

## 5. PLASTIRA STREET

### 5.1. Case Study Area and Character Sections

#### Case Study Area

Plastira street is located in the Eastern part of the city of Kalamaria and it is a significant two-way arterial street. Its total length is approximately 2,800m, while the Case Study segment is 1,120m long.

Even if residence is the main land use of the area, the street is characterized by the concentration of recreational land uses at the ground floor of the buildings. The street runs along the coastal zone of Kalamaria, but it is approximately 100m away from the sea, on a slope, elevated approximately by 20m above the sea level. There are no built-up blocks along one side of the street, the one close to the sea.

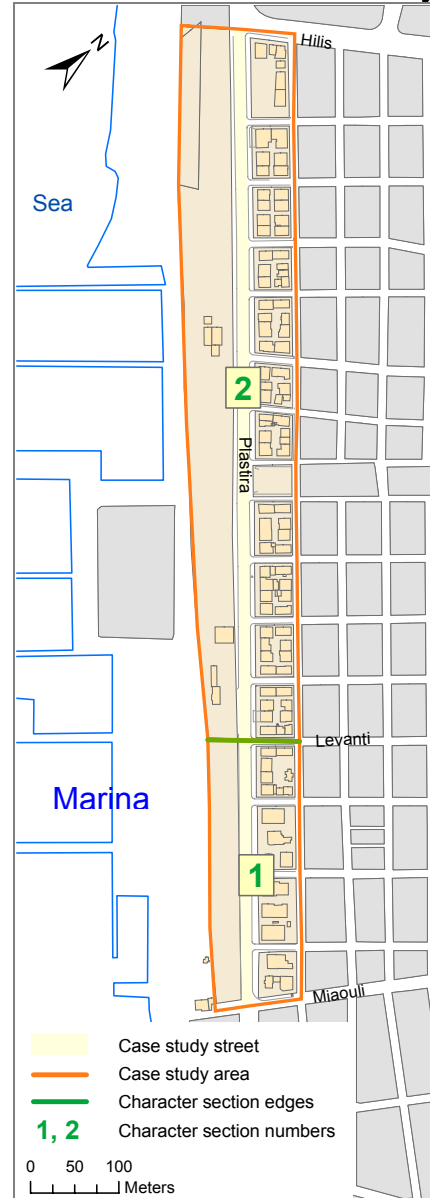
#### Character Sections

For the purpose of the project, Plastira Street Study Area was divided into two Character Sections.

Section 1, as shown in the map, runs between Miaouli and Levanti Street (300m). The predominant land use of this section is recreation at the ground and first floors, and residence on the upper floors, but only at the eastern side of the road. The western side – the one close to the coast – is used as cafeteria open space and as entry points to the marina.

Section 2 starts from Levanti Street up to Hilis Street (820m) and has a more or less residential character.

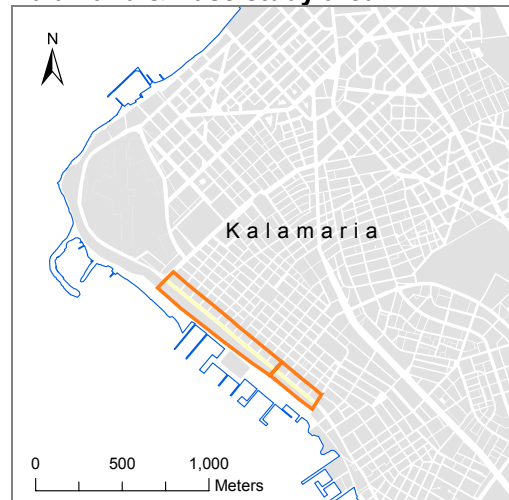
Character sections of Case study



Bus route map of Kalamaria



Kalamaria & Case study area



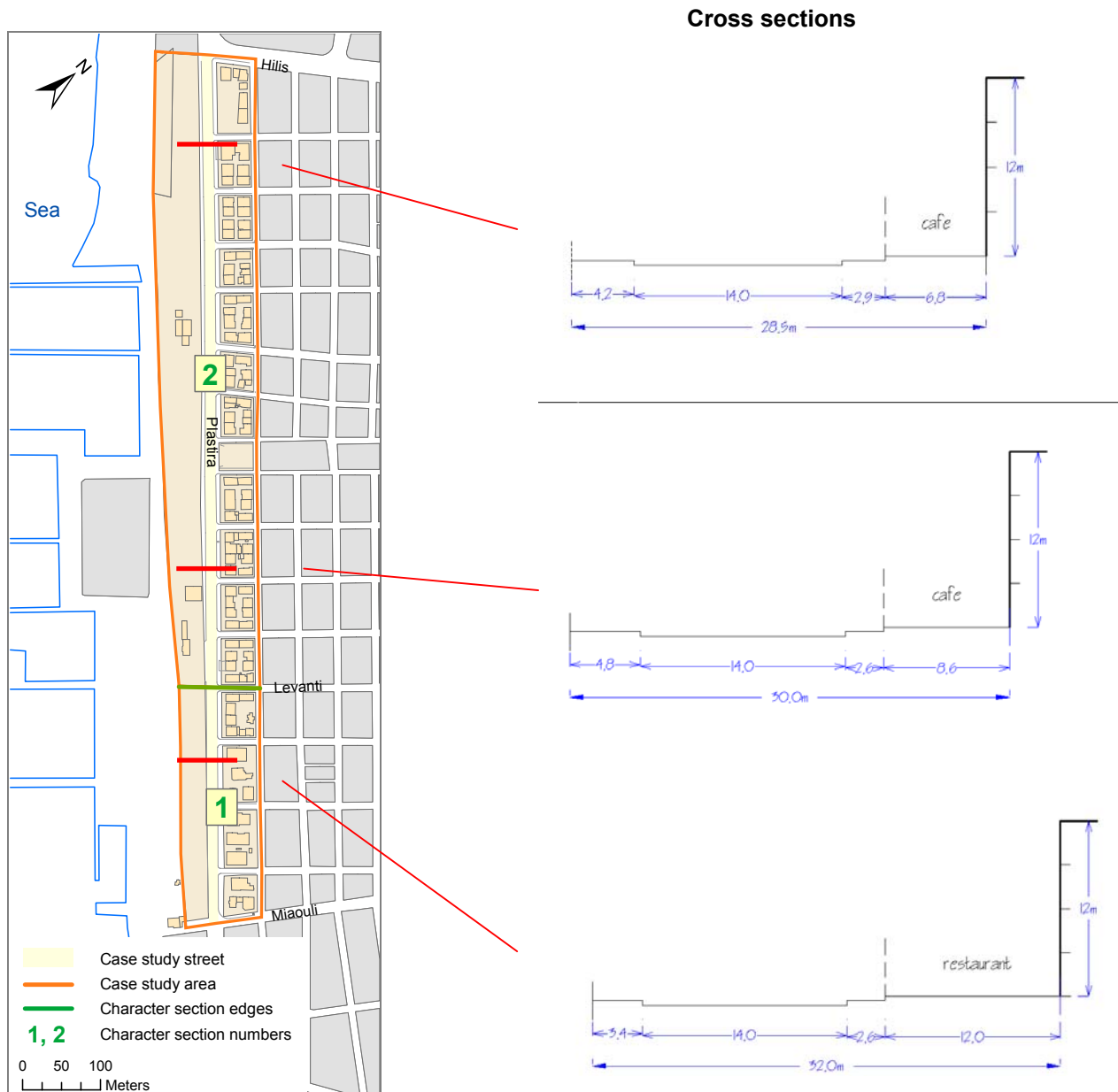
## 5.2. Street Indicators

### 5.2.1 Built Form

#### Buildings

Building Height : The average height of roofline is 11 m in both sections.

Spacing of Buildings : The ratio of frontage to space between frontages is 2.02 for Section 1 and 2.87 for Section 2. The density of buildings is much higher in Section 2 than in Section 1.



**Inactive Frontages :** The percentage of inactive to active building line is 29% for the whole area, 39% for Section 1 and 26% for Section 2.

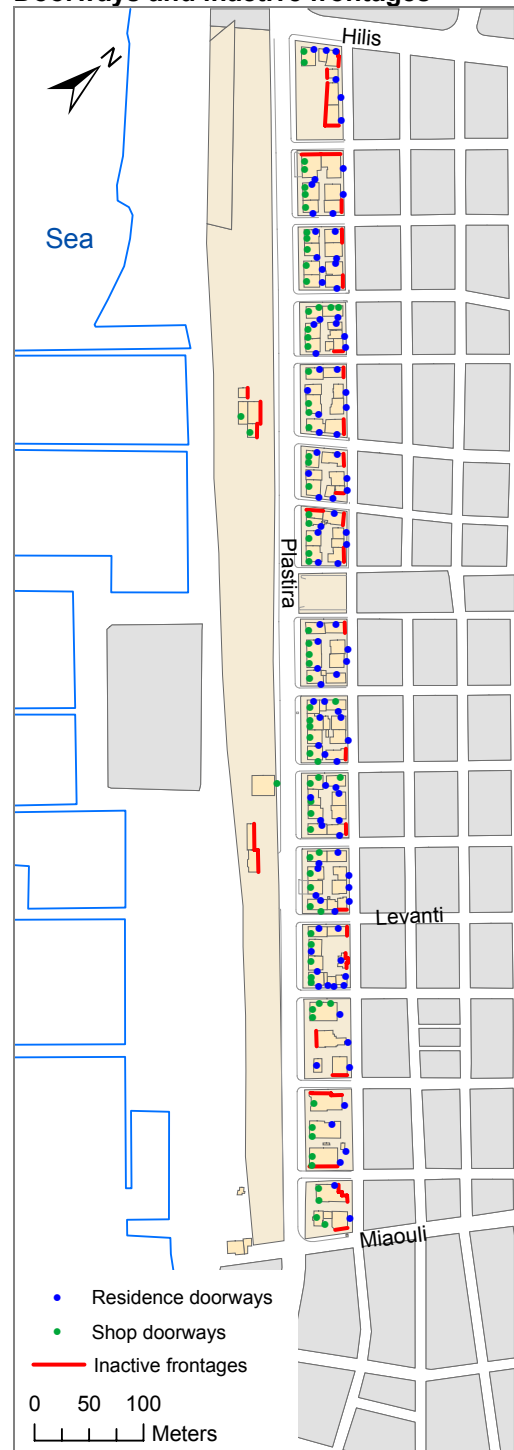
Buildings facades to Plastira Street are almost all active.

**Doorways :** The number of doorways opening onto the public realm is 14 for Section 1 and 52 for Section 2.

The number of doorways per 100m is 6.9 for the whole street, 5.4 for Section 1 and 7.4 for Section 2.

Almost all of them are shop doorways to cafés / bars / restaurants, as recreational land use dominates along Plastira street. This particular zone attracts mobility, not only from Kalamaria, but from all over Greater Thessaloniki Area as well, especially during the evening.

**Doorways and inactive frontages**



Historically important buildings or significant structures :

There are two historically important buildings in Plastira Street. Both of them are at Section 1.

The first one, at the beginning of Section 1 (Plastira-Miaouli junction), was built between 1925 and 1930 by a Greek architect, named Kokkas.

The second significant structure, at the number 95 of Plastira street, it was built in 1930 by a Russian architect.

Both buildings were initially used as country houses for rich families of Thessaloniki. Having been renovated recently, today they house a bar-restaurant and a bar.



*1<sup>st</sup> Historical building in Section 1 at the corner of Plastira & Miaouli street*



*2<sup>nd</sup> Historical building in Section 1 at the corner of Plastira & Kazika street*

Quality of Built Fabric :

Both character sections present a nice picture in terms of the quality of built fabric: reinforced concrete and masonry are the basic materials used, due to strict Greek building regulations and seismic code. Decoration elements in the new residential buildings are the balconies and windows, as well as the various colours of facades. Old buildings are renovated and in a good state of repair.

### Space Between Buildings

#### Primary Descriptors

Street Width : The distance between building line and the edge of the opposing sidewalk (at the unbuilt side of the street) is 32 m in Section 1, and fluctuates from 28.5 m to 30 m in Section 2.

Side Space Width :	Width of side space on Southwest side of str. (m)	Width of side space on Northeast side of str. (m)
Average:	4.0 (3.4-section1 4.2-section2)	2.8 (2.7-section1 2.9-section2)
Narrowest:	0.0 (0.0-section1 3.4-section2)	2.6 (2.6-section1 2.8-section2)
Widest:	4.8 (3.4-section1 4.8-section2)	7.8 (7.8-section1 6.4-section2)

The following photos are taken successively in different points, walking from Section 1 to Section 2



Section 1



Section 1



Section 2



Section 2



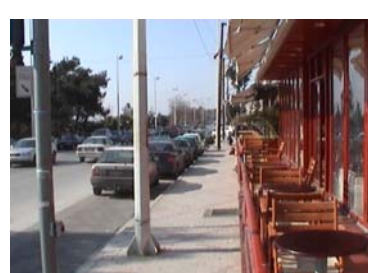
Section 2



Section 2



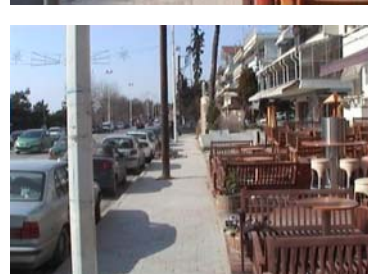
Section 2



Section 2



Section 2



Section 2

**Median Strip :** Plastira Street does not have a median strip.

**Width Between Side Space :** The width between side space is 14m all along Plastira street. Not all of this space is used by traffic because parking is allowed in both directions. As there is a significant demand for parking places in Plastira street, there are 2 meters of carriageway in each direction almost constantly occupied by parked cars.

**Trees and Other Greenery :** Green space of Plastira street shapes the street space and is an important formative element of the street, although it is not equally distributed in both street sides.

There is a large green area between the street and the sea, on the top of the slope, parallel to the street, as well as at the sea level (the latter does not influence the visual environment of the street). There are many trees, mostly pines.

At the built side of the street, Skra Square forms an important green opening. Apart from that, there are no trees or other greenery on the side space.

Along the sidewalks of the crossing roads trees are planted in rows.



*Plastira park – greenery in Section 1*



*Skra Square – greenery in Section 2*

**Street surfaces, furniture and other design elements :**

Plastira Street has asphalt all along the carriageway and tiles on the side spaces.

The pavement of the carriageway is in good condition, with sporadic patches and cracks.

The pavement marking is not adequately maintained.

The sidewalks are covered by slabs.

There are no special elements of street furniture at pedestrian crossings.

**Guard Railing :** There are no guard railings in Plastira street study area.

Bollards are used sporadically either to prevent parking on sidewalks or to define refuse bin location.



*Section 2- pedestrian crossing*



*Section 1- bollards used to define refuse bin 's location*

People Spaces : Along Plastira Street there are many spaces for people to congregate all green, mostly at Section 1.

Skra Square, in Section 2, is a public place with a park, playground, benches etc.

A Municipal cafe is located in Section 1, within a small grove.

Finally, most of the restaurants and cafes along the street have terraces at both sides of the street.



Section 2-  
footpath and benches in Plastira park



Section 2-  
playground in Plastira park

Lighting : Plastira street has two rows of street lighting, one in each side of the street, in both character sections.

The average distance between two successive lighting poles (of the same row) is 29m all along the street. Apparently there is poor lighting on the crossing local streets.



Typical street light in Plastira street

### Secondary Descriptors

Definition (Two Dimensional Scale) : Ratio street width to building height  
5.5 ( 5.8-Section 1 5.5-Section 2 )  
The number is too high because of the single actual built side of the street.

Type of green  
'shapes' = green shapes the street space

Definition (Enclosure) : Average width between side spaces is 14m. Total average side space is 7m.

The enclosure effect is minimum as there is only one building line along the street. The effect is perceivable mostly due to tall lighting poles in both sides of the street.

Transparency : Inactive building line  
29% (39%-Section 1 26%-Section 2)

Number of doorways per 100 metres building line  
6.9 (5.4-Section 1 7.4-Section 2)

Illuminated building line  
All active building frontages of Plastira street are heavily illuminated, due to the large windows at the ground floor.



Plastira Street from Section 1

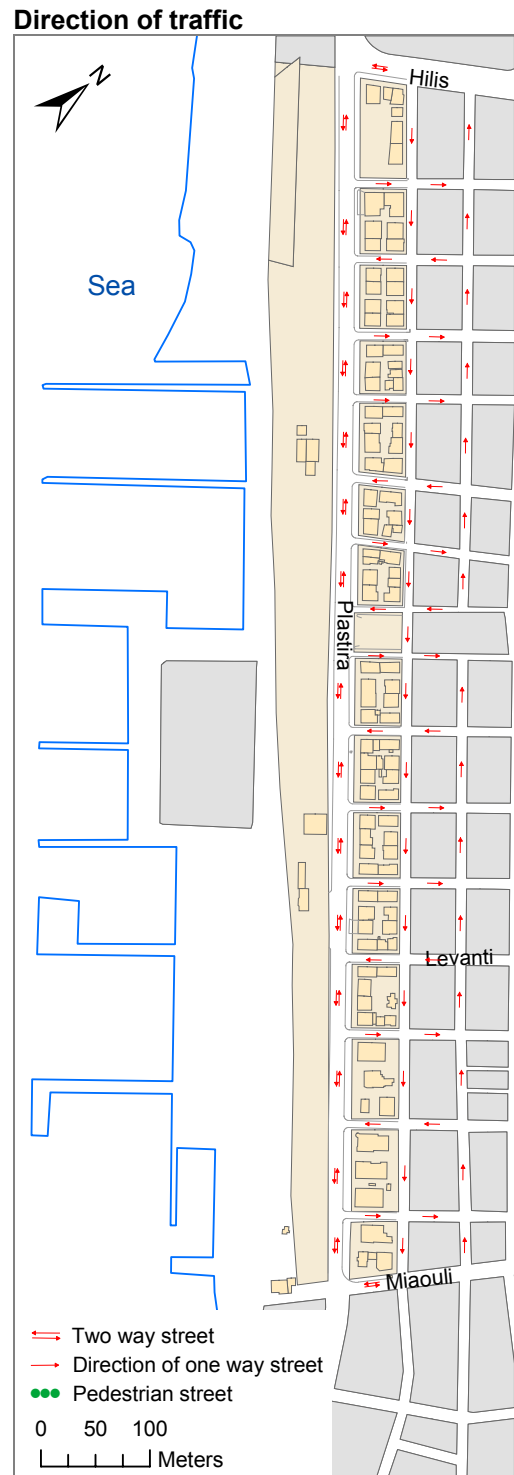


Plastira Street from Section 2


**5.2.2 Function, Management and Regulation**

**Primary descriptors**

<p><b>One-Way or Two-Way Operation :</b></p>	<p>Plastira operates as a two-way street.</p> <p>Most of the adjacent streets (crossing or parallel to Plastira) are one-way streets, and operate as pairs of opposite direction, as shown in the map.</p> <p>The two main crossing streets at the edges of Plastira, i.e. Hilis and Miaouli have a two-way operation.</p>
<p><b>Speed limit :</b></p>	<p>The speed limit is 50 km/h.</p>
<p><b>Traffic Calming Measures :</b></p>	<p>There are no traffic calming measures taken at Plastira street.</p>
<p><b>Number of Marked Traffic Lanes :</b></p>	<p>Both character sections of Plastira street have 2 traffic lanes per direction.</p> <p>On-street parked vehicles in both sides of the street restrict traffic. Most often only one traffic lane is effective per direction.</p>
<p><b>Lane Width :</b></p>	<p>The lanes width is 3.5 m along the whole street.</p>
<p><b>Visual Width :</b></p>	<p>There is no visual reduction of carriageway width.</p>





Division/ Allocation of Carriageway Space :	<p><b><u>Segregation of carriageway</u></b></p> <p><b>bus</b>  <input type="checkbox"/> separate  <input checked="" type="checkbox"/> in mix</p> <p><b>bicycles</b>  <input type="checkbox"/> separate  <input checked="" type="checkbox"/> in mix</p> <p><b>pedestrians</b>  <input checked="" type="checkbox"/> separate  <input type="checkbox"/> in mix</p> <p><b>HOV / taxis etc</b>  <input type="checkbox"/> separate  <input checked="" type="checkbox"/> in mix</p>	<p>Pedestrians use the sidewalks.</p> <p>Bicycles are not specially cared for and they use either the carriageway or the sidewalks.</p> <p>On-street parking occupies space of the carriageway (2 metres per direction).</p>
Pedestrian Crossings :	<p>All pedestrian crossings are signalised and have zebra markings. There are 6 signalised pedestrian crossings along the study area, every 225m in average. All of them are at junctions.</p> <p>There are no pedestrian over / underpasses neither built pedestrian crossings.</p> <p>Sometimes refuse bin s or illegally parked cars obstruct pedestrian crossings such.</p> <p>Even if there are enough signalised pedestrian crossings, many pedestrians cross Plastira street anywhere. This extremely hazardous situation is caused by the land uses (café-bar-restaurants), which generate significant pedestrian activity along the street.</p>	
Signal Junctions :	<p>There are 6 signalised junctions in Plastira street study area. Three pedestrian crossings are provided in each signalised junction.</p>	
Roundabout Junctions :	<p>Plastira Street has no roundabout junctions.</p>	
Other Junctions :	<p>Plastira Street has 11 non-signalised (priority) junctions. Pedestrian crossings with zebra markings are not provided at these junctions.</p>	
On-Street Parking :	<p>Along the study area there are 310 on-street legal parking spaces.</p> <p>On street parking is permitted in both directions of the street. There are no restrictions and no special reserved parking spaces.</p> <p>During the evening hours, cars are parked in a second row, illegally, blocking the traffic lane, especially in Section 2. Most of them belong to visitors of the recreational land uses. Traffic Police of Kalamaria makes occasional attempts to control illegal parking, but enforcement is rather poor.</p>	 <p><i>Illegally parked cars next to legal parking spaces in Section 2. (note that bus on the background is the only moving vehicle on the frame)</i></p>
Cycle "Lanes" : Cycle Parking :	<p>There are no special facilities for cyclists.</p>	

Bus Stops : On Plastira Street study area there are 7 bus stops for both directions in total. There is approximately one bus stop every 400m in each direction.

Bus stops on Plastira street are well marked and all of them - except one - provide shelter with a bench. Parking in front of bus stops to a length of 25m is prohibited by greek regulations. Drivers often violate this rule, and in addition there is poor enforcement.

Marked spaces?

yes

no

Parking prohibited?

yes

no

Shelter provided?

yes

no



*Typical bus stop with shelter in Section 1*



*Typical bus stop with shelter in Section 2 & illegally parked cars*

5.2.3 Patterns of Use

Traffic

Primary Descriptors

<p>Average Vehicle Flow :</p>	<p>Average Daily traffic flow (24 hour AADT) by vehicle type :</p>	<p><b>Daily Traffic Flow</b></p>
	<p>Car/van 15,000 in Section 1 17,000 in Section 2</p>	
	<p>Van/truck &gt;3.5T 300 in Section 1 340 in Section 2</p>	
	<p>Buses 300 in both sections</p>	
	<p>There are two major vertical streets with significant traffic, both in Section 2: Hilis str :14,300 pcus Passalidi str: 2,000 pcus</p>	
<p>Peak Vehicle Flow :</p>	<p>Peak Hour traffic flow along Plastira street by vehicle type:</p>	
	<p>Car/van 1,400 in Section 1 1,600 in Section 2</p>	
	<p>Van/truck &gt;3.5T 30 in both sections</p>	
	<p>Buses 20 in both sections</p>	
<p>Vehicle Occupancy :</p>	<p>The average number of persons per bus is 90 in the total study area.</p>	
	<p>The bus occupancy is higher in Section 2 than in Section 1, because the closer to the centre of Thessaloniki, the higher the bus occupancy:</p>	
	<p>70 persons per bus in Section 1 100 persons per bus in Section 2</p>	
<p>Bus Reliability :</p>	<p>The average bus delay is 1 minute. Although the calculated average delay is too low, there is a significant deviation from average, which affects bus reliability.</p>	

## Activities

### Primary Descriptors

#### Street Activities and Behaviour :

There are various pedestrian street activities along Plastira street. During the morning hours, the residential uses generate every-day pedestrian trips, home to work, school, shops etc. Nevertheless, the peak of pedestrian trips occurs during the evening, as the study area is a popular entertainment zone for the Greater Thessaloniki Area and it is full of people moving, standing, sitting etc.

#### Pedestrians Along the Street :

Pedestrian flows along the road sections of the study area were not available from Municipal or other sources. These flows vary significantly with time of day, season and exact location, and therefore flow counts in one period and at one point only are not indicative of the real situation and representative of the pedestrians' level of service. Nevertheless, limited pedestrian flow counts were conducted according to the ARTISTS' suggested instructions in November 2002. These counts were taken during evening peak periods (around 20:00) and resulted in the following figures:

420 pedestrians / h in Section 1  
912 pedestrians / h in Section 2,  
(both street sides at the busiest point in section)

It is worth mentioning that the north east sidewalk is quite narrow with several obstacles, thus resulting in inconvenience for the pedestrians who use it. Similarly, several objects are present on the other sidewalk, such as kiosks, bus stops, sporadic trees and poles (lighting, electricity, telecommunication, traffic signals, advertisement etc.), which reduce the effective walkway width and obstruct significantly pedestrian mobility.

#### Pedestrians Across the Street :

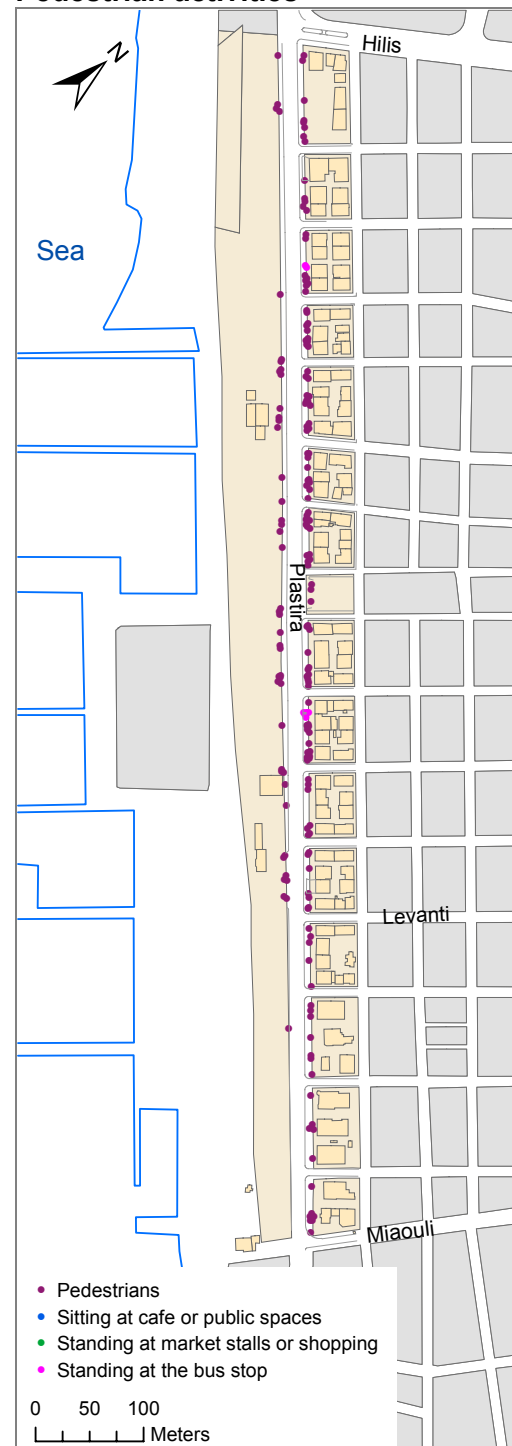
In a similar manner, observations of pedestrian flows at peak hour (evening around 20:00) were conducted and resulted in the following figures:

60 pedestrians/ h Section 1  
192 pedestrians/ h Section 2

(in both directions at the busiest point in winter)

There are a lot of pedestrians crossing the street at non-protected (traffic signals, zebra crossings etc) points.

#### Pedestrian activities



Upper Floors  
Land Use :

Ground Floor  
Use :

A percentage of 62% of buildings within the study area has mixed use (commercial ground floor and residential upper floors). This figure is even higher for buildings with frontages on Plastira street, while buildings with frontages at the parallel street have mainly residential use.

Number of workplaces on ground floor \*

	Total str	Section 1	Section 2
Business	1	0	1
Industrial	0	0	0
Retail	64	11	53
Public service	1	0	1

\*2002

Number of workplaces on ground & upper floors \*

	Total str	Section 1	Section 2
Business	16	2	14
Industrial	0	0	0
Retail	52	12	40
Public service	5	0	5

\*1995

Floor space in m<sup>2</sup> of ground & upper floors\*

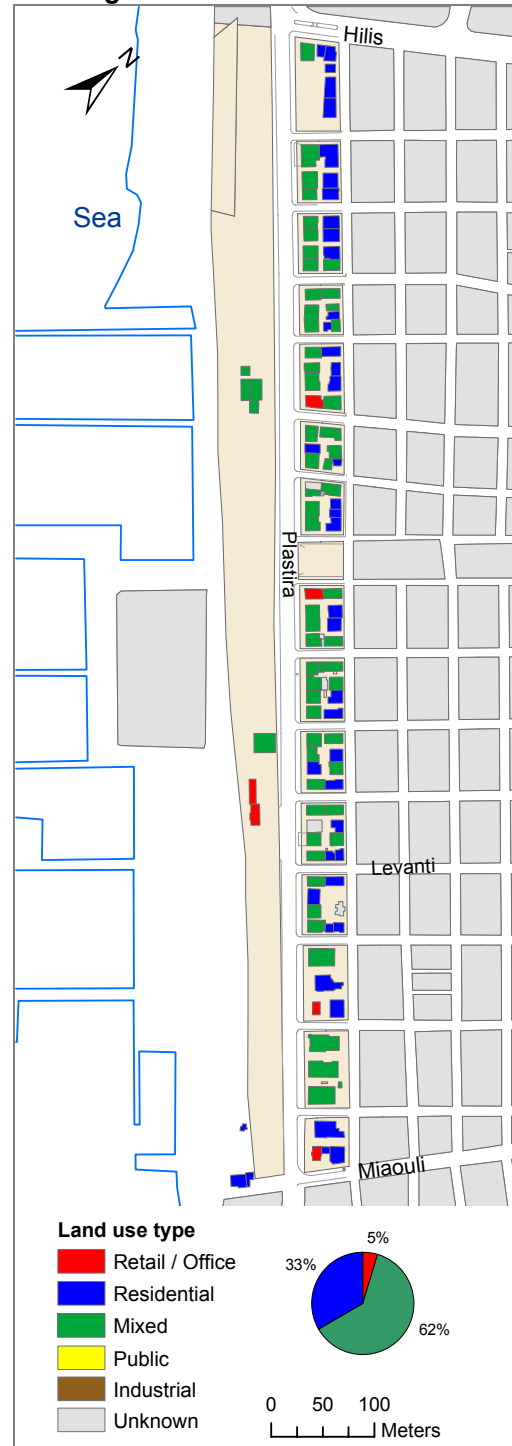
	Total str	Section 1	Section 2
Business	1631	225	1406
Industrial	0	0	0
Retail	6031	1414	4617
Public service	159	0	159

\*1995

The upper floors use is primarily residential. There are no special office buildings in the area, but there are offices sporadically at the upper floors of some buildings.

The ground floor of buildings in front of Plastira street has a recreational use (bars, restaurants, cafes and street cafes with seating outdoors) and is included in the category "retail" ("services").

**Building land use**



**Off-Street  
Parking :**

There are two off-street parking areas on Plastira street, both of them at Section 2 at the south-west side of the street.

The first one is close to the edge of the section, and the second is located in the middle of it. Both are open-air public parking lots with no restrictions (time or charge). They have a capacity of 50 parking spaces each.



*1<sup>st</sup> off street parking in Section 2*



*2<sup>nd</sup> off street parking in Section 2*

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### 5.3. Performance Indicators

#### 5.3.1 Street Safety

Traffic deaths and injuries :

The numbers of accidents presented hereby are referred to the period 1999-2001.

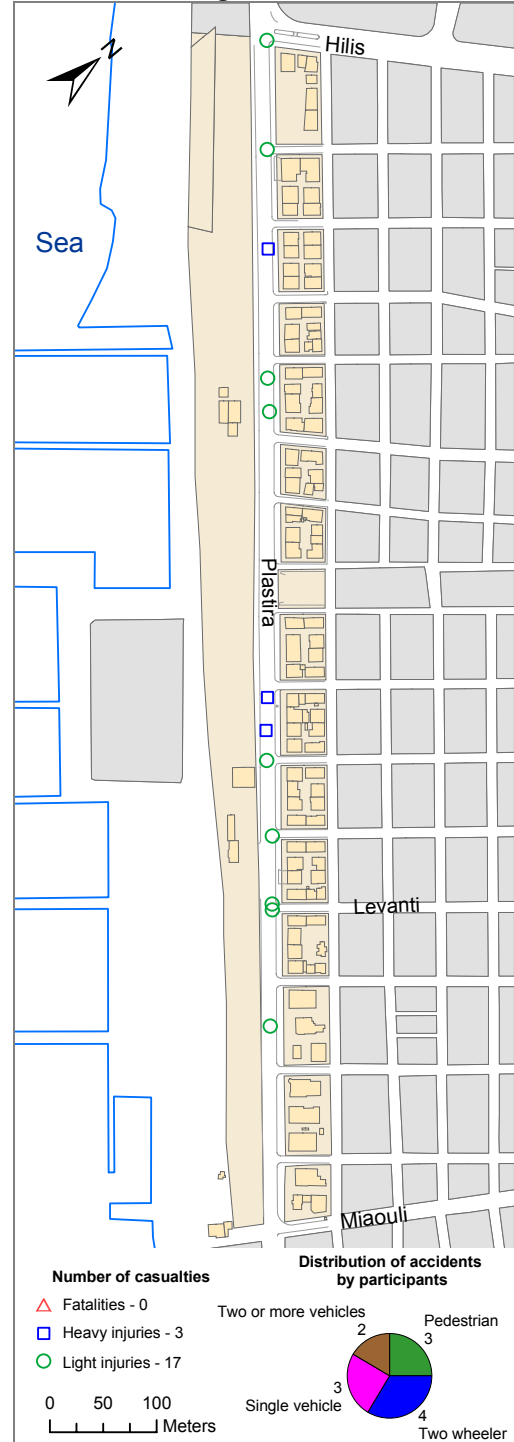
- Total number of road deaths = 0
- Seriously injured pedestrians = 1
- Slightly injured pedestrians = 4
- Seriously injured two-wheelers=0
- Injured two-wheelers=6
- Seriously injured in motorised vehicles=2
- Slightly injured in motorised vehicles =7
- Total number of serious road injuries=3

The following total numbers are given separately for the total length of the street case, as well as for the two character sections.

- Slight road injuries 17 (Section 1: 3 Section 2:14)
- Killed and injured 20 (Section 1: 3 Section 2:17)
- Accidents 12 (Section 1: 3 Section 2: 9)

From the above is concluded that the number of fatal and serious accidents along Plastira street is not very high. Most of the accidents involving pedestrians occur at non-protected points. A high concentration of accidents occurs at Section 2, between Levanti street and Skra Sq., where the interaction among pedestrians and vehicles is high.

Accidents during 1999-2001

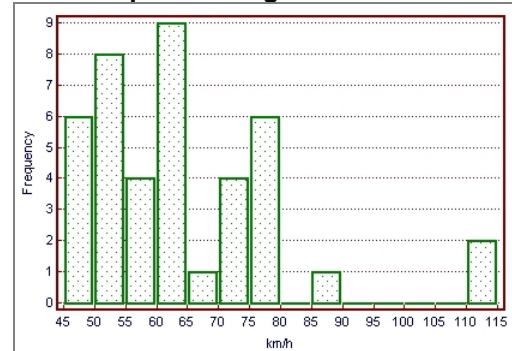


Vehicle Speed: Average speed of motorised vehicles in km/h (free flow conditions)  
64-Total str 56-Section 1 72-Section 2

V85 of motorised vehicles in km/h  
76-Total str 62-Section 1 78-Section 2

In free flow conditions drivers exceed speed limit in both sections.

**Vehicle speed histogram**



### 5.3.2 Economy

Viability : Homes (Apartments): The average rent of a 80 m<sup>2</sup> flat for one year is €5,650.  
Homes (Apartments): Purchase price per owner-occupied flat is 3,250 euros per m<sup>2</sup>.

Kalamaria, and the particular neighbourhood, is a place of high-income households. Many of the apartment buildings are constructed within the last fifteen years and they are of very good quality. Therefore, the cost of renting or buying a house is rather high comparing to other districts of Thessaloniki.

Retail: Average rent price per year is € 247 per m<sup>2</sup> (estimated for 2002).  
Office: Average rent price per year is € 71 per m<sup>2</sup> (estimated for 2002).

This very high rental price of retail shops in Plastira is due to the recreational character of the street. The office rental price is similar to the average for Kalamaria.

Residential Population : The total population of the Study area is 1627. The population density of the area is very low, (81 m<sup>2</sup> of space per inhabitant), mostly because of the unbuilt southwest side of the street.

### 5.3.3 Noise

The noise level due to traffic along Plastira street exceeds the limit imposed by the Greek and European legislation for residential areas.

## 5.4. Long-Term Change

Until late 70's there were no signalized junctions in Ethnikis Antistasis street. Then, traffic signals of 70sec cycle time and fixed program were installed in the major intersections. Recently, in 2002, the program changed to a new cycle time of 90 sec to conform with the rest of the signals of the Greater Thessaloniki Area, which have changed at the same time.

During the last couple of decades older buildings of 1 or 2 floors have been replaced by new taller ones (4 to 5 floors) of good built quality, decorated with balconies, windows and colored metallic parts. The commercial activity have grown with the appearance of big supermarkets, banks and shopping centers.