NTUA campaign of 30 Marathons in 30 months for 30 km/h speed limit in cities

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Excellence in Road Safety Awards 2025
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Outline

1. 30 Marathons in 30 months campaign
2. Two First-ever Scientific Reviews
3. Scientific evidence on 30km/h city-wide schemes
4. Cost benefit analysis example
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30 Marathons in 30 Months Campaign

30 Marathons in 30 Months Campaign

- The National Technical University of Athens (NTUA) launched the innovative and original 30 Marathons in 30 months campaign to actively promote the adoption of 30km/h speed limit in all cities worldwide, as a key policy for safer, healthier and greener cities for all

- The NTUA campaign was implemented by the internationally renowned NTUA Professor George Yannis, who is ranked 2nd in Europe and 9th worldwide in road safety science, and supported by the NTUA Road Safety Observatory, a Centre of Research and Innovation Excellence on road safety with global recognition

- This campaign was concluded in November 2024 in Athens (all Marathons in under 4 hours) with a particularly significant global impact

International Organisations Allied

- This impactful NTUA campaign of 30 Marathons in 30 months has mobilized large synergies with key stakeholders and the society
- The campaign was implemented with the active support of the National Technical University of Athens (NTUA) and several key International Organisations dedicated to road safety and sustainable urban mobility (ETSC, POLIS, ECTRI, UITP, FERSI, FEHRL, ERF, IRF, ECF, WALK21)
- These external partners helped raise awareness, organized events, promoted the NTUA campaign, supported wide dissemination of its message for city-wide 30 km/h speed limit and fostered dialogue at both local and international level

National Technical University of Athens

ETSC European Transport Safety Council

POLIS CITIES AND REGIONS FOR TRANSPORT INNOVATION

ectri

UITP ADVANCING PUBLIC TRANSPORT

FERSI Road Safety Research

FEHRL

EUROPEAN UNION ROAD FEDERATION ERF

IRF INTERNATIONAL ROAD FEDERATION

ECF EUROPEAN CYCLISTS' FEDERATION

WALK21 LEADING THE WALKING MOVEMENT

Campaign Social Impact

A campaign with high global impact
to actively promote city-wide 30 km/h speed limit

georgeruns30x30.com/media/

- **26 cities** with Marathon finish
- **10 International Organisations** Allied

- **500.000+ pageviews** per year
- **100.000+ global audience** at social media
- **200 republished posts** from scientific organisations and institutions (with 80.000+ post impressions)
- **45 social media** posts

- **35 interviews** in the electronic media
- **46 newspaper/magazine** articles
- **3 papers** in scientific journals
- **28 presentations** in conferences/webinars

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Effectiveness of 30 km/h speed limit – A literature review

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ABSTRACT

Introduction: Road crashes are a major social problem, resulting in 1.19 million fatalities and over 50 million injuries annually. Speeding is the primary cause of road crashes worldwide, particularly in cities where pedestrians, cyclists, and motorcyclists are especially vulnerable. This paper aims to review and assess the effectiveness of implementing a 30 km/h speed limit. *Method:* To achieve this objective, a comprehensive literature review was conducted, evaluating the impact of 30 km/h speed limits on safety, emissions, energy consumption, traffic flow, livability, and health. The systematic literature review adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. *Results:* Current scientific evidence indicated that the introduction of 30 km/h speed limits in cities can save over 40% of lives, alongside significant positive effects on the environment, energy consumption and public health, including reduced fuel consumption and increased walking and cycling. *Practical Applications:* Public awareness campaigns and promoting the use of public transport and active mobility options, such as walking and cycling, could further support the adoption of 30 km/h speed limits in cities.

1. Introduction

Road crashes are a significant global issue, resulting in 1.19 million fatalities and more than 50 million injuries annually (World Health Organization, 2023). Over 50% of all road crashes, fatalities, and injuries involve Vulnerable Road Users (VRUs), including pedestrians, cyclists, motorcyclists, and their passengers.

The Global Plan for the Decade of Action for Road Safety 2021–2030 aims to reduce road traffic deaths and injuries by 50% by 2030 (World Health Organization, 2019). Achieving this target necessitates the implementation of evidence-based interventions known to decrease road traffic fatalities and injuries. Thus, the establishment of a 30 km/h speed limit is one such evidence-based intervention.

Higher travel speeds are particularly harmful to VRUs, such as pedestrians, cyclists, and motorcyclists, as they lack substantial protection to absorb the impact of a road crash. Consequently, they are more likely to die or sustain serious injuries in vehicular collisions compared to vehicle occupants at the same impact speed. According to Sharpin et al. (2021), there is a 40% chance of a pedestrian dying if hit by a vehicle traveling at 50 km/h, compared to a 13% chance at 30 km/h. Furthermore, Karmakharuk and McTiernan (2019) highlighted that speed limits equal to or less than 30 km/h can also reduce the injury risk and death of car occupants. Most importantly, people have a 90% chance of surviving after being hit by a vehicle (e.g., car or truck) going at 30 km/h, but less than 50% at 50 km/h or higher.

Vision Zero is a road safety concept aimed at achieving zero fatalities or serious injuries in road traffic (European Parliament Resolution, 2021). The idea is to create a road system that minimizes the impact of human errors and prioritizes road safety for everyone, everywhere. The call for a 30 km/h speed limit in built-up areas is based on the understanding that lower speeds can significantly reduce the severity of crashes and increase the chances of survival in the event of a collision. This approach aligns with broader global efforts to improve road safety and reduce the number of road traffic fatalities and injuries. Countries and regions worldwide are adopting various measures to create safer road environments, with setting lower speed limits in urban areas being one such strategy. It is important to note that road safety policies and recommendations can vary between regions and countries, and local authorities may implement different measures based on their specific circumstances and traffic conditions.

In the same context, the Safe System Approach is a human-centered strategy aimed at eliminating fatal and serious injuries for all road users (World Road Association, 2019). It acknowledges that humans are prone to errors and that the road transport system should be designed to absorb these errors without resulting in severe consequences. The approach is based on the principles of safe roads, safe vehicles, safe speeds, and safe

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sustainability

MDPI

Review

Review of City-Wide 30 km/h Speed Limit Benefits in Europe

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Abstract: To date, more and more European cities are systematically working to expand the proportion of their street network with a speed limit of 30 km/h. This paper endeavored to assess the effectiveness of city-wide 30 km/h speed limits in Europe. In an effort to condense research outputs, a quantitative approach along with qualitative assessments were implemented. This study described the changes in safety, environment, energy, traffic, livability, and health before and after the phased implementation of city-wide 30 km/h speed limits. The systematic review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines. Results from 40 different cities across Europe, including Brussels, Paris, and Zurich, indicated that reductions in speed limits improved road safety by decreasing the likelihood of crash risk and the severity of crashes that do occur. On average, the implementation of 30 km/h speed limits in European cities demonstrated a 23%, 37%, and 38% reduction in road crashes, fatalities, and injuries, respectively. Lower speed limits also yielded environmental benefits, with emissions decreasing on average by 18%, noise pollution levels by 2.5 dB, and fuel consumption by 7%, indicating enhanced fuel efficiency and reduced environmental impact. Encouraging citizens to embrace walking, cycling and utilizing public transit services can further contribute to a safer and environmentally sustainable urban environment.

Keywords: 30 km/h speed limits; road safety; speed limit reduction; cities; implementation modalities

1. Introduction

The European Union's road safety policy framework for 2021–2030 aims to achieve a 50% reduction in road deaths and serious injuries by 2030, with the ultimate goal of "zero deaths on the roads" by 2050, known as "Vision Zero" [1]. Vision Zero is a comprehensive strategy which aims to completely eliminate all traffic fatalities and serious injuries, and promote healthy, safe, and equitable mobility for all road users. First implemented in Sweden in the 1990s, Vision Zero states that any serious or fatal injuries that occur within the road system are unacceptable. This approach is supported by time-limited targets and performance indicators aiming to reduce fatalities and slight and serious injuries [2].

In order to achieve "Vision Zero" in the European Union (EU), the Safe System Approach is promoted [3]. This Safe System prioritizes safer vehicles, infrastructure, lower speeds, and improved post-collision care. In particular, special emphasis is given to safer vehicles through the implementation of regulations and standards for advanced safety features. Additionally, efforts are directed toward enhancing road infrastructure design and maintenance to minimize the risk of collisions and reduce crash severity. Speed management strategies, including lower speed limits in residential streets and effective enforcement, are also crucial to promote safer driving behavior. Improving emergency response systems and post-collision care facilities is essential for better treatment of crash victims and reducing injury severity. Cross-border cooperation is prioritized to enforce traffic regulations consistently across EU member states, while digitalization of driving licenses enhances license management and enforcement.

check for updates

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Two First-ever Scientific Reviews with High Visibility

(more than 250,000 views)

Scientific Reviews

The two first-ever **literature reviews**:

- Assessment of changes **before and after** the implementation of city-wide 30 km/h speed limits in Europe (meta-analyses of 70 studies from 17 cities)
  Yannis, G., & Michelaraki, E. (2024). Review of City-Wide 30 km/h Speed Limit Benefits in Europe Sustainability, 16(11), 4382

- Assessment of the effectiveness of 30 km/h speed limit through **simulation studies** (meta-analyses of 60 studies)
  Yannis, G., & Michelaraki, E. (2024). Effectiveness of 30 km/h speed limit - A literature review. Journal of Safety Research, Vol. 92, November 2024

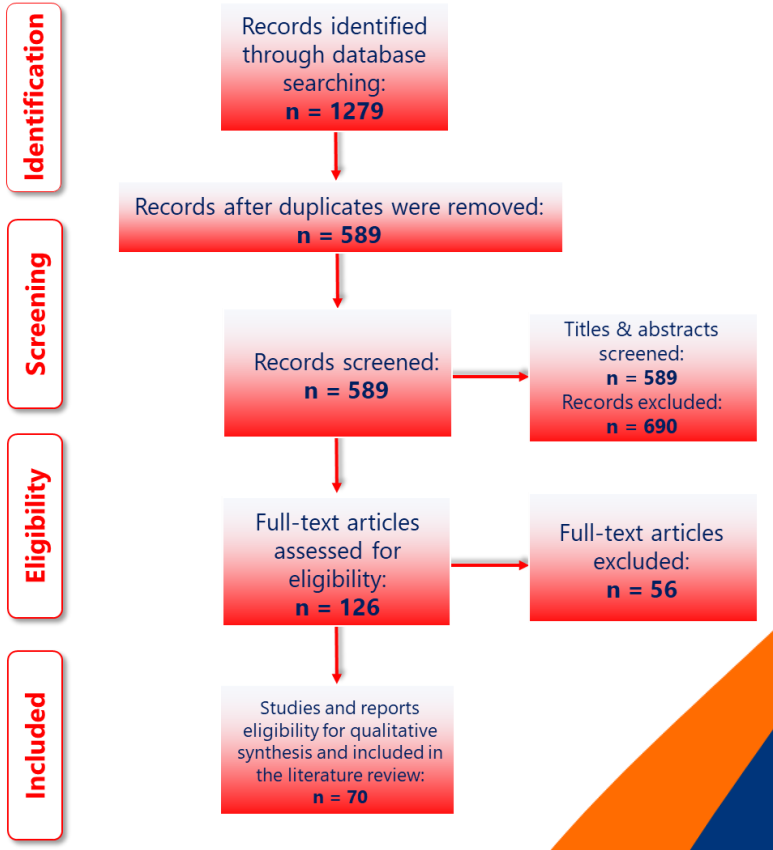
These findings are now **referenced worldwide** to substantiate the need for city-wide 30km/h speed limits, demonstrating driving changes in terms of:

Safety Emissions Energy Traffic Liveability Health

Methodology

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

- 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 included in title, abstract or key words
  - ✓ Studies published from 1992 and onwards
  - ✓ Studies including information with regards to 30 km/h speed limit in the title or abstract
  - ✓ Source: peer-reviewed journals before peer-reviewed conference papers before scientific papers/articles



The PRISMA flowchart

Scientific Evidence on 30km/h City-wide Schemes

Cities with 30 km/h Speed Limit

A/A	City	Implementation Started
40	Amsterdam	December 2023
39	Wales Cities	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

4 Countries adopted/ing Countrywide 30km/h speed limits (in all urban areas)

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)

- Fatalities by 37%
- Serious injuries by 38%
- Road crashes by 23%
- Emissions by 18%
- Noise by 2.5 db
- Fuel consumption by 7%
- Traffic congestion by 2%

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_2, NO_x, 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*

Effectiveness of 30 km/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

Road safety

- decrease average travel speed
- decrease conflicts with VRUs

Environment

- reduce air pollution
- reduce car dependency

Traffic flow

- reduce traffic volumes
- reduce congestion

Energy

- reduce fuel consumption
- promote smoother eco-driving

Sustainability

- increase Public Transport use
- increase pedestrian, cyclists and e-scooter active mobility

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

Cost Benefit Analysis Example

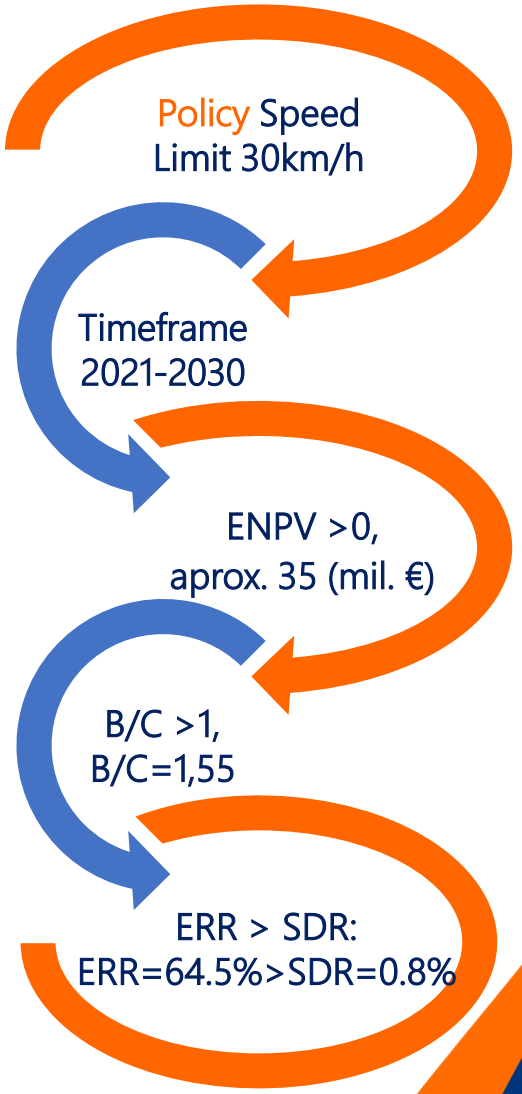
Cost Benefit Analysis Results – Athens (1/2)

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, by including all the Costs (Implementation and Operational) and all the Benefits (Road Crashes, Fuel Consumption, Emissions) which concludes to the following results:

- The most important economic benefit arises due to the improvement of road safety through the reduction of fatalities on road crashes:
  - ✓ Expected Net Present Value (ENPV) > €35 million
  - ✓ Benefit-Cost Ratio (B/C) = 1,55
  - ✓ Economic Rate of Return (ERR) = 64.5%
  - ✓ Social Discount Rate (SDR) = 0.8%

- All the examined policies present a positive ENPV and an ERR higher than the SDR, indicating their feasibility over time



Cost Benefit Analysis Results – Athens (2/2)

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 (with the exception of major axes) 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_2, NO_X και PM
- The traffic congestion change is negligible
- The indirect benefits of increasing the use of Public Transport and active travel are also significant

Benefits from Countrywide New Speed Limits

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 Greece)
- 123 seriously injured (out of 636 in Greece)
- 783 slightly injured (out of 12,533 in Greece)

New Greek Road Code - 30km/h speed limit

The NTUA campaign of 30 Marathons in 30 months played a catalytic role in influencing the Greek Government, which plans to include at the new Greek Road Code:

- The mandatory 30 km/h speed limit in all urban areas in Greece (with the exception of main axes)
- Under final checking by the Government – expected to be voted before summer 2025
- Foreseen to be in force from 1 January 2026
- Accompanied by important measures:
  - a more rational fines system (linked to the severity and the size of the infraction)
  - a large number of speeding monitoring cameras
  - a new digital system for automated processing of fines


30km/h
Speed Limit for
Safer, Healthier and
Greener Cities
30

Conclusion

Contributing Efficiently to Road Safety Culture Change

This highly impactful and innovative successful campaign from NTUA demonstrated that city-wide 30km/h speed limit is:

The since-long waited single road safety measure with such a significant benefit 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

Key Impacts

More livable cities

Speed limits reduction gaining rapid acceptance across Europe and **more and more European cities** adopting lower speed limits

Significant socio-economic impact

The reduction of speed limits in cities (30km/h) leads to a **significant reduction** in:

- road crashes and casualties
- fuel/energy consumption and air pollution without a significant decrease in travel times

Increase of acceptance

- **Public acceptance** of speed limits reduction tends to improve over time, especially by pedestrians, cyclists and Public Transport passengers
- **Inertia and reactions** from car drivers need to be addressed

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

Time for Action at European level

- Speeding, as the key factor for road crashes, must be recognized as a major societal health issue for which action is needed at EU level, as is the case with smoking and alcohol consumption
- Consequently, the European Union should set the maximum speed limits in all European Roads, and national and local Authorities can only make the necessary adjustments of lower speed limits after specific studies
- Given its unprecedented benefits, the city-wide 30km/h speed limits should become a European rule (off course with the exception of selected main axes e.g. roads with a median), with the EU assuming thus its fundamental role of protecting its citizens' lives

More Campaigns to Come

- Life is a Marathon and the efforts to ensure safe roads everywhere and for all continue before, during and after the NTUA campaign of 30 Marathons in 30 months
- The globally recognised research group of the NTUA RSO, together with its extensive network of international collaborations, will persist in scientifically promoting evidence-based solutions for safe, healthy and green mobility
- Particular focus will remain on addressing the five big road killers: speed, drink-and-drive, mobile phone use, non-use of seat belt and helmet

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