

# Related Expertise

## Concession Projects - PPP

### IMPETUS-ISIS for "Attiki Odos"

ISIS and Impetus developed a traffic model for the offer that Attiki Odos, SA had provided in the bidding process and won the contract for the construction and operation of the highway "Attiki Odos". Impetus had supported ISIS on the model development and had provided the preliminary strategy for the tolls and the traffic related to it, in addition to the various other studies such as the environmental impact assessments, the maintenance of work zones during the construction process, etc. The bidding process was done on the year 1994 and it was successful.

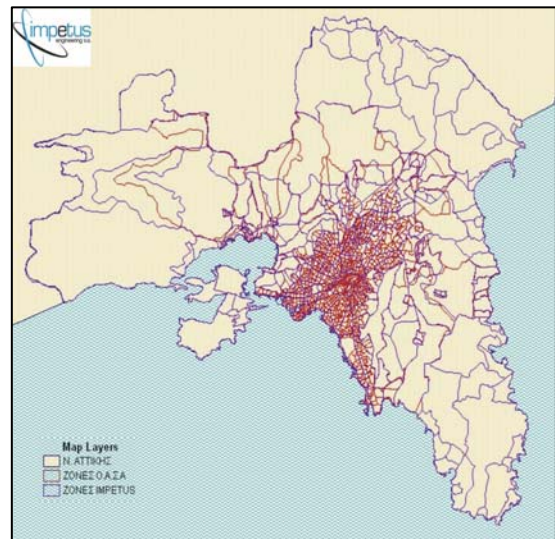


### Attiki Odos J.V. traffic model

#### "Attiki Kykloforia"

Based on the above successful bid, IMPETUS under contract with "JV Attiki Odos, SA" had developed a traffic model for the whole Attica region. The main purpose of the traffic model "Attiki Kikloforia" was to forecast the traffic that

went 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, were needed, following the standards of the modern international transportation modelling. Scenarios with traffic toll levels and the various types of partial operations had been studied during the years 1997 to 2005.

## Cost-Benefit Analysis – European Investment Bank (EIB) – Attiki Odos, SA

Impetus, under a contract with Attiki Odos, SA had developed a series of Cost-Benefit analyses for the European Investment Bank (EIB) in Greek and English languages. A traffic model, based on Caliper's TRANSCAD, had been implemented and the various traffic scenarios for the partial operation of the highway, as well as its final approach (full operation) and presented in this study. The work was based on the traffic model "Attiki Kykloforia" and the results of the study had been updated on a per year basis for 5 consecutive years starting in 1998.



## Cost-Benefit Analysis for the Rion-Antirion Bridge, ETVA

Impetus, under a contract with ETVA, had developed the Cost-Benefit analysis for the "Rion-Antirion Bridge". Impetus had based all the work of traffic modelling, as well as the environmental impact assessments, on the traffic model (under the GIS Transcad platform) that had been fully implemented for the whole Greece (all new road constructions until 2025). The Cost-Benefit analysis had to be submitted as a requirement to European Investment Bank (EIB) and it had been submitted on 2004.



## “Submerged Thessaloniki Tunnel- Artery” Thermaiki Odos, SA - Halcrow Group Ltd



Impetus developed a small traffic model (selected part of Thessaloniki roadway network) for the offer that Thermaiki Odos, SA had provided in the bidding process and won the contract for the construction and operation of the submerged artery “Thermaiki Odos” for the city of Thessaloniki. IMPETUS was the traffic consulting engineering organisation, which provided with all the necessary traffic information the Joint Venture for the “Thessalonica Submerged Artery” to be submitted to the Ministry of Environment and Public Works. Impetus has supported Thermaiki on the model development and has provided the preliminary strategy for the main arteries distribution, transport design, traffic circulation proposals within the project’s impact zone, tolls and the traffic related to it, in addition to the various other studies such as the traffic deviations during the construction of the work and numerous traffic arrangements regarding the access and the egress of the artery, the maintenance of work zones during the construction process, etc. The bidding process was done on the year 2004. Halcrow Group had

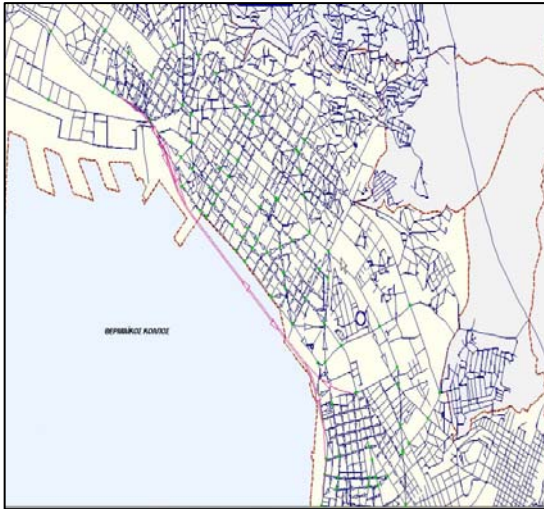
been appointed as Traffic Advisor to the Banks supporting TOG and in that role carried out an audit of the IMPETUS traffic study in order to provide the Banks with an independent review of traffic and revenue issues related to the project.

## Thermaiki Odos Group (TOG)

### Traffic model ‘Thermaiki Kykloforia’

IMPETUS had developed a complete traffic model for the Thessalonica Metropolitan Area under contract with the Joint Venture Thermaiki Odos Group (TOG). The consulting team (IMPETUS) investigated the situation in Thessalonica from many perspectives in relation to the existing data, studies, and other information and developed a full GIS model with all related information (capacities, speeds, on street parking, peak period and 24-hr volumes, signalisation, etc) for the Thessalonica Metropolitan Area. This work had been carried from 2006 to 2007. This was accomplished in order to help the JV to decide over the various proposed traffic approaches regarding the final transport design of the artery.

The traffic model was developed and implemented using TRANSCAD s/w v4.7, which is a GIS-based transportation-modelling suite, developed in USA by the CALIPER organisation. Impetus team also supported the JV, with other traffic software (TSIS-5 and HCS – Highway capacity software), applying over the micro-study of the city intersections and the East and the West circulation of the city road network after the initiation of the artery’s functionality.



## Korinthos - Tripoli - Kalamata (KTK) Audit in cooperation with Jacobs Consultancy

The Ministry of Environment, Physical Planning & Public Works (MEPPPW) of the Hellenic Republic announced the decision to proceed with the 400m Korinth-Tripoli-Kalamata and Lefktro-Sparta DBFD toll road concession in March 2005.

The Korinth-Tripoli-Kalamata and Lefktro-Sparta concession formed part of the Greek government's larger programme of DBFD toll road concession, which could ultimately renew and improve the country's strategic highway network, and create bypasses for major urban centres.

Halcrow Group Ltd had been commissioned to undertake traffic and revenue forecast on behalf of the Moreas Group for the Korinthos-Tripoli-Kalamata Motorway concession project and Jacobs Consultancy in cooperation with IMPETUS has been commissioned from the Sponsors to undertake the traffic audit for the banks of Halcrow's traffic study in terms of validity, quality and appropriateness of forecasting model inputs, software and procedures and provide with comments, necessary changes in the assumptions used in the traffic forecasting and amendments to revenue forecasts if appropriate.

## MATURITY OF STUDIES FOR THE ATTRACTION OF INVESTORS IN THE INTERNATIONAL FREIGHT CENTRE OF THESPROTIA

IMPETUS has been signed as the contractor for the development of the International Freight Centre in Thesprotia, Municipality of Paramythia (under PPP legislation). The aim of the project is to lead to the attraction of possible investors after the completion of the two phases of the

Project. The first phase of the project which involved the preparation of the final business plan had already been submitted to the Ministry of Internal Affairs (handling all PPP projects) and we have already proceeded to the second phase which is the identification and attraction of possible investors. Therefore, we certainly believe, that the planning of the International Freight Center of Thesprotia will be available at 2012-2013 time period. The business proposal without rail connection (more realistic scenario) shows an investment situation with an IRR of 6,67 %.

- **IRR on TCF (Total Cash Flow): most realistic case = 6,67 %**
- **IRR on FTE (Flow to Equity) = 6,42 %**
- **Break-even point** after eleven years

- **Investment volume of the SPV (consortium): 87 Mio EURO**
- **Discounted Capital Value: 13 Mio EURO (at a discount rate of 5%)**
- **Investment in equity capital for private investors: 11,0 Mio EURO**
- **Profitability: 104,47 %**
- **operation period: 40 years**