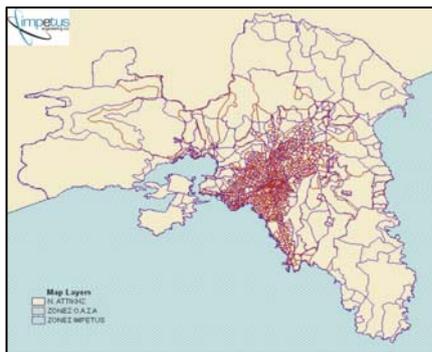




TRAFFIC MODEL "ATTIKI KIKLOFORIA"

The main purpose of the traffic model "ATTIKI KIKLOFORIA" was to forecast the traffic that goes through Attica Road in different time horizons and examine the traffic impacts caused by the operation of the Road on the rest roadway network. The traffic study consisted of many technical stages like the examination, analysis and the evaluation of the traffic conditions of the basic roadway network of Attica, including Attica Road and the rest new road construction works. For the completion of this work, a simulation traffic model was applied, handled in 4 stages (based on the model of Urban Transportation Planning Systems - UTPS) using existing data, which were updated, when needed, following the standards of the modern international transportation modeling.

The Region of study included the Prefecture of Attica and Salamina Island only, while the remaining islands (though administratively belong to the Prefecture) were included only in the form of external trips that are embedded in the trip matrix.



The traffic study consisted of the following: the building of a huge GIS platform containing almost the whole Attica roadway network, the functional hierarchy of the network, the technical characteristics, modeling of the characteristics of the infrastructures and the operation of signalized (or not) intersections and links.

A huge amount of data was collected from Ministries, Services and various other sources.

With regard to the functional characteristics of the network, the data types collected are divided into the following categories:

- Analytic traffic measurements for the turning movements in primary intersections (and not only), by Y.PE.XO.DE (Ministry of Environment and Public works)
- Analytic traffic measurements and traffic classification for primary roads, by Y.PE.XO.DE (Ministry of Environment and Public works)
- Analytic traffic measurements and traffic classification for Attica Road (starting from the first day of operation (23-3-01))

Also the study included estimations of traffic congestion and factors for converting vehicles to PCEs, estimations and evaluation of the Level of Service for specific roads and intersections. Spotting on the main problematic intersections and determining the trucks of the roadway network. The results and conclusions from the various researches and analyses were organized in databases.

The databases that were developed amongst others are:

- ✓ Databases containing various data divided in a municipality and traffic zone level, of the region of study.
- ✓ Databases containing data for the road network and its functional Characteristics,



- ✓ Databases containing traffic routes and stops of Means of Mass Transportation (MMT)
- ✓ Databases containing data for signalized (or not) intersections of the whole network
- ✓ Other various databases with updated information (e.g., demographic, last census 2001, vehicles per region - 2000, socioeconomic data, etc.)

The correlation of the above-mentioned databases with the cartographic information was achieved with the use of the GIS s/w Transcad v4.7.



The advantages of the traffic model "Attiki Kikloforia" were the following:

1. Modeling of the network and its adaptation in the new traffic requirements of Attica. Utilization of all the under constructions new works for the various time horizons.
2. Analytic correlation of the traffic accessibility relations, land use and values.
3. Analysis of smaller areas (sub-area analysis), as was done for the surrounding areas of Marinas at Zeas, Flisvos and Alimos (under concession), for Attica Road, the Olympic works, Gerakas, Chalandri, Spata, Piraeus etc. The model provided with valid data for the traffic management studies.
4. Analyses of accesses/egresses, traffic scenarios for all the Olympic works (existing, under construction, proposed, etc) and their operation impacts (traffic, environmental, etc)
5. Forecasts on a year basis (for various time horizons), projections on coefficients for future planning that were used in the trip generation procedure, modal split etc.
6. Analytic scenarios for traffic evaluation, examination of the impacts caused by the operation of Attica Road, the other new constructions and their interaction.
7. Analysis of traffic and level of service of Attica Road.

"Attiki Kikloforia" traffic model was an accurate model that was able to predict future traffic and not only, and since it was being updated all the time (updated up to 2005), it was a very useful tool, which provided information required to actualize various traffic management studies.

Through the analysis of the data, concerning the Level of Service status of various important road axes came out the need of classifying Attica in regions as follows:

- ✓ **Urban** - An area with high demographic density, big percentage of commercial land use and pedestrians trips.
- ✓ **Suburban** - An area of medium demographic density with mixed land use, commercial, other activities and inhabited areas.
- ✓ **Rural** - Region of small demographic density and insignificant commercial activity.

The "Attiki Kikloforia" model network consisted of almost 60.000 links (including around 5.000 centroid links) and almost 50.000 nodes (including around 1.230 centroid nodes and almost 1.700 signalized intersections). The traffic model included full data for all the Municipalities of Attica (study region), and all the new Olympic Works were embedded including all their accesses/egresses. Finally it included full information regarding the Means of mass Transportation, etc.