

Urban Mobility in the city of Larissa (What is the current status and what could be done in the future)

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ABSTRACT

In the last few decades, urban planning has taken a special interest in urban transportation. Especially in Greek cities the use of "mild" ways of transportation is of great importance. This kind of interventions, have the goal to improve the quality of the environment for the habitants and the visitors of each city and therefore the quality of their lives. This paper describes a specific proposal in terms of Urban Mobility in the case of the city of Larissa and its city center in particular. The significance of this paper comes from the fact that Larissa has already started to adopt to some of the Urban Mobility policies but not to the extent that they have a desirable end result. The proposal is based on the Woonerf- type of pedestrian walks and the division of the city center in 14 different cells, one of which will be presented extensively.

INTRODUCTION

A major point of interest for every city is to offer a mild and hospitable urban environment for both inhabitants and visitors. According to Arturio Soria y Mata, the vitality of each city can be recorded only in its public spaces... the structure of the city will be ideal, when the total time spent by habitants for their transportation, will be minimum.¹ Urban Mobility policies promote the reduction of car usage to only when necessary and encourage "mild" ways of transportation in the city, which consist of: public means of transportation, bicycles and pedestrian walks. This of course does not exclude cars from the city, because that would be an exaggeration.

When Urban Mobility is applied, the task is to create a better environment and surroundings for the habitants of each city. The "Car Free Cities" network of European cities, are cities that use Urban Mobility policies. Car-free areas of this kind, with anything from a couple of hundred to more than a thousand residents, exist in Amsterdam, Vienna, Cologne, Hamburg and Nuremberg, UK, among others. There is even a small one in Edinburgh. In Greece the Municipalities that have already started to follow these policies are: Athens, Agioi Anargiroi, Amaroussion, Larissa, Volos, Neo Psychiko and Rhodes. Also the city of Karditsa has already created a cycling web in each city center.

URBAN MOBILITY- MILD WAYS OF TRANSPORTATION

In Greek cities, most of the urban planning problems come from close and tight building, topography and other obstacles. Therefore, it is mandatory to have an improvement of Public Transport (PT). This will ultimately lead people to trust means of transportation for safety and punctuality, increase their use and decrease the use of private cars. According to the size of each city, different types of Public Transport are needed. Bigger cities need subways and tram solutions (Athens and Thessaloniki), while smaller cities (such as Larissa) may benefit from a well-organized bus network.

Since 1990, Greece has the lowest rate of PT use in Europe and only improvement of services could change this. With the exception of Athens, where PT are run and managed by public authorities, in all other cities they are privately owned. This creates inefficient district network (which remains mostly the same without update to current needs), insufficient

¹ Vlastos T., Milakis D., *Urban planning vs transportations*, Athens 2006, p.22

maintenance of the buses etc. All this conclude to low quality services and the depreciation of PT by people who prefer the use of private cars.

Besides PT, the next best way of transport for most cities is the bicycle. The conditions that encourage the use of bicycle are similar to those that characterize a city of Urban Mobility. These include: safety of transport, small speed, clean air, low noise pollution, beautiful road environment, good maintenance of the roads and pavements, as well as a sufficient number of road signs and information. Over the years, more protective policies benefit bicyclists over car users, such as creating areas of mild traffic. The safety of a bicyclist depends on a large degree with details such as an anomaly on an otherwise smooth road. But, besides the issue of safety, the environment of the route is also very important. For example, even though bicyclists have the flexibility of moving through traffic congestion with ease, they inhale exhaust fumes faster than car drivers or the pedestrians.

Finally, the most commonly used way of transportation is walking. Even the most ardent supporter of car usage, is going to have to walk some distance every day, even if it is to get to his car. Some people walk to roam inside a city, others for exercise and others to just get from point A to point B. So, planning for the pedestrians is planning for everybody. In these troubling times, we can also say that walking is the only free way of transportation.

There are two different types of pedestrian street network that can be distinguished. The first type has to do with the rate of mixture of cars with the circulation of pedestrians. In this case there are pedestrian streets that completely exclude cars (except in cases of emergency), pedestrian streets that allow access to cars for specific hours (usually in commercial areas) and mild traffic streets, where PT and other vehicles may pass through, but only at low speed (Woonerf- type). The second type has to do with the land uses surrounding the pedestrian streets. In this case the pedestrian streets go through residential areas, office and commercial areas, city centers, historic, traditional or archeological areas, parks and open space areas.

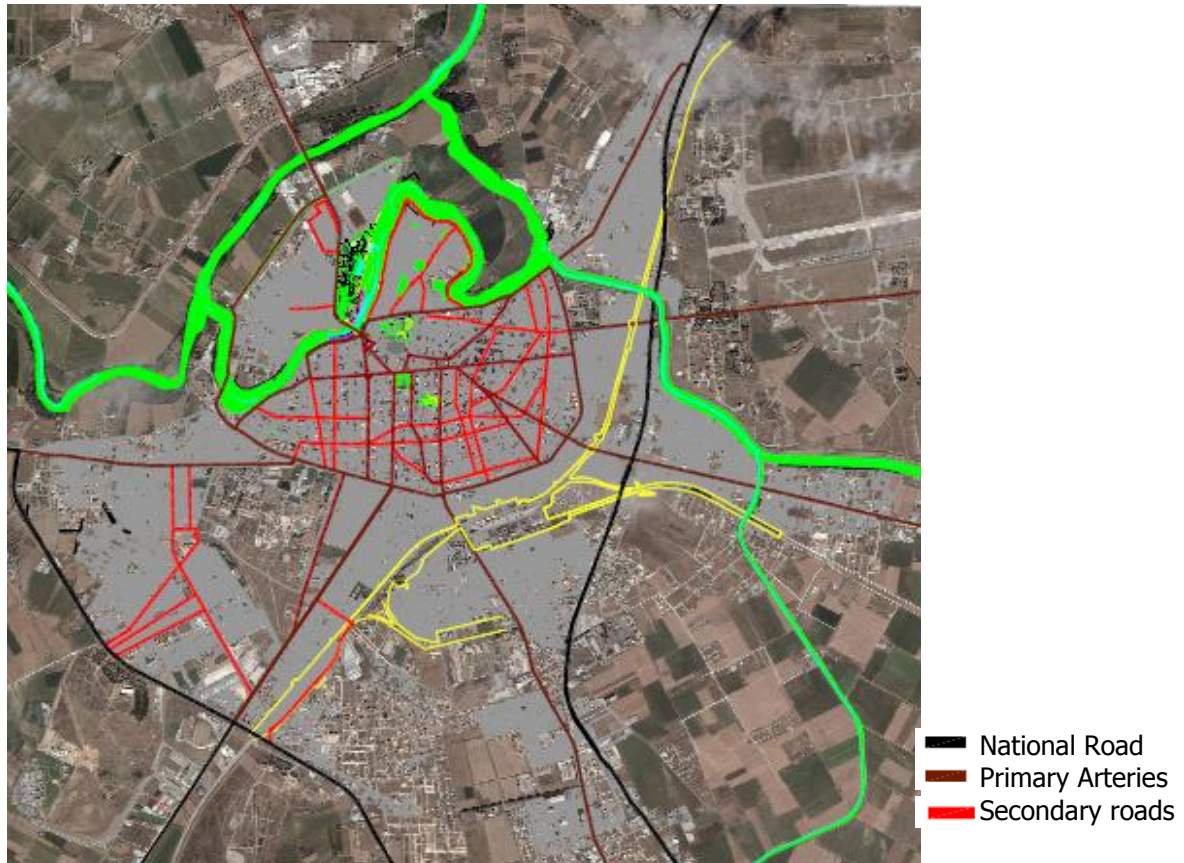
THE CITY OF LARISSA: A GENERAL DESCRIPTION

Larissa is the capital city of the Thessaly District of Greece (Map 1). The Prefecture of Larissa consists of the provinces of Larissa, Agia, Elassona, Tirnavos, and Farsala. It is located 350km north of Athens and 150km south of Thessaloniki. The population of the greater area is 165,000 people, while the city population is about 125,000 according to Census 2001. The Prefecture of Larissa covers a 5.381sq.klm area. It is a main agricultural centre and a transportation hub. The National Road and the main railway of the country, passes through Larissa and connect Athens with Thessaloniki. There is also a connection between Larissa and the western part of Greece (Ipiros). The most commonly used connection on a daily basis is between the cities Larissa and Volos, as well as other smaller towns and villages of the district, due to working relationship between these cities, as well as leisure, public services and education.



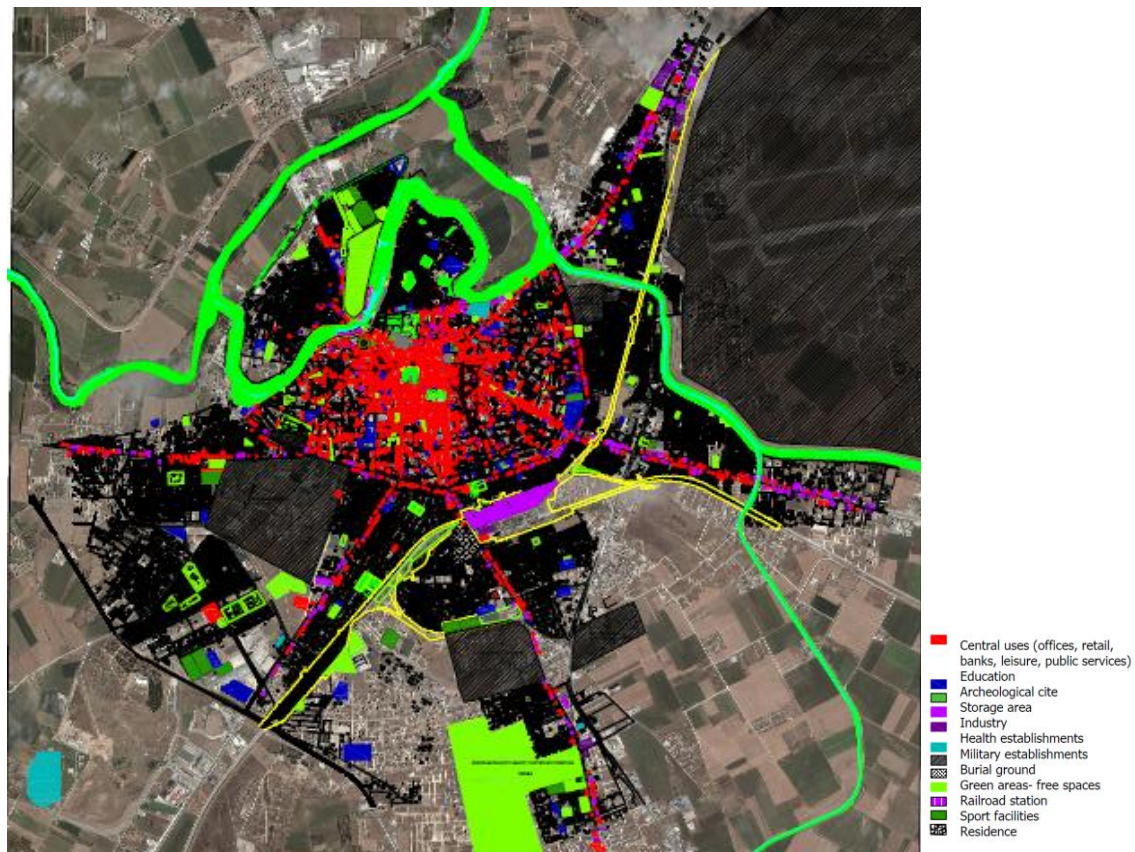
Map 1. General map of the Thessaly District (Thessalia) and Larissa city.

The road network follows the form from outside the city until it reaches the ring road in the central area (Plan 1). Up until today, the roads of the city center had big traffic problems due to traffic coming from the national road network which go through the residential areas. As for the transportation of the locals inside the city, according to the case study of Aristotle University of Thessaloniki "*Evaluation of structural and functional data of transport system of Larisa*", reported that transport to and from the city center is done by private cars in 32%, 4.5% by bicycle and 12% by bus. 42% replied that they prefer walking but only for small distances. This shows that 58.5% of the population prefer mild ways of transportation for their daily commute (which is considered a good percentage). But, the size of Larissa is such, that inside the city center everything is walking distance (15-20mins time distance) and so the use of car, could be easily avoided. This means that 32% car usage may be considered a fairly high percentage in this occasion.



Plan 1: City center of Larissa and the main road network (Papadopoulou A., 2007)

In matters of urban infrastructure, surroundings and traffic control, Larissa has a shortage of parking spaces, ring roads and direct connection of local streets, not enough stretch of cycling and pedestrian streets web. Traffic congestions are also a main reason for the degradation of urban surroundings due to the atmospheric conditions, visual and audio pollution. Larissa has the same weaknesses as those found in most Greek cities, such as concrete-block buildings, architectural degradation, not enough free spaces in the city center and dense populating. Besides those, there is discontinuity of the urban web due to obstacles such as: Pinios river (which goes through the city), railway, prison, storage and military facilities all around the city center, as well as facilities from the Electricity Company, the old National Road of Athens to Thessaloniki and the burial-ground. (Plan 2)



Plan 2: Urban land uses (Papadopoulou A., 2009)

Most of the open spaces (squares, parks, and green areas) are near the central and west part of the city. According to Municipality, 20% of the entire city has organized open public spaces (almost 3.000sq.klm out of 15.000sq.klm of the city space). Most important of these areas are: the park of Alkazar (near the Pinios river), the park of St. Antonio and Frurio. Also, in the area of Mezourlo, thousands of new trees were planted in an area of 360sq.klm creating a new park, which is not open to public for the time being.

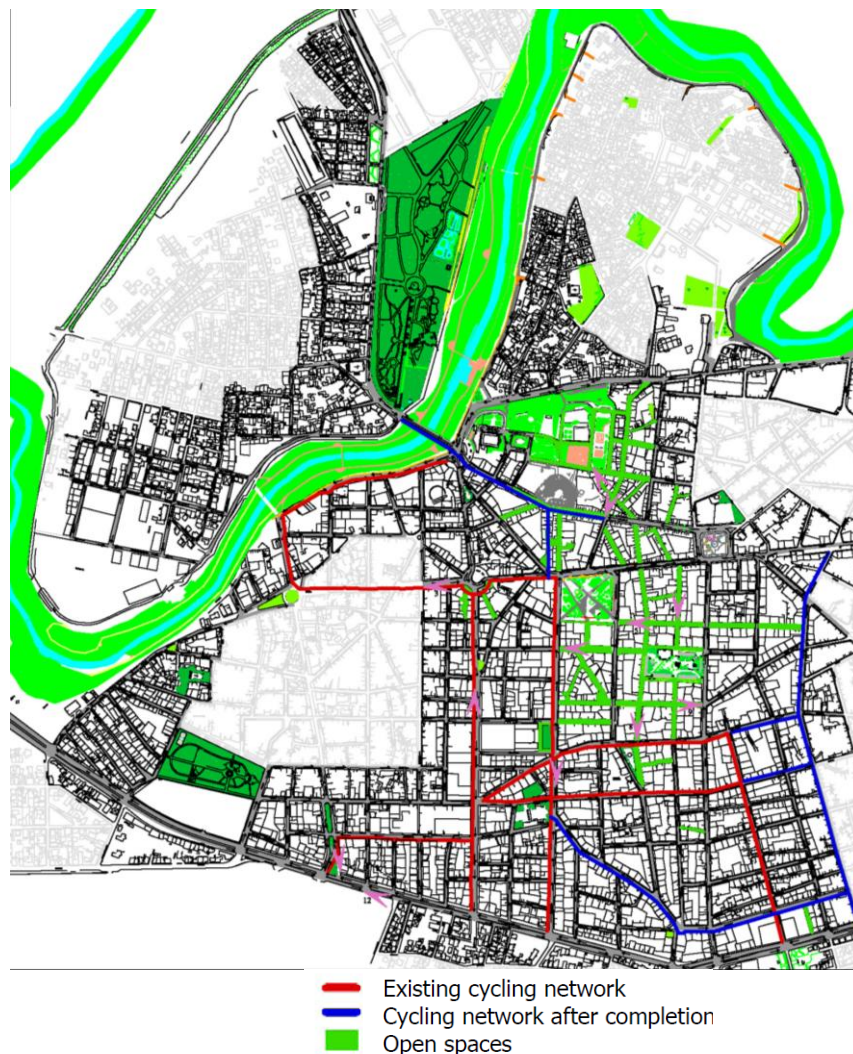
MILD WAYS OF TRANSPORTATION IN LARISSA

Larissa is a member of the Car Free Cities network of European cities that use Urban Mobility policies. Until now, Larissa had a serious traffic problem due to the bad road network that was based on earlier development, which was randomly created, without any specific planning or study. Additionally, national traffic going through the city center, created congestions every day, by overloading the inadequate road web. Nowadays, the city is making an effort to upgrade its road web with new infrastructures (construction of new roads, improvement of old ones, pavements etc) and through alternate ways of transportation with the goal of reducing private car use.

The majority of the population is car owners, preferring to use for day to day transportations. Today, all of the eleven bus routes go through the city center and manage to connect poles- apart regions. Even though that is a very positive thing; because these routes follow the main road network, they leave the rest of the populated areas without coverage. So, PT is considered satisfactory for smaller distances from the center, but inefficient for the people who mostly need them, meaning those who live outside the city center. Also, the ticket prices are considered very high by most people, which is one more thing that discourages the use of PT.

Because of Larissa's flat topography, the use of bicycles is rather easy and should be encouraged. In 1994, the Municipality of the city, made the first study of a cycling network for the reintroduction of bicycles and decongestion from cars. Up until 2000, sporadic cycling routes were constructed in different areas of the city as well as the Pinios river banks (Plan 3). Today, many

people use bicycles for their daily commute, even though the cycling web isn't fully developed yet and the mentality of using private cars isn't dismissed. In the city center bicycle routes usually come through mild traffic areas, roads with bigger traffic load, even arteries or highways. In some cases, bicycles coexist with pedestrians, in others with cars and in others protected from cars.



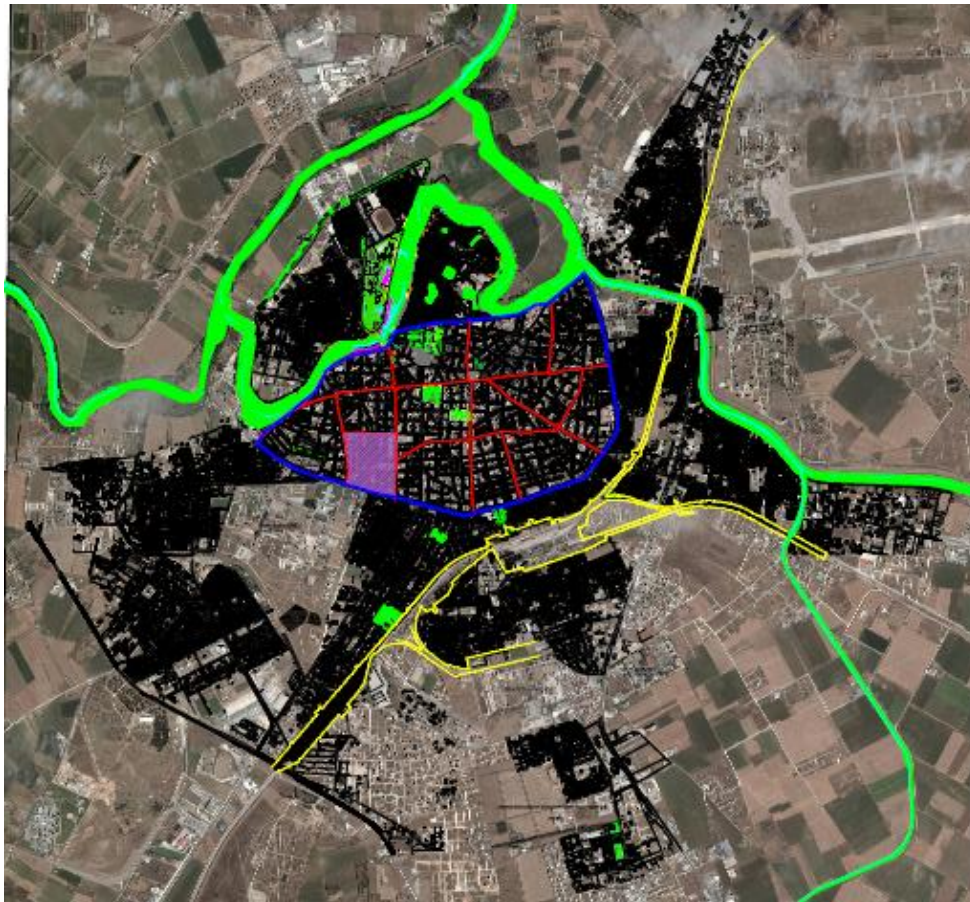
Plan 3: City center of Larissa: the bicycle and pedestrian street networks.
(Papadopoulou A., 2007)

Due to the total or partial lack of good directive signs, it is a necessity to provide the city with such. It is important to mention that the Municipality has created places and stands for parking bicycles on pavements and squares, which unfortunately are rarely used and an office on the Central Square for renting bicycles for the day. Larissa has one of the best developed network of pedestrian streets in Greece. After many studies, came a complete and functional proposal for the network that connects the commercial and office center with Frurio (which is the historic center of the city with archeological interest as well), Alkazar, Pinios river, the three central squares and the central residential areas. Today, there is a complete network of pedestrian streets that extends to 460sp.klm and includes 40 building blocks.

CASE STUDY PROPOSAL

This particular case study is for the center of the city which is defined by the internal ring road. At first, the central area is divided into 14 different cells and in subsequence only one cell is studied that will be used as a "modulor" for the remaining ones (Plan 4). Inside the cell, all streets are considered mild traffic. The "entrance" of vehicles into the residential areas will be allowed only through the formed ring roads of each cell, as to drive them easily to their final destination. By constructing these streets in a sinuous pattern, vehicles will be obliged to

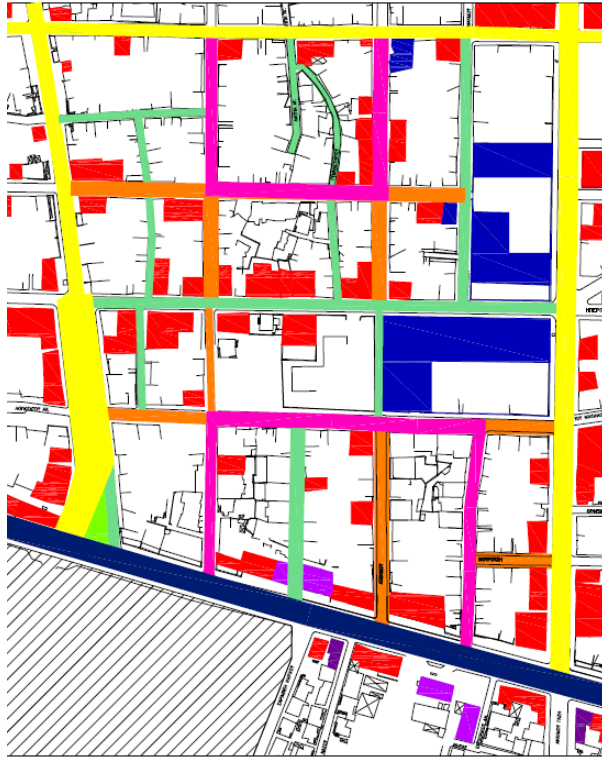
constantly change direction and therefore reduce their speed. The choice of the particular cell has to do with all the road characteristics it combines. It has high traffic streets, traffic collector streets and local streets. The main land use of the buildings is residential, but there is also office and commercial uses, as well as primary and secondary education facilities.



Plan 4: Division the city center in cells (Papadopoulou A., 2009)

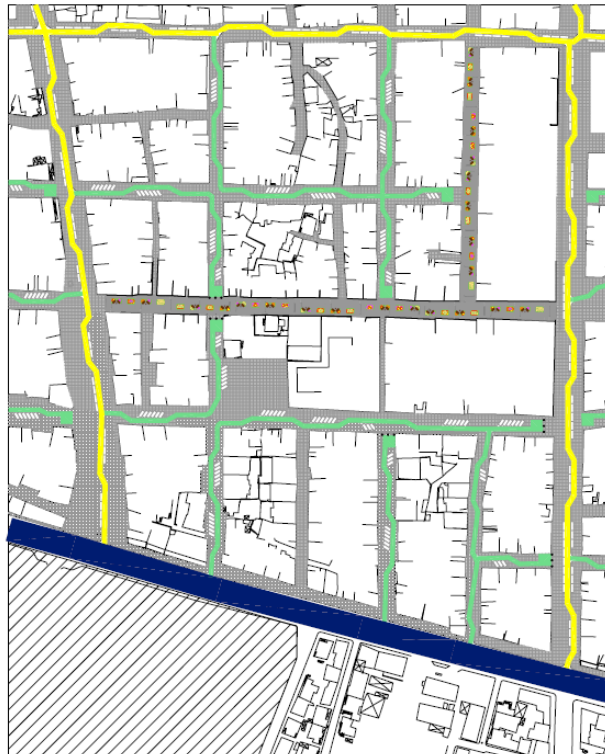
The basic goal of this study is to create a central web of pedestrian streets -that will connect the neighboring cells and join the already existing web- as well as traffic control, improvement on the infrastructures for disabled people and new parking spaces. The pedestrian streets proposed, follow the model of Woonerf. Due to the mild traffic streets and the proposed increase of pedestrian streets, there will be no further need for a study of a cycling web, since the conditions created are in favor of the use of bicycles without the need of separate infrastructure.

As shown on Plan 5, yellow are the ring roads of the cells (where vehicles top speed will be around 35km/h), orange are the streets inside the cell (where vehicles may travel at the speed of 20km/h) and green are pedestrian streets where vehicles are banned (except in cases of emergency). With pink are the loops which will lead around one or two building blocks and end up in the main ring road of the cell again or in dead-ends. This way, roaming through the cells is discouraged and only the vehicles which have a terminal destination inside the cell will continue inside it. The connection of the neighboring cells is through their ring roads. With this, reduction of traffic inside each cell will be accomplished and also of the space occupied by vehicles. Therefore, more space for the pedestrians and cyclists will be released.



Plan 5: Module cell (Papadopoulou A., 2009)

Plan 6 shows the general image of what a cell would look like with the loops, dead-ends and the pedestrian streets. On the roads inside the cell, special consideration for parking spaces has been made. These parking spaces are for the residents of the surrounding buildings or their guests. Of course, the number of these spaces aren't adequate on their own, but can be added to the already existing parking spaces available in the near by areas (parking buildings and open-space areas).



Plan 6: Module cell- final proposal (Papadopoulou A., 2009)

The width of each road is adequate for the biggest emergency vehicle to pass through (fire trucks and ambulances) as well as removal vans (garbage trucks), but is prohibitive for leaving a car on the side of the pavement (quick stop). The rest of the existing width of the road is used for creating pedestrian walks, small stop areas for the people, green areas and parking spaces. Also, the pavement will be elevated by at least 15cm from the street- deck and obstacles will be placed in such a way so that cars won't be able to go through the pedestrian streets.

CONCLUSIONS

In a time where a great effort for the improvement of environmental conditions for the health, safety, quality of life and economic growth of each city is being made, Urban Mobility is the way to go. Each citizen has a right to his own city. The way to Urban Mobility, throughout Europe is accomplished with great ease because of the existing infrastructure, the mentality of the habitants and the nobility of drivers towards the pedestrians. In Greece, that can only be accomplished through a radical change of thinking and many new public works that would facilitate such a result.

The Greek environmental and energy policy has improved during the last decades, contributing to the creation of Urban Mobility cities in order to provide economic benefits and improve the quality of life of all social groups. In view of facing the environment of the cities according to the principles of a sustainable development, it is important to adopt concrete principles of politics, as well as specific implementation mechanisms. Consequently, there is a lot of work for the local authorities that wish to fulfill today's expectations and needs, as far as the care and the management of the urban environment are concerned.

In Larissa, when the first pedestrian street was created (Kouma street- early 1980's), all the shop owners of the area were against it because they feared that the removal of cars from a main commercial road would downgrade their businesses and reduce the number of costumers. As history shows, this was completely disproved and so, nowadays, all commercial uses are gathered near the central pedestrian web of the city. For this, Urban Mobility in the city of Larissa is already introduced and accepted, but it is also connected with the business and commercial center of the city. The goal should now be to take it to the next level, which is to expand it to the entire city.

BIBLIOGRAPHY

- *White Bible- European policy in transportations till 2010: time to choose*, European Commission, Luxembourg, 2002
- Aravantinos A., *Urban Planning for the development of urban space through Urban Mobility*, Simmetria Publications, Athens, 1997
- Basdanis V., Dramis L., Pouliou V., *Urban and Interurban Transportation of Larissa and potential improvement*, Technical Chamber of Greece- Central and East Thessaly, Larisa 1996
- Belsi M., *Bicycles and Public Transportation. The example of Larisa*, MSc NTUA Urban Planning, Students study, Athens, 2007
- Beriatos E., Papageorgiou M., *Environmental planning for Low Carbon Cities: the Greek Case*, 45th ISOCARP International Congress, 2009
- Breines S., Dean W., *The pedestrian revolution. Streets without cars*, Vintage Books, New York, 1974
- Choay F., *The Modern City: Planning in the 19th Century*, George Braziller, New York, 1969
- Dekoster j., Schollaert U., *City moves forward with bicycles*, Department of Official Publications of European Communities, Luxembourg, 1999
- Economou D., Petrakou G., *The development of Greek Cities- Interdisciplinary approaches of urban analysis and methods*, Universal Publications of Thessaly- Gutenberg, 2nd edition, Volos, 1999-2004
- Kosmopoulos P., *Environmental Social Psychology- The concept of Space*, University Studio Press, Thessaloniki, 2000
- Papadopoulou A., *Urban development of Larissa: 19th century- today*, Undergraduate 1st part-thesis for the Architecture School NTUA, Athens, 2006
- Papadopoulou A., *Larissa: Study for the development of cycling and pedestrian street networks*, Undergraduate 2nd part-thesis for the Architectural School NTUA, Athens, April 2007

- Papadopoulou A., *Urban mobility in the city- case study for Larissa*, thesis for the postgraduate programme for the Architectural School NTUA in Urban Planning, Athens, July 2009
- Sarigiannis G., *Roads and pedestrian streets in urban spaces*, Temporary Notes on the class: Transportation systems in the city, postgraduate programme for the Architectural School NTUA in Urban Planning, Athens, 2006
- Sirakoulis K., Deffner A., *Urban Youth Leisure, Time Use Research and Quality of Life: The Comparison of Leisure Preferences of University Students in Athens and Larissa, Greece*, 46th ERSA conference 'Enlargement, Southern Europe and the Mediterranean' Volos 2006
- Theodorou K., *Wondering in the city- A kinetic theory of a moving world*, NTUA, Student study, Athens, February 2004
- Tsougiopoulos G., *Greek urban center: case study for Larissa*, EKKE, Athens, 1981
- Vlastos T., *Deferent public transportation for a different city*, Development Company for the Municipality of Athens, Athens, 2003
- Vlastos T., Milakis D., Athanasopoulos K., *Bicycles in 17 Greek cities*, Ministry of Education-Organisation of Publications for Teaching Books, Athens, 2004
- Vlastos T., Milakis D., *Urban planning vs transportations*, Athens 2006
- Vlastos T., Barbopoulos N., Milakis D., *Bicycle- Guide to development and evaluation of webs*, Technical Chamber of Greece, Athens, 2007
- Vlastos T., Birbili T., *Making cities for bicycles. Aesthetics and construction facts*, MBike, Athens, 2001
- Vlastos T., Birbili T., *Creations and policies in using bicycle in Greek cities*, MBike, Athens, 2000
- Vlastos T., Siolas A., *Proposals of urban and traffic unification of the city- West Athens*, NTUA –Geography and Urban Planning, Athens, 1994