



Athens Municipality



Department of Transportation
Planning and Engineering NTUA

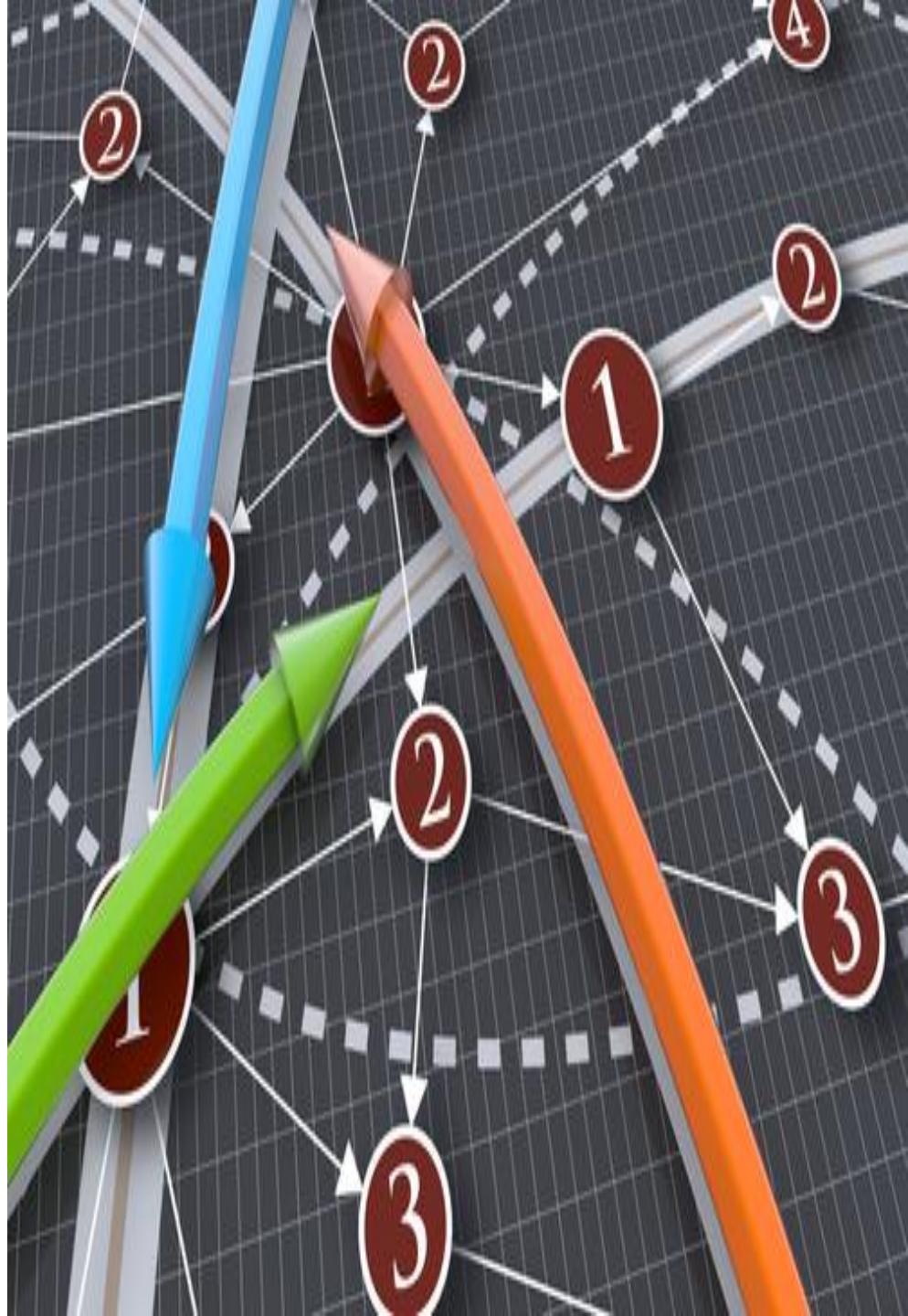
Athens Great Walk

George Yannis
NTUA Professor

Municipality of Athens City Council
Athens, 11 May 2020

Outline

- Objective and **Framework** of Interventions (4)
- Traffic **Conditions today** in Athens and Internationally (9)
- **Mobility** Interventions (17)
- Traffic **Impact** Assessment (22)
- **Conclusions** (4)



Objective and Framework of Interventions

- 
- Objective of Interventions
 - Framework of Interventions
 - Opportunities for Mobility

Objective of Interventions

- **Hospitals relief** by reducing road accidents
- **Avoiding crowding** in public transport by promoting alternative modes of transport (pedestrians, bicycles)
- **Social distance** in public space (pedestrians)



Opportunity for a new mobility policy

- The health crisis has led to a **collapse in travel demand** and traffic load and a return to 'new normality' may take a long time
- The Athens Municipality disposes advanced maturity studies for **major mobility interventions** in the center of Athens
- It is an opportunity, a part of the space temporarily freed from passenger cars, to be assigned to the proposed interventions, which can be **implemented immediately, together with gradual return** to the new normality
- This period is a unique opportunity for the **smooth implementation of the interventions** (as pilot), so that residents and visitors can return to a new Athens with new opportunities for mobility and the market.

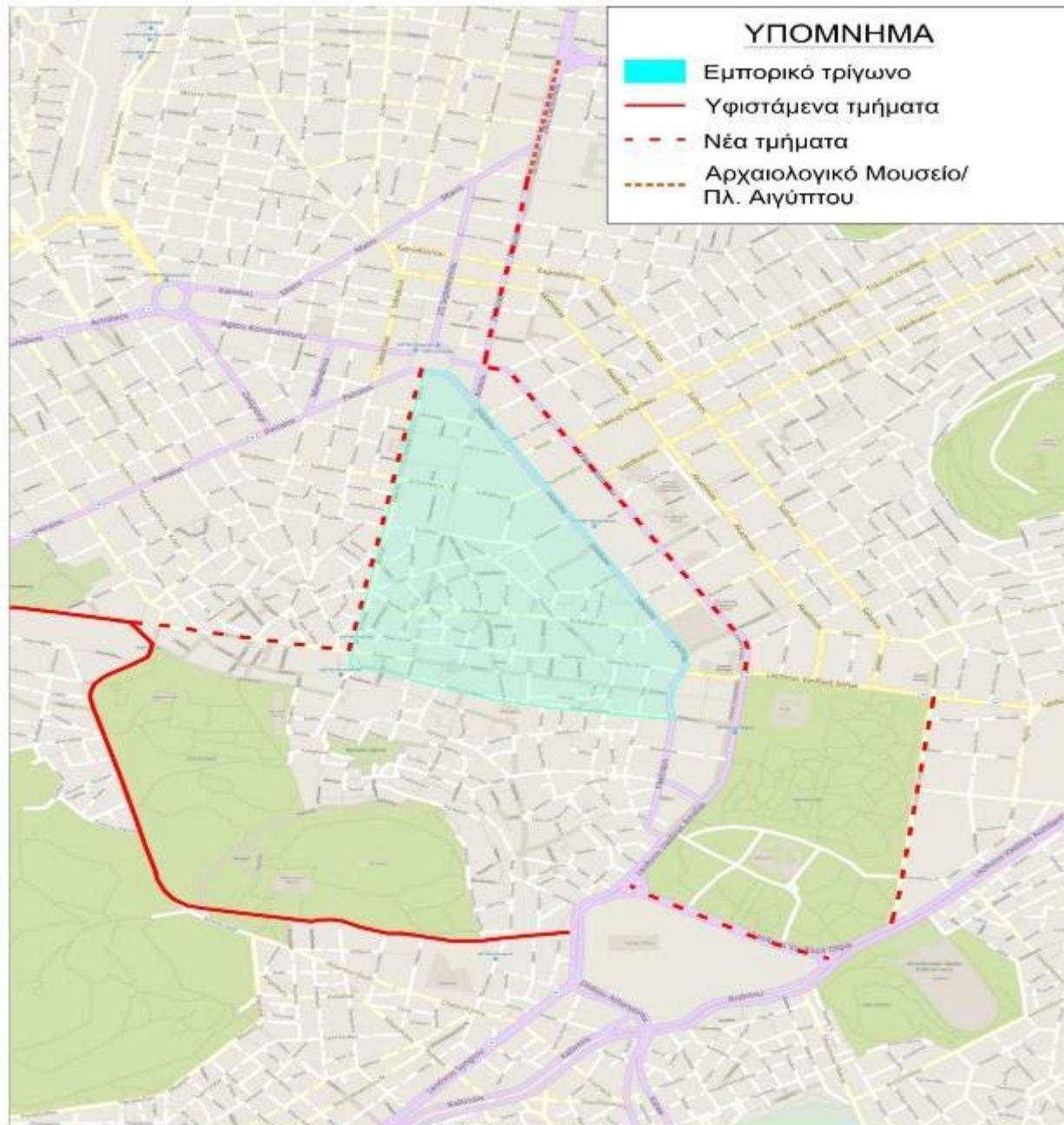


Framework of Interventions

The interventions are part of the **new policy of upgrading the Public Space** in Athens consisting of two major urban interventions:

- **The Athens Great Walk**
(upgrade and regeneration of road and pavement infrastructure)
- **Commercial Triangle and Plaka free of vehicles** (special traffic and parking regulations)

Regain of public space from passenger cars



Ultimate Purpose of Interventions

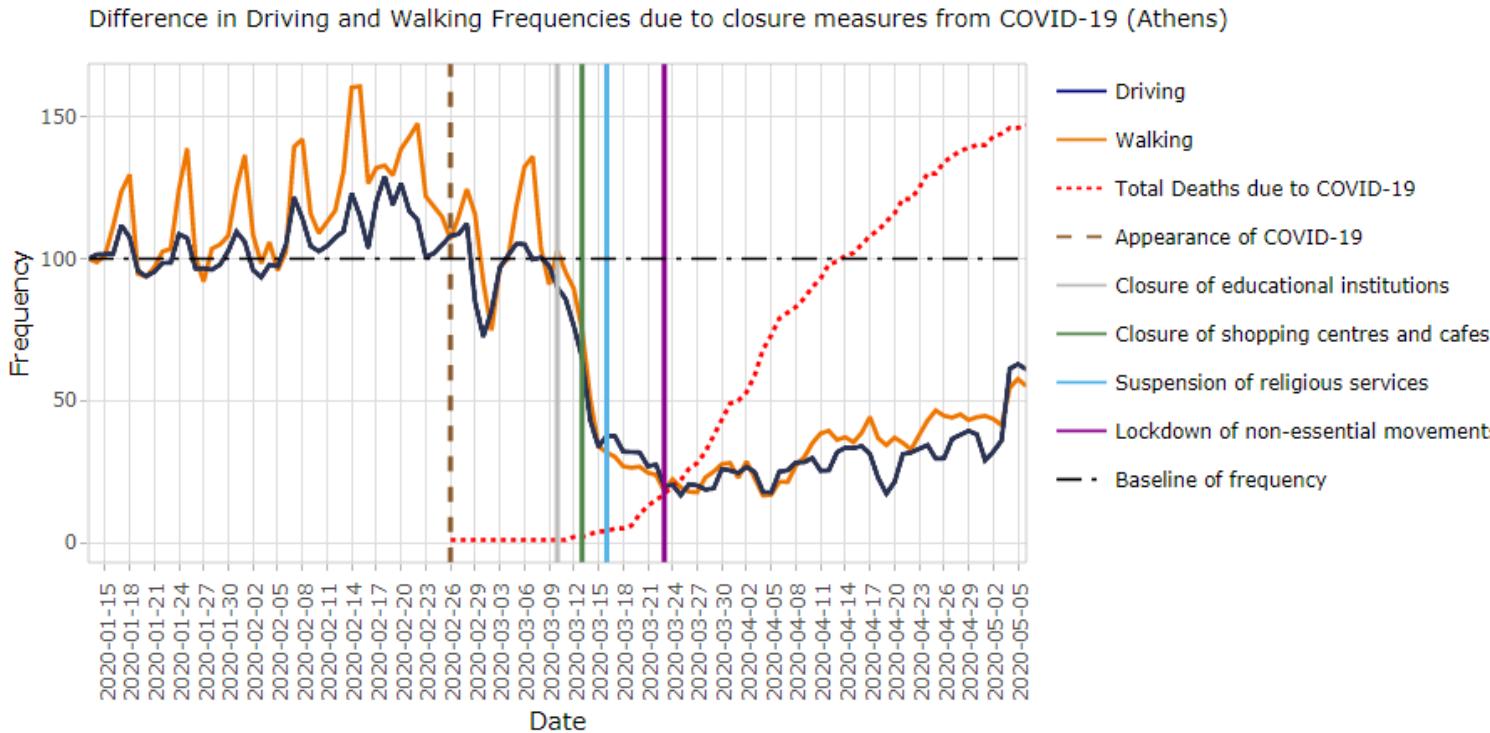
- New quality in urban mobility
 - Comfortable Trips
 - Green Trips
 - Safe Trips
 - Market stimulus (trade, tourism)
 - New modern image of the city
- The proposed interventions are part of the new mobility policy of Athens City, and are harmonized with both the under development **Sustainable Urban Mobility Plan** and the related trends in European cities.



Traffic Conditions today in Athens

- 
- A grayscale map of the city of Athens, showing a dense network of roads and highways. The map is centered on the city's central business district and extends to the surrounding urban areas and hills.
- Travelling
 - Speed
 - Road Accidents

Short term traffic trends in Athens

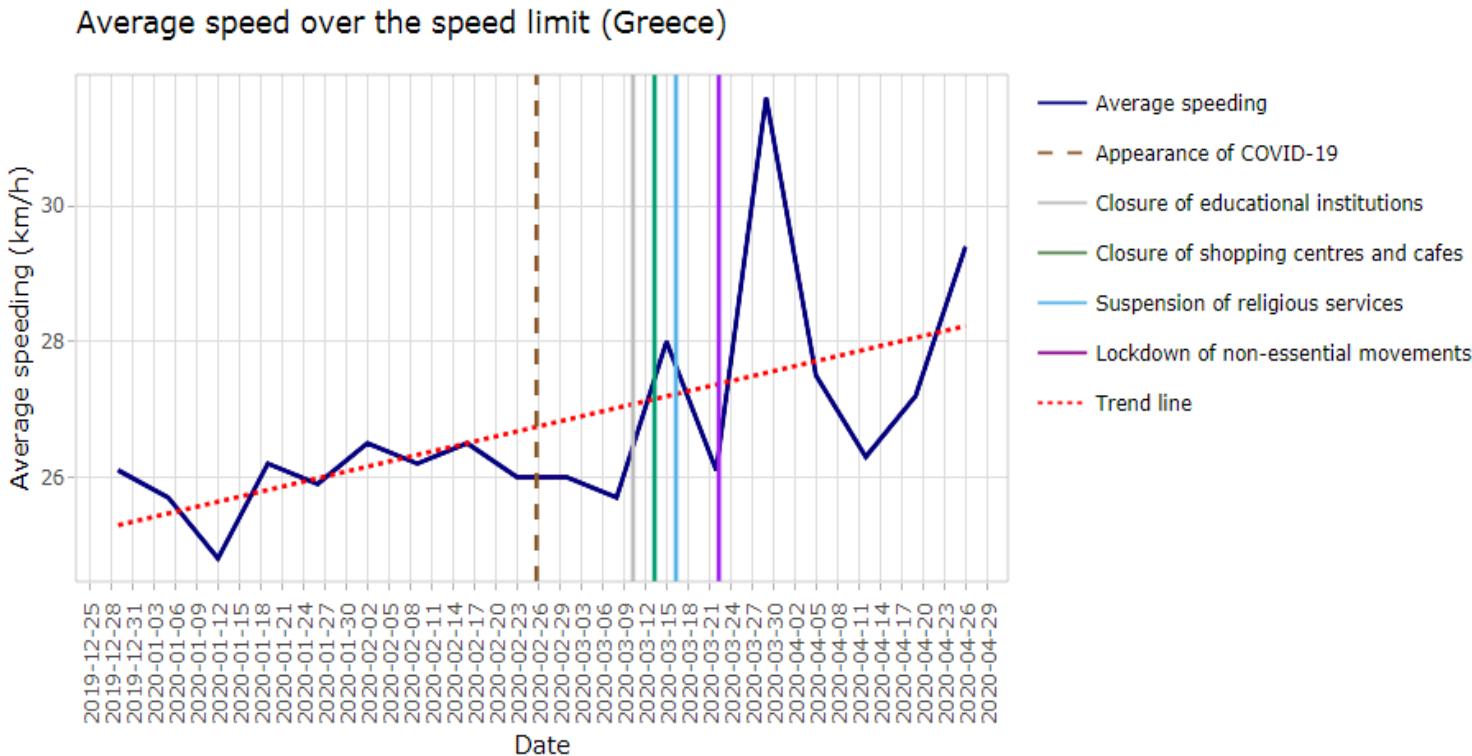


- **46.26% reduction in driving trips and 42.54% reduction in pedestrian trips in March compared to February**
- **Significant 74.37% reduction in driving trips and 72.18% reduction in pedestrian trips in April compared to February**

Source: Apple



Speed Limit Overrun Evolution - Greece

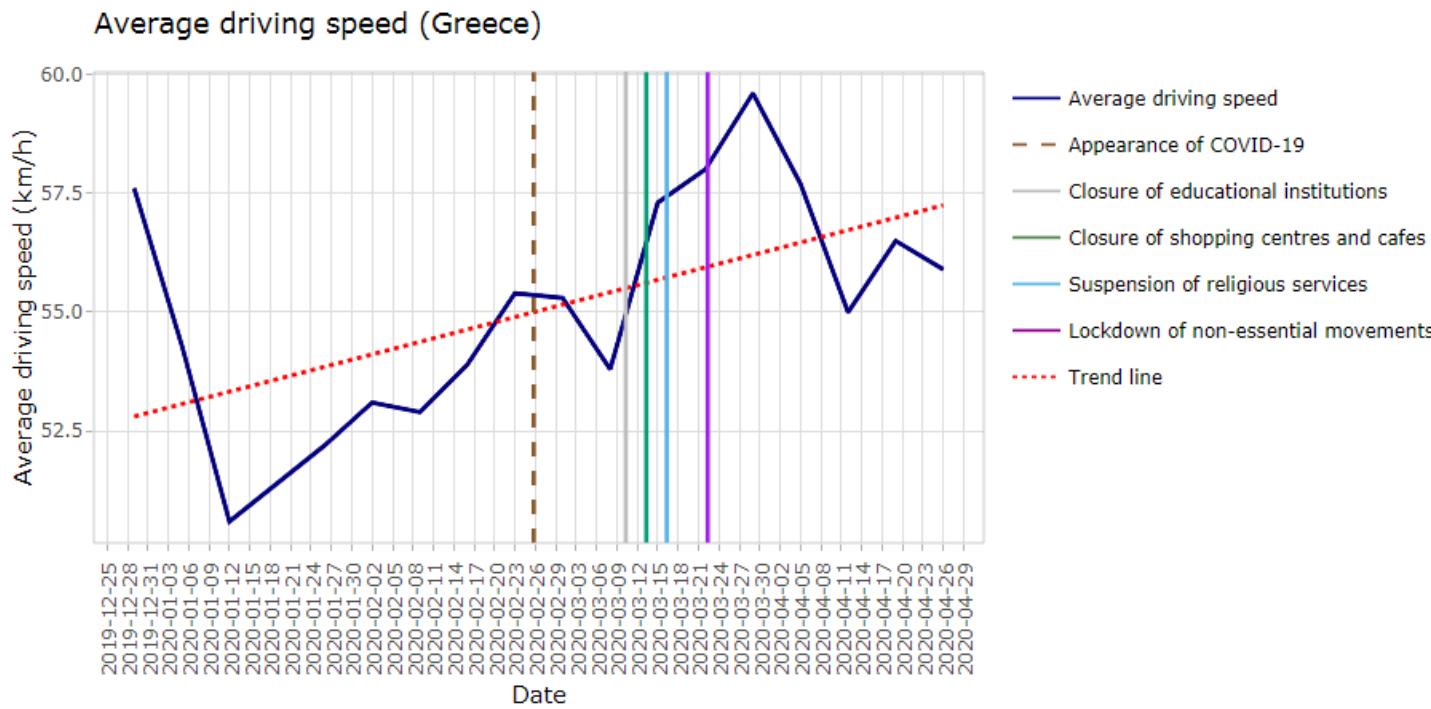


- A 2% increase in the average speed limit exceeded in March compared to February
- A remarkable 7% increase in the average speed limit exceeded in April compared to February

Source: OSeven



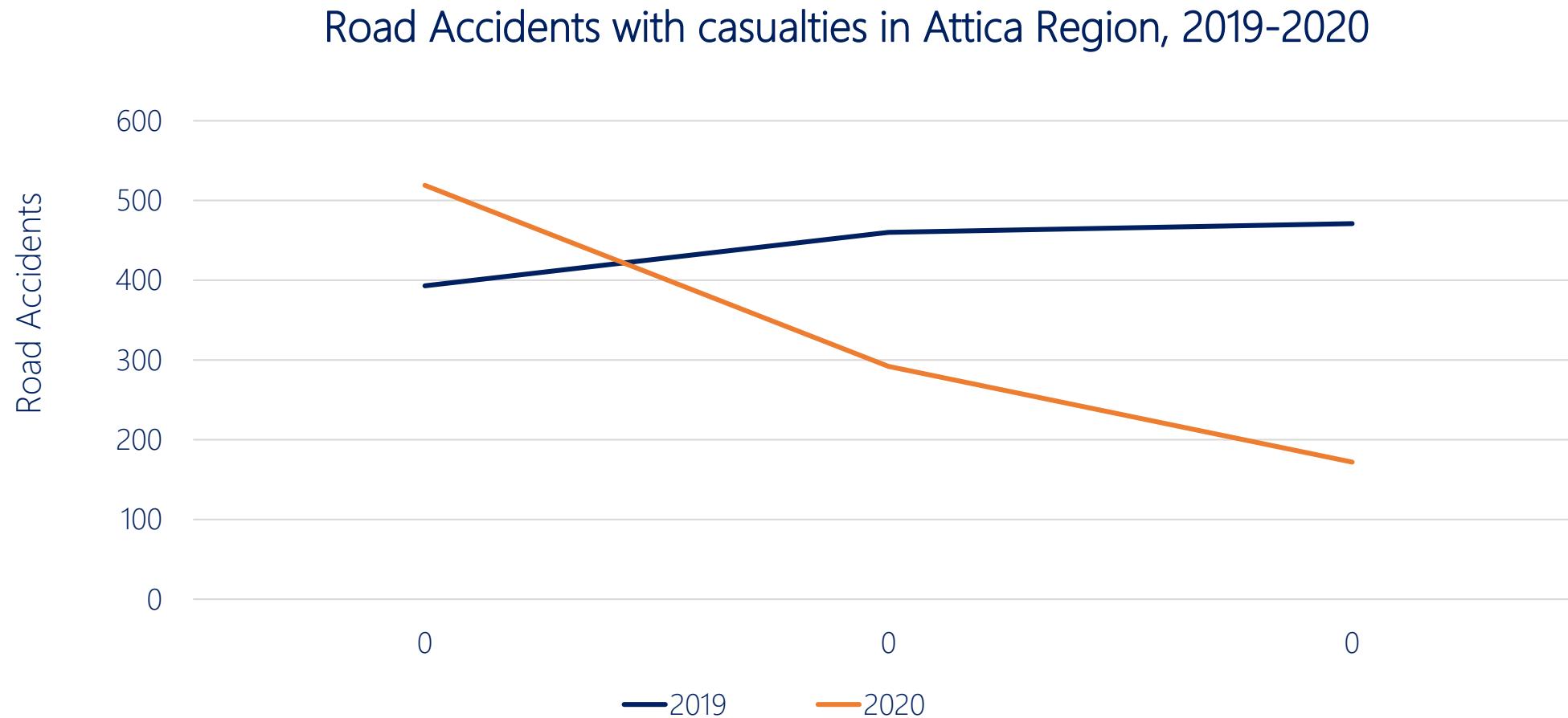
Average Speed Evolution - Greece



- 4% increase in average speed occurred in March compared to February
- A significant 6% increase in average speed was detected in April compared to February

Source: OSeven

Road Accidents in Attica Region (1/2)



Source: Attica Traffic Police



Road Accidents in Attica Region (2/2)

Road Accidents	March			April		
	2019	2020	Change	2019	2020*	Change*
Fatal	15	7	-53%	15	2	-87%
with serious injuries	13	10	-23%	14	6	-57%
with slight injuries	432	275	-36%	442	164	-63%
Total	460	292	-37%	471	172	-63%

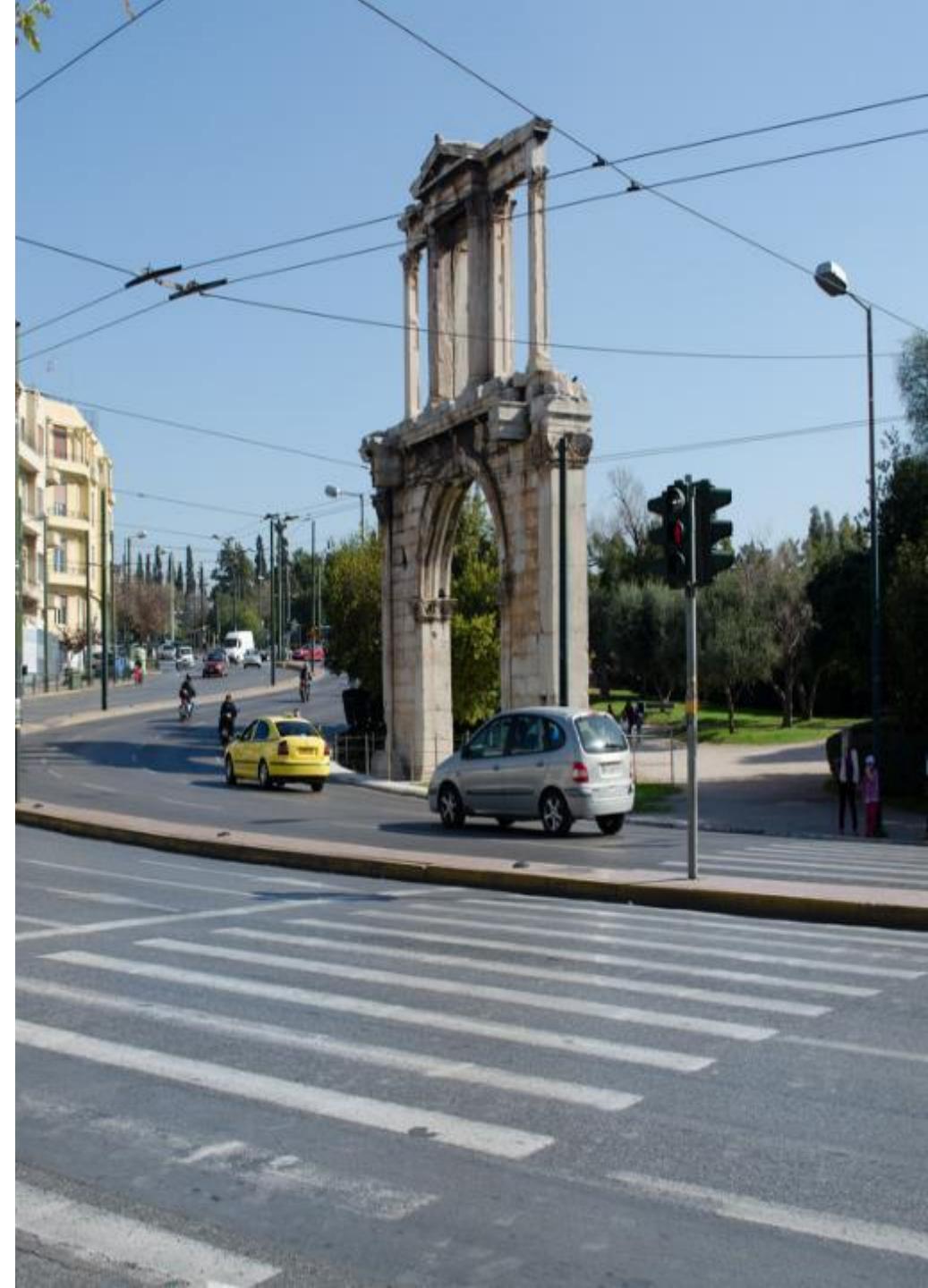
Source: Attica Traffic Police



Change in Traffic Parameters

Change of Traffic Parameters compared to February

	March	April
Vehicle traffic	-46%	-73%
Pedestrian traffic	-43%	-73%
Speeding	+6%	+5%
Average Speed	+6%	+11%
Casualty Road Accidents	-43%	-67%



Road Accidents Internationally

Countries	
Italy	73% reduction of fatalities
Ireland	No fatalities for 7 days in March
Netherlands	50% reduction of road accidents

Cities	
Athens	63% reduction of road accidents
Amsterdam	73% reduction of road accidents
Istanbul	35% reduction of road accidents
Indianapolis	27% reduction of road accidents



Mobility interventions in other cities (1/2)

- Development of **cycling paths**, **widening of sidewalks** and roads with priority for pedestrians and cyclists in **Milan**
- Reduction of **the speed limit to 30 km/h** in **Brussels**
- **Increase in green signalling time** for pedestrians and bicycles in **Brussels**
- **Automatic traffic lights** for pedestrians and bicycles in **Brussels**, without pressing a button
- Reduction of **the speed limit to 20-30 km/h** in key areas where there are vulnerable users in **Turin**
- Reduction of the **speed limit to 30 km/h** in central arteries in **Barcelona**



Mobility interventions in other cities (2/2)

- Development of a total length of 650 km of **temporary and permanent cycling paths** in Paris
- Widening the width of **bike lanes** in Berlin
- Turning busy downtown roads into calm **roads by reducing the speed limit to 30km/h** in San Francisco
- **Development of emergency cycling lanes** on main roads and a ban on motorised traffic on the local road network in a wide area of downtown **Vancouver**
- Quadruple the network of **cycling paths** on central arteries in Mexico City
- Replacing **motorised lanes** with new emergency bike lanes using temporary cones in **Bogota**



Mobility Interventions

- Increase of Sidewalks in Central Axes
- Streets free of private vehicles
- Areas free of private vehicles
- Promotion of Public Transport and Cycling

Mobility Interventions

a. Increase of Sidewalks in Central Axes

- Panepistimiou
- Syntagma Square

b. Streets free of private vehicles

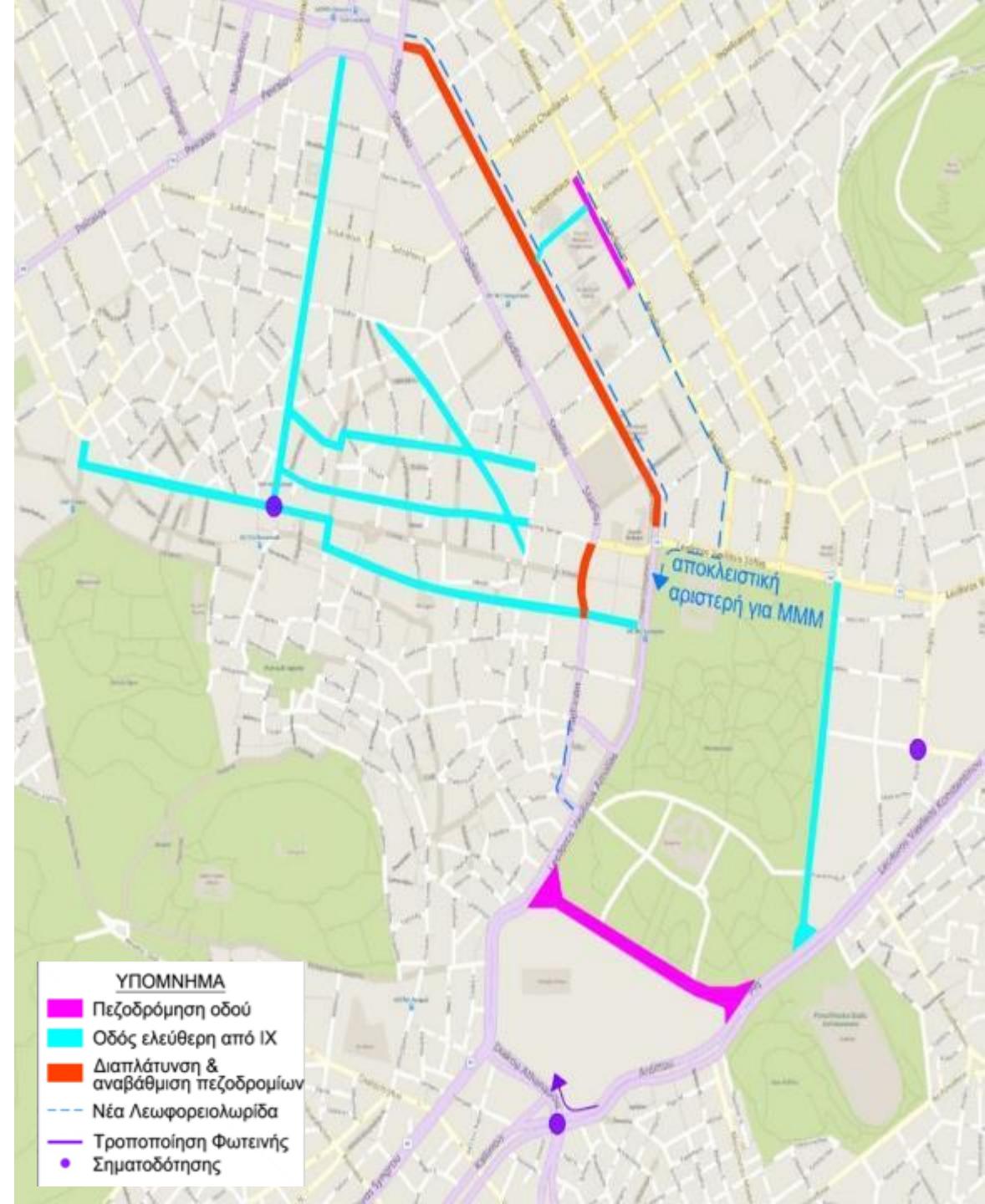
- Olgas Av. - Herodou Attikou
- Athinas - Ermou – Metropoleos

c. Areas free of private vehicles

- Commercial Triangle
- Plaka

d. Promotion of Public Transport and Cycling

- New bus lanes
- Cycle lanes in main axes
- Mixed traffic with low speeds



Panepistimiou – Increase of Sidewalk



Panepistimiou - Increase of Sidewalk

- New sidewalk for the entire length, 3 lanes width
- 2 traffic lanes for all vehicles
- 1 new parallel flow bus lane (+28 routes)
- Removal of reverse flow bus lane (-3 routes)

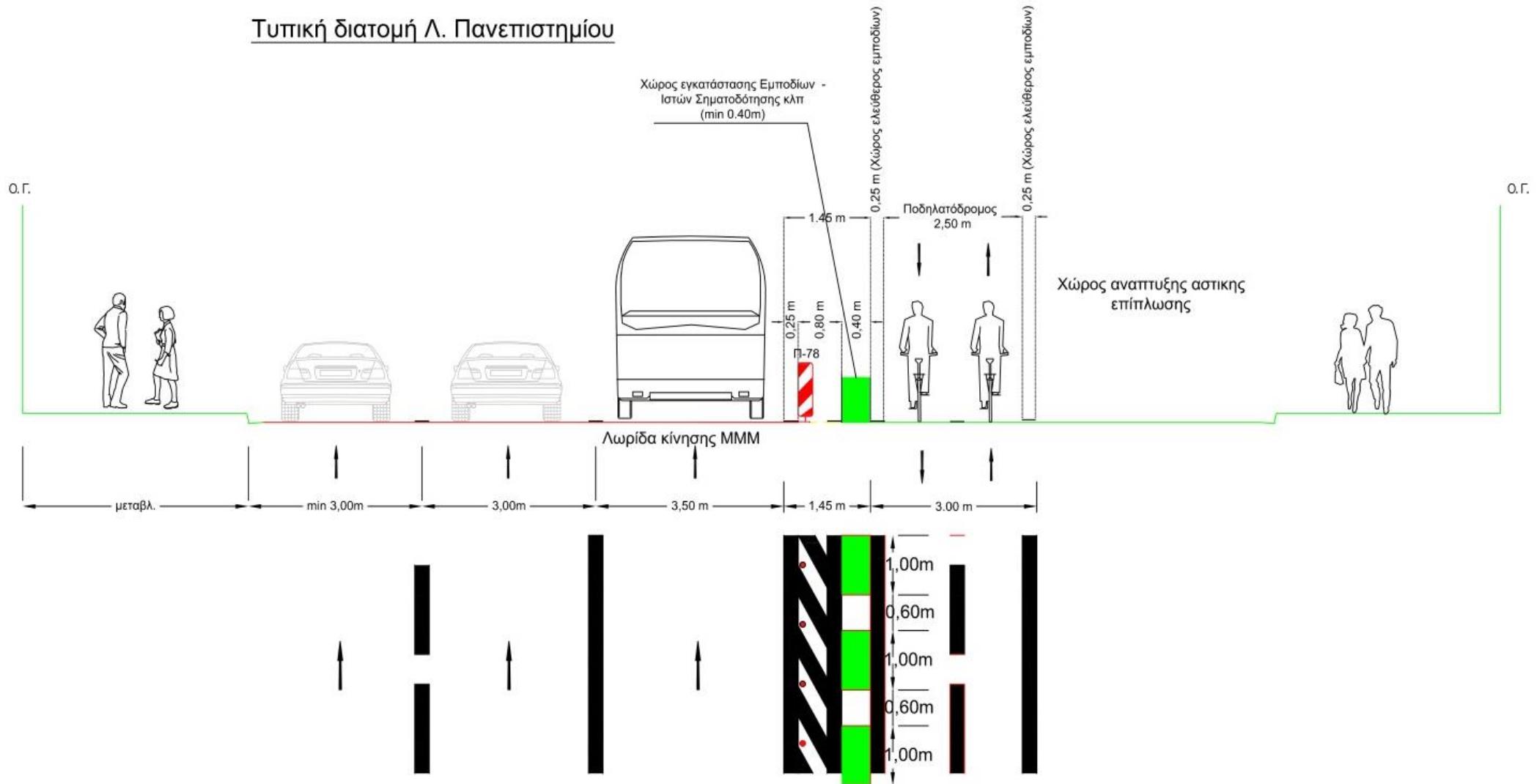


Temporary Regulation at the entrance of Panepistimiou Street from Vas. Sofias Ave. and Amalias Ave.



Panepistimiou Street (indicative cross section)

Τυπική διατομή Λ. Πανεπιστημίου



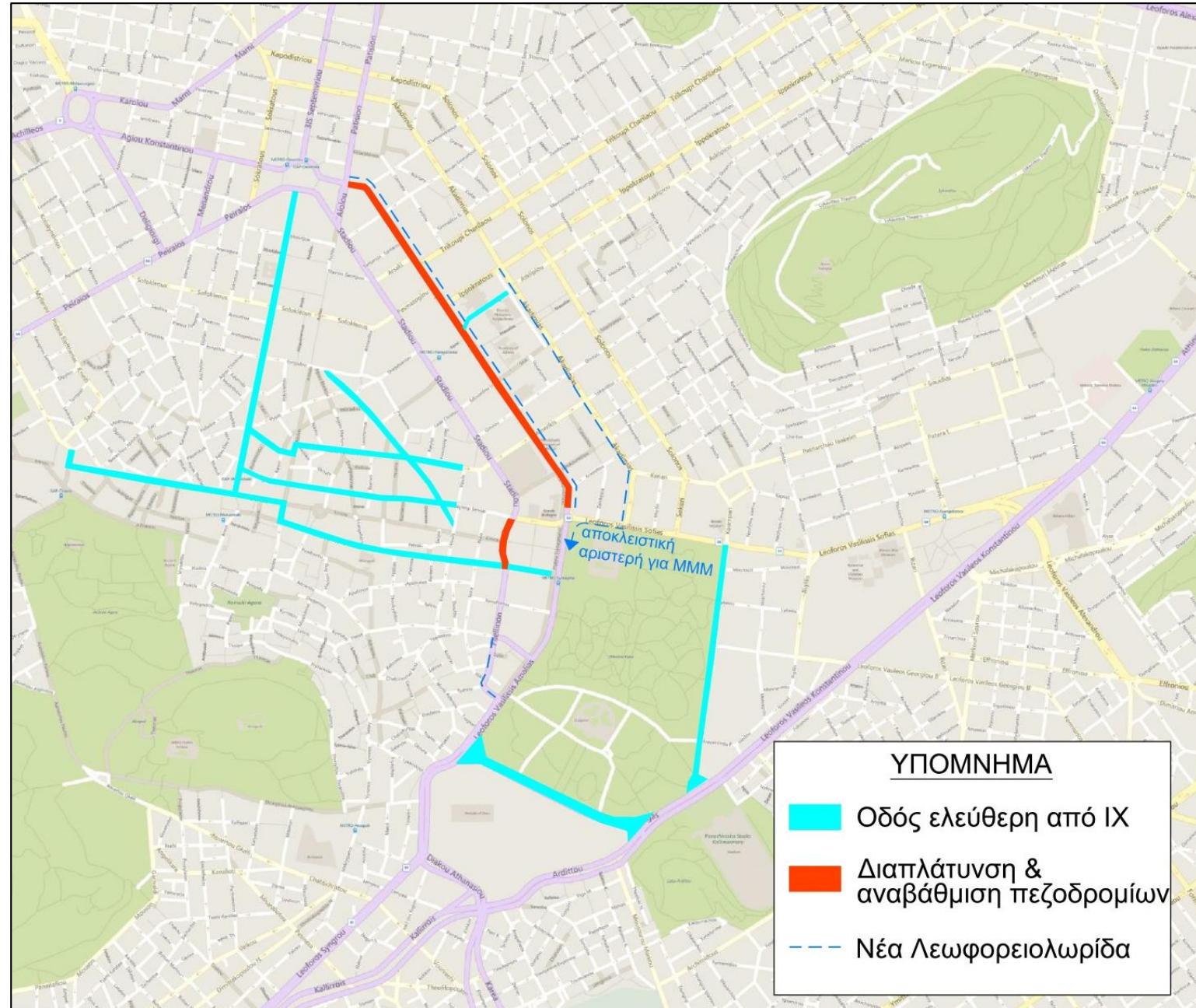
Syntagma Square – Increase of Sidewalk

- New sidewalk for the entire length, 1-2 lanes width
- 3 traffic lanes for all vehicles
- 1 new bus lane
- 1 bus stop lane

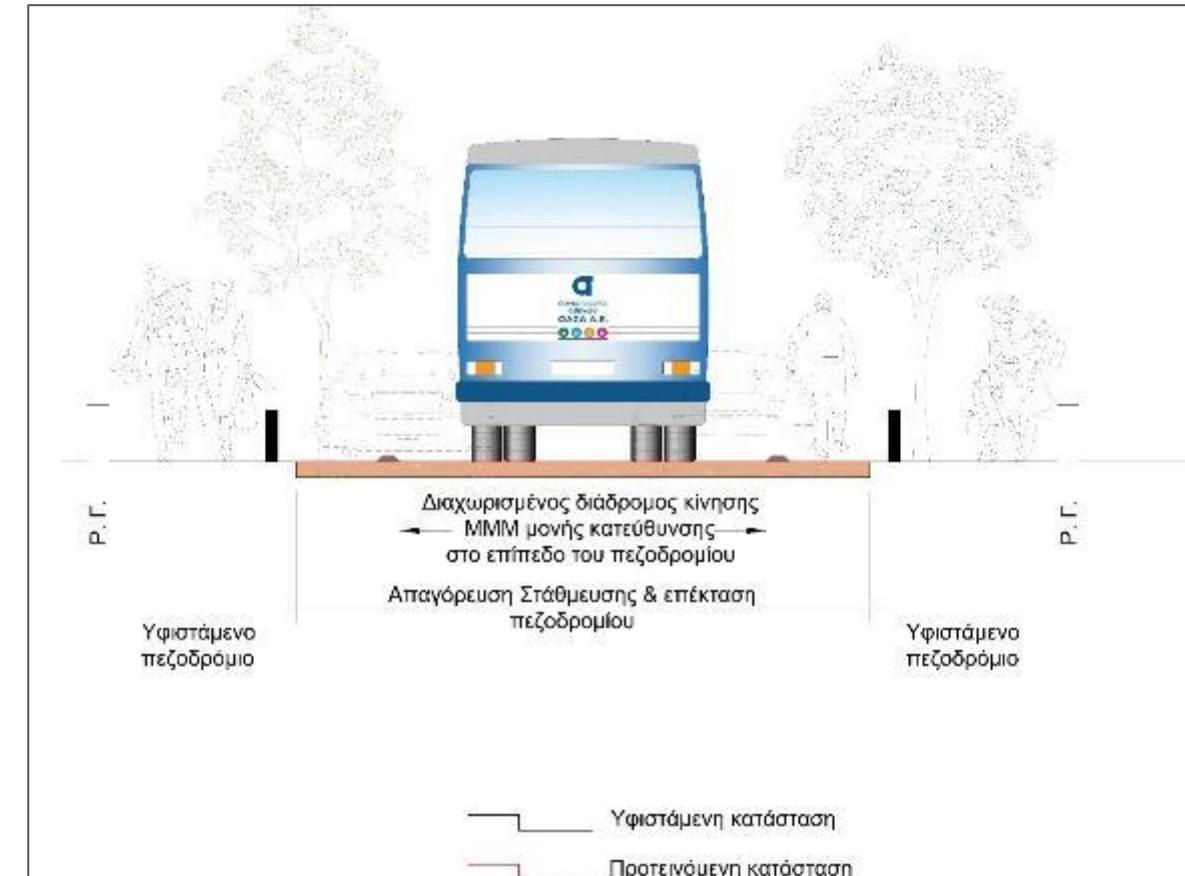
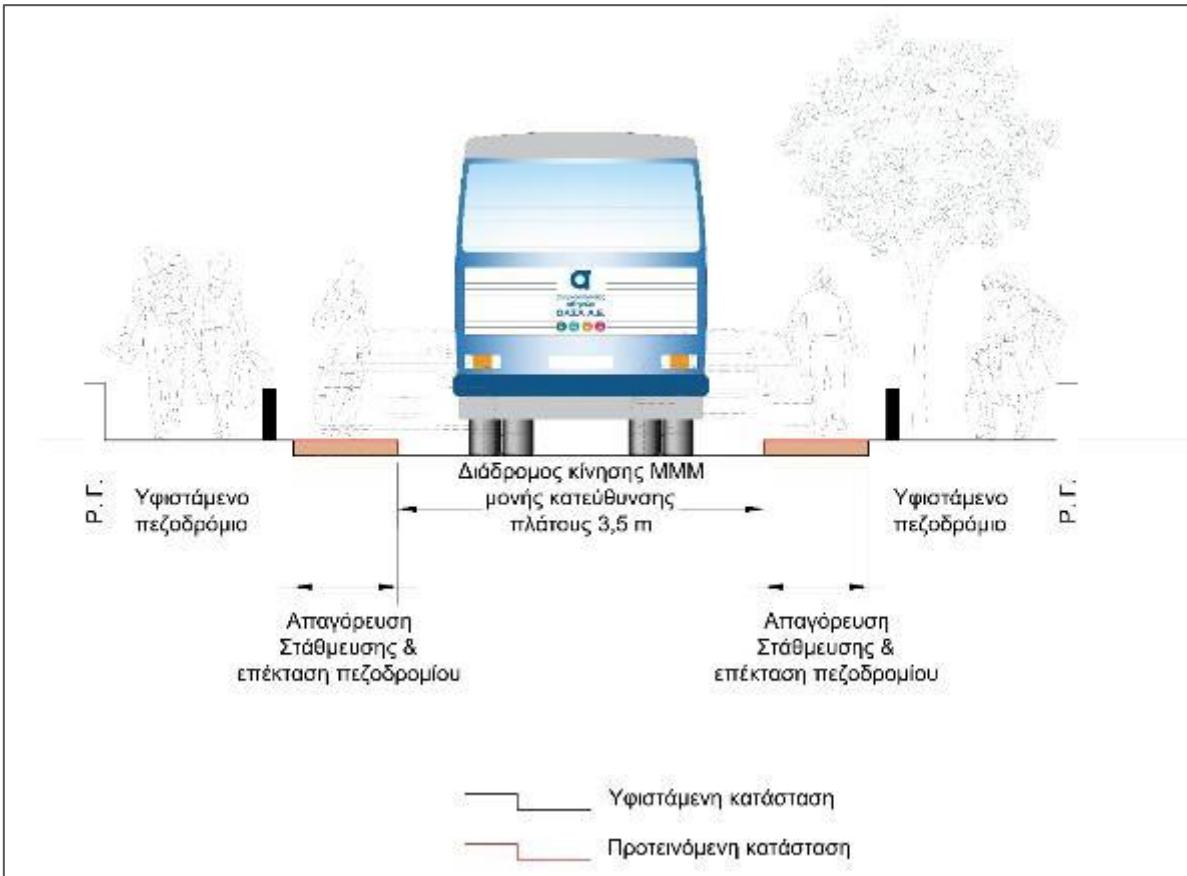


Streets free of private vehicles

- Olgas Av.
- Herodou Attikou
- Athinas
- Ermou
- Mitropoleos



Mitropoleos

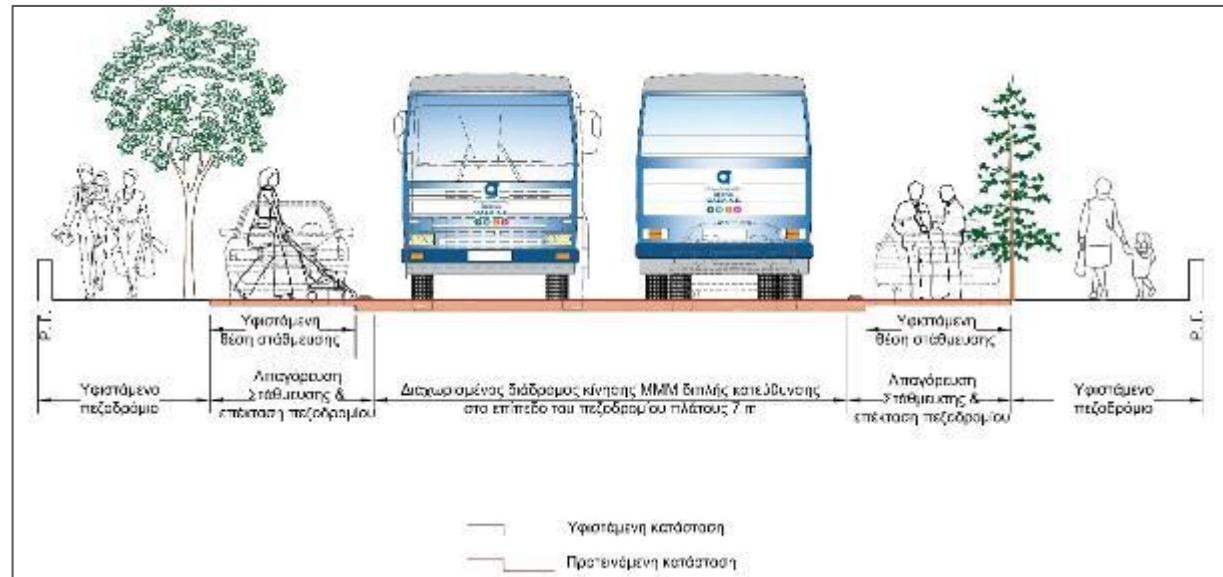
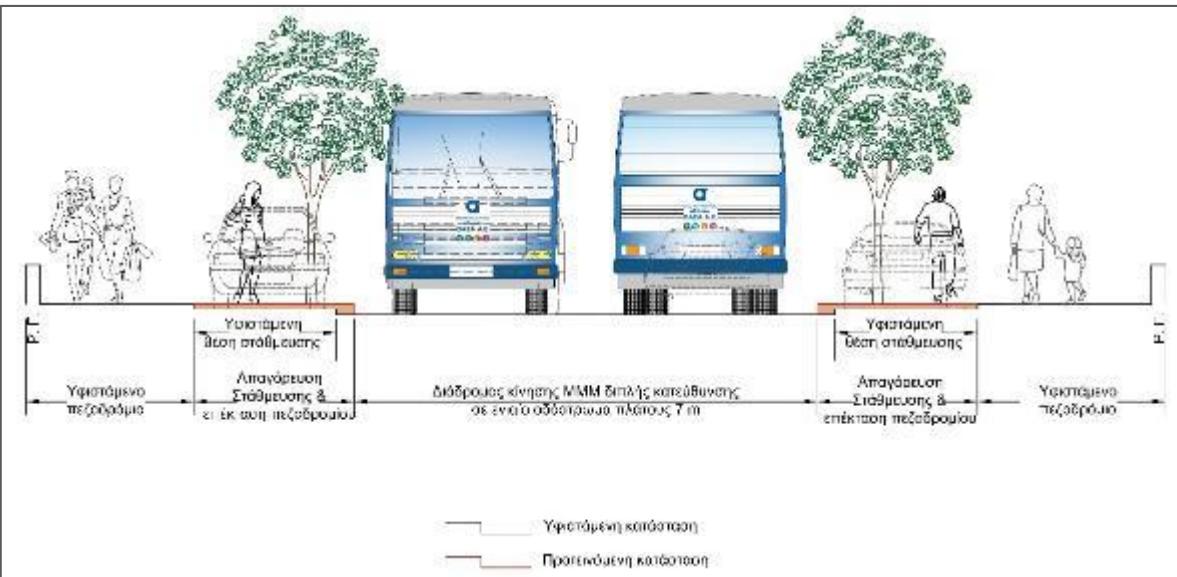


Mitropoleos



Athens Great Walk – May 2020

Athinas (Ermou– Evripidou)

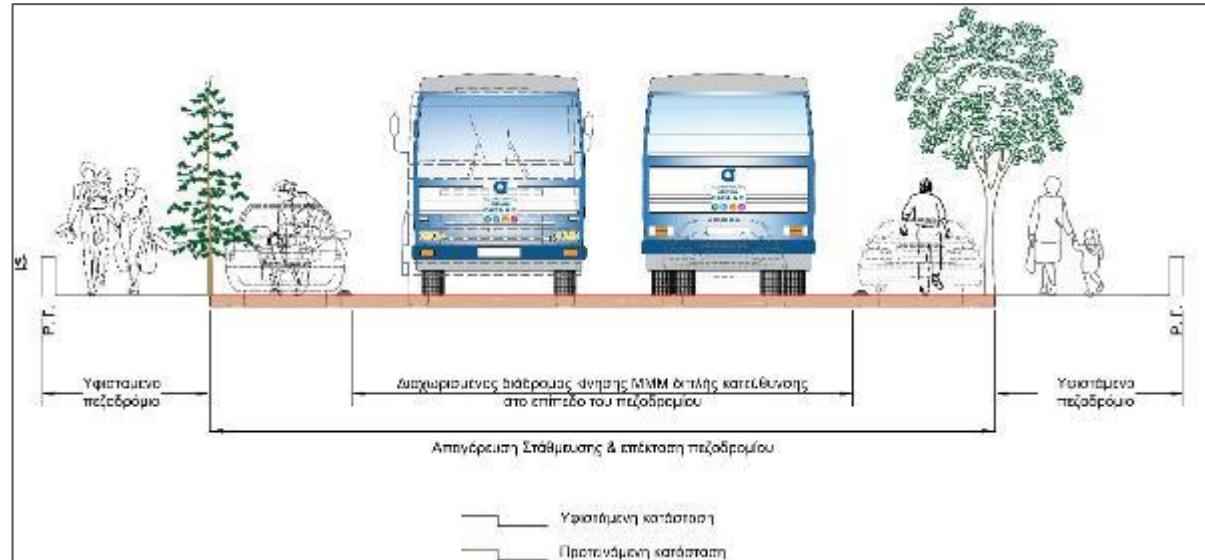
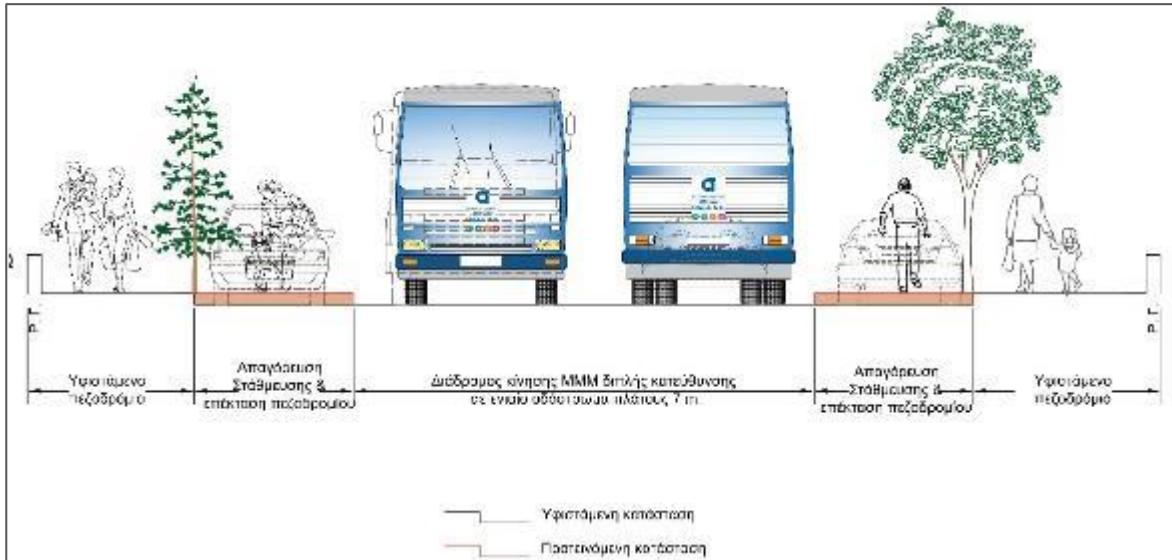


Athinas



Athens Great Walk – May 2020

Ermou (Athinas Section – Ag. Asomaton)



Ermou



Athens Great Walk – May 2020

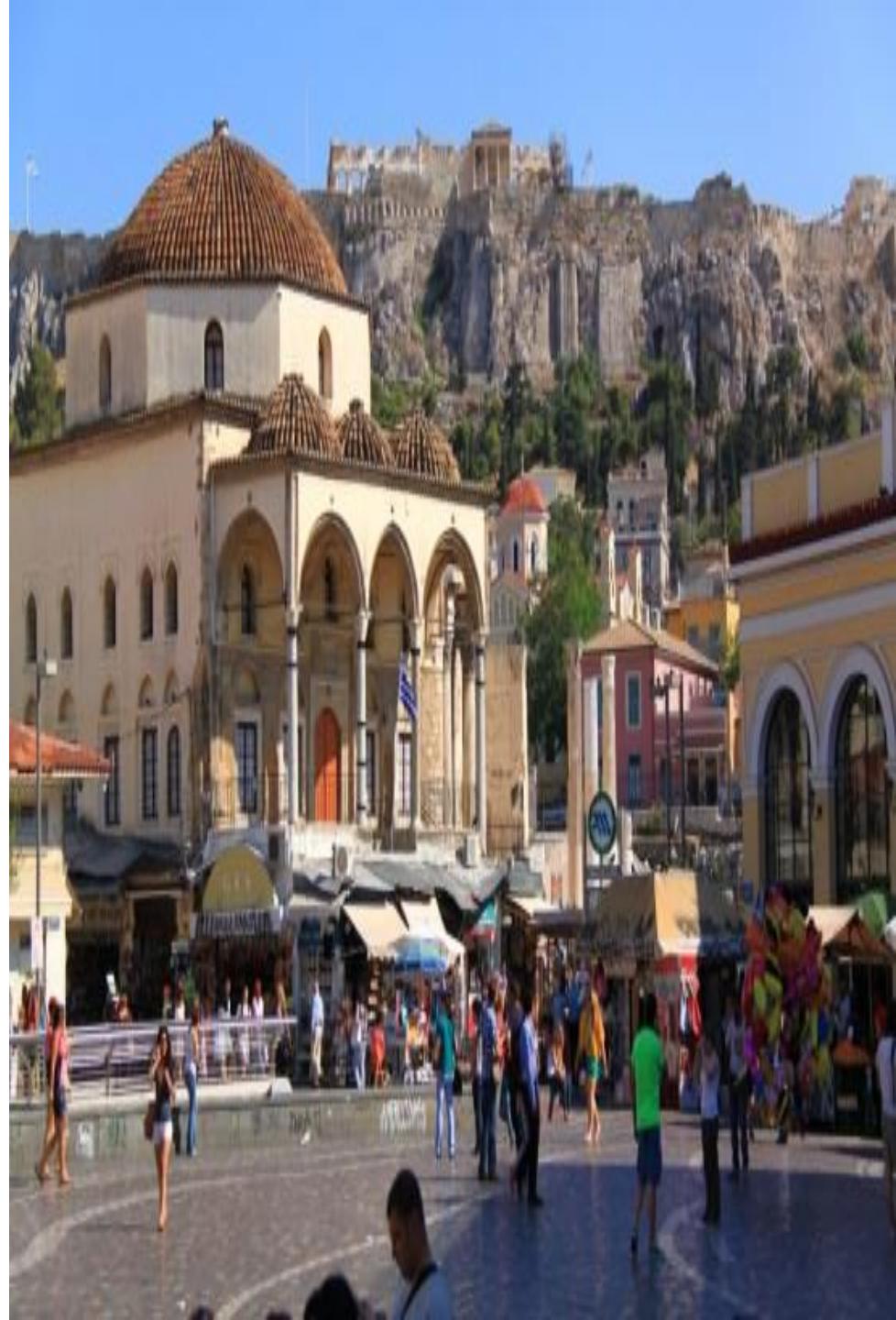
Traffic Arrangements at the Commercial Triangle and Plaka (1/2)

- The Commercial Triangle (Omonia, Syntagma, Monastiraki) and the area of Plaka **become free** of traffic and parking (cars and motorcycles) and are **attributed to pedestrians and bicycles**.
- **Bus traffic is allowed** on designated routes
- Only the following vehicle categories have **access** to the roads of the Commercial Triangle:
 - Emergency vehicles
 - Supply chain vehicles
 - Garbage vehicles
 - Utilities vehicles
 - Access to parkings
 - Residents and hotel visitors



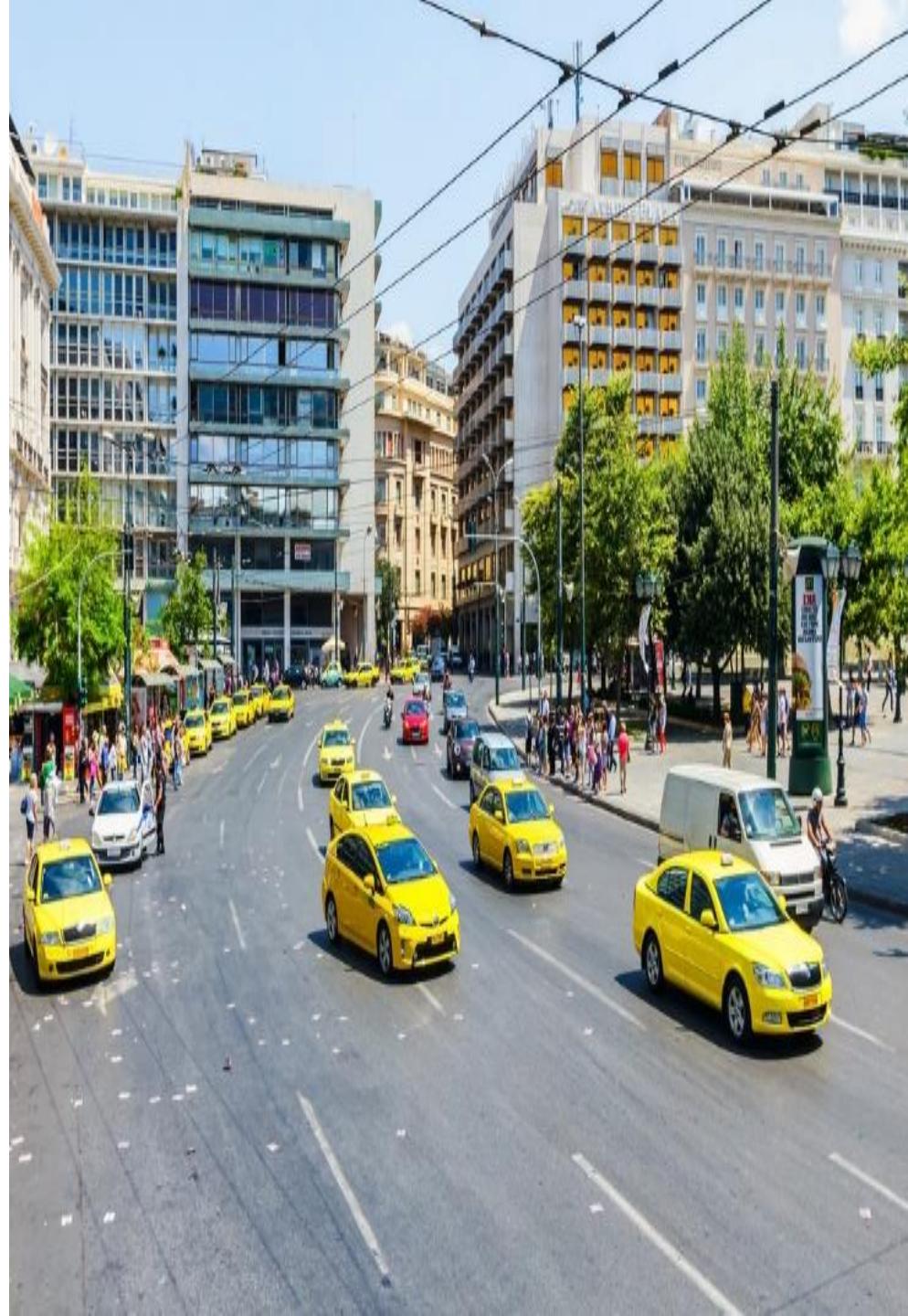
Traffic Arrangements at the Commercial Triangle and Plaka (2/2)

- Stadiou, Sofokleous and Evripidou Streets **remain open** to traffic while Athinas and Metropoleos Streets are closed.
- **Provision of defined routes** serving:
 - Access to public and private parking spaces
 - Hotels
 - Residents
- Possibility of entrance by **invitation**
- Access will be controlled at the **first phase** by the Municipal Police and at the **second phase** with automatic digital control (cameras)
- Special supply chain **rules**



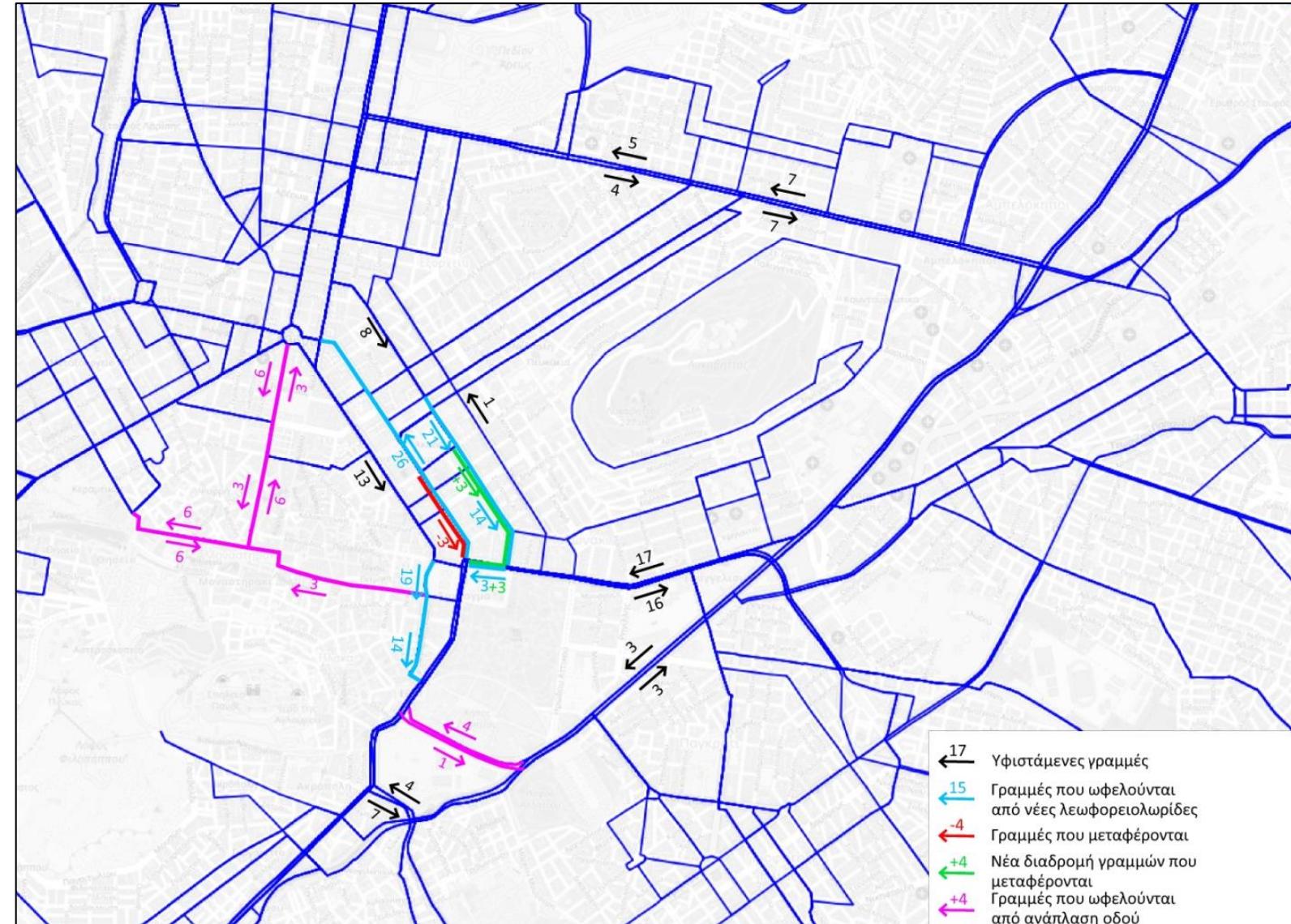
Taxi Traffic and Stop Regulations

- Entrance to the Commercial Triangle and Plaka after **invitation** and control, only for disembarkation and boarding of passengers
- Waiting areas in designated **central locations around** the Commercial Triangle and Plaka
- **Right turn** from Othonos to Vas.Amalias (on bus lane)



New Bus Lanes

- Panepistimiou:
 - new parallel flow 1,050m (26 routes)
 - removal of opposite flow 400m (-3 routes)
- Akadimias:
 - new parallel flow 770m (17-24 routes)
- Syntagma/ Filellinon:
 - new parallel flow 310m (14-19 routes)
- Vas. Sofias:
 - new parallel flow 310m (6 routes)



Cycling Promotion

- Exclusive movement of bicycles on selected axes (Olgas - Herodes Atticus, Mitropoleos) and at the Commercial Triangle and Plaka
- Cycle Lanes on main axes:
 - Panepistimiou
 - Athinas
 - Ermou
- Safe mixed traffic conditions of bicycles and other vehicles with low speeds in the intervention area



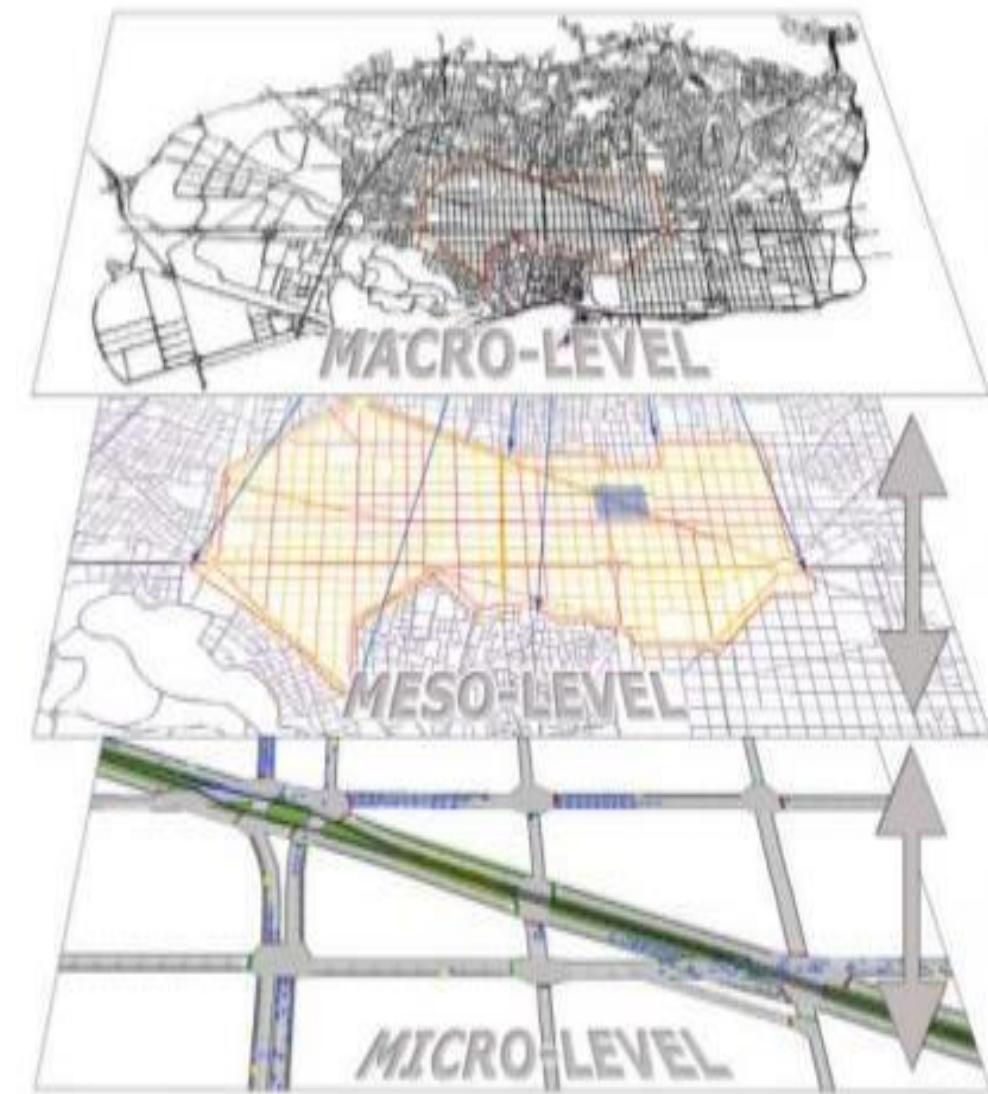
Assessment of Traffic Impact Interventions

Performance Indicators

1. Average Speed and Vehicle Kilometers
2. Level of Service
3. Travel Time - Average speed change rate
4. Regeneration surface and length
5. Exclusive traffic lane length for Public Transport
6. Bus and Trolley travel time

NTUA Traffic Simulation Model

- The **Integrated Traffic Simulation Model** for the Athens Network of the NTUA Department of Transportation Planning and Engineering was updated and used for the needs of the study (292 zones of origin-destination)
- An analysis at road network-level (**macro**), axes-level (**meso**) and selected junctions (**micro**) was performed
- The impact assessment was based on **6 selected Performance Indicators** by comparing current situation with a series of alternative scenarios while the best scenario was selected



Analysis Areas

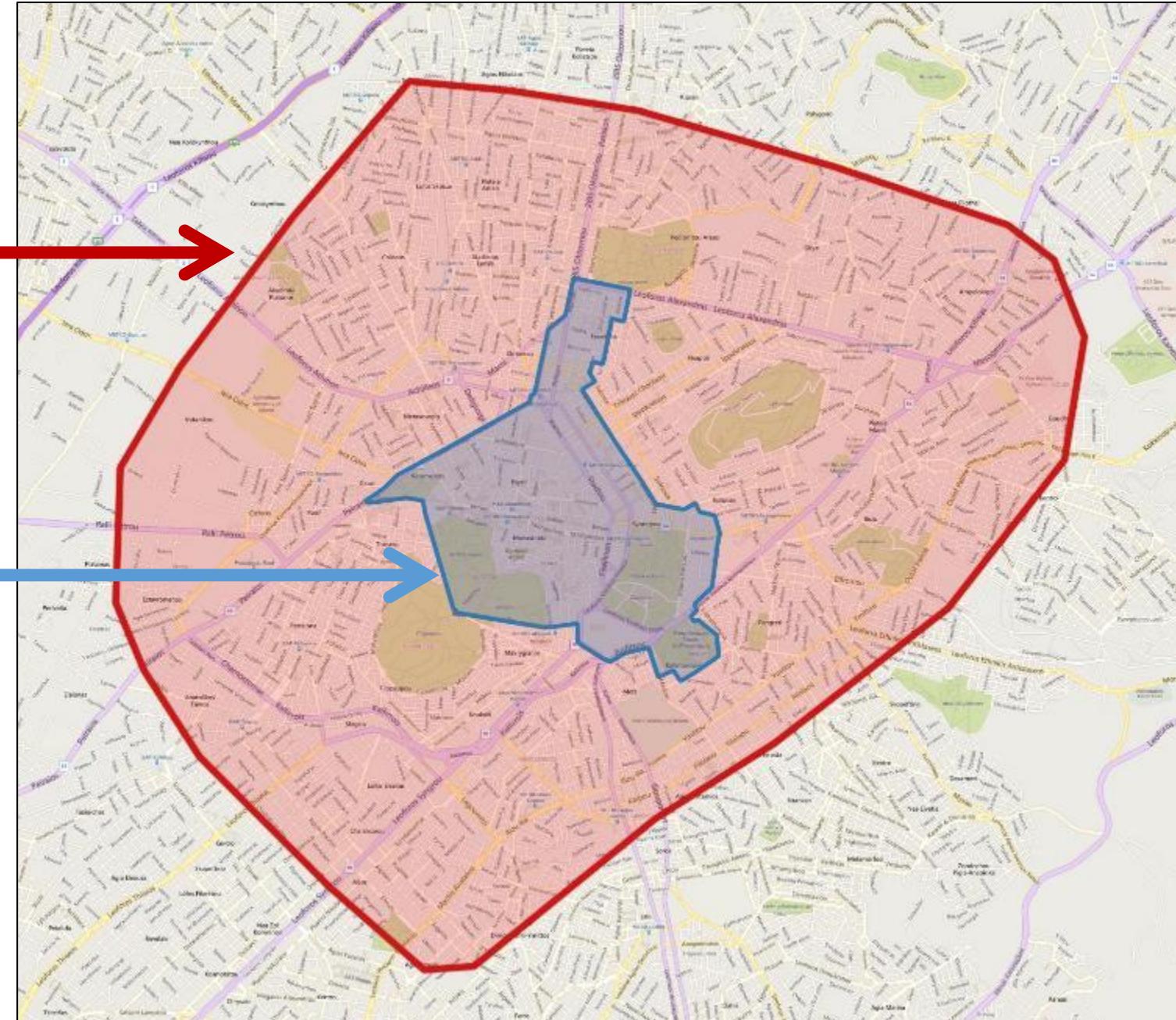
Wider
Area
Analysis

Intervention
Area

Scenario B0. All interventions

Scenario B1. Additional signalling upgrade

Scenario B2. Additional modal shift from
passenger cars to Public
Transport (within 6 months): ~7%



DA1. Intervention Area Indicators Results

Indicators	Existing A	Interventions B1	Percentage change (B1-A)/A	Interventions B2	Percentage change (B2-A)/A
Vehicle Kilometers	38.990	36.059	-7,5%	29.934	-23,2%
Vehicle Hours	1.826	1.896	3,9%	1.293	-29,2%
Average Free Flow Speed (km/h)	37,6	36,9	-	36,9	-
Average Speed (km/h)	21,4	19,0	-16,5%	23,1	8,4%
Average speed reduction ratio (Average Speed / Average Free Flow Speed)	56,8%	51,6%	-5,2%	62,8%	6,0%



DA1. Wider Intervention Area Indicators Results

Indicators	Existing A	Interventions B1	Percentage change (B1-A)/A	Interventions B2	Percentage change (B2-A)/A
Vehicle Kilometers	218.581	217.344	-0,6%	194.356	-11,1%
Vehicle Hours	10.221	10.403	1,8%	8.672	-15,2%
Average Free Flow Speed (km/h)	38,05	37,94	-	37,94	-
Average Speed (km/h)	21,39	20,89	-2,3%	22,41	4,8%
Average speed reduction ratio (Average Speed / Average Free Flow Speed)	56,2%	55,1%	-1,2%	59,1%	2,9%



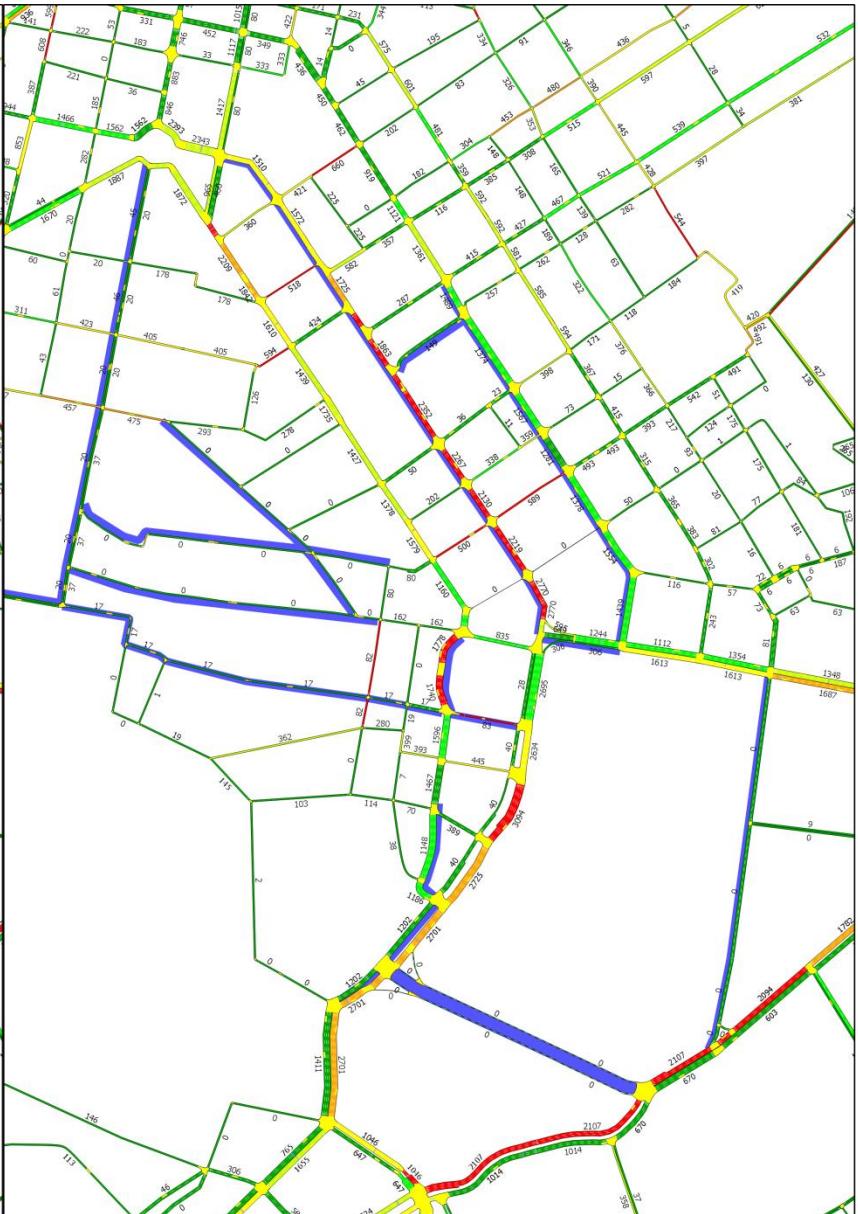
Scenario A (Existing Operation)



Scenario B1



Scenario B2



Morning Peak, 2020 - Traffic loads (PCU / hour)



DA2. Comparison of Level of Service at Selected Points in the Intervention Area

Level of Service at Selected Cross Sections	Existing A	Scenario B1		Percentage change (B1-A)/A	Scenario B2		Percentage change (B2-A)/A	
Panepistimiou (Ippokratous)	80,0%	C	126,3%	F	46,2%	95,9%	E	15,8%
Akadimias (Ippokratous)	79,0%	C	95,0%	E	16,0%	75,6%	C	-3,4%
Stadiou (Pezmazoglou)	97,2%	E	103,0%	F	5,8%	89,4%	D	-7,8%
Vas. Amalias (Filellinon)	104,2%	F	96,3%	E	-8,0%	90,0%	D	-14,2%
Filellinon (Souri)	81,1%	D	105,5%	F	24,4%	63,2%	B	-17,9%
Alexandras to Patision (Ippokratous)	95,3%	E	98,8%	E	3,5%	86,9%	D	-8,5%
Alexandras to Kifisis (Ippokratous)	97,9%	E	98,6%	E	0,7%	94,9%	E	-2,9%
Vas. Konstantinou to Hilton (Rigilis)	63,4%	B	47,2%	A	-16,1%	43,7%	A	-19,7%
Vas. Konstantinou to Vas. Olgas (Rigilis)	106,7%	F	109,7%	F	3,0%	95,1%	E	-11,7%
Vas. Sofias to Hilton (Rigilis)	93,8%	E	113,9%	F	20,2%	93,8%	E	0,0%
Vas. Sofias to Syntagma (Rigilis)	104,2%	F	87,9%	D	-16,3%	74,9%	C	-29,3%



DA2. Comparison of Level of Service at Selected Points in the Intervention Area

Level of Service at Selected Cross Sections	Existing A		Scenario B1		Percentage change (B1-A)/A	Scenario B2		Percentage change (B2-A)/A
Kifisias to Alexandras (Panormou)	121,4%	F	121,8%	F	0,3%	119,6%	F	-1,8%
Kifisias to Katechaki (Panormou)	118,9%	F	119,1%	F	0,1%	117,7%	F	-1,2%
Mesogion to Alexandras (Mich/lou)	92,7%	E	91,9%	E	-0,9%	83,4%	D	-9,3%
Mesogion to Katechaki (Mich/lou)	99,1%	E	99,0%	E	-0,1%	96,4%	E	-2,7%
Patision to Alexandras (Kodr/nos)	56,7%	A	56,3%	A	-0,4%	52,7%	A	-4,0%
Patision to Ag. Meletiou (Kodr/nos)	35,2%	A	34,3%	A	-1,0%	34,1%	A	-1,1%
Athinon to Lenorman (Achilleos)	71,9%	C	69,5%	B	-2,4%	64,3%	B	-7,6%
Athinon to E.O. (Achilleos)	92,7%	E	85,6%	D	-7,1%	84,9%	D	-7,8%
Pireos to Omonoia (Iera Odos)	99,2%	E	99,9%	E	0,7%	90,6%	E	-8,6%
Pireos to Chamosternas (Iera Odos)	63,2%	B	63,7%	B	0,5%	62,2%	B	-1,1%
Chamosternas to Pireos (Argiropouleos)	98,9%	E	102,5%	F	3,6%	89,2%	D	-9,7%
Chamosternas to Syggrou (Argiropouleos)	71,2%	C	74,5%	C	3,3%	69,1%	B	-2,1%
Syggrou to Syntagma (Lagoumitzi)	95,4%	E	94,2%	E	-1,1%	87,7%	D	-7,6%
Syggrou to Posidonos (Lagoumitzi)	90,7%	E	90,2%	E	-0,5%	79,5%	C	-11,3%
Kallirois to Vouliagmenis (Frantzi)	126,8%	F	126,2%	F	-0,6%	124,0%	F	-2,8%
Kallirois to El. Venizelou (Frantzi)	89,4%	D	92,0%	E	2,7%	76,1%	C	-13,3%
Ilioupoleos to Kallirois (Ilia Iliou)	112,7%	F	113,3%	F	0,6%	96,2%	E	-16,5%
Vouliagmenis to South (Ilia Iliou)	79,1%	C	79,6%	C	0,5%	66,1%	B	-13,1%



DA3. Comparison of Average Travel Time at Selected Axes (1/2)

Average Travel Time (seconds)	Existing A	Scenario B1	Percentage change (B1-A)/A	Scenario B2	Percentage change (B2-A)/A
Panepistimiou (Syntagma Square to Omonoia Square)	2,88	5,12	78,0%	3,48	20,8%
Stadiou (Omonoia Square to Syntagma Square)	3,27	3,70	13,3%	2,85	-12,8%
Akadimias (Chalkokondili to Vas. Sofias)	4,85	4,86	0,1%	4,67	-3,8%
Vas. Amalias (Ath. Diakou to Syntagma Square)	1,85	1,97	6,6%	1,76	-5,1%
Filellinon (Syntagma Square to Vas. Amalias)	1,76	3,24	84,5%	1,72	-2,1%
Alexandras (Patision to Kifisisas)	7,09	7,18	1,3%	6,97	-1,6%
Alexandras (Kifisisas to Patision)	9,04	9,57	5,8%	8,14	-10,0%
Vas. Konstantinou (Vas.Sofias to Vouliagmenis)	3,83	3,86	0,9%	3,01	-21,6%
Vas. Konstantinou (Vouliagmenis to Vas.Sofias)	1,98	1,91	-3,7%	1,90	-4,1%
Vas. Sofias (Vas. Konstantinou to Panepistimiou)	3,44	3,05	-11,3%	2,90	-15,6%
Vas. Sofias (Panepistimiou to Vas. Konstantinou)	4,39	4,90	11,5%	4,35	-1,0%
Chamosternas (Syggrou to Pireos)	3,92	4,03	2,9%	3,70	-5,6%
Chamosternas(Pireos to Syggrou)	4,50	4,52	0,5%	4,48	-0,4%
Konstantinoupoleos (Chamosternas to Deligianni)	6,51	6,64	2,0%	6,26	-3,8%
Konstantinoupoleos (Deligianni to Chamosternas)	5,99	6,04	0,8%	5,79	-3,2%
Aristotelous/ Marnis/ Karolou (Patision to Kar. Square)	4,58	4,59	0,1%	4,50	-1,7%
Karolou/ Marnis (Metaxourgiou Square to Patision)	2,48	2,53	2,3%	2,43	-1,9%
Patision (Alexandras to Panepistimiou)	2,65	2,57	-3,0%	2,44	-7,7%



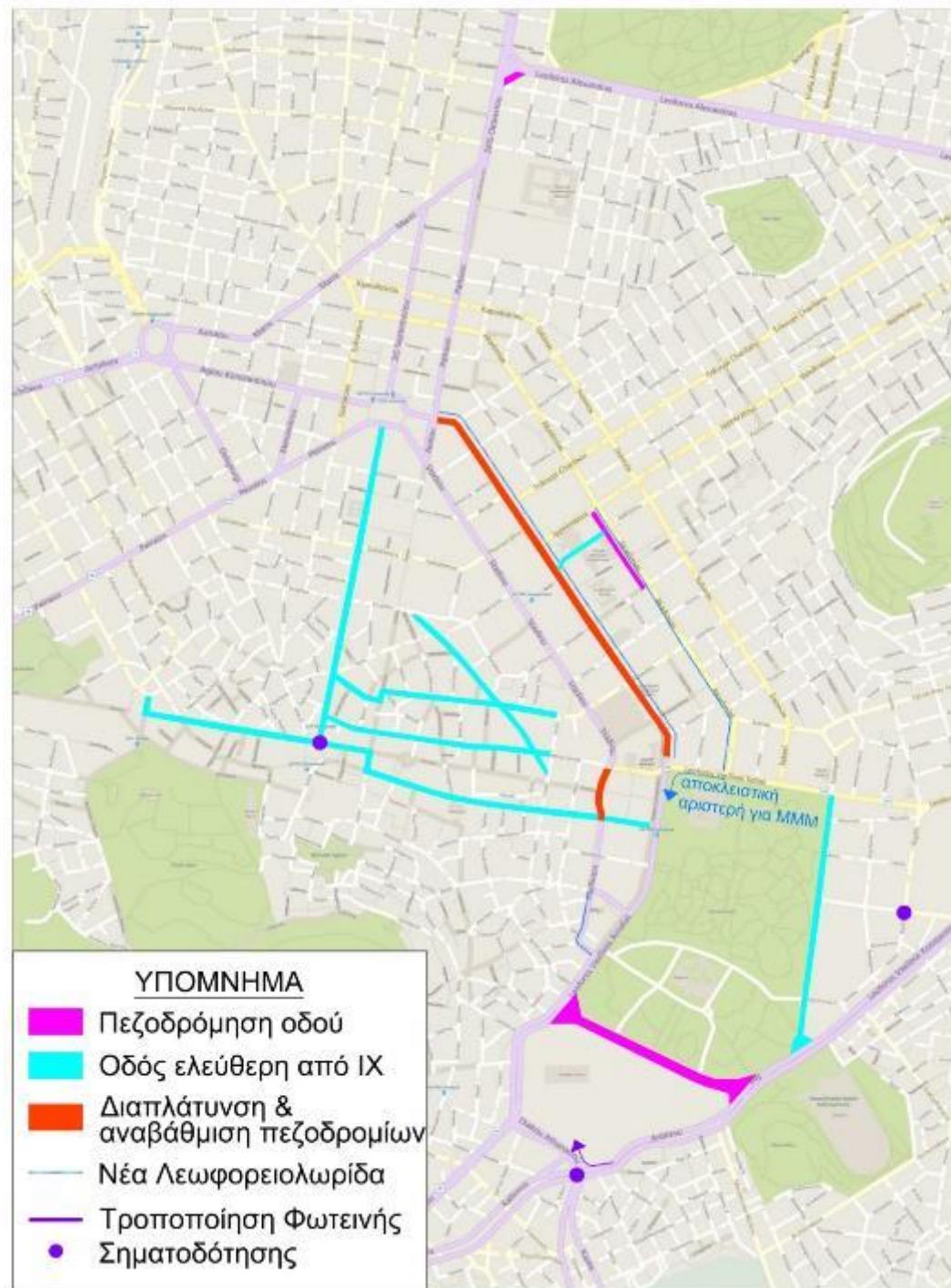
DA3. Comparison of Average Travel Time at Selected Axes (2/2)

Average Travel Time (seconds)	Existing A	Scenario B1	Percentage change (B1-A)/A	Scenario B2	Percentage change (B2-A)/A
Ilioupoleos/ II. Iliou - Ath.Diakou/ Syggrou	3,75	3,49	-7,0%	3,42	-8,7%
Ath.Diakou/ Syggrou - Vouliagmenis/ II. Iliou	2,56	2,63	2,5%	2,45	-4,4%
Kifisia/ Panormou - Hilton	7,41	6,92	-6,6%	6,72	-9,3%
Hilton - Kifisia/ Panormou	6,58	6,43	-2,2%	6,24	-5,1%
Michalakopoulou (V.Konstantinou - Fidipidou)	5,70	5,57	-2,2%	5,47	-4,1%
Michalakopoulou (Fidipidou - V.Konstantinou)	6,08	5,93	-2,5%	5,71	-6,1%
Syggrou (Charokopou – Vas. Amalias)	4,94	4,64	-6,1%	4,24	-14,2%
Syggrou (Vas. Amaliasέως - Charokopou)	3,96	3,84	-3,2%	3,63	-8,4%
Pireos (Chamosternas - Menandrou)	6,68	6,92	3,7%	6,13	-8,1%
Pireos (Menandrou - Chamosternas)	7,47	7,38	-1,1%	7,09	-5,0%
Acharnon (Ag. Meletiou - Marnis)	5,06	5,07	0,2%	5,02	-0,8%
Acharnon (Marnis - Ag. Meletiou)	3,25	3,25	-0,2%	3,23	-0,8%
Patision (Ag. Meletiou - Alexandras)	3,74	3,88	3,6%	3,85	2,9%
Patision (Alexandras - Ag. Meletiou)	2,74	2,73	-0,4%	2,73	-0,6%



DA4. Regeneration surface and length

Axes	Length (m)	Area (m ²)
Vas. Olgas	680	10.400
Herodes Atticus	670	5.000
Panepistimiou	985	6.900
K. Palama (Ippokratous to Sina)	225	1.900
R. Fereou	190	2.150
Metropoleos (Syntagma to Aiolou)	585	3.050
Aiolou & Ermou (Aiolou to Athinas)	165	850
Athinas	800	8.600
Ermou (Athinas to Agion Asomaton)	450	4.800
Perikleous (Voulis to Athinas)	550	1.950
Kolokotroni (Athinas to Voulis)	450	1.300
Praxitelous (Perikleous to Evripidous)	500	1.400
Syntagma	135	1.318
Selected Scenario	6.385	50.118



DA4. Regeneration Lengths

➤ Wider Analysis Area:

- Length of existing roads free of private vehicles:
41,2 km
- Length of new roads free of private vehicles:
5,3 km
- Increase: **12,9%**

➤ Intervention Area:

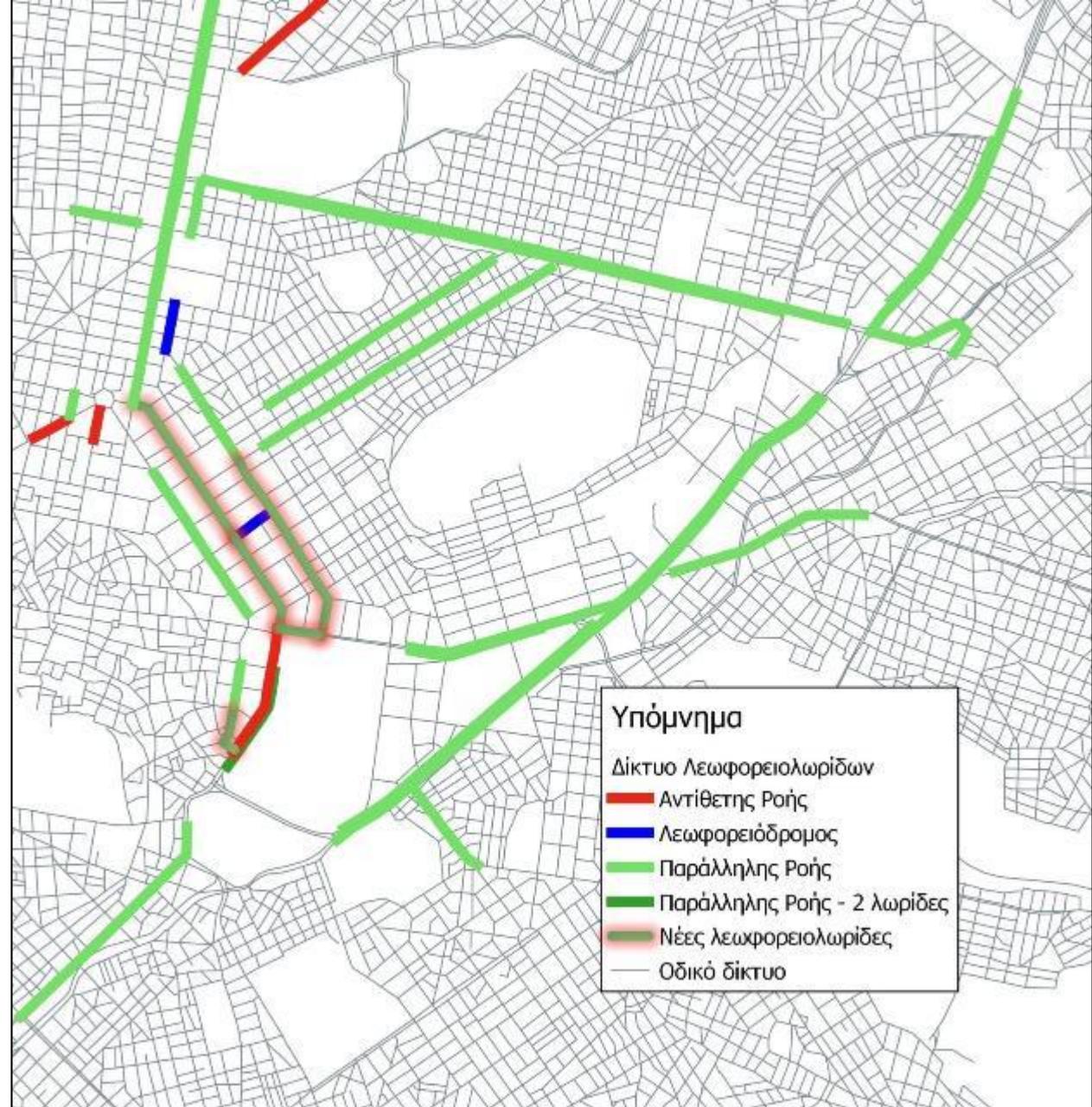
- Length of existing roads free of private vehicles :
11,6 km
- Length of new roads free of private vehicles :
5,3 km
- Increase: **45,7%**



DA5. Exclusive bus lanes

➤ New bus lanes length:

- Panepistimiou:
 - New parallel flow 1.050m (26 routes)
 - by removing the opposite flow 400m (3 routes)
- Akadimias:
 - New parallel flow 770m (17-24 routes)
- Syntagma/ Filellinon:
 - New parallel flow 310m (14-19 routes)
- Vas. Sofias:
 - New parallel flow 310m (6 routes)



DA5. Exclusive bus lanes

➤ Scenario B1/B2 (Suggested)

Length of new bus lanes

- In Intervention Area:

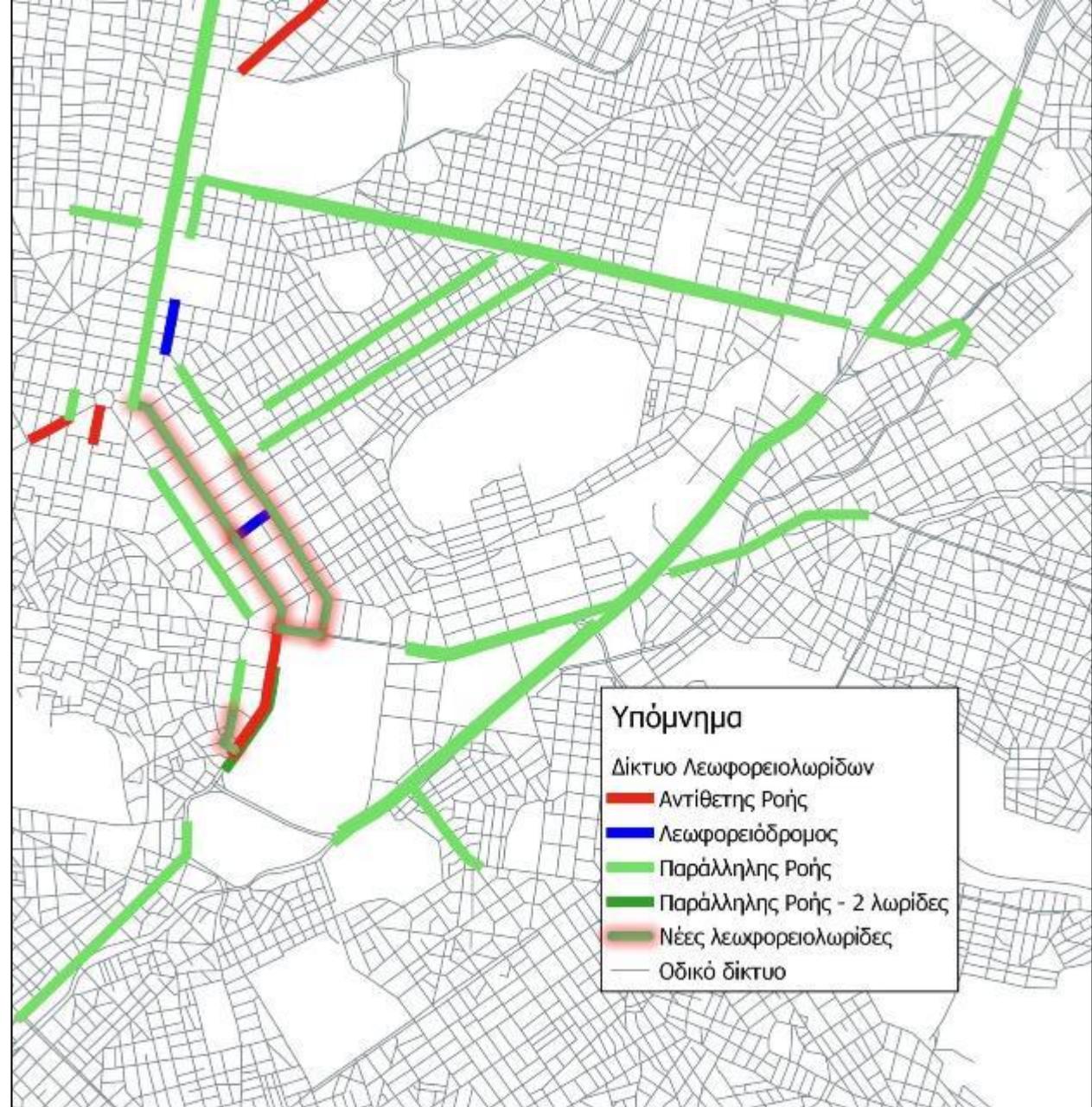
8,3 km

Increase: 29,2%

- In Wider Analysis Area:

30,0 km

Increase: 6,7%



DA6. Bus and Trolley travel time

- Increase of bus and trolley average speed at Panepistimiou and Akadimias
- Scenario B1 - Increase:
 - Panepistimiou: 28,3%
 - Akadimias: 21,7%
- Scenario B2 - Increase:
 - Panepistimiou: 34%
 - Akadimias: 31%



DA6. Public Transport Average Speed – Panepistimiou (1/2)

Trolley

Average Speed (km/h)	Existing A	Scenario B1	Percentage change (B1-A)/A	Scenario B2	Percentage change (B2-A)/A
1: MOSCHATOS - KALLITHEA - ATTIKI SQUARE (T)	14,9	16,7	13%	16,7	12%
2: KAISARIANI - PAGRATI - ANO KIPSELI (T)	18,7	20,3	9%	20,2	8%
3: N. PSYCHIKO - ANO PATSIA - N. PHILADELPHIA (T)	9,4	16,2	73%	17,2	83%
4: ST. AG. IOIANNIS - AG. ARTEMIOS - ANO KYPSELI (T)	16,4	19,4	18%	19,8	21%
5: TZITZIFIES - SYNTAGMA SQUARE - LAMPRINI (T)	15,4	17,0	10%	17,4	13%
6: N. PHILADELPHIA - KOSMAS AITOLOS - IPPOKRATOUS (T)	10,7	17,1	59%	18,2	70%
11: N. ELVETIA - N. PAGRATI - A. PATSIA (T)	15,6	17,2	10%	17,1	9%
12: ZAPPEION - PERISTERI [AG. IEROTHEOS]	15,3	17,6	15%	17,5	15%
15: PETRALONA - DIKASTIRIA - EL. VENIZELOU	18,2	21,9	20%	21,7	19%



DA6. Public Transport Average Speed – Panepistimiou (2/2)

Average Speed (km/h) – Buses	Existing A	Scenario B1	Percentage change (B1-A)/A	Scenario B2	Percentage change (B2-A)/A
022: AKADIMIA – NEA KYPSELI	12,7	16,2	27%	16,7	31%
025: PR. DANIHL – IPPOKRATOUS (T)	9,2	8,9	-3%	9,7	5%
026: VOTANIKOS – IPPOKRATOUS (T)	10,3	9,3	-10%	11,3	10%
027: ORPHEOS - IPPOKRATOUS (T)	8,6	8,2	-5%	9,9	14%
057: LOFOS SKOUZE - OMONOIA	6,4	8,5	33%	9,0	40%
060: AKADIMIAS – LYKAVITTOΣ	8,8	16,1	83%	16,2	84%
203: KAREAS – AKADIMIA	7,9	15,0	90%	15,6	97%
204: STR. SAKETA – AKADIMIA	7,7	12,5	63%	12,6	65%
211: METAMORPHOSI - AKADIMIA	7,2	13,1	83%	13,7	91%
214: ZOODOCHOS PIGI – AKADIMIA	9,5	13,5	42%	15,2	59%
220: ANO ILISIA - AKADIMIAS	8,4	13,6	63%	15,9	90%
221: PANEPISTIMIOUPOLI – AKADIMIAS	10,9	15,3	41%	19,5	80%
227: AG. ARTEMIOS – ANO PETRALONA (T)	14,7	17,7	20%	17,6	20%
230: AKROPOLI - ZOGRAFOU (T)	20,8	17,5	-16%	19,5	16%
235: ZOGRAFOU - AKADIMIAS	7,8	14,5	86%	16,1	107%
608: NEKR. ZOGRAFOU - AKADIMIA – GALATSI (T)	11,0	14,9	36%	15,8	44%
622: GOUDI – ANO GALATSI	8,5	13,3	58%	13,8	63%
813: AVEROF – PROUSSIS	10,6	21,8	106%	23,3	121%
815: GOUDI – TAVROS	8,9	14,1	58%	15,6	74%
856: DAFNI - YMITTOS – AIGALEO (T)	14,3	18,3	28%	18,6	30%
A2: AKADIMIA – VOULA	14,0	17,7	26%	17,3	-9%
A3: AKADIMIA – GLYFADA	13,4	18,3	37%	19,5	9%
A5: ANTHOUSA – AG. PARASKEVI – AKADIMIA (T)	14,0	17,4	24%	18,7	33%
Γ18: PERAMA - OMONOIA (T)	9,7	22,0	126%	22,1	127%



DA6. Public Transport Average Speed - Akadimias

Average Speed (km/h) – Buses	Existing A	Scenario B1	Percentage change (B1-A)/A	Scenario B2	Percentage change (B2-A)/A
3: N. PHILADELPHIA – ANO PATISIA - NEO PSYCHIKO	9,1	9,1	1%	13,1	35%
6: N. PHILADELPHIA – KOSMAS AITOLOS – IPPOKRATOUS (T)	10,3	8,0	-23%	11,6	13%
021: KANIGGOS SQUARE - GIZI	8,0	8,4	4%	11,1	38%
022: AKADIMIA – NEA KYPSELI	10,0	8,7	-13%	11,9	19%
025: IPPOKRATOUS – PROF. DANIHL	9,2	10,9	18%	11,0	20%
026: IPPOKRATOUS – VOTANIKOS	9,3	10,8	16%	10,9	18%
027: IPPOKRATOUS – ORPHEOS	9,9	11,4	15%	11,6	17%
060: AKADIMIA – LYCABETTUS	12,9	11,5	-11%	11,3	-13%
203: KAREAS –AKADIMIA	7,4	15,9	115%	14,8	100%
204: STR. SAKETA –AKADIMIA	9,4	12,3	31%	11,7	25%
211: METAMPRHOSI –AKADIMIA	12,2	16,8	38%	15,3	25%
214: ZOODOXOS PIGI –AKADIMIA	11,2	16,4	47%	16,4	47%
220: ANO ILISIA –AKADIMIA	7,3	14,3	95%	13,6	85%
221: PANEPISTIMIOUPOLI –AKADIMIA	8,6	14,2	65%	13,9	62%
224: EL. VENIZELOU – KAISARIANI (T)	8,4	10,1	19%	11,3	34%
230: ZOGRAFOU –AKROPOLI (T)	11,9	14,6	23%	12,1	30%
235: ZOGRAFOU –AKADIMIA	9,3	13,3	42%	11,7	28%
608: GALATSI –AKADIMIA – NEKR. ZOGRAFOU	9,7	10,0	3%	11,4	13%
622: ANO GALATSI – GOUDI (T)	10,1	9,7	-4%	13,5	31%
815: TAVROS –GOUDI (T)	10,3	9,9	-3%	10,9	63%
A2: AKADIMIA – VOULA	8,1	12,5	55%	8,8	41%
A3: AKADIMIA – GLYFADA	8,3	11,7	42%	16,9	22%
A5: ANTHOUSA – AG. PARASKEVI - AKADIMIA	10,3	14,9	46%	11,7	77%
A7: STOURNARI - KIFISIA	9,0	8,8	-2%	11,0	23%



Public Transport Service Upgrade (estimation)

- Reduction of bus and trolley passenger-hours at Panepistimiou and Akadimias
- Scenario B1 – Reduction :
 - Panepistimiou: **19,1%**
 - Akadimias: **7,4%**
- Scenario B2 - Reduction:
 - Panepistimiou: **21,1%**
 - Akadimias: **25,5%**
- Increased trips with Public Transport



Analysis Results – Scenario B1 (Indicators 1, 2, 3 – Passenger Cars)

- **1,8% increase of vehicle hours** for private trips at the wider area and **3,9%** at the intervention area
- **2,3% reduction of average speed of vehicles** at the wider area and **11,0%** at the intervention area
- **Lower level of service and higher travel time** at Panepistimiou, Filellinon and Vas. Sofias and less at Akadimias
- **Without significant change** at the main axes (-1,2% to 5%)



Analysis Results – Scenario B1

(Indicators 3, 4, 5 – Public Transport, Pedestrians)

- New bus lanes total length 1,9 kilometers (50 routes)
- 28% increase of average speed of busses and trolleys at Panepistimiou and Akadimias
- Regeneration of road sections (total length 6,3 kilometers)
- 22% reduction of passenger hours of busses and trolleys at Panepistimiou and Akadimias
- Increase of trips with Public Transport within 6 months (estimation 7,2%) – Scenario B2



Summary Results (Selected Scenario - B1)

Passenger Cars traffic				Public Transport and Pedestrian Traffic		
ΔA1	Vehicle hours of private trips (Intervention area)		+3,9%	ΔA4	Regeneration of Road sections	
ΔA1	Average Speed (Intervention area)		-11,0%	ΔA4	Regeneration of Road sections	
ΔA2	Level of Service (Intervention area)		+2,5%	ΔA5	Bus lanes (50+ routes)	
ΔA2	Total Level of Service		+1,2%	ΔA6	Average speed of Busses (Panepistimiou and Akadimias)	
ΔA3	Travel time at selected axes		+11,0%		Passenger hours in Public Transport	
ΔA3	Travel time at external axes		0%		Public Transport Trips	



Summary Results (Selected Scenario - B2: Change of Mode)

Passenger Cars traffic				Public Transport and Pedestrian Traffic		
ΔA1	Vehicle hours of private trips (Intervention area)		-29,2%	ΔA4	Regeneration of Road sections	+6,3km
ΔA1	Average Speed (Intervention area)		+8,4%	ΔA4	Regeneration of Road sections	+50 στρ.
ΔA2	Level of Service (Intervention area)		- 8,3%	ΔA5	Bus lanes (50+ routes)	+1,9km
ΔA2	Total Level of Service		- 5,0%	ΔA6	Average speed of Busses (Panepistimiou and Akadimias)	+34%
ΔA3	Travel times at selected axes		-5,0%		Passenger hours in Public Transport	-31%
ΔA3	Travel times at external axes		-5,0%		Public Transport Trips	+7,2%



Conclusions

- Significant Benefits
- Brave choices
- Estimated Impact
- Emblematic Significance

Significant Benefits

The proposed mobility interventions in Athens :

- will assist **dealing better with the corona crisis** (fewer accidents and hospital relief, alternative modes of transport, social distance for pedestrians)
- will achieve the completion of the **Great Athens Walk** and will assist freeing the **Commercial Triangle and Plaka** from private vehicles
- are introducing new and **sustainable mobility practices** in Athens with substantial priority in public transport, pedestrians and bicycles
- take advantage of the opportunity for their **smooth (trial) implementation** during the period of gradual recovery from the coronary crisis



Brave choices

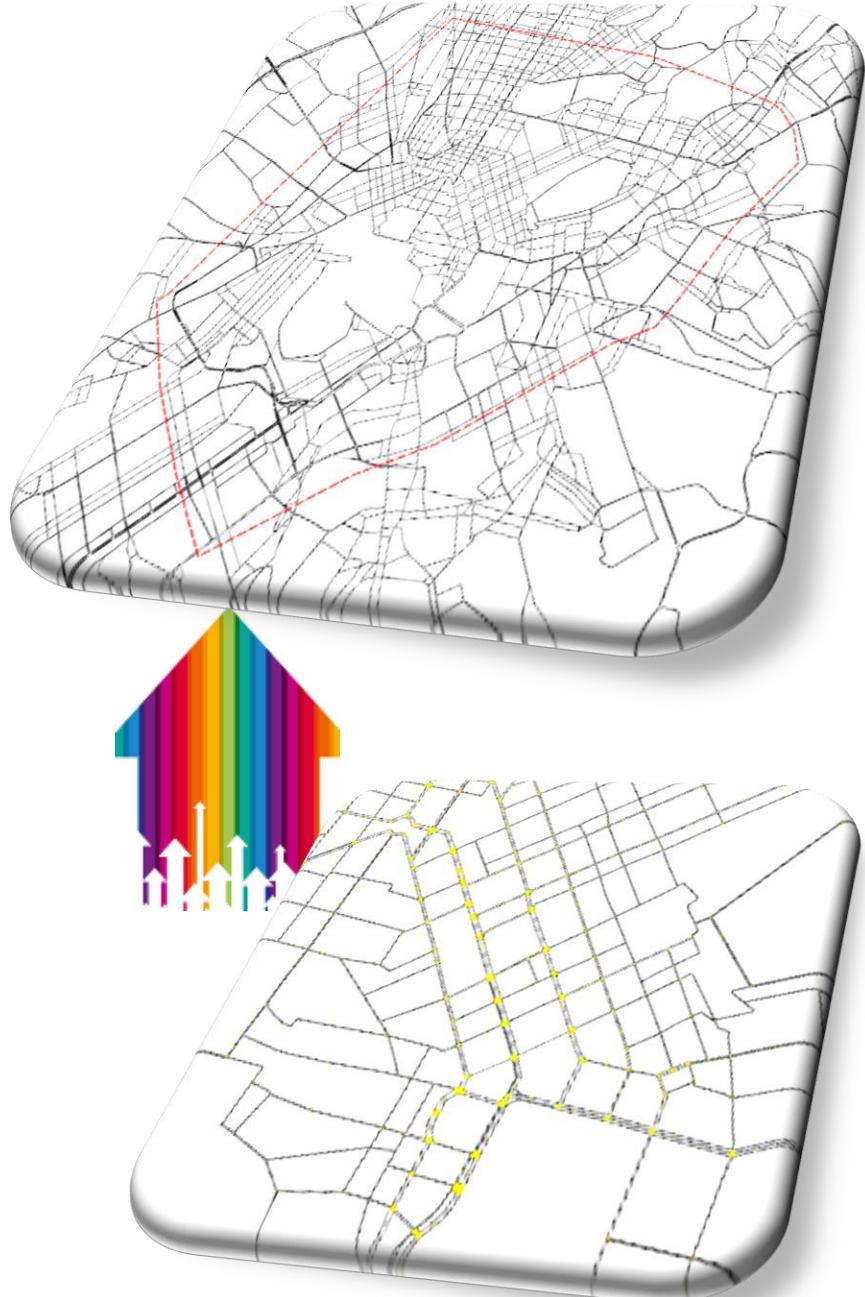
- The new traffic lanes for pedestrians and bicycles in emblematic places of the center of Athens (Syntagma - Panepistimiou) demonstrate the **new mobility policy** of Athens City
- Traffic regulations leading to reduction of average speed at city center are a **fundamental choice of protecting human life** against the reckless and dangerous speed of vehicles
- The completed Great Walk will make Athens even more attractive as a **unique tourist destination**, with a pleasant tour around the places where democracy was born
- The release of the Commercial Triangle and Plaka by private vehicles proves that the city can operate differently **focusing on humans instead of vehicles**



Estimated Impact

Traffic impact results indicate that:

- the **negative impact** of interventions on traffic is **limited** in the area of Syntagma and Panepistimiou, it is also very limited in the Athens ring and negligible outside the ring
- the **positive impact** of interventions is significant for bus users (many faster routes), pedestrians and cyclists and therefore for the **economy and quality of life** in Athens
- the traffic in the area is expected to be **re-balanced soon** as car occupants will choose new routes, different hours or different means of transport (estimated increase modal shift to Public Transport of 7%)

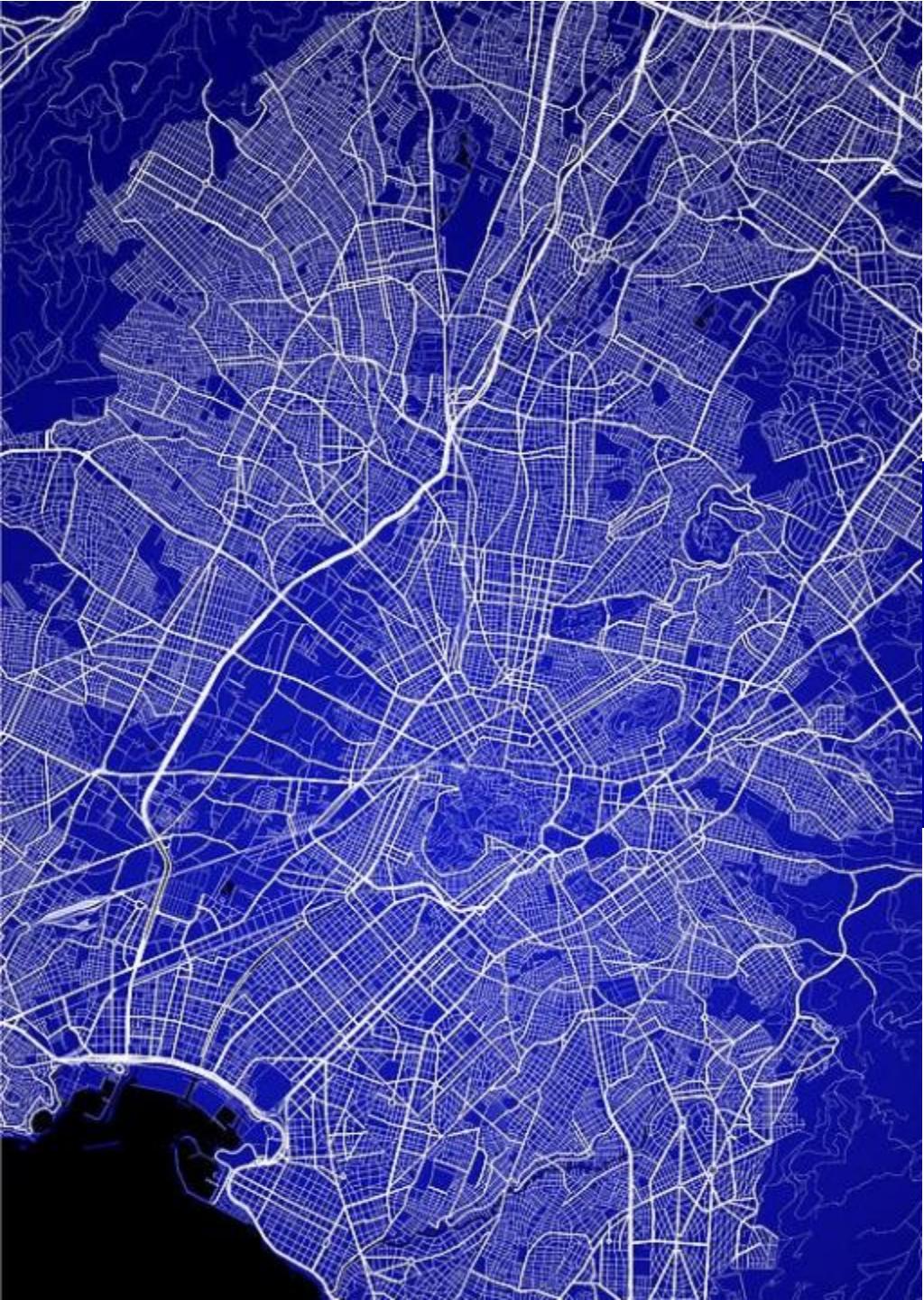


Emblematic Significance

The proposed mobility interventions in Athens:

- have significant **social, economic and environmental** benefits
- lead to quite limited and short **traffic impact**
- open the way in an emblematic way, for the implementation of the new policy of **sustainable urban mobility** at Athens City and throughout the wider Athens area.





Athens Municipality



Department of Transportation
Planning and Engineering NTUA

Athens Great Walk

George Yannis
NTUA Professor

Municipality of Athens City Council
Athens, 11 May 2020