ARTISTS
Arterial Streets Towards Sustainability

National WP2 Report of Greece

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Municipality of Kalamaria

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1. TOWN AND ROAD PLANNING IN GREECE

This chapter contains information about urban and road network planning in Greece. It refers to legal issues (existing legislation, guidelines etc.), as well as experience acquired from the implementation of design elements and street reconstruction schemes.

1.1. Legal issues concerning urban and road network planning

Urban and road network planning in Greece is the responsibility of Local Authorities. In Greece, there are four levels of Authorities:

- **Central Government**, responsible for the overall national policy in all areas, including planning legislation. The responsible Ministry is the Ministry of Environment, Planning and Public Works.
- **Regional Authorities** (the country is divided into 13 of them) which act like "Local Ministries". The General Secretary of the Regional Authority is the representative of the Central Government in the Region and he is responsible for the implementation of the Governmental policy. The Regional Authority supervises the two lower grades of Authorities.
- **Prefectures** (52 of them), which are the so-called provincial authorities and they comprise the second level local authorities. The Board members of the prefecture are directly elected by the eligible voters at the Local Authority Elections every 4 years.
- **Municipalities**. They are the Authorities of the lowest level. The Municipal Boards, along with community level boards are directly elected every 4 years. There is no hierarchical relation between Prefectures and Municipalities.

Road networks in Greece are classified in three main categories: National, Provincial and Municipal Road networks.

The Regional Authorities are responsible for the construction and maintenance of the National Road Network, while the Prefectures take care of the provincial roads. The Municipalities are responsible for the local roads and for all other issues within their area, such as:

a. The construction, maintenance and operation of water supply, drainage system, transport system (public transport, road network, parking, traffic management etc.), parks, and schools,
b. The cultural, educational, environmental, urban planning etc. issues.

All the above Authorities are responsible to keep roads in such a condition, that traffic demand is served satisfactorily.

Implementation of major construction works, that are assumed to influence the environment considerably, start after the approval of an Environmental Impact Study, according to the Greek legislation about environmental planning ([2], [3]). In addition, when a major scale transport project is going to be implemented within an urban area, the City Council's decisions follow extended public presentations and discussions. This procedure is not explicitly prescribed by existing legislation but it is considered common practice.

Traffic control measures in local road networks are imposed by the city councils, following a legal procedure of four steps including:

a. Approval of a special Municipality Committee,
b. Public announcement of the traffic control measures, at the local newspapers, and a 15-days period for the citizens to object to it,
c. Submission of the proposal to the City Council, together with the citizens objections, if any, and City Council's decision,
d. Announcement of the City Council's decision to the local newspapers.
The urban planning policy for Thessaloniki is described in the Master Plan of Greater Thessaloniki Area (GTA). The Master Plan consists of goals, directives and measures for the regional and urban planning of the area, in the context of five-year development programmes. It contains also an Environmental Protection Programme, that is measures and directives for the protection and improvement of the natural and urban environment of GTA.

At the local level, each Municipality has a Local Town Plan which deals with local urban planning matters, like land use definition (residential areas, education, green areas, health services etc.), as well as the traffic system, road classification and traffic services.

The Local Town Plans should not be contrary to the Master Plan of the GTA. The release of the plan proposals are sent to the Minister of Environment and other State and Local Authorities (Regional Authority, neighbour Municipalities etc.). Affected and interested land and building owners, tenants, associations, NGO’s etc. must also be informed. This is typically done by inserting advertisement in local newspapers and by sending the proposals to selected people / organisations.

Major land use changes are allowed only when the Local Plan is formally being modified – if necessary– after at least five (5) years from the previous modification. Minor land use modifications in buildings are allowed, given that the type of land use is permitted by the Local Plan for the specific block.

Street classification is also included in the Traffic Plan of the Municipality, which usually is not contrary to the Local Town Plan. Traffic control measures, included in the Traffic Plan, are being implemented according to a five-year programme. During the implementation of the programme, public participation is either formally requested from the Local Authority, or enforced by the groups that are affected, after the beginning of the works.

1.2. Road construction financing

In Greece, Local Authorities are responsible for the financing of the construction and maintenance of all streets within their area. Roads that are considered extensions of national roads may be undertaken either by Central Government Agencies or by the responsible Regional Authority. Of course, the major part of the available funds comes from national sources. But, the way that this money is spent depends on the Local Authority and its Technical Programme, which is being approved by the City Council at the end of the year. Furthermore, a significant part of the money comes from European Commission funds (mainly for street reconstruction and improvement, environmental improvement works etc.).

In the Thessaloniki Greater Area, the public bus transport facilities and equipment are financed by the Public Transport Organization of Thessaloniki, which is a private Organisation operating under a 20 year Concession contract, granted by the Ministry of Transport and Communications. There is also a state authority under the Ministry of Transport and Communications that is responsible for Public Transport Planning and supervision of the Thessaloniki PT Operator. Many Municipalities of the GTA run Municipal bus services, provided for free to the public, in order to complement the main mass transit system of the GTA. The Municipal bus transit systems are financed by Municipal funds.

In terms of parking, owners of new buildings are obliged to provide adequate parking space within their land according to the local defined parking norms. Until recently this obligation could be avoided with the payment of a compensation fee to the Municipality so that the latter can provide off-street parking spaces to increase parking supply. Now this is not possible any more in most cases.

The Ministry of National Economy subsidises construction cost of new parking infrastructure for public use up to approximately 30% of the total cost. Beneficiaries of this subsidy are either the Municipal Authorities or private enterprises depending who will operate the parking space.
National funds are distributed to Local Authorities according to the population size.

Information on the financial situation related to arterial streets for Greek Local Authorities in general is not available. In terms of the Municipality of Kalamaria, the relative figures are given in paragraph 2.1, and refer to the road network in general, not only arterial streets.

<table>
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<tr>
<th>Financing organisation</th>
<th>Percentage of road network construction &amp; maintenance budget</th>
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</thead>
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<tr>
<td>Municipality of Kalamaria</td>
<td>~ 15%</td>
</tr>
<tr>
<td>National Funds (Road Directorate)</td>
<td>~ 40%</td>
</tr>
<tr>
<td>European Community Funds</td>
<td>~ 30%</td>
</tr>
<tr>
<td>Private (local residents for the construction of new streets)</td>
<td>~ 15%</td>
</tr>
</tbody>
</table>

### 1.3 Reconstruction experience and tradition

#### 1.3.1 Individual design elements / schemes

Street reconstruction in urban areas aims usually at improving road environment for car traffic and/or increasing street capacity, as well as road safety for pedestrians and cars. During the recent years a strong interest is shown by the Municipalities to improve the quality of the pedestrian movements.

The following paragraphs describe the design elements used in Greece, while maintaining or reconstructing urban streets.

Pavement marking: Pavement marking is very important for traffic safety and drivers' convenience on one hand, and for the good image of an arterial street on the other. A good pavement marking complements the traffic signs, and facilitates the drivers, providing them with the proper rules and information for a safe and convenient driving. Even if in Greece pavement marking is not satisfactorily maintained in all local and collector streets, a rather good care is taken along the arterial streets. Problems arise when the pavement's surface condition is bad, when the marking material is improper and when the marking works are not well protected against the passing traffic.

Construction of new arterial streets by demolishing buildings: After the second World War, most of the new Town Plans in old Greek cities included the construction of "new" and wider arterial streets by demolishing old and low-rise buildings. The building owners were compensated either with money, or by being allowed to build a higher building on the remaining site. This situation continues more or less until today, but only with the demolition of minor buildings, because the larger part of arterial streets has been constructed.

Construction of new arterial streets in non-built-up areas: When a new arterial is to be constructed in a non-built-up area (like a ring road or a bypass), the existing properties and buildings are considered, so that the works are completed with the less cost for the Municipality or the State.

Signal control at junctions: A centralised Traffic Signal Control System operates in Greater Thessaloniki Area, comprising most of the traffic lights of the area. This is a modern and semi-dynamic system, with approximately 230 controlled junctions, and progression programmes along all main arterial streets. A special Division of the Regional Authority's Department for the Environment and Public Works is responsible for the operation and management of the system. One of the most important characteristics of the traffic control system is that it gets real-time data from traffic volume counters, and selects the right proactive programme from a library of time setting plans, in order to achieve optimisation of traffic circulation.

Parking: In Greece, parking is prohibited on arterial streets, in general, in order to increase street capacity. In certain cases, parking is permitted on arterial streets when they are within CBDs or along corridors with
pedestrian concentrations. Parking is most of the time free in housing areas, but it is not free along arterial streets on in the CBS’s and in other local centres. On-street parking spaces are often defined by kerb extensions, so that the vehicles can not park on street corners and obstruct visibility. In addition, kerb extensions make the street narrower and facilitate street crossing by pedestrians. Parking policy in city centres usually intends to offer short-term parking spaces on-street and long-term spaces in parking garages or parking lots. The Greek Ministry of National Economy subsidises Local Authorities or private investors for the construction of parking garages in CBDs and elsewhere where parking demand is high.

One-way streets: Most arterial streets in Greek cities operate as one-way streets, in order to increase capacity and simplify control measures. This traffic control measure was extensively implemented in many significant arterial streets of Thessaloniki, in the late 70’s. Since then, most of the arterial streets of Thessaloniki have been changed to one-way operation. In residential areas, one-way streets are used to increase on-street parking supply.

Implementation of Bus lanes: The first bus lane was implemented in Thessaloniki in 1990. After evaluating the positive results in buses’ travel speed and passengers’ travel time, today a total length of 9.000m of bus lanes operate at the city, and some 3.000m more are planned to operate. The implementation of bus lanes, together with some additional measures (new fare collection system, replacement of buses, information material etc.), improved the level of service of public transport and increased the PT share in the transport modal split. For the smooth operation of the bus lanes, it is very important for the road users to respect the restrictions related to the operating hours of the bus lanes, the hours when catering is permitted, the vehicle types that are entitled to enter the bus lanes etc.

Cycle routes: The construction of cycle routes is rather seldom in Greece, even if the climate is very mild and favours the use of bicycles as an alternative urban transport mode. Many Municipalities include in their technical plans the construction of bicycle routes, but most usually the implementation of such a plan is ranked as "low priority" and it does not go further.

Pedestrianisation of streets is a very common tool in Greece, used to enhance the pedestrian environment, increase the traffic safety for pedestrians, and invigorate the shopping activity in commercial streets. There are some examples of arterial streets which have been pedestrianised, after a thorough study of traffic impacts (increased traffic volumes in neighbour streets, reduction of parking spaces, modification of bus routes, etc.). Most of these cases are successful because the positive results exceeded the traffic impacts. Sometimes, in order to reduce traffic problems, traffic is not prohibited from the arterial street, but the street width is being limited to the necessary, in order to slow-down vehicles. In the same time, sidewalks are getting wider, and a more comfortable accommodation is offered to pedestrians.

Mid-block signalised pedestrian crossings are used in Greece only in front of schools, in order to help the students to cross the street safely. In most of the cases, traffic lights are pedestrian-actuated. Zebra stripes are used at almost all signalised pedestrian crossings and at junctions. Zebra stripes at non-signalised pedestrian crossings are used very rarely, mainly because drivers do not give priority to pedestrians without a red signal.

Traffic calming measures: Traffic calming measures at arterial streets are prohibited in Greece. Usually, traffic calming is implemented at local streets that cross arterial streets, aiming to reduce speed of vehicles that enter the arterial. The only traffic calming measures permitted in arterial streets are road markings (visual speed reduction), traffic signs (speed limit, warning signs etc.), and change in surface texture and/or colour.

Guard railings and bollards: Guard railings and bollards are placed along the sidewalks’ edge, in order to prevent pedestrians to cross the streets anywhere but at pedestrian crossings. A careful and elegant design of railings and bollards enhances the street aesthetics.

Left turn restrictions: Left turn restrictions are used usually at signalised junctions in order to improve the level of service and reduce delays. Before the implementation of a left turn restriction, the possible impacts to traffic should be evaluated, as well as the availability of alternative routes should be examined.
Table 1 sums up the general experience among traffic planners in Greece and Greater Thessaloniki Area, relating to schemes on arterial streets. In addition, it presents today’s view on the schemes and whether or not it may be viewed as a realistic option today by most local road authorities.

### 1.3.2 Accumulated knowledge

Greek legislation includes guidelines for the geometric design of urban arterial streets, that is standards for lane width, slope, pavement marking, traffic signs, lighting etc.

There are no publications, books or research projects, about specific design elements to improve environmental and living conditions along arterial streets.

<table>
<thead>
<tr>
<th>Scheme on arterial streets</th>
<th>Experience</th>
<th>Realistic option today (yes/no)</th>
<th>Today’s view</th>
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</thead>
<tbody>
<tr>
<td>Pavement marking</td>
<td>Increases safety &amp; convenience in driving, improves street's image</td>
<td>Yes</td>
<td>Necessary - Successful</td>
</tr>
<tr>
<td>New arterial streets by demolishing buildings</td>
<td>Increase of mobility, a lot of money for compensation</td>
<td>No or a few times</td>
<td>Avoided if possible</td>
</tr>
<tr>
<td>New arterial streets in non built-up areas</td>
<td>Elimination of through traffic</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Signal-control at junctions</td>
<td>Better safety, higher mobility, low cost, improve air quality</td>
<td>Yes</td>
<td>Major success</td>
</tr>
<tr>
<td>On-street parking at arterial streets</td>
<td>Only short-term and controlled (charged or time-limited)</td>
<td>Yes</td>
<td>Mixed attitudes</td>
</tr>
<tr>
<td>One-way traffic</td>
<td>Very widely implemented to improve mobility</td>
<td>Yes</td>
<td>Major success</td>
</tr>
<tr>
<td>Implementation of bus lanes</td>
<td>Improve Level of service for buses, increase number of passengers, minor impacts for general traffic</td>
<td>Yes</td>
<td>Major success</td>
</tr>
<tr>
<td>Cycle routes</td>
<td>Very limited knowledge and experience</td>
<td>Yes and no</td>
<td>Mixed attitudes</td>
</tr>
<tr>
<td>Pedestrian streets Sidewalks widening</td>
<td>Improve pedestrian environment, invigorate shopping activity</td>
<td>Yes</td>
<td>Major success in most cases</td>
</tr>
<tr>
<td>Pedestrian crossings</td>
<td>Usually at signalised intersections to increase safety</td>
<td>Yes</td>
<td>Successful</td>
</tr>
<tr>
<td>Actuated pedestrian crossings</td>
<td>Usually used in front of schools</td>
<td>Yes</td>
<td>Successful</td>
</tr>
<tr>
<td>Visual speed reduction by road markings</td>
<td>Reduce speed, complements traffic signs</td>
<td>Yes</td>
<td>Successful</td>
</tr>
<tr>
<td>Surface texture and/or colour change</td>
<td>Reduce speed, but may be increase traffic noise</td>
<td>Yes and no</td>
<td>Mixed attitudes</td>
</tr>
<tr>
<td>Guard railings and bollards</td>
<td>Protect pedestrians at sidewalks</td>
<td>Yes</td>
<td>Major success</td>
</tr>
<tr>
<td>Left turn restrictions</td>
<td>Increase mobility, improve signalised intersections’ capacity</td>
<td>Yes</td>
<td>Successful</td>
</tr>
<tr>
<td>Humps / bumps Pinch points / chicanes</td>
<td>Prohibited at arterial streets by law</td>
<td>No</td>
<td></td>
</tr>
</tbody>
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Table 1. Experience and views on schemes on arterial streets in Greece
2. MUNICIPALITY OF KALAMARIA

Kalamaria is one of the fifteen Municipalities of Greater Thessaloniki Area (GTA), the second one in population size, after the central Municipality of Thessaloniki. In GTA there is no central Road Directorate responsible for the roads of the whole area. Kalamaria, as the rest Municipalities of GTA, is responsible for the construction and maintenance of the local road network of its urban area.

The following map shows the location of Kalamaria in Greece and the GTA.

This chapter focuses on:

1. General policies and rationales in relation to traffic and land use characteristics of arterial streets in urban areas, and
2. Processes and experience related to reconstruction and changes of arterial streets.
2.1. General issues

The Municipality of Kalamaria is responsible to place road name signs, traffic signs, traffic signals, road lighting, poles and surveying marks on buildings and sites along publicly owned roads.

Kalamaria is crossed by important arterial roads of GTA. Two of them are a pair of one-way streets connecting the centre of Thessaloniki to the airport and the nearby beaches. These arterial streets are overloaded, especially with through and heavy traffic, and the Municipality often claims funds from the central government for their improvement or maintenance.

Kalamaria is in constant cooperation with other Authorities responsible for the transport system in Thessaloniki. Specifically:

- The Traffic Police Department, which is informed by the Municipality about any modification in the traffic system, and supports the Municipal Police to enforce traffic regulations (parking, control measures etc.).
- The neighbour Municipalities, when a traffic control measure affects the operation of their road network.
- The Organisation for the Public Transport of Thessaloniki (OASTH), which is responsible for the mass transit system of the city.

Kalamaria spends a 10% of the total municipal budget to road construction and maintenance. The total amount spent yearly is approximately € 4,0m. About 40% of this amount come from national funds, 30% from European funds, and 15% from Municipal funds. A percentage of 15% originates from citizens and it concerns the construction of the road network of the city's extension area.

With regard to the public transport system, the Municipality of Kalamaria is responsible for the installation of shelters at the bus stops. In addition, the Municipality of Kalamaria runs a municipal bus service, for which is totally responsible (operation, financing etc.).

In terms of parking spaces, the Municipality has implemented a Parking Management Plan, including parking restrictions and parking controlled zones. Furthermore, two underground garages will be constructed shortly in the city centre, in order to offer parking spaces to the visitors of the commercial and administration land uses.

2.2. Policies and Rationales

All the traffic and land use Plans and studies which refer to the Municipality of Kalamaria include policies and regulations related to the local and main road network. The most important of them are as follows:

4. Traffic and Transport Plan of Greater Thessaloniki Area, approved in 1998
5. Revised Local Plan of Kalamaria, approved in 1999 [8]

City of Thessaloniki Master Plan (1985)

The Master Plan of Greater Thessaloniki Area (GTA) includes all the goals, objectives and programmes that are necessary for the urban planning of the City, in terms of 5-year plans of economic and social development. Kalamaria is one of the thirty (30) Municipalities comprising GTA.

The main general goals the Master Plan of Thessaloniki aim to:
- Show off the historical features of the city and improve its central Business District.
• Improve the quality of life for all residents and protect the environment
• Balance the social differences between the residents of the different areas.
• Balance the different land uses to all the different areas
• Protect the residential areas from noisy and polluting land uses.

The most important specific goals of the Master Plan are:

• The protection of the historical and cultural features of the area, the resettlement of the relation between the city and the sea, the protection of the natural landscapes.
• The environmental pollution reduction, via the construction of the necessary structures, and tax or penalty imposition.
• Restructuring of operations and activities, in order to improve quality of life and protect the environment.
• Protection of the city against natural disasters, like earthquakes, flood etc.
• Economic reformation of the area by supporting the first-level production, and developing the industry.

Among the policies to fulfill the Master Plan's goals and objectives, the transportation and traffic problems play a very important role. The principles for the transport planning are:

a. The construction of a ring road to by-pass the city centre and to eliminate through traffic from the arterial streets of the city centre (it has already been constructed),
b. The improvement of the traffic signal control system and the signing system (in operation already),
c. The improvement of the parking problem,
d. The removal of the intercity bus and rail terminals from the city centre,
e. The construction of an extended pedestrian street network, in order to improve pedestrian movements and safety (under development),
f. The improvement of public transport system (under development).

A special Organisation was established for the Implementation of the Master Plan of GTA. This Organisation is responsible for the co-ordination of the Local Authorities in order to take the necessary actions for the implementation of the Master Plan's policies. The Organisation also finances the Local Authorities, especially the Municipalities, to develop Traffic Management Plans and Environmental Protection Plans. Finally, the Organisation acts as a connection among the Local Authorities and the central Government, provides consultation and facilitates the procedures whenever needed.

Local Plan of Kalamaria:

Municipality of Kalamaria's Local Plan was approved in 1986 and it has been recently revised and re-approved (1999). The revised Local Plan considers that Kalamaria's population will reach 103,000 residents. This target population has already been exceeded, as the actual number of residents is approximately 120,000.

The Local Plan divides the Municipality's area into 19 sectors, and it defines the permitted land uses in each of them. The permitted land uses are: a) Residential, b) Business areas, c) Recreational, and d) Installations that create low annoyance to the residents and the environment (noise, pollution etc.).

The Local Plan classifies the main and secondary road network of the Municipality, with relation to the road network of the rest GTA. This classification defines the arterial streets, the collectors and distributors, as well as the main pedestrian streets. In addition, the Plan defines the future main road network, taking into account the expected development of the city.

Traffic Management Plan of Kalamaria:

The Traffic Management Plan of Kalamaria was approved in 1989 and it was revised and re-approved in 2001. The initial Plan included tools, measures and infrastructure works in terms of a 5-year implementation programme.
The main goals and objectives of the initial Plan were as follows:

- Improvement of the capacity of the main road network
- Improvement of parking conditions
- Improvement of the operation and the Level of Service of mass transit, in order to change the modal split in favour of public transport
- Facilitation of the pedestrian trips, and increase in traffic safety.

During the decade after the approval of the Traffic Management Plan, many traffic control measures have been implemented as planned, but a lot of them were implemented after slight or major modification. The traffic control measures include:

- Implementation of one-way streets
- Junction control by traffic lights, co-ordination of traffic lights
- Parking management measures
- Vehicles’ speed reduction measures
- Pedestrianisation of streets
- Creation of a Municipal bus service, to complement the existing public transport system of Thessaloniki.

The revised Traffic Management Plan includes the evaluation of the results and incidental impacts of the implemented traffic and parking management measures, and proposes further traffic control measures, taking into consideration the development of the urban area, the increase in population density, the increase in the car ownership index, therefore, the increase in traffic volumes. The following paragraphs describe the specific policies, objectives and proposals of the revised plan.

- **Car traffic:** The improvement of the car traffic Level of Service in the arterial streets will reduce delays, as well as environmental impacts. This goal can be fulfilled by enforcing the parking limitations in arterial streets, as well as by improving the operation of traffic lights via co-ordination. On the other hand, car traffic conditions will improve by reducing demand for car traffic, and simultaneously by increasing public transport use.

- **Bus traffic:** The public transport system is rather satisfactory for Kalamaria, as most of the area is well covered, and the listed schedules are sufficient. Problems occur when it comes to the reliability of the buses, due to the traffic problems in the road network. In order to achieve better reliability, bus lanes have been implemented in many arterial streets of the city of Thessaloniki. Furthermore, the Municipality of Kalamaria runs a municipal bus service, which gives an alternative solution to private cars. The municipal bus is free of charge.

- **Parking:** The Traffic Plan proposes the construction of seven (7) underground parking garages, in the city centre and at the suburbs of Kalamaria, in order to increase the off-street parking supply and free arterial streets from parked vehicles, which obstruct the streets, and in the same time give a very unpleasant visual environment. Due to the high construction cost, the Municipality started with the construction of two of them in the city centre, and the rest will follow in the future years.

- **Road safety:** There is no specific target for road safety in the Municipality of Kalamaria. The target is the reduction of the number of traffic accidents, especially those involving the most vulnerable street users, that is children, aged people, handicaps and pedestrians in general. Many traffic calming measures are proposed by the Traffic Management Plan, such as road humps, street closures, luminous traffic signs etc. Road humps have already been placed in streets in front of all schools, parks, and other pedestrian concentration areas.

- **Visual street environment:** The type and aesthetics of street furniture is very well considered in Kalamaria. Sidewalks, pedestrian streets, parks and other open spaces are studied in detail by the city's architects, in order to develop an attractive area for the people that live, work or pass through them. In addition, as one of the Cities that will receive visitors and athletes during the Olympic Games of 2004, Kalamaria will enhance the visual environment of the streets-entrances to the city.
This project includes improvement of the building fronts facades, removal of obstructing materials, decorations etc.

- **Cycling routes:** In addition to the pedestrian streets, the Traffic Management Plan includes a proposal for the construction of a cycling route network, among the recreation area, the CBD and the residential areas. No cycling route has been constructed so far, because this has been not a priority of the Local Authority.

**Core rationales:**

The Municipality of Kalamaria is highly advantageous to alternative to car transport modes, ie. public transport and walking. This position is proved by the operation of the Municipal bus service, which is free of charge, and by the construction of a very extended pedestrian street network, not only in residential areas, but at the city centre as well.

The pedestrianisation of a CBD arterial street, 10 years ago, raised a lot of complaints. But, the political decision was very clear and strong, and the project was completed, with very positive results.

The Municipality participates every year at the European day "In town without my car“, with festivities, competitions, and other events.

In terms of **public involvement** in traffic and transport projects, the Municipality follows all the legal procedures, which unfortunately are not very explicit. Therefore, the administration of the Municipality makes efforts to inform the residents when a traffic or transport project is being developed. The information is provided by announcements at the local newspapers. In addition, the Municipality publishes its own local newspaper, which presents all interesting local matters. Public involvement is also very strong, not only by individuals, but by Associations that represents different groups (residents by neighbourhood, business-holders, professionals, parents of students etc.). Even if it is very difficult to create a unanimous opinion among all local stakeholders, the administration of the Municipality gives always a try to keep everybody pleased.

A very important rationale is to **slow-down traffic in front of schools**, parks and other public places, where vulnerable road users concentrate. Almost all stakeholders agree to this target of the Municipality.

### 2.3. Processes and Experience

Every year, the Municipality's Technical Programme includes maintenance or reconstruction works of arterial or local streets. The maintenance works usually refer to pavement or sidewalks improvements. Major arterial reconstruction schemes are decided by the City's Council and include traffic management measures, parking management measures, as well as geometric design and layout improvements. The reconstruction schemes are processed after thorough studies, that examine the goals and objectives, give design details and estimate the cost of the works.

During the last decade, the following reconstruction projects have been completed in Kalamaria:

- **Sofouli street:** This arterial has been reconstructed in 1995. The main objective was to improve car traffic level of service. The major modification was the implementation of one-way operation. The project included installation of traffic signs and traffic signals, modification of public transport routes, pavement markings (pedestrian crossings, lane separation etc.). A very extended public information and involvement took place before and after the implementation of the project. The project was designed and implemented by the Technical Department of the Municipality.

- **T. Oikonomidi street:** Before the scheme's implementation, this street was a collector/distributor. It has been reconstructed in 1995, in conjunction to Sofouli street, to operate as a pair of one-way arterial streets.
Because of the upgrade of the street from collector to arterial, all the necessary measures were taken, mainly to ensure an acceptable traffic safety level. The project contained traffic calming measures at all local streets' junctions, installation of traffic lights and signs, pavement parking, reconstruction of pavement and sidewalks surface, pavement's surface and colour change in front of a school, new street lighting, construction of special on-street parking spaces. The project was designed and implemented by the Technical Department of the Municipality.

Passalidi street: Reconstructed in 1996. This is an arterial street that passes through Kalamaria's commercial centre. The scheme aimed to improve the street environment mainly for the pedestrians, as this street crosses the central pedestrianised street of the commercial centre of Kalamaria. The reconstruction includes sidewalks' widening and parking control measures to increase turnover (installation of parking meters). The reconstructed sidewalks have been designed by the Municipality's architects with a lot of care, in order to be attractive for all the road users. New and modern sidewalks equipment has improved very much the street's visual environment. The project was designed and implemented by the Technical Department of the Municipality.

Metamorfoseos street: This is one of the main arterial streets of Kalamaria's centre. In 1995 the sidewalks have been widened, in order to provide more free space to the pedestrians. In the mean time, parking control measures have been implemented (parking meters) in order to increase turnover and parking supply. Special parking spaces for residents had been defined in the nearby streets. The project was designed and implemented by the Technical Department of the Municipality.

Aegeou street: Reconstructed in 1998. The purpose was to organise the traffic and parking characteristics of the street. Special on-street parking spaces were designed, with sidewalk extensions at corners. The scheme included pavement markings, reconstruction of sidewalks, new road lighting and planting of trees on sidewalks.

A reconstruction scheme is planned by the Regional Authority, for a main arterial of Kalamaria, Ethnikis Antistasis street, which connects Thessaloniki's CBD to the International Airport. The street operates as a one-way street since the late 1970s. It is overloaded by through and heavy traffic, all over the day. Many bus routes use the arterial. The segment to be reconstructed passes through a residential neighbourhood of Kalamaria and divides it into two parts. Traffic safety, especially for pedestrians, as well as environmental impacts (noise and air pollution) are the main problems caused by traffic. The proposed scheme includes street pavement widening, in order to improve traffic conditions, and in the mean time the construction of a central island, in order to make pedestrian crossings more safe and comfortable. The project has been presented formally at Kalamaria's City Council more than once. In addition, public presentations have been organised. Up to now, the involved stakeholders have not reached a decision, and the project is pending.