



Middle East Technical University

Civil Engineering Department

STARS PROJECT

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Introduction

Statistics* of driver faults in accidents (2010)

DRIVER FAULTS	TOTAL	%
Unable to adjust vehicle speed to road due to road, air or traffic conditions	36.079	34,40%
Failure to yield the right of way	16.739	15,96%
Failure to turning regulations	15.042	14,34%
Tailgating	10.543	10,05%
Failure to other traffic safety regulations	6.236	5,95%
Frequent or unsafe lane changes	4.991	4,76%
Impaired driving	3.310	3,16%
Failure to traffic signals	2.860	2,73%
Entering to no entry roads	2.678	2,55%
Other	2.460	2,35%
Influence of alcohol	1.511	1,44%
Collision to safety parked vehicles	1.212	1,16%
Passing when it is restricted	808	0,77%
Unsafe parking	415	0,40%

Introduction

According to these results, it is necessary to control speeding behaviour of the drivers.

- *Excessive Speed (driving above the speed limit)*
- *Inappropriate Speed (driving too fast for the conditions, but within the limits)*

Motivation

Speed reduction depends on different concepts :

➤ Enforcement (Educating people)



➤ Infrastructure (Geometric Design, Sight Clearance)



➤ Taking Precautions (Signposts & technology)



Motivation

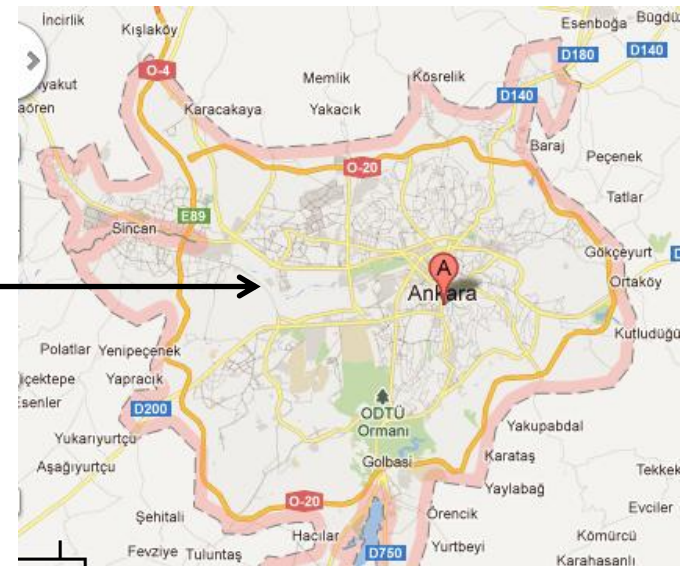
Since the easiest and fast way of reducing speed is gaining importance, the last item is chosen.

- To increase awareness of a U-Turn on a multilane highway
- To decrease number of accidents in the selected black spot
- To decrease speed of turning vehicles
- To route approaching vehicles

As a result, safety can be increased



Study Area



Study Area

Satellite images of the area



Study Area

i)



While driving on the road, there is no sign for the U-Turn.

200 m before the U-Turn, there is a small sign with, however the sign board is not clear.

ii)



Study Area

iii)



The arterial road is divided in this section. Left line is going to enter U-Turn.

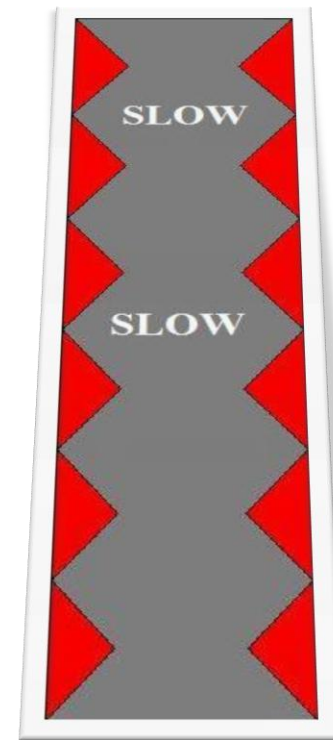
Improper and small sized signs were placed at the end part.

iv)



Plan A

- Pavement painting with red color in zig-zag pattern
- Writing “SLOW” to warn drivers



Plan A

Signs

- Before 300 meters to the divergence
(Turning Sign)
- End of the U-Turn
(Solar Chevron Sign)



Plan B

- Installing fake speed cameras over the road section before the U-Turn



Plan B

The placement for the speed cameras



Materials

- Thermoplastic pavement marking with red color

Advantage:

- Better for night driving with the reflective elements



- Greater sign boards

Advantage:

- Better visibility for drivers



Materials

➤ Solar road buttons

Advantage:

- Better for night driving
- Separate lines naturally



Difficulties

- Convincing local authorities
- Finding financial support
- Long bureaucratic process
- Taking measurements before and after the implementation periods

Evaluation

- Average speed measurements before and after the implementations
- Online questionnaire at the website of municipality
- Accident analysis before and after the implementations

Schedule for Implementation

- February 2012- Meeting the officials, discuss ideas
- March 2012- Field observation, improving ideas
- April 2012-Cost analysis
- May,June 2012- Presenting final project to authorities for taking permissions
- July 2012- Implementing project
- September,October 2012-Evaluating results

Partnership

From Middle East Technical University:

- Prof.Dr. Hediye Tuydes YAMAN
- Zerrin ARDIC EMINAGA

Associations:

- ETSC
- YoIEvent Management

Local authorities:

- City Security Management System (KGYS)
- Local-press and social network



Thanks For Your Attention!

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