

# Evaluation of a Speed Enforcement Corridor implemented in a high-risk road in Evia Greece

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Hosted by





# Hellenic Research and Educational Institute for Road Safety, Prevention and Reduction of traffic accidents "Panos Mylonas"

Established on May 12th 2005 after the tragic loss of Panos Mylonas, a 22 year old University student of Mechanical and Aeronautical Engineering and the youngest WRC accredited journalist.

## Our Vision

"a world without road crashes"

## Our Mission

To increase Society's awareness for traffic safety  
To support the Government and stakeholders to act for the prevention of traffic crashes

## Our Strategic Pillars & Activity Areas

1. General Policy on Road Safety
2. Road User's behavior
3. Infrastructure

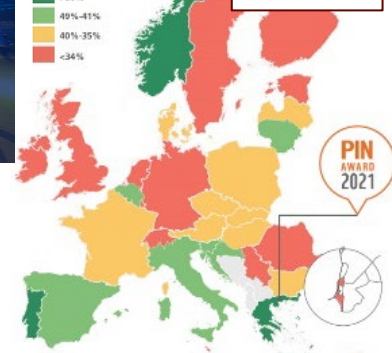
## Road Safety in Greece 2010 - 2020

The only country achieving the EU target of halving road fatalities in 2020 compared to 2010



Relative change in road deaths between 2010 and 2020 and recipient countries of the PIN Award over the period 2010-2020

GREECE  
WINNER OF THE  
2021 ROAD SAFETY  
PIN AWARD



# The role of Civil Society: “Road Safety is a shared responsibility”

The role and influence of civil society among other non governmental sectors can be important in the implementation of a road safety action plan by:

## 1. Keeping road safety on the government agenda

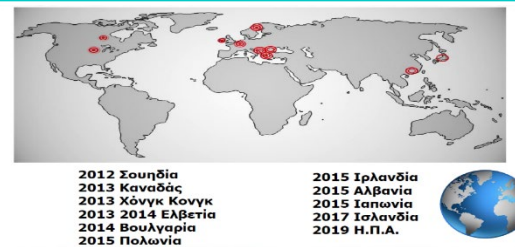


## 2. Uniting stakeholders with a common goal



## 3. Be an important source of road safety information for the community & governments

*International Fora - European Initiatives & Project Consortia Transferring Knowledge & Best Practices*



## 4. Promotion of the road safety related SDGs

Participants: 8,500 citizens of Greece & neighboring countries  
*Key Results: Top priority “better transport and roads” -4,664 votes*



# Road crashes as a global problem: The role of speeding

The leading cause of death in the 5-29 age group

The 8th cause of death for all ages

1.35 million deaths every year

50 million injured every year

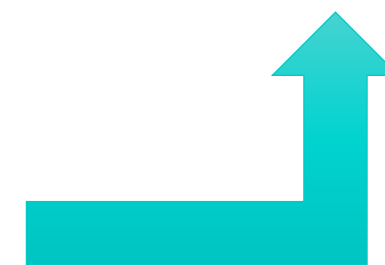
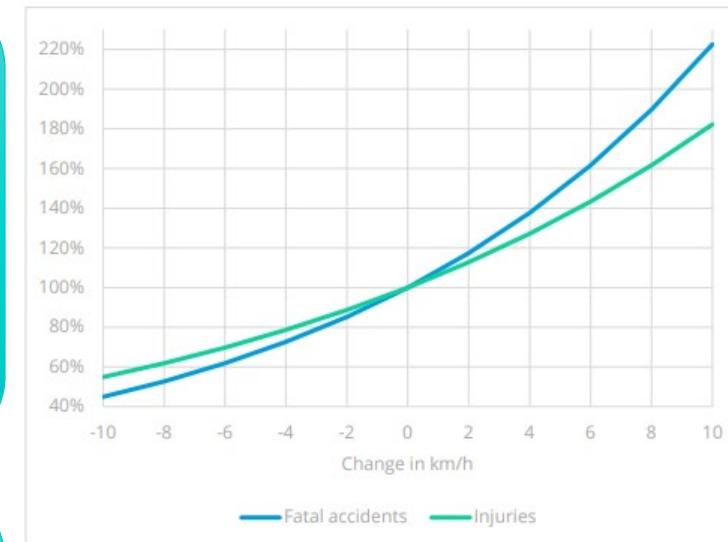
Two problematic types of speed for road safety:

Excessive speed: driving at a speed higher than the maximum permitted speed

Inappropriate speed: driving at excessively high speeds given the traffic situation, infrastructure, weather conditions and/or other special circumstances

10-15% of all road traffic collisions and 30% of fatal injury collisions are the direct result of excessive or inappropriate speed

The risk of collision increases with speed: An increase in speed by 10 km/h leads to a fatality risk of 220% of the original, i.e. the risk has more than doubled.



**Reducing the average speed by 1 km/h on all EU roads would save over 2000 lives a year.**

# The role of enforcement

- Enforcement is a way to deter drivers from excessive or inappropriate speeding.
- Speed limit enforcement is essential as long as the speed problem is not solved in a structured way.
- It is argued that speed limit enforcement is most crucial on high risk locations
- Although there have been speed limit enforcement efforts in the EU, drivers' expectation of possible checks by the police remains at a low percentage in the EU, namely at 38% on average, according to an ESRA (2016) survey.

ETSC (2019)

**2,100** LIVES COULD BE SAVED EACH YEAR IF THE AVERAGE SPEED DROPPED BY ONLY 1 KM/H ON ALL ROADS ACROSS THE EU

**ISA**  
 =  
**20% FEWER DEATHS**

THE MANDATORY INSTALLATION OF AN OVERRIDABLE INTELLIGENT SPEED ASSISTANCE (ISA) SYSTEM ON ALL NEW VEHICLES COULD EVENTUALLY CUT ALL ROAD DEATHS BY 20%



**OBSERVED VEHICLE SPEEDS ABOVE THE SPEED LIMIT IN THE EU:**



FROM **35% TO 75%**  
 ON URBAN ROADS



FROM **9% TO 63%**  
 ON RURAL ROADS



FROM **23% TO 59%**  
 ON MOTORWAYS

**SOLUTIONS FOR SAFER SPEEDS:**



SAFE AND CREDIBLE SPEED LIMITS



SELF-EXPLAINING, SELF-ENFORCING ROADS



VEHICLES THAT HELP DRIVERS TO COMPLY WITH SPEED LIMITS



STRICTER LAWS



ROAD USER EDUCATION



EFFECTIVE AND FREQUENT TRAFFIC LAW ENFORCEMENT ACTIVITIES



# The role of RSI - Partnerships

- In collaboration with the Hellenic Police, RSI “Panos Mylonas” has launched a pilot speed management program.
- The program was released upon the meeting events:
  - 21 June 2022 at the presence of the Region of Sterea Ellada and the Municipalities of Chalkideon and Dirfion-Messapion and the "Safer Roads Foundation" (SRF) of the United Kingdom, the purpose of which was to present the planned interventions on the E-77 road axis
  - 22 June 2022 in the Ministry of Citizen Protection, at the HQ of the Hellenic Police, in which the ceremony of handing over the radar device for speed control that the RSI “Panos Mylonas” donated to the Police Station of Dirfyia Messapia, took place.



# The role of RSI: «Traffic Police Officer of the Year» Initiative

- RSI has established the award for the "Traffic Police Officer of the Year" since 2005.
- The Traffic Police Officer of the Year is selected on the initiative of the Institute, based on his/her significant contribution to the prevention and reduction of road incidents and the protection of citizens' lives, following a selection - evaluation of the nominees from all the Traffic Police Departments of the country.
- Several awardees have received honorary plaques, while the Traffic Police Departments where they serve have received state-of-the-art radars, a symbolic contribution of the Institute in the fight for the prevention of road crashes.



# The Role of RSI - Interventions (1/2)

- Speed Enforcement Corridor Implementation in a high-risk road in Evia Greece:
- The E-77 road axis part on the Chalkida-Edipsos National Road

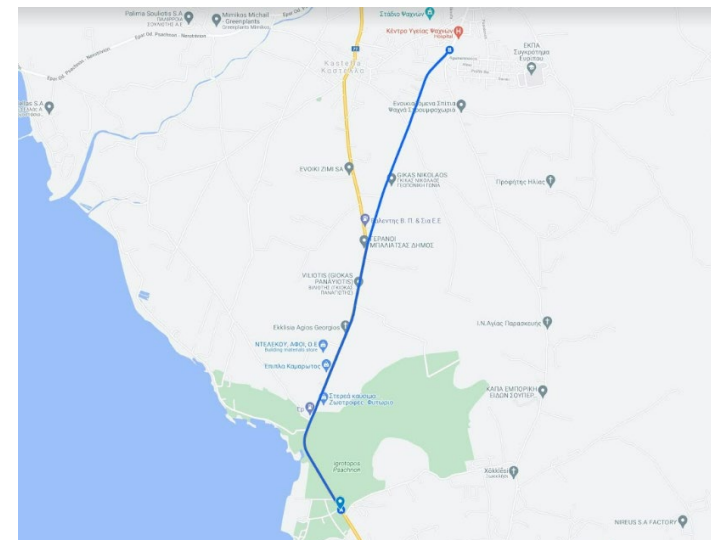




# The Role of RSI - Interventions (2/2)

Regarding the interventions on E-77:

- 47.1% of fatal road traffic collisions that occur in non-residential areas involve passenger vehicles.
- The number of traffic fatalities and injuries increased dramatically between 2014-2018 on the 4 km section of the E-77 axis on the Chalkida-Pshachna National Road



# The Rationale

- Design of infrastructure projects to improve road safety by enabling drivers to control their behavior
- Pilot installations of enhanced and intelligent warning signs
- Target group: drivers of vehicles crossing the E-77
- Method: installation of 18 signs & 4 radar (VMS) EVOLIS active speed measurement of vehicles [offered by the RSI under the financial support of the Safer Roads Foundation (SRF) of the UK]

## Methodology

- Speed indication through electronic signs is used as a means of controlling behavior through learning mechanisms
- Target behavior: driving at an inappropriate speed
- Desirable behavior: exercising control & driving at appropriate speed
- Condition handling: Introduction of a hazard warning stimulus
- Purpose: reduction of undesirable behavior and adoption of desirable behavior



# Methodology – Materials

- 4 electronic danger warning signs
- On the EO 77 Chalkida - Psachna
- Period: 3/8/22 - 31/8/2023
- On both 2 traffic directions
- Radar for speed indication
- Recording - storage of traffic data
- Hide function:
  - Direction (1) view speed
  - Direction (2) do not see their speed



# Signs Locations

Placement at ~330m distance



3500 cm x 2200 cm



1600 cm x 2400 cm



Regulatory road signs (P - 32)

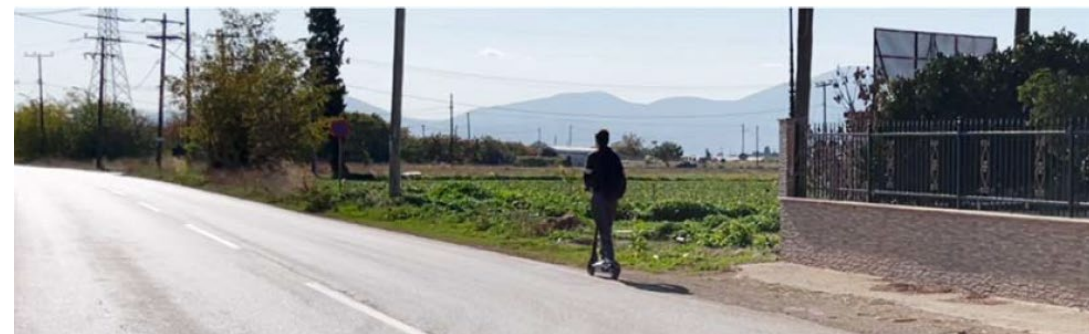
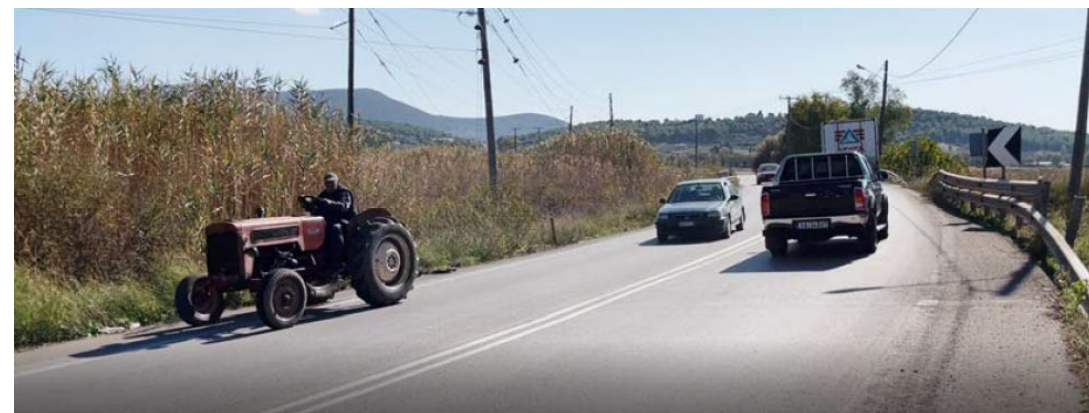


# Electronic Signs & Radar Locations





# Before the Intervention





# Before the Intervention





## Before



## After





# Before



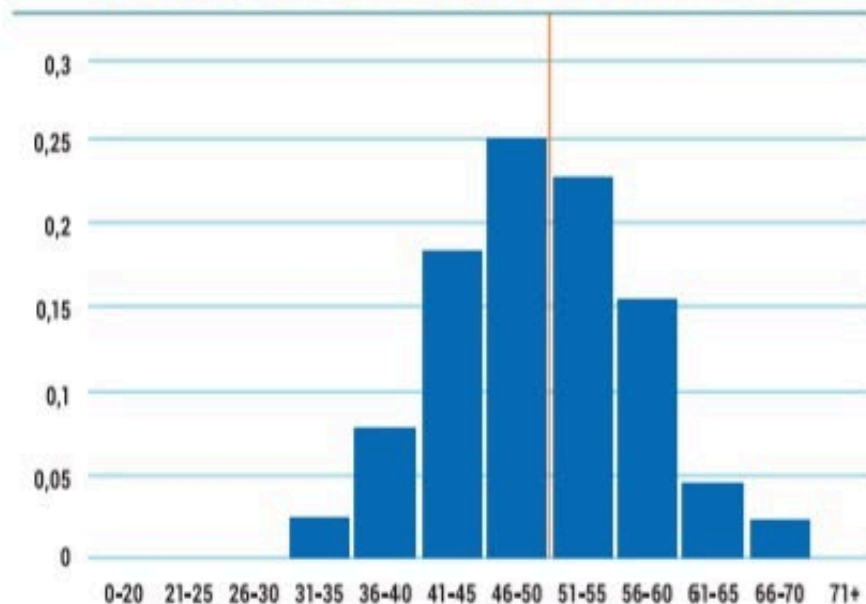
# After



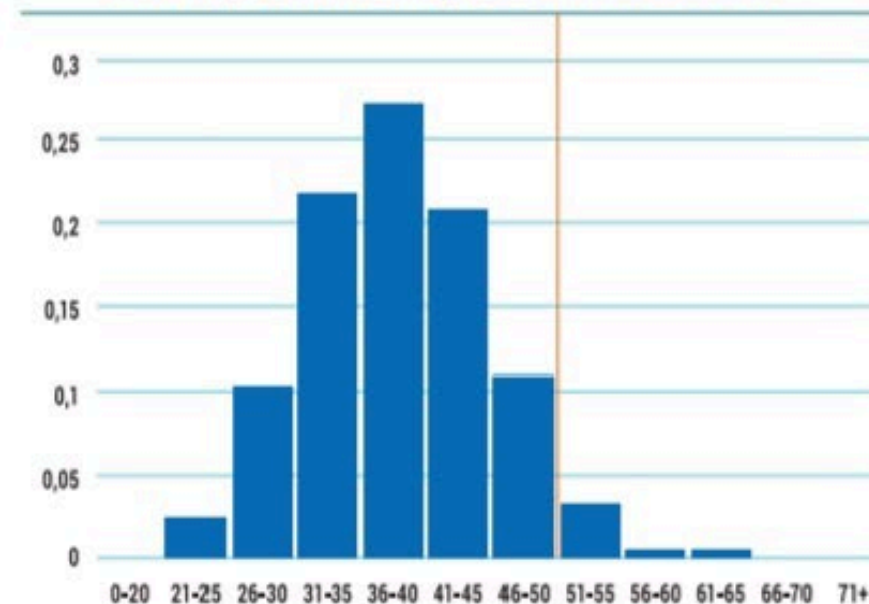


# Evidence from EVOLIS road traffic control

Κατανομή ταχυτήτων πριν την τοποθέτηση



Κατανομή ταχυτήτων μετά την τοποθέτηση



Στοιχεία της μελέτης του τμήματος πολιτικών μηχανικών και εφαρμοσμένης μηχανικής του: University of McGill, Montreal, Canada τον Αύγουστο του 2018 με θέμα τον έλεγχο της συμπεριφοράς των οδηγών πριν και μετά την τοποθέτηση του EVOLIS.

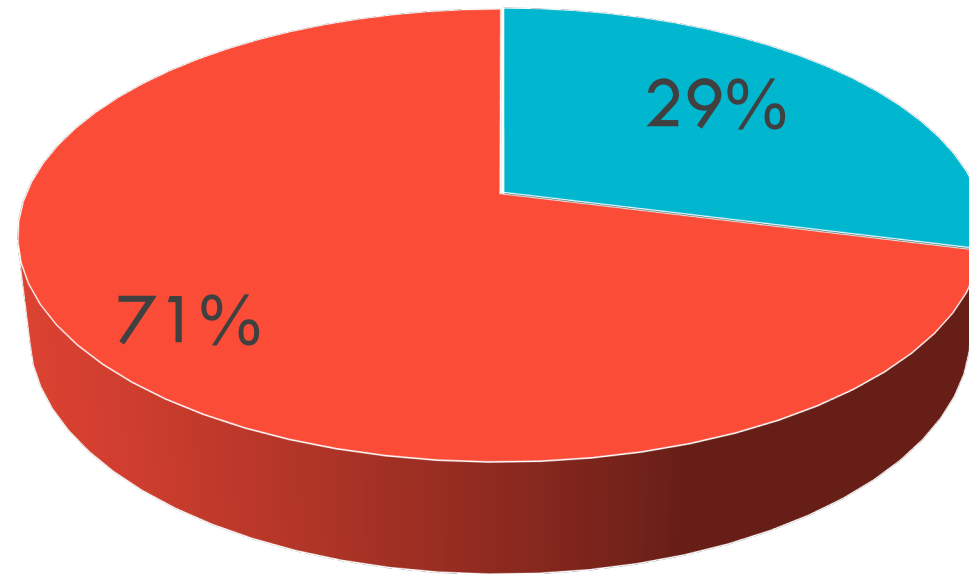
# Results (1)

	Overall Speed Average (Km/h)	
VMS	Direction 1	Direction 2
A Chalkida – Psachna	57,32	62,68
B Chalkida – Psachna	57,06	61,84
C Psachna – Chalkida	59,32	59,63
D Psachna – Chalkida	56,0	56,2



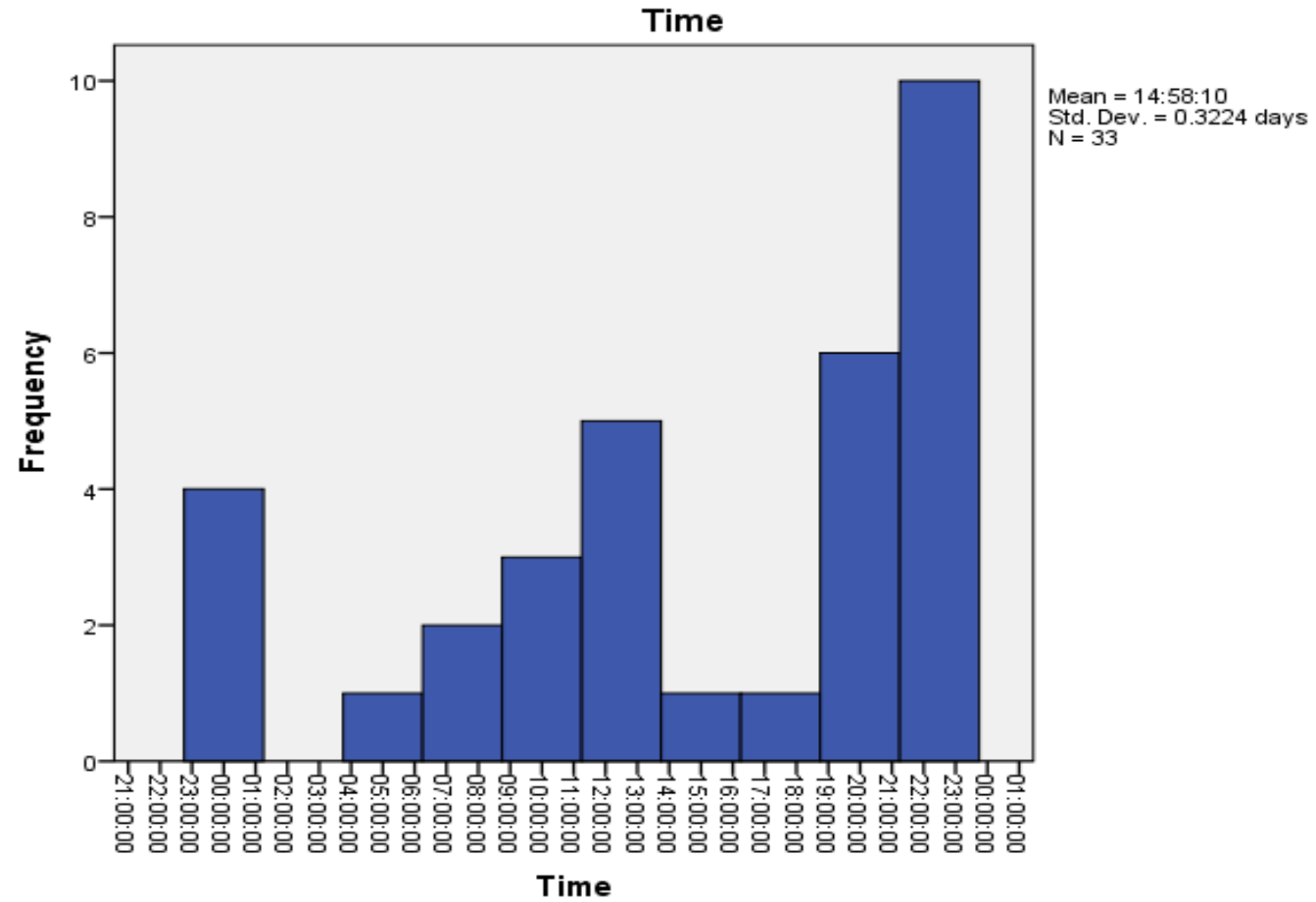
# Results (2)

## Distribution of Maximum Speed Frequency (159 km/h) related to Direction



■ Having visual contact of speed ■ Not having visual contact of speed

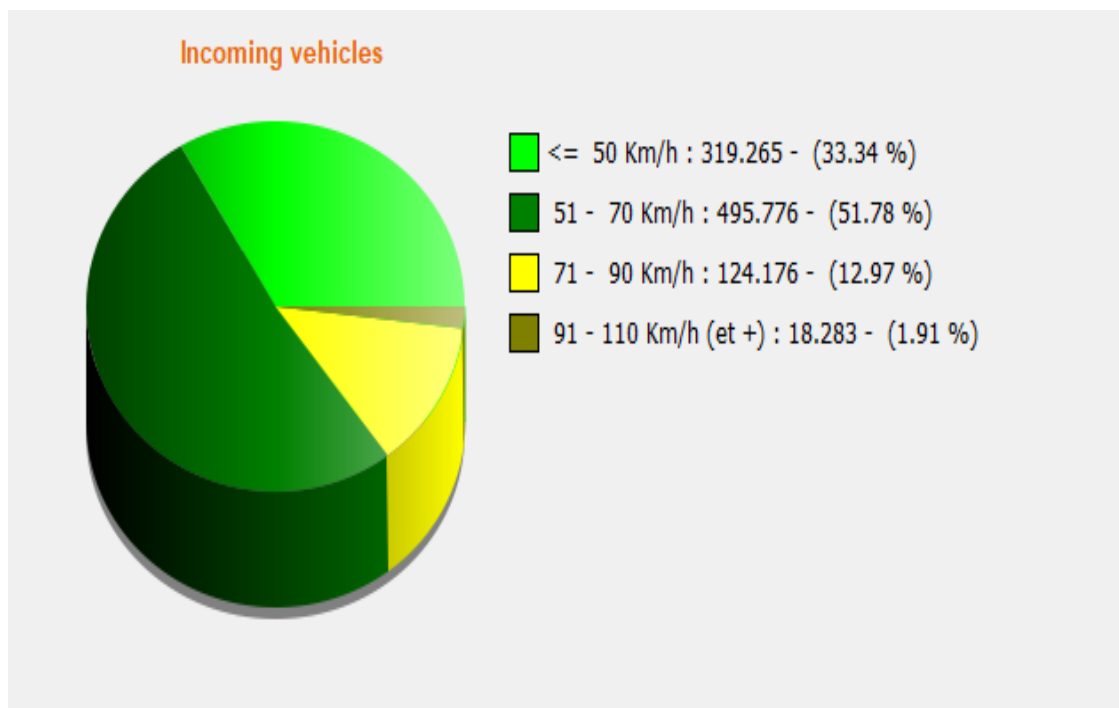
# Results (3)



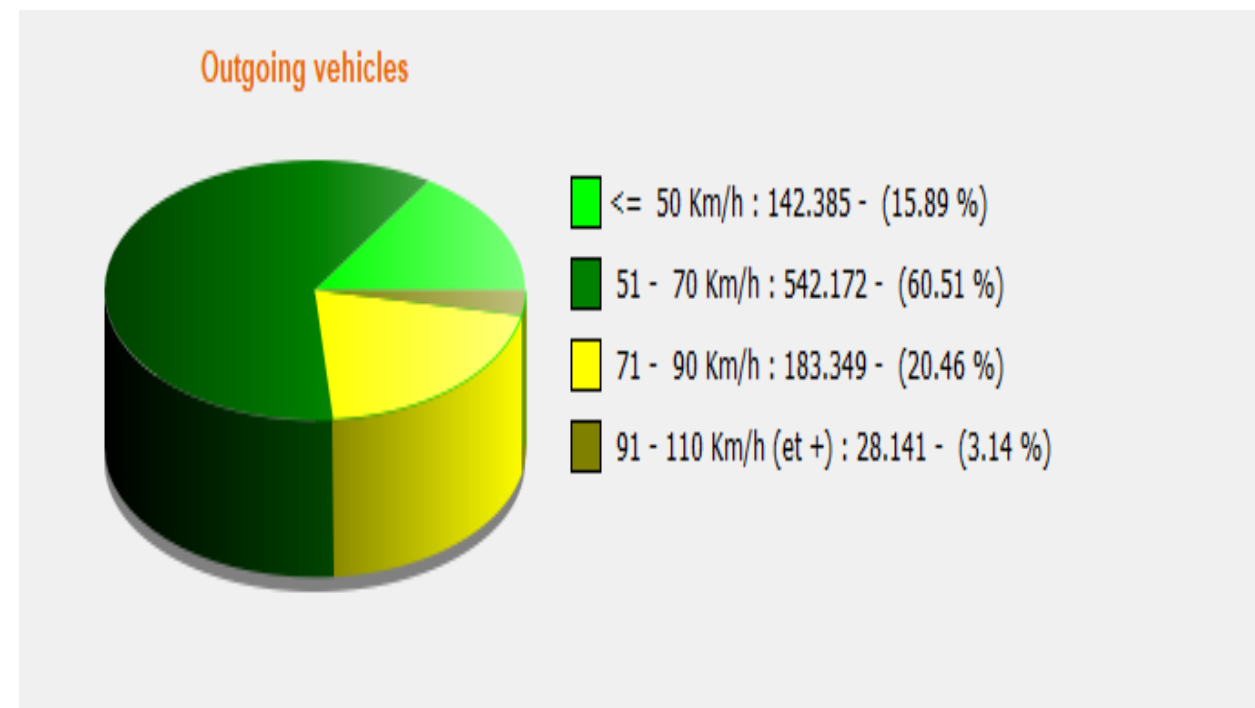


# Results (4)

(1)



(2)



## Results (5)

- Percentiles 85%
- Direction (1) : Average speed in the 85% percentile is 70km/h indicating that a significant percentage of drivers are above the average recorded speed (57.32 km/h) by 12.68 km/h
- Direction (2) : Average speed at the 85% percentile is 75km/h indicating that a significant percentage of drivers are over the average recorded speed (62.68 km/h) by 12.32 km/h and well over the speed limit



# Conclusions

## Average Speed

- In the direction [2] where drivers cannot see their speed → the speed limit is higher

## Maximum Speed

- To a greater extent in [2]
- It occurs more often in the evening hours:  
***increased speed is linked to lack of police enforcement***

## Speed Distribution

- In [2], there is a higher frequency of vehicles breaking the legal speed limit

# Discussion

- Methods of controlling road behaviour such as electronic signs at critical points on the road are proving particularly useful
- This is measurably illustrated by the fact that after the intervention [1] drivers were able to display the desired behaviour to a greater extent than in the condition [2]

**The degree to which a driver perceives that his/her driving behavior is being controlled has a significant effect on his/her final response**



# Benefits and Remarks

Multiple applications of using data from equipment such as EVOLIS signs:

- significant impact on road behavior
  - enhancing compliance with legal speed limits
- possibility of data collection through recording and statistical analysis:
  - the number of vehicles passing through
  - the peak traffic hours
  - traffic volume at road network locations
- In view of the above, contribution to
  - the planning of journeys
  - technical works on infrastructure management
  - control by the Traffic Police

# ZERO ACCIDENTS SINCE THE RADARS/SIGNS WERE INSTALLED!



ΔΗΜΟΣ ΧΑΛΚΙΔΕΩΝ  
Municipality Of Chalkis

**Political commitment, local authorities' and community support are crucial**



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