

# Athens 2004 Olympic Games Transport

*From the transport standpoint, six main features characterize the Athens 2004 Summer Olympic Games. They are: a) record amount of new main transport infrastructures delivered for the Games, b) reliance on 100% public transport for spectators, volunteers and workforce, c) dedicated transport services for each Olympic client group, d) integrated traffic management skill development applied to Olympic mega-events, e) observer program and emphasis on transfer of knowledge (TOK) from Games «X» to «X+1» and f) substantial metropolitan transport infrastructure and traffic know how post Games legacy.*

By Philippe H. Bovy \*

The first Olympic Games were held in 776 BC at Olympia, Greece ([www.olympic.org](http://www.olympic.org)). These ancient Games took place every four years during almost one thousand two hundred years before being abolished in 393 AD by Roman Emperor Theodosius.

In 1896, the first modern Olympic Games were celebrated in Athens with about 320 athletes from 13 countries ([www.forthnet.gr/olympics](http://www.forthnet.gr/olympics)). Most of the Games took place in a new marble stadium called Panathinaïkon or Kallimarmaro Stadium (Figure 1) close to the foot of Acropolis. This Stadium will host the arrival of the «real» marathon race as well as Archery during the XXVIII Olympic Summer Games to be held from August 13th to 29th 2004. The Summer Olympic Games are by far the largest world mega-event as evidenced by Olympic key numbers ([www.athens2004.gr](http://www.athens2004.gr)). These first Games of the third millennium have outstanding challenges, among them the delivery of reliable, safe and efficient transport services to all Olympic constituent groups, spectators and the general public.

## Olympic key numbers

Greece is a country of close to 11 million people with 4,5 million living in Athens metropolitan area. The 2003 private car ownership rate is of 415 vehicles per 1000 inhabitants. Key numbers of the current Athens 2004 Summer Games are:

- 28 Olympic sport competitions in 35 disciplines to be held in 17 days including the opening and the closing ceremonies,
- 35 competition venue sites hosting 300 competition events for 16000 athletes and team officials coming from 202 countries
- 21600 accredited media personnel from TV, radio broadcasting and the written press,
- 5500 officials and delegates from IOC (International Olympic Committee), 202 NOC's (National Olympic Committees), 28 IF's (International Sports Federations) special guests, Head of State, VIPs.
- 2500 technical officials
- 31000 sponsor guests
- 113000 accredited volunteers, paid staff and contractors



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## Transports aux Jeux olympiques d'Athènes 2004

*Du point de vue des transports, six principaux éléments caractérisent les Jeux olympiques d'été de 2004 à Athènes:*

*a) un nombre record de nouvelles infrastructures principales de transport mises en service pour les Jeux, b) recours aux transports publics à 100% pour les spectateurs, les bénévoles et les employés, c) services de transport dédiés à chaque groupe de clients olympiques, d) application des dernières connaissances en gestion intégrée du trafic aux grands événements olympiques, e) programme de suivi et accent mis sur le transfert des connaissances des Jeux «X» aux Jeux «X+1» et f) substantiel héritage d'un patrimoine d'infrastructures métropolitaines et de savoir-faire en transport après les Jeux.*

**Editorial note:** This communication has been written on June 15th 2004, two months prior to the Games. All material, statistics, photographs are therefore dated mid June 2004.





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1: Athens famous Kallimarmaro (marble) Stadium, site of the Marathon race arrival on August 29th 2004.

1: Le célèbre stade Kallimarmaro (en marbre) d'Athènes qui vivra l'arrivée du vrai marathon olympique le 29 août 2004.

- 4,5 million ticketed spectators, and
- an unknown number of Olympic non ticketed visitors (on live sites for example)

## 2004 Olympic Games Spatial Structure

The Athens 2004 Games are spread in Attika region with about two thirds of venues concentrated in three competition clusters.

The first and largest cluster is the OAKA Olympic Park complex located 18 km North of the City Centre and 14 km from the Olympic Village. It hosts the Olympic Stadium

(75000 gross seating capacity) where the opening and closing ceremonies will be held as well as athletic competitions. Gymnastics, basketball, tennis, swimming, bicycle track racing are grouped in the same large compound hosting 10 sports. The Main Press Centre (MPC) and the International Broadcasting Centre (IBC) are located at the edge of this mega sport complex. All these Olympic activities make Athens Olympic Park the largest Olympic traffic generator of the Athens Games. Substantial transport infrastructure developments have been carried out to improve metropolitan accessibility to this multi-function site: Metro line 1 upgrading, new Suburban Rail Line and new Attiki Odos Motorway with two interchanges nearby.

The second most important Olympic competition cluster is located at Hellenikon, 20 km southeast of the City Centre and 33 km from the Olympic Village, on the former site of Athens International and Domestic Airport. Eight sport venues such as canoe/kayak slalom, baseball, softball and fencing are located there. Sailing takes place nearby at Aghios Kosmas in a completely rehabilitated marina. The new Athens tramway serves these venues.

The third Olympic cluster is in Faliron Bay on the Athens coastline, about 8 km South of Athens City Centre and 25 km from the Olympic Village. This cluster will host 5 sports such as judo, beach volleyball and basketball. Football will be in the totally rebuilt Athens Karaiskaki Football Stadium (33000 seats). These venues are served by metro line 1 and by the new tramway. Other Olympic sport venues are more or less evenly distributed in all Attika regions. The furthest away are rowing and canoeing at Schinias/Marathon 45 km and equestrian at Markopoulo 42 km East of Athens centre.

## Athens tremendous transport infrastructure development

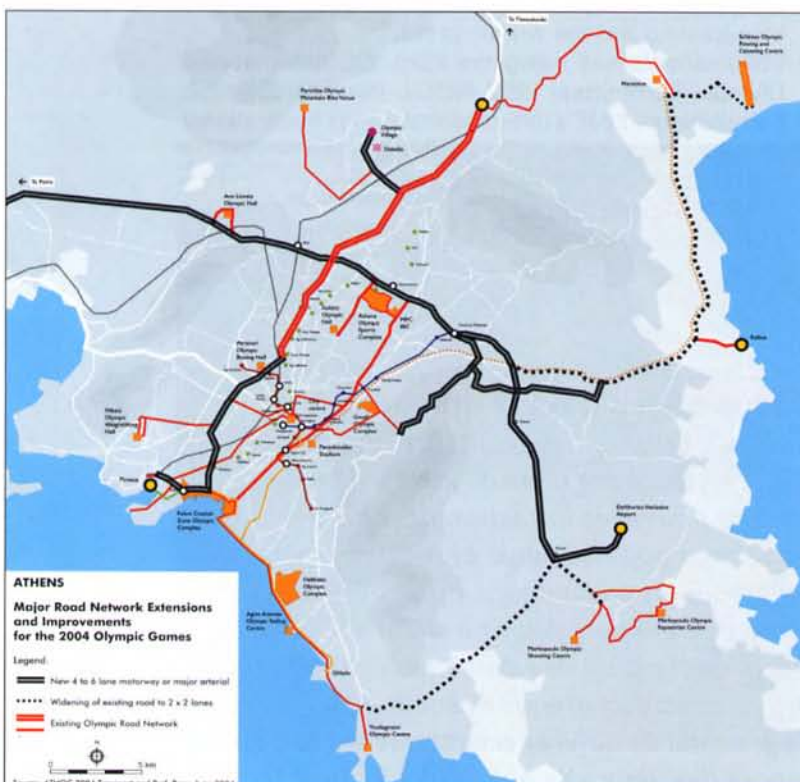
In accordance with its successful Olympic bid and Host City contract, Athens transport infrastructure, which was quite lagging for a 4,5 million capital city, has been considerably improved in all sectors: road, rail and air.

### Road Transport

About 140 km of main road facilities have been built as listed below:

- 65 km of dual 6 lane toll carriageway (2 x 3 lanes) linking the new Athens International Airport Northeast of the City centre to the Corinth Motorway, West of the City centre (Figure 4);
- about 16 km of 6 lane dual carriageway (2x3 lanes) extending the Thessaloniki – Athens National Highway 1 all the way to the Athens coastline at Faliron;
- about 17 km of new four lane separated highways serving the Olympic Village and to
- about 41 km of regional 2 lane road widening to 4 lane separated new highways mainly in the eastern sector of Attika Region (Marathon route, Koropi-Vari Airport southern access highway)

These new and improved road facilities have been designed and built to relieve traffic congestion in the central part of Athens. Most facilities are tangential bypasses and connections between various parts of Attika Region.



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2: Athens Road development plan.

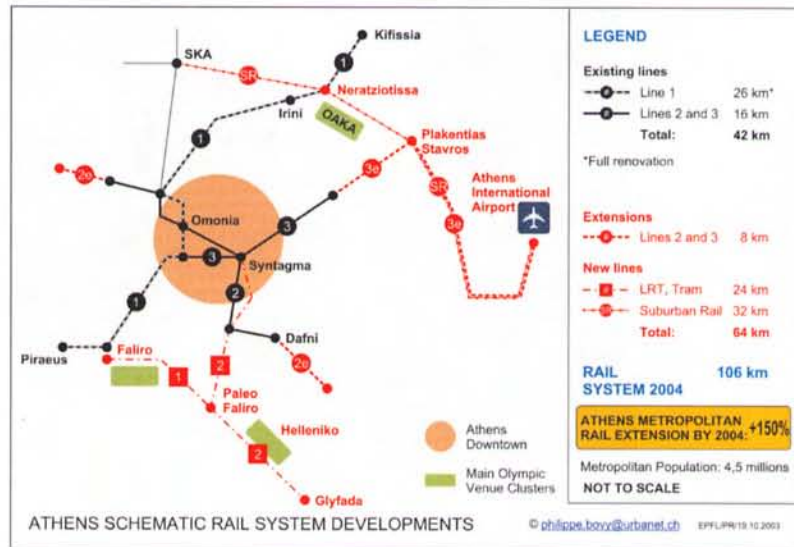
2: Plan de développement du réseau routier d'Athènes.



### Rail Public Transport

A very ambitious program of rail transport system rehabilitation, extension and new construction has been undertaken. Development efforts concerned four systems:

- **Isap Metro line 1** ([www.isap.gr](http://www.isap.gr)). The oldest rail line of Greece connecting Piraeus to Athens Centre and the northern suburb of Kifissia (28 km), has been completely up-graded with modernized stations, new security systems and additional rolling stock to increase this rail line capacity to 26000 passengers per hour and direction (Figure 6).
- **Attiko Metro lines 2 and 3** ([www.ametro.gr](http://www.ametro.gr)) have been extended to reach the near suburbs of Athens. The East-West line 2 is extended of 2,5 km and two stations while the South – Northeast line 3 is extended of 6 km and 2 stations. Metro 3 operates also on 19 km of the new Suburban rail line leading to Athens International Airport. Dual current metro trains reach the Airport, 38 km from Athens centre in 20 minutes.
- **Suburban Line Ska-Airport** ([www.ose.gr](http://www.ose.gr)). A totally new 32 km line linking the new Athens International Airport to the central Greek railway interchange node on the AthensThessaloniki main rail line has been completed. This northern section of the Athens metropolitan express rail system uses the median of new Attiki Odos Motorway. It has a new Olympic station near OAKA sport complex.
- **New Tramway** (Athens Light Rail System) with two lines totalling 24 km. One connecting the City Centre to



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4: Rail public transport schematic development map.

4: Carte schématique du développement des transports publics sur rail.

the coastal area at Glyfada and the other linking the Faliro area (near Piraeus) to Glyfada also. These two lines are part of a larger tram network to be developed around Acropolis and in other parts of Athens centre. This renaissance of the Athens tram has been carried out with attractive Pini Farina designed air conditioned low flow trains.

These public transport network extensions have allowed a doubling, in less than 5 years, of the metropolitan and high performance rail system. From a rather small radial urban rail system, these new rail services built an interconnected system with key metropolitan transfer stations.

### Air transport

As mentioned earlier, the Athens International Airport was moved from Hellenikon, 20 km Southeast of Athens, to a location East of the Ymettos mountain range. The new AIA Athens International Airport ([www.aia.gr](http://www.aia.gr)) has two parallel runways, 24 boarding bridges part of a total of 78 passenger gates. 2003 traffic reached 12,5 million Pax, about 60 % in international traffic. The Airport is linked to

5: Athens new air-conditioned and low flow tramway.

5: Le nouveau tram d'Athènes, à air conditionné et plancher bas.

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3: Attiki Odos Motorway with central reservation for Suburban express rail and Attiko metro line.

3: L'autoroute à péage Attiki Odos avec un espace central réservé au train express régional et à la ligne de métro Attiko.

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6: Athens new green track tramway through densely populated Nea Smirni neighbourhood.

6: Les nouvelles voies «vertes» du tram d'Athènes au travers du quartier densément habité de Nea Smirni.

the new six lanes Attiki Odos Motorway. In its median, an express rail line has been constructed to connect the Airport to Athens Centre both by metro and suburban rail.

### Olympic transport operations and traffic management systems

A system of 160 km of directional Olympic priority lanes has been established to facilitate Olympic accredited vehicular traffic. Another 40 km of permanent bus reserved lanes will also help surface public transport.

Global metropolitan wide traffic management is an essential part of urban traffic operations, particularly during the critical Olympic period. A much improved Traffic Monitoring and Control Centre (TMCC) will allow the command and control of 1100 signalised intersections, 204 CCTV cameras, 75 VD video detection cameras and 24 VMS variable message signs. The TMCC is linked to at least six other traffic management centres like Attiki Odos or Attiko Metro.

The Olympic Transport Operation Centre (OTOC) will provide high level, centralised transport command to allow for global intervention in all transport, traffic and security functions.

### A client oriented Olympic transport system

Six integrated client oriented transport and mobility systems have been developed taking into account Olympic requirements. The overall Olympic vehicle fleet amounts to 1150 buses and 3400 cars not counting Athens bus company reinforcement for Olympic express bus lines. Transport features of main client groups are presented below.

- *Athlete transport system.* Based on a temporary depot next to the Olympic Village, this 350 coaches and 50 minivan system is entirely dedicated to the movement of 16000 athletes and team officials. Services are provided from the Olympic Village transport mall to and from all competition venues, training venues, Airport and City centre.

- *Media transport system.* About 530 buses provide transport services to more than 21 600 media personal, 24 hours a day. Its main hub is at the IBC / MPC. Its two main transport tasks are:

- a) linking the 7 Media villages and 102 Media hotels to the IBC/MPC complex, busy main working area of all accredited journalists, reporters, photographers, etc
- b) linking the IBC/MPC hub to all competition complexes, isolated venues and other Olympic destinations

### Olympic official transport system

About 1850 chauffeured cars, called T1, T2 and T3, provide mostly on demand transportation for accredited members of the Olympic family

### Spectator, volunteer and workforce transport system

This combined group of Olympic «clients», amounts to about 400 000 ticketed spectators and 113 000 accredited volunteers and workforce on a peak Olympic day. This traffic is handled by substantially strengthened public transport with services operated 24 hours a day. The public transport system is supplemented by 22 Olympic express bus routes operated by 450 buses (and 100 reserve buses on stand by). All ticketed and accredited persons will have free public transport on the day of validity of their Olympic ticket.

### Olympic transport operation costs

Olympic transport starts about three weeks before the Games and extends to the end of the Paralympic Games about two months later. Athens Olympic transport operation budget reaches about 105 million €. Total transport infrastructure investment amounts in billions of euros: They are splitted between private and public sectors. Attiki Odos toll Motorway and the new Athens International Airport have private financing. Other projects are public with a substantial European Union contribution

### Olympic transport testing, monitoring and transfer of knowledge

It is an Olympic requirement that all competition venues and main functional systems be tested one year before the Games. In Athens, late delivery of key Olympic transport elements made transport and Olympic traffic management real scale testing impossible. Therefore August 14th, day No 1 of the Games, is the real Olympic transport and traffic test event.

Since Sydney 2000 Olympics, IOC is investing substantial resources in an ambitious Transfer of Knowledge Program (TOK). Through a wide range and thorough Observer Program, all Games aspects and functions are monitored by IOC experts and selected delegations of future Olympic Games (2006 through 2012 candidate Cities).

Transfer of knowledge and learning process programs are of growing significance due to the complexity of mega-event planning, preparation, delivery, impact and legacy follow-up. Tremendous progress have been made in the safe, reliable and convivial delivery of transport services for all client groups of huge mega events like the Summer Olympics. In fact, Olympic transport and traffic management schemes are more and more viewed as «real scale laboratories» for urban and metropolitan mobility plan innovation and developments. ■