

Cycle track connection

BIKE PAL Project

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1. INTRODUCTION

The aim of this document is to describe the actions undertaken by the group of Valencia that participated in the BIKE PAL Project. This aforementioned project will be thoroughly analysed by the authors. Related aspects, such as the promotional campaign or the assessment of the assignment, are outlined in this draft resolution as well. In short, it is based entirely on the improvement of the infrastructure of a point in particular of the cycle track network of Valencia.

The document has been organised in chronological order for a best understanding, according to the implementation and dissemination of the project. In this way, the reader is located in a Spanish and Valencian context with respect to bicycle traffic safety.

Next the reasons why this point to be improved was chosen are given. Also, the existing problems are defined as well as the detailed objectives pursued with the improvement.

Then the ideas to solve the problematic of the point to be upgraded are presented, as well as the different phases in which the implementation of the project is to be applied. Lastly, the success of the improvement is depicted, together with the promotional campaign and some relevant conclusions.

More specialized reading aspects are described in the four annexes included to complete this document.

2. BACKGROUND INFORMATION. THE BICYCLE IN SPAIN AND IN VALENCIA

2.1 THE BICYCLE IN SPAIN

The bicycle is becoming one of the main ways of mobility on city streets in the European area today, as numerous studies have pointed out. However, this important and increasing number of cyclists has contributed to a sharp increase in accidents in which this specific target group is involved.

If the accident rate and statistical indicators of cyclists referred to Spain are observed in the last years in urban areas (figure 1), the risk of accidents has increased concurrently with the growth in the number of bike users in this country. Next figure easily displays the number of slightly and seriously injured:

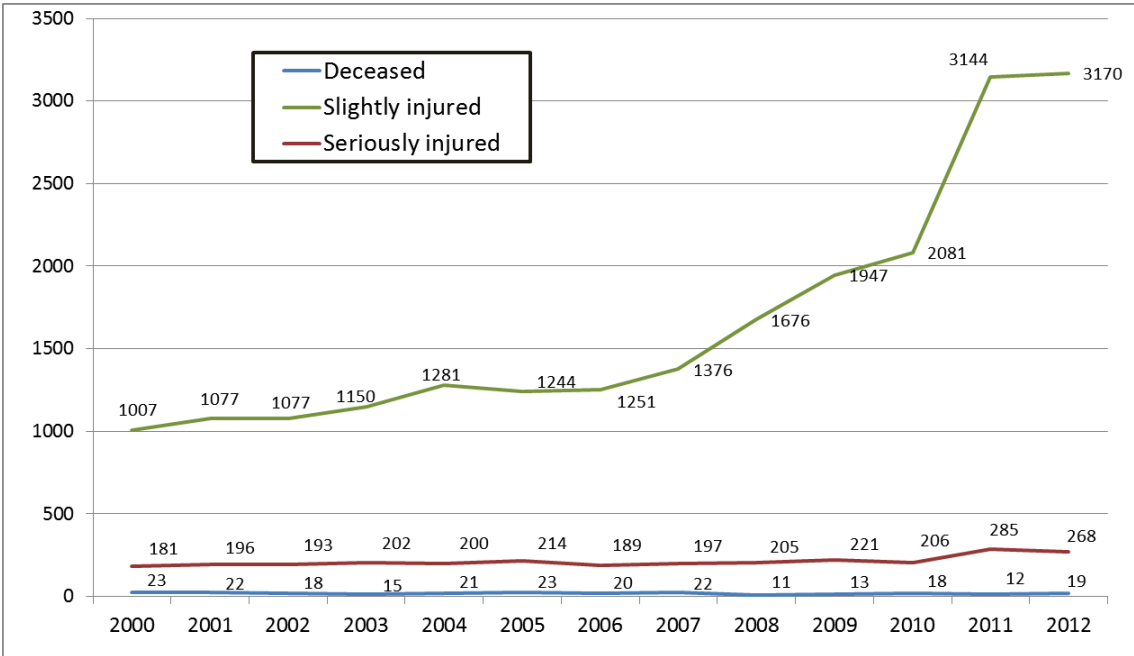


Figure 1: Graphs with the accident rates in urban areas in Spain in the last years. Elaborated by the authors. Source: Accident rates in urban area (2010), DGT, INE.

2.2 BIKE PAL PROJECT

To avoid that this sustainable mode of transport becomes a road safety problem, there are two main courses of action: organize awareness campaigns throughout the society or the upgrading of urban infrastructures to allow the safe movement of this specific target group.

From the ETSC (European Transport Safety Council), the Bike Pal Project is now underway for some years. It is a European project whose objective is to reduce the accident rate of cyclists in the highways of all the EU. Informative campaigns, drafting studies and a greater awareness in society are crucial for this project. Involve university students to propose ideas for competition is one of the most important phases of this project. The aim is to improve the infrastructures and do awareness campaigns in their own cities so as to optimize the safety of cyclists.

The authors of this draft resolution, habitual users of the bicycle, were presented with the BIKE PAL project in a conference of their own university and decided to participate on it. A lot of ideas could be provided as well as solutions for one of the major problems present for cyclists: insufficient existing cycle track connection in Valencia.

2.3 THE BICYCLE IN VALENCIA

In many occasions, cyclists are obliged to circulate in non-designated areas due to this lack of cycle track connection in Valencia. When a cyclist comes across a junction, he or she feels disoriented. They do not know which way to take, and feel compelled to perform uncomfortable and unsafe manoeuvres. Not only are these manoeuvres dangerous for them, but also to other road users like pedestrians or other vehicles. This type of manoeuvres might pose a road safety problem, as in many cases they are a result of imprudent movements.



Figure 2: Siting of Valencia

From 2009, 7 cyclists¹ have since died from being knocked down by motor vehicles. In most cases, the cause is due to the cyclist passing a pedestrian crossing on flashing amber lights. Four out of these accidents were produced in junctions and avenues with a great volume of traffic, and two out of them in points where the cycle track suffers an interruption.

With what has been seen hitherto, the importance of insufficient existing cycle track connection is crucial for the road safety of cyclists. For this reason, this project will cover the connection of a cycle track in a conflictive point where high-traffic of cyclists is present.

The cycle track network in Valencia was around 145 kilometres long at the beginning of 2013, according to the database of the city council. An intricate network that nevertheless has serious shortcomings in the connection. This is because cycle tracks had been built in different phases and with diverse plans throughout the years.

¹ Can be consulted in the deceased map together with where the accidents took place in the webpage (1) of the bibliography.



Figure 3: Map of the cycle track network in Valencia²: in green cycle tracks, in red ciclocalles (lanes designed for bikes; exclusive to Spain).

Most of the cycle tracks in Valencia (green colour in figure 3) are two-way tracks. They are separate from the driveway and generally located in the pavement; usually paved in red to being different from the rest of the pavement, as it can be appreciated in the next figure:

² The cycle track map can be consulted in the link presented in the bibliography.



Figure 4: Panoramic view of a characteristic cycle track in Valencia

In the last years, *ciclocalles* are fitted out in some areas of the city. These *ciclocalles* have a characteristic speed limit on 30 km/h for motor vehicles, and the cyclist always has priority. These new cyclist infrastructures have improved the connection of the cycle tracks already built, but there are many interruptions as they can be seen in figure 3.

On the other hand, there is the increasing use of the bicycle produced in the last years in the city. According to data from the Sustainable Urban Mobility Plan of Valencia (September 2013), the number of bicycle users has increased by 19% since 2009. Currently, 75.000 daily trips on bike are registered, which constitutes the 4.8% of all movements present in the city.

This significant growth of the bicycle in the last years has led to an insufficient cyclist infrastructure in most cases, and disconnections in the network worsen the situation. This design is drafted to provide ideas so as to improve the disconnections that may serve as a reference to solve others.

3. SELECTION OF THE PLAN OF ACTION

To select the point to be improved, the cyclist connection of the inner ring road of Valencia was outlined in the first place. The inner ring road is a set of streets that surrounds the historical centre of Valencia of 5 km long and with a high volume of traffic (around 20.000 vehicles per day). Through these streets that give access to the historical centre, a large number of cyclists travel. In addition to this, a lot of cycle tracks of the city end in the inner ring road, thus there is a lack of a cyclist infrastructure to connect them.

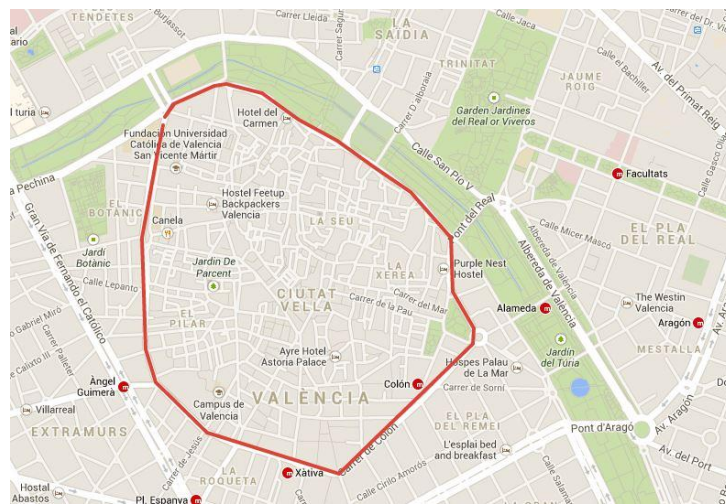


Figure 5: Location of the inner ring road of Valencia.

Notwithstanding the above, there is no separate infrastructure. Cyclists are forced to travel sharing the driveway with the rest of the vehicles. Most of these streets have four lanes of traffic in the same direction, and the top speed is on 50 km/h (see figure 6).



Figure 6: Image with the section type of the inner ring road (Colon Street).

The inner ring road of Valencia is a highly competitive infrastructure asked for more than 20 years ago, but it was considered as too ambitious for the objectives pursued in the BIKE PAL project. In fact, the Valencia City Council estimates that the implementation would cost 1.3 million euros; therefore a possible smaller action to be carried out was decided. The aforesaid investment was too high.

Two weeks before the BIKE PAL camp, the association Valencia en Bici (Valencia on Bike) was contacted. The aim was to facilitate the choice of a smaller and more local action in where to establish this roadway improvement. After the first meeting, the association offered the possibility to put an announcement on their site on Facebook. Through this announcement, urban cyclists exposed the most dangerous and uncomfortable traffic points. More than 40 proposals were received in only two days, but solely the most interesting eight were elected.



Figure 7: Placing of the most interesting eight proposals (in blue), and the final selected proposal (in red).

After the visit and the consultation undertaken to the followers of Valencia en Bici, including running further analysis of each proposal, a survey to choose the point to be improved was set. The criteria to be adopted for the selection contemplated:

- Have a simple implementation, both economical and technical.
- Be of greatest benefit possible for cyclists on road safety legislation.
- Establish a clear example of small improvements and investments to solve a connection problem effortlessly, so that the administrations and policy managers are interested.

To achieve this, a complex course of action was selected a priori from a technical point of view. If solved, it would contribute a great benefit in enhancing the safety and comfort of cyclists. It could be a benchmark for other simpler disconnections of the city in the near future.

A disconnection of a cycle track in the junction of Primado Reig Avenue and Almazora Street to be ameliorated was picked. This point is highlighted because it is part of the cyclist route that joins the historical centre of Valencia with the northern metropolitan area, in particular with the locality of Alboraya. In the intersection, the cycle track is 140 metres short to unite Primado Reig Avenue with Benicarló Street, as can be seen in figure 8.

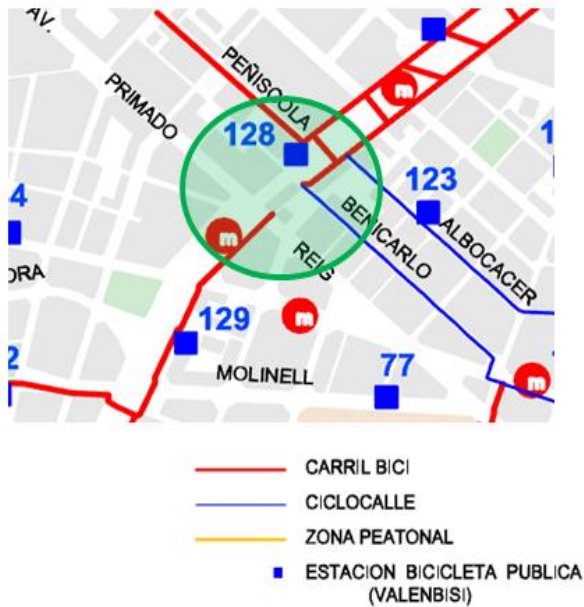


Figure 8: Area plan of the cycle track network.

The lack of a cycle track in this section is due to the existence of a building that the town-planning conception of Valencia expects to demolish in order to redevelop the block. According to the consultation proposed to the City Council, the area urbanised is not expected to be demolished in the short or medium term. For this reason, the existing problem to be sorted out was sought after with full knowledge of this being a provisional solution. If the block is to be properly urbanised in the long term, the cycle track will be built in the stipulated site by the urban-planning objectives.

4. DESCRIPTION OF THE SELECTED POINT, INCLUDING THE PROBLEMATIC ENTAILED

The action zone and the problematic entailed, together with the interruption of the cycle track, will be thoroughly analysed in this section. The interruption coincides with the junction of two important streets of the city with a high density of vehicles. There are several lanes in each way. In the junction, there is also a tramline.

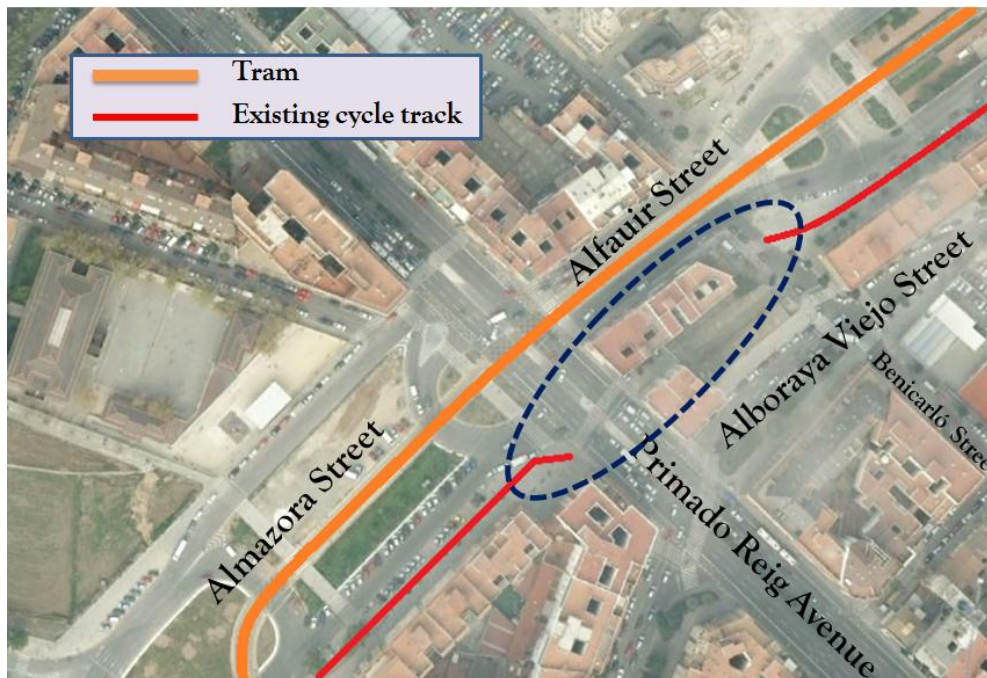


Figure 9: Junction scheme where the interruption of the cycle track is produced.

4.1 DESCRIPTION OF THE SELECTED POINT

Primado Reig Avenue is a street of 30 metres width that goes in two directions with traffic of 45.000 vehicles. The direction that affects the action has three traffic lanes and one cordoned parking lane, as seen in figure 10.



Figure 10: Panoramic view of Primado Reig Avenue (Image: Google Earth).

Alfauir Street has three traffic lanes as well; separate from the tramline, which is placed between both directions. Despite being on average a street with low traffic intensity (10.000 vehicles per day), three traffic lanes are necessary.



Figure 11: Panoramic view of Alfauir Street (Source: Google Earth).

This is because the vehicles that access through Almazora Street proceed to turn to the left very imprudently as a general practice in Primado Reig Avenue. The fact that it is not allowed is

overlooked. In this way, vehicles block the entrance to Alfauir Street, producing great traffic jams in the junction. This problem is aggravated by the tramline, would not otherwise reserve a space to proceed to turn properly.



Figure 12: Panoramic view of the entrance to Alfauir Street.

Two streets near the point are analysed as well, although they do not affect either the intersection or the existing cycle track. However, they are of importance given the closeness to the cycle track. On the one hand, **Camino Viejo de Alboraya Street** runs parallel to Alfauir Street, and it is a one-way street. It has two traffic lanes and two cordoned parking lanes. Vehicles tend to double-park because it is a street with low intensity of traffic.



Figure 13: Panoramic view of Camino Viejo de Alboraya Street (Source: Google Earth).

Lastly, the cycle track in Benicarló Street is reached on the north side. It is a street of 15 metres width, and traffic is one-way. In the section where traffic collides, there is an entrance to an industrial area, a cordoned parking lane and a single traffic lane.



Figure 14: Panoramic view of Benicarló Street (Source: Google Earth).

4.2 PROBLEMATIC ENTAILED OF THE SELECTED POINT

The existing problems related to the disconnection of this point in particular are carefully analysed below:

- It is an area with high cyclist traffic, according to the valued data of the City Council of a point near the place. In the cycle track, over 1.000 bicycles roam per day.
- Changing from one end to the other can be specially complicated.

To start decomposing the problematic entailed of this point in particular, it is important to underline that in every moment only the cyclists that roam the cycle track have been taken into consideration. Although some cyclists have a tendency to always travel on the highway, they are usually found in this disconnection.

Cyclists who travel by the cycle track have two options when reaching the interruption: either they go through the pavement or highway. The direction of the traffic lane is crucial for cyclist to tip between the sidewalk and the driveway.



Figure 15: Direction of the driveway. Alboraya direction: from top to bottom.

The pavement both for Alfauir Street and Primado Reig Avenue is very narrow, as seen in figures 17a and 17b. In one section even, it is less than one metre and a half.



Figures 17a and 17b: Panoramic view of both the pavements of Alfauir Street and Primado Reig Avenue.

Moreover, a great number of cyclists tend to accumulate in the pavement of Primado Reig Avenue when the traffic lights do not allow crossing the avenue. In this way, it is undeniable that the movement of cyclists through the pavement is uncomfortable for both pedestrians and cyclists. In occasions, it is even hazardous for the neighbours, as a consequence of the closeness of the entranceways to houses and shops adjacent to the area.

Traffic jams produced in the junction because of imprudent procedure, as mentioned above, also creates a road traffic problem when cyclists travel on the road in the Alboraya direction. Hence they generate situations of insecurity for cyclists. Besides, stalled vehicles in the junction cause limited visibility in blind spots.

In conclusion, the interruption of the cycle track generates a series of traffic safety problems, both for cyclists and other urban users. All these problems are endorsed by the cyclist's opinions, stated in the polls (showed later). There is considerable discontent with the state of the section described.

According to the survey conducted before the action between the 17th and 20th of May of 2013 (see annexe 1), 31 out of 34 people polled regard the point as poor and unsafe for cycling.

5. OBJECTIVES OF THE PLAN OF ACTION

The objectives set out for the improvement are as follows:

1. Free movement of cyclists in the selected point.

Many cyclists roam the area described, as affirmed before. The aim is to make this point the less unsafe possible for the cyclists, and limit the speed as less as possible. Although the solution is not perfect for cycling, it should be applied to make the best use of it.

2. Diminish competition between cyclist-pedestrians.

Most cyclists travel through the pavement due to a non-existing cycle track. The proposed idea designs a space for cyclists. This area should not take away pedestrian space. As a result, the number of cyclists would not be accumulated in the pavement either.

3. Increase security of both cyclists and pedestrians.

Some do not get off the bicycle and their speed is only slightly decreased in the pavement, being somewhat dangerous for the pedestrian. On the other hand, drivers are perilous for cyclists who travel on the highway. This may increase the risk of an accident.

4. Good social perception of the plan of action.

Besides achieving the objectives already set out, having a good social perception of the plan of action is also imperative, especially from neighbours and local storekeepers.

6. INITIAL IDEAS FOR THE IMPROVEMENT

With the objectives of the plan of action set out, there are different possibilities to achieve them. Four different alternatives were outlined initially. Every alternative consisted of building a new cycle track that joined both unconnected extremes, but with different paths. In this project, the alternatives presented are carefully analysed from the beginning. The alternative chosen as the best does not indicate that is to be implemented in the end.

6.1 INITIAL ALTERNATIVES TO SOLVE THE DISCONNECTION

Alternative A:



Figure 18: Scheme of alternative A.

Based on eliminating parking places in the Primado Reig Avenue and in part of the street of Camino Alboraya Viejo, invading the pavement in the remaining part. The pavement of Camino Alboraya Viejo is of 7 metres width, thus is expected that pedestrians would not object in excess to this change. Sharp changes in direction in the tracing of the cycle track may be a drawback, causing discomfort for cyclists. This solution is similar to the one proposed by the City Council.

Alternative B:

Figure 19: Scheme of alternative B.

In this option, parking places are eliminated both in Primado Reig Avenue and in the whole section of Camino Alboraya Viejo, as well as in Benicarló Street. Pedestrians would barely notice this improvement. However, it would strongly affect the parking space. In Camino Alboraya Viejo, there would be two traffic lanes despite the low intensity of vehicles. This option, although it seems acceptable, is not coherent since the mentioned street is a street with local traffic, thus one traffic lane could be removed.

Alternative C:

Figure 20: Scheme of alternative C.

Alternative C arises from alternative B. The idea is to eliminate one traffic lane in Camino Alboraya Viejo instead of the parking space. In this way, the number of parking places is not reduced in this street, but displaced to one of the current traffic lanes. Since it is a local street, there is little alteration of the fluidity of traffic. In Primado Reig Avenue and Benicarló Street, parking places would be eliminated.

Alternative C, with some slightly modifications, will be shown later as the one finally developed. This is due to being the most economical and technical of all of the alternatives.

Alternative D:

Figure 21: Scheme of alternative D.

Consisting of building the cycle track throughout Alfauir Street, removing one traffic lane of the existing three. This is the option that would please more to cyclists, since they would follow their paths in the same street they are travelling. They would perceive their paths in a straight line, without having to deviate. Apparently, it would be the best option. Nonetheless, it is only a perception, since the run distance is the same as the other three alternatives.

Alfauir Street averaged an intensity of 10.000 vehicles per day. If removing one traffic lane, a quite comfortable capacity for that intensity of vehicles would still be present. However, due to the traffic jam problem, removing one traffic lane would be almost impossible.

The BIKE PAL camp criticized this alternative for being difficult to persuade local authorities to remove one traffic lane. The consequently financial cost was also decisive for this position. More construction work should be carried out to remodel the corner of Primado Reig Avenue and Alfauir Street as well. For all these reasons, this option was the first to be disregarded by the decision makers after the first meetings. It will be seen with more detail in section 7.

The table presented below shows comparisons among the different alternatives to see how they would affect diverse users, and also their financial cost. This valuation is done using precautionary measures when it comes to studying the assorted options.

COMPARISON AMONG ALTERNATIVES				
Affects:	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
PARKING PLACES	Little affection	Affects a fair amount	Does not affect	Does not affect
PEDESTRIANS	Affects a fair amount	Does not affect	Does not affect	Does not affect
VEHICLES	Does not affect	Does not affect	Affects partially	Affects partially
COMFORT OF CYCLISTS	Low	Medium	Medium/High	High
FINANCIAL COST	Medium	Low	Low	High

Figure 22: Table showing the comparison among the proposed alternatives to solve the disconnection.

6.2 ELECTED ALTERNATIVE

Finally, alternative C was the option selected and finally developed, as it will be seen in section 7. The most important operations concerned for this alternative are:

- **Primado Reig Avenue:** removing the parking lane.
- **Camino Viejo de Alboraya:** removing one traffic lane, and displacing the parking lot to the space formerly occupied by the traffic lane. In this way, the cycle track occupies the zone of the driveway closest to the pavement.
- **Benicarló Street:** a similar operation to Camino Viejo de Alboraya will be applied and joined with the existing cycle track.

Next figure illustrates a plan for the solution finally selected:

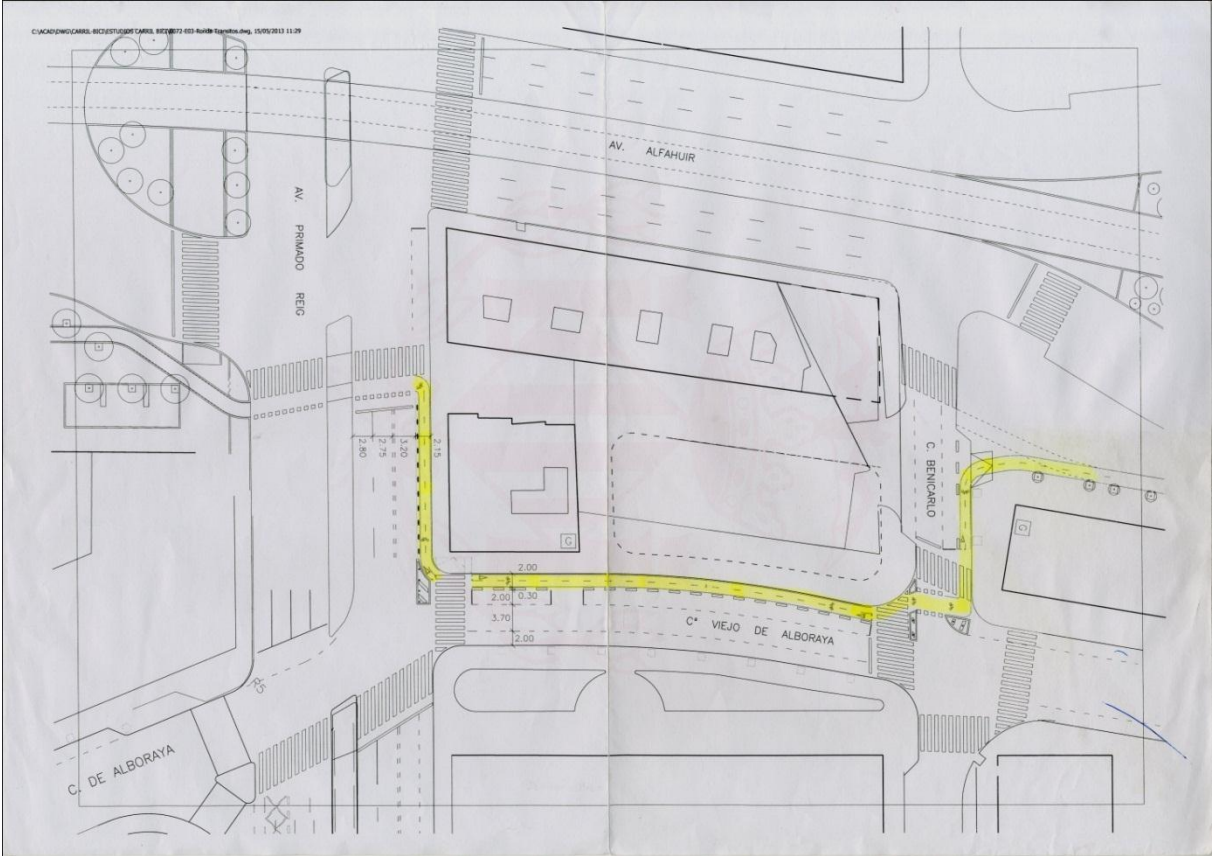
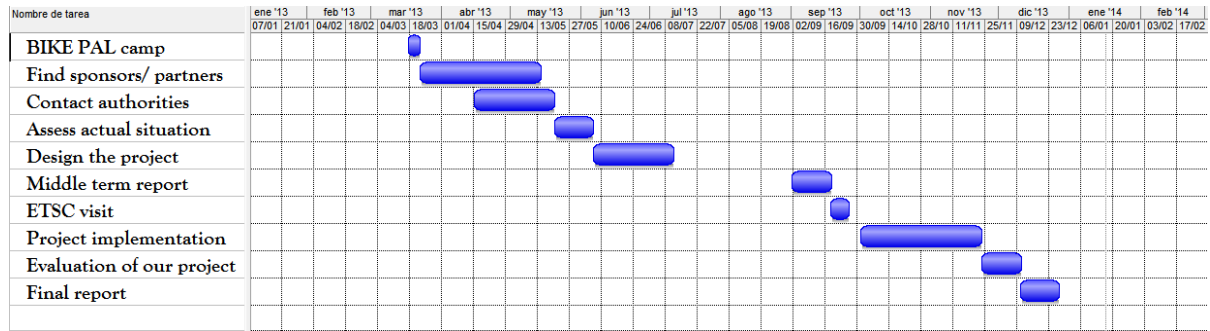


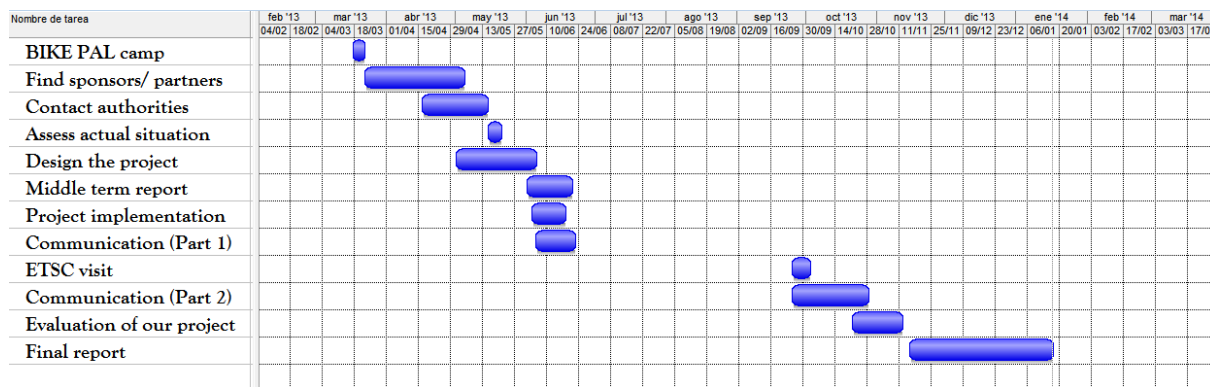
Figure 23: Solution plan for the option implemented by the City Council. Source: Valencia City Council.

7. KEY PHASES FOR THE IMPLEMENTATION OF THE PROJECT

In this section, the phases of the implementation of the project are exposed. Next chart (timeline) shows each single phase of the project with the expected duration:



Real implementation duration is observed in the following chart:



7.1 AFTER THE CAMP: CONTACT LISTS WITH UNIVERSITY LECTURERS

After the BIKE PAL safe cycling camp, university lecturers from the Universidad Politécnica de Valencia UPV (Polytechnic University of Valencia) were contacted for advice and recommendations about the next steps. In particular, Jordi Esparza, who is a professor that helped us to know about the BIKE PAL Project at university. In the first meeting, we needed to make contact with Javier Soriano in order to have the first contacts of the personnel of the Valencia City Council. Soriano is both a professor at university and a civil servant of the City Council.

After approaching Javier Soriano, the project was explained. Then we were referred to Samuel Sáez, technician of the City Council specialised in mobility and transport of bicycles. The 30th of April was

the day set for the meeting with this technician; other sponsors are sought after to be able to realise successfully this project. The aim is to attend the first meeting with the City Council with the maximum number of supporting figures along with a solid project. Other organizations interested in the same objectives pursued in the project are intended to support it.

7.2 FINDING SPONSORS

The most significant meetings arranged to find sponsors were: the Civil Engineering School of the UPV, the organization Valencia en Bici, and the Neighbourhood Association of Benimaclet.

The meeting with the **director of the School**, hold the 19th of April, is meant to look for the institutional support of the School to carry out the project. This meeting is key for the later communication campaign. Thanks to the aid proportionated by the School, the project is brought to light in the media, as it will be seen in section 9.

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The meeting with the association “**Valencia en Bici**” is hosted in its seat the 23th of April. It is the second meeting organised with this particular target group, since before the camp another meeting was called with one of their members to look for a point to be improved.



In this meeting, the project is presented with the four different alternatives to have the opinion of the members of the association attending the meeting. Furthermore, information is interchanged about the BIKE PAL experience and some new concepts learnt in the camp are exposed. To finish with, the association offers its full institutional support and suggest other associations to obtain more backing. The Neighbourhood Association of Benimaclet would follow, which is the quartier where the improvement is to be implemented.

In the middle of May, the **Neighbourhood Association of Benimaclet** is contacted. However, their answer is produced after the meetings with the City Council and when the project has already been approved. For this we need their help to back the promotional campaign.



7.3 MEETINGS WITH THE CITY COUNCIL

The first meeting with Samuel Sáez is on the 30th of April. Sáez is a technician of the City Council of Valencia. This two-hour meeting is the first initial contact with the City Council. The meeting is realised in his office inside the municipal agency. The project BIKE PAL is explained together with the idea of the project that we intend to apply with the four alternatives already expounded.



The technician values the alternatives and gives us his opinion. He disregards alternative D from the beginning. This rejection is justified due to the little scope in the existing road space in the corner of Alfauir Street and Primado Reig Avenue. The mobility of urban fixtures needed to locate the cycle track, such as a lamp and a light, would complicate its implementation (see figure 24).

As a result, it would incur in an increasing of a considerable cost of action. On the other hand, there is the problem of traffic jams that would generate in the junction if reduced to two traffic lanes.



Figure 24: Panoramic view of the corner of Alfauir Street in Primado Reig Avenue.

After exposing the proposed alternatives, and after alternative D having been rejected, the technician informs us that the City Council has already been raised and tried to address this interruption (see figure 25). Still, the project conceived by the City Council was too ambitious. Its aim was to comprehensively restore the block with a sidewalk enlargement and other improvements of urban fixtures. The budget of such a project was too high, and thus left without actual implementation.

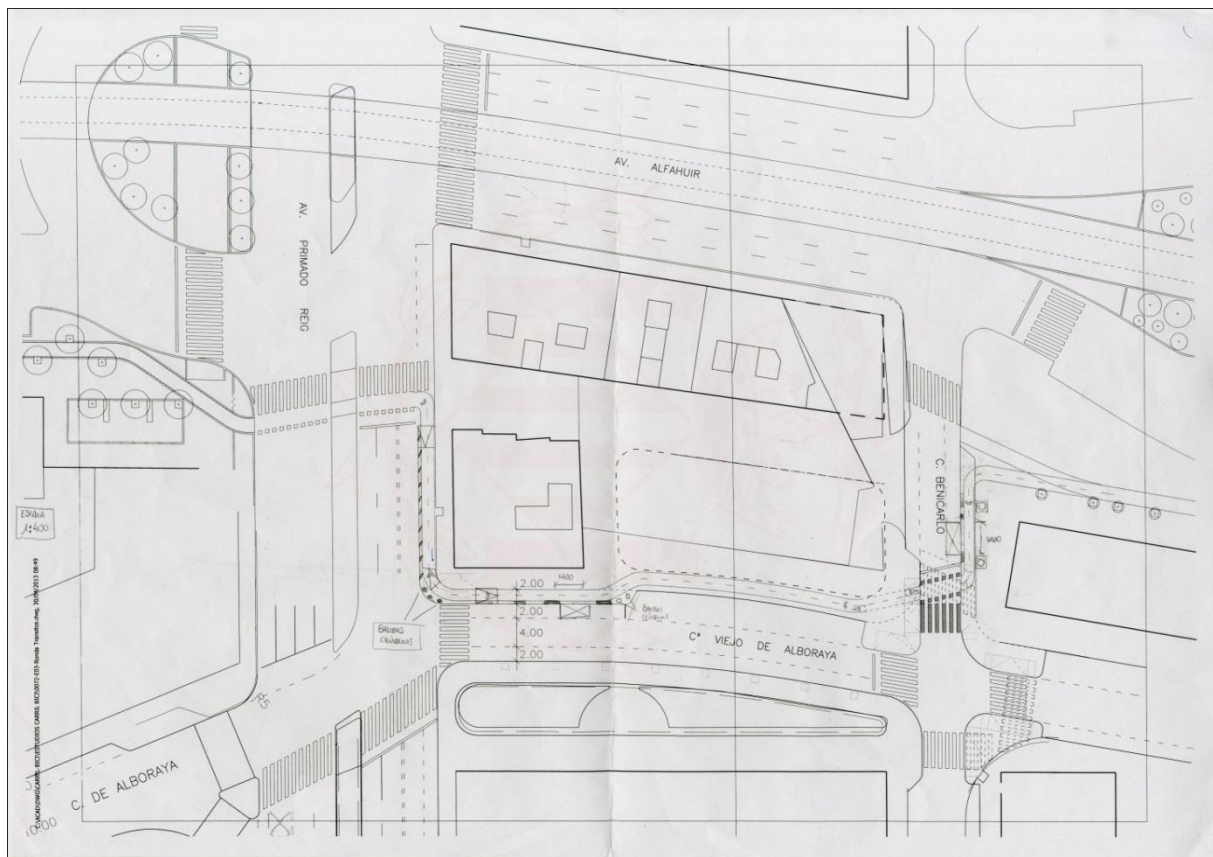


Figure 25: Map of the proposal presented by the City Council. It can be appreciated that it is a solution similar to alternative A. Moreover, the remodelling of the intersection between Benicarló Street and Camino Viejo de Alboraya can also be seen. Source: City Council.

The solution designed by the City Council, in relation to the cycle track, was too similar to the present alternative A. However, alternative A has a cost appreciably lower (ten times less). No auxiliary construction work was needed. Also, alternatives B and C were even more economical. It is thought

exclusively to solve the most important and urgent problem, which is to connect the cycle track. And doing it in the most economical way possible. It must not be forgotten that this connection is part of a provisional plan of action in the medium term. During the meeting, lower transaction costs are emphasized repeatedly.

Subsequently, the technician gives us some data of the number of cyclists who travel through the cycle track to estimate the importance of this point.

With the meeting finished, the technician does not agree for the City Council to implement the construction work throughout his department, although the idea is to be surveyed. The justification proportionated is that the City Council does not contemplate construction work of this type in the short term. Nonetheless, we insist on talking with another decision maker with major responsibility or another department of the City Council. The technician suggests that we organise a meeting with Rafael Vidaurre, City Council technician of the signalling area. The purpose is to look for a way to implement it as a horizontal construction work, since most of the project is related with this type of construction.

Since the implementation and financial aid from the City Council was foreseen to be difficult, other financial ways were considered between both meetings. New sponsors were sought after, if not achieved our objective at the second attempt.

The meeting with Rafael Vidaurre was the 15th of May. Before visiting Rafael, a casual encounter with Samuel is led that day. Samuel is the technician of the first meeting. We are informed that the idea that we present is being subject to study. And after the consultation made to other higher decision makers of the City Council, **we are confirmed that the improvement is going to be implemented with the most economical version, such as it was insisted on the first meeting, and to be financed wholly from the City Council.**

The project is corroborated to start in 15 days. In spite of obtaining this encouraging news, the meeting with Rafael was carried out as well even if it was not to affect the project. The goal to convince a local authority had been completed.

7.4 PREVIOUS POLLS TO THE PLAN OF ACTION

After receipt of the notice of impending execution of the construction work, a survey addressed to cyclists who travel around the point is prepared. This is before the roadwork start. This survey is realised with the use of opinion polls whose goals are:

- Know about the perception and opinion of the cyclist of the selected point. Assess if the improvement is absolutely necessary for the cyclist, and in which measure. Up until now, only hypotheses were drawn up about the bad state of the point, but no data was registered about the perception of itself.
- Observe their behaviour before the interruption, if some improvement can be contributed to the project. It is considered as a feedback process to the initial project.

Taking into account the closeness of the implementation date, the polls were designed and realised few days after the last meeting. With the help of a member of the association Valencia en Bici, the kinds of questions for the survey are drawn up. The opinion polls are of interception and addressed exclusively to cyclists. They are realised in the point of action, on both sides of Primado Reig Avenue.



Figure 26: Scheme of the area that illustrates the different locations where the opinion polls were conducted.

The high level of rejection that these polls attract is well known. For this reason, they are to be answered in little time (90 seconds approximately), during the red light of this avenue. In this way, the cyclist does not waste any time. Also, a lot of information can be drawn with this short questions, including the cyclist's opinion of this point.

The poll contains the following questions:

- 1) – Gender and Age (Closed answers)-> **(M, F, and number)** ____ and ____
- 2) – Days you take the bike per week (Open answer, **number**) _____
- 3) – Number of times that you cross this point per day (Open answer, **number**) _____
- 4) – Why do you take the bike? (To see the reason of the journey: **Work**__, **College/University**__, **Leisure**__, **Other**__, **All of the Above**__)
- 5) – What's your opinion about this section? (**Bad**__/**Good**__/**I don't know**__)
- 6) – Usually, what do you do? Which way do you take? (Open answer)

- 7) – What do you think about this proposal? (Bad__/**Good**__/**O.K.**__/**Don't know**)
Any comments? _____
- 8) – Would you use this alternative, or you'd do the same route as always (**I'd use the same route**__, **I'd use it**__, **I don't know**__)

Other matters equally important should be studied after the questionnaire. The first problem addresses the number of cyclists polled, and the methods entailed. To decide the optimal sample size, the procedure shown in annexe 1 is applied.

Before the plan of action was developed, 32 polls were conducted on two working days (concretely on 17 and 20 May). They were realised at different times of day for the sample to be the most representative possible. Cyclists were selected arbitrarily when crossing the point. There were some refusals:

PERCEPTION OF CYCLISTS		
	Number of people polled	Percentage
POSITIVE	0	0 %
NEGATIVE	29	90,6%
N/A	3	9,4%
TOTAL	32	100 %

As observed in the previous data table, the main conclusion is that 91% of people polled considered the disconnected section as a difficult point to cross, and no one regarded it positively. Aside from establishing if the point had a positive or negative impact on cyclists, more details about their behaviour towards this particular section and their own opinions were also described.

Another important conclusion drawn is that cyclists use different ways of crossing the disconnection according to their destinations (Alboraya or Valencia), as described in this same report. Other results can be consulted in annexe 1.

TRAJECTORY/DESTINATION ALBORAYA⁴		
PAVEMENT	13	43,33 %
HIGHWAY	14	46,67 %
BOTH	3	10,00 %
TOTAL	30	100%

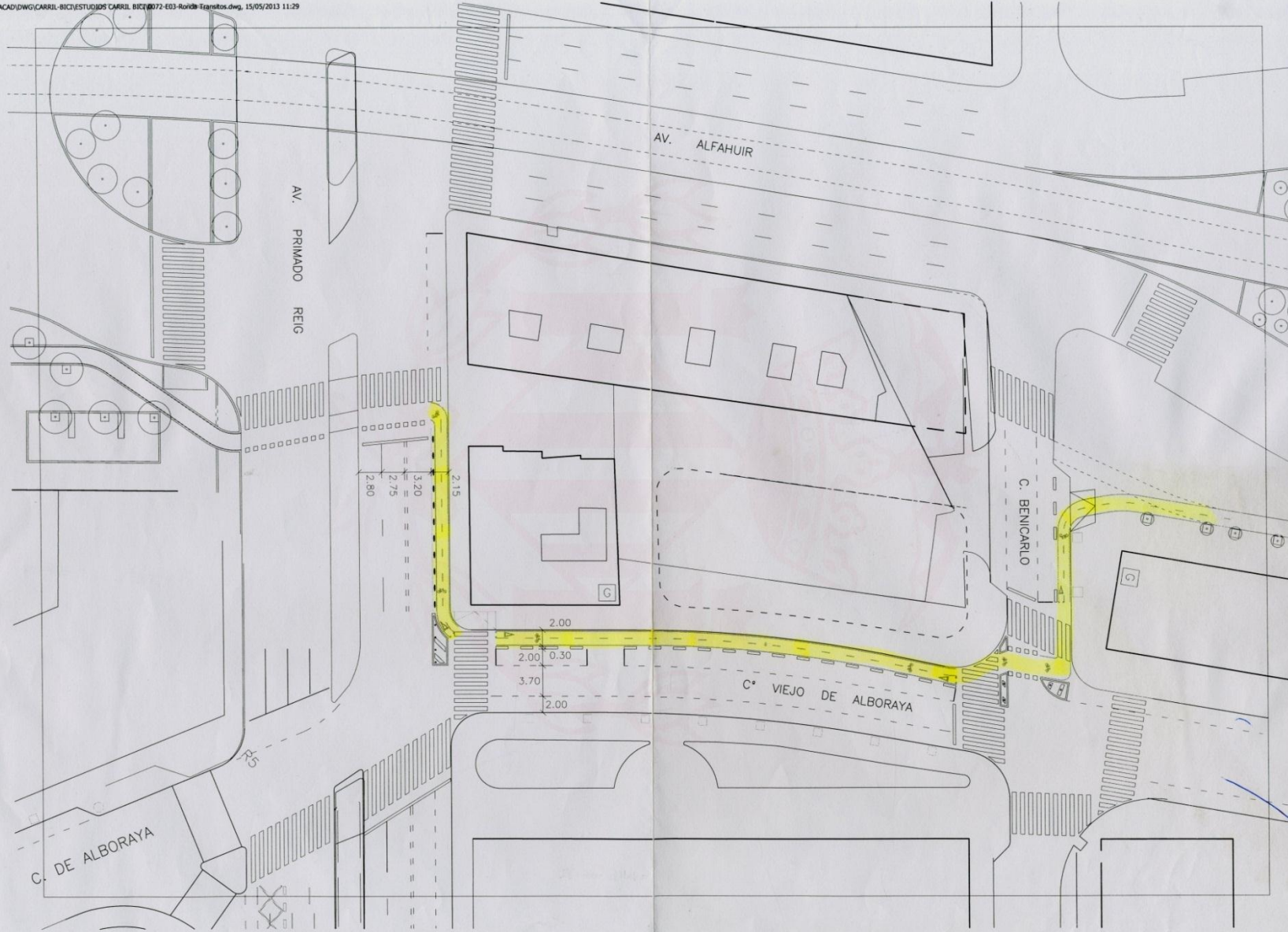
TRAJECTORY/DESTINATION VALENCIA³		
PAVEMENT	24	77,42 %
HIGHWAY	4	12,90 %
BOTH	3	9,67 %
TOTAL	31	100%

7.5 ULTIMATE AIM PROJECT

The plan of action is next explained. Its estimated value is situated between 5.000 and 6.000 euros. The following page contains a plan with the required works to be executed. Later on, the materials utilized are expounded as well as the engineering structures needed, and also the operations to be performed.




³ 32 cyclists polled, but only 31 replied.

⁴ 32 cyclists polled, but only 30 replied.



7.5.1 MATERIALS



To make possible the implementation of this alternative, the next **materials** are needed:

MATERIALS	DESCRIPTION	IMAGE
Cylindrical marker posts	Channel buoing to guide cyclists and motor vehicles.	
Segregate elements (I)	Concrete blocks to separate the line of the parking space and the cycle track in Camino Viejo de Alboraya and Benicarló Street.	
Segregate elements (II)	Reflective elements made entirely of plastic to separate the traffic lanes from the cycle track in Primado Reig Avenue.	

<p>Paint cycle track/lane</p>	<p>In the whole cycle track, paintings are needed to mark horizontally the cycle track.</p>	
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7.5.2 ENGINEERING STRUCTURES

Also, the following **engineering structures** and reforms are required:

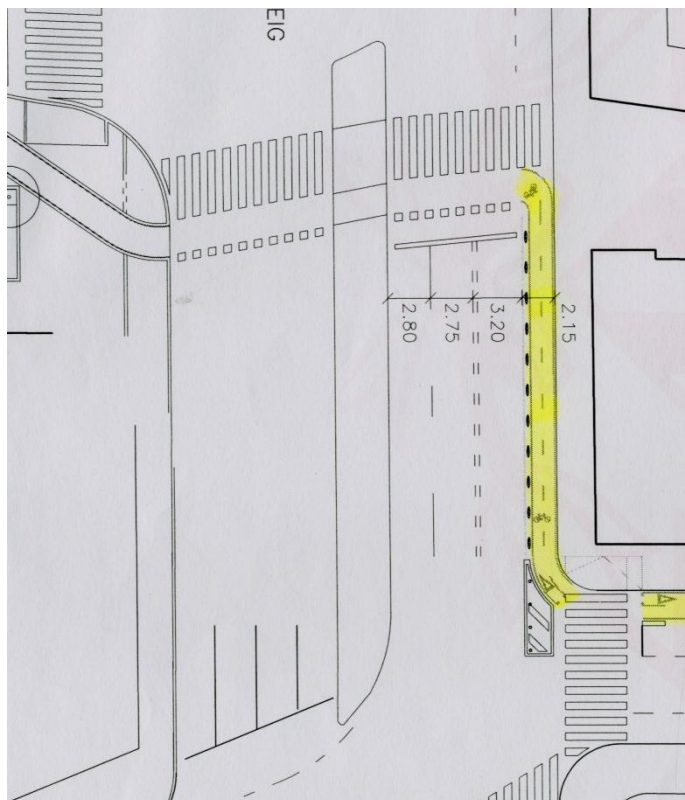
ENGINEERING STRUCTURES	DESCRIPTION	IMAGE
<p>Ascending/ Descending gradient</p>	<p>Ramps to go up and down the cycle track and into the pavement.</p>	
<p>Connection with the existing cycle track</p>	<p>Construction work is necessary to connect it with the existing cycle track.</p>	

7.5.3 OPERATIONS TO BE CARRIED OUT

The operations to be carried out are described thoroughly in each one of the following sections:

- In **Primado Reig Avenue**, 4 parking spots would be removed to place the cycle track. In this way, it is united with the existing cycle track of the pedestrian crossing of Primado Reig Avenue, as seen in figures 27a, 27b, and 27c.

The designed width of the cycle track is 2.15 metres. To complete the operation in this section, the horizontal signalling of the parking space should be erased using black painting in the first place. After this, the horizontal signalling of the cycle track will be painted and the described segregate elements would be placed to separate the cycle track from the traffic lane. The closeness of the traffic lane recommends utilizing flexible segregate elements made entirely of plastic.



Figures 27a, 27b, and 27c: Detailed project in Primado Reig Avenue.

In the corner of Primado Reig Avenue that crosses Camino Viejo de Alboraya, the existing zebra crossing would be displaced and enlarged. The goal is to make the cycle track more visible for vehicles. Also, to avoid that cars park in the crossing, cylindrical marker posts would be installed.

- In **Camino Viejo de Alboraya Street**, one traffic lane would be deleted and lately the parking space would be moved to that lane (see figure 28).



Figure 28: Scheme of the plan of action to be performed in Camino Viejo de Alboraya.

In this section, different segregate elements from the ones used in Primado Reig Avenue would be instated. With larger dimensions and made of concrete to avoid that cars park in the cycle track. The elements used are orthohedral blocks made of concrete of 30 x 10 x 50 centimetres.

These blocks will be installed in a broken line throughout the street. In this segment, the cycle track would be two metres wide. Although the number of the traffic lanes is reduced with the presence of the cycle track, its width is less than the parking line. Thus the road also remains wide enough for cars after applied the reform.

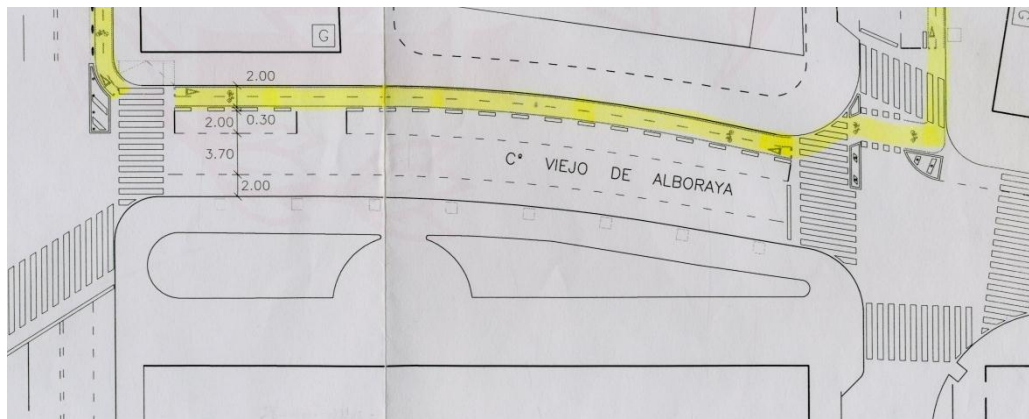


Figure 29: Detailed project in Camino de Alboraya Viejo.

As seen before, first the existing street marks would be deleted and later replaced with horizontal signalling, both in the cycle track and in the parking line. In the intersection of Camino Viejo de Alboraya and Benicarló Street, two special zebra crossings will be delineated with cylindrical marker posts, as seen in figure 29.

- Finally in **Benicarló Street**, a similar operation to Camino Viejo de Alboraya will be applied. In this case, there is only one traffic lane, but has approximately 5 metres wide. This allows displacing the parking space at the expense of narrowing this lane (see figures 30a and 30b).



Figures 30a and 30b: Detailed project in Benicarló Street.

In this sector, apart from putting the segregate elements made of concrete, two already described manufacturing works should be undertaken: the ramp and the connection with the existing cycle track.

The **ramp** should be built in order to go up the cycle track into the pavement, since the connection is implemented on a road level. However, the existing cycle track is found on a sidewalk level, some centimetres higher. Due to the lie of the existing cycle track, the ramp coincides with the bend.

To connect with the existing cycle track, some special little pavement zone of the cycle track should be removed (red pavement). This is because some metres of the old cycle track do not coincide with the new cycle track. For this, roadwork should be implemented to lift up this pavement and build it following the new tracing.



Figure 31a: In blue, the existing cycle track is marked.

Figure 31b: Panoramic view of the tracing of the existing cycle track in the interrupted point.

Lastly, like in the other sections, the old road markings should be removed and proceed to site the new horizontal signalling.

7.6 EXECUTION OF THE WORKS

In this part, a photographic report with brief comments about the execution of the works is displayed. These lasted from the 3rd to the 18th of June of 2013. The pictures are presented chronologically.

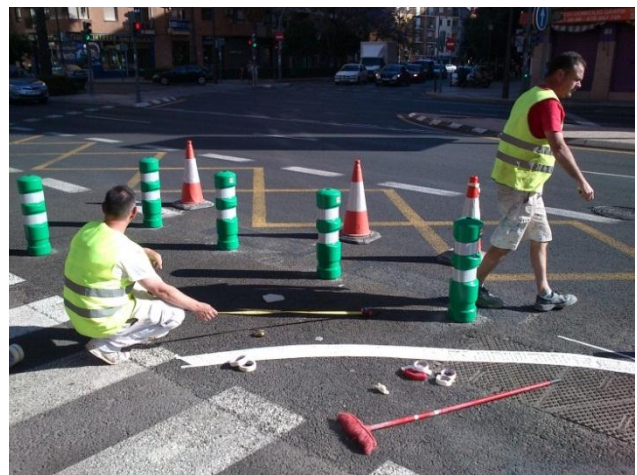
The works started with the following manufacturing constructions: the ramp and the connection with the existing cycle track:



Afterwards, the segregate blocks made of concrete were installed:



Afterwards, the horizontal signalling and cylindrical marker posts were put:



7.7 FINAL OUTCOME. BEFORE AND AFTER

A series of pictures is presented below to show the final outcome of the action. Also, some comparisons before and after the reform are reflected of the existing situation.



BEFORE



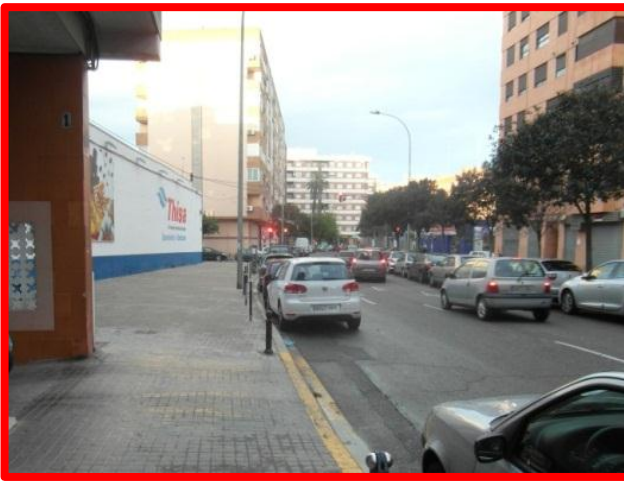
AFTER



BEFORE



AFTER





BEFORE



AFTER



BEFORE



AFTER



Other details:



7.8 SURVEYS AFTER THE ACTION

As done before the action, cyclists who travelled by the cycle track were asked new polls after the execution of the works. In this occasion, the opinion polls had the following objectives:

- Understand the opinion of cyclists about the improved point. Value if the improvement was convenient and the section optimized.
- Know if cyclists use the improvement otherwise seek the reasons for their reluctance.



Figures 32a and 32b: Images of the precise moment in which our opinion polls were conducted after the action.

The same location was subject to scrutiny after the action by poll. The opinion polls were realised between the months of October and November. Due to being part of the evaluation of the action plan, their results will be analysed in the next paragraph.

- 1) – Gender and Age (Closed answers)-> **(M, F, and number)** ____ and ____
- 2) – Days you take the bike per week (Open answer, **number**) _____
- 3) – Number of times that you cross this point per day (Open answer, **number**) _____
- 4) – Why do you take the bike? (To see the reason of the journey: **Work**__, **College/University**__, **Leisure**__, **Other**__, **All of the Above**__)
- 5) Do you know the improvement applied here? (**Yes**__, **No**__, **I don't know**)
- 6) Do you use it or take the same route as before? (**Same route as before**__, **I use it**__, **No preference**__). If the cyclist says he or she uses it, ask what they did before the implementation.
- 7) What do you think about the improvement? (**Very good**__/**Good**__/**O.K.**__/**Poor**__/**Very Poor**__/**I don't know**__)
- 8) Do you think that this increases road safety for cyclists? (**Yes**__, **No**__, **I don't know**__) Any comments (something you do not like, etc.)

8. ASSESSMENT OF THE PROJECT

Its aim is to know if the objectives pursued are achieved with the improvement. With the exception of the last purpose (social perception of the action), the remaining goals depend on the behaviour and perception of cyclists:

- To measure the **behaviour** of cyclists, an observation of the place of the action and the valuation of cyclists is realised. With them, the movement elected by the cyclist is intended to be studied, if uses the new built cycle track or still travels by the pavement or the road.
- To measure the **perception** of cyclists, opinion polls were conducted.

As can be seen, the appraisal of the improvement cannot be measured directly and objectively using some meter. The proposed aims depend on the perception and psychology of cyclists, which is subjective.

Observation and appraisal were processed manually counting the cyclists who crossed the zone. Each action performed by the cyclists was closely watched. Measuring in different working days and in different weeks was realised in order to boost randomness and representativeness. Also, it was procured to do it in different times of the day. These observations were delineated between the months of October and November.

795 bicycles were measured, without differentiating all the possible trajectories. The most important conclusions reached were that 68% of bicycles use the new cycle track. The remaining 32% utilizes indistinctly the pavement and the road. In the next table, these results are summed up:

BYCICLE		
	Number	Percentage
CYCLE TRACK	541	68.05 %
ROAD	128	16,10%
PAVEMENT	126	15.85%
TOTAL	795	100%

More details can be consulted in annexe 3.

The **surveys** were produced simultaneously with the observation after the action. More opinion polls were done after the action than before it, owing to having more importance for the evaluation of the project. To be specific, 50 polls were conducted.

In these polls, it was decided to ask the cyclist in a more precise way what they would think about the action applied. For this, a value scale of 1 to 5 points was elaborated. In this way, if the cyclist regarded the action as very poor scored 1 point. On the contrary, if the action was contemplated as of very good quality scored 5 points. The results are as follows:

VALUATION OF THE ACTION BY CYCLISTS			
Punctuation	Value Scale	Number of Cyclists who participated	Percentage
1	Very poor	0	0%
2	Poor	2	4.88%
3	O.K.	5	12.20 %
4	Good	17	41.46 %
5	Very good	15	36.58 %
Don't know	N/a	2	4.88 %
TOTAL⁵		41	100 %

As appreciated, a high number of cyclists are content with the improvement. 78% deem it as good or very good.

Next question was related to the improvement of traffic safety. If the measures applied favoured it. These were the results:

⁵ Although 50 polls were conducted, only 41 replied.

CYCLISTS'S OPINION ABOUT OPTIMIZING TRAFFIC SAFETY WITH THE ACTION EXECUTED		
	Number of bicycles	Percentage
There is more safety	35	83.33 %
There is not more safety	5	11.90 %
Does not know	2	4.76 %
TOTAL⁶	42	100%

In this occasion, the percentage of cyclists who alleged the action improved traffic safety increased by 83% while 12% contemplated the point to have some deficiencies yet for the safety of cyclists.

More important conclusions were that the appraisal of the action is very positive, with a high grade of approval. The information about the use of the cycle track obtained in the related premises was also satisfactory, although lots of cyclists opt to use the pavement and the road instead. This is due to lots of reasons.

Some of these reasons could be known with the polls produced and in most cases were:

- Since they were close to their own homes, they had to leave the cycle track.
- It was not comfortable for the destination they were travelling.
- In many times, the cycle track of Primado Reig Avenue was used to park inappropriately. Especially at night.

More detailed data about this survey performed after the action can be consulted in annexe 2.

⁶ Although 50 polls were conducted, only 42 replied.

9. COMMUNICATION

The communication campaign is aimed to set the improvement as a benchmark of traffic safety for cyclists, only with little actions implied. In this section, a summary of all the mass media that participated is conveyed. A press release was done on the 5th of June to distribute it to the media, contacting the director of our School to facilitate the process. 10 June was the first day in which this project appeared in the media.

10 JUNE:

- **Interview on Radio 9 (live), 10 June**

The first interview on Radio 9 at 4.30 pm is requested on the telephone to Sergio.

- **Publication on News UPV**

<https://www.upv.es/noticias-upv/noticia-5974-bike-pal-es.html>

The screenshot shows a news article on the UPV website. The article is titled "Bike Pal" and features a sub-headline: "Dos estudiantes de la ETS de Ingenieros de Caminos, Canales y Puertos de la UPV participan en el concurso europeo de seguridad vial Bike Pal." The article text describes the initiative, the participants (Cristina Medina Martínez and Sergio Torres Gómez), and the goal of the competition. To the right of the article is a sidebar with "Noticias destacadas" (Highlighted News) including items like "Times Higher Education Ranking", "Puertas abiertas 2014", "El portal de la otra formación", "Ranking QS", "Calendario académico 13-14", and "Posgrado universitario UPV".

Figure 33: Article published digitally on the UPV site.

- **Europa press publication:**

<http://www.europapress.es/sociedad/educacion/noticia-dos-alumnos-upv-elegidos-concurso-europeo-carril-bici-20130610123444.html>



Figure 34: Europa Press article.

- **Publication on local newspaper Las Provincias:**

<http://bicivalencia.lasprovincias.es/dos-alumnos-de-la-upv-elegidos-en-un-concurso-europeo-por-proponer-mejorar-el-carril-bici-que-une-valencia-y-alboraya/>



Figure 35: Article on lasprovincias.es

- **Publication on Facebook Valencia en Bici**

- **Publication on Facebook BICIUTAT**

- **Publication on Facebook Universitat en bici (Cyclist Association of Universitat de Valencia – University of Valencia)**

- **Publication on Diario Crítico CV (Critical Diary CV)**

Currently, the online article no longer exists.

- **Publication on ABC-AGENCIAS (EFE), digital content:**

<http://www.abc.es/agencias/noticia.asp?noticia=1434372>

The screenshot shows the ABC.es website header with navigation links: ACTUALIDAD, OPINIÓN, DEPORTES, CULTURA, ESTILO, TV, MULTIMEDIA, BLOGS, SALUD, ARCHIVO, SERVICIOS. Below the header, the article title is 'Dos estudiantes de la UPV, seleccionados en concurso UE de seguridad vial'. The date is 10-06-2013 / 14:11 h EFE. The article text states that two students from the UPV (Escuela de Caminos) were selected for a competition in Brussels to improve road safety. A sidebar on the right lists regions under 'Por comunidades' with arrows pointing to each: Andalucía, Aragón, Baleares, Cantabria, Castilla La Mancha, Castilla y León, Cataluña, Ceuta, Comunidad Valenciana, País Vasco, Córdoba, Extremadura, Galicia, and La Rioja. There is also a 'Tweet' button and a 'Publicar' button.

Figure 36: Article on ABC-AGENCIAS

- **Publication on AUTOCASIÓN (EFE), digital content:**

<http://www.autocasion.com/actualidad/noticias/133144/dos-estudiantes-de-la-upv-seleccionados-en-concurso-ue-de-seguridad-vial/>

AUTOCASIÓN

Inicio COCHES NUEVOS KM 0 COCHES OCASIÓN **ACTUALIDAD** VENDE TU COCHE GRATIS

Portada Novedades Pruebas Vídeos Noticias Reportajes Fichas Motos Test Drive Buscar... en Actualidad

CITROËN C4 VTi TONIC por 11.700€
PLAN PIVE 4 CITROËN
+EQUIPAMIENTOS +DESCUENTOS

Estás en: Inicio > Actualidad > Noticias >
Dos estudiantes de la UPV, seleccionados en concurso UE de seguridad vial

Dos estudiantes de la UPV, seleccionados en concurso UE de seguridad vial

10 Jun 2013

Valencia, (EFE). – Dos estudiantes de la Escuela de Caminos (ETSICCP) de la Universitat Politècnica de Valencia (UPV) han sido seleccionados en Bruselas en el concurso BIKE PAL sobre seguridad vial, con una propuesta para mejorar el carril bici en la ciudad de Valencia.

¿Te ha gustado?
0 comentarios ★★★★★ 5/5 Votar (1)

Valencia, (EFE). – Dos estudiantes de la Escuela de Caminos (ETSICCP) de la Universitat Politècnica de Valencia (UPV) han sido seleccionados en Bruselas en el concurso BIKE PAL sobre seguridad vial, con una propuesta para mejorar el carril bici en la ciudad de Valencia.
En este certamen, universitarios de toda Europa plantean una idea para mejorar la seguridad vial de los

PLAN PIVE 4 CITROËN
+EQUIPAMIENTOS +DESCUENTOS
CREATIVE TECHNOLOGIE

Boletín de noticias

Figure 37: Article on AUTOCASIÓN

- **Publication on Levante, a written provincial newspaper.**

<http://www.levante-emv.com/valencia/2013/06/11/ayuntamiento-ejecuta-idea-carril-bici-propuesta-universitarios/1005796.html>

Levante
EL MERCANTIL VALENCIANO

C.Valenciana Más noticias Deportes Economía Opinión Ocio Vida y Estilo Participación Multimedia Servicios

Valencia Castelló Comarcas Sucesos Agenda Transportes Fallas Pueblos en Fiestas 97.7 LevanteTV

Levante-EMV » Valencia

☆ ☆ ☆ ☆ ☆

8+1 Tweet 1 Recomendar 42

El ayuntamiento ejecuta una idea para el carril bici propuesta por dos universitarios

El proyecto ha sido premiado en Europa y afecta a 100 metros de carril en el barrio de Benimaclet

11.06.2013 | 08:58

LEVANTE-EMV VALENCIA

El Ayuntamiento de Valencia está ejecutando un proyecto de dos alumnos de la Universidad Politècnica de Valencia (UPV) que ha sido premiado en Europa. Se trata de la conexión de dos tramos del carril bici que une Valencia con Alboraya, a la altura de Benimaclet, un tramo que estaba sin ejecutar y que obligaba a los ciclistas a salir a la calzada o pasar por la acera.

Según la UPV, los estudiantes de Caminos Cristina Medina y Sergio Torres fueron seleccionados en el concurso europeo «Bike pal», al que concurren universitarios de toda Europa con ideas para mejorar la seguridad vial de los ciclistas. Una vez seleccionados, mejoraron su proyecto y participaron en una semana de formación en Bruselas, todo porque después tenían que convencer al Ayuntamiento de Valencia para ejecutar y pagara ese proyecto.

Se trata exactamente de unir dos tramos del carril bici que va de Valencia a Alboraya, en la confluencia de Primado Reig, Alfauir, Camino Viejo de Alboraya y Benicarló. Son cien metros que obligan a los ciclistas a saltar a la calzada o ir por la acera.

Y el ayuntamiento, después de mantener un par de reuniones con los alumnos, ha puesto en marcha las obras con fondos propios. Los trabajos comenzaron el pasado 3 de junio y terminarán en estos

Galerías de Comunitat Valenciana

'Els Enfarinats' gobiernan Ibi

¿Un iPhone nuevo por 17€? Compradores españoles consiguen hasta un 80% de descuento usando un sorprendente truco www.megabargains24.com

Figure 38: Article on Levante

13 JUNE:

- **Publication on “El vecinal”, digital provincial newspaper.**

<http://www.elvecinal.es/el-nuevo-carril-bici-de-benimaclet-ideado-por-dos-estudiantes/>

elvecinal.es
18/01/2014
Valencia
-Tus propuestas son noticia-
CÓMO FUNCIONA CONTACTO PUBLICIDAD

INICIO DENUNCIA SERVICIO VIDA URBANA EVENTOS VIÑETAS INFO ÚTIL

Inicio » El nuevo carril bici de Benimaclet ideado por dos estudiantes

El nuevo carril bici de Benimaclet ideado por dos estudiantes

CARLOS ALBIACH 13/06/2013 6:00:21 AM - 3 COMENTARIOS - VISTO 1400 VECES

Hasta hace unos días ir desde el centro de la ciudad hasta Alboraya en bicicleta hacía que te toparas con uno de los llamados puntos negros de ciclistas. Pero este punto negro, situado en la avenida Primado Reig, ya es historia gracias al proyecto que dos jóvenes estudiantes de la Universidad Politécnica han ideado para un concurso europeo y que el Ayuntamiento ha hecho realidad. Iniciativas de este tipo ponen de manifiesto la importancia de que la ciudad cuente con una infraestructura de calidad y segura para los ciclistas.

Cristina y Sergio en el carril bici que han proyectado para el concurso. C.A.

VIÑETAS

No hay bien que por mal no venga

No hay bien que por mal no venga

Tweets sobre "#quejavecinal"

Cómo funciona elvecinal.es

0:00 / 1:00 YouTube

Cómo funciona elvecinal.es

LO MÁS LEÍDO

Más Vistos Más Comentados

Elvecinal.es dice adiós

Figure 39: Publication of the article about the works executed in the digital newspaper *El Vecinal*.

14 JUNE:

- Live interview of Radio 5 in Radio Nacional de España (Spanish National Radio) in local disconnection for the province of Valencia.



Figure 40: Image of our interview on Radio Nacional de España

Interview on UPV television:

<http://www.youtube.com/watch?v=laRFkou77dI&feature=youtu.be>

<http://www.youtube.com/watch?v=1xzV4nFL50o>

1 OCTOBER:

Talk-lecture in the locality of the Neighbourhood Association of Benimaclet. This conference was arranged thanks to the collaboration of such association. The objective was to expose the action before the neighbours of the quartier.



Figure 41: Image of the talk-lecture given at the premises of Benimaclet.

23 OCTOBER:

Interview in the programme “Luz de Cruce” (Beam Lighting) of Mediterranean TV. This channel is broadcasted in all the Valencian Community. The programme is specialised in topics related to traffic safety. Here is their webpage:

<http://luzdecruce.es/index.php/component/content/article/26-ahora-en-mediterraneo-tv-los-domingos-20a45-horas>



Figure 42: Image of the interview done in the programme Luz de Cruce.

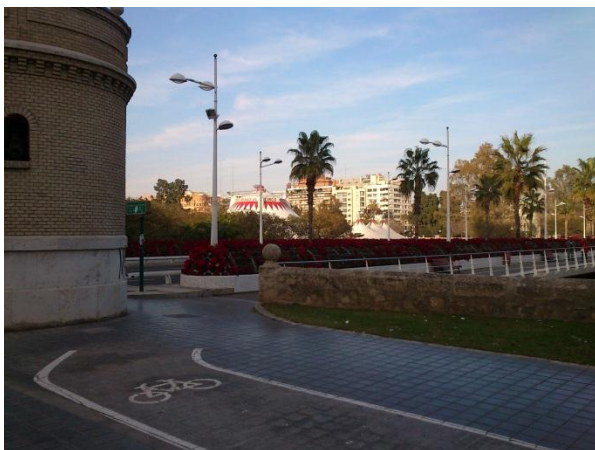
10. CONCLUSIONS AND POTENTIAL APPLICATIONS

To end this project, a small reflection about how this action could be implemented in other disconnections of Valencia is led.

With the success of the implementation of this project, together with the results obtained with the survey conducted, this action becomes an example of how traffic safety of cyclists could be improved with a low cost.

The interruption of the cycle track network up the bridges of Valencia is a major problem of disconnection in the city. Valencia is physically divided in two because of the old Turia riverbed. To cross from one end to the other, bridges are thus essential. It is undeniable that this supposes a true challenge for cyclists. Only 3 out of 18 bridges of Valencia, there is habilitated some type of infrastructure for cyclists.

It can be inferred that in such bridges there would be space problems to locate cyclist infrastructures. However, this is not the case. Most bridges are oversized due to the high traffic of cars, as seen in the following images:



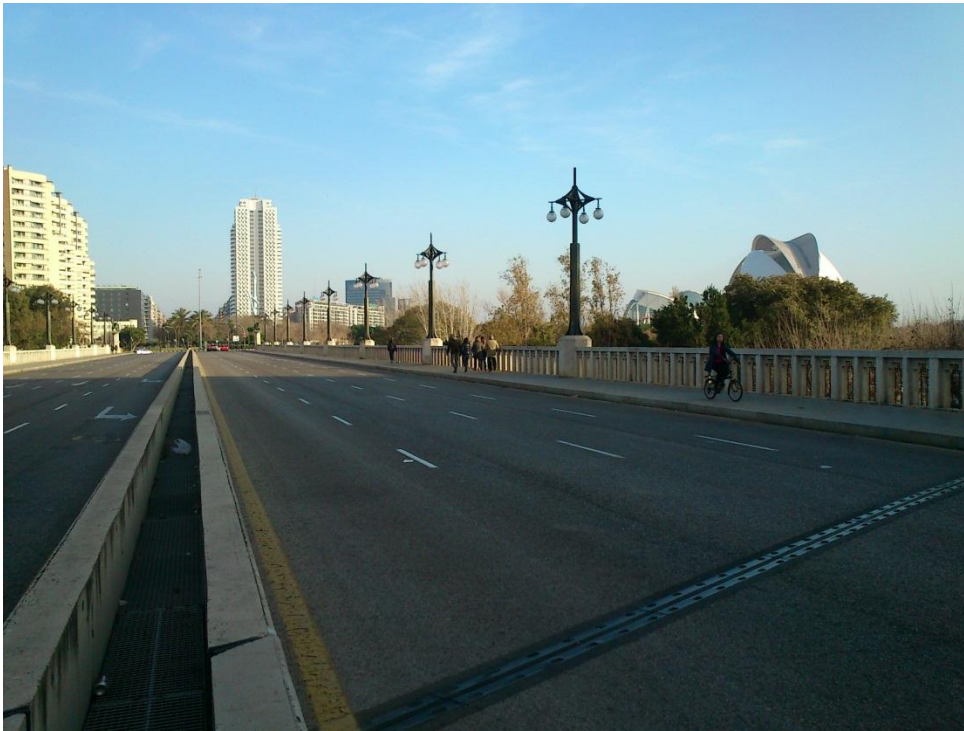


Figure 43: Panoramic view of Reino Bridge

Many solutions could be provided to sort out these problems. Moreover, in many occasions their implementation would be easy with a low cost. Technically speaking, they have an easier and more feasible solution than the one obtained in Primado Reig Avenue. Especially noticeable is the case of the bridge L'Assut de l'Or, in the vicinity of The City of Arts and Sciences.

This bridge, inaugurated in 2008, has no cyclist infrastructure. Nonetheless, it has a road space reserved for a tramline to be built not applied ever. Its tracing has been deviated. This space could be used to erect a cycle track, since it is well preserved.

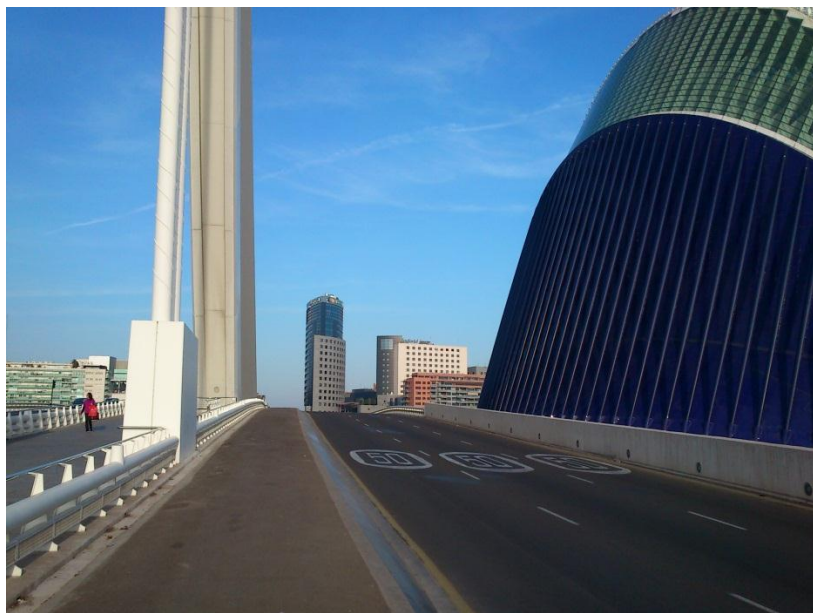


Figure 44: Panoramic view of L'Assut de l'Or Bridge

To conclude, it can be said that cyclist's infrastructures can be upgraded without incurring to great investments and with solutions that are technically easy.

11. BIBLIOGRAPHY

- **Documents consulted:**

- (1) ETSC, "Raising the bar", 2012
- (2) ETSC, "Pedalling towards safety", 2012

- **Websites:**

(1)

<https://maps.google.es/maps/ms?ie=UTF8&oe=UTF8&msa=0&msid=215642687765878819299.0004ce022e8b23464d8b7>

(2):

https://maps.google.es/maps?source=s_q&f=q&hl=es&geocode=&q=http:%2F%2Fbicivalencia.lasprovincias.es%2Fvalenciaenbici.kmz&aq=&sll=39.501392,-0.396538&sspn=0.208485,0.445976&ie=UTF8&ll=39.46615,-0.395508&spn=0.132523,0.22316&z=12&vpsrc=0&oi=map_misc&ct=api_logo

(3):

<http://www.valencia.es/ayuntamiento/trafico.nsf/fCategoriaVista?readForm&Vista=vCategoriaDescargas&Categoria=Sincat&titulo=Descargas&lang=1&nivel=7&expand=2&bdorigen=&idApoyo=>

(4):

[http://www.valencia.es/ayuntamiento/trafico.nsf/vCategoriaDescargas/6CEA196B8E5C4ABBC12577740037504A/\\$FILE/2876-201302a-web.pdf](http://www.valencia.es/ayuntamiento/trafico.nsf/vCategoriaDescargas/6CEA196B8E5C4ABBC12577740037504A/$FILE/2876-201302a-web.pdf)

(5):

www.dgt.es

ANNEXE 1: Polls before the action

The opinion of all the cyclists who travel by the point (population) was revealed with the survey, as intended. A reduced number of cyclists (sample) were asked in order to fulfil this purpose. In addition to this, the sample in every statistical analysis must be **representative** of the population and decided **randomly**. Complying with these two characteristics is difficult and depends on many factors.

To know the sample size, specialized bibliography should be consulted⁷. It is recommended that the sample number be different according to the size of the population. The population in this case is of 1.000 cyclists per day, therefore the 10% is recommended to be the sample. In other words, 100 opinion polls were needed to carry out the project.

Albeit it was verified by early polling results that many cyclists cross the point several times the same day. Following this line of reasoning, if many polls were conducted inevitably the same cyclists would be asked twice by terms of pure statistics. The sample size was reduced to the third size approximately, taking into account that cyclists cross the point between 2 and 3 times per day.

The poll contains the following questions:

- 1) - Sexo y edad (Respuestas cerradas)-> **(V, H y número)** _____ y _____
- 2) - Días que coges la bici a la semana (Respuesta abierta, **número**) _____
- 3) - Nº de veces que pasas al día (Respuesta abierta, **número**) _____
- 4) - ¿Para qué coges la bici? (para ver el motivo del desplazamiento: **Trabajo**__, **Estudios**__, **Ocio**__, **Otros**__, **Para todo**__)
- 5) - ¿Qué te parece este tramo? (**Mal**__ / **Bien**__ / **No lo sé**__)
- 6) - Normalmente, ¿Cómo actúas? ¿Por dónde vas? ¿Qué haces? (Respuesta abierta)

- 7) - ¿Qué te parece la propuesta? (Mal__ / Bien__ / Regular__ / No lo sé)

⁷ R. ROMERO & L. R. ZÚNICA, “Métodos estadísticos en ingeniería”, Editorial UPV, 2005

Algún comentario _____

8) - ¿Lo utilizarías o seguirías yendo por donde vas ahora? (**Seguiría por donde voy ahora __, Lo utilizaría __, No lo sé __**)

1) – Gender and Age (Closed answers)-> (**M, F, and number**) ____ and ____

2) – Days you take the bike per week (Open answer, **number**) _____

3) – Number of times that you cross this point per day (Open answer, **number**) _____

4) – Why do you take the bike? (To see the reason of the journey: **Work __, College/University __, Leisure __, Other __, All of the Above __**)

5) – What’s your opinion about this section? (**Bad __/Good __/I don’t know __**)

6) – Usually, what do you do? Which way do you take? (Open answer)

7) – What do you think about this proposal? (**Bad __/Good __/O.K. __/Don’t know**)

Any comments? _____

8) – Would you use this alternative, or you’d do the same route as always (**I’d use the same route __, I’d use it __, I don’t know __**)

The results obtained were the following:

(1a):

GENDER	
WOMEN	14
MAN	18
TOTAL	32

(1b)

AGE	
[15-20]	2
[20-25]	6
[25-30]	5
[30-35]	3
[35-40]	4
[40-45]	6
[45-50]	3

[50-55]	2
[55-60]	0
More than 60	1
TOTAL	32

(2):

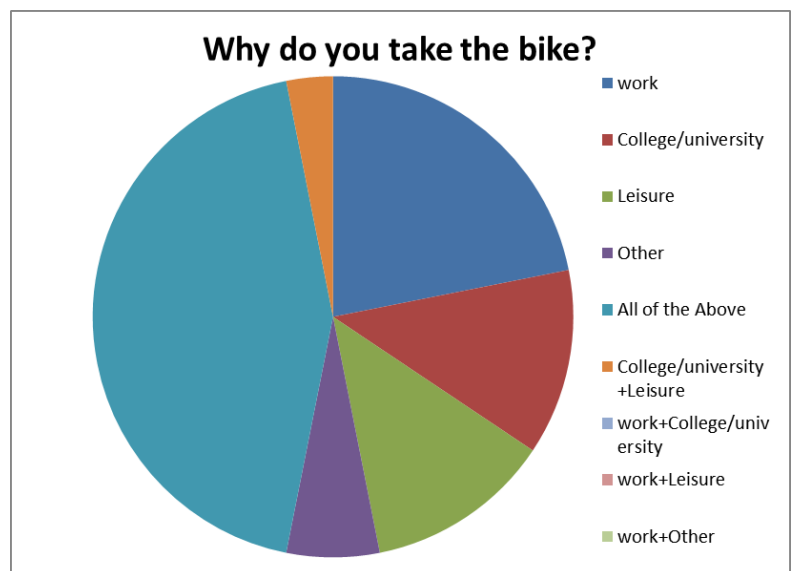
DAYS YOU TAKE THE BIKE PER WEEK	
0	0
1 day	1
2 days	1
3 days	4
4 days	1
5 days	9
6 days	2
7 days	13
TOTAL	31

(3):

NUMBER OF TIMES THAT YOU CROSS THIS POINT PER DAY	
[0-4]	6
[5-9]	3
[10-14]	10
[15-19]	3
[20-24]	5
[25-29]	3
[30-34]	1
TOTAL	31

(4):

REASON OF THE JOURNEY	
WORK	7
COLLEGE/UNIVERSITY	4
LEISURE	4
OTHER	2
ALL OF THE ABOVE	14
COLLEGE/UNIVERSITY+ LEISURE	1
WORK+ COLLEGE/ UNIVERSITY	0
WORK+ LEISURE	0
WORK+ OTHER	0
TOTAL	32



(5):

PERCEPTION OF CYCLISTS		
	Number of people polled	Percentage
POSITIVE	0	0 %
NEGATIVE	29	90,6%
N/A	3	9,4%
TOTAL	32	100 %

(6a):

TRAJECTORY/DESTINATION ALBORAYA ⁸		
PAVEMENT	13	43,33 %
ROAD	14	46,67 %
BOTH	3	10,00 %
TOTAL	30	100%

⁸ 32 cyclists polled, but only 30 replied.

(6b):

TRAJECTORY/DESTINATION VALENCIA⁹		
PAVEMENT	24	77,42 %
ROAD	4	12,90 %
BOTH	3	9,67 %
TOTAL	31	100%

(7):

WHAT DO YOU THINK ABOUT THIS PROPOSAL?	
GOOD	32
BAD	0
O.K.	0
Don't know	0
TOTAL	32

(8):

WOULD YOU USE THIS ALTERNATIVE, OR YOU'D DO THE SAME ROUTE AS ALWAYS	
I'd use the same route	1
I'd use it	30
I don't know	1
TOTAL	32

⁹ 32 cyclists polled, but only 31 replied.

ANNEXE 2: Surveys performed after the action

Based on the same hypotheses shown in the polls taken before the action (see ANNEXE 1). They were realised at the same location as the polls before the action.

The poll contains the following questions:

- 1) - Sexo y edad (Respuestas cerradas)-> **(V, H y número)** ____ y ____
- 2) - Días que coges la bici a la semana (Respuesta abierta, **número**) _____
- 3) - Nº de veces que pasas al día (Respuesta abierta, **número**) _____
- 4) - ¿Para qué coges la bici? (para ver el motivo del desplazamiento: **Trabajo**__, **Estudios**__, **Ocio**__, **Otros**__, **Para todo**__)
- 5) - ¿Conoces la mejora que se ha hecho aquí? (**Sí**__, **No**__, **No lo sé**__)
- 6) - ¿La utilizas o sigues yendo por donde ibas antes? (**Voy por donde antes**__, **La utilizo**__, **Cada vez hago una cosa**__) Si dice que la utiliza, preguntar qué hacía antes _____
- 7) - ¿Qué te parece la mejora? (**Muy buena**__ /**Buena**__ / **Regular**__ / **Mala**__ / **Muy mala**__ / **No lo sé**__)
- 8) - ¿Crees que con esta actuación los ciclistas circulan más seguros? (**Sí**__, **No**__, **No lo sé**__)
Algún comentario (algo que no te guste, etc.)

- 1) – Gender and Age (Closed answers)-> **(M, F, and number)** ____ and ____
- 2) – Days you take the bike per week (Open answer, **number**) _____
- 3) – Number of times that you cross this point per day (Open answer, **number**) _____
- 4) – Why do you take the bike? (To see the reason of the journey: **Work**__, **College/University**__, **Leisure**__, **Other**__, **All of the Above**__)
- 5) Do you know the improvement applied here? (**Yes**__, **No**__, **I don't know**)
- 6) Do you use it or take the same route as before? (**Same route as before**__, **I use it**__, **No preference**__). If the cyclist says he or she uses it, ask what they did before the implementation.
- 7) What do you think about the improvement? (**Very good**__ /**Good**__ /**O.K.**__ /**Poor**__ /**Very Poor**__ /**I don't know**__)

8) Do you think that this increases road safety for cyclists? (**Yes** ____, **No** ____, **I don't know** ____) Any comments (something you do not like, etc.)

The results obtained were the following:

(1a):

GENDER	
WOMEN	15
MAN	34
TOTAL	49

(1b)

AGE	
[15-20]	4
[20-25]	6
[25-30]	4
[30-35]	7
[35-40]	5
[40-45]	11
[45-50]	9
[50-55]	2
[55-60]	0
More than 60	1
TOTAL	49

(2):

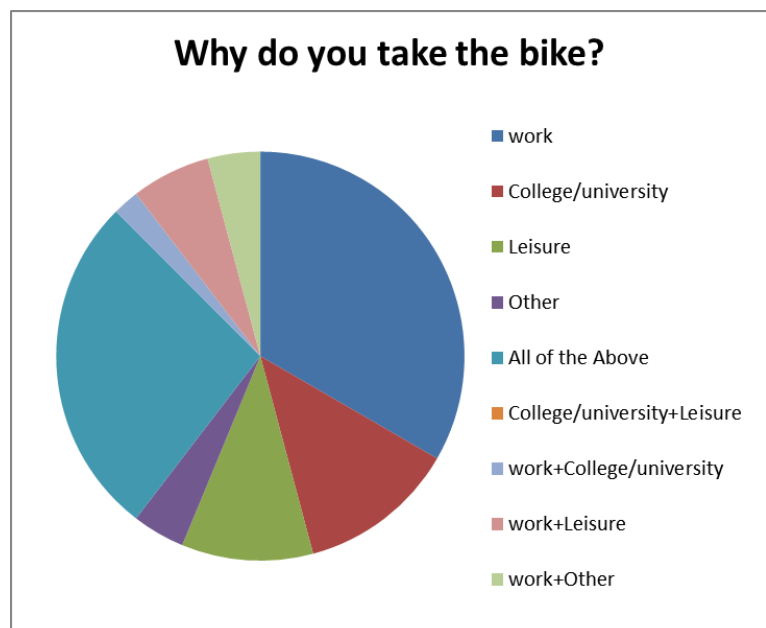
DAYS YOU TAKE THE BIKE PER WEEK	
0	0
1 day	0
2 days	2
3 days	9
4 days	4
5 days	25
6 days	1
7 days	9
TOTAL	50

(3):

NUMBER OF TIMES THAT YOU CROSS THIS POINT PER DAY	
[0-4]	13
[5-9]	14
[10-14]	12
[15-19]	0
[20-24]	8
[25-29]	1
[30-34]	0
TOTAL	48

(4):

REASON OF THE JOURNEY	
WORK	16
COLLEGE/UNIVERSITY	6
LEISURE	4
OTHER	2
ALL OF THE ABOVE	13
COLLEGE/UNIVERSITY+ LEISURE	0
WORK+ COLLEGE/ UNIVERSITY	1
WORK+ LEISURE	3
WORK+ OTHER	1
TOTAL	46



(5):

DO YOU KNOW THE IMPROVEMENT APPLIED HERE?	
YES	43
NO	7
N/A	0
TOTAL	50

(6a):

DO YOU USE IT OR TAKE THE SAME ROUTE AS BEFORE?	
Same route as before	4
I use it	36
No preference	3
TOTAL	43

(6b):

WHAT THEY DID BEFORE THE IMPLEMENTATION?	
PAVIMENT	17
ROAD	10
BOTH	8
TOTAL	35

(7):

WHAT DO YOU THINK ABOUT THE IMPROVEMENT? (1= Very Poor, 5= Very good)	
N/A	2
1	0
2	2
3	5
4	17
5	15
TOTAL	41

(8):

DO YOU THINK THAT THIS INCREASES ROAD SAFETY FOR CYCLIST?	
YES	35
NO	5
N/A	2
TOTAL	42


ANNEXE 3: Cyclist traffic count after the action

The following data was gathered:

CYCLIST TRAFFIC COUNT						
DATE	HOUR	DURATION (Minutes)	TOTAL NUMBER OF BYCICLES	NEW CYCLE TRACK	ROAD	PAVIMENT
21/10/2013	18:30-19:00	30	24	18	3	3
21/10/2013	19:00-19:15	15	33	29	2	2
21/10/2013	19:15-19:30	15	12	8	4	0
22/10/2013	15:00-15:20	20	29	25	1	3
22/10/2013	17:25-18:00	35	30	19	5	6
23/10/2013	11:30-12:00	30	30	20	8	2
23/10/2013	12:00-12:30	30	26	17	1	8
23/10/2013	12:30-13:00	30	21	10	7	4
23/10/2013	13:00-13:30	30	18	15	2	1
23/10/2013	13:30-14:00	30	44	29	11	4
23/10/2013	14:00-14:15	15	27	17	5	5
30/10/2013	10:15-10:30	15	11	11	0	0
30/10/2013	10:30-10:45	15	9	4	1	4
30/10/2013	10:45-11:00	15	8	4	2	2
30/10/2013	11:00-11:15	15	5	3	1	1
30/10/2013	11:15-11:30	15	7	3	3	1
30/10/2013	11:30-11:45	15	8	5	1	2
30/10/2013	11:45-12:00	15	10	6	1	3
30/10/2013	12:00-12:30	30	19	10	4	5
31/10/2013	09:15-09:30	15	18	13	1	4
31/10/2013	09:45-10:00	15	18	12	2	4
22/10/2013	15:35-17:00	85	102	70	16	16
22/10/2013	18:51-19:15	21	31	27	1	3
22/10/2013	19:15-19:30	15	12	8	4	0
23/10/2013	11:15-11:30	15	13	9	3	1
23/10/2013	11:30-12:00	30	30	20	8	2
23/10/2013	12:00-12:30	30	28	19	1	8
23/10/2013	12:30-12:45	15	19	10	6	3
31/10/2013	10:00-10:15	15	11	3	2	6
31/10/2013	10:15-10:30	15	15	6	5	4
12/11/2013	08:00-08:30	30	34	18	9	7
12/11/2013	08:30-08:45	15	20	16	2	2
12/11/2013	08:45-09:00	15	26	21	2	3
12/11/2013	09:00-09:30	30	22	19	1	2

12/11/2013	09:30-10:00	30	25	17	3	5
TOTAL			795	541	128	126
%			100%	68,05%	16,10%	15,85%

ANNEXE 4: Authorization of the occupation of the public road for the construction work


AJUNTAMENT DE VALENCIA

SERVICI DE CIRCULACIÓ, TRANSPORTS I INFRAESTRUCTURES
AFECCIONS I OCUPACIONS DE LA VIA PÚBLICA

NUM. SEÑALAMIENTO: **13/01431** *** TIPO M(OBRAS)

La Sección de Afecciones y Ocupaciones de la Vía Pública, no ve inconveniente desde el punto de vista del tráfico, en la ocupación de la vía pública para la realización de las siguientes operaciones:

SOLICITANTE: **SERV.CIRCULACIO,TRANSPORTS I INFRAESTRUCTURES**
BERTOLIN

EMISOR: **SERVICI DE CIRCULACIÓ, TRANSPORTS I INFRAESTRUCTURES**

DATOS DE LA OBRA

Zona de ocupación permitida: **ACERA Y CARRIL DERECHO**
Ubicación:
AV / PRIMADO REIG , 0


ENTRE AV.ALFAHUIR Y CAMINO VIEJO DE ALBORAYA..SE MANTENDRA ITINERARIO PEATONAL PROTEGIDO POR LA ACERA

Motivo: **CARRIL BICI**
Días y horas autorizadas: **Del 28-05-13 al 28-06-13 — De 00:00 a 23:59**

CONDICIONES DE LA AUTORIZACIÓN

- 1 - El solicitante respetará todo tipo de canalizaciones existente tanto en calzada como en acera, cuando las obras a realizar puedan afectarlas de alguna manera, con especial cuidado en las mas superficiales, como la de tráfico y alumbrado público.
- 2 - Se señalizará la obra con luces, vallas y placas reglamentarias a cargo del solicitante, siendo éste el único responsable de cualquier accidente que pudiera ocurrir con motivo de la obra.
- 3 - Asimismo, el solicitante deberá tomar las medidas necesarias para garantizar la seguridad de la circulación rodada y de los peatones, de acuerdo con el Reglamento General de Circulación y demás normas de aplicación.
- 4- Deberán retirarse de la calzada en caso de graves molestias al tráfico, emergencias o a requerimiento de la Policía Local.
- 5- Deberán respetarse los accesos a la propiedad con la debida seguridad.
- 6- Cuando se afecta a zona de estacionamiento permitido, el solicitante deberá colocar, con 48 horas de antelación, señalización de prohibido estacionar, indicando el motivo, días y horas.

Valencia, 24-05-2013
EL JEFE DE LA SECCION DE AFECCIONES Y OCUPACIONES DE LA VIA PUBLICA


AJUNTAMENT DE VALENCIA
SERVICI DE CIRCULACIÓ
TRANSPORTS I INFRAESTRUCTURES