



**Session I: Reducing Speed Limits**  
**27 November 2024**

# **Review of impacts of city-wide 30km/h speed limit**

**Eva Michelaraki, Research Associate**  
**George Yannis, Professor**

Department of Transportation Planning and Engineering  
National Technical University of Athens





# Outline



**Scientific evidence on  
30km/h city-wide schemes**



**Conclusion**

**30 Marathons in  
30 months campaign**

**Key facts about speeding**



**Cost benefit analysis example**





# Objectives

- **Critical assessment** of the effectiveness of city-wide 30 km/h speed limit in order to enhance urban sustainability
- Identification of **changes before and after the implementation** of city-wide 30 km/h speed limits in terms of:



Safety



Emissions



Energy



Traffic



Liveability

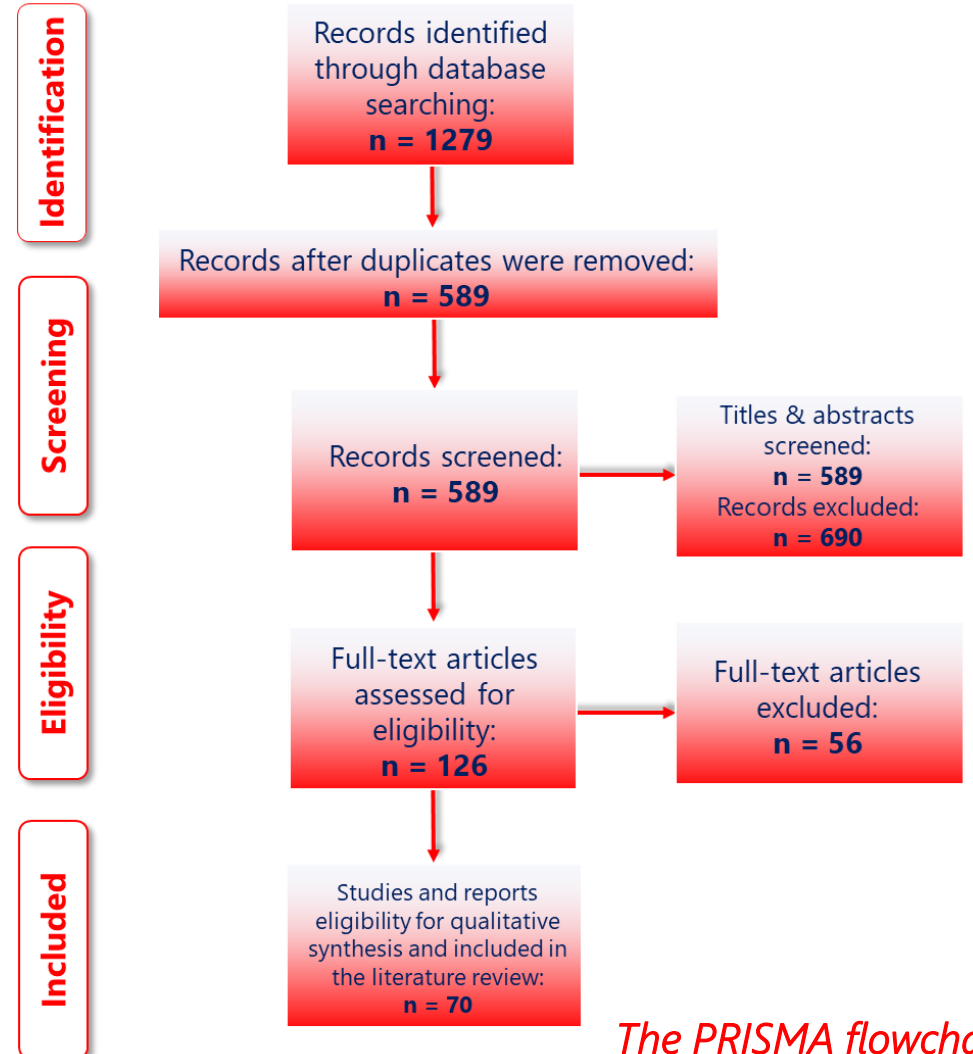


Health

# Methodology

- **Meta-analyses of 70 studies from 17 cities** were reviewed
- Systematic search of relevant scientific and grey literature, according to the **Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA)**
- The **inclusion criteria** for selecting relevant studies were:
  - ✓ Search term
  - ✓ Year of publication
  - ✓ Source

Key search phrase	Search terms	Screened papers	Included papers
30 km/h speed limit	"30 km/h" OR "20 mph" OR "30 km/h speed limit" OR "speed limit" OR "speed limit reduction" OR "maximum speed" OR "reduced speed" AND "traffic calming" AND "mobility" AND "city-wide" AND "cities" AND "implementation modalities" AND "benefits" AND "urban areas"	589	70



*The PRISMA flowchart*



# Speeding Kills (1/2)

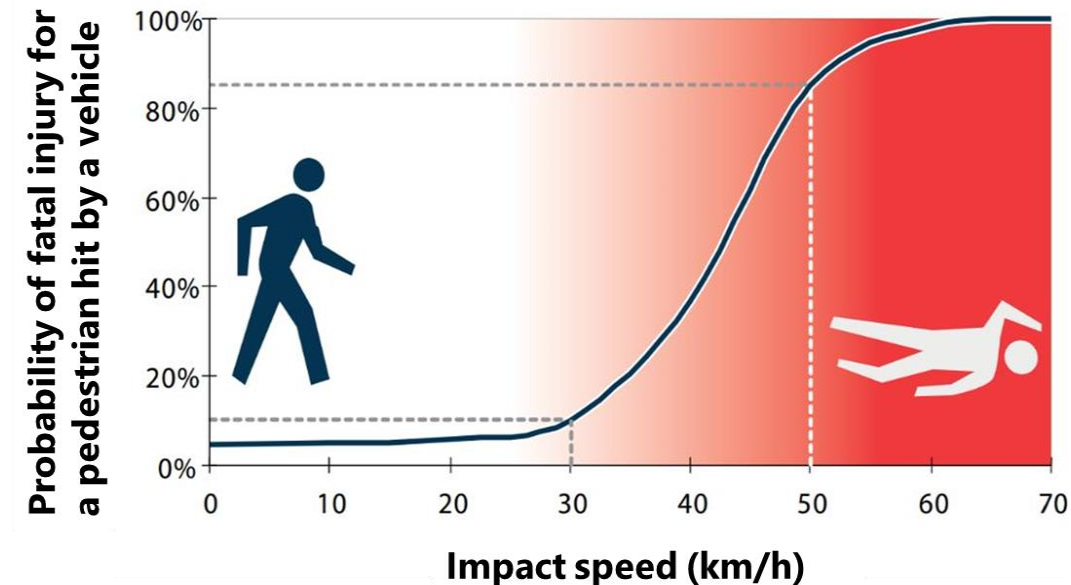
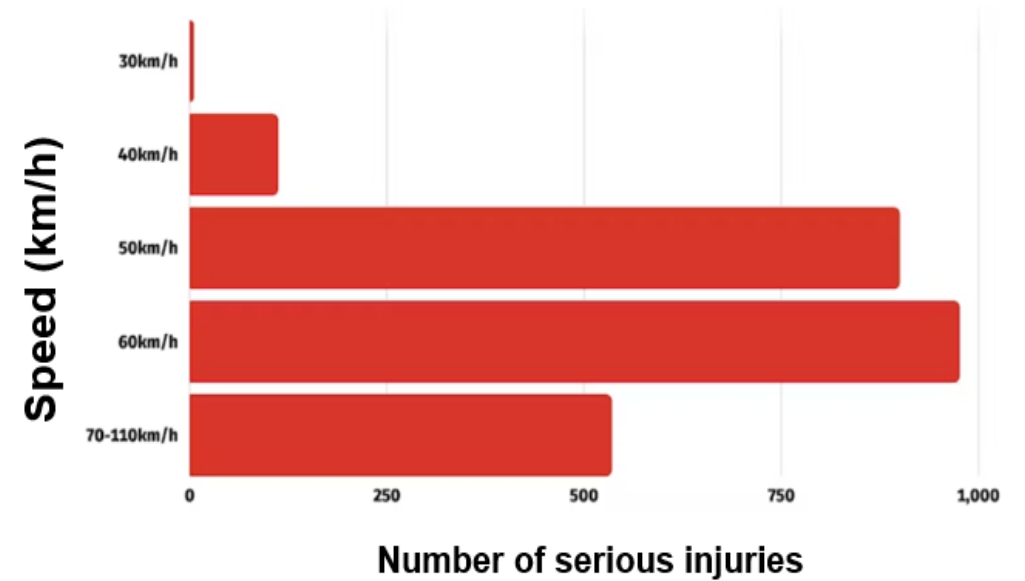
- Speeding is the **number one cause of road crashes** worldwide, especially in cities where pedestrians, cyclists and motorcyclists are highly exposed and vulnerable in case of a collision (70% of fatalities in urban areas are VRUs)
- Speed has been found to be a **major contributory factor** in around 10-15% of total crashes and in around 30% of fatal crashes





# Speeding Kills (2/2)

- When speed increases, the risk of a **crash** and of its **severity** increases as well
- A 5% increase in average speed leads to approximately a 20% increase in **fatal crashes**
- **Pedestrian fatalities** increase from 10% in 30km/h collisions to 90% in 50km/h collisions

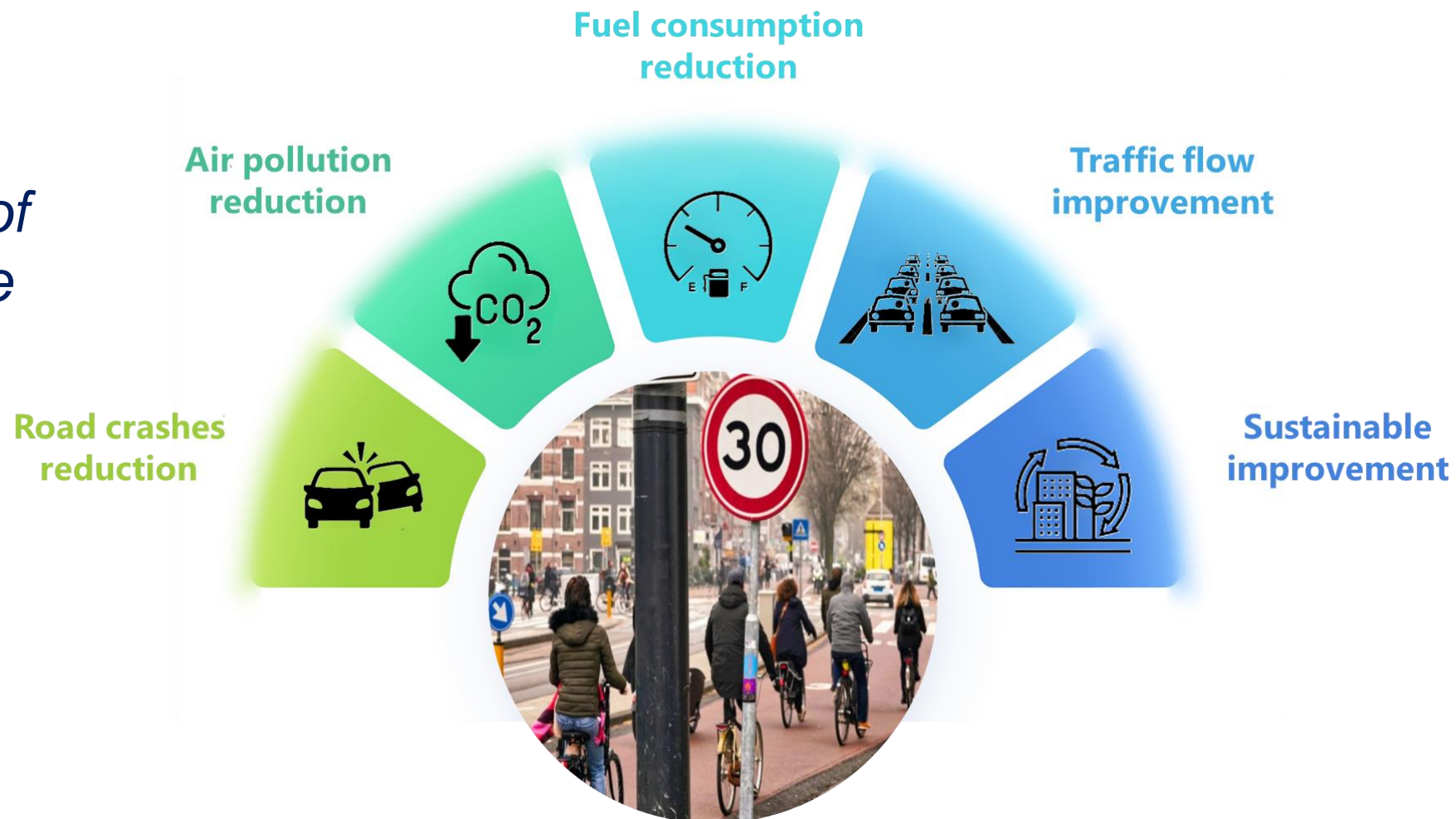




# Benefits from 30km/h Speed Limit

Yannis, G., & Michelaraki, E. (2024). Effectiveness of 30 km/h speed limit – A literature review. Journal of Safety Research, Vol. 92, November 2024

*Setting a speed limit of 30 km/h where people and traffic mix, make streets **safer, healthier, greener and more liveable***



# Cities with 30 km/h Speed Limit

A/A	City	Implementation Started
40	Amsterdam	December 2023
39	Wales	September 2023
38	Bologna	July 2023
37	Florence	November 2022
36	Copenhagen	June 2022
35	Lyon	March 2022
34	Den Haag	December 2021
33	Zurich	December 2021
32	Toulouse	November 2021
31	Vienna	September 2021
30	Paris	August 2021
29	Montpellier	August 2021
28	Münster	July 2021
27	Valencia	May 2021
26	Leuven	April 2021
25	Brussels	January 2021
24	Nantes	August 2020
23	Glasgow	January 2020
22	Antwerp	January 2020
21	Barcelona	December 2019

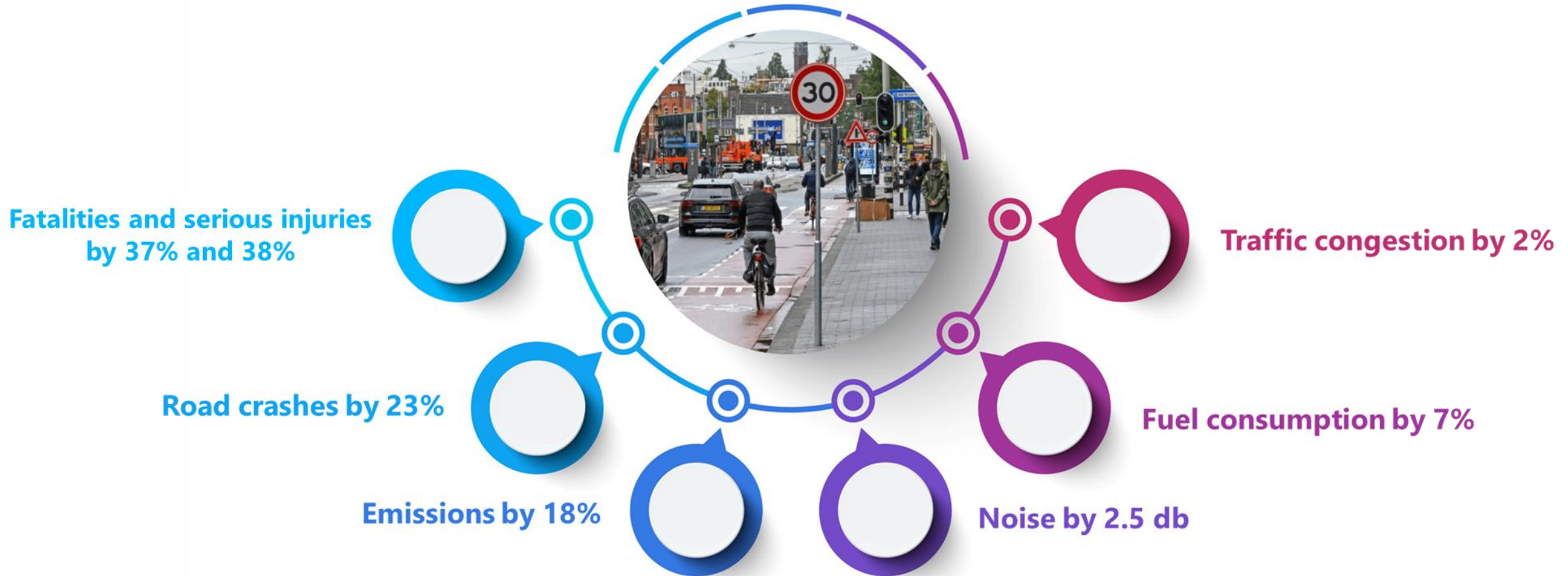
A/A	City	Implementation Started
20	Lille	August 2019
19	Helsinki	May 2019
18	Madrid	September 2018
17	Bilbao	June 2018
16	Strasbourg	February 2017
15	Dublin	January 2017
14	Berlin	January 2017
13	Edinburgh	July 2016
12	London	June 2016
11	Grenoble	January 2016
10	Ljubljana	September 2015
9	Luxembourg	August 2015
8	Ghent	April 2015
7	Bristol	2015
6	Munich	2011
5	Brighton	2010
4	Hove	2010
3	Warrington	July 2005
2	Stockholm	2004
1	Graz	September 1992



# 30km/h Speed Limit in Cities (1/2)

*Yannis, G., & Michelaraki, E. (2024). Review of City-Wide 30 km/h Speed Limit Benefits in Europe Sustainability, 16(11), 4382*

City-wide 30km/h speed limits led to **average reduction** in (meta-analyses of 70 studies from 17 cities):



# 30km/h Speed Limit in Cities (2/2)

*Yannis, G., & Michelaraki, E. (2024). Review of City-Wide 30 km/h Speed Limit*

*Benefits in Europe Sustainability, 16(11), 4382*

## Fatalities:

- **63% and 55% reduction** in Bristol and Brussels

## Serious injuries:

- **72% and 50% reduction** in Münster and Grenoble

## Road crashes:

- **46% and 40% reduction** in London and Paris

## Emissions:

- **29% and 25% reduction** in Berlin and Graz

## Noise:

- **3 db reduction** in Paris and Berlin

## Energy:

- **12% and 10% reduction** in Münster and Brussels

## Traffic congestion:

- **9% and 2% reduction** in Grenoble and Bilbao`

City	Safety			Emissions		Energy	Traffic
	Crashes	Fatalities	Injuries	CO <sub>2</sub> , NO <sub>x</sub> , PM	Noise	Fuel	Congestion
Bologna	-38%	-33%	-10%	-23%			-3%
Zurich	-16%	-25%	-20%		-1.7 dB		
Paris	-40%		-25%		-3 dB		
Münster			-72%	↓	↓	-12%	
Brussels	-10%	-55%	-37%		-2.5 dB	-10%	
Glasgow		-31%					
Helsinki	-9%		-42%				
Bilbao	-28%			-19%			-2%
Berlin	-10%			-29%	-3 dB		
London	-46%	-25%	-25%	-10%			
Grenoble	↓	↓	-50%				-9%
Edinburgh	-38%	-23%	-33%	-8%			-2.4%
Bristol		-63%					
Brighton			-45%				
Hove			-45%				
Warrington			-43%				
Graz	-12%		-20%	-25%	-2.5 dB		

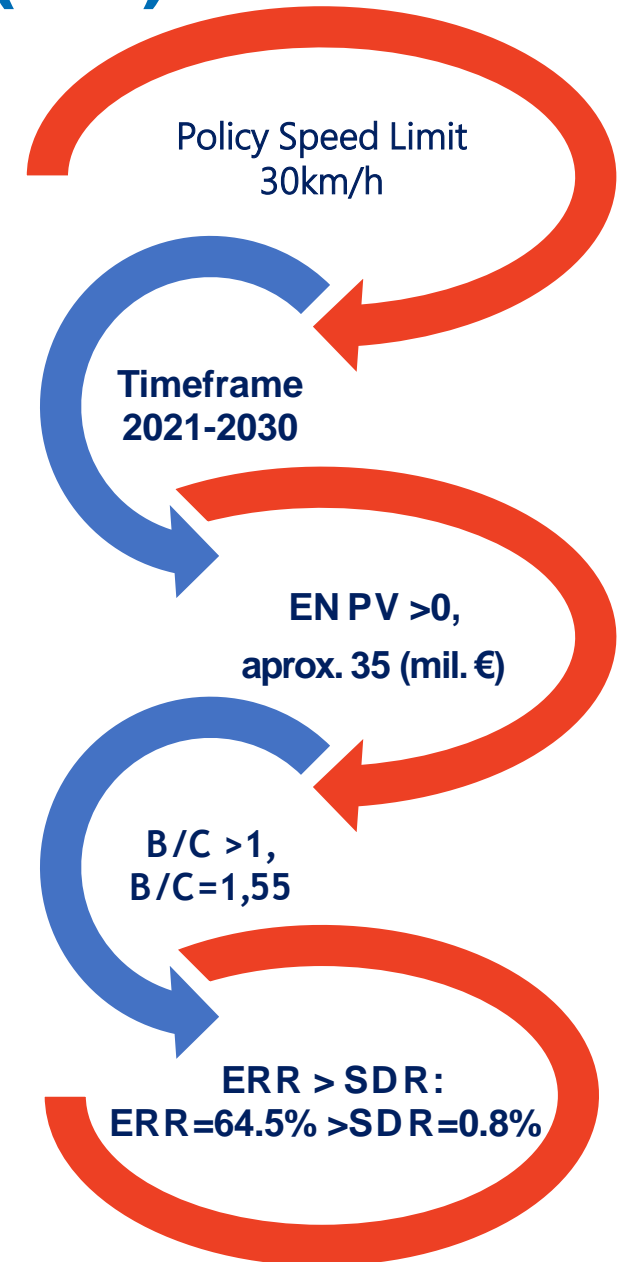
\* grey colour indicates that the impact of the implementation of 30 km/h in this city has not been examined yet  
 \*\* the symbol ↓ indicates that the quantitative effect of this measure has not been provided; only qualitative impact is given  
 \*\*\* these reductions refer to a comparison period before and after the implementation of 30 km/h speed limits which is not the same among all cities examined

# Cost Benefit Analysis Results – Athens (1/2)

Roussou, S., Petraki, V., Deliali, K., Kontaxi, A. & Yannis, G. (2024). Cost benefit analysis of reducing speed limits in Athens to 30 Km/h. Case Studies on Transport Policy, 101289, October 2024

A Cost Benefit Analysis for the City of Athens was implemented till the year 2030, including:

- ✓ **Costs** (implementation and operational)
  - ✓ **Benefits** (road crashes, fuel consumption, emissions):
- In the case of the reduction of the speed limit to 30 km/h in the city center, the **society benefits** from a reduction in road casualties amount to **€130 million** over a 10-year period





# Cost Benefit Analysis Results – Athens (1/2)

*Roussou, S., Petraki, V., Deliali, K., Kontaxi, A. & Yannis, G. (2024). Cost benefit analysis of reducing speed limits in Athens to 30 Km/h. Case Studies on Transport Policy, 101289, October 2024*

- It is estimated that city-wide 30 km/h speed limits on the road network of City of Athens will save lives annually:
  - ✓ 33 **fatalities**
  - ✓ 83 **seriously injured** and 830 **slightly injured**
  - ✓ **fuel consumption** by 48 million litres
  - ✓ 65.5 thousand tonnes of **CO<sub>2</sub>, NO<sub>x</sub> και PM**
- The **traffic congestion** change is negligible
- The indirect benefits of increasing the use of **Public Transport** and **active travel** are also significant







# Cost Benefit Analysis Results – Greece

It is estimated that city-wide 30 km/h speed limits on the road network of all cities in Greece (with the exception of major axes) will save lives annually:

- 104 **fatalities** (out of 635 in all of Greece)
- 123 **seriously injured** (out of 636 in all of Greece)
- 783 **slightly injured** (out of 12,533 in all of Greece)







# **City-wide 30km/h speed limits: the road safety catalyser**

The since-long waited **single road safety measure**  
**with such a significant improvement** at such a  
low cost

Such a **high societal impact**  
for such a small change in our habits

More than a simple new traffic rule:  
**a catalyser for a new road safety culture**

# Conclusion

More and more European cities adopting lower speed limits



The reduction of speed limits in cities (30km/h) leads to a **significant reduction** in road crashes and casualties, energy consumption and air pollution

More livable cities

Significant socio-economic impact

Increase of acceptance



**Public acceptance** of speed limits reduction tends to improve over time, especially by pedestrians, cyclists and Public Transport passengers



# Accompanying Measures

Public consultation  
and awareness  
campaigns



Public Transport  
and active mobility  
promotion



Traffic calming  
measures



Intelligent  
transportation  
systems



Monitoring  
and evaluation



Enforcement and  
police cooperation





# 30 Marathons Campaign

- The discussion and introduction of city-wide 30 km/h speed limit faces strong reactions and rigid inertia, whereas supporters' voices are often **weak and inefficient** resulting in hesitant politicians and Authorities
- After more than 30 years of dedication to road safety science and several Marathon races, Prof. George Yannis decided to step beyond the traditional scientific pleas and combine both passions for a cause: to run **30 Marathons in 30 months** to actively promote the adoption of city-wide 30km/h speed limit in as many cities as possible worldwide



George runs 30 Marathons in 30 Months  
for 30km/h speed limit in all cities





Zagori - Jul 2022

Helsinki - Aug 2022

Antwerp - Sep 2022

London - Oct 2022

Athens - Nov 2022

Valencia - Dec 2022

Malta - Feb 2023

Rome - Mar 2023

Paris - Apr 2023

Belgrade - Apr 2023

Copenhagen - May 2023

Stockholm - Jun 2023

# George - 30 Marathons - 30 Months



Apeldoorn - Jul 2023

Tallinn - Sep 2023

Brussels - Oct 2023

Lyon - Oct 2023

Athens - Nov 2023

Florence - Nov 2023

Nicosia - Dec 2023

Dubai - Jan 2024

Sevilla - Feb 2024

Barcelona - Mar 2024

Paris - Apr 2024

Zurich - Apr 2024

Utrecht - May 2024

Torhout - Jun 2024

Paris - Aug 2024

Warsaw - Sep 2024

Munich - Oct 2024

Athens - Nov 2024





**30**

# Campaign Social Impact

*An Integrated Communication Policy  
with Strong Global Impact*

- **26 cities** with Marathon finish
- **3 papers** in scientific journals
- **20 presentations** in conferences/webinars
- **16 interviews** in the electronic media
- **10 newspaper/magazine** articles
- **40 social media** posts
- **48 republished posts** from scientific organisations and institutions (with 80.000+ post impressions)
- **400.000+ pageviews** per year
- **100.000+ global audience** at social media
- **10 International Organisations** Allied



# Thank you for your attention!



**For more information:**

**Eva Michelaraki:**

[evamich@mail.ntua.gr](mailto:evamich@mail.ntua.gr)



**Baden-Württemberg  
Ministry of Transport**

