



ROAD SAFETY IMPROVEMENT OF AN URBAN INTERSECTION IN AFRAGOLA, ITALY

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European Transport Safety Council

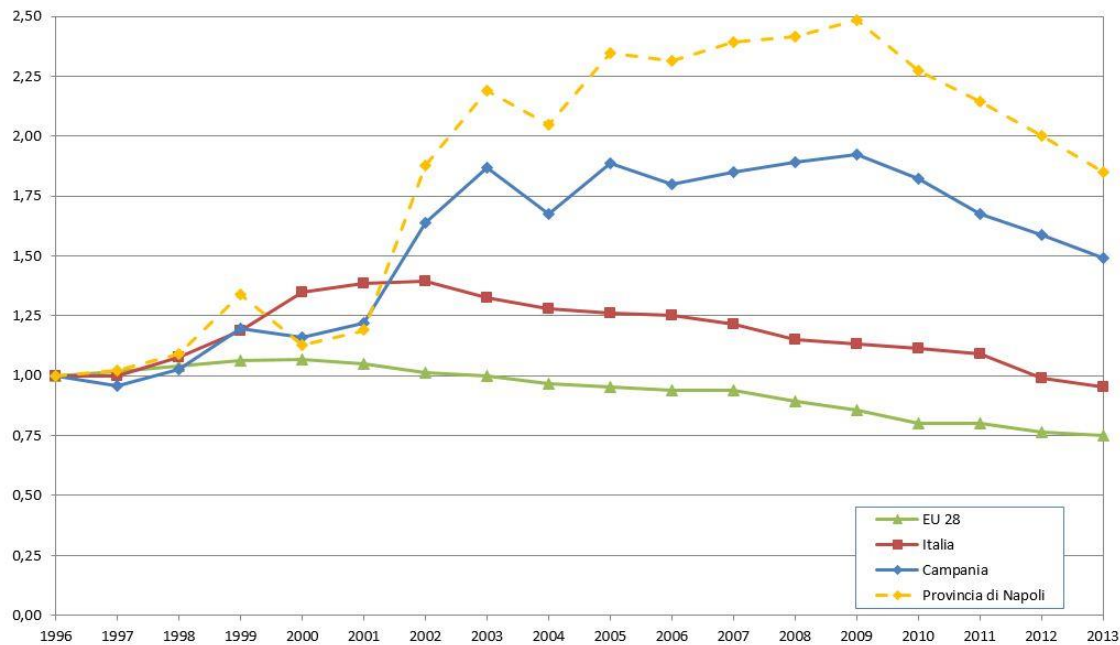


INTRODUCTION

We are Giuseppe and Vincenzo from University of Naples Federico II.
We are Master students and we attend courses Highway Design and Road Safety with Professor Alfonso Montella.
During our studies we have been interested in road safety, in fact our Bachelor thesis examines Road Safety Management in European Countries.



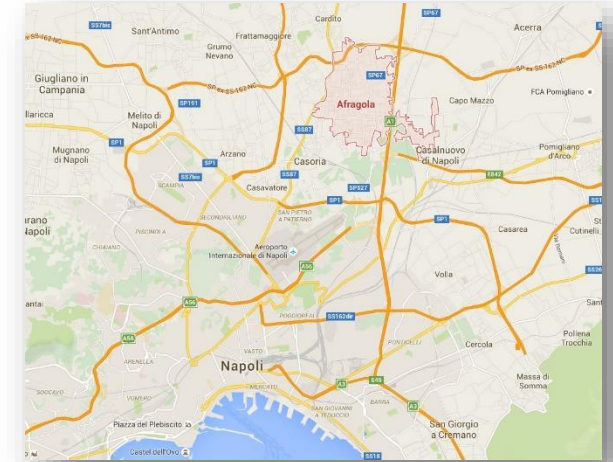
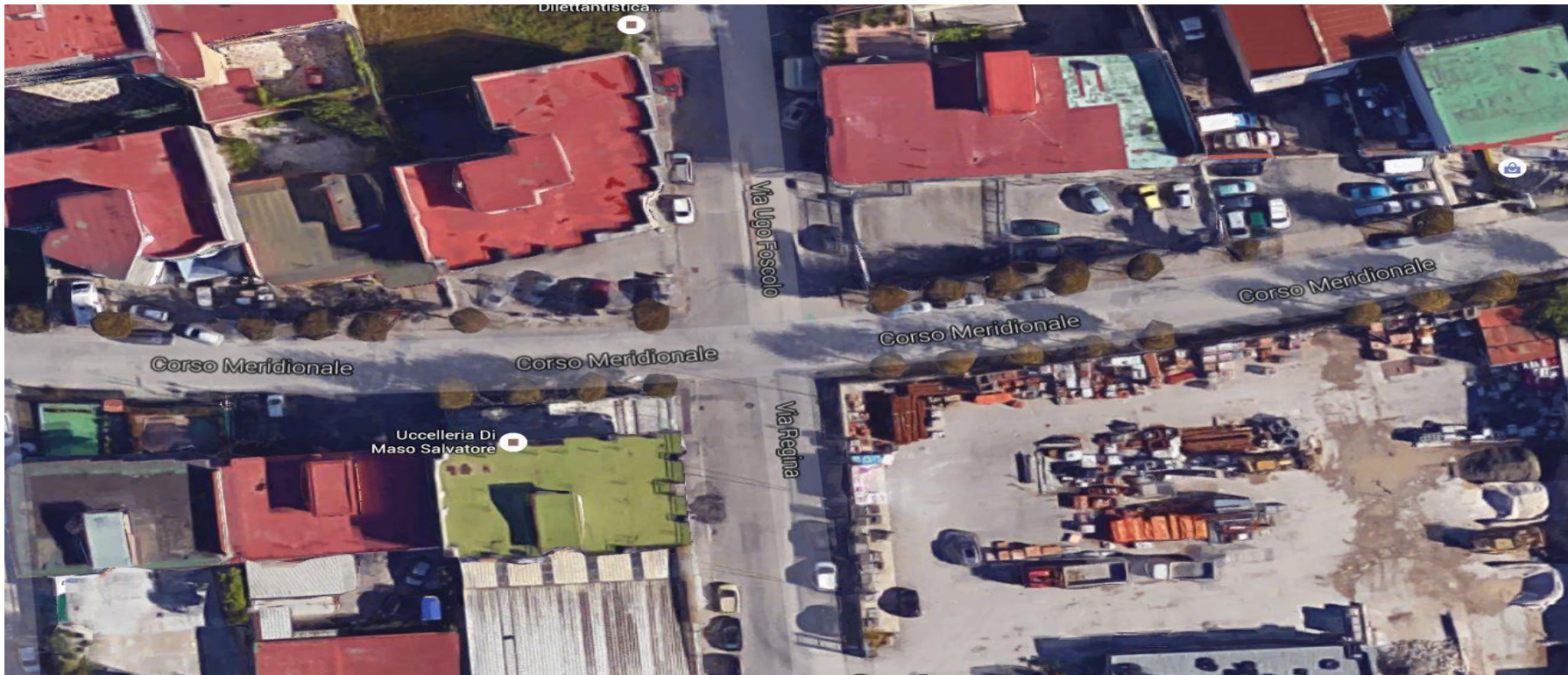
In Italy the accident rate goes beyond the European average. Campania, in particular, is the Italian region with the highest number of accidents. Regarding the road safety, between Campania's provinces, Naples is the most dangerous.



Years	EU-28	Italia	Campania	Provincia di Napoli
1996	59.401	6.676	262	73
1997	60.267	6.714	236	59
1998	58.982	6.313	254	62
1999	58.390	6.688	309	94
2000	57.082	7.061	303	83
2001	54.949	7.096	321	82
2002	53.969	6.980	323	109
2003	51.052	6.563	388	143
2004	47.898	6.122	408	158
2005	45.943	5.818	368	146
2006	43.718	5.669	324	142
2007	43.159	5.131	320	110
2008	39.599	4.731	329	130
2009	35.361	4.237	288	132
2010	31.490	3.998	254	97
2011	30.694	3.860	243	106
2012	28.143	3.753	242	103
2013	25.938	3.385	273	98

LOCATION

The critical point analyzed is situated in Afragola, in the province of Naples. According to the municipal police, the intersection of Corso Meridionale and via Ugo Foscolo has the highest number of accidents in urban setting. The main road connects an extra-urban road with the residential area, for this reason the road users travel with excessive speed.



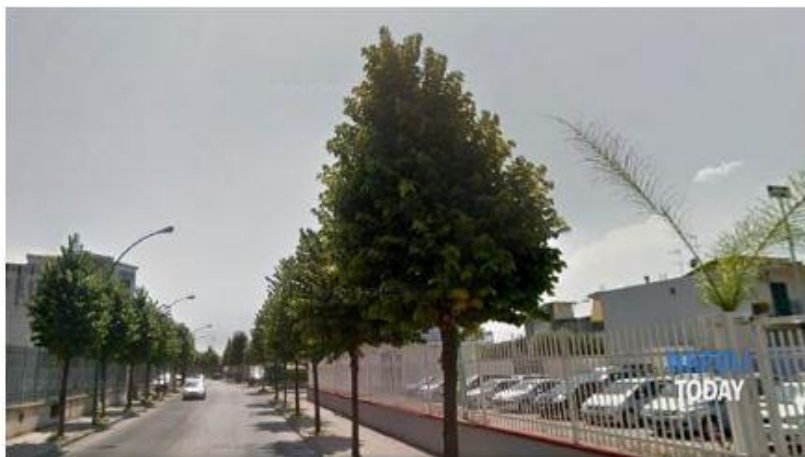
Incidenti stradali / Afragola / Corso Meridionale

Moto contro muro: muore un 25enne, c'è anche un ferito

La tragedia al corso Meridionale di Afragola. La velocità potrebbe essere, secondo gli investigatori, una delle cause dell'incidente. Il ferito è ora ricoverato all'ospedale Cardarelli

NT Redazione
03 SETTEMBRE 2015 11:19

449
Condivisiani



Tragedia nel napoletano. Un giovane di 25 anni, **Pasquale Fusco**, è morto ed un suo coetaneo è ricoverato in prognosi riservata in terapia intensiva nell'ospedale Cardarelli in seguito a un **incidente stradale al corso Meridionale di Afragola**.

La moto sulla quale viaggiavano è andata a sbattere contro un muro. La velocità potrebbe essere - secondo gli investigatori - una delle cause dell'incidente.

Il ferito ha riportato traumi in varie parti del corpo.

APPROFONDIMENTI



Scontro sulla SS 145 Sorrentina: tre feriti, uno in gravi condizioni
3 settembre 2015

I più letti di oggi

1. Suv si ribalta sulla statale, morto il conducente
2. Incidente sul lungomare a Castellammare, grave un centauro



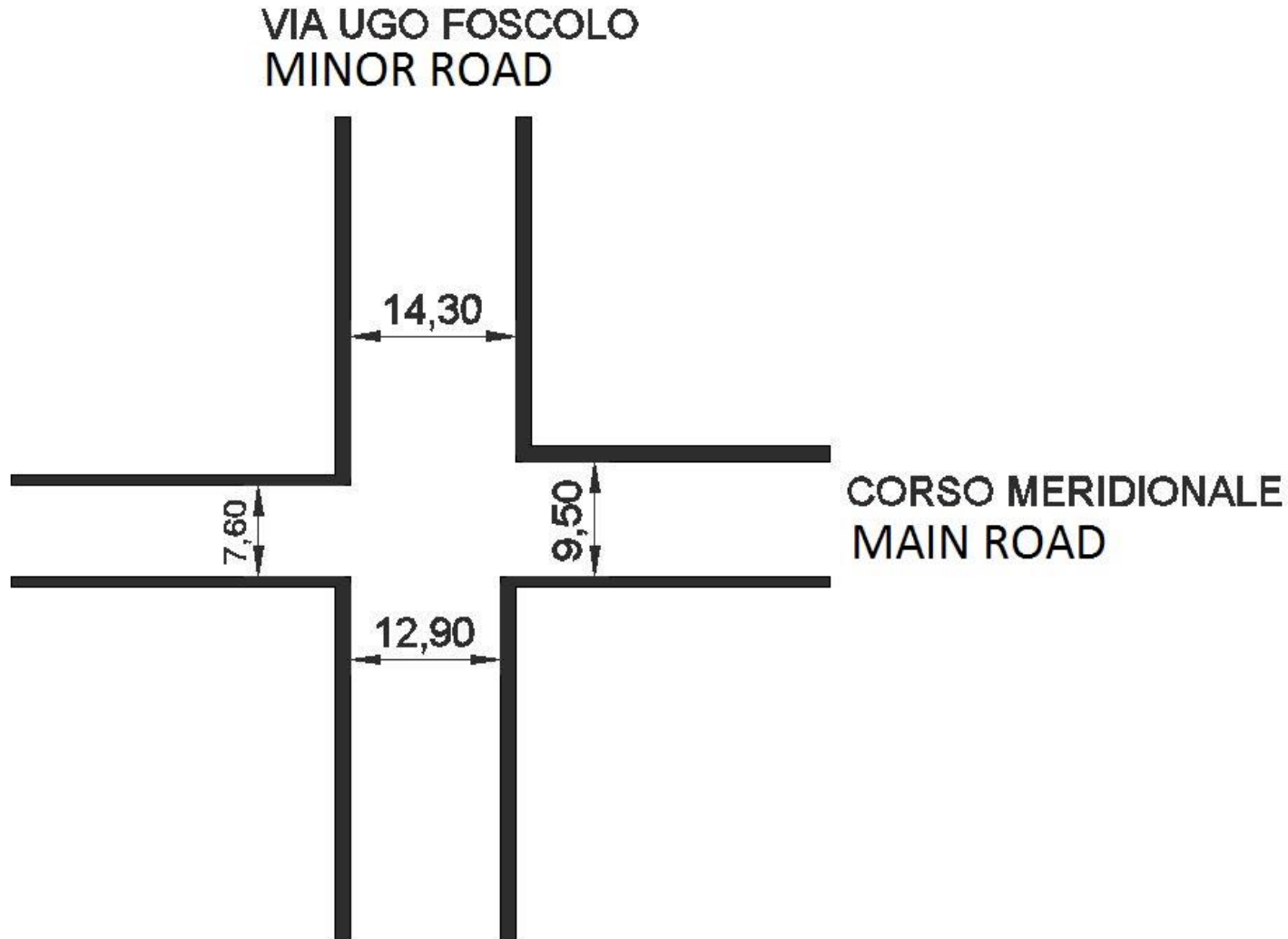
Fotovoltaico per te
Prima di mettere il fotovoltaico a casa, leggi queste 3 novità che stanno cambiando il mercato
(nella foto: un tecnico spiega perché si usa l'inverter)



Over the years there have been a succession of many road accidents with serious injuries in this intersection, 4 only in the last half year.

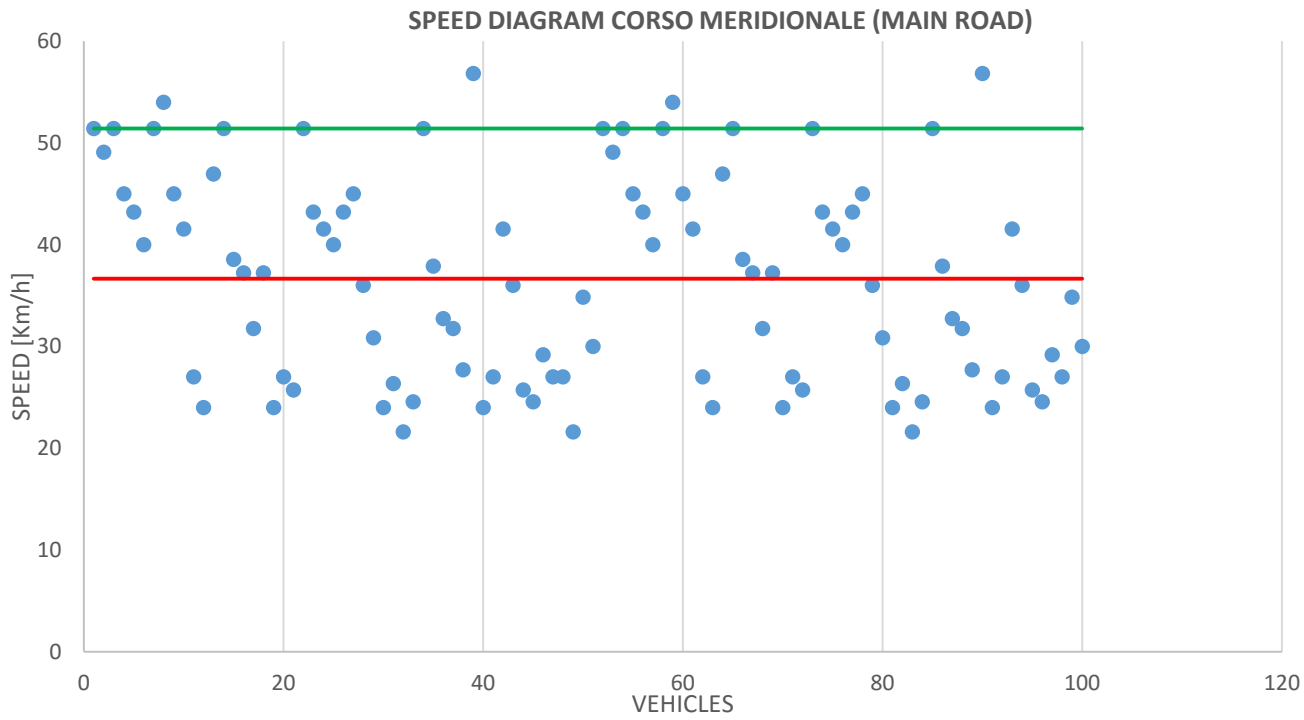
One of this accidents was fatal!!!

PROBLEM 1



The first problem is that the minor road is wider than the main road, this is the reason why the minor road users don't observe the priority, with a resulting excess of speed.

Speed Diagram

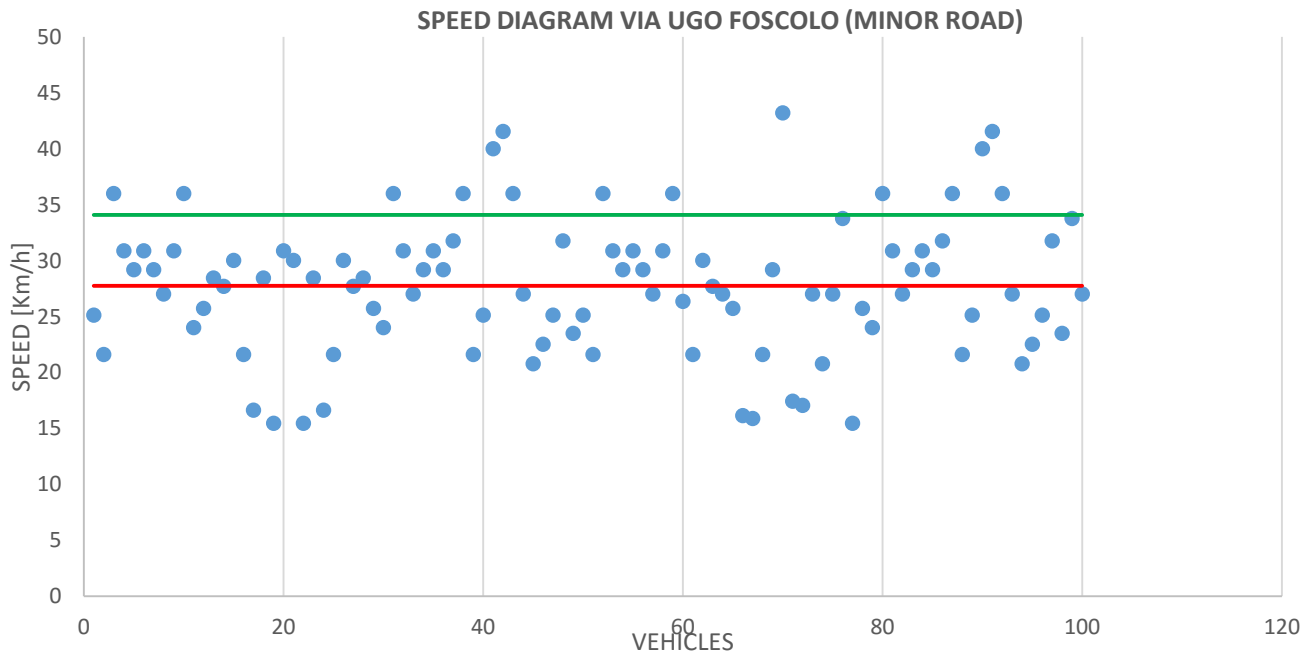


— Vm

$$V_m = 36,7 \text{ Km/h}$$

— V85

$$V_{85} = 51,4 \text{ Km/h}$$



— Vm

$$V_m = 27,7 \text{ Km/h}$$

— V85

$$V_{85} = 34,1 \text{ Km/h}$$

PROBLEM 2

Another fundamental problem observed in this intersection is the lack of road markings, in particular stop lines and pedestrian crossing are almost absent, even if there is an high pedestrian flow due to the presence of a middle school in the zone.



PROBLEM 3

The intersection warning road sign is problematic, also because it is covered by vegetation.



PROBLEM 4



Dangerous Curbs

On the minor road there is a divisional island very dangerous for vulnerable road users. In fact the curbs are vertical and with sharp edges.

PROBLEM 5

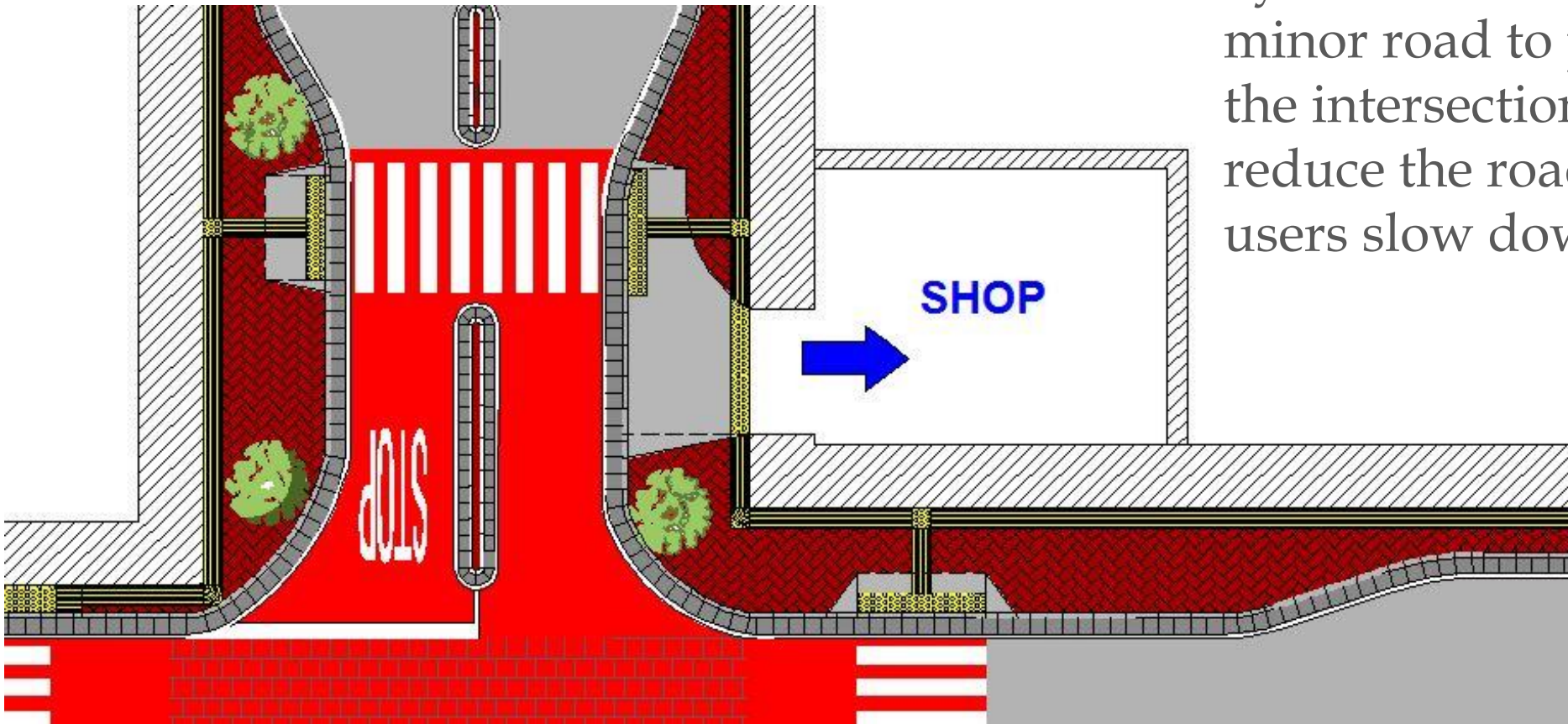


Dangerous Parking

In this zone there are different commercial activities but there are no parking signs and this causes erroneous parking near the intersection, with a resulting lack of visibility.

SOLUTION

We increased the sidewalk width by curb extension, especially in the minor road to prevent parking in the intersection's proximity and to reduce the road width to make the users slow down.

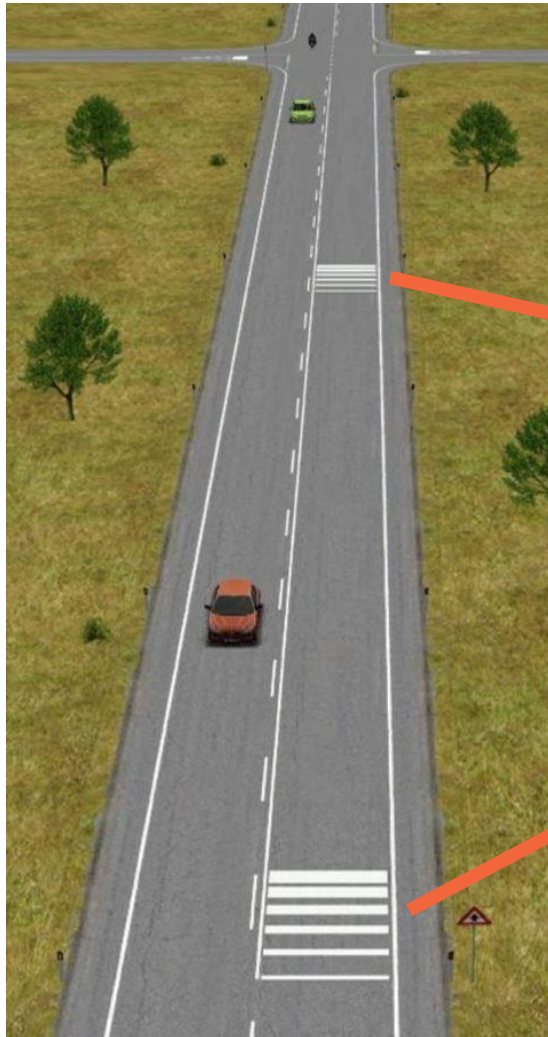


SOLUTION



We inserted pedestrian crossings and we painted the intersection with red to give drivers a visual impact to let them slow down. Moreover we adopted the technique of printed conglomerate with metallic net, to give road users the perception of being in the urban setting.

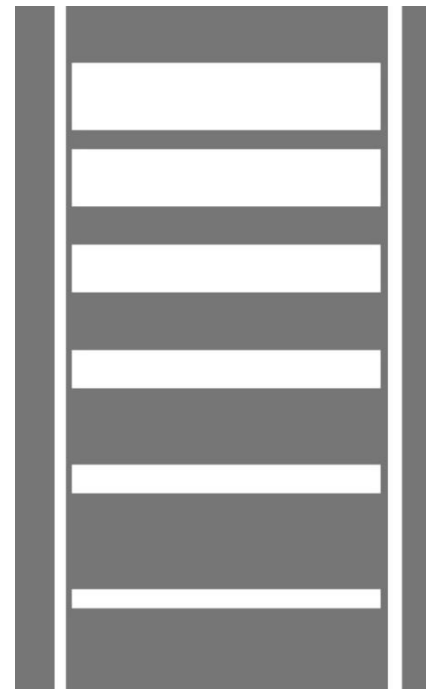
SOLUTION

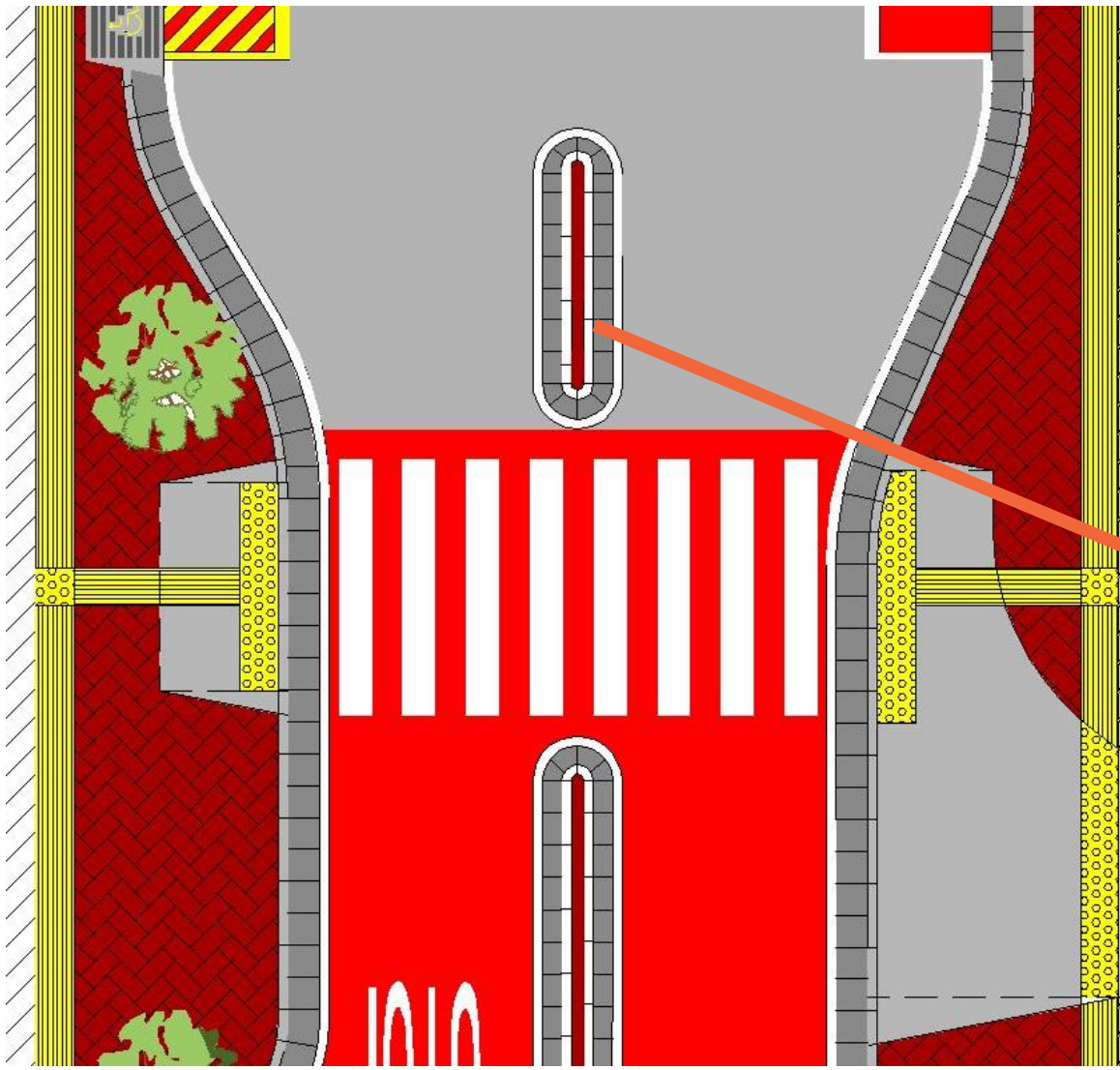


50m

100m

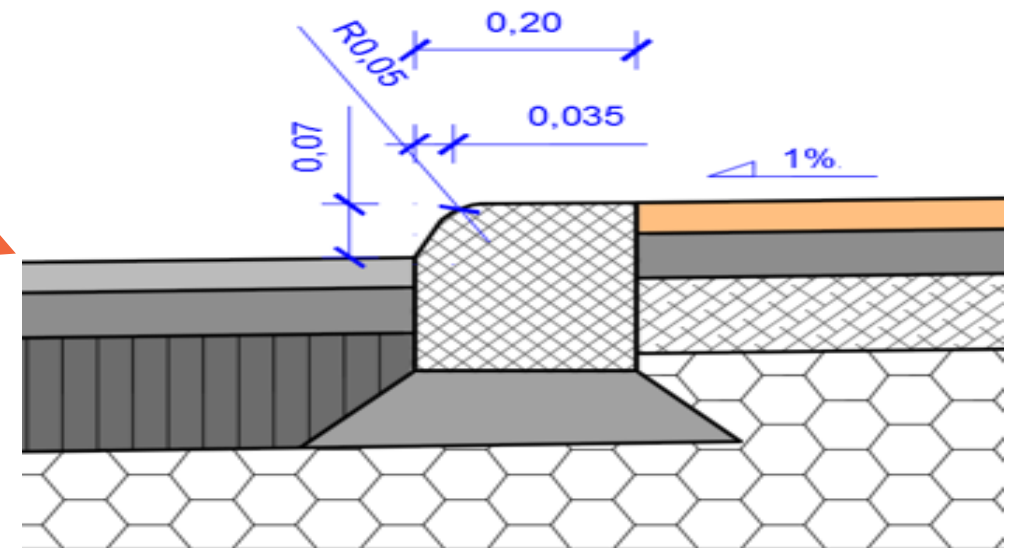
On the main road we inserted braking optic stripes, in both directions of travel, at 50 and 100 meters from the intersection.

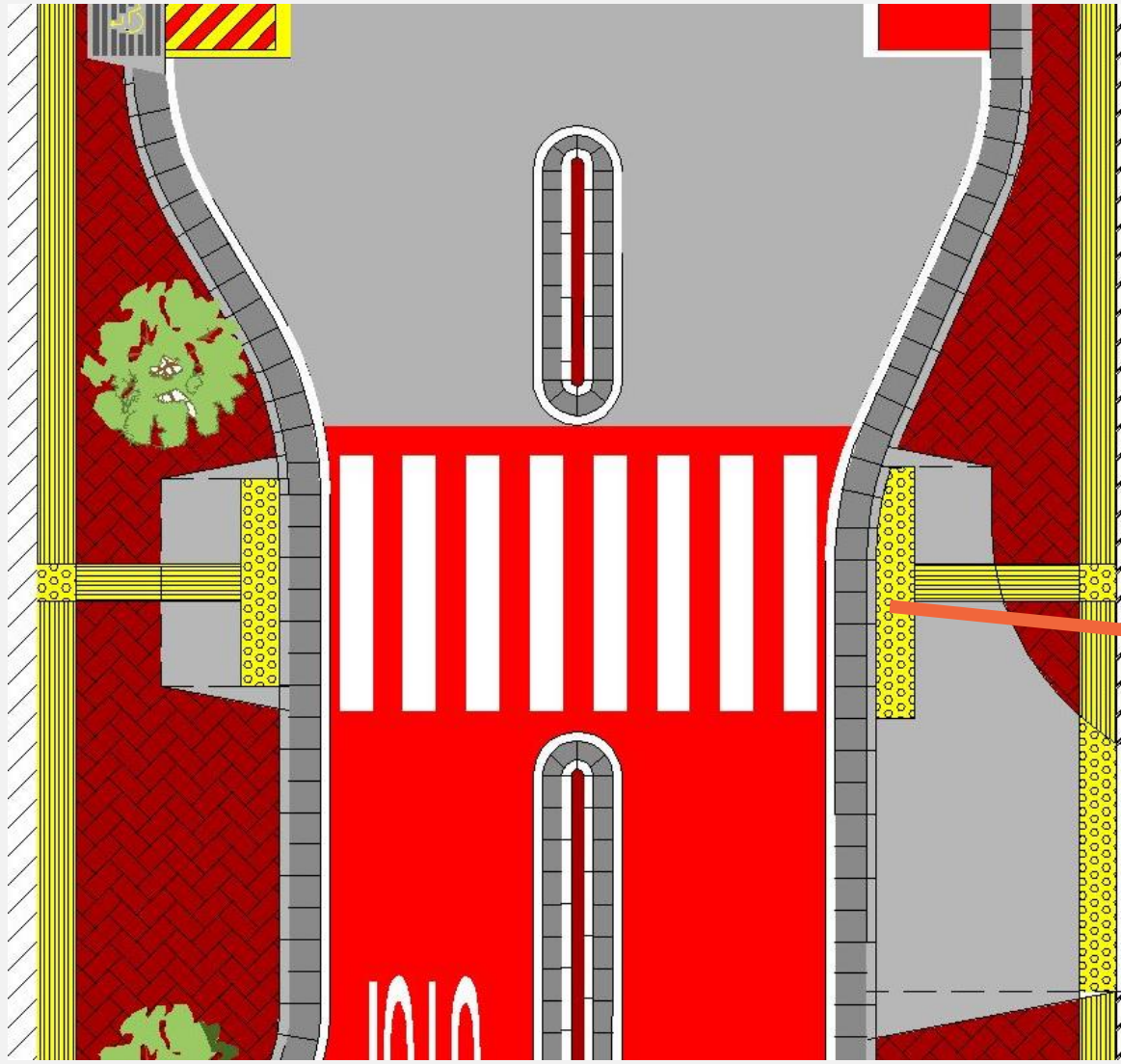




Mountable Curbs

We improved the divisional island in the minor road and we also reproduced it in the opposite branch. The inserted surmountable curbs to reduce the danger for vulnerable road users.



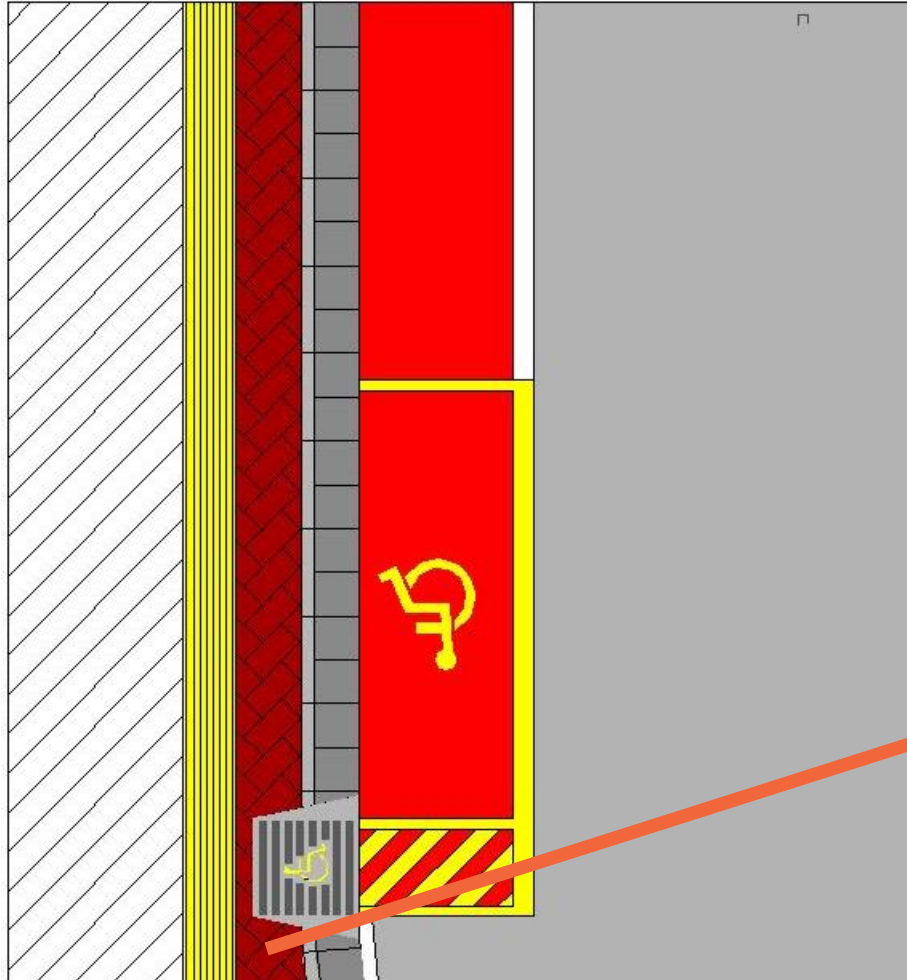


Tactile Paving

Also we have placed tactile paving according to Loges System.



SOLUTION



We inserted parking, for the disabled too. We painted them in red to give the road users the sensation of a separate area.



ROAD SIGNS

The vertical road signs inserted are:



- Stop



- Obligation to turn right



- Dangerous intersection



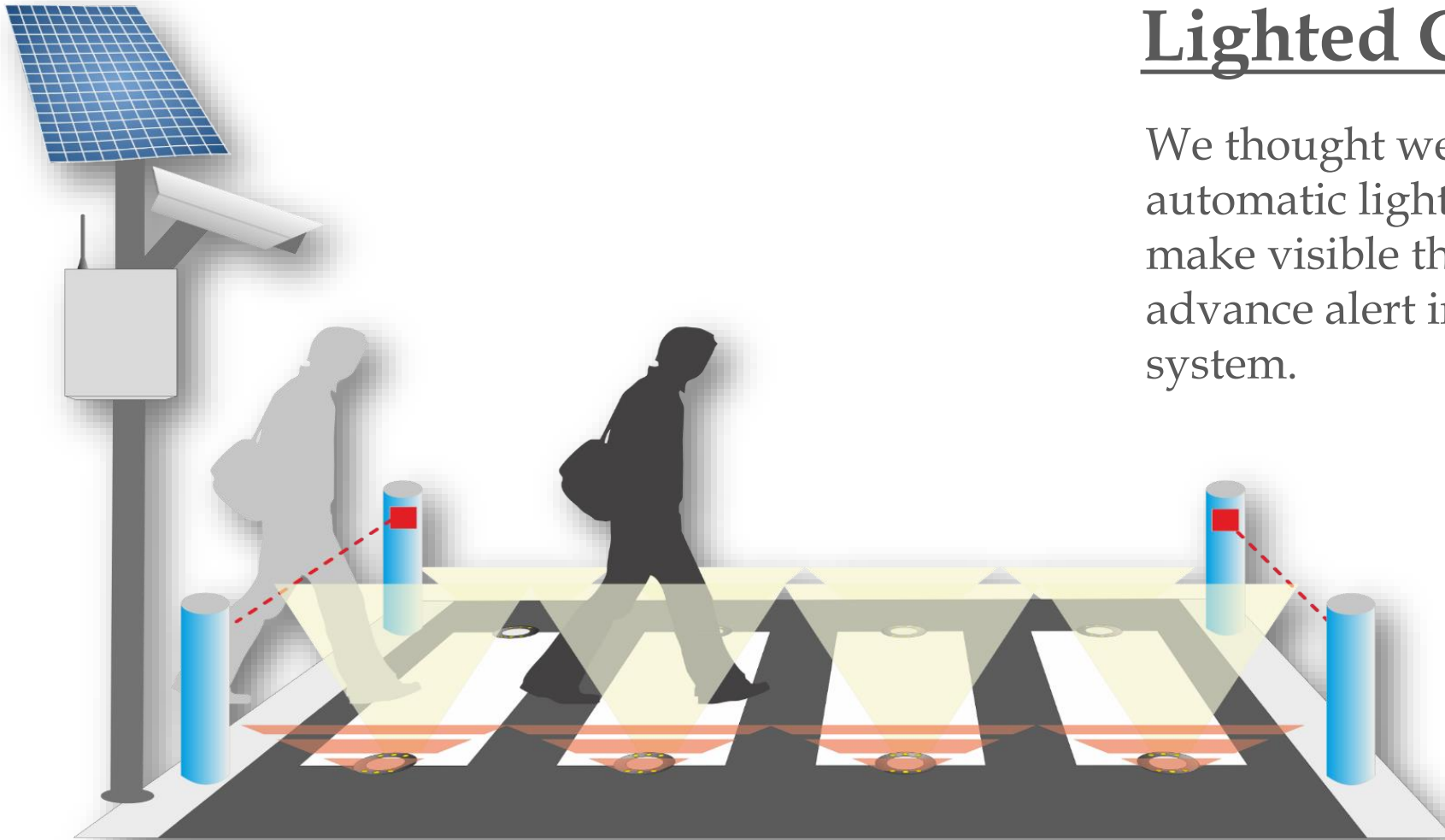
- Crosswalk



- Disabled parking

Lighted Crosswalks

We thought we'd do to install an automatic lighting and signaling to make visible the pawn and advance alert incoming cars system.



Is This Proposal too expensive?

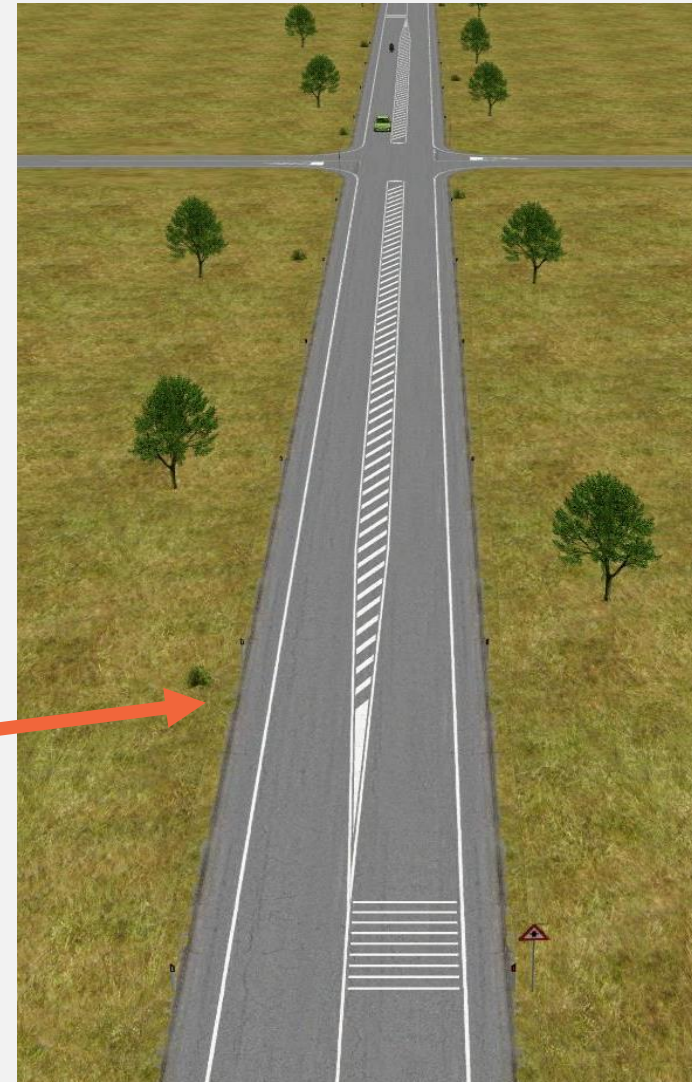
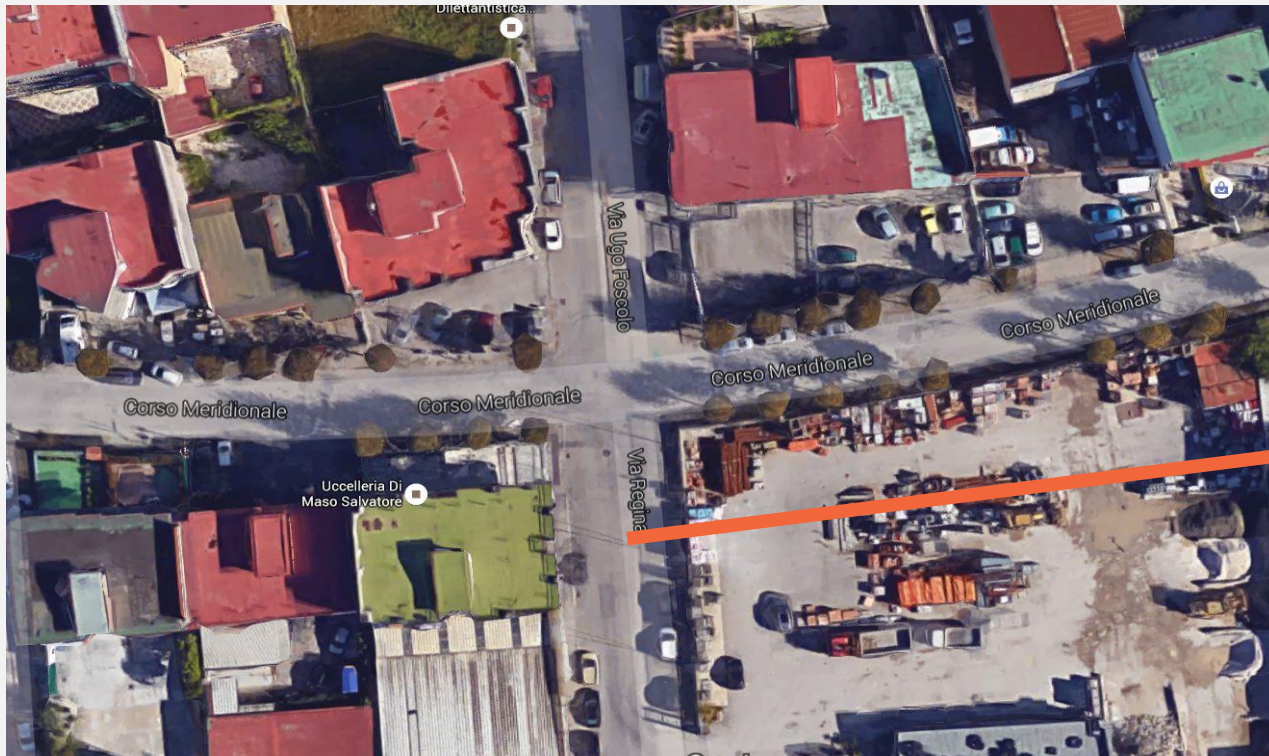


LOW COST SOLUTION



LOW COST SOLUTION

We removed the dangerous divisional island on the main road, and we designed a divisional island only with horizontal road signs.



LOW COST SOLUTION



We inserted pedestrian crossings painted with red to give drivers a visual impact to let them slow down.

LOW COST SOLUTION

Double STOP on curved pole for visibility problems connected with vegetation



TIMELINE



2016

NOVEMBER

DECEMBER

JANUARY

FEBRUARY

MARCH

APRIL

MAY

JUNE

JULY

2017

- Contact the University and ask professor Alfonso Montella to talk about YEARS PROJECT in some meetings.

- Contact potential Partners
- Contact Local Authorities

- Developing Ideas and Strategies for Road Safety Campaigns

Start Work !!!

POSSIBLE DIFFICULTIES

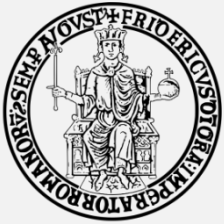


Italian bureaucracy

Find Funds



POTENTIAL PARTNERS



University of Naples Federico II



European Transport Safety Council



ACI (Automobile Club d'Italia)



Meridiani Association



Failsafe – Divisione guida sicura



THANKS FOR YOUR ATTENTION

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