



ΠΡΟΤΥΠΑ ΓΙΑ ΒΙΩΣΙΜΕΣ ΚΑΙ ΕΞΥΠΝΕΣ ΠΟΛΕΙΣ - ΕΣΥΠ / ΕΛΟΤ

ΣΥΓΚΟΙΝΩΝΙΕΣ – ΜΕΤΑΦΟΡΕΣ ΣΤΙΣ ΠΟΛΕΙΣ – ΠΡΟΤΑΣΕΙΣ ΓΙΑ ΔΕΙΚΤΕΣ ΕΠΙΔΟΣΕΩΝ

ΑΛΕΞΑΝΔΡΟΣ ΔΕΛΟΥΚΑΣ
ΠΟΛ. ΜΗΧΑΝΙΚΟΣ – ΣΥΓΚΟΙΝΩΝΙΟΛΟΓΟΣ
ΑΤΤΙΚΟ ΜΕΤΡΟ Α.Ε.

ΕΙΕ, 13 ΟΚΤΩΒΡΙΟΥ 2017

UITP MOBILITY IN CITIES DATABASE – ATHENS

- Δείκτες επιδόσεων προσφοράς υποδομών δημοσίων μεταφορών
- Δείκτες επιδόσεων ιδιόκτητων ιδιωτικών μέσων μεταφοράς
- Λοιποί δείκτες επιδόσεων προσφοράς

Athens		
Standardised Indicator	Value	Unit
Supply indicators		
Private Transport Infrastructure Indicators		
Length of road per 1000 people	4 519.66	m/1000 persons
Length of freeway per 1000 people	38.67	m/1000 persons
Length of road per urban hectare	313.83	m/ha
Length of freeway per urban hectare	2.69	m/ha
Parking spaces per 1000 CBD jobs	224.77	spaces/1000 jobs
Public Transport Infrastructure Indicators		
Total length of public transport lines per 1000 people	1 307.30	m/1000 persons
Total length of reserved public transport routes per 1000 people	55.31	m/1000 persons
* Bus reserved route length per 1000 people	2.89	m/1000 persons
* Minibus reserved route length per 1000 people	N.A.	m/1000 persons
* Segregated tram network length per 1000 people	N.A.	m/1000 persons
* Light rail network length per 1000 people	N.A.	m/1000 persons
* Metro network length per 1000 people	7.50	m/1000 persons
* Suburban rail network length per 1000 people	44.92	m/1000 persons
* Heavy rail network length per 1000 people	52.42	m/1000 persons
Total length of reserved public transport routes per urban hectare	3.84	m/ha
* Bus reserved route length per urban hectare	0.20	m/ha
* Minibus reserved route length per urban hectare	N.A.	m/ha
* Segregated tram network length per urban hectare	N.A.	m/ha
* Light rail network length per urban hectare	N.A.	m/ha
* Metro network length per urban hectare	0.52	m/ha
* Suburban rail network length per urban hectare	3.12	m/ha
* Heavy rail network length per urban hectare	3.64	m/ha
Intermodal Transport Infrastructure Indicators		
Number of park and ride facilities per kilometre of reserved public transport	0.02	facilities/km
Number of park and ride spaces per kilometre of reserved public transport	6.52	spaces/km
Number of park and ride facilities per 10.000 urban hectare	0.60	facilities/10000 ha
Car equivalents per number of park and ride spaces	888.00	units/space
Private transport supply (cars and motorcycles)		
Passenger cars per 1000 people	303.04	units/1000 people
Motor cycles per 1000 people	57.72	units/1000 people
Total private passenger vehicles per 1000 people	360.76	units/1000 people
Passenger car kilometres per car	11 764.24	km/unit
Motor cycle kilometres per motor cycle	8 964.36	km/unit
Total private passenger vehicle kilometres per vehicle	11 316.26	km/unit
Private collective transport supply (taxis and shared taxis)		
Taxis per million people	4 329.17	units/10 ⁶ persons
Shared taxis per million people	0.00	units/10 ⁶ persons
Taxi vehicle kilometres per capita	346.33	v.km/person
Shared taxi vehicle kilometres per capita	0.00	v.km/person
Traffic Intensity Indicators		
Passenger cars per kilometre of road	67.05	units/km
Motor cycles per kilometre of road	12.77	units/km
Total private passenger vehicles per kilometre of road	70.88	unit equivalents/km
Total single and collective private passenger vehicles per kilometre of road	71.84	unit equivalents/km
Passenger car kilometres per kilometre of road	788 790.35	v.km/km

Source : Union International des Transports Publics / UITP, The Millenium Cities Database for Sustainable Transport, uitp.org/MCD

UITP MOBILITY IN CITIES DATABASE – ATHENS

- Δείκτες επιδόσεων ζήτησης για δημόσιες μεταφορές

Athens		
Standardised Indicator	Value	Unit
Public Transport Supply and Service		
Total public transport vehicles per million people	705.16	units/10 ⁶ persons
* Buses per million people	634.37	units/10 ⁶ persons
* Minibuses per million people	N.A.	units/10 ⁶ persons
* Tram units per million people	N.A.	units/10 ⁶ persons
* Light rail units per million people	N.A.	units/10 ⁶ persons
* Metro units per million people	62.34	units/10 ⁶ persons
* Suburban rail units per million people	8.45	units/10 ⁶ persons
* Heavy rail units per million people	70.79	units/10 ⁶ persons
Total public transport vehicle kilometres of service per capita	37.29	v.km/person
* Bus vehicle kilometres per capita	32.32	v.km/person
* Minibus vehicle kilometres per capita	N.A.	v.km/person
* Tram wagon kilometres per capita	N.A.	v.km/person
* Light rail wagon kilometres per capita	N.A.	v.km/person
* Metro wagon kilometres per capita	4.33	v.km/person
* Suburban rail wagon kilometres per capita	0.64	v.km/person
* Heavy rail wagon kilometres per capita	4.97	v.km/person
Total public transport vehicle kilometres of service per urban hectare	2 589.32	v.km/ha
* Bus vehicle kilometres per urban hectare	2 244.49	v.km/ha
* Minibus vehicle kilometres per urban hectare	N.A.	v.km/ha
* Tram wagon kilometres per urban hectare	N.A.	v.km/ha
* Light rail wagon kilometres per urban hectare	N.A.	v.km/ha
* Metro wagon kilometres per urban hectare	300.60	v.km/ha
* Suburban rail wagon kilometres per urban hectare	44.23	v.km/ha
* Heavy rail wagon kilometres per urban hectare	344.83	v.km/ha
Total public transport seat kilometres of service per capita	989.59	seat km/person
* Bus seat kilometres per capita	772.04	seat km/person
* Minibus seat kilometres per capita	N.A.	seat km/person
* Tram seat kilometres per capita	N.A.	seat km/person
* Light rail seat kilometres per capita	N.A.	seat km/person
* Metro seat kilometres per capita	173.17	seat km/person
* Suburban rail seat kilometres per capita	44.38	seat km/person
* Heavy rail seat kilometres per capita	217.55	seat km/person
Overall average speed of public transport	20.00	km/h
* Average speed of buses	18.00	km/h
* Average speed of minibuses	N.A.	km/h
* Average speed of trams	N.A.	km/h
* Average speed of light rail	N.A.	km/h
* Average speed of metro	30.00	km/h
* Average speed of suburban rail	58.00	km/h
* Average speed of heavy rail	33.59	km/h
Mobility Indicators		
Overall mobility		
Daily trips by foot per capita	0.20	trips/person
Daily trips by mechanized, non motorised modes per capita	0.03	trips/person
Daily public transport trips per capita	0.43	trips/person
Daily private transport trips per capita	1.27	trips/person
Total daily trips per capita	1.93	trips/person



UITP MOBILITY IN CITIES DATABASE – ATHENS

- Δείκτες επιδόσεων ζήτησης καταμερισμού στα μέσα

Athens		
Standardised Indicator	Value	Unit
Mode split of mechanised trips		
* Percentage of mechanised, non motorised modes over mechanised	1.51	%
* Percentage of motorised public modes over mechanised trips	24.86	%
* motorised private modes	73.63	%
Overall average trip distance	9.00	km
Overall average trip distance by car	12.10	km
Overall average trip distance by public transport	6.12	km
Average distance of mechanised trips	10.30	km
Overall average distance of the journey-to-work	8.40	km
Average distance of the journey-to-work by mechanised modes	9.40	km
Average time of a car trip	27.00	minutes
Average time of a public transport trip	20.00	minutes
Private Mobility Indicators (cars and motorcycles)		
Passenger car kilometres per capita	3 565.06	v.km/person
Motor cycle kilometres per capita	517.44	v.km/person
Total private passenger vehicle kilometres per capita	4 082.50	v.km/person
Passenger car passenger kilometres per capita	4 527.63	p.km/person
Motor cycle passenger kilometres per capita	582.12	p.km/person
Total private passenger kilometres per capita	5 109.75	p.km/person
Private Mobility Indicators (taxis and shared taxis)		
Taxi passenger kilometres per capita	519.50	p.km/person
Shared taxi passenger kilometres per capita	0.00	p.km/person
Taxi trips per capita	71.58	trips/person
Shared taxi trips per capita	0.00	trips/person
Public Transport Mobility Indicators		
Total public transport boardings per capita	225.46	boardings/person
* Bus boardings per capita	195.10	boardings/person
* Minibus boardings per capita	N.A.	boardings/person
* Tram boardings per capita	N.A.	boardings/person
* Light rail boardings per capita	N.A.	boardings/person
* Metro boardings per capita	30.02	boardings/person
* Suburban rail boardings per capita	0.34	boardings/person
* Heavy rail boardings per capita	30.36	boardings/person
Total public transport passenger kilometres per capita	957.59	p.km/person
* Bus passenger kilometres per capita	721.53	p.km/person
* Minibus passenger kilometres per capita	N.A.	p.km/person
* Tram passenger kilometres per capita	N.A.	p.km/person
* Light rail passenger kilometres per capita	N.A.	p.km/person
* Metro passenger kilometres per capita	230.89	p.km/person
* Suburban rail passenger kilometres per capita	5.17	p.km/person
* Heavy rail passenger kilometres per capita	236.06	p.km/person
User cost of transport		
Average user cost of a car trip	259.88	10 ⁻⁴ % per capita GDP/trip
Average user cost of a public transport trip	19.95	10 ⁻⁴ % per capita GDP/trip
Price of fuel per km	70.60	10 ⁻⁵ % per capita GDP/km
User cost of private transport per passenger kilometre	214.77	10 ⁻⁵ % per capita GDP/km
User cost of public transport per passenger kilometre	32.63	10 ⁻⁵ % per capita GDP/km
Maximum charge for on-street parking in the CBD	73.33	10 ⁻⁴ % per capita GDP/h

UITP MOBILITY IN CITIES DATABASE – ATHENS

- Δείκτες επιδόσεων ατυχημάτων

Athens		
Standardised Indicator	Value	Unit
Transport Externalities Indicators		
Transport Energy Indicators		
Private passenger transport energy use per capita	13 362.71	MJ/person
Public transport energy use per capita	602.02	MJ/person
Total transport energy use per capita	13 964.73	MJ/person
Energy use per private passenger vehicle kilometre	3.02	MJ/km
Energy use per public transport vehicle kilometre	16.14	MJ/km
* Energy use per bus vehicle kilometre	17.11	MJ/km
* Energy use per minibus vehicle kilometre	N.A.	MJ/km
* Energy use per tram wagon kilometre	N.A.	MJ/km
* Energy use per light rail wagon kilometre	N.A.	MJ/km
* Energy use per metro wagon kilometre	6.93	MJ/km
* Energy use per suburban rail wagon kilometre	29.86	MJ/km
* Energy use per heavy rail wagon kilometre	9.87	MJ/km
Energy use per private passenger kilometre	2.37	MJ/p.km
Energy use per public transport passenger kilometre	0.63	MJ/p.km
* Energy use per bus passenger kilometre	0.77	MJ/p.km
* Energy use per minibus passenger kilometre	N.A.	MJ/p.km
* Energy use per tram passenger kilometre	N.A.	MJ/p.km
* Energy use per light rail passenger kilometre	N.A.	MJ/p.km
* Energy use per metro passenger kilometre	0.13	MJ/p.km
* Energy use per suburban rail passenger kilometre	3.68	MJ/p.km
* Energy use per heavy rail passenger kilometre	0.21	MJ/p.km
Overall energy use per passenger kilometre	2.12	MJ/p.km
Air Pollution Indicators		
Total emissions per capita		
* Emissions of CO per capita	194.09	kg/person
* Emissions of SO ₂ per capita	0.51	kg/person
* Emissions of VHC per capita	29.22	kg/person
* Emissions of NO _x per capita	10.10	kg/person
Total emissions per urban hectare	16 242.48	kg/ha
Total emissions per total hectare	3 197.24	kg/ha
Transport Fatalities Indicators		
Total transport deaths per million people	220.93	deaths/10 ⁶ persons
Total transport deaths per billion vehicle kilometres	49.47	deaths/10 ⁹ v.km
Total transport deaths per billion passenger kilometres	33.54	deaths/10 ⁹ p.km
Public/Private Transport Balance Indicators		
Proportion of total motorised passenger kilometres on public transport	14.54	%
Ratio of public versus private transport speeds	0.80	
Ratio of annual investment in public transport versus private transport infra	1.73	
Ratio of segregated public transport infrastructure versus expressways	1.43	
Ratio of public versus private transport energy use per passenger kilometre	0.26	
Ratio of public vs private transport total cost	0.00	
Ratio of public versus private transport user cost per passenger kilometre	0.02	



ΑΘΗΝΑ – ΔΕΙΚΤΕΣ ΕΠΙΔΟΣΕΩΝ ΤΟΜΕΑ ΜΕΤΑΦΟΡΩΝ ΠΡΟΤΥΠΟΥ ISO 37101

- Πληθυσμός Περιφέρειας Αττικής 3.828.434 (Απογραφή 2011)

Πηγή : statistics.gr/el/statistics/-/publication/SAM03/-

- Χιλιόμετρα συστήματος δημοσίων μεταφορών υψηλής χωρητικότητας ανά 100.000 κατοίκους

- 3 γραμμές μετρό 82,5 χλμ

- 3 γραμμές τραμ 25,3 χλμ

- 2 γραμμές προαστιακού 205 χλμ

312,8 χλμ

ΔΕΙΚΤΗΣ 2017 = 8,17

Πηγή : MDS (2017), Existing Transport Conditions, Attica Transportation Model Update, Attiko Metro

ΑΘΗΝΑ – ΔΕΙΚΤΕΣ ΕΠΙΔΟΣΕΩΝ ΤΟΜΕΑ ΜΕΤΑΦΟΡΩΝ ΠΡΟΤΥΠΟΥ ISO 37101

➤ Χιλιόμετρα ελαφρού συστήματος επιβατικών δημοσίων μεταφορών ανά 100.000 κατοίκους

- 255 γραμμές λεωφορείων 5.680 χλμ. δικτύου
 - 19 γραμμές τρόλλευ 352 χλμ. δικτύου
- 6.032 χλμ. δικτύου ΔΕΙΚΤΗΣ 2015 = 157,56

Πηγή : OASA Activities Report 2015 (oasa.gr/content.php?id=os)

Σημείωση : Η χωρητικότητα γραμμής τραμ είναι 4πλάσια εκείνης τυπικού 12μετρου λεωφορείου → το τραμ είναι μέσο υψηλής χωρητικότητας

Πηγή : Transit Capacity and Quality of Service Manual, TCRP Report 100, Transportation Research Board, Washington D.C.

ΑΘΗΝΑ – ΔΕΙΚΤΕΣ ΕΠΙΔΟΣΕΩΝ ΤΟΜΕΑ ΜΕΤΑΦΟΡΩΝ ΠΡΟΤΥΠΟΥ ISO 37101

➤ Ετήσιος αριθμός μετακινήσεων ανά κάτοικο για τις δημόσιες μεταφορές

- 630.951.459 μετακινήσεις Δ.Μ. ΔΕΙΚΤΗΣ 2015 = 164,8

Πηγή : OASA, Activities Report 2015

➤ Αριθμός ιδιωτικών αυτοκινήτων ανά κάτοικο

- Κυκλοφορούντα ΙΧ στην Αττική ανά κάτοικο (2014): 0.384

Πηγή : WWF Greece (2014), Travel Modes and Urban Cycling in “Better Life” Programme, Public Issue survey, Athens

➤ Ποσοστό μετακινούμενων ατόμων με σκοπό την εργασία που χρησιμοποιούν τρόπο μετακίνησης διαφορετικό από ιδιωτικό όχημα

ΔΕΙΚΤΗΣ 2015 = 63%

Πηγή : DELOUKAS, A. (2015) “Should We Promote Cycle Infrastructure in Athens? – A Total Cost Analysis “, 7th International Transport Research Congress, Athens, November 2015

ΑΘΗΝΑ – ΔΕΙΚΤΕΣ ΕΠΙΔΟΣΕΩΝ ΤΟΜΕΑ ΜΕΤΑΦΟΡΩΝ ΠΡΟΤΥΠΟΥ ISO 37101

➤ Αριθμός μηχανοκίνητων δικύκλων ανά κάτοικο

- Περιφέρεια Αττικής (2016) : 734.461

ΔΕΙΚΤΗΣ = 0,192

Πηγή : [statistics.gr/el/statistics/-/publication/SME 18/-](http://statistics.gr/el/statistics/-/publication/SME%2018/)

➤ Χιλιόμετρα ποδηλατοδρόμων ανά 100.000 κατοίκους

- Αττική 2015 : 73 χλμ.

ΔΕΙΚΤΗΣ = 1,91

Πηγή : ATHANASSOPOULOS, K. (2015), Greek Cycling Facilities
e-Map Platform in : smu.gr/article.php?story=20150611042050813, accessed 11.06.2015

ΑΘΗΝΑ – ΔΕΙΚΤΕΣ ΕΠΙΔΟΣΕΩΝ ΤΟΜΕΑ ΜΕΤΑΦΟΡΩΝ ΠΡΟΤΥΠΟΥ ISO 37101

➤ Θανατηφόρα ατυχήματα οδικού δικτύου ανά 100.000 κατοίκους

- Νομαρχία Αθηνών (2015) : 107
- Νομαρχία Αν. Αττικής (2015) : 51
- Νομαρχία Δυτ. Αττικής (2015) : 16
- Νομαρχία Πειραιώς (2015) : 33

207

ΔΕΙΚΤΗΣ 2015 = 5,41

Πηγή : statistics.gr/el/statistics/-/publication/SDT04/

➤ Αριθμός απευθείας αεροπορικών συνδέσεων

- Εθνικές 34
- Ευρωπαϊκές 64
- Υπερατλαντικές 20

118

ΔΕΙΚΤΗΣ ΦΘΙΝΟΠΩΡΟΥ 2017 = 118

Πηγή : aia.gr/traveler/flight-info/direct-flight