

Sustainable Mobility systems

# The Principles of sustainable mobility. How can we make it happen on Tollways?

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# Sustainable Mobility\*

...mobility that meets the needs of society to move freely, gain access, communicate, trade and establish relationships without sacrificing other essential human or ecological requirements today or in the future.

\* Source: World Business Council for Sustainable Development as part of that organization's *Mobility Project 2030*

# Why should we incorporate sustainability into our lives

Sustainability is important because all the choices we pursue and all the actions that we make today will affect everything in the future. We need to make sound decisions at present in order to avoid limiting the choices of generations to come.

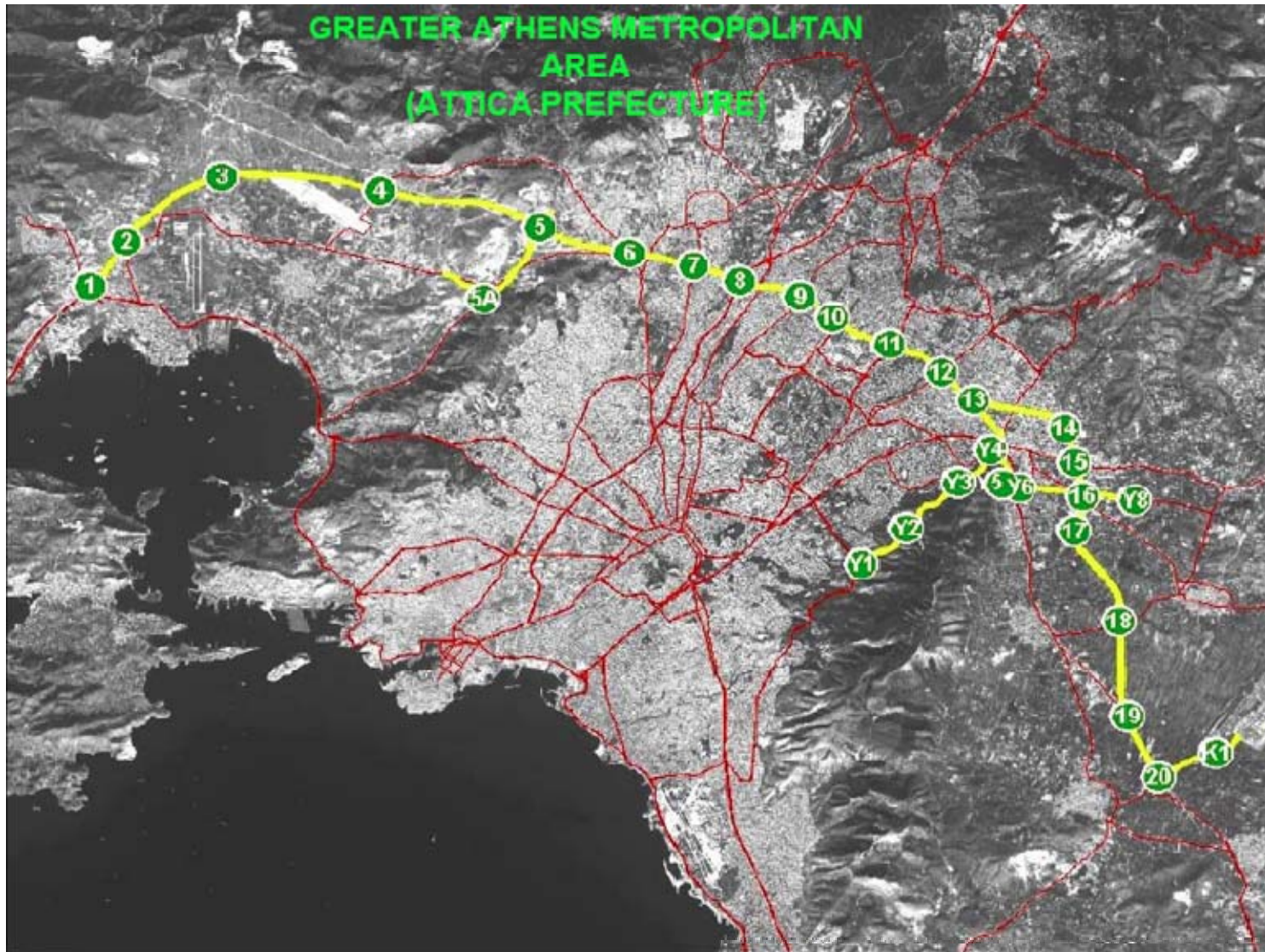
# The principles of sustainable mobility

- Preserve the natural environment
- Maintain human health and safety
- Meet the travel needs of the population
- Support a good economy
- Minimize transport costs for access and mobility
- Minimize infrastructure costs
- Maintain energy security
- Ensure long-term viability

Is it possible to incorporate the principles of sustainable mobility into the operation of the modern motorways?



# Attica Tollway



# Attica Tollway



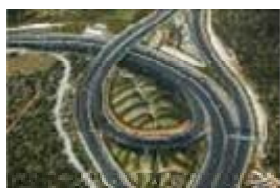
70 km Urban Motorway



A major BOT Project, developed on stages  
 1st Section opened - March 2001  
 Project Completed – June 2004



AADT(2010): 281,000



Number of Toll Stations 39  
 Number of Toll Lanes 195



The suburban railway of Athens has been constructed in the central reservation of the motorway



# Preserve the natural environment

- Mitigation of noise
  - buffer zones and specially-planted slopes provide adequate insulation from noise
  - noise barriers
- Mitigation of air pollution
  - Plantation absorbing traffic-related air pollution
  - Total green areas are twice the total paved areas of Attica Tollway

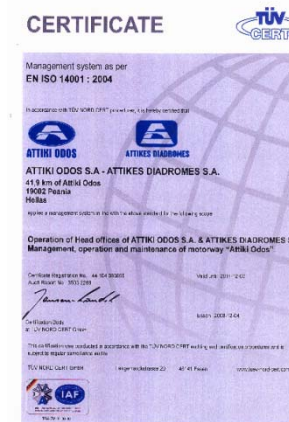




# Preserve the natural environment

Use of energy sources and transport technologies that reduce carbon emissions.

- Use high efficiency cars for motorway operation purposes (patrolling, maintenance etc)
- High Efficiency Electronic tolling (eliminating congestion of vehicles entering the motorway)
- Speed Harmonization system in the tunnels
- Pilot Production of electricity of road lighting by solar panels
- Use of lighting measure devices



# Maintain human health and safety

- TMC based monitoring (full CCTV cover)
- Dense patrolling on 7/24/365 basis
- Constructed on the basis strict international safety specifications.
- High quality skid resistant asphalt pavement
- Full crash barrier fencing installed.
- Sufficient and effective lighting along the motorway.



# Maintain human health and safety

From Employees perspective

- Implementation of the strict operational procedures
- BS OHSAS 18001: 2007 Health & Safety Certification





# Meet the travel needs of the population

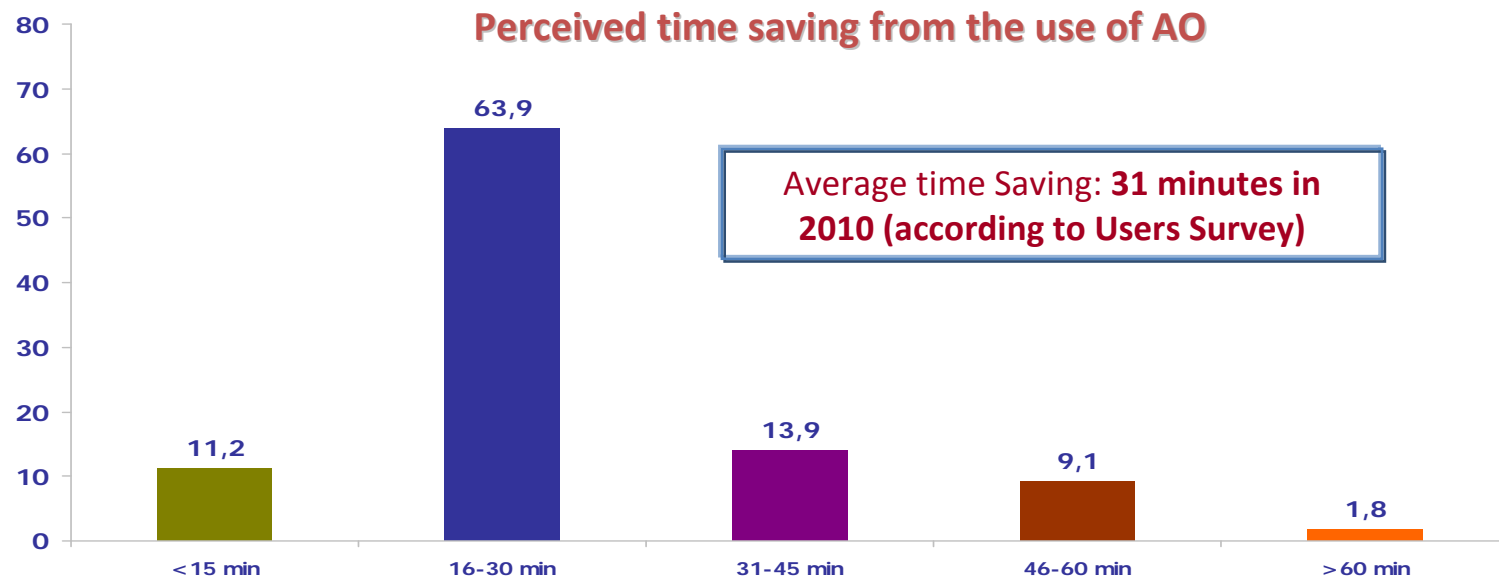
- The location of Attica Tollway enables cross-modal integration in order to improve effectiveness of modes and increase user choice.
- The suburban railway of Athens has been constructed in the central reservation strip of the motorway.





# Support a good economy

- Attica Tollway is the congestion free alternative route to and from city centre. It provides direct links with the interurban national motorway network and direct access to the new Athens International Airport.
- Travel Time reliability
- Significant time savings



# Minimize transport costs for access and mobility

- Contribution to integration of services and infrastructure across modes to increase effectiveness and reduce time of travel.
  - Effective connection of motorways with suburban railways, metro, buses etc
  - Provision of direct access to large scale traffic generators (stadiums, shopping malls etc)

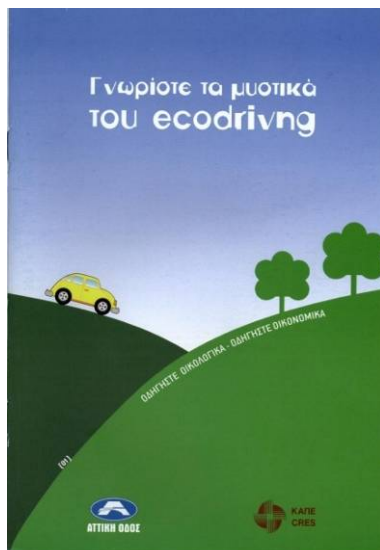
## Minimize infrastructure costs

- Application of travel demand management strategies to ensure efficient use of infrastructure such as ramp metering.
  - Our future plans include:
    - Dynamic Re-routing Information
    - Temporary Hard Shoulder Use
    - Real time Information
    - Managed Lanes
    - Different toll rates for peak hours
- Effective maintenance of the infrastructure (preventive against remedial maintenance)



# Maintain energy security

- Incorporate in the everyday operation the use of alternatives to fossil fuels and renew the fleet with more effective technologies
- Eco-driving strategies and campaigns





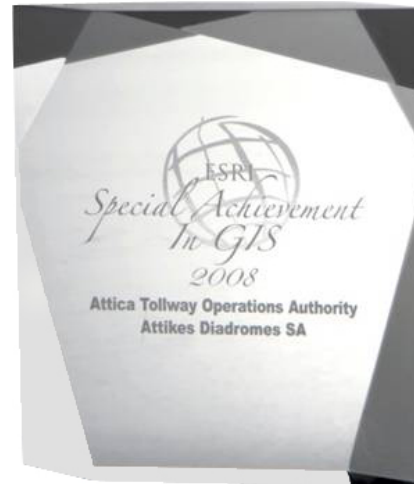
## Ensure long-term viability

- The funding streams for the long term operation of Attica Tollway are part of the long term tolling strategy
- Additionally, the application of several “sustainable” processes contribute also to operational cost savings (for example use of solar panels, LEB bulbs etc)

# Awards from International Organizations



**Prize Décibel d' Or**  
Conseil National de Bruit (CNB)  
Paris, France.



**1<sup>st</sup> Prize  
Special Achievement  
in GIS**  
Environmental Systems  
Research Institute (ESRI)  
San Diego, CA, USA



**Global Road  
Achievement Award in  
Environmental  
Mitigation**  
International Road  
Federation (IRF),  
Washington DC, USA



**1<sup>st</sup> Prize European Road  
Safety Award**  
International Road  
Federation (IRF) European  
Road Federation (ERF)  
Amsterdam, Netherlands

# Conclusions

Maintaining safe and high-quality infrastructures, implementing innovative systems providing our customers comfortable and safe driving conditions, enhancing personnel safety.

Making Attica Tollway a shared and completely safe space are among the numerous initiatives launched to address the critical issue of sustainable mobility for Attica Tollway.

# Attica Tollway...paving the way



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