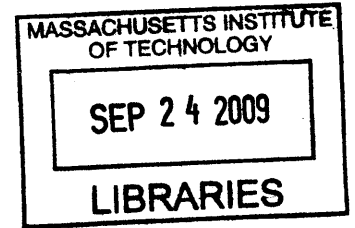


**Transportation Planning for Mega Events:
a Model of Urban Change**

by

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Diplom-Ingenieur in Business Engineering, Universität Karlsruhe TH (2005)
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Submitted to the Department of Urban Studies and Planning
in partial fulfillment of the requirements for the degree of

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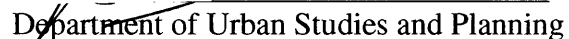
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Abstract

My study is about opportunities for revolutionary developments in urban transport. Often, we think of transport and urban development as an evolutionary process, yet there exist a few opportunities for cities to revolutionize their transport system within a short timeframe of only 10 years. Prime examples for such opportunities are mega events. Based on my hypothesis that mega event owners exercise a decisive influence on urban and transport planning through the requirements they impose on cities, the challenge inherent to leveraging the mega event opportunity is the alignment of transport provisions for staging a world-class event with the metropolitan vision by using the mega event as a tool for desirable change.

In my study I examine the dynamics of the urban-change process in the run-up to mega events by analyzing the potential clash between the event owner's requirements and the development of transport strategies pursued by four cities, which have hosted the largest mega event of all – the Summer Olympic Games. The Olympic cities in my research are Barcelona (1992), Atlanta (1996), Sydney (2000), and Athens (2004). I comparatively analyze the extent to which each city did or did not align the planning of preparations for the mega event with the metropolitan strategies for long-term urban and transport development. Through field observations, document analysis, and interviews, I identify the influences the International Olympic Committee (IOC) brings to the transport planning process of metropolises, analyze the Olympic impacts, and finally propose a causal model linking IOC influences and urban transport outcomes.

I find that the influence of IOC produces a similar pattern of urban and transport change. I explain further why and under what conditions the event requirements can function as catalysts for transport investments, integration of transport systems, upgrades of institutional coordination, and management capacities. If planned effectively, event transport strategies can bring significant long-term enhancement in regional mobility.

Existing theories of urban development do not fully capture the interdependencies among factors operating before, during and after mega events. My research suggests that the IOC is a powerful agent in local urban and transport planning that guides cities towards similar urban change in the run-up to the Olympics. To leverage mega event opportunities for transport, I provide policy recommendations on the alignment of event transport requirements and metropolitan strategy. Given the high investment costs and associated risks, city governments should catalyze their endeavors for improved metropolitan transport through the city's bid that can ultimately enhance metropolitan transport for users on a daily basis.

Thesis Supervisor: Karen R. Polenske

Title: Peter deFlorez Professor of Regional Political Economy, MIT

Readers: Arnold Howitt, Executive Director, Ash Institute for Democratic Governance
and Innovation, Harvard Kennedy School

Christopher Zegras, MIT, Assistant Professor

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List of Acronyms

ANC	Areas de Nova Centralitat= the New Center Areas
ASOIF	Association of Summer Olympic International Federations
ATHOC	Athens Organizing Committee
ACOG	Atlanta Organizing Committee for the Olympic Games
ARC	Atlanta Regional Commission
AOC	Atlanta Olympic Committee
AOC	Australia Olympic Committee
BIE	Bureau International des Expositions
BOC	Beijing Organizing Committee
CBD	Central Business District
CETRAMSA	Center Metropolitan d'Informacio i Promocio del Transport S.A
CODA	Corporation for Olympic Development in Atlanta
COOB	Comite Organizador Olimpico de Barcelona '92
EMT	Entitat Metropolitana del Transport
FIFA	Federation Internationale de Football Association
FGC	Ferrocarrils de la Generalitat de Catalunya
HOV	High Occupancy Vehicle
IBC	International Broadcast Center
IOC	International Olympic Committee
ITS	Intelligent Transportation Systems
IVHS	Intelligent Vehicle Highway System
MARTA	Metropolitan Atlanta Rapid Transit Authority
MPC	Media Press Center
NOC	National Olympic Committee
NSW	New South Wales
OAKA	Ολυμπιακό Αθλητικό Κέντρο Αθηνών
OASA	Οργανισμός Αστικών Συγκοινωνιών Αθηνών
OCA	Olympic Coordination Authority
OCOG	Organizing Committee of the Olympic Games
OFFS	Olympic Family Fleet System
OFTS	Olympic Family Transport System
OFM	Olympic Family Members
OGGI	Olympic Games Global Impact
ORTA	Olympic Roads and Transit Authority
OSTS	Olympic Spectator Transportation System
OTS	Olympic Transport System
OTSG	Olympic Transportation Support Group
OV	Olympic Village
PGM	Plan General de Metropolitano
RTA	Roads and Traffic Authority
SOCOG	Sydney Organizing Committee for the Olympic Games
SRA	State Rail Authority
STA	State Transit Authority
TMB	Transports Metropolitans de Barcelona
TMC	Transport Management Center
TOK	Transfer of Knowledge
USOC	United States Olympic Committee
VIP	Very Important Person

Chapter One

INTRODUCTION

Extraordinary global forces bring tremendous opportunities to metropolitan regions. As one of these phenomena, mega events¹ and their effects on metropolises deserve appraisal and examination as momentous opportunities to realize ambitious urban and regional goals. Two political power players, the “event owner”² and the city government, determine the outcome of this urban-change process – each seeking to implement its own agenda. The dynamics of the change process lie at the center of my study, which is guided by the following hypothesis: mega event owners exercise a decisive influence on urban and transport planning through the requirements they impose on metropolitan regions. My findings show that this influence can significantly alter pre-existing city plans, usually leading to a recurring pattern of transport change in hosting cities, and frequently creating—but also squandering—valuable opportunities for the host city in preparation for the event. Unless the city takes proactive steps early on in its planning for the mega event, to make sure that the transportation decision-making does not serve only the event’s short-term needs, then city planners will not get the transformation and long-term benefits they had hoped for. Yet it is those hoped-for benefits that are the typical rationale for cities to bid for the event in the first place, and that persuade people to support the idea of the mega event.

Problem statement

Essentially, two sets of actors – the event owner and city government—³ use the occasion of the mega event as a powerful tool to achieve their objectives. Even though both share the goal to make the mega event a success, the groups with regard to whom this success is defined are inherently different for the two players. Their reputation, the economic position of sponsors and, in terms of transport, the well-being of the athletes (in

¹ A definition of “mega events” in the transport context is developed later in this chapter.

² An “event owner” is the overseeing and ruling body of the mega event, such as the International Olympic Committee (IOC) for the Olympic Games.

³ The focus of my study lies on the interaction between the event owner and the host city government. A potential third party, the private developer, can only act upon the decision of withdrawal or agreement by the city government and hence is here of secondary importance. Throughout this study, however, I will refer to the third party’s influence, especially in my second case study, on Atlanta in 1996.

the case of the Olympics) is the prime focus for the event owners, whereas the citizens are the center of attention for city governments. The differing interests of these groups create a potential clash between the long-term perspective of the development goals the city is striving to accomplish, and the short-term needs of the event--the requirements the particular event imposes, through the event owner, on the city. The outcome ultimately evolves out of this clash of two forces.

This clash is evidenced by new stadiums and their use. Many Olympic researchers have found that there is a clear need for these stadiums during the event, but they are a lasting burden for the city afterwards due to their high maintenance costs and underuse. So far, Olympic researchers have paid little attention to the transport sector, even though the potential clash between the short-term needs and the possibilities for the city's future development seems far greater than for single stadiums. For the mega event, demands for the short-term transport peaks have to be met; investment in transport systems is likewise of high importance, since it can clearly benefit the city in the long run by increasing mobility and accessibility both to and within the region.

From the short-term perspective, the transport demands placed on the city by the event and the event owner are in the foreground. During the mega event, the transport system has to cope with the increased demand from visitors, deal with special needs of the participants, and provide reliable and continuous service for the residents. Event owners scrutinize transport preparations for the predicted peak flows across the city. The smooth operation of transport is crucial to the event's success and the city's reputation in the world.

From the long-term perspective, the planning for the mega event and the transport measures cities undertake to accommodate the additional passenger demand become part of what determines the city's future development. Hence, the city's motivation is to maximize its benefit from these measures. New highways, metro lines, or transport management systems ideally bring about the desired urban development through the investments necessary for the Olympics.

As interest in hosting mega events grows, along with their impact on the city and the need to plan for sustainable transport, it becomes ever more urgent for cities to

understand the variables and factors that can make possible a transport strategy for such events that both meets peak event demands and achieves a city's developmental goals.

Theory and hypothesis generation

A power struggle between global and local forces is the theoretical foundation on which I build this study. The globalizing force embodied by the mega event owner, and the local force represented by the hosting city's government, compete on a global-local stage in the run-up to a mega event. In analyzing this setting, my goal is to theorize a global to local connection when a set of mega event requirements interacts with what the city has been planning to do on its own before the mega event.

Explanation of hypothesis

I hypothesize that mega event owners exercise a decisive influence on urban and transport planning through the requirements they impose on cities.

The mega event owner is a powerful global agent that has power in a local setting, because it forces cities to compete in order to be designated as the host place. Therefore, the agenda and requirements of the mega-event owner are essentially forced upon the city and can powerfully influence its development. The ways in which the individual cities try to stage the event so as to satisfy these requirements essentially make the cities adopt a specific set of transportation improvements. My hypothesis expresses the idea that in this struggle between the global and the local, the global in the form of the event owners frequently gains the upper hand, because they inherit the power to award the event (in the bidding stage) and retain the power to withdraw the event from the host at any time.

Research questions

To take advantage of the opportunities mega events bring to cities, the key question for planners to answer is how cities can align the necessary transport provisions for staging a world-class event with their metropolitan vision, and hence use the mega event as a driver towards desirable change. To develop practical guidelines, however, a deeply rooted theoretical problem needs to be explored. According to Essex and Chalkley (2005, p. 7), mega events are complicated projects that "do not fit any planning model." If they do not fit any model, what role then *do* mega events play in urban development?

The model, which I develop, describes a pattern of change that cities are likely to undergo when staging a mega event. I provide in the conclusions the practical recommendations I draw from the model.

Research aim and contribution

My research aim is to formulate recommendations for planners on how best to leverage the opportunities mega events bring to the transport and urban development process.

My theoretical contribution is a model of urban change, showing the effects mega events have on cities that can aid policy makers in understanding how to use mega events efficiently as catalysts for metropolitan transport development. Change can be represented through a model leading from cause (mega-event influences) to effect (metropolitan outcomes) based on an analysis of the metropolitan planning and implementation process before, during, and after mega events.

My practical contribution is transport planning and policy recommendations for cities on how to manage temporary peak passenger demands while planning for urban transport benefits. The goal of this research is to aid decision-makers in planning a mega event not as an interrupting occurrence but rather as an opportunity, enabling discontinuous transport improvement.

Methodology and constraints

I examine one type of mega event: the Summer Olympic Games. Scholars in general agree that the Olympic Games always deserve to be grouped into the category of mega events (Getz 1999; McDonnell et al. 1999). Furthermore, among all mega events the Olympic Games are the most studied phenomenon. Furthermore, I constrain my analysis to four Olympics -- Barcelona (1992), Atlanta (1996), Sydney (2000), and Athens (2004) -- which I comparatively analyze as case studies.⁴

My measure of alignment (between the requirements and the metropolitan strategy) is the extent to which the International Olympic Committee (IOC) through the

⁴ For a detailed explanation of the selection of my case studies, refer to Chapter 3.

Olympic Games *makes* the city deviate from its original⁵ plans. Any deviation from the original city plans provides evidence for the decisive influence of mega event owners on urban plans. I acknowledge that there might be other influences that change the original city plans in the run-up to the Olympics. This possibility, however, is highly unlikely due to the host-city contract⁶ and the time pressure the city faces in complying with requirements during the seven-year preparation period. Measuring change (and deviation) stretches from building new infrastructure, to implementing policies, to altering travel behavior across private, public, and active transport.

Findings

I found my hypothesis to be true in all of the cases, however, the degree to which Olympic requirements made the cities deviate from their original master plan varies greatly. I attribute this degree of deviation to two factors. One, over time the mega event owner became more knowledgeable about handling Olympic passenger travel learning from previous hosts' mistakes and successes, and hence imposed additional and more stringent requirements on cities. Second, the more the IOC doubted that the city was able to handle the Olympic transport demands, the more pressure it exercised on the cities to comply with their requirements and desires. Mega-event owners are indeed agents of change in urban settings. In exploring mega events and their impact on urban change, I believe there are four important results brought to light through my research.

First, the validity of the hypothesis implies that mega events are more than mere catalysts for urban development – in contrast to the claims of previous researchers (Chalkley and Essex 1999; Essex and Chalkley 2005; Gold and Gold 2007b). In their view, mega events provide only catalytic stimuli that speed up construction and other projects that had been planned before the Olympics came into the picture. In contrast, I show that, because of the requirements the International Olympic Committee (IOC) and other mega-event owners impose on cities, the period during which a mega event is prepared introduces a powerful vision on the local level and elevates the mega-event

⁵ Master plans developed before the city was awarded the right to stage the Games.

⁶ The host-city contract is an agreement signed with the IOC by the city hosting the Olympics, in which the city agrees to implement all modifications in the manner stated in the bid file. Changes to this agreement are difficult to implement and only possible with the consent of the IOC.

owners to formidable agents of urban change. Hence, I believe such event owners should occupy a place in the urban and transport planning literature, to which my study makes a pioneering contribution.

Second, I found that because of the requirements imposed by the IOC, cities staging mega events show a similar pattern of transport change. In general, these transport requirements are imposed to ensure that the host city's transport system is capable of transporting the peak passenger loads of the mega event. These similar requirements impose change at the local level resulting in similar measures of implementation and similar legacies.⁷

Third, cities rarely planned for leveraging mega-event benefits after the event. I found that cities frequently failed to take long-term advantage of the Olympic event, notwithstanding what they originally thought they would do, e.g., implementing major changes in their public transport system. In identifying the common pattern mega events impose by theorizing the global-local connection, this study could potentially not only help to avoid the missing of opportunities, but also provide planning recommendations that leverage the potential for beneficial urban development through mega events.

Fourth, to the extent that cities have been able to gain sustainable advantage from hosting the Olympics, it is because there has been an alignment of their long-term planning perspective and the way they used the Olympics to improve their transport systems. The typical rhetoric surrounding the decision to bid to host the Olympics almost always emphasizes the legacy impacts of the Games, but the dynamic that I document in this study is -- at least on the transportation side -- that cities are pushed into giving priority to satisfying the short-term demands. If cities are not very careful to protect their goals and city planners design the Olympic venue selection and make smart land use choices in a way that supports the cities' own transportation goals (always somewhat different from the IOC's), then the Olympics' beneficial legacy will actually be quite minimal. Therefore, there is a clear need for aligned planning very early-- preferably during the bidding stage -- to ensure the alignment of the event with the metropolitan strategy.

⁷ Legacies are defined at the end of this chapter.

Mega events bring the potential to move cities towards sustainable transport practices. To achieve the IOC's goal of moving millions of spectators in a short period of time, temporary transport measures fostering public transport are implemented. Properly planned and implemented, these measures can enhance long-term urban transport efficiency for the city. Evidence-based transport planning and policy recommendations can help cities make the most of the potential of hosting the Olympic Games to promote discontinuous progress in transport improvement.

Definitions

A few definitions are necessary to enhance the reader's understanding of the material discussed.

Mega events in the metropolitan transport context

Until the beginning of this century, transportation in association with mega events was usually mentioned in a side note: transport played the role of a temporary supporting service (Hall 1996; Syme et al. 1989). Surprisingly, the subject of transport has rarely been studied in relation to mega events. On the one hand, transport systems need to be prepared for the mega event; on the other hand, these preparations remain as tangible legacies, which can potentially enhance urban transport by being a stimulus to change the way people travel. However, research on transportation systems beyond the mega events themselves does not exist. "Facilitating successful access to special events is key to their success, yet a transport and events research agenda is still to emerge" (Robbins et al. 2007, p. 303).

The key variables that define mega events in terms of transportation are given by da Silva (2003, p. 209). Bearing in mind the size of the region as well as the quality of the transport system, he established the following variables for an event:

- *size*: number of visitors, as well as direct participants and personnel hired for the event;
- *concentration*: duration of the event, duration and magnitude of traffic peaks;
- *foreseeability*: periodicity of the event and the time available to prepare it;
- *additional cost* of extra transport demand, compared with existing transport demand

- *level and capacity* of existing transport system

Strongly leaning on Bovy's characterization (2002) of mega events, I define mega events in the transport context as follows:

A transport mega event is a unique temporary combination of mass transport flows, requiring the involvement of all available metropolitan transport modes with different service levels and requiring temporary and long-term modifications of a transport system.

Academics believe that at least three kinds of events fit the category of a mega event (the World Cup, the Olympics, and World Fairs), for which they have concluded that significant planning efforts are necessary to surmount the challenges these events impose on a city's transport system (Botella 1995; Bovy 2006; Bramwell 1997; Gold and Gold 2007b).

Power play

By "power play" I designate the dynamics through which urban change is produced by the various actors, mostly IOC representatives, planners, and politicians. Primarily, I analyze political power plays, which also have economic and social implications.

Catalyst

A catalyst in chemistry is "a substance that enables a chemical reaction to proceed at a usually faster rate or under different conditions (as at a lower temperature) than otherwise possible" (Merriam-Webster 2009). Metaphorically, one social phenomenon can be conceived as a catalyst if it makes another social phenomenon happen faster, sooner, or more readily. Researchers have found this catalytic effect of mega events in various circumstances (Chalkley and Essex 1999; Essex and Chalkley 2005; Gold and Gold 2007b).

Missed opportunities

The concept of missed opportunities is twofold. The first is tied to the idea of "alignment," in which the ideal is to produce an Olympic transportation plan that to the

greatest extent possible advances the pre-Olympic transport vision of the host city. This definition implies a fixing of the understanding of good urban and transport planning for seven years (the time between bidding for and staging the Games). Admittedly, this implication denies any evolution of the conception of what good planning is for the city during those seven years. This assumption is valid because the IOC freezes the urban plans through the host city contract and no change without the IOC's consent can be made. Furthermore, the city is likely to be so entirely occupied with the Olympic preparations during those seven years that only very rarely will any additional changes be implemented that were not planned beforehand. The second concept of missed opportunities emerged from the interviewing process, in which interviewees described ideas for projects that could have leveraged the Olympics for a better, more locally attuned outcome, but were not implemented at the time because of other, more pressing, Olympic priorities.

Influences, effects, and legacies

For this study, I define influences, effects, and legacies as follows: Influences are any temporary changes brought to the host city before and during the mega event.⁸ These influences are broadly stimulated by the Olympics as an event and either imposed by the International Olympic Committee (IOC) members, or by city governments driven by Olympic aspirations. For this study, influences are caused by explicit and implicit requirements the IOC imposes on the hosting city. Influences become effects if they manifest themselves after the mega event. Legacy is a term frequently used by academics to describe effects on a city as consequences of a mega event.

Study structure

In Chapter Two, I review the literature to theorize a global-local connection of mega event owners' influence on local planning. The challenge is to use established, well-known theories to illuminate mega event practice. The goal of this chapter is to build a theoretical framework suggesting that the IOC as an agent of urban change can influence urban plans due to the requirements they impose on hosting cities.

⁸ Influences according to Merriam Webster Dictionary are defined as (1) the power or capacity of causing an effect in indirect or intangible ways, (2) a force exercised and received consciously or unconsciously.

In Chapter Three, I lay out the research design of my study. I develop an analytical framework for testing my hypothesis and defend the methods used for my research.

In Chapter Four, I introduce the International Olympic Committee (IOC) as a global agent of change and its medium, the Olympic Games. Throughout this chapter, I identify influences the Olympics bring to bear on the transportation and venue planning process. The goal of the chapter is to marshal evidence that the IOC has, through the Olympics, the vision, the power, and the necessary tools to intervene in the urban planning process. My key argument is that the IOC, equipped with the Olympics as an international mega event, can be a global force in shaping cities.

In Chapter Five, I recount narratives from the four selected Olympic cities (Barcelona, Atlanta, Sydney, Athens), in which I analyze the process for planning and implementing Olympic transport and venue requirements. The goal of the chapter is to highlight in each case the role the Olympics play in urban and transport change. Each city section consists of four parts. The first lays out the transport picture before the Olympics by presenting a trajectory of transport developments. The second analyzes the Olympic plans and highlights the dynamics between planners, politicians, IOC members, citizens, and private companies that occurred during the planning process for the Olympics and how these dynamics brought about changes to the original urban master plan. The third provides a quick glimpse into the time during the Games. The fourth reviews the changes that manifested themselves in the urban realm and retrospectively analyzes missed opportunities identified by Olympic planners.

In Chapter Six, I conduct a comparative analysis across all four cities. This chapter fulfills two purposes. First, I argue for causal connections between influences of the mega events and certain urban outcomes, in particular in the transport sector. Hereby, I build a model of change in the wake of a mega event by answering my theoretical research question: What role do mega events play in urban development? Second, I analyze the dynamics of the urban change process. I find that the IOC has exercised more power on urban plans over the years likely due to the IOC's experience gained from previous hosts. The IOC's pressures and short time horizon of the Olympic Games tend to lead to hasty decisions and to similar missed opportunities across cities.

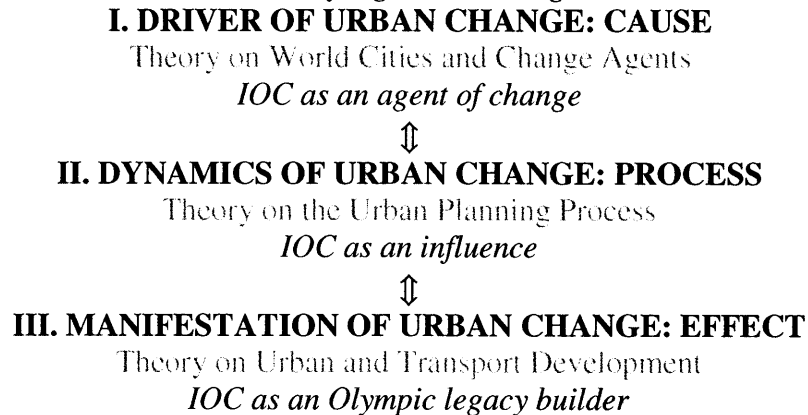
In Chapter Seven, I tackle my practical research question on how cities can align the necessary provision of transport for staging a world-class event with their metropolitan vision, and thereby use the mega event as a driver towards desirable change. I reflect on my case studies and provide an outlook on how my model of change might have to be adjusted depending on future scenarios.

Chapter Two

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

By theorizing a global-local connection I seek to develop an understanding of the role global mega events play in local planning and urban transport development. In the age of globalization, cities seek a competitive edge to create, reinforce, and consolidate world city status. As one opportunity, mega events provide a platform on which to claim such status. Viewing the International Olympic Committee (IOC) as an agent of urban change rather than the Games as a catalyst (as previous researchers have done) allows me to analyze the dynamics between the IOC and city leaders when the city conducts its urban planning in the run-up to a mega event. The outcomes of this planning process, the Olympic legacies, remain in cities long term and provide evidence that in the pursuit of staging a mega event, cities change. I capture this change process in a theoretical model that links cause – a mega event- to their effects - legacies (Figure 2.1).

Figure 2.1: Theoretical framework for analyzing the role of mega events



Source: the author

First, the driver constitutes the cause for urban change; in my case, the cities desire to stage a mega event. Here, the literature on world and globalizing cities lends powerful support to my proposed model, because at the heart of academic work on world cities lies the analysis of the constant competition among cities for world-city status (Friedman 1986; Hall 1966; Sassen 2001). Providing the global-local connections, Short (2004) argues that the Olympic Games provide the stage for cities to claim such status. Drawing from the literature on change agents, principally stakeholders influencing the

urban political process, I introduce the IOC as a globalization force potentially initiating change on the local level (Nas 2005).

Second, the dynamics of urban change stands as a synonym for the interaction of various actors to develop and implement urban strategies, visions, and plans. As a perturbation of the well-established local urban processes, the IOC through mega events insert a different force into the planning process by imposing a set of requirements. Traditional urban-planning theories do not fully capture the preparation and outcomes of planning in the wake of mega events; as Essex and Chalkley (2005, p. 7) believe, mega events “*do not fit any planning model.*” Urban changes have so far been understood through policy changes. Regime theory,⁹ as academics have argued, offers a powerful explanation of political changes that occur during mega events (Andranovich et al. 2001). In this section, I focus not on the interaction between all stakeholders in the urban planning process during a mega event, but rather on the specific influences mega-event owners insert into the urban- and transport-planning process.

Third, manifestations of urban change are reflected in tangible and intangible outcomes of the change process. Urban and transport development theorists analyze processes through which cities take shape (Fainstein et al. 1992). These standard trajectories are interrupted by a mega event and result in urban developments – the legacies, which I interpret as the results of the global-local connection.

I explore the causal effects of mega events on urban transport. Because mega events affect entire urban areas rather than only their transport system, and because a comprehensive understanding of urban planning is crucial for the evaluation of urban development (Hopkins 2001), I base this literature review on urban areas, zooming into transport in detail where appropriate.

Driver of urban change – the cause

Since the 1980's, globalization has been a major force in urban and regional change around the world. Driven by international trade, investments, increased mobility, and advances in information technology, globalization is a process that fosters

⁹ Regime theory is a tool for such analysis, because it seeks to explain mechanisms of how urban change agents act during the processes of decision making (Lauria 1997).

interactions among people, companies, and governments of different nations across the globe (Levin Institute 2008; Marcuse and Kempen 2000). Within urban systems, globalization has led to a new outlook and changes in governmental aspirations. Moving from solely providing services to its residents, cities ventured beyond. “Globalization... means greater intercity competition both nationally and internationally in which entrepreneurial cities seek a competitive edge” (Hiller 2006, p. 319).

Cities seek a competitive edge in the world city system

The competition of cities on the global scale has as its primary objective to remain or become one of the great “world cities.” World cities are centers of political and economic power (Hall 1966), command and control centers of the global economy (Friedman and Wolff 1982), and possessors of a cluster of advanced producer services (Sassen 2001): they are where the world’s business is conducted (Geddes 1915). There are three traits, most researchers agree that a world city possesses:

1. A focus on competitive capitalism (Smith 2000),
2. A modern image (Burbank et al. 2001), and
3. Worldwide connectivity (Castells 2000).

The focus on developing a global hierarchy among cities considers only a few within a narrow range, and tends to ignore the processes through which globalization shapes cities (Short 2004). Both processes are different, while globalizing cities are constantly seeking promotion to “world” rank (1999). The desire to secure a place at the top of a postulated global hierarchy has captured cities. To claim world city status, each city, whether a world, global, or globalizing city, devises a carefully thought-through strategy to become or remain competitive. One important strategy, more and more cities have come to believe, is to stage a mega event.

Mega events as strategy to acquire or confirm world city status

As an important process of globalization, the Summer Olympics “have become the mega event with the ability to create, reinforce, and consolidate global city status” (Short 2004, p. 108). Over the past three decades, the number of cities applying to host mega events has grown exponentially (indicated by the light grey bars in Figure 2.2). In recent years, developing cities such as Capetown (South Africa), and Beijing (China)

have joined the competition among cities for mega events and successfully secured the right to stage them (BOC 2008; GCIS 2008). The Olympic motto “citius, altius, fortius” (swifter, higher, stronger) seems to have captured ambitious cities.

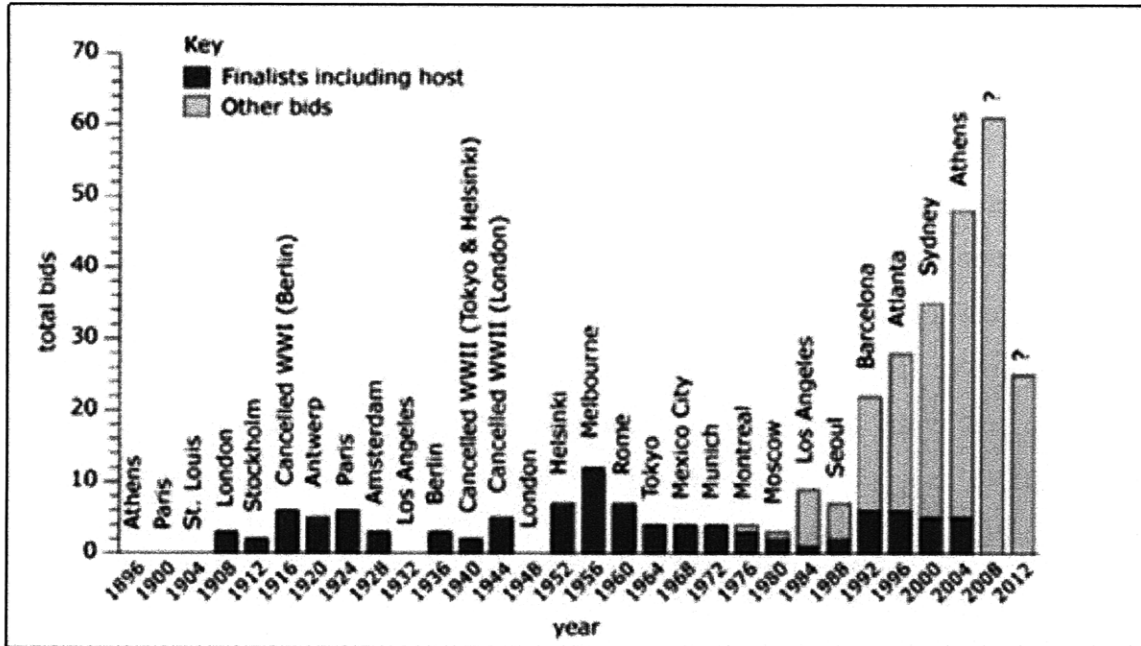


Figure 2.2: Olympic Summer Games city competition
 Source: (Essex and Chalkley 2008).

In the process of staging a mega event, three competitive advantages come into play that potentially promote and enable world city status. These correspond directly with the three traits of world cities (p.25):

(1) *Economic growth of the region.* Burbank et al. (2001, p. 4) have suggested that cities pursue mega events as part of a local strategy to promote economic growth through consumption-based development. The prospect of economic growth is the driving force behind bids for hosting mega events (Malfas et al. 2004), while maximizing the direct, indirect, and induced economic effect is the primary goal for cities (Preuss 2004).

(2) *Worldwide image creation.* Ultimately, cities strive to be placed on the world map (Essex and Chalkley 2004; Harvey 1989), which they hope to achieve by showcasing the chocolate side of the city as the spitting image of a clean and modern international metropolis worthy of belonging to the “world-class” (Burbank et al. 2001). Short (2004) suggests that mega events are a showcase opportunity and may well be “the best stage upon which a city can make the claim to global status” (p. 24). The

international media attention is a tool to broadcast this new image (Hiller 2000; Horne 2007).

(3) *Enhanced connectivity*. Wilson (1996, p. 617) has observed that mega events transform urban spaces, “spectacularizing them in the interests of global flows,” and Short (2004) argues that mega events connect the city into a global space of flows.¹⁰

Introducing urban change agents

Urban change evolves out of the dynamics between agents. Mega events provide a unique stage in which all of these agents are present. Ranging from governments, private sector, individuals, grass-root groups, and non-profit organizations, academics have sought to define agents of change and explain the mechanisms by which these agents act in the urban realm (Ball and Magin 2005; Nas 2005).

Social movements frequently underlie changes in cities. For example, Blumer’s (1990) analysis of industrialization as an agent of social change proposes that industrialization exerts a set of causal forces on societies that result “in change in the social structure, normative orders and patterns of belief and conduct found in societies” (xvii). These movements in general play a neutral character, but set the stage for changes in the traditional order. In a similar manner, globalization exerts forces on cities.

Of particular interest to my study are international organizations, which can also bring about urban change, as Brenner and Keil (2006) have pointed out. They observed that international organizations such as the World Bank and the United Nations, as well as international non-profit organizations, “frequently exercise a powerful influence on patterns of urban development in the global south” (p. 192). As such an international agent, an “event-owner” – a body such as the International Federation of Football Associations (FIFA) or the International Olympic Committee (IOC) - can exercise significant power.

¹⁰ For world city status, the global space of flows is an essential feature, as it shows the importance of the informational society through the preeminence of the space of flows over the space of places (Castells 1993). By the “space of flows,” Castells refers to a “system of exchanges of information, capital and power that structures the basic processes of societies, economies, and states between different localities regardless of location” (Castells 2006 , p. 136).

Staging mega events initiates urban change

Academics believe mega events to be catalysts for urban renewal and regeneration by improving the physical infrastructure and existing facilities (Essex and Chalkley 1998; Malfas et al. 2004; Owen 2005; Ritchie and Yangzhou 1987; Spilling 1996). The Metropolis (2002) report on the impact of major events on the development of large cities featured eight case studies, of which “all the events studied have been conceived as catalysts for large-scale transformations of the city” (p. 18). In specific, this report stressed transport as receiving a particularly strong stimulus through mega events, in the sense that it enabled cities to speed up the building of certain infrastructures, gaining 10-15 years in development (Metropolis 2002).

I agree with the above researchers that mega events are an initiator and a vehicle for urban change, but doubt their pure catalytic role. A catalyst in a chemical sense is “a substance that enables a chemical reaction to proceed at a usually faster rate or under different conditions (as at a lower temperature) than otherwise possible” (Merriam Webster 2009). This definition implies that the chemical reaction stays the same, whereas the substance speeds the process. For mega events, I believe, a different approach is necessary, which takes into account that through a mega event, the “reaction (= urban decision-making process)” changes. I draw evidence for this belief from mega-event scholars who have observed the general trend that occur prior to mega events – excessive promises occur by bidding cities to out-do competitors (Essex and Chalkley 2005; Coubertin 1911 quoted in Preuss 2004).

Mega-event owners as agents of urban change

Reflecting on the literature, I introduce the event owner as an agent of urban change, that among multiple stakeholders - national, regional, and local governments, grassroots groups, citizens - can influence the urban-planning process. Unlike most academic scholars, I believe that mega-event owners can be powerful agents of urban change rather than mere catalysts. Nas (2005) defined directors of change as being “actors with explicit ideas about city development in a position to formulate and influence future urban transformation” (p. 3). Even though Nas (2005), referred to individuals, I believe, his definition is transferable to mega-event owners just as Blumer’s

(1990) analysis of industrialization was, or Brenner's and Keil's (2000) observation about international agencies. Nas' definition implies two fundamental characteristics of directors: they have a vision about the city and possess the power to implement it. As a given, they own the tools to influence urban policy. If the Olympics show these characteristics, they can be defined as a powerful agent of urban change in the planning process that has the potential to actively structures cities and their transport systems (Chapter 4).

Dynamics of urban change – the process

Urban planning and urban politics have to be analyzed simultaneously to understand decision-making processes, which arise from the interplay among all stakeholders (Hall 1982; Wu 2003). Analyzing the power play in the urban realm and its resulting urban change is a multi-faceted undertaking (Källtorp 1994). Clegg (1989) has argued that the key to understanding the powers through which urban change occurs lies in “thinking of power as a phenomenon which can be grasped only relationally” (p. 207). Källtorp (1994) goes on to argue that the relational concept of power is determined by its capacity to influence processes. Because power capacities alone cannot secure a particular outcome, Hindess (1982) introduces agents as shaping the final outcomes of the planning process, driven by their own particular strategy made out of certain interests.

Shaping cities as an interaction of global and local forces in the political process

The process of globalization influences local decision-making and initiates change on the local level. To indicate the complexity of this influence, scholars invent terms such as “local-global interplay” (Dunford and Kafkalas 1992), “local-global nexus” (Peck and Tickell 1994), “glocalization” (Swyngedouw 1992, 1997), and “glurbanization” (Jessop 1998) to label the concept of how globalization acts within cities. A city evolves in a social process through negotiation, in which different actors express their interests, propose solutions, and generate decisions (Ward 2004). Most scholars find that global forces were penetrating at the national and regional scales (Fainstein et al. 1992; Sassen 2001), but that globalization was only one of the forces determining the spatial pattern of cities (Marcuse and Kempen 2000, p. 262). Academic

opinions, however, diverge on how powerful federal, state, and local governments are in shaping global forces.

For this study, I adapt the view of Anttiroiko and Kainulainen (1998; 1996), and in particular Beauregard (1995, p. 232), who finds that “dominance is conceded to actors and forces operating internationally, and local actors resist, adapt, or acquiesce but do not fundamentally alter global intrusions.” As a result, people had three choices: to capitulate, adapt, or attempt to turn the imposed changes to valuable opportunities for their community.

If global forces dominate, common urban actors – to gain and stage mega events - submit to the Olympic vision of perfection and the balanced interplay between these actors shifts in favor of Olympic projects and their priorities.

Urban and transport planning processes

Hopkins (2001) defined a vision as “an image of what could be” (p. 38). He also acknowledged that a vision cannot only overcome resistance in an established system, but also that a common future can work “if people can be persuaded that it [the vision] can and will come true” (p. 38). I find that the metropolitan vision is expressed in a statement officially issued by the city council about future directions of the city. In comparison, Hopkins (2001) defined the term “strategy” in the urban realm as a set of decisions that forms a contingent path through a decision tree. Strategy is arguably the most inclusive and thus fundamental notion of plans because “it is the most explicit about the relationships among interdependent actions, their consequences, intentions, uncertainty, and outcomes” (Hopkins 2001, p. 41). For van den Berg et al. (2000) the necessity for cities to align their strategies, programs, and projects with their overall vision for the region is vital. Inskip (1994) warned that without such strategic thinking, planners may create unexpected and unwanted outcomes. Newman and Thornley (2005, p. 8) defined “strategic urban planning” as a policy that is citywide, having a spatial dimension and implications for specific geographical areas within the city, and that establishes priorities. For this study, I adopt the latter definition. Drawing from the above-mentioned scholars, a metropolitan plan is a reflection of both vision and strategy, because it is guided by visions and implemented through a specific strategy with definite goals.

To implement the urban plan, Fassbinder (1996) believes that planning has to become a complex commercial undertaking, which includes the mobilization of all sectors and all actors towards one great vision which all should be “willing to share ... and support” (p. 69). Mega events have been acknowledged as accelerators of plans for rapid change and as a vehicle to overcome resistance (Burbank et al. 2001). Fassbinder’s argument provides an explanation on why the Olympics are so powerful in changing urban processes: it is because they provide the vision the city needs to move forward.

Mega events and regimes

Harvey (1989) suggested that “urban spectacles” have become a key element of urban and economic policy. A decade later, similar observations by Chalkley and Essex (1999) claimed that mega events have turned from a tool to an agent that plays a significant role in urban policy without providing further evidence. In line with their suggestions, Short (2004, p. 107) believes that “the Games act as an important tool to literally reshape the city, in both discursive and spatial terms.”

According to Stoker (1995, p. 54), regime theory holds substantial promise for understanding the variety of responses to urban change. Frequently witnessed in the wake of mega events is the creation of urban growth regimes¹¹, which enable the acceleration of an urban agenda (Burbank et al. 2001). Short (2004) argues that urban regimes focus on city competition and constitute an entrepreneurial model of regime. These regimes come to power in the run-up to mega events that may shape the city.

Transport planning for mega events

Usually, five factors influence the development of transportation: (1) spatial and land use planning, (2) government policy, (3) economic forces, (4) technology, and (5) social and behavioral trends (Masser et al. 1993; Newman and Kenworthy 1999). For mega events, other factors become important, because “Olympic cities are judged as much on the quality of the transport services as they are on their sporting facilities,” states Curnow (2000, p. 62). Creating a world-class image includes the perfect functioning of all its parts, in particular, transport.

¹¹ An urban regime is defined as “the formal and informal arrangement by which public bodies and private interests function together to be able to make and carry out governing decisions” (Stone 1989, p. 6).

Efficiency, effectiveness, and safety are the three keywords used in planning for exceptional events. Mega events are regarded as an outstanding transport challenge for the city and require broad strategic and operational measures (Bovy 2006; ECMT 2003). Planning has to consider the urban form, the usual traffic flows of citizens, the layout for event sites, and cultural as well as climatic conditions. Recommendations include using the regional infrastructure to the maximum and serving the visitors mostly through public transport services. Bovy and Liaudat (2003) provide a description of the mega event transport task. In “grande manifestations¹²” they distinguish six client groups (spectators, actors, logistical staff, volunteers, VIP’s, media), each of which has specific mobility and accessibility needs. Among client groups an implicit hierarchy is established. In order for an event to be successful, each of these clients’ needs has to be fully met.

Manifestations of urban change – the effect

Pursuing globalism shows impacts on the local level. Due to the increasing tie of cities to global trends, cities change (Brotchie et al. 1995; Brunn and Leinbach 1991; Sassen 1994). “Cities are the urban theaters where the two worlds, the local and global, meet and interwine” suggests Nas (2005, p. 1). The most interesting aspect of this type of study is the effects of globalization processes on the urban structure (Ward 2004) and hence, mechanisms by which national and international forces produce specific spatial changes within cities (Marcuse 1997). Given that globalization forces build and change cities, impacts cannot be easily translated into spatial patterns due to the complex interactions of economic and political forces (Marcuse and Kempen 2000; Smith and Feagin 1987). The forces of city competition in the discourse of globalization have shaped cities. Pioneers in global cities research such as Hall, Friedman, and Sassen have analyzed the changing city systems around the globe, arguing that globalization is a major force in fostering change on the local level.

Just as globalization has an impact on the city, so do mega events. Short (2004, p. 25) concludes that “as a factor in globalization, then, the Olympics and other global and regional media spectacles have an immense impact on the urban image, form, and networks of the host.” As an example, Wu observed the making of global spaces

¹² Great festivals.

associated with mega events, such as the Shanghai expo and Beijing Olympics (Wu 2003). The shift of a city towards a world city through the Olympics is frequently manifested in their urban development and in Olympic legacies. The city is permanently transformed by the spatial restructuring of the mega event (Short 2004).

Legacies as manifestations of mega events

Mega events have different impacts on the hosting city, its region, and its country, whereas I am primarily concerned with the impacts mega events bring to metropolitan regions and their transport systems. Impacts of mega events adopt many forms. Academics agree that mega events have significant impacts on hosting cities and their futures (Botella 1995; Bovy 2006; Bramwell 1997; Gold and Gold 2007b). However, what exactly the impacts are and how they manifest themselves in metropolitan regions is in continuous debate.

Academic discussions on the impact of mega events are centered on the question whether they are ‘good’ or ‘bad’ for a city. Advocates and cities seeking to host a mega event proclaim a variety of benefits for citizens; opponents point out cases of unsuccessful and negative impacts on host cities. The literature paints a rather positive picture of mega-event impacts (Gold and Gold 2007b), whereas only a few authors argue against the positive findings (Lenskyj 2002). A summary of the debates is presented in Table 2.1, while in the following two sections I only discuss the physical and political impacts in detail, because they directly apply to my study.

Table 2.1: Structure of exemplary impact types of mega events

Type	On whom?	Impact	
		Positive	Negative
Cultural	World	Worldwide positive image creation, international tourism destination	Worldwide negative impression of city
Economic	Country	Growth of the region, increasing employment, tourism revenues	Short-term impacts that are not sustained, increased housing prices
Physical	Metropolis	New infrastructure, new facilities	Unused and costly facilities;, budget drawn away from education
Political	Governance	Catalytic effect to move	Exclusion of the public

		urban plans	
Psychological	Individuals	National and regional pride, good memories (fair sports)	Bad memories (terrorist attack)
Social	Groups	Renewal, affordable housing projects	Evictions

Source: compiled by the author.

Physical–enhancement vs. white elephants¹³

Chalkley and Essex have distinguished four phases over the past 100 years of urban infrastructural development related to mega events, showing an increasing scale of impact, organizational effort, and international attention (Chalkley and Essex 1999; Essex and Chalkley 2004a). There seems to be a mismatch between the promises cities are willing to make in the pursuit of hosting a mega event and what the city needs for its future: cities, “given the imminent publicity and world-wide interest focused on the Games invest extravagantly in unnecessary infrastructure” (Essex and Chalkley, 2002, p. 12). Aware of mega events’ pitfalls, grassroots groups frequently protest against new stadiums (Curry et al. 2004) and academics highlight the danger of underused and thus costly arenas (Gold and Gold 2007a).

The other controversy in using mega events as a strategy for urban renewal revolves around the discussion of the beneficiaries. Academics have argued that rarely have any improvements benefited citizens (Andranovich et al. 2001), and if they did, they benefited the already wealthy (Eitzen 1996; 2002). Hence, Ruthheiser (2000) suggested that mega events as such may serve to exacerbate social problems and deepen existing divides among residents.

Political–the missing element of public participation

Preuss (2004, p. 1) noted that mega events provide a “unique opportunity for politicians and industry to move hidden agendas” by fast-tracking the decision-making process (Cashman 2002; Hiller 2006). This frequently leads to the exclusion of public participation in the decision-making process (Lenskyj 2002). Hall (1989) reported that an

¹³ White elephants are considered valuable possessions that their owners cannot discard. Their maintenance cost exceeds by far their value. The phrase originated in South East Asia (Thailand, Burma). In the 1800s, receiving a white elephant as a gift was both a blessing and a curse: a blessing because the white elephant was sacred, and hence had to be kept; a curse because the animal had to be worshiped, fed, and could not be put to practical use to offset the cost of maintaining it.

apparent inverse relationship existed between the increase in size of a mega event and the decrease of public involvement in the decision-making process. Later on he (1996, p. 375) observed that public resources were shifted to imaging functions.

Transport influences, impacts, and their legacies

Mega events lead to investments in public transportation, road construction, and airport expansion, and researchers claim that these improvements provide the host city with benefits in terms of quality of life, significant time saving, more capacity, and more attractive travel (Bennett 1999; Christy et al. 1996; Getz 1999; Preuss 2004; Syme et al. 1989).

Surprisingly, the field of transport for mega events has rarely been studied. On the one hand, transport systems need to be prepared for the mega event; on the other hand, these preparations remain as tangible legacies that can potentially enhance urban transport by being a stimulus to change the way people travel. Improved transport is a potential benefit frequently mentioned in bidding files and used as a claim to counter potential costs and burdens to the hosting community (Cashman 2002). Transport as a lasting legacy in hosting cities has the potential of leveraging mega-event benefits. However, research on transportation systems beyond the immediate post-event evaluations by planners does not exist. “Facilitating successful access to special events is key to their success, yet a transport and events research agenda is still to emerge” (Robbins et al. 2007, p. 303).

The missing links

In this study I am attempting to analyze the connection between the global and the local, seeing the metropolis as a reflection of global impacts in the run-up to mega events. The focus of my study is how the IOC through the Olympics as a global force shapes urban areas and their transport systems.

Defining the mega-event transport problem

The basic problem mega-event transport planners face is, I believe: *the alignment of transport provisions for staging a world class event with the metropolitan transport strategy by using the mega event as a driver towards desirable change*. Support for my

position can be drawn from several scholars who have studied metropolitan impacts. Coaffee (2007) and Preuss (2004, p.94) make general statements claiming that the “matching of urban development and event plans are very important”, yet neither one has given recommendations concerning how to achieve these goals. With my problem definition I oppose the views of other scholars.

Hensher and Brewer (2002, p. 383) argue that the end customers for public transport in the value chain of mega-event transport are “spectators, athletes, officials, and workers” transported during the Olympics. I believe that the end customers in the value chain are the residents of each city; therefore, the long-term perspective for planning has to be geared to benefit them and staging a mega event should foster the long-term developmental goals of the city.

Robbins et al. (2007, p. 304) declared that the “basic problem planners face” is “the provision of additional capacity to meet peak levels of demand, ... [which] may result in the underutilization of that capacity for the remainder of the year and is therefore economically unviable.” This, however, I argue, is only a small piece of the “problems that planners face.” Robbins et al. suggest that the problem lies purely in the use of the built transport infrastructure after the event. Aligning the metropolitan vision with the requirements a mega event bring to the city are of a multifaceted nature: the sustainability challenges metropolitan transport faces in the future, the metropolitan strategy the city is pursuing, and changing citizens’ demands for transport should be the main targets in expressing the problem planner’s face when hosting a mega event.

Hiller (2006, p. 331) emphasized that after a mega event, the use of facilities must be “reevaluated and integrated into the fabric of urban life and the needs of its residents.” Given the importance of a long-term planning horizon (Ashworth and Voogd 1990; Bramwell 1997), I argue that a shift in thinking and analysis is needed. I believe that the alignment of the event with the urban future has to happen before the plans for a mega event are implemented.

Given my critique and my understanding of the transport problem, my aim is to develop policy recommendations on how cities can align event requirements with the metropolitan transport strategy. Those go beyond the attempt to express the potential of mega events, which came from Rubalcaba-Bermejo and Cuadrado-Roura (1995), who

have suggested that events are planning instruments for urban-transport development, such as clearing congested areas or re-organizing transport systems. My recommendations are rather targeted towards leveraging the potential the events bring to metropolitan transport.

The unmet challenge of aligning event and metropolitan strategy

Only recently have academics and practitioners emphasized the importance of aligning the requirements an event sets for the city with the city's own goals. Bramwell (1997), in analyzing the 1991 World Student Games in Sheffield, conducted one of the few empirical studies, investigating strategic planning before and after a mega event. He found that Sheffield did not plan for the long term, but rather used a learning-by-doing approach. Based on his findings, he suggested the city might have missed important opportunities. Hence, he emphasized the importance of a long-term perspective on mega events. Just like the long-term perspective on projects, Ashworth and Voogd (1990) recommended that urban planning be guided by the strategic vision of the region if the city wants to market itself for tourism. Getz (1999) furthermore believes that an event is a strategic tool for helping to achieve metropolitan goals. His recommendation to planners was to focus on the intended outcomes of the event and plan for pre- and post-event impacts. In terms of transport, Getz's advice (1999, p. 28) was to "disperse venues and activities throughout the destination as far as practical to spread benefits more widely and to avoid congestion"; but it has not been tested empirically. Coaffee (2007) suggested the same way of thinking when he concluded that a successful process of urban renewal emphasized the long-term and strategic planning horizon, geared towards sustainable regeneration in the wake of a mega event.

Even though I agree with the importance of aligning both strategies for the betterment of the cities (as both Bramwell and Coaffee have emphasized) and find their idea of a long-term planning horizon essential, these authors give no recommendations on how to achieve them through a mega event. In order to develop such recommendations, it is essential to understand which impacts mega events have had and why, and hence the causal links between mega events and their effects on urban development have to be understood.

Conclusion

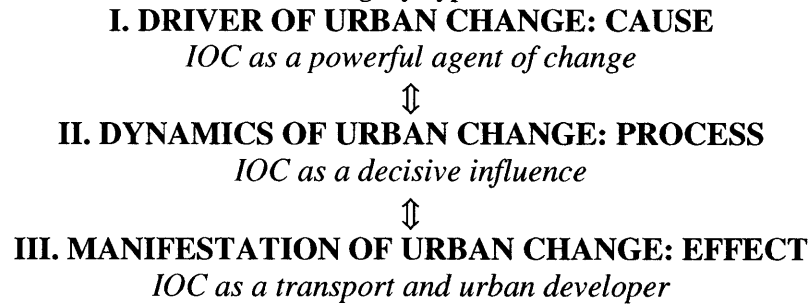
I deduce my hypothesis from this literature review: mega event owners exercise a decisive influence on urban and transport planning through the requirements they impose on cities (summarized in Figure 2.3).

In the first section (Driver of Urban Change), I introduced the IOC as a potentially powerful stakeholder in the urban planning process in the run-up to a mega event. Because cities seek the promotion to world-city status, some choose to stage mega events and hence allow the mega-event owner to intervene in their preparations thereby making them an agent of urban change. In Chapter 4, I describe the vision the IOC has on Olympic transport, explain the power they hold within the run-up to the Olympics, and point out specific requirements the IOC imposes on hosting cities.

In the second section of this chapter (Dynamics of Urban Change), I highlighted the struggle between global and local forces, particularly pointing to researchers who have suggested that global influences dominate local ones. The emphasis lies on the necessity to view a city's planning process in the run-up to a mega event as undergoing a shift in priorities. If I view mega-event owners as a global force, the IOC *then* can exercise a decisive and sometimes even predominant influence on urban politics, and can, consequently, also alter the planning process in metropolitan regions, because Olympic priorities dominate local thinking and decision-making. In Chapter 5, I tell four narratives on past Olympic hosts, focusing on the shift in priorities within urban and transport planning.

In the third section of this chapter, I provided evidence that the Olympic dominance is manifested locally in Olympic legacies, e.g., stadiums. Within the few years leading up to the mega event, cities undergo a transformation stimulated by the hope for economic growth, a world-class image, and urban regeneration. Researchers have attributed mega events the role of catalysts in the urban development. In contrast to these statements, I found that white elephant buildings tell a different story.

Figure 2.3: Theoretical framework for building my hypothesis



Source: the author

The model of change I develop throughout this study suggests that the IOC is a powerful agent of urban change. As a globalizing force driven by constant world city competitions, the IOC significantly influences local transport planning and decision-making and hence can have an effect on long-term urban transport development. Hence, there is a need for an explanatory model of change evoked by mega events. Because transport has been largely ignored by researchers and yet holds great potential in benefiting cities post-event, I focus my analysis on transport systems cities undergo in the run-up to a mega event.

Chapter Three

RESEARCH DESIGN

The IOC exercises a decisive influence on urban and transport planning through the requirements they impose on cities. To support my hypothesis, I gathered evidence in Olympic cities to reveal the urban-process strategies during which mega-event owners change cities. Given the complexity of analyzing the influence of the IOC on local planning post-event, I considered multiple case studies to be the only viable alternative; for causal studies Yin (2003) considered explanatory case studies selected via replication logic¹⁴ as suitable, for comparative investigations of urban change, Källtorp (1994) suggested an inductive, qualitative method, which would allow theoretical interpretation of highly varying data. My research design, hence, is qualitative using primarily interviews triangulated with document analysis and observations for cross comparison.¹⁵ With my study, I hope to develop a process strategy for cities choosing to host a mega event in order to leverage mega-event opportunities.

Shortcomings of previous methodologies

The development of the transport system through mega events as an object of study has largely been neglected in academic discussions (Robbins et al. 2007). At the same time, transport, just like other investments for mega events, requires significant planning efforts and investments upfront, and can – if well planned - remain as a lasting legacy in hosting cities, benefiting citizens beyond the mega event (Hiller 2006, p. 318).

The few researchers who have studied transport for mega events generally recorded findings in a descriptive manner without analyzing the planning process or remaining legacies. Further shortcomings of many previous studies are their focus on single cases, their short time horizon, or the researcher's bias. My analysis tries to overcome these shortcomings in four ways: its comparative nature, its time range, its theoretical approach, and relatively unbiased view.

¹⁴ All of my case studies are intrinsically different regarding their preexisting transport infrastructure, and their choice of Olympic venue locations, yet staged the same event – the Olympic Games (Table 3.1).

¹⁵ Triangulation is used to confirm, cross-validate, or corroborate findings in a single study. This strategy usually integrates the findings by offsetting the weaknesses of one method with the strengths of another.

Most past analysts have studied one-time performances of mega events and have drawn conclusions from a single case. They comprise practical guidelines, e.g., by the U.S. Department of Transportation (DOT 1997), short-term measures, and “strategic planning guidelines” describing a single specific event and listing lessons learned (Trout and Ullman 1997). My approach is to compare preparation efforts among four cities which staged the Olympic Games.

Former analysts have focused on the immediate need to “perform well” during the event. The short time horizon does not account for long-term impacts mega events may have had on cities. Post-event studies were usually conducted within a year after the event. Based on short-term studies and single cases, an analyst cannot establish general benefits cities bring to a region and analyze conditions to foster potential benefits. In contrast, I focus on the implications and outcomes of the preparation efforts and thus look into results of up to 15 years after the event has passed.

Past mega-event analysts were mainly driven by views from practice and summarized lessons learned. They ignored the potential influence of the mega event itself on planning and hence argued they were catalysts. In contrast, I am grounding the analysis in a theoretical approach in viewing the IOC as a change agent acting within the cities planning process.

A fair amount of research has been conducted by investigators eager to place their cities in a positive light after the event (Getz 1999; Horne 2007). Therefore, the legacies that follow the hosting of an event are “difficult to quantify, prone to political interpretation and multifaceted” (Malfas et al. 2004, p. 209).

My focus is on analyzing how and why urban change in the run-up to mega events took place. Because I believe that the causal relationship between influences exerted by a mega event and its impact is crucial in formulating recommendations for leveraging benefits.

Methodology

I started with the intent to use both quantitative and qualitative techniques for my research question on how metropolitan transport changes through a mega event. After pre-testing of simple measures, such as the percentage of public transport vs. private

transport ridership with the quantitative data collected from secondary sources (census, public transport agencies, and governmental statistics), I judged the data to be unreliable. The trial to compare data across four countries over a series of 20 years yielded 'impossible results' due either to lack of data or changing methods of data collection, conducted by research agencies. Therefore, I will only use qualitative techniques for this research.

Given that my research theme is hardly understood and I am analyzing a multi-year process while trying to identify causal relationships, Yin (2003) argued that in these cases the comparative case-study strategy has distinct advantages over other methodologies. The explanatory nature of my case studies will be examined through pattern matching (identification of similar patterns) suggested by Yin and Moore (1988) to untangle the complex relationships inherent in my search for a process strategy. Cross-case comparative analysis and synthesis yield valid insights into the phenomenon (George and Bennett 2005b; King et al. 1994). Analysts should compare the collected data systematically across cases to develop conceptual categories according to a grounded theory approach (Glaser and Strauss 1967; Strauss and Corbin 1990). Källtorp (1994) outlined a 12-step research design for comparative studies on power in urban change, on which I have drawn throughout my analysis. Results can be achieved through building an inductive-iterative theory through the careful examination of empirical evidence (Ragin 1987; Yin 2003).

The Olympic Games as the phenomenon of my analysis

As the specific phenomenon, I have selected the Summer Olympic Games for my research. Scholars in general agree that the Olympic Games always deserve to be grouped into the category of mega events (Getz 1999; McDonnell et al. 1999). Among all mega events, the Olympic Games are the most studied phenomenon and research centers around the world are dedicated to it (Olympic Museum, Lausanne, Switzerland; Centre for Olympic Studies & Research, Loughborough University, UK, Australian Olympic Studies Center, University of Technology Sydney, Australia; Olympic Studies Centre CEO-UAB, Barcelona, Spain). Thus, I have drawn on extensive resources and gathered

the most relevant information given that I am exploring a new research area: the transport sector before, during, and after mega events.

Another approach to the selection of cases could have been a comparative study among different types of mega events such as sporting events and political conventions. I declined this option because studying the Olympics in depth lends more information and allows for the analysis of a broader range of impacts. The Olympic Games comprise most of modern sports and draw the largest numbers of spectators and athletes in the shortest time span compared to other mega events. Hence, the pressure on the transport system is the largest and its performance is tested to the maximum. Other events such as world expositions, the world cup, international conventions, etc., are, in essence, the Olympics on a smaller scale, e.g., fewer venues in a city and/or focused only on a single sport (soccer competitions). Therefore, my findings are transferable to other events, because the Olympic Games “generate similar dynamics for the host cities or regions” (Malfas et al. 2004, p. 1). On a final note, I chose not to study the Winter Olympic Games, because the number of spectators is only about 30% of those for the Summer Olympic Games.

Selection of the case studies

I chose to analyze four metropolises that previously hosted the Summer Olympic Games, namely Barcelona (1992), Atlanta (1996), Sydney (2000), and Athens (2004). Getz (1999) believes that cities have to be compared globally to understand the relative impacts of mega events. The selection of four case studies is based on replication logic where cases are chosen based upon either a literal or a theoretical replication or both (Yin 2003). My goal is to select representative cases that help build a theoretical framework for examining the role of a mega event in changing metropolitan transport. Through my selection, I can control for two likely variables to impact metropolitan transport change in the run-up to mega events: (1) whether there were one or more main centers of Olympic activity – venue location: one vs. several clusters and (2) whether Olympic standard public AND private transport to the venues existed prior to the Olympics – transport infrastructure did or did not exist prior to the Olympics (Table 3.1).¹⁶

¹⁶ I believe those variables to be likely, because the Olympic transport system is determined by the venue choices, and change in urban transport infrastructure are necessary depending on the existing transport infrastructure to those venues.

Table 3.1: Selection of Olympic Case Studies

Transport To major venues existed \ Venue location	One main cluster	Several clusters
Yes	Atlanta	Athens
No	Sydney	Barcelona

Source: the author.

Whereas Atlanta and Sydney established one main center of activity, Athens and Barcelona set up a dispersed structure of Olympic activities. While Atlanta and Athens located their main Olympic activities and stadiums containing most of the venues on a well-connected transport system, Sydney and Barcelona chose rather remote locations as their main centers for Olympic activity (see individual city sections for detailed description). The other important cross-case comparison is the city's vision in staging the Olympic Games. Past hosting cities, Barcelona, Atlanta, Sydney, and Athens cover the broad range of how cities can prepare for the exceptional conditions of a mega event, including both extremes. Barcelona is known as the prime model for urban redevelopment through a mega event, whereas Atlanta adopted the strategy of purely staging the Games for a profit. Finally, my focus on the selected ones was constrained by finding interview partners (alive), my time for this study, and by my language skills.

Approaching the research questions

The challenge in preparing a city for a mega event lies in aligning the short-term strategy for the event with the long-term strategy for the city's future. To understand the causal mechanism underlying developments in the run-up to mega events, it is necessary to identify the influences and corresponding effects mega events have on the city. Therefore, my theoretical research question given my focus on the transport sector is:

“What role do mega events play in urban development?” The independent variable is the mega event; the dependent variable is the legacies (Figure 3.1).

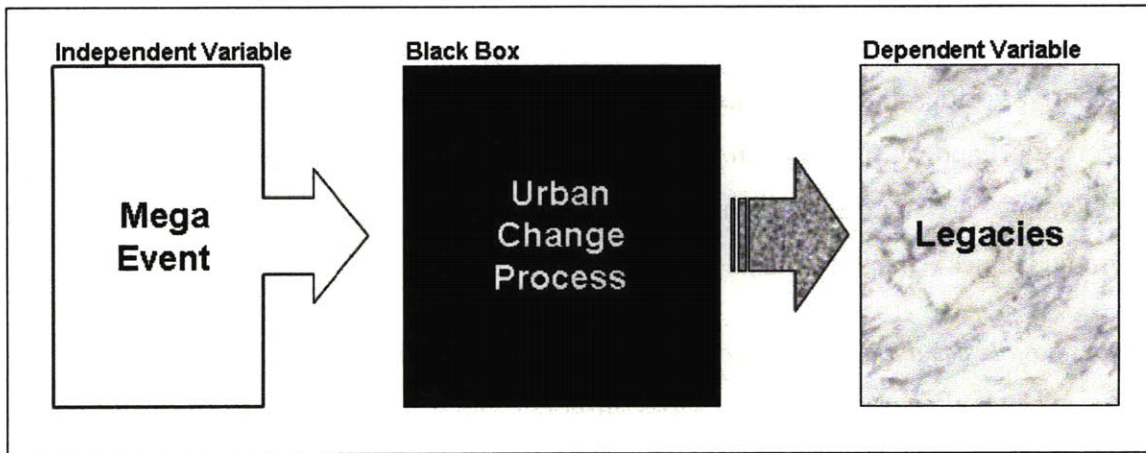


Figure 3.1: Mega event as influence
Source: the author.

Developing the analytical framework

Analytically, three steps are necessary to identify change (Figure 3.2):

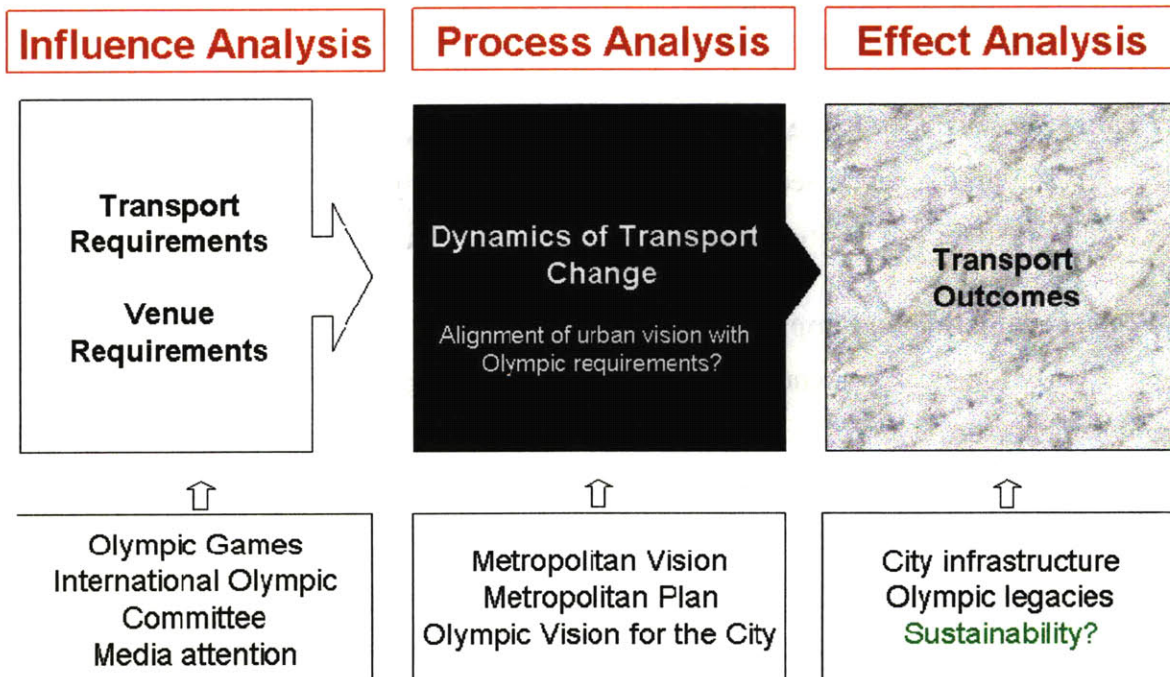


Figure 3.2: Analytical framework for urban change
Source: the author.

Influence analysis: the Olympic Games as an agent of change

Here, I identify the transport and urban requirements the IOC impose on the cities. These requirements include, but are not limited, to the number of venues, number of vehicles for athletes, restrictions on travel time for athletes, etc. Furthermore, the transport priorities the IOC places on different customers (athletes, media, spectators, citizens etc.) and on transport in general, as a criterion for being elected as the host for the Olympics are important to analyze. The influences, in general, are stimulated by the Olympic Games (Chapter Four).

Process analysis: dynamics of urban change in four Olympic cities

I analyze each of the four cities in detail about how the mega event influences changed urban-planning and transport decisions. The stories entail the transport-planning processes of each city over a period of approximately 20 years. I emphasize the metropolitan vision the city had prior to the Games, the vision the city had for the Games and ultimately, how these plans, vision, and strategies change due to the Games, thus providing an insight into why and how metropolitan transport undergoes changes while the city stages the Olympics (Chapter Five).

Change analysis: identifying similar patterns through comparative analysis

The third analysis section is comparative and analyzes legacies that remained or were hoped to remain in cities after the Olympics left (Chapter Six).

Project evaluation and impact assessment

My practically oriented research question driving this study is: *How can cities align their metropolitan vision with the necessary transport provisions for staging a world class event, and hence use the mega event as a driver towards sustainable change?*

For that, I researched the cases in the light of whether and, if so, how cities have aligned the Olympic requirements with the metropolitan vision in the past. My measure of alignment is the extent to which the IOC through the Olympic Games *makes* the city deviate from its original plans. I define the original plan as the urban plan developed before the city was awarded the right to stage the Games. This master plan presumably is driven by governmental goals. The influx of the mega event and the resulting response

from the city leads to metropolitan change. The question in assessing effects is whether and, if so, to what extent do the Olympics’ forces push all cities along the same path of urban development? My view is that deviations from the urban strategic plan provide a vital indicator of a city’s response to the mega event and also to the dominating influence of the IOC.

Table 3.2: Structure of effect types of mega events

Not in urban master plan = deviates from	In urban master plan = catalytic

Source: compiled by the author.

In Table 3.2 I list urban developments that had been made prior to the particular city staging the Olympics (completed between the election of the city and hosting the Olympic Games; this time span is about seven years). I distinguish between Olympic inspired changes, those that have not been in the urban master plan, and catalytic changes, those that appear in the metropolitan plan prior to the Olympics.

I acknowledge that there might be other influences that change the original city plans during the Olympics. This possibility, however, is highly unlikely due to the host city contract¹⁷ and the time pressure the city faces in complying with requirements during the seven-year preparation period.

Missed opportunities

My measurement of change does not only include infrastructure but also implemented transport policies, altered travel behavior across private, public, and active transport, as well as sustained transport operations. While measuring change, I came across various missed opportunities. The concept of missed opportunities is twofold. The first is tied to the idea of “alignment,” in which the ideal is to produce an Olympic transportation plan that to the greatest extent possible advances the pre-Olympic transport vision of the host city. This definition implies a fixing of the understanding of good urban

¹⁷ The host city contract is an agreement signed with the IOC by the city hosting the Olympics, in which the city agrees to implement all modifications in the manner stated in the bid file. Changes to this agreement are difficult to implement and only possible with the consent of the IOC.

and transport planning for seven years (the time between bidding for and staging the Games). Admittedly, this implication denies any evolution of the conception of what good planning is for the city during those seven years. This assumption is valid because the IOC freezes the urban plans through the host city contract and no change without the IOC's consent can be made. Furthermore, the city is likely to be so entirely occupied with the Olympic preparations during those seven years that only very rarely will any additional changes be implemented that were not planned beforehand. The second concept of missed opportunities emerged from the interviewing process, in which interviewees described ideas for projects that could have leveraged the Olympics for a better, more locally attuned outcome, but were not implemented at the time because of other, more pressing, Olympic priorities.

Methods

I combine research techniques believing that the ecumenical approach – no research method is superior to the other – should offer better opportunities to compare urban change among mega event cities. Each method has strengths and weaknesses, but used together and carefully triangulated they should complement each other and allow for a rich analysis. I used interviews, observations, and document analysis in each city. I conducted the study in a concurrent manner, meaning all techniques were applied in parallel and if necessary repetitive. Because new schemes evolved, I had to review additional documents, get access to further documentary material, and even visit interview partners more than once.

Formal and informal interviews

I conducted interviews with two types of focus groups.¹⁸ The first type was interviews with IOC experts on transport and operations planning for the Olympic Games conducted at the IOC Headquarters in Lausanne. Professor Phillippe Bovy, Professor at EPFL in Lausanne, is the IOC consultant for Olympic transport. Lisa Hindson is the expert and coordinator for Olympic operations. Since 2006, I have been in contact with

¹⁸ A focus group is an established elite for a particular topic as the center of my attention. The elite is defined as someone who is in a privileged position as far as knowledge is concerned. Frequently, these are people in positions of authority with considerable personal power.

both of them to clarify issues arising through my research and follow-up information was exchanged via email. The second type was interviews with key planners of each case study city. These comprised professionals in governmental agencies, local transport authorities and independent researchers.

I identified interviewees through four different sources: the IOC consultants, experts running the Olympic centers in Sydney and Barcelona, official publications, and archival documents obtained at several research centers. Thereafter, the interviews were conducted in a snowballing manner. Being aware of the possible bias in such snowballing interviews, I made sure to interview, at least one person from the private sector, one from the public sector, an independent researcher (e.g., professors at universities), and one member from the local Olympics Organizing Committee. I interviewed only those individuals, who were fluent in English, and had public exposure through their work. However, sometimes the interviewee switched into his/her native or more familiar language (languages included English, Spanish, and German, all of which I understand) so as to better express their point of view.

Interviewees, who expressed the wish not to be recorded yet willing to share their thoughts, allowed me to take notes during the interview. I conducted informal interviews and had casual conversations with tourists as well as residents living close to the Olympic sites. Further sources included conversations at conferences and general meetings with members of the planning committee for the World Cup in Germany (2006), and the upcoming World Cup in Capetown (2010) including the head of transport roads and stormwater.

Unobtrusive observation

To gain a good understanding of the city's layouts and its development caused by the Olympics, I conducted site visits in each city for several months: In Barcelona, I spent three months during the summer of 2007 as a fellow of the Olympic Studies Center at the Universitat Autònoma de Barcelona. In Atlanta, I spent about three months during three visits, during the summer of the 1996 Olympics, during the summer of 2008 and during March 2009. In Sydney, I was a research fellow of the Olympic Studies Center at the University of Technology, Sydney, during January, February, and March 2008. In

Athens, I spent about 4 months, during the summer of 2004 as a Golden Ambassador (during the 2004 Games), and during the summer of 2008.

I used observation to verify interviewees' statements and to support some of my findings. I took field notes and pictures immediately on site. Later on the same day, I consolidated these notes into a research report. In all Olympic cities, I observed the activities at the Olympic sites. I also tested all transport modes leading to the main Olympic venue clusters.

Content analysis of governmental, planning departments

At the Olympic Museum, I received special access to the restricted archives. The 25-year embargo on the archives for the Olympic Games was lifted for me by the president of the IOC, J. Rogge as a special exception to facilitate my research. At the Olympic Museum, I was able to collect transport evaluation documents that had been written prior to awarding the city with the Games and during their preparations. These included personal communication files between the IOC (french) and the cities, questionnaires posed by the IOC to bidding cities, presentations given to bidding and candidate cities, bidding file guidelines, and evaluation documents of bidding cities regarding their transport sector, specific passenger forecasts, detailed strategic and operational planning documents, etc. I performed an archival analysis of existing planning documents for all cities, such as meeting minutes, letters etc. at the headquarters of the IOC in Lausanne. The Museum also had all bidding files, candidacy files, and after-Games reports of my case study cities.

Further sources were local Olympic archives. In Barcelona, I conducted an archival analysis at the Olympic Studies Center at the Universitat Autònoma de Barcelona. Here again, I received special permission to the restricted archives. During my research stay in Atlanta, I visited the city's Olympic memorial museum and searched its archives at the Kenan research center. In Sydney, I conducted an archival analysis at the Olympic Studies Center at the University of Technology in Sydney.

In each city, I searched in local libraries and their databases for newspaper articles/information on the transport and urban planning of the Games as well as the general perception of the public, political leaders, and tourists after the Games.

Furthermore, I searched the city archives for strategic metropolitan planning documents before the Games, how the Games impacted such metropolitan planning, and how the metropolis has developed since the Games (these documents were written in Spanish, Greek, French, and English). Finally, I obtained the strategic and operational transport plans for the Olympics through personal contacts I had established during my visits.

Limitations

There are five rather obvious limitations of my methodological approach. The first is my assumption that the mega event is an independent variable. Mega event owners and the city's political leadership negotiate on the best option to implement the requirements, some of which are strict while others are flexible. Hence, there is no true independence of the mega event variable. The second is that the requirements the IOC imposes on cities change over time. Through knowledge-management techniques, the IOC informs cities about new requirements or warns about potential pitfalls. Hence, requirements are not static.¹⁹ A further shortcoming is the inevitable limitations the case study approach bears, the selection of my cases. Due to my language skills, budget, and available time, I had to limit my selection to four cases. A further shortcoming of my analysis is the selection on interviewees and their willingness to share information.²⁰ Because of political reasons and ethical constraints, the information the interviewees provided may have affected my results. A further shortcoming of my study is the lack of a counterfactual. Because I only researched cities that staged the Games – given I wanted to analyze how cities change due to a mega event – I cannot account for changes that happened in other similar cities that did not stage the Olympics at the time. Likewise, I cannot take account of urban changes that were not motivated or catalyzed by the Games.

My goal is not exhaustive in the sense that I do not list all requirements, and all changes, a mega event can bring to the transportation system. I expect there to be additional influences the IOC exerts on cities. Instead I intend this study to start a discussion on how to leverage the opportunities the Olympics bring to urban transport.

¹⁹ In Chapter Seven I give a detailed analysis of this constraint, as it is important for future hosts.

²⁰ In a few instances, Olympic city planners denied to be interviewed by me – the reason they gave me were their position in the city governments.

Conclusions

This study is a pioneering effort to fill the gap in the literature regarding urban and transport change cities undergo when staging mega events. Its methodology, seeking to avoid biases of the past, is defined by its comparative nature, its long-term time perspective, and its quest for causal explanations. The goal of this research is to aid decision-makers in planning a mega-event not as an interrupting occurrence but rather as an opportunity enabling discontinuous transport improvement.

Chapter Four

THE IOC AS AN AGENT OF URBAN CHANGE

In this Chapter I introduce the International Olympic Committee (IOC) as an agent of urban change.²¹ Nas' (2005) defined directors of change as “actors with explicit ideas about city development in a position to formulate and influence future urban transformation” (p.3). His definition implies two fundamental characteristics of directors: they have a vision about the city and possess the power to implement it. The point of this chapter is not to establish the IOC as a director, because they have to interact with city government, which ultimately have the power to implement changes in the planning process. The argument, I am laying out here, is rather that the IOC through the Olympic Games can have a significant effect on urban and transport planning due to its Olympic vision and the power it holds within the planning process.

Throughout this chapter, I focus on these two characteristics by identifying influences²² the Olympics bring to the transportation planning process. For transport, these include accessibility requirements for venues, mobility requirements for Olympic client groups, and transport planning recommendations given by the IOC. Implicitly, cities view these recommendations as “golden rules” which, when complied to, enhance their chances in winning the right to stage the Games. The IOC itself defines its role in the organization of the Olympic Games as follows:

The organisation of the Games consists of a partnership between the IOC and the Organising Committee for the Olympic Games (OCOG). The Games are the exclusive property of the IOC, which has the last word on any question related to them. The IOC plays a supervisory and support role; in other words, it controls the organisation of the Games, ensures they run successfully, and checks that the principles and rules of the Olympic Charter are observed.

Source (Olympic Movement 2008)

The first goal of this chapter is to crystallize “the vision” the Olympics bring to city development. The IOC’s primary focus lies on the Olympic ideal, which, applied to transport, means ensuring smooth operations for all Olympic client groups during the

²¹ International Olympic Committee (IOC) is an international non-governmental non-profit organization based in Lausanne, Switzerland.

²² Refer to Chapter 1 for definitions.

event. As a secondary aspiration, the IOC wants to ensure that Olympic legacies benefit the cities' long-term development.

The second goal of the chapter is to build a strong case that the IOC has the power, ability, and necessary tools to intervene in the urban and transport planning process to realize their Olympic vision. Having a vision and the power to implement it would make the IOC a global actor of change with the ability to affect local urban development.

For this chapter, I use three primary sources for my analysis. First, I draw on personal communications with the transport advisor of the International Olympic Committee, Professor Phillipe Bovy (EPFL), and his presentations for candidate and bidding cities. Second, I evaluate an interview²³ and emails exchanged with Lisa Hindson, the head of Olympic operations (IOC). She oversees seven functions during the city evaluations' process, in specific the transport infrastructure and operations process. Third, I utilize documents gathered at the Olympic museum (Lausanne), some of which are written by other Olympic city officials.

This chapter is structured according to the two definitional elements – vision and power - of the agents of change. First, I find that in terms of transport, the “vision about the Olympics means a vision for the city”. Guided by the explicit and implicit requirements, the IOC superimposes an organizational structure for transport on cities that requires investments in transport, frequently in infrastructure. As a hook for cities to buy into the Olympic idea, Olympic legacy claims stimulate motivations to use the mega events for urban regeneration. Second, I suggest that the IOC has the power, and necessary tools, to interfere in the urban-planning process. I support this claim through a careful reflection on the types of interactions and tools of influence between the IOC and the hosting city. Before launching into a detailed analysis of the IOC as an agent of urban change, I provide an introduction to the Olympic Games and its transport challenge is.

Introducing the Olympic Games

The Olympic Games have become the largest sporting event in modern times. Baron Pierre de Coubertin re-inaugurated the Olympic Games in 1896 according to their

²³ Questionnaire for the interview can be found in the Appendix.

Athenian ancient predecessor. Two years prior, Coubertin had founded the International Olympic Committee (IOC) as the governing body for this worldwide athletic competition. Since then, the modern Olympic Games take place every four years.

The IOC awards the Olympic Games to a city after a careful process of evaluation (IOC 2003, Rule 36, para. 3). Like many world mega events, the Olympic Games are attributed by the event owners (IOC) to the event organizers (city) after a selective bidding process. For the event organizer bidding entails defining objectives, structure, and content of the event and its most significant requirements and constraints. For the event owner bidding is an evaluation and decision process. The main aim of the bidding process is to facilitate selection of the “most efficient and reliable” project (Bovy 2005). The detailed procedure leading to the election of a host city for the Olympic Games is manifested in the Olympic Charter (Chapter 5, Rule 34 and its bye-laws - page 72). This procedure is sketched out below.

Olympic bidding is a two-stage, two-year process, preceding the actual Games preparation period of seven years. The first stage is called the bidding stage, in which prequalification for potential acceptance is evaluated by the IOC. One Olympic host city proposal per country is allowed, presented by its country’s National Olympic Committee (NOC). If more than one city within one country aspires to bid, national elections are held and evaluated by the respective NOC. The second stage is called the candidacy stage. The candidacy dossier follows eleven criteria²⁴ set forth by the IOC. The IOC carefully evaluates individual city’ proposals in comparison with other city bids according to the Olympic Charter (IOC 2007, rule 34). Only this full candidature can lead to the selection as a host city. The candidacy file turns into a contract between the IOC and the city upon awarding the city with the right to host the Olympic Games. Within the following seven years preceding the Games, these plans shall not be altered and if so, modifications require the consent of the IOC. The preparation of this Host City Contract (HCC) is a considerable project with high cost (20 to 40 million USD (2005)).

²⁴ 1. Government support, legal issues and public opinion, 2. General infrastructure, 3. Sports venues, 4. Olympic Village, 5. Environmental conditions and impact, 6. Accommodation, 7. Transport concept, 8. Safety and security, 9. Experience from past sports events, 10. Finance, 11. Overall project and legacy.

The Olympic transport challenge

The Olympic transport task is immense (as of 2004): 26 sports²⁵, 300 competition events, 16500 athletes and technical officials from 202 countries, over 5,000 IOC, NOC and IF members, over 21,000 media, over 30,000 sponsors and guests, over 50,000 volunteers, between 50,000-75,000 workforce staff members, between 4-8 million ticketed spectators, and between 2-13 million residents to be moved within three weeks (Bovy 2004a; Bovy and Liaudat 2003, p. 122)(Bovy, P. IOC transport consultant, Email correspondence, February 3rd 2007).

The function that Olympic transport assumes is to connect competition (sports) with non-competition venues, such as the Olympic Village, hotels, the airport, etc. (Bovy 2005). Extraordinary high traffic peaks occur frequently and can reach 1.2 to 1.7 million Olympic person trips per day (Bovy 2004a, slide 7). Transport's role, as the crucial backbone of the city, is to maintain stable linkages and ensure that almost all other major Olympic city functions can operate unimpeded (Bovy and Protopsaltis 2003). At the same time, Olympic transport has to maintain normal traffic conditions for residents.

Transport has to fulfill six fundamental objectives according to the IOC transport consultant Bovy (2004a, pp.19-20)²⁶:

- Transport must be *safe and secure*.
- Transport must be “absolutely” reliable.
- Transport must be *efficient, comfortable, convivial* and must guarantee short travel time especially for athletes and the media.
- Transport must be *flexible* to mitigate risk of interruptions.
- Transport shall be *environmentally friendly*.
- Transport shall *contribute to a strong host city and regional mobility legacy*.

Transport systems during the time of the Olympics must perform extraordinarily well. For IOC transport consultant, Bovy and the head of the transport management team in Athens, Panos Protopsaltis, mis-execution of the transport task carries high risk,

²⁵ Aquatics, archery, athletics, badminton, basketball, boxing, canoe / kayak, cycling, equestrian, fencing, football, gymnastics, handball, hockey, judo, modern pentathlon, rowing, sailing, shooting, table tennis, taekwondo, tennis, triathlon, volleyball, weightlifting, wrestling (Olympic Movement 2009).

²⁶ Worth noting is the switch from “must” to “shall” in the IOC’s objectives, whereas these objectives are hard to measure.

because it is highly vulnerable, prone to dysfunction and to vivid criticism by the international media (Bovy and Protopsaltis 2003). Failure to perform perfectly can lead to severe congestion, overcrowding, and athletes even missing competitions. These outcomes can severely damage a city's global image (Rushin 1996).

The vision about the Olympics means a vision for the city

In terms of transportation, I believe that the IOC's vision about the Olympics imposes a vision for the city. Nas (2005) defined directors of change as having a clear "vision about the city", by which he meant its future development. For the Olympic Games, this vision has to be interpreted somewhat differently. The IOC's primary focus lies on the Olympic ideal, which for transport means ensuring smooth operations for all Olympic client groups during the event. Hence, the vision the IOC has about the city is the functioning of the transport system during the Games. Only of secondary importance then is to ensure modifications benefiting the city's future development.

The transport priorities cities must adapt when planning transportation for the Olympics lend strong support to my claim. The IOC advises cities to establish a hierarchy in transport service, placing the Olympic associates, such as athletes, IOC members, heads of state, media, referees and other VIPs on top, followed by visitors and then residents (Bovy 2004a, pp. 47-49):

- Priority 1: Athletes between the Olympic Village²⁷ (OV), training, and competition venues, as well as technical officials, rights holders, broadcasters, selected VIPs have designated travel routes. This client group requires the best service – primarily on demand - and holds the highest requirements in terms of frequency, reliability, punctuality and security. Additionally, special shuttles are required for the sporting equipment.

²⁷ The Olympic Village accommodates the athletes during the time of the Olympic Games. Munoz argued that this village should fulfill a dual function. Besides accommodating athletes, its design and structure should be considered for after event usage. Until the 70's the villages have been used for social housing, since then either student accommodations or more frequently in the latest Games for high-quality housing. Munoz observed that this change corresponds to the parallel evolution of athletes, with a Spartan life styles change to a model of the athlete as a tourist. (Munoz 1997)

- Priority 2: Media and press officials and specific workforce, which is required to be present well before the competition, require almost exclusive transport services running 24 hours a day.
- Priority 3: National Olympic Committees (NOC), International Federations (IF) officials and Olympic Family²⁸ frequently use individual cars and limousine services; the service is very time-sensitive and is mostly on demand.
- Priority 4: Holders of this priority class are frequently high-ranked Games sponsors, such as Coca Cola, McDonalds, etc.
- Priority 5: Workforce, volunteers and spectators belong to this group.
- Priority 6: General public. The Olympic traffic must be managed to minimize hindrances to the general public.

Mobility and accessibility requirements

To ensure the priorities are met, the IOC sets requirements on hosting cities to ensure that their Olympic vision about transport becomes reality. Ultimately, those requirements may have the potential to alter urban areas. Cities theoretically have power over two issues in implementing measures to comply with the IOC transport priorities: the land-use choice for venues and the provision of transport services for Olympic client groups. Their power, however, is heavily constrained by a superimposed IOC transport structure and ‘known’ best practice solutions. The IOC sets out a framework of explicitly and implicitly stated accessibility and mobility requirements which cities have to comply with. Based on experiences from previous hosting cities, the IOC provides recommendations aimed at supporting cities in preparing for the Olympic transport task.

The venues and their accessibility requirements

Venues²⁹ are the central entry and exit points of mega events. Hence, their accessibility for athletes and visitors alike is crucial. Compulsory by IOC requirements, each of the venues has to have two distinct functional areas strictly separated from each

²⁸ Olympic Family members are directly associated with the athletes. These can directly related family members, team coaches, personal trainers etc.

²⁹ The IOC distinguishes competition and non-competition venues. Competition venues are stadia in which Olympic competitions take place, non-competition venues are central points of interest within the Olympic system, such as the airport, the media center, and the Olympic Village.

other. Both areas also must have clearly distinct access routes for security and reliability: one for “front of house” (FOH) traffic and one for “back of house” (BOH) traffic and emergencies (Bovy 2004a, p. 52). The FOH traffic includes ticketed spectators and sponsors with no access to individual vehicles. The BOH traffic consists of transport priorities types 1 through 4 and other important functions, such as emergencies (Bovy 2004b). Around each venue, a security perimeter separates “city domain” from “mega event domain” (Bovy 2004b).

Accessibility in between venues is a further crucial element in planning transport for the Games. The bidding questionnaire requires the cities to report travel distances between the Olympic Village, training facilities and the venues, between the venues and non-competition venues, the airport and non-competition venues, etc. (IOC 2000, p. 46).³⁰ The estimated travel time matrix has to consider congestion levels, proximity to public and exclusive transport, and future infrastructure developments (Bovy 2004a, p. 33).

The travel time matrix and the distance matrix are crucial evaluation criteria, by which cities are rated (IOC 2000, pp. 46-47):

- Linkage of main Olympic venues to high performance transport
- Quantity and amount of transport needed for Games operations
- Transport efficiency and clustering – the geographical parameter

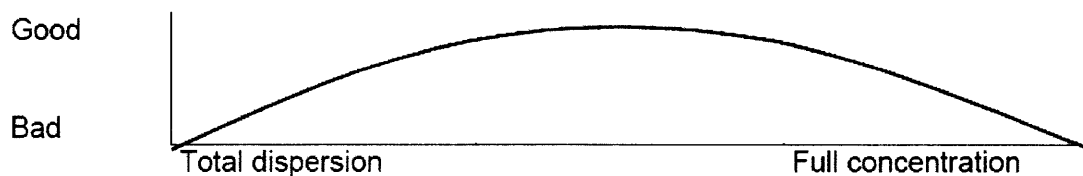


Figure 4.1: : IOC Evaluation of venue clusters

Source: (IOC 2000, p. 46)

Figure 4.1 describes the IOC preferred layout of the competition and non-competition venues: total dispersion or full concentration is to be avoided. Dispersed

³⁰ It contains a preliminary budget and the proposed position of Transport within the OCOG (organizer). The file also needs to cover the relation to public authorities in charge of transport, security, and the environment (Bovy 2005).

venues create heavy and expensive logistics between many venues. Clustered venues put high pressure on the transportation system and huge amounts of people need to arrive and depart from the same area. From a transportation point of view, the IOC believes that the optimum lies between the two (IOC 2000).

During the applicant city seminar of the 2012 Olympics, Bovy and Protopsaltis laid out the risks and benefits for concentrating or dispersing Olympic venues (Bovy and Protopsaltis 2003, slide 45). The concentration of Olympic venues downtown or in clusters well served by public transport is a major advantage. Transport services can be grouped and offer high service frequencies and high capacities. At the same time, the disadvantage of a downtown location and Olympic clusters is the risk of transport congestion and more difficult pedestrian crowd management. Comparatively, for outlying, stand-alone venues access design and operations are simpler, but they have inconveniences linked to much longer travel time and higher cost of transport services for all client groups.

Even though the IOC points out risks and opportunities for certain accessibility arrangements, detailed mobility preferences limit the land-use choice of cities. Evidence to this fact leads to statements like: the Olympic Organizing Committees (OCOG) must design a system to minimize distances and travel times for the Olympic Family, especially athletes and athlete travel time shall be less than 45 minutes (Bovy 2004a, p. 19). As well as stating their preference of having the Olympic village and very large 24 hour/day traffic generators like the Main Press Center (MPC) and International Broadcast Center (IBC) close to the Games center of gravity does encourage cities to cluster (Bovy 2004a, p. 26). Implicitly, the rule is: the lesser the travel time for athletes, the better for the city's bid.

The transport customer groups and their mobility requirements

Besides the accessibility requirements for and in between venues, the IOC requires cities to transport their Olympic client groups in a specific manner guaranteeing free flow conditions (IOC 1992, p. 44). The different Olympic transport services are numbered from T1 through T5, each associated with different vehicles and service levels. These requirements are necessary, according to the IOC because of security

measures, equipment needed, and speed of access to the competition venues (Bovy 2004). The set-up of Olympic transport is complex, whereas large user categories, such as spectators, must use public transport and sensitive logistical and guest categories will use private transport means.

Table 4.1: Services required during the Olympics (Athens 2004)

Olympic Service	Olympic Associate	Transport Service Required
T1	VIPs ³¹	Accredited car and driver for exclusive use by a single passenger
T2	International Federations, International Olympic Committee, National Olympic Committee, Organizing Committee, etc.	Accredited car and driver for exclusive use by two passengers
T3		Accredited car and driver for use by up to three passengers on call-up service from the car pool
T4	Athletes and Team officials, Technicians, Media, Sponsors	Accredited Olympic Family bus transport
T5	Staff, Volunteers, Spectators	Public transport and other modes

Source: (ATHOC 2001, p. 1.5)

As evident from Table 4.1, each of the client groups requires different levels and hours of service. T1 through T4 levels require private transport, whereas there is no flexibility given to Olympic transport organizers on what type of private transport they choose; it has to be cars and buses. Transport for the first four client groups is, of course, free. Defined in the Olympic Charta, the OCOG has to cover local transport costs of accredited national Olympic delegations, technical officials, the Olympic Family, medical commission, Olympic museum, world anti-doping agency, etc. The fifth client group, the staff, volunteers and spectators, requires different transport means, which must be 100% public transport according to the IOC. For mega events “only very high performance public transport has the necessary capacity to meet the very peaked and high traffic demands” (Bovy 2004b, p. 20). The transport consultant Bovy, gets even more specific in suggesting that the spectator traffic shall only be supplied by high capacity *rail* transport, because they can deliver traffic demand peaks of 50,000 – 200,000 persons/hour. Light rail and medium capacity subway help “but are often not sufficient for mega events”

³¹ Very important persons (VIP’s) are, for example, heads of state.

(Bovy 2004b, p.23). Furthermore, parking for this client group is a no-go (Bovy 2004b, p. 22).

In order to coordinate the travel flows, a single entity for transport is needed to oversee all traffic functions. A single transport spokesman must take responsibility for all internal and external communications via all media (Bovy 2004a, p. 56). The traffic command, control, and communication center is the heart and brain of this games-time transport system. It allows efficient and real-time transport and security management, communication is an increasingly important function within the organization and towards the public and the media.

Olympic planning recommendations

Having provided the cities with a long list of accessibility and mobility requirements, the IOC aims to support the cities in preparing for such a massive transport task. The first step was realizing that these requirements cannot be fulfilled by most existing transport infrastructure and operations. “Mega event organizations often imply major public investments in transport infrastructures and mobility equipments: compressing 25 years of projects in 5 years” (Bovy 2004b, pp. 52-53). Hence, “the IOC places a strong emphasis on “sustainable legacies” aiming to improve the cities future travel. The Olympic Charta in force since September 1, 2004 has as its 14th mission statement to promote “a positive legacy from the Olympic Games to the host cities and host countries” (p. 12).

What exactly legacies are, however, is heavily debated. David Richmond, the head of the Sydney Olympic Organizing committee implied the subjectivity of the matter by stating that “legacy like beauty is in the eye of the beholder” (Richmond 2003). Implicitly he suggested, sustainable legacies are positive and can include venue infrastructure, expertise and experience, and overall major legacies should not be “add-ons” but integral to the bid. Richmond’s recommendation was to “align and integrate Games planning with ‘big picture’ city planning and development” (slide 22). The golden question, which remains to be answered by the IOC, is how?

The IOC and associated city officials have tried to give planning recommendations to help achieve “sustainable legacies”. Recommendations made by the

transport consultant Bovy emphasize long-range planning goals, designated for local communities (Bovy 2004b, pp. 52-53): "Mega event infrastructure must be planned and designed "in priority" to serve long-range community development goals"; "Long-term components are to be cast 'in concrete' and 'mega event overlays' built as temporary structures." "Mega event transport infrastructure especially heavy rail, motorways, and tunnel projects must be primarily conceived for long-range community benefits and metropolitan sustainable development." These goals can be achieved by "integrating legacy projects in Olympic plans in parallel with examining each project in terms of sustainable development" (Cartalis 2003, slides 20-21). Overall they cover the basics, but as I will argue in Chapter Six, these basics might be insufficient, in some cases even incorrect.

Olympic legacies: a win-win situation for cities?

The answer to the question "what comes out of these planning recommendations?" is provided by the IOC upfront. By claiming a variety of Olympic benefits, the IOC provides for many cities a further hook to buy into the Olympic idea. The results for urban planning and in particular for transportation, have remained unquestioned so far.

Promising Olympic benefits

According to the IOC, the Games carry a strong momentum for development and can act as a catalyst for urban development. Because of this opportunity, most Olympic host cities have taken this Olympic advantage and substantially upgraded their transport system and built a metropolitan legacy (Bovy and Protopsaltis 2003, slide 27; Cartalis 2003, slide 2). The Olympic Games impacts and legacies are positive in transport (see also Bovy 2004a, p. 59; Bovy, p. 45). Bovy and Protopsaltis further added, specifically regarding transportation, certain legacies hosting cities can expect:

- Integrated public transport system expansion (new or improved transport systems as well as reserved bus lane networks) is a major Olympic legacy.
- Games' specific transport improvements (public transport and highways) developed can support long-term metropolitan and community needs.

- Games' innovative transport and traffic-management concepts can be used for other events and for general traffic improvements.
- Adoption of improved traffic incident or accident management techniques.

Out of this evaluation, the IOC launched the Olympic Games Global Impact (OGGI) project in 2001 with the goal to achieve sustainable development economically, environmentally, and socially. The program required using 150 indicators during the bid, candidacy, and preparation efforts of the city up until 1 year after the Olympics. Evaluations of these measures comprise volume 4, as the fourth part of the obligatory deliverable for Olympic Games host cities. The problem with these measures is three-fold. First, they did not include any qualitative measures, which are hugely important for a holistic assessment of the Games (Leonardsen 2007; Pyo et al. 1988). Second, the evaluation stretches only two years after the Games. Third, no city is accountable for unfulfilled outcomes.

Remaining Olympic doubts

Planning recommendations and legacy promises made by the IOC have stimulated expectations about what the Olympics can bring to a city. As early as 1988, Pyo recognized that "above all, the Olympic Games should be recognized as an investment for the future and an image building event rather than a profit generating opportunity" (Pyo et al. 1988, p.144). The expectations have gained momentum and are advertised positively. Common newspaper headlines in the run-up to the Olympics, like "mass transit crisis could complicate city's Olympic prospects" (Hersh 2008), promise massive improvement in the public transport systems in the wake of mega events.

Whether these claims are actually substantiated or not, has yet to be proven. Long-term evaluations of impacts of mega events barely exist, and, if they do, they are primarily descriptive. The key question is whether, given Olympic priorities and requirements, it is realistic or even possible to accomplish true sustainable development in cities. Are the promises made and possibilities offered by the Olympics to hosting cities realistic?

There are some indications that they are, and some indications that they are not. For example, Bovy concludes that "mega events are a catalyst for main metropolitan

transport infrastructure developments, which are needed but would otherwise have been constructed in a much longer time frame” (Bovy 2004b, p. 45). Those academics, who have challenged general promises on urban development, expressed doubts about the purely positive nature. “In their enthusiasm to be chosen as host city in competition with other bid cities, many cities succumb to starting huge projects. Olympic Games politicians push to build sport facilities and also start construction programs for secondary and tertiary structures, which sometimes are in conflict with the city’s long-term development plans” (Preuss 2004, p. 79). Opponents and proponents claims, however, are lacking evidence and deserve careful examination.

The IOC primarily paints a positive picture for applying cities, barely mentioning the risks associated or the other – negative - perspectives on Olympic legacies. For example, Cartalis pointed out the Schinias rowing center built during the Athens Olympics as a good example of sustainable planning (Cartalis 2003). Controversially, local media reports indicated the opposite. They reported that the Schinias rowing center destroyed the natural habitat for many species and was a “disaster” for the environment and historical site (Pappas 2003). Because of these discrepancies, I suggest taking a closer look at legacies and challenge the message publicized by the pre-Olympics public relations that preparations for the Olympics permanently enhance public transport.

The power to implement the Olympic transport vision

The IOC also has the power to implement its Olympic vision. I provide proof that the IOC has the tools to influence a city’s decision by pointing out involvement and interference options during the Olympic preparation process, in specific to transport.

The IOC likely has the most power during the bidding and candidacy stage because of the forthcoming evaluation process. “During the bidding stage, the cities face the most pressure, because they are in it to win” says Lisa Hindson (2006) in an Interview. In the bidding file, the city has to make a good argument why it is the best city to host the event. Hence, it is trying to show itself in the best light possible. This may mean, implementing measures that ensure superior travel conditions for athletes and showcasing the potential of the city to handle millions of visitors. These preparations are crucial in winning the bid. Bovy and Protopsaltis pointed out that “upgrading and

development of new transport infrastructure plays a key role in an Olympic bid and its evaluation” (Bovy and Protopsaltis 2003, slide27).

Once the city wins the bid, it is responsible for fulfilling the promises made during the application process. In the seven years following a successful bid, the city is obligated to build the promised infrastructure, setting up the necessary services.

The medium of influence

To ensure cities meet IOC expectations and keep the promises made, the evaluation is tightly linked to an extensive monitoring program. The monitoring program is another way of influencing the cities progress and ongoing decisions. As a threat, - which the IOC never actually executed - the IOC can take away the Games at any time from the host and give it to the previous Games organizer in case obligations are not being fulfilled. During the implementation stage, cities seek best practices and advice in handling the transport task, which the IOC willingly provides. The IOC gains its knowledge through the Transfer of Knowledge (TOK) program (Figure 4.2)³². The TOK program ensures the knowledge transfer from one city to the next, because in Bovy’s opinion cities must take advantage of other very large event experiences and management techniques. Training the core staff through participation in preceding Games is key to the success of the Games (Bovy 2004a, p. 27).

³² The TOK program ensures that knowledge and lesson’s learned about staging the Olympic Games get passed from one hosting city to the other. For example, benefits to Games organizers “X+1” (Beijing 2008 monitoring of Athens 2004) is a strong input into Games bidders “X+2” (candidate Cities for 2012 monitoring of Athens 2004).

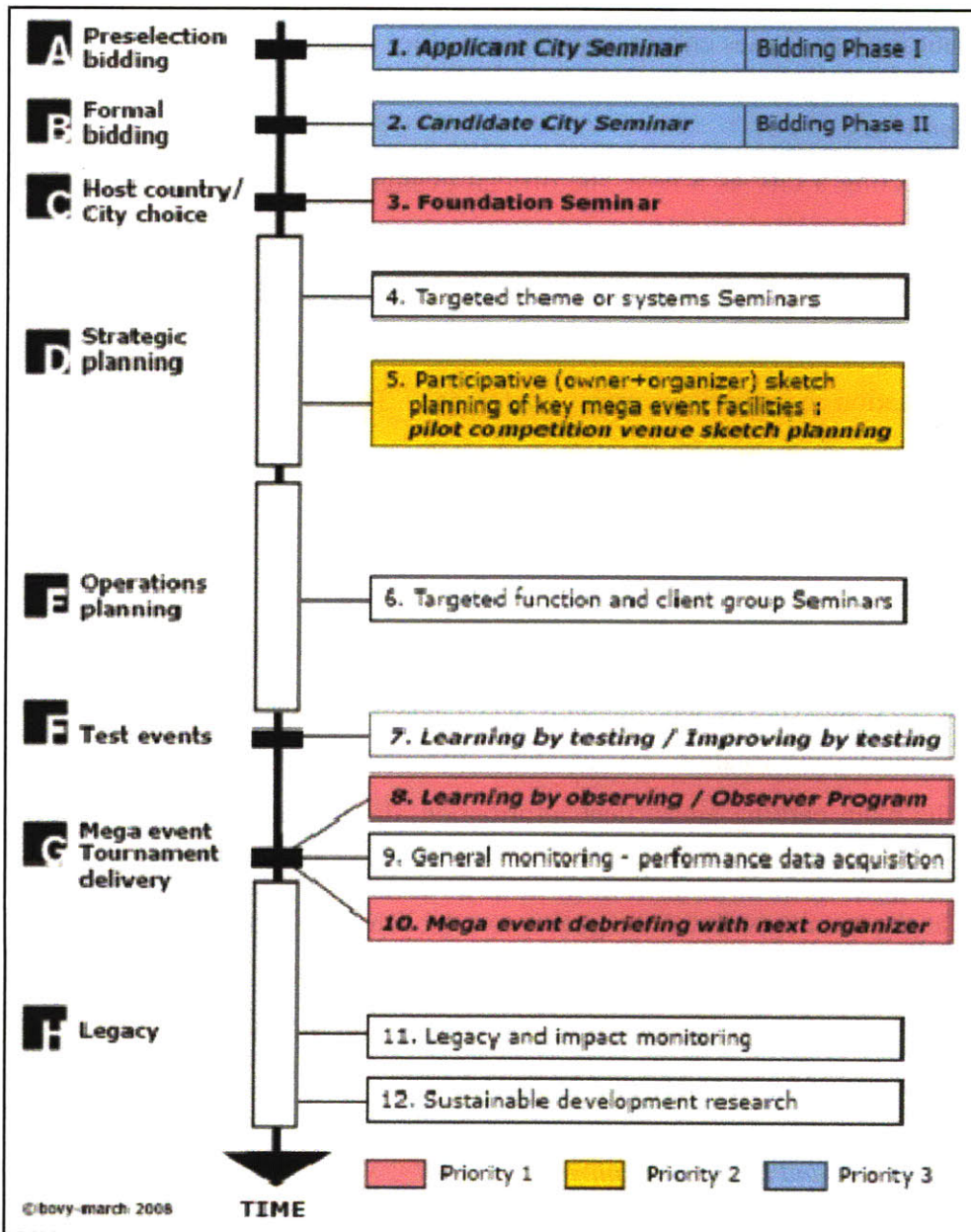


Figure 4.2: Transfer of Knowledge Program

Source: (Bovy, P., IOC Transport Consultant, personal communication via Email July 30th 2008)

The tools of influence

Olympic Games Knowledge Management (OGKM) seminars and more than 40 Olympic Function Technical Manuals complete the Transfer of Knowledge Program (Bovy, P., IOC Transport Consultant, personal communication via Email July 30th 2008).

With a clear timeline in mind, seminars and personal advice to candidate cities paralleled by frequent monitoring processes ensure the applicant cities meet their targets.

The pre-selection visit

Before selecting a city as a host, the official evaluation commission of the IOC arranges a full pre-visit briefing and analysis of the whole candidacy dossier. This visit includes two days of “in house” comprehensive presentations of all 17 themes, two days of visits of all proposed competition and non competition venues, and a full wrap-up session and evaluation commission press conference. This visit concludes with a qualitative risk assessment of all 17 themes based on the initial bid report and complementary information provided during this official IOC visit.

Evaluation of mandatory questionnaires

Candidature procedure and questionnaire distributed by the IOC are part of the bidding process (IOC 2004). The questionnaire has a specific theme #14: transport. The questionnaire requests information on existing, planned, and additional transport infrastructure, the main parking areas, fleet information, distance and journey times for the application year and the year the city is hosting the Games (between the competition venues as well as the training venues) the goal is to establish a Candidate City’s transport network and operational plans for the Olympic Games (Bovy 2005). Selected candidate cities can use the “acceptance evaluation to orient, adjust, and improve their bid quality and coherence” (Bovy 2005).

The in-house evaluation and informal inquiries

The option for “in house analysis” of technical themes by IOC experts (security, transport, economic development, etc) always exists. These experts are available for confidential inquiries throughout the bidding phase (Bovy 2005).

Seminars and supporting documentation on how to prepare the bid (TOK)

Since 2002, IOC organizes a four-day “acceptance of candidate cities” seminar on Games structure, content, main organizational functions, past most “successful” experiences and key transfer of knowledge lessons. Furthermore, candidate cities receive large amounts of material from the IOC on “how to bid”. These include the Transfer-of-

Knowledge material from previous Games as well as mandatory preparations. The documents can amount to six 650-page dossiers including maps, CDs, and evaluation reports (Bovy 2005). The acceptance of these recommendations by cities is manifested through the statement by Bovy (2005) that the two-step bidding process and very substantial transfer of knowledge program led to very high quality “competitive” bids.

Live Observer Program

City planners participate in Live Observer Programs other cities hosting the Games prior to them; specific critical functions include sports management, transport, security, accommodation, technology, media, arrivals departures etc.

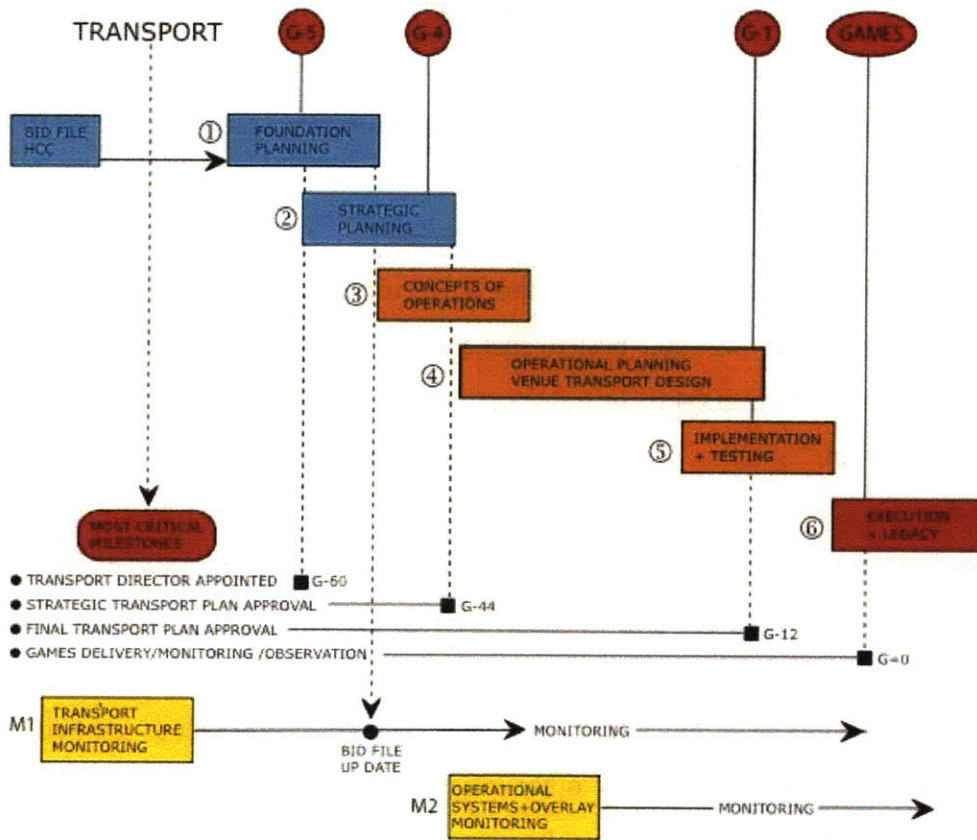


Figure 4.3: IOC influence on Olympic transport planning process

Source: (Bovy 2004a, p. 7)

These tools of influence are manifested in Figure 4.3 in the Box labeled “most critical milestones” in transport. The IOC influence continues beyond the initial bidding stage throughout the preparation process. The round shapes on top, labeled G’s indicate

the time left to the opening ceremony, e.g., G-5 is equivalent to the beginning of the Games minus five years.

Approval of transportation plans

In transport the most crucial and central concern is the establishment of the Olympic Transport Strategic and Business Plan. Cities have to submit this plan for approval to the IOC (44 months prior to the Games). Final transport plan approval occurs at G-12 (12 months prior to the Games). Any further changes to these plans have to be approved in writing by the IOC.

Monitoring of the transport implementation process

Two monitoring streams exist: M1 and M2. M1 is the monitoring of promised infrastructure and its implementation, which receives its final update 4½ years prior to the Games. M2 monitors the operational systems, including the testing a year prior to the Games.

Overall, the tools of influence of the IOC carefully evaluated by its transport consultant P. Bovy are trying their best to make sure the transport requirements for the mega event are met (Bovy 2004a). In transport the most outstanding successful features of former Games are “intelligently” incorporated in the transport strategic bid scheme (Bovy 2005).

The recommendations given by the IOC on how to integrate Olympic plans into the development of urban areas and transport system are vague. The downside of such knowledge transfer is that a critical review of measures as well as the innovation of new measures to handle the peak demands is neglected. Measures and tactics applied in one city might not be the best choice for other cities given the circumstances of the city. Furthermore, unsustainable practices can be passed on from city to another, especially if the evaluation period of the OGGI program extends only two years after the Olympic Games.

Conclusions

In an attempt to ensure that the city is prepared for the Olympic transport challenge, the IOC exercises power over hosting cities driven by their Olympic ideal and the city's motivation to stage the 'perfect transport Olympics'.

Through the setting of objectives, demanding of priorities, and putting a strong weight on transport during the evaluation process, the IOC has a strong influence on Olympic transport, and hence its legacies. This influence lasts not only during the two years leading up to election of the host, but also during the implementation stages. Therefore, the challenge then lies in aligning the short-term strategy for the event and the long-term strategy for city development early on in the bidding process.

During the bidding stage, competing interests show the greatest potential to clash. I note that the desire to win the bid can lead cities to promise exceptional alterations to urban areas. Once the bid is won, they are locked into their promises through the host city contract.

The basic conflict in preparing the city lies in the motivations of actors. Getz (1999, p. 24) hypothesized that the scale might tip in favor of the Olympic short-term needs: "the event organization will likely be dominated by people whose mission is to produce the event on time and within budget so the task of planning and monitoring related effects is left to the government or 'watchdog' groups". Which of these two actors, the city or the Olympics, dominate local thinking I will test in this study.

Even though the city and the event owner largely share the goal of making the visitor experience an excellent one, the city has broader goals. They not only include transport services and infrastructure to meet event needs, but also long-term development objectives. For the city there is a clear tradeoff between short-term service delivery and cost. The organizing body does not feel this tradeoff, because it only pays a comparatively small amount; thus, it is likely to demand more and better services than the city is likely to want to provide and pay for. The city also may or may not find tradeoffs between short-term service delivery for the event and long-term development strategy. I discuss the potential clash between the IOC's priorities and the city's goals in the next chapter.

Chapter Five

THE FOUR CITIES

Barcelona, Atlanta, Sydney, and Athens are intrinsically different cities, located on three continents, and with unique histories, economies, political institutions, urban forms, and transport networks (Table 5.1). Each city approached the Olympic planning process differently, but with the same goal: to stage “the best Olympics ever.” Each city’s leaders, trying to use the Olympics as an opportunity for change, considered individual transport and urban goals in the city’s spatial context. I argue throughout my analysis that these goals were constrained by Olympic requirements and the interplay between the IOC’s requirements and metropolitan planner’s visions resulted in a change of the original cities’ urban and transport plans. In the process, I identify gained and missed opportunities.

Table 5.1: Cities’ characteristics

Characteristic	Barcelona	Atlanta	Sydney	Athens
Country	Spain	USA	Australia	Greece
Year of the Olympics	1992	1996	2000	2004
Year of election	1986	1990	1993	1997
Year planning began	~1979	~1986	~1990	~1988 ³³
Number of visitors	3,033,050	8,384,300	6,700,00	3,581,000
Number of athletes	9,400	10,400	10,600	10,600
Olympic main clusters	4	1	1	3
Public Transport modes before Olympic Games	3 train companies, 4 metro lines, buses	2 metro lines, buses	12 train lines, buses	1 metro line, 2 train lines, buses

Source: compiled by author

In this chapter, I tell four different stories about each city, mostly in chronological order by tracing their trajectory over approximately 20 years. I divide each city story into four sections. In the first section, I review the existing master plan for urban development in each city and the sociopolitical context before the Olympic candidature. In the second section, I analyze the bid and how the city prepared for the Olympic Games by focusing on the influence of the Olympic requirements on transport and urban plans. In the third

³³ Athens bid for the 1996 Games and used most of its ideas for the 2004 bid.

section, I briefly review the transport situation during the Games. In the fourth section, I analyze the long-term impacts the Olympic Games had on transport in each city.

Barcelona (1992) – remodeling the city

The effect the Olympics had on Barcelona was expediting Barcelona's development and completing projects within five years that would have taken 30 years without them (Mosby 1992). Barcelona's planners decided to establish four Olympic areas, placing one at each entrance gate of the city. All areas received significant governmental funding to revitalize them, which included building hotels, removing old industrial facilities, creating artificial beaches, and constructing a new port. As for transport, the city added a ring road circling the metropolis, a tunnel connecting Barcelona's northern suburbs, a mountain train, and escalators.

Barcelona, the capital of Cataluña, is located in the southeast of Spain on the Mediterranean Sea. In the summer of 1992, Barcelona staged the Olympic Summer Games, through which the city transformed itself. This transformation became an inspirational model for future Olympic hosts, setting the highest standards on how to use the Olympic Games as a stimulator for urban development and competitor in the global realm. This transformative scheme became known as the "Barcelona model" (Capel 2007).

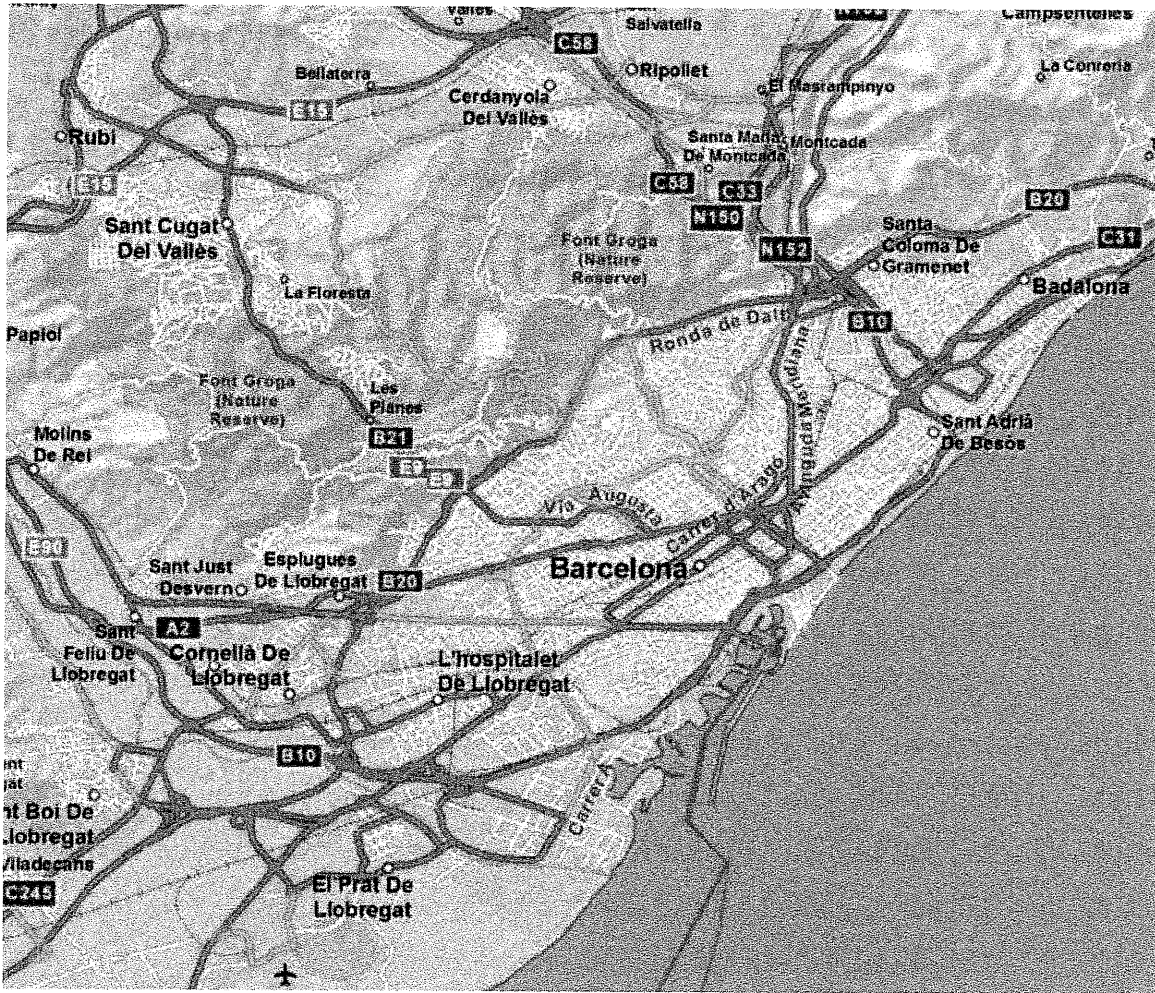


Figure 5.1: Barcelona

Source: ESRI, ArcGIS Resource Center, World Street Map;

http://resources.esri.com/arcgisdesktop/index.cfm?fa=content&tab=World_Maps

Barcelona's history and transport situation

Under Spain's dictator Francisco Franco, Barcelona and Catalunya experienced 40 years of neglect of investment in public amenities. During this time the city grew mostly uncontrolled, only constrained by natural boundaries: the sea, the rivers Llobregat and Besòs and the Serra de Collserola ridge (Sánchez et al. 2007). During Barcelona's development years (between 1960 and 1970) the city experienced rapid industrial and economic growth, accompanied by urban chaos and a lack of planning. After Franco's death in 1975, Barcelona was left with both a legacy of economic and social isolation, and the problems of its recent rapid urban growth. To make things worse, Spain was stricken by a severe social and economic crisis marked by inflation, a declining population, and an increase in unemployment.

The neglect of investment in public infrastructure was also apparent in Barcelona's transportation system (Corporacion Metropolitana de Barcelona 1986). The public transport system had been in steep decline, while motorists pushed onto the city's already clogged road network, resulting in increased air pollution in Barcelona's center.

After a democratic city government was elected in 1979, two entities were established by the Catalanian Parliament for transport: in 1986, the Center Metropolitan d'Informacio i Promocio del Transport S.A. (CETRAMSA), the metropolitan transport company; and in 1987, the Entitat Metropolitana del Transport (EMT), which was a coordinating committee formed by 18 municipalities in the Barcelona metropolitan area with the task to provide joint public passenger transport services. The public transport system consisted of three rail carriers: the Spanish railway company called renfe; the metro; and the Ferrocarrils de la Generalitat de Catalunya (FGC), the regional railway system. Bus systems were operated under the umbrella of the Transports Metropolitans de Barcelona (TMB) (TMB 2008, p. 4).

A way out of the urban crisis – a metropolitan strategy

After years of neglect, Barcelona sought a way out of its urban crises. The goal was to emerge as a global city with a revitalized Catalan identity and a strong political leadership (Borja 2004). Nationwide, Barcelona experienced political stability and continuity in the run-up to the Olympics.³⁴ Among all political parties, there existed a strong sense of agreement regarding the Olympic dream (Sala-Schnorkowski 2007). Interestingly, after the Games, a lack of political stability has stalled further rapid transport and urban investments in Barcelona (Pàmies Jaume 2007). For urban regeneration, the Ajuntament de Barcelona (Barcelona's city government) sought to solve Barcelona's main problems (the degradation of the city center, the lack of urban consolidation of Barcelona's outskirts, and the need for rejuvenation of the sea front) and established aspirational goals that were to guide the future development of the city under: to foster regeneration of Barcelona and its individual city quarters, to open a discussion

³⁴ Starting in 1982, the central Spanish Government was led by the Spanish Workers' Socialist Party until 1992. From 1980 until 2003, the autonomous government of the Generalidad de Catalonia was led by the conservative nationalist coalition "Convergencia i Unió"³⁴. Since the first free elections in 1979, Barcelona City Council has been led by the "Partit dels Socialistes de Catalunya"³⁴ in coalition with other progressive political groups (Sánchez et al. 2007).

of grand schemes of change on the metropolitan scale, and to develop metropolitan services such as transport, public spaces, etc., which would satisfy the needs of the citizens (Argilaga and Benito 1997).

To make this strategy happen, there were three distinct plans, two of which had to be modified due to Barcelona winning the Olympic bid:

- Plans for the New Center Areas (ANC = Arees de Nova Centralitat (catalan)) selected 10 undeveloped areas, which were to receive a concentration of services and facilities that would make them new focal points in the city. The locations of these 10 areas are marked in Figure 5.2 with yellow circles.
- Plan General de Metropolitano (PGM) of 1976³⁵, which included the development of Barcelona and its 26 surrounding municipal areas laying out “la reconstrucción de la ciudad” (the reconstruction of the city). The PGM sought to establish a new urban order through a clear layout of public spaces and a road system that was to prevent further congestion in the urban network.

³⁵ Barcelona’s Road Plan of 1983 was a close follow-up to the PGM.

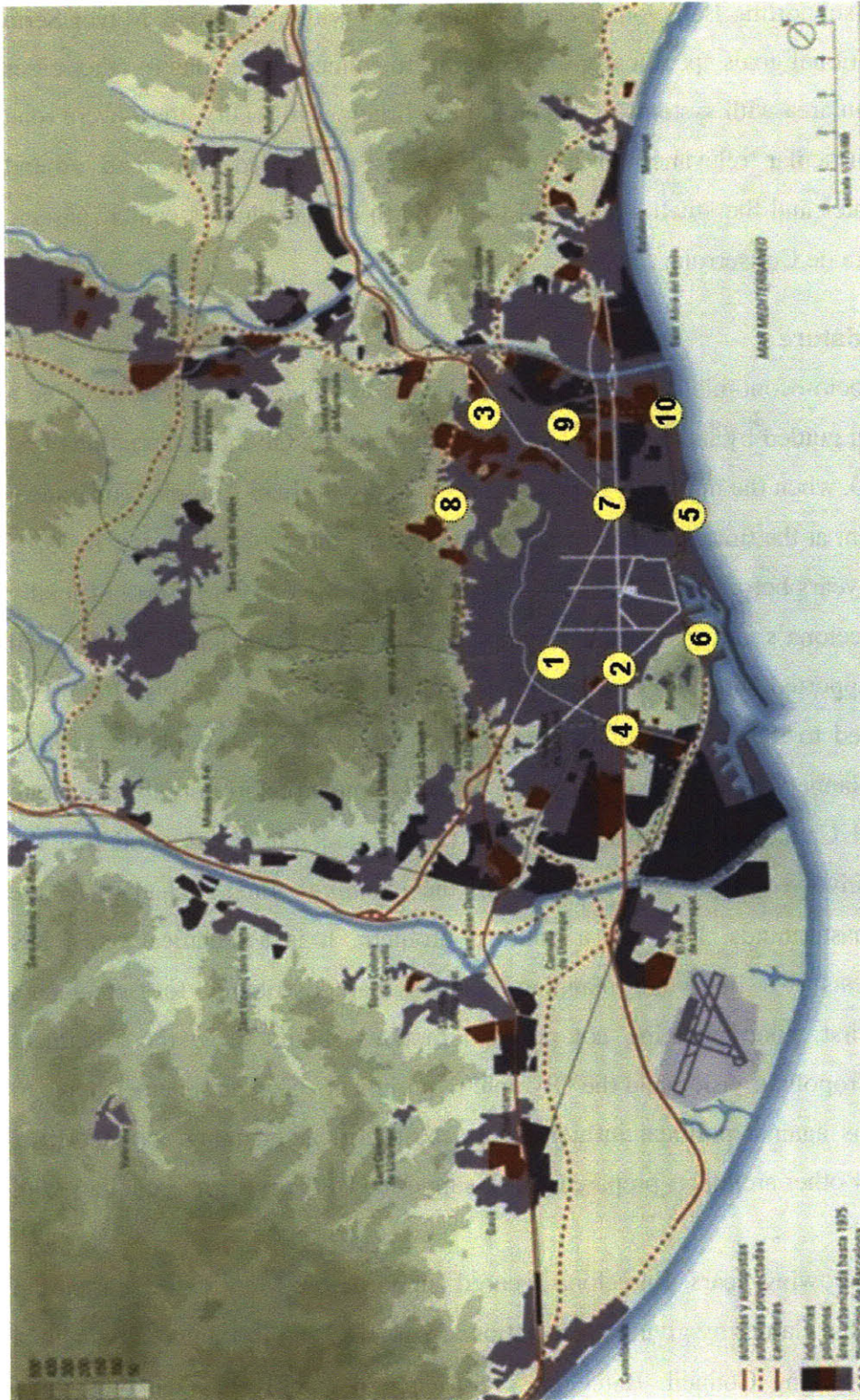


Figure 5.2: Plan General Metropolitano 1976¹

Source: (Guàrdia i Bassols et al. 1994, p. 89) modified by author indicating development areas according to (Sánchez et al. 2007, p. 15) reproduced from (Esteban 1999)

Besides supporting Barcelona's central road axes³⁶ with a ring road, Mayor Serra announced additional goals specifically for transport: to connect Barcelona to other cities in the Catalanian area with systems of regional transportation. In reality, these were road projects. Of particular relevance to my argument, is the dotted ring road around Barcelona's center and the small black road to the north of Barcelona's center, passing through the Serra de Collserola.

Olympic candidature

In the socio-economic decline of Barcelona, the Olympic candidature became a collective dream guided by its metropolitan vision. Barcelona's Olympic aspirations first surfaced in 1980, when the mayor, Narcís Serra, discussed with Juan Antonio Samaranch, the IOC president at the time, the idea of Barcelona hosting the 1992 Olympics. In 1981, four-and-a-half years before the official IOC application was due (1986), Serra officially announced Barcelona's desire for the Olympics, which the Barcelona City Council unanimously supported shortly thereafter. Plans and reports (e.g., the Cuyas Report of 1982) contributed to the creation of the preliminary report of the candidature (1983). Following the planners' idea to take advantage of the Olympic opportunity to regenerate Barcelona's and Catalunya's urban areas, Millet (2007) said: "It is not good that the politicians are involved from the beginning [in the planning]. First, it had to be the planners, the masterminds. It is not a political problem. It is a technical one." His statement suggests two important planning features that contributed to Barcelona's development. First, good planning not political motives should drive the alignment between the metropolitan vision and the Olympic requirements. Second, planners have to guard their plans against political influences. In these critical planning stages, Millet (2007) and a few other architects prepared plans, supported by "very strong relations with the mayor."

In the following years, Barcelona secured support from Madrid and started the preparations for the Games by giving presentations to the IOC and forming the Barcelona Candidature Governing Council. Barcelona's city council quickly realized the strong influence of the IOC in the wake of the Olympics on urban politics.

³⁶ The main access roads before 1992 were the Avenida Diagonal, Avenida Meridiana (north-south) and the Gran Via, connecting east and west (Brunet 1993).

In this sense, the institutional consensus created during the Olympic Games broke with a negative inertia in the way of doing things in Barcelona, characterized basically by the fact that traditionally, it was only the municipality which confronted itself with urbanistic and sectoral policies, which, because of their nature had to be the object of shared attention with the central and autonomous [Catalonian] governments.

Source: (Acebillo Marin 1992, pp. 25-26) translated by author.

The election of Barcelona as the host of the 1992 Olympics took place in Lausanne, Switzerland, on October 16, 1986. On March 12, 1987, COOB'92 -- standing for "Comite Organizador Olimpico de Barcelona '92" - was officially constituted as the supreme governing body of the Olympic Games. Even before Barcelona was officially named the host of the '92 Olympics, the city had begun to enlist volunteers and had started construction (NBCSports 1991).

Throughout Barcelona's candidacy and preparations, Olympic planners faced extra scrutiny. Samaranch, born and raised in Barcelona, was the IOC's president at the time of Barcelona's bid, candidature, and victory. He communicated intensively with the planners and influenced Barcelona's planning process³⁷.

Samaranch was in our favor. He was our worst enemy. And we had to do it much, much, much better, because he was our worst enemy. He was our worst critic: "this one no....this has to be that....this" [quoting Samaranch]. We had to do it much better. We knew more than them (the other candidate cities). We were talking with everybody and we were always better than what other cities were presenting. It was the only way to win. Today, Barcelona would not win, impossible. I am very clear about this.

Source: Interview with Millet in 2007, translated by author.

Overall Millet (2007) says the IOC itself -- not their requirements -- barely influenced the planning work of the Barcelona Organizing Committee, because at the time Barcelona was hosting the Olympics, the IOC did not have the necessary expertise. In fact, according to him, Barcelona was the foundation stone for future expertise used.

³⁷ How much this personal relationship influenced Barcelona's election as the 1992 hosting city is not discussed here. It was important, however, that Samaranch took a personal interest in the city of Barcelona and hence fostered and guided Barcelona's comprehensive future development.

Dynamics of transport change – the macro perspective

The preparation of the Olympic candidature led to a change in priorities: “The right to organize the 1992 Olympics ... evoked at first an enormous wave of enthusiasm and satisfaction, and immediately a global reorganization of priorities of all kind...” (Barreiro et al. 1993). How these new Olympic priorities affected the urban projects in Barcelona was tremendous.

The modified urban plan for the Olympics

The urban land-use choices were guided by existing sporting facilities: 37 were required, 27 were already built, 5 were under construction (1985-1986), and the other 5 were in the planning stages. Four areas within Barcelona served as centers of Olympic activity, which – combined - fulfilled what was necessary to stage the Games (Table 5.2).

Table 5.2: Barcelona’s four Olympic areas

	(1) Montjuïc	(2) Diagonal	(3) Vall d’Hebron	(4) Parc de Mar
Area in Fig. 5.3	southwest	northwest	northeast	southeast
# of venues	5	6	5	2
# of sports	13	7	5	4

Source: compiled by the author: NBCSports 1991, BOCOG 1993

Note the change in priorities and directions of urban planning that is visible when the layout (Figure 5.3) is compared with the ANC of 1976 (Figure 5.2). The Olympic areas of Vall d’Hebron (3, corresponding to 8 in the PGM) and Parc de Mar (4, corresponding to 5 in the PGM) were included in the initial ANC plan, while the areas of Montjuïc (1) and Diagonal (2) were added by way of the Olympics as areas of refurbishment (Corporacion Metropolitana de Barcelona 1976). This set-up clustered sports venues and contained most of the athlete’s and IOC’s accommodations within a circle of 5km, in which 85% of the sporting activities would take place. This change in priorities – so Millet (2007) -was also beneficial for Barcelona: “the city needed a structure to accommodate its future growth. We put an Olympic area at each entrance gate of the city. It was easy, a clear vision.”

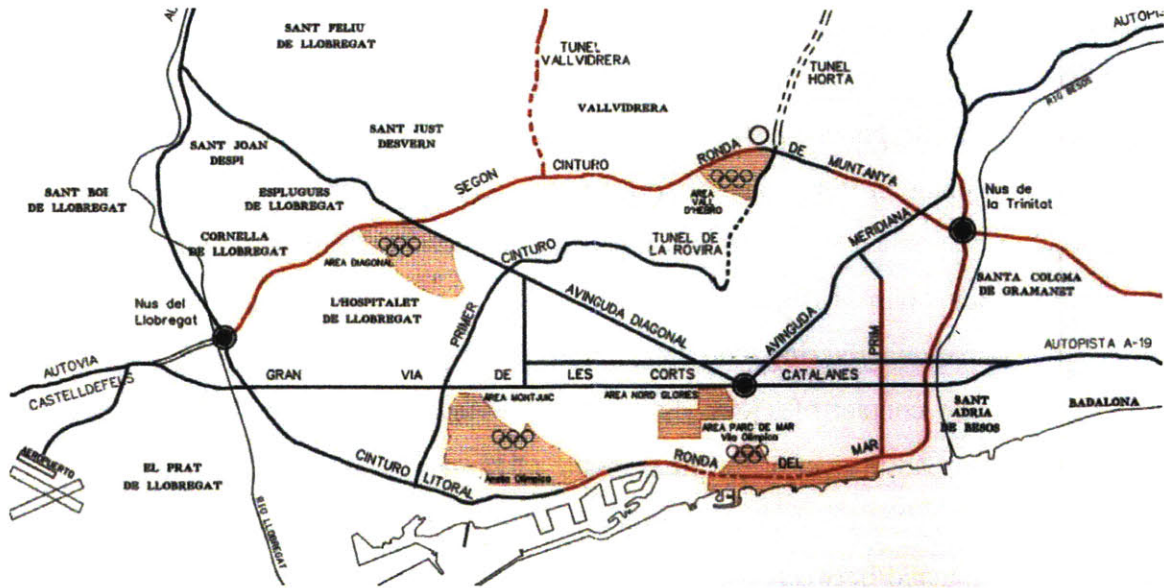


Figure 5.3: Barcelona's Olympic ring road (1992)
Source: (Holsa 1992a)

With this change in priorities for areas of urban refurbishment, transport investments also received different priorities in the run-up to the Olympic Games. While Barcelona's regional road network expansion seemed in retrospect perfectly aligned with Barcelona's urban vision, only the ring road³⁸ surrounding the central city but not the tunnel Vallvidrera had been in the 1976 PGM plan. Olympic spectator movements did not require major changes in Barcelona's urban transport system, as the existing metro lines efficiently linked all Olympic areas.

The new ring road

For the Olympics, the ring road was an absolute necessity said Millet i Serra (2007). Each Olympic area was adjacent to the newly built rondas (marked as red roads in Figure 5.3) providing an essential connection between the four Olympic areas: Montjuïc, Villa Olímpica, Vall d'Hebron and Diagonal (HOLSA 1992b).). The Games catalyzed the ring road guaranteeing the completion of the circuit before 1992 (Millet 1995). Seemingly, giving priority to the road infrastructure was in the interest of the IOC. As Sala-Schnorkowski remembers, the IOC's priority was "to easily transport the Olympic Family members and hence improve the transport networks of the roads and

³⁸ Ronda de Dalt passed the city to the north and Ronda Litoral passed the city to the south along the coast (HOLSA 1992b)

streets of the inner city” (Sala-Schnorkowski 2007). Given that all the VIPs and athletes were being transported by car, building the ring road seems to have been an important consideration in the planning stages. Cross concurs writing that the Olympics changed transportation plans in Barcelona. “A drastic rethink of the planned road network led to the adoption of a much more ambitious scheme, involving the construction of a 21 km outer ring system” (Cross 1992, p.12).

For Barcelona, the ring road “was an absolute necessity” said Oriol Pàmies Jaume (2007), the press contact of TMB, during an interview. The reasons were many to go ahead with the road project at the time of the Olympics. Many studies in the planning stages of this ring road³⁹ stressed the city’s inadequate capacity to satisfy current and future travel demand between the region and the metropolis.⁴⁰ Building the ring would result in a significant drop in inner-city traffic.⁴¹ Furthermore, the ring road would reduce noise and pollution levels and enhance access to the airport (Preuss 2004). However it was clear to the planners that the new road would only relieve congestion for a few years (Riera 1993). Furthermore, the powerful Olympic stimulant erased many and varied problems that had hindered building the roads earlier on (Servicios Tecnicos de la CMB 1993). Since 1970 the ring road had encountered fierce resistance from the residents of the neighborhood adjacent to the ring held massive protests opposing the construction of the Ronda de Dalt (Sánchez et al. 2007). The residents opposed the idea of having a large highway cut through their city, and demanded instead additional metro lines to be installed.⁴²

The Vallvidrera tunnel

The Vallvidrera tunnel (marked in the Figure 5.3) was one of the basic elements of the road infrastructure connecting Barcelona the city’s northern suburbs, Terrassa and Collserola (Holsa 1992a). At the same time, the completion of the tunnel was crucial for

³⁹ The ring road first appeared in the Plan de la Red Arterial de Barcelona in 1963 (Barreiro et al. 1993, pp. 9-11)

⁴⁰ According to coordinator of the Transport and Traffic Area, Alfred Morales Gonzalez, that would require increasing the capacity of the metropolitan region from the current 588,000 to 900,000 vehicles per day.) Otherwise, the road system would reach saturation in 1995 (Servicios Tecnicos de la CMB 1993)

⁴¹ According to the simulations, the ring road would cause a 15% reduction of traffic density by removing the through traffic and reduce travel time more than 90% (Servicios Tecnicos de la CMB 1993)

⁴² Interview with Albert Recio, Associació de Veïns de Nou Barris (Nou Barris residents’ association), 05/07/05, in Sanchez et al. 2007.

the Olympics. “Is of crucial importance for the celebration of the Olympic Games ...”⁴³ (CEAM 1987, p. 82). Starting the Vallvidrera tunnel also required building an additional five smaller tunnels to connect Sant Cugat and extend the road network to join a further highway up north. Interesting to note here, is that the Vallvidrera tunnel was not planned in the original PGM plan of 1976 (see Figure 5.2 of PGM 1976). The Vallvidrera tunnel did appear before then, in the Plan Comarcal of 1953 (Guàrdia i Bassols et al. 1994).

Dynamics of urban and transport change – the micro perspective

Each of the four Olympic areas required modifications to make them accessible for the expected passenger demands. The following sections discuss each area, identify and explain the transport bottlenecks, and describe the solutions that were sought because of the Games.

The Montjuïc Mountain

The mountain of Montjuïc was the heart of the Barcelona Games. Located 70 meters above the city with the Olympic Park and 13 of the Olympic sports, it contained more venues than the other Olympic areas. The area around Montjuïc required significant infrastructural investments in old and new stadiums and were to integrate Montjuïc into the city. In 2007, the area was primarily a destination for tourists, and occasional festivities still gave life to the area.

Solving the Transport Bottleneck

The Montjuïc area has always had serious accessibility problems from the city (Holsa 1992a). The primary means of access to Montjuïc was by foot. Given that Montjuïc was expected to welcome close to 2 million spectators and thousands of athletes for the Olympics, several access alternatives were considered. For BOCOG, it was clear that private cars had to be constrained, but the capacity that could be provided with taxis, shuttles, and buses alone was insufficient. After long political battles and conflicts within governmental organizations, visitors to the Olympics were provided with three alternative modes of transport to Montjuïc:

- *A bus shuttle service* from the Plaza España to the Olympic area,

⁴³ I la seva importància per a la celebració dels JJOO és evident... (translated by the author from Catalan)

- *Mechanical escalators* embedded in the slopes of the mountain. Specifically for the Games three new escalators from the Plaza de España to the Olympic Ring were installed, permitting access to the sport venues within 15 minutes (Holsa 1992a). This system was considered to function well during the Olympics because of its high flexibility and reliability.
- *The funiculars*, a mountain train from the parallel metro station. This option was expected to attract the most passengers. Due to the exhibition in 1929, the funiculars already existed, but the Olympic Games required the complete refurbishment of the mountain train (Sala-Schnorkowski 2007).

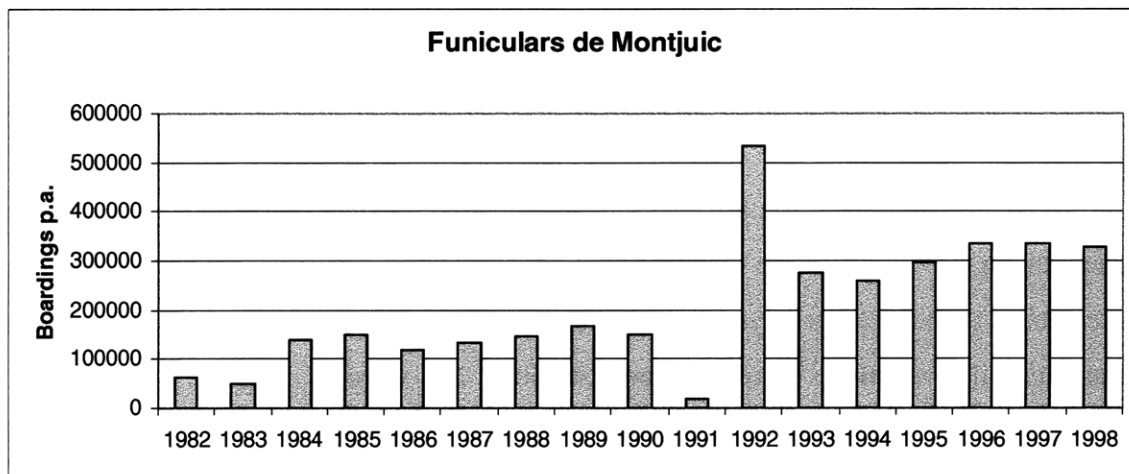


Figure 5.4: Ridership of Barcelona’s funiculars
 Source: (Ajuntament de Barcelona 1993, 1995, 1999)

After refurbishing the old system, the funiculars carry about twice as many passengers yearly, most of them tourists.⁴⁴ In 2007, the funiculars were running regularly up the mountain.

Extension of the metro – a missed opportunity?

Prior to the bid in 1986, four metro lines were in operation (Sala-Schnorkowski 1986). One possibility discussed among the decision-makers to access provide access for spectators to Montjuic was to refurbish an old but since the 80’s abandoned metro line (marked in the Figure 5.5 with L2 with the thick black line) and extend it underneath the

⁴⁴ In 1991 the train was closed due to the reconstruction works. In 1992, the year of the Olympics, the ridership spiked.

Montjuïc Mountain to Barcelona’s airport El Prat (dotted line). The political focus on the existing lines and the cheap alternative of the escalators available overrode any discussion to revitalize prior to the Olympics.

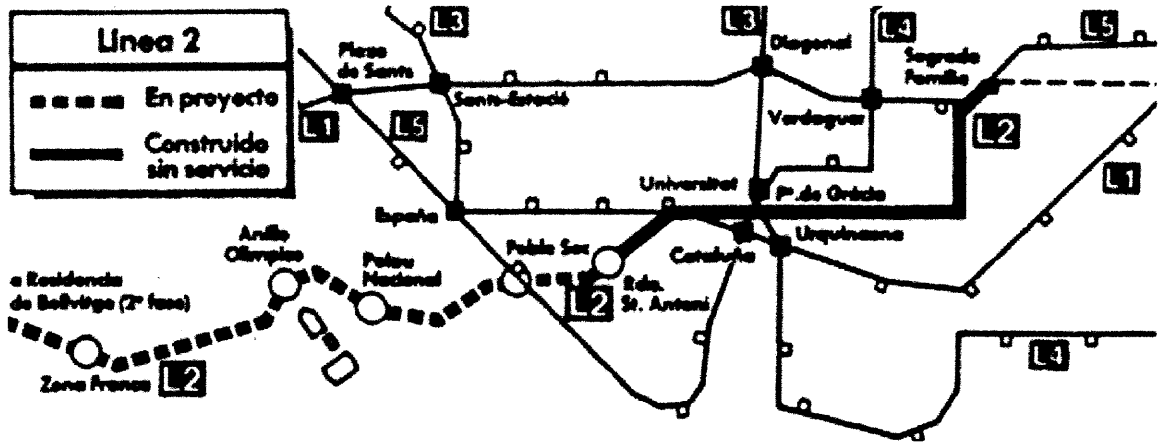


Figure 5.5: An alternative access to Barcelona’s Montjuïc – metro line 2
 Source: (CEAM 1987, p. 88)

Both the mayor and the public transport committee supported such a metro refurbishment, because the main section of Line 2 already existed and forecasts predicted a the line to carry 45.8 million passengers yearly after the Olympics (CEAM 1987; TMB 1988). The TMB president at the time, Sala-Schorkowski, was hoping for support of the extension of Line 2 by the IOC, but was told by Samaranch that the time frame for such a project was simply too short for implementation⁴⁵ (Samaranch 1989).

The more powerful reason seems to be somewhat different. For the Games, it was impossible to start operating the metro, because there was not enough funding available – it had been tied up through more important Olympic projects (Millet 2007). Because the Olympic Montjuïc station would not generate enough Olympic demand⁴⁶ and other – cheaper – alternatives were available, the metro line received lesser priority among the projects that had to get implemented prior to the Games. The revitalization of the metro L2 was started in 1995, and within two years the entire line was revived (Mateu Cromo 1996; Schwandl 2004).

⁴⁵ Olympic Archives / Summer Olympic Games Barcelona 1992 – “lieu competition to transport position du CIO”

⁴⁶ Olympic Archives / Summer Olympic Games Barcelona 1992 – internal transportation access

The Diagonal Area and Vall d'Hebron

In the Diagonal area, competitions in seven sports were held. The Diagonal was one of Barcelona's upscale areas, with an established university, high-class hotels (lodgings of the IOC members) and expensive shops (NBCSports 1991; Sànchez et al. 2007). The Vall d'Hebron, which hosted competition in five sports, used to be a remote neighborhood with a middle-class residential area (NBCSports 1991) Residences for the referees, judges and media were added (Barreiro et al. 1993). Both areas seem to have remained active, but Vall d'Hebron is characterized by large empty parking lots – likely white elephants of the Olympics. Transport connections were good thanks to the existing Line 3 and the newly built Rondas.

Parc del Mar

Placing the Olympic Village in the run-down area of Poblenou was the key decision to inaugurate the recovery of the sea front and make Barcelona's metropolitan vision come true. This area, one of the most traditional districts of Barcelona, was the location of old factories, workshops, and many abandoned buildings. With Parc del Mar hosting competitions in four sports, within this area 2,500 new stores, new residential complexes, and two high-rises for new offices and hotels were built in the run-up to the Games (Barreiro et al. 1993). In designating this area as the home to the majority of the 15,000 athletes, it had to have a pleasant atmosphere, and guarantee optimum security (Martorell et al. 1991). Therefore the Ajuntament de Barcelona undertook vast improvements to the area including a new metro station, a new Sport port, new beaches, and new sewage systems.

The sports marina, the Olympic Village and restaurants as well as evening leisure facilities turned the former industrial area into a center of urban life, which it remained fifteen years later. Eventually, though it became evident that the Olympic Village was no place for families. Because public amenities, such as schools and kindergartens, had not been provided for, the area was not attractive to families, according to Brunet (2007).

The cooperation among public entities to transform the sea front, so Sala-Schnorkowski (2007) believes, was only possible because of the Games and very influential people involved in the process. After the Olympics were over, the unique

cooperation that had been in existence for the Olympics dissolved (Sala-Schnorkowski 2007). Hence, the Olympic Games provided the catalytic momentum to bring forth Barcelona's revolutionary development plans

The tracks must go – a new strategy for renfe

In order to recover the sea front, the two renfe train tracks excluding the old Municipal "Sant Marti" from Barcelona had to be removed. The problem of the train tracks blocking access to the sea and thus hindering the reurbanization of Barcelona was already evident in 1981, but only in February 1986 – 18 months before Barcelona was elected as the 1992 host city -- an agreement between the presidents of renfe, the Ajuntament de Barcelona, the Ministry of Transport, Tourism and Communication, and the Metropolitan Corporation was reached, announcing the plan to remove the tracks and transform the Franca train station (Delegacion de la 5a zona 1989).⁴⁷ To compensate for the removal of the existing train tracks, a formerly freight-only line to El Clot junction was upgraded to allow suburban trains access to the city center (CEAM 1987).

The Artificial Beaches

After the train tracks were removed, the Auntement de Barcelona created six artificial beaches (San Sebastia, Barceloneta, Nova Icario, Bogatell, Mar Bella, and Nova Mar Bella) and a new port, where Olympic regattas could be held (Ajuntament de Barcelona 1993; HOLSA 1992b).

Serving the airport El Prat

The airport is located approximately 10 km to the west of the city center. In the wake of the Olympics, the airport was improved with a new international passenger terminal, new aircraft parking platforms, and new car parks (Bofill 1993; CIO-Documentation 1985). Before the Games, the airport was exclusively served by renfe and private motorway access. For the Games, a new airport bus service was introduced in December 1991. It was expected to attract close to a million passengers a year (Cross 1992). 15 years later, the airport service is still in operation.

⁴⁷ The Franca train station was later on abandoned, remaining only as a historic building.

Estació del Nord

Estació del Nord (Northern Station), a former train station, was renovated for the 1992 Olympics. It was used as a depot as well as a major hub for Olympic bus services. In 2007, it served as the terminus for long-distance and regional bus services.

During the Olympics

Infrastructural improvements alone were not enough to satisfy the requirements the Olympics placed on Barcelona (Association of Summer Olympic International Federation 1990). Hence, the city undertook a wide variety of temporary measures to accommodate the traffic and transit flows. In the end, “it was planning for a lot more people than were really coming” as Vilalante (2007), the former head of the transport operations of the Barcelona Games, said in an interview.

Traffic and transit management strategies

For the Olympic Family and IOC members, Barcelona implemented special lanes for the Olympic Family, which ran on exclusive sections of inner-city roads and Rondas. Cars and buses allowed to travel on them had priority over public transit and private traffic (COOB'92 1990). Only during the first day of the celebration, so Vilalante (2007) remembers, “the buses for the Olympic Family had problems with reaching their destinations, because the bus drivers were from all over Spain.”

The general public was encouraged to take public transport, which was free of charge for Olympic ticket holders.⁴⁸ Several public transport routes provided access to the venues, whereas metro lines 3 and 4 carried the largest passenger loads (COOB'92 1990, slide 36). Besides the existing rail and bus networks, Barcelona's city council provided additional public bus routes to and from the Olympic venues and to central locations (TMB 1992). Overall, Barcelona's bus network was expanded by 20%. Priority was given to public transport through a special traffic light system that had been experimentally introduced before the Games (COOB'92 1990; Cross 1992). Overall, the bus systems received a harsh critique. On August 10, 1992, an experienced journalist for

⁴⁸ IOC Archives / Summer Olympic Games of Barcelona 1992 – special conditions 1989

the Games stated that it was not easy to report on the Games due to the unreliable bus service.⁴⁹

Park-and-ride facilities along the rail systems were provided so residents and tourists could easily access the inner city (COOB'92 1990). The base load on Barcelona's road network was reduced through the implementation of traffic demand measures, such as flexible working days and bringing forward summer holidays. Residents criticized the noise during the Olympics: "The cars of the Olympic Games jammed the Passeig de Gracia area, their roar nearly drowning out the birds in the trees" (Mosby 1992). During the Games, COOB established traffic-control zones around the old city with strict parking and access restrictions were established (Cross 1992; Culat 1992).

In a tourism survey measuring the Olympic experience of visitors, the access to Olympic areas, the park and rides, as well as the parking restrictions scored below average. In comparison, the Olympic ticket for public transport received very high marks (Brunet 1993, p. 110).

Fleet modernizations to ensure comfort

Barcelona's public transit agencies used the opportunity the Olympics presented to modernize their fleet. Buses were modern and fully air-conditioned, the metro received new cars, and renfe bought new suburban electric multiple-units, as well as an electronic passenger information system (Cross 1992). Even though the upgrade was mentioned in different documents, most of it benefited metro Line 3, which was and did carry most of the Olympic load.

Traffic and transit management systems to ensure control

In the wake of the Olympics, Intelligent Transportation Systems (ITS) for access control and speed regulation were installed on Barcelona's road system. The ITS were capable of issuing immediate maintenance warnings and likely resulted in time reductions in emergency response. To coordinate these measures, Barcelona built a new technology operations info center. In the long term, Barcelona's city council hoped that these high tech systems would maximize social benefit through time savings and enhance

⁴⁹ "Some scheduled buses did not run on time and some did not exist" (Klein 1992).

environmental protection through emission reduction. The system could also be used to give priority to public transport (Ajuntament de Barcelona 1988, 1989a, 1989b).

An evaluation of transport outcomes

“The planning focus was on after the Olympic Games” emphasizes Sala-Schnorkoski (2007). Because of this mindset, a clear vision of Barcelona’s future, and strong leaders to guard this vision, Barcelona looked fundamentally different after than before the Games. The Olympics provided the impetus for radical transformation of Barcelona to a beautiful Mediterranean city (Botella 1995).

Investments in transport infrastructure, during the seven years leading up to the Games, however, were split very unevenly; about 95% went into new roads (calculated from Brunet 1993). Officially, these investments were justified by Barcelona’s long-standing problem of continuous traffic congestion in the inner city and the lack of capacity to meet traffic demand from the outskirts. Unofficially, and as argued in this Barcelona narrative, the roads were an absolute necessity for the IOC and Olympic athletes, whereas public transit to serve the peak passenger demands was already sufficient.

The Rondas

According to Sala-Schnorkowski (2007), the CEO of TMB during the Olympics, the Olympics brought improvements primarily to road infrastructure. Even though the plans to upgrade Barcelona’s roads had been around for a long time, the Olympics provided “*la facilidad para decirlo*”⁵⁰ (Sala-Schnorkowski 2007). Building the Rondas changed the traffic-flow patterns immediately from centralized axes to a circling ring and hence relieved congestion in the inner city (Ajuntament de Barcelona 1990, p. 387, 1993, p. 427).

Five years after the Games the Fundació Barcelona Olímpica conducted a survey measuring citizen’s satisfaction with the infrastructure built for the Olympics. The Rondas were selected as the most important infrastructural change, ranked even ahead of the Olympic Port, the new sea front, the Olympic Village and the sport installations

⁵⁰ the setting to say it.

around Barcelona (Anguera Argilaga and Gomez Benito 1997). All Barcelonan interviewees agreed with the Director General for Land Transport on the fact that “the Rondas were an absolute necessity for the city, from which the residents still profit today”(Villalante 2007).

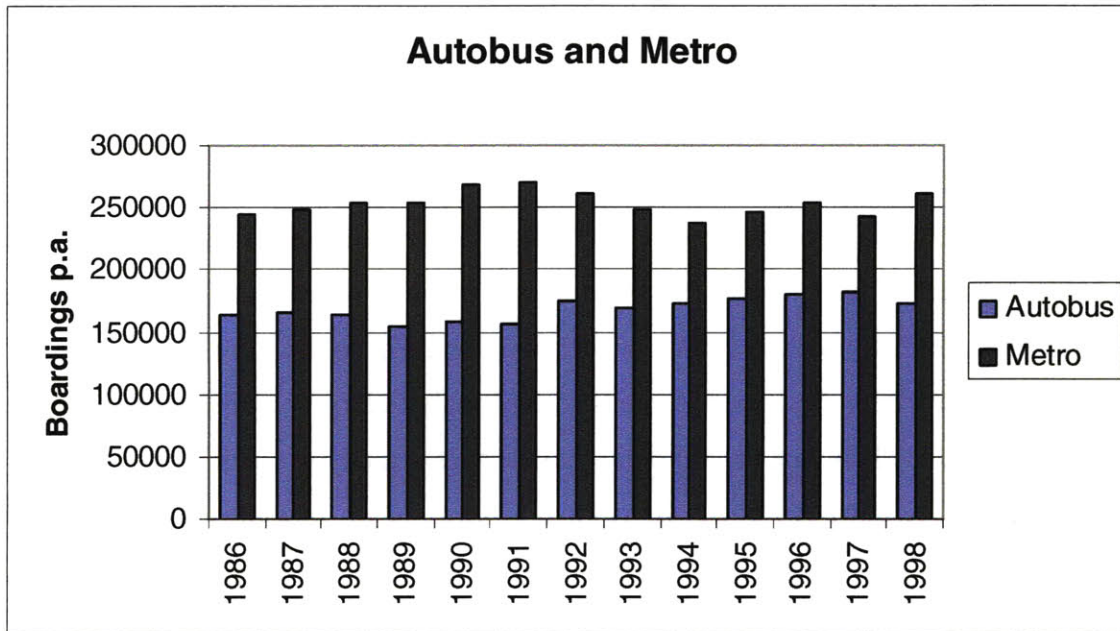


Figure 5.6: Ridership metro and buses in Barcelona between 1986 and 1998

Source: (Ajuntament de Barcelona 1993, 1995, 1999)

Arguably, because of the Rondas the city’s metro ridership declined after the inauguration of the roads (Figure 5.6; between 1991 to 1994). In 2007, however, the city continued to face the same old/new challenge of traffic congestion in the inner city and some citizens called into question the decision not to implement a pricing structure for road usage at Games time (Pàmies Jaume, 2007).

Public transit system

According to Sala-Schnorkowski (2007), public transport did not experience major changes, because it played a minor role during the Olympics, primarily solving access to Montjuïc (Sala-Schnorkowski 2007). Some urban projects, as Brunet (1993, p. 82) summarizes, were not implemented in the run-up to the Olympics. In particular to transport, he mentions the metropolitan transportation system and the construction of the high-speed rail line linking Barcelona with Montpellier and Madrid.

According to Pàmies Jaume (2007), there were two major transport initiatives that were inaugurated during the Olympic Games, but not immediately continued afterwards. First, an integrated fare system that allowed passengers to switch freely between transport modes.⁵¹ Second, accessibility for disabled people was started with thousands of low-floor buses and the adaptation of the metro for these passengers.⁵² Furthermore, Pàmies Jaume (2007) acknowledged that a few parking restrictions and methods (such as the “green zone”⁵³) have been kept after the Olympics had left.

Conclusions

In all the existing literature on the Olympic Games, Barcelona has been hailed as the perfect model of how to plan for them. The alignment of mega-event requirements with the metropolitan plan was superb, while investments in public infrastructure prior to the Olympics have been described as catalytic. My analysis largely agrees with this view, but differs with the claim that the Olympics have a purely catalytic effect.

In this city narrative about Barcelona, I have shown that the Olympics had a decisive influence on the city’s urban and transport-planning process. The decision to add two Olympic areas to Barcelona’s original urban plan made further changes to the transport system compulsory in order to accommodate the peak movements of visitors and athletes between all Olympic areas. These included adding subway stops, refurbishing the green metro line, overhauling the traffic management system, building the Vallvidrera tunnel, providing escalators, and the funiculars to guarantee access for spectators to the venues on Montjuic – all projects that were not slated to be undertaken prior to winning the Olympic bid. Accordingly, the IOC exercised a decisive influence on Barcelona’s development. At the same time, Barcelona also undertook projects that were planned prior to the Olympics and sped them up (catalyzed them), such as a ring road circling the inner city. The Rondas for the city’s future and the IOC’s preference for road transport aligned well strategically. Most of the investments in the run-up to the Olympics benefited private rather than public transport. This fulfilled Barcelona’s

⁵¹ It took Barcelona 15 years to implement integrated ticketing into its transport system.

⁵² By 2007, the process was finally completed (Pàmies Jaume 2007).

⁵³ The green zone allows residential parking for 1 Euro a week, whereas non-residents have to pay 3 Euros per hour.

transport goal to relieve inner-city congestion and connect Barcelona's suburbs to the center. Conversely, other urban projects – especially in public transport -- were delayed because of the establishment of new priorities imposed by the Olympic requirements (e.g., revitalizing an old metro line). The main investment in public transport – the funiculars – primarily benefits tourists. Removing the train tracks along the coastal lines definitely improved public access to the sea front, but by no means improved accessibility within the city of Barcelona; rather, it constituted a rerouting of passenger movements in Barcelona's vicinity.

Even though the Olympics imposed many requirements on Barcelona (e.g., the number of sports), in 1988 -- the year Barcelona won the bid -- Olympic requirements were comparatively lax. Responsibility for success lay with the city, including learning from previous experiences. As cautionary examples, Barcelona had its two immediate Olympic predecessors – Montreal and Los Angeles. The former ran up a tremendous public debt; the latter staged private Games without public input. Barcelona's goal was to use the Olympic Games optimally for a positive future, revamping a city that had been neglected for decades. Strategically and with a very long planning horizon, Barcelona aligned the Olympics in exemplary fashion with its urban vision and transport goals.

Atlanta (1996) – the vision of staging successful Games

Atlanta missed the chance for the Olympics to bring about major change to its transport system, even though the city's goal was to evolve out of the Olympic preparations as a modern multi-modal transport city. Atlanta's Games were driven by the private sector, whose interest lay in revitalizing downtown while spending a minimum on public infrastructure. Through the Olympics, Atlanta received a new inner-city park and new housing developments adjacent to Olympic venues. In terms of transport, road expansions were undertaken, high occupancy vehicle (HOV) lanes implemented, the metro expanded, and the city equipped with a new traffic management system.

Atlanta, the state capital of Georgia, is located in the southeast of the United States of America. In 1996, the Atlanta region counted a population of slightly more than 3 million people. During the summer of 1996, Atlanta hosted the Games of the XXVI Olympiad, unofficially known as the Centennial Olympics.

jobless, and homeless (Beaty 2007). Whites had moved to the suburbs, almost completely abandoning Atlanta's center. Redevelopment and revitalization of downtown Atlanta was on the political agenda, especially under Mayors Andrew Young and Maynard Jackson in the 1970s and 1980s. As a solution, they sought to conquer the hospitality industry, starting with the Democratic National Convention in 1988.

Atlanta's transport system has been and still is mostly based on its extensive road network (Chapman 2000). Atlanta's freeway system was first planned in 1946 (the Lochner Plan) and continuously expanded, e.g., through the National Defense Highway Act, which made Atlanta the juncture of 3 interstate highways (Helling 1997). Streetcars, trackless electric trolleys, and automobiles were the primary means of transport until 1963, after which private cars and buses dominated the streets and finally displaced other means of public transport. Only in 1975, the Metropolitan Atlanta Rapid Transit Authority (MARTA) built MARTA's rail system, to open by the end of 1996 (Helling 1997, p. 75). Racial tension also played a significant role in transit decision-making (Helling 1997, p. 74):

..., the whiter counties have long avoided anything that might bring them any closer to the black core. That is the real reason why links to MARTA (which was said in its early days to stand for "Moving Africans Rapidly Through Atlanta") have been resisted and why, even in a much more tolerant city, people in the outlying suburbs stick doggedly to their cars. (Anonymous 1999) in The Economist

Use of an automobile to access the suburbs was an unaffordable option for people of color, forced to reside in downtown Atlanta. Any expansion of public transportation met resistance from political leaders, because with it would come "those people" (Beaty 2007, p. 41). With limited public-transit options available, the sprawling city had rapidly increased residents' dependence on the automobile, and investments in modern superhighways⁵⁴ became a necessity for accessing Atlanta. The highway system developed further, radiating from Atlanta's CBD in six directions (ARC 1996). "Traffic was nightmarish for commuters" (p. 19) and "transportation was legendarily chaotic, late, [and] crowded" (p. 31); thus Beaty (2007) describes the transport situation before the Olympic Games.

⁵⁴ Exhibition on Olympic Games, Kenan Research Center, Atlanta, USA.

Atlanta's metropolitan plan

Given the socio-economic disparity in Atlanta and its impact on public and private transport services, Atlanta's future development plans only called for a small expansion of the MARTA's rail (Figure 5.8) but a significant upgrade in road infrastructure (Figure 5.9) until 2010.

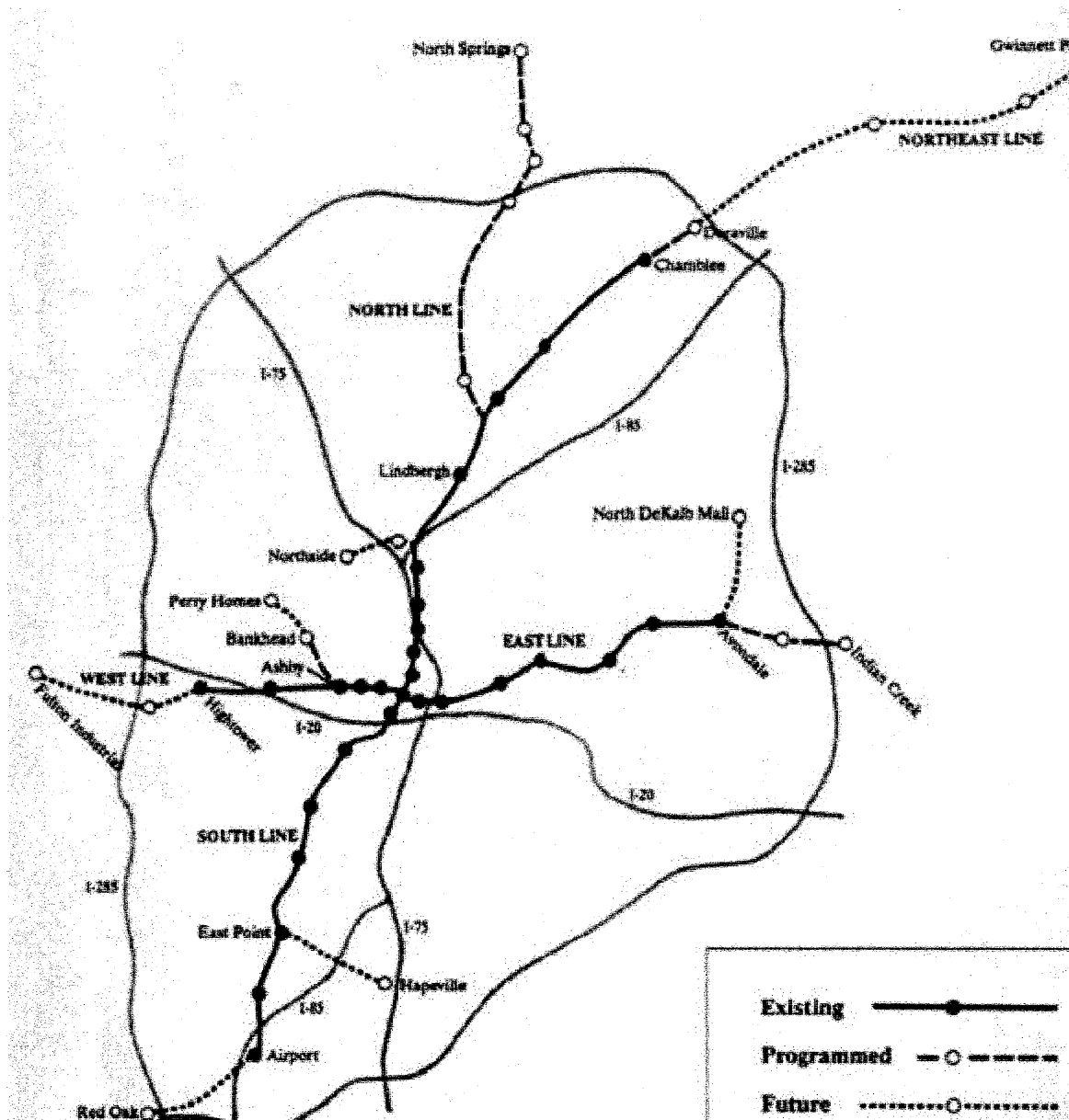


Figure 5.8: MARTA expansion plan in 1999
 Source: (ARC 1999, p. 52)

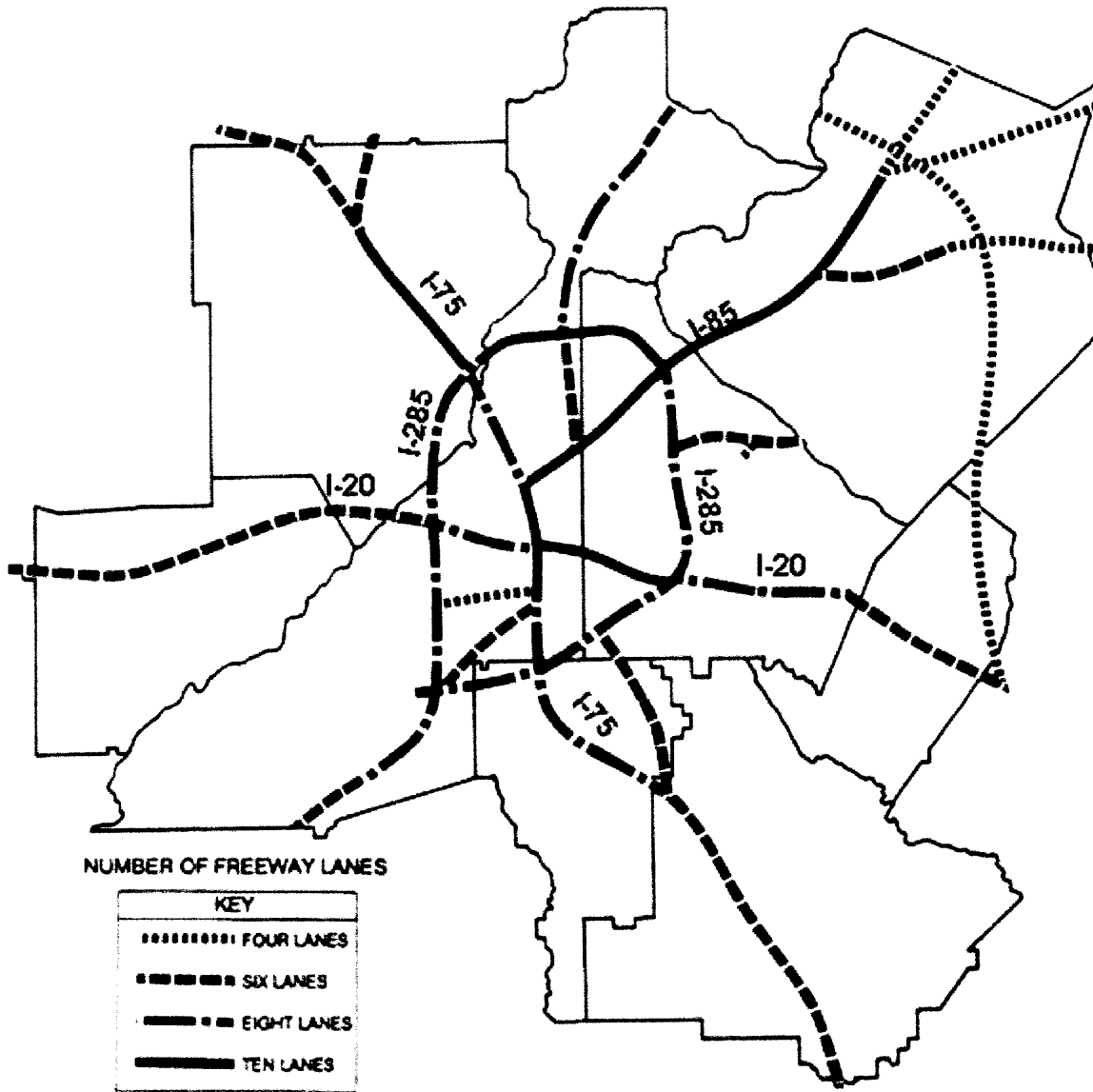


Figure 5.9: Atlanta's new highway lanes
Source: (ARC 1999, p. 56)

Atlanta's infrastructural plan clearly focused on improving highway infrastructure.⁵⁵ Buses were planned to be the primary means of public transport, including radial and cross-feeder buses to MARTA, running on Atlanta's freeways. Exclusive priority was not given to those buses; they had to share HOV lanes with other

⁵⁵ Until 2010, the city was planning to add 162 miles of new roads, to widen 759 miles of its highways, and to upgrade 87 miles of its road network. The plan also suggested twenty-one park-and-ride facilities along major highways and MARTA's rail stations.

vehicles. These HOV lanes were to be implemented by 2010 according to the dotted lines in Figure 5.10.

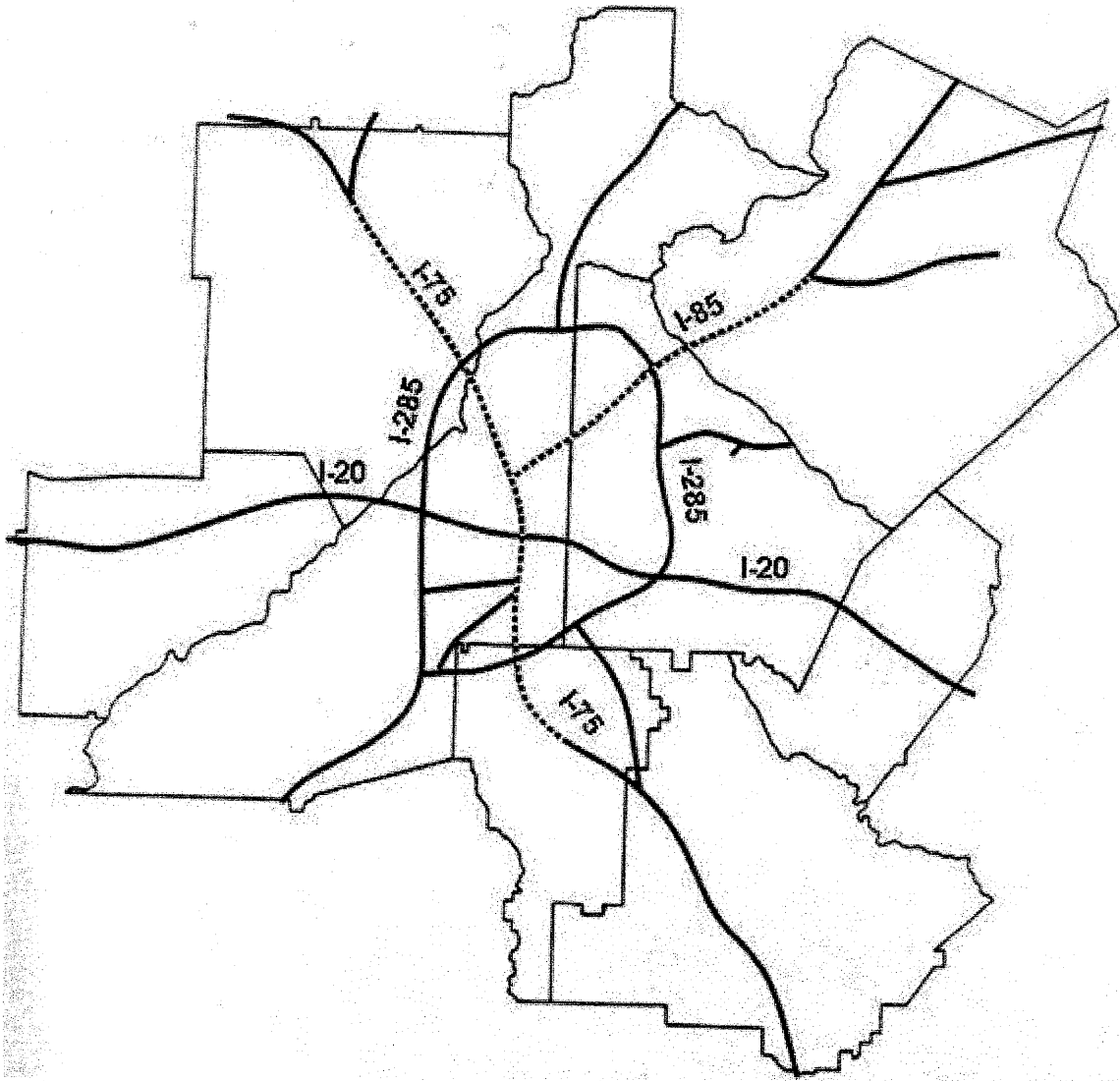


Figure 5.10: Atlanta's HOV lanes
Source: (ARC 1999, p.57)

As we shall see later, more HOV lanes, specifically on I-20 (the east-west connection), were added to the HOV lanes of the original 2010 transport plan. The stimulus of the Games for the HOV lanes likely stemmed from the IOC's free flow traffic requirement.

Cities bid for a win-win situation: the Olympic vision

Aligned with the mayors' desire to foster Atlanta's hospitality industry, Billy Payne, a real estate lawyer in Atlanta, had the idea in the mid-1980s to host the 1996 Olympic Games. Embracing Payne's vision, he and his friends, informally known as the "Atlanta Nine," formed an informal bid committee that lacked any political support, because the local authorities did not believe Atlanta would stand a chance of winning the Olympic competition. In 1987, Atlanta submitted its bid (along with 14 other cities) to the United States Olympic Committee (USOC) to become the candidate city of the USA (Senn 1999). After winning the US bid, Atlanta entered the international competition for the Olympic Games in February 1990. The application to the IOC had strong support from private businesses.⁵⁶ Public authorities, instead, only reluctantly supported the bid, declining to take on any responsibilities for the Games. In September 1990, the city was awarded the right to stage the 1996 Olympic Games by the IOC (ACOG 1993c, pp. 6-8).

The Atlanta Nine had been the driving force behind the bid as the core of the Atlanta Olympic Committee (AOC). In early 1991, the AOC reconstituted itself as the Atlanta Organizing Committee of the Olympic Games (ACOG), a private, non-profit corporation. Billy Payne headed ACOG, as president, with the former mayor of Atlanta, Andrew Young, as his Co-Chair (ACOG 1995a; Beaty 2007). ACOG was in charge of planning and staging the events for the 1996 Centennial Olympic Games.

What distinguished the Atlanta case from the other three cities in this study in its planning approach was that the city of Atlanta refused from the very beginning to financially participate in the Olympics. Like Atlanta's U.S. predecessor, Los Angeles (1984), the Games were to be privately financed Olympics (Preuss 2004). The city leaders' decision was driven by the reluctance of the public towards the Olympic Games, who feared heavy tax increases to finance the Games just as had happened in Montreal (1976). Because the major portion of the Games was financed by the private sector, the focus of the organizing committee was to raise funding and cut expenses to a minimum.

⁵⁶ In 1989, businesses began preparing for the possibility of Atlanta winning the Games. To take advantage of the potential monetary influx and the associated tourist spending, they fostered the creation of the Metropolitan Atlanta Olympic Games Authority (MAOGA), which was eventually established through House Bill 659 (Blair et al. 1996). MAOGA would become the public authority responsible for review of ACOG construction contracts, financial statements and budgets, approval of venue changes, and construction of the Olympic stadium.

Political leaders saw Atlanta evolving through the Olympics into the next great international city (ACOG 1993a; French and Disher 1997; Yarbrough 2000). With this vision, it became necessary to revitalize Atlanta's CBD to display a clean and glorious image of a world-class city. With the Atlanta Nine as the growth regime in place dominating as the corporate elite, the Olympics "gave the business/political power elite the excuse they had longed for to tighten their grip on Atlanta's development" (Beaty 2007, p. 6). The result showed, as Short (2004, p. 107) argued, in a push for "major urban restructuring that primarily benefited business and corporate interests."

Location and access - the Olympic Ring in Atlanta's CBD

Atlanta's plan for the 1996 Centennial Olympics had as its core idea to concentrate most of the Olympic venues in the center of the city. Located in this Olympic Ring, which was an area conceived as within 1.5 mile radius, were 20 sports hosted in 11 Olympic venues, and the main Olympic Village – located at Georgia Tech (Figure 5.11). Housing for athletes, officials, and the Olympic Family was spread within the ring. Also within the Olympic ring were the main press center, the international broadcast centre (located in the Georgia World Congress centre), and the Olympic Family hotel. Concentrating the Olympic venues in a tight ring seemingly offered easy access to most venues (ACOG 1995b, p. 7). Near the centre of the Olympic Ring, the only two subway lines of MARTA intersected for easy access to the venues for spectators. This concentration, as we shall see later, caused significant challenges in transporting athletes and officials to their respective venues by bus.

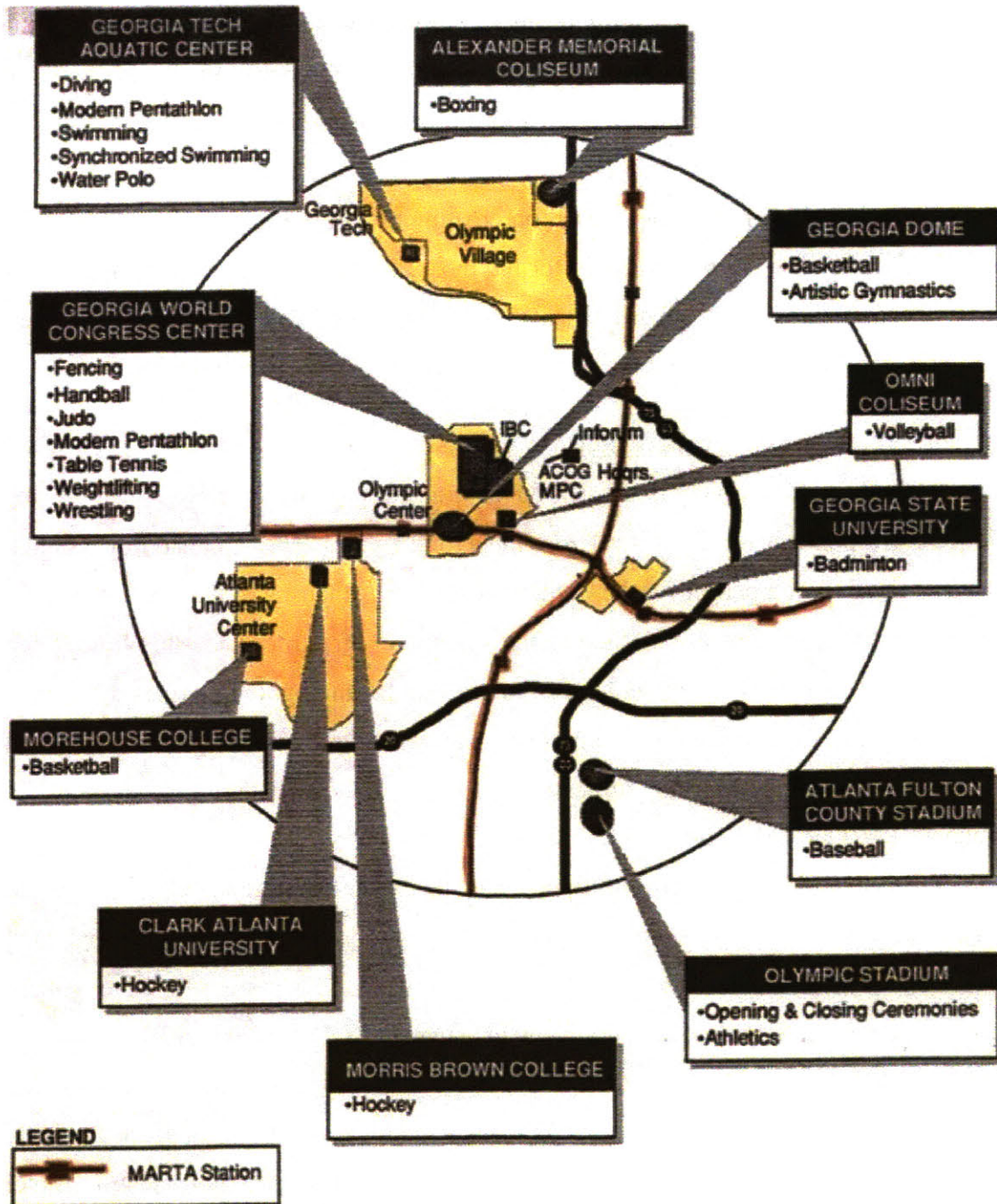


Figure 5.11: Atlanta's Olympic Ring
 Source: (ACOG 1995b)

Also included in the bid, was the creation of Centennial Park, which was to become Atlanta's most visible imprint of an Olympic legacy. ACOG's motivation for creating it was primarily for the Olympic Games as "a gathering place for hundreds of thousands of visitors during the 1996 Olympics" (ACOG 1995a, p. 79).

With most of the venues being located in the central city, this set-up promised the revitalization of 15 decaying neighborhoods adjacent to the Olympic venues. In charge of planning and executing Atlanta's revitalization efforts in the downtown neighborhoods was the Corporation for Olympic Development in Atlanta (CODA) (Rutheiser 1996). Their efforts, however, primarily focused on creating a worthy Olympic image. Without public funding at hand, AOC built only for the most visible, front-row communities new homes, becoming "living advertisements for how well Atlanta treated its poor neighborhoods" (Beaty 2007, p. 6).

The transport promises and expectations

"Atlanta sold its bid principally on its transport" believes Powell (2007), the athletics correspondent for *The New York Times* for 18 years. The IOC had doubted that Atlanta's strongest competitor for the Centennial Games, Athens, would be able to handle the traffic volume associated with the Games, given the infrastructure at that time (Senn 1999). The bar for transport was set high from the very beginning, in that transport was to "allow the guest to move comfortably from event to event breaking new ground in efficiency and techniques and surpassing past Olympic transportation systems in efficiency" (ACOG 1993b, p. I-1).

The Olympic legacy for transport was to "establish integrated, multi-modal transportation systems which move people and goods in a more efficient and environmentally sensitive manner" (Atlanta Department of Planning and Development and Corporation for Olympic Development in Atlanta (CODA) 1993, section 1, p. 3). Organizers foresaw as the long-term benefits to the city such as "repairs to key transportation facilities, an advanced traffic management system, high occupancy vehicle lanes on the freeway system, the multimodal Atlanta transportation centre, travel behavior changes, pedestrian facilities, the use of alternative fuel vehicles and a continued spirit of cooperation and pride" (ACOG 1993b, p. I-7). "We're hoping the commuting changes will be the legacy of the Games for transportation" (Kelly Love cited from Goldberg 1996). Advertised to the IOC throughout the bidding, candidacy, and preparation period was the technology and advanced infrastructure with which Atlanta would present itself to the world (ACOG 1995b). Specifically, ISTEA allotted additional

funds for the Atlanta region to develop the Intelligent Vehicle Highway System (IVHS) demonstration project. With these improvements in place the city was expected to run “like clockwork, ensuring mobility for all” during the Olympics (ACOG 1993b, p. I-1).

Preparing for the Olympic Games

Transportation planning for the Atlanta Games started in 1989, when a group of transport agencies developed the first 1996 Atlanta Olympic Transportation plan (ARC 1996): however, at that time, venue locations, and in particular, the Olympic stadium’s location had not been fixed (ARC 1996). In 1992, ACOG, which was responsible for providing transport to the Olympic Family and spectators attending the 1996 Centennial Olympic Games, put two agencies in charge of transport planning, the Olympic Transportation Support Group (OTSG) and the Atlanta Regional Commission (ARC), the agency primarily responsible for transportation planning and programming in the Atlanta region (ACOG 1993c). Throughout the candidacy and even shortly before the Opening Ceremony, important locations, such as training facilities, parking lots, and bus depots, continued changing, which was to become a key obstacle for robust and reliable transport planning (ORTA 1998b, Appendix A, p. ii). Furthermore, traffic estimates kept on rising as Atlanta approached the Olympic Opening Ceremony. In the end, planners grossly underestimated the actual demand, which would lead to traffic congestion and severe overloads on the Olympic transport system. Atlanta staged the largest and most compact Olympic Games ever with 11 million tickets sold (Dahlberg 1996).

Transportation systems of the Games

ACOG’s role was to coordinate and manage the Olympic Transport System (OTS) for the Atlanta Olympics, which comprised three different transport systems (U.S. Department of Transportation 1997) (ACOG 1994): (1) The Olympic Family Fleet System (OFFS), which consisted of operating the Olympic Family motor pool, primarily automobiles and other light vehicles. (2) The Olympic Family Transport System (OFTS), which was to provide transport for 150,000 people, including all athletes, technical officials, NOC, and IOC members classified as being in the A-category (ACOG 1995a, p. 11). The Olympic Family OTS (bus and van) was outsourced by ACOG to a private management company and bus provider, which had no former experience in handling

large volumes. (3) The Olympic Spectator Transportation System (OSTS), which consisted of the 46-mile MARTA rail system with 36 stations, and MARTA's 150 bus routes, on which express buses operated from Olympic park-and-ride lots to downtown Atlanta venues, and shuttle buses ran from selected rail stations to outlying venues, and of shuttle buses from Olympic park and ride lots to outlying venues, which were operated 24 hours a day (MARTA 1996). MARTA, under contract to ACOG, operated the OSTS, defined as the interconnected network of park and ride lots, shuttle buses and rapid rail cars which would serve all Atlanta venues (Bulkin 1995, p. 25). For spectators, transportation to and from the venues was integrated into the spectator's ticket (Dahlberg 1996).

All three transport systems were run on a one-way street system in downtown Atlanta and on the high occupancy vehicle (HOV) lane system on the highways (ACOG 1993b; U.S. Department of Transportation 1997).

Transport infrastructure and the promised legacy

The Olympics required infrastructure investments to prepare Atlanta's transport systems (ACOG 1993b, pp. III-1-III-4). In the run-up to the Olympics, Atlanta added freeways and arterials at a fast pace. Furthermore, MARTA, the agency responsible for public transport in Atlanta, completed more than 20 major projects in time for the Olympic Games.

Table 5.3: Atlanta's transport investments for the Olympics

Road infrastructure	Public transport	ITS
Ten road construction projects in the inner city	Extension of the East Line services through Kensington to Indian Creek Station in June 1993 ⁵⁷	advanced traffic management system, including combined state-of-the-art traffic control, freeway surveillance, and an incident management

⁵⁷ For the first time, the rail line went beyond the I-285 perimeter highway. Please refer to Figure 5.8 for details. To enhance access to Olympic venues at Stone Mountain, the host of Georgia's international horse park, MARTA.

Street improvements in downtown ⁵⁸	Three new stations Buckhead, Medical Center, and Dunwoody Stations	system IVHS ⁵⁹
High occupancy vehicle (HOV) lanes ⁶⁰	Enhancements at transit rail stations	multi-modal transportation center
“Olympic landscaping” ⁶¹ of many sections of the I-20, I-75, and I-85	MARTA mid-life overhaul, including an institution of automatic train announcements	
Renovation and enhancements of key bridges	Perry Boulevard CNG Bus Facility	

Source: compiled by the author. (MARTA 2009), (ACOG 1994).

The Olympic momentum, according to Waters (2009), a state traffic engineer for the Georgia department of transportation prior, during and after the Olympics, was tremendous: it “allowed the city of Atlanta and the department of transportation to advance its ITS plans and to implement those not over a 10-year period but over a 4-year period.” Besides this catalytic affect, Waters (2009) also acknowledged a change in the original transportation plans “the implementation of the HOV lanes on I-75 and 85. HOV lanes had been planned for many years; [they were] just redone in the fact that [planners] utilized an existing lane and its shoulder width to add another lane rather than take away a lane that had been designated before.”

Active transport

In the run-up to the Olympics, 12 projects for pedestrian access to venues downtown were completed. In addition, new bike paths stretching 17 miles connected the Olympic village at Georgia Tech to Stone Mountain Park, where a smaller cluster of venues was located.

⁵⁸ Those were necessary not only to accommodate the increase in the expected traffic flow but also to represent Atlanta as a clean new city to the visitors

⁵⁹ Intelligent Vehicle Highway System (IVHS) was a demonstration project implemented in the greater Atlanta region before, and tested during, the Olympic Games.

⁶⁰ HOV lines are dedicated to vehicles with two or more persons, emergency vehicles, motorcycles, and buses. The first HOV lanes opened in mid-December 1994 (18 lane miles on I-20 from downtown to I-285). In 1996, sixty additional lane miles opened on I-75 and I-85 (Department of Public Safety 2009).

⁶¹ Beautification along arterial and inner city roads.

Airport upgrade

Hartsfield Atlanta International Airport gained \$500 million of improvements, including a \$350 million international air terminal, a \$24 million atrium, and a new extension of the underground train to connect with Hartsfield's concourses. All the projects were part of the airport's master plan, but the Olympics created a catalyst to move the projects forward sooner (Dahlberg 1996; Vaeth 1998).

Transport operations

The Games, as the organizers were very well aware, brought the risk of heavy congestion in the inner city due to Atlanta's high share of private transport. Key strategies to reduce demand during the Games were essential, based on the understanding that "a significant reduction in normal daily traffic into and through the city [was] necessary in order to make room for Olympic-related traffic and prevent gridlock" (Dahlberg 1996, p. 11). The key characteristic of Atlanta's transport system during the Games was a heavy reliance on pedestrian movements (ACOG 1995a, p. 80) and public transportation (ORTA 1998b). Furthermore, during the Games the city promoted biking (providing 40 miles of new bike paths) and walking as modes of linking the venues of the city centre. Given that Atlanta had a car-dependent population, an intensive communication campaign was necessary to shift residents to public transport. ACOG intensively promoted the use of public transit and urged employers to institute flexible working hours, ride-share programs, offer telecommutes, and other efforts to help control traffic, basically minimizing the number of trips wherever and whenever possible.

During the Olympics

Atlanta became known as "the chaos Games" due to significant glitches in the transport and technology systems. "If Atlanta was not the best, it may rank in one of the top three Games, where the most world records were achieved. However, Atlanta is mentioned not for its tremendous successes, but because of the transport failure," said Protopsaltis in a 2007 interview.

The disappointing transport performance had led to athletes missing competitions (Rushin 1996), angry spectators waiting to get on MARTA (Applebome 1996), and endless drives on the gridlocked freeway system. In the closing ceremony, Antonio

Samaranch, the IOC president at the time, said Atlanta had hosted “great Games,” but he stopped short of saying they were “the best Games ever,” the usual phrase with which presidents end the Olympic Games.

Media and athlete transportation

“Most of [the transport problems] were Olympic Family members and media access problems,” according to Graham Currie’s (2008) assessment of the transport problems in Atlanta. Because journalists had to travel between venues mostly by buses and shuttles with ordinary spectators, the long waiting hours in the humidity and heat of the city and the 15-minute walk to the MPC explain “the headlines of some newspapers on the ‘great Olympic chaos in Atlanta’” (Billouin 1997, p. 161). Another factor, so Currie (2008) argues, is that the media always need a great story. Confirmed was this claim by several other interviewees wishing not to be cited.

One of the facts is that the international media pays for the Games. A simple fact is that they will find a story. They have to find one. The story they found was, before the Games, many people from different organizations saying how good the Games were going to be, [and] then, during Games time, a city struggling with over demand. And in fact the Olympic Family transport system was under a huge stress because of a lack of resources, and this was a huge story for the media.

The problems with media and athlete mobility emerged early on in the Games. ACOG, which was responsible for the Olympic Family transport system, “had run [it] so poorly that the IOC directed organizers to fix it, and fix it fast” (extract from Newspaper article Hill 1996b).

The reaction of the press and the consequent damage to Atlanta’s image in the world led to Olympic advisors recommending to ensure that, in the future, the Olympic Family, particularly the media are well catered to (Currie 2007). This, in return, requires more buses, newer buses, and excellent road conditions during the Olympics and, of course, direct access to each of the venues by private vehicles.

Spectator transport

At the beginning of the Games, people seemingly complied with the imposed traffic laws (Hill 1996b). Thereafter, however, the situation started to deteriorate,

presumably because commuters got wind of “gypsy parking” spots in the inner city and opted for their cars instead of public transit (Hill 1996a). More evidence for such behavior came from journalists observing “vacant parking spaces at MARTA lots” (Goldberg and Hill 1996). Seemingly, the transport problems stemmed from people driving despite the urgent message not to that was continuously sent for over two years prior to the Games (Monroe 1996). Interestingly, however in ARC’s post-Olympic report, a quite different transport picture is described: “traffic congestion was almost non-existent except for a few recurrent hot spots” (ARC 1996, p. 37).

Demand estimations vs. capacity increase

Traffic estimates were well below the actual attendance. MARTA Rail, for example, carried 15 million passengers instead of the expected 9.6 million (Booz•Allen & Hamilton 1997). This “increase of close to 50% beyond expectations,” in Currie’s (1998, p. 7) judgment, “proved impossible [to handle] without significant service quality deterioration.”⁶² In Currie’s opinion MARTA “did amazing things during the Olympics. It carried volumes you would never ever have thought possible, but it was far too small to carry the [Olympic] volumes” (Currie 2008).

Undersupply of transport stock

Besides relying heavily on MARTA’s rail system, the second backbone of the Olympic transport system was the buses. Initially, Atlanta had asked for 2,000 new buses, but only 1,800 were available. The buses, which transport organizers had to borrow from other cities and states, were hoped to be in good condition, but the actual vehicles they received were in poor condition and broke down very often (Billouin 1997; Booz•Allen & Hamilton 1997; Monroe 1996).

To run the Olympic bus systems, over 2,000 additional bus drivers were required. These could only be obtained from sources “out of state”, unfamiliar with the road network in Atlanta (Billouin 1997; Booz•Allen & Hamilton 1997). The media

⁶² As an example of the task at hand for MARTA: its usual weekday load was 230,000 boardings. The expected Olympic average was 588,000; but the actual Olympic average was higher than four times the normal weekday load, amounting to 953,000 boarding on average (Booz•Allen & Hamilton 1997). The maximum load MARTA carried on its peak day was close to 1.3 million passenger trips per day (Monroe 1996).

complained about unfriendly bus drivers who abandoned their buses on the road, describing the phenomenon as inexplicable and rude. Another part of the story offers Currie (2008) in an interview: “when you have undermanning of these resources you end up having the drivers [have] to work harder. As a result, they are getting very tired. You have reports from the media they are unreliable, not turning up, and lazy. It is not because of that, they are exhausted!”

Non-coordinated transport systems

Another reason for Atlanta’s traffic problems was that the transport systems during the Games were managed and organized by three transport entities (Gonzalez et al. 2000). As a result, Booz•Allen & Hamilton (2001, p. 43) pointed out, in their report on the Sydney and Atlanta Olympics, that “special event transit operations should be managed under a single organizational umbrella.”

After the Games left the city: what is left?

Atlanta is left with a bitter after-thought to its poor transport performance. For Currie (2008) the facts of why Atlanta experienced such transport problems were clear:

If you look at the simple fact of Atlanta as a city: it is not a good Games city, it has an extremely poor public transport system and very poor bus system, and there is another fact in that the Atlanta Olympic Games was one of the largest ever. What we got here is a city that is not designed to handle mass volumes at all, handling the biggest volume ever.

Yet understanding how this apparently obvious fact could have been overlooked – by the IOC and Atlanta , is worth revisiting:

The official and unofficial IOC story – the blame goes to...

The IOC took the stance that Atlanta’s organizers had not listened to the advice the IOC had given the city during the preparation for the Olympics. " The IOC was putting the responsibility on the ACOG, with some IOC members saying that ‘the Americans had refused to listen to advice or pay any attention to previous experience’” (Billouin 1997, p. 161). Interviews conducted after the Games led Atlanta organizers to blame themselves: “we have never seen a single document from Barcelona, because we were too lazy to translate” (Interview with Macey 2003). So, the official IOC story.

My research, however, sheds a different light on the story. In fact, the IOC never saw a problem in Atlanta's transport preparations. The evaluation commission of the Association of Summer Olympic International Federations visited Atlanta in 1990 and concluded that "no major traffic problems can be expected in Atlanta for the 96 Olympics" (Boitelle et al. 1990, p. 12). Also, regarding the operations of the public transport systems, there were no major issues or potential pitfalls detected. The impression the public transport system made on the IOC evaluation commission was very positive: the traffic conditions were experienced as fluid and MARTA as a rapid, efficient modern transport system (Ericsson et al. 1990). MARTA was expected to carry high peak loads easily (ACOG 1992). In contrast to Macey's claim above, Atlanta planners observed in detail the Barcelona Games (ACOG 1993b), to which over 100 delegates had been sent to analyze each organizational effort of the Games (ACOG 1993a). Confirmed was ACOG's claim by the interview with Vilalante (2007) in Barcelona, who remembered that the commissioner of the city of Atlanta was his co-pilot during the transport operations of the 1992 Games.

This analysis sheds light on the rather minimal interference of the IOC on Atlanta's transport problems. Because the IOC did not anticipate any transport problems, they did not see a need to interfere in the transport-planning process.

Missed opportunities?

From today's perspective, there were not many opportunities Atlanta had missed given the public reluctance in backing the Olympics. Therefore, revolutionary changes to Atlanta's transport system could not be undertaken. Because the IOC did not foresee transport problems, they did not see a need to interfere in the transport planning process. Hence, most of the projects that had been implemented into Atlanta's transport system during the Games had a long-term perspective. As Waters (2009) states in an interview:

All of the projects, [except] one⁶³, that I can think of were sustainable and were in the overall transportation projects list. The only exception was a different exit into the Stone Mountain Park on US 78. And the state did

⁶³ This one exception that was, according to Waters, implemented solely for the Olympics did indeed become useless for the city and the state after closure of the events: "[The exit ramp] was added because of the Olympics and then it was abandoned about five years after the Olympics."

build that. The anticipation was that it would become an emergency or overflow exit.

The ITS technologies, which were a “shining star” for the bid and during the Olympics, have since been beneficial to Atlanta and the entire region, stated Dunn (2009), the ARC’s spokesperson for external relations in the transportation planning division, in an interview. But she admitted that “with funding challenges, keeping it up to speed has been an issue.”

From a transport perspective, Waters (2009) could not recall any instances in which Atlanta could have gotten more out of the Games than it did. He described the planning approach as follows:

The professionals that have been involved in this have asked themselves over and over and over again [whether they could have done anything different]. The answer is “No.” Most of the professionals in the Atlanta area became involved very early on and mutually engaged in a pledge that we would do everything that we could, humanly possible, to make the Games a success. We did not want to have the situation after the Olympic Games, where we would say “if we had just tried a little harder, we could have done better.” I sincerely believe we did the very best we could and we fully utilized every resource that was made available to us.

Conclusions

Because Atlanta’s government shied away from backing the bid, it missed the opportunity of the Olympics to bring about major change in how people would travel in Atlanta in the future. Investments went primarily into expanding the existing road network and a brand new traffic management system. Public transport companies catalyzed only minor extension of existing lines through the Games, which did not deviate from their original plans. Dunn (2009) and Waters (2009) agree that the Olympics overall expedited transport projects that had been planned before the Games, and that Atlanta used the resources it had wisely for the future of its transport system beyond the needs being faced for the Olympics.

Hence, the changes the city had to undergo solely because of the Olympic requirements deviated from the original city plans only to a minimum. Part of the explanation is that overlaying the expected Olympic peak passenger flows onto the regular commuter flows would require minimal investments in new public transport

infrastructure and likely result in sufficient transport systems capacity – so both the IOC’s evaluation committee and the Atlanta Organizing Committee (AOC) believed.

Retrospectively, the investment choices in transport were beneficial to the city, but came at a high price for Atlanta’s future in remaining a car-dependent city and for its reputation in the world. Currie (2008) comments on the choices that Atlanta made:

What Atlanta did was to invest into a railway extension which was of modest benefit to the Games. And they invested a lot in technology, such as the new traffic center. What did that do for the Games? You could not get the volumes of people in on the road system; you needed a transit system. Another example of this is that Atlanta implemented a lot of resources on smart cards/ticketing. Of what benefit is that? What it did was take a lot of resources away from the Games.

There are three important lessons the IOC learned from Atlanta. First, media had to be handled with kid gloves, since the press was crucial for broadcasting a positive image to the world. Therefore, in future Olympic Games, they received dedicated buses and cars to serve their exceptional needs. Second, there is a need for extensive mass transit systems to cope with the peak passenger demands for the Olympics. This lesson, as we shall see later in the case study of Sydney and Athens, had a tremendous impact on existing transportation plans. Third, a single entity for Olympic transport was essential, with responsibility for overseeing transport operations and equipped with cross-institutional power.

Sydney (2000) – the Olympics dictating a local strategy

Sydney rarely used the Games to foster its transport vision and failed to implement the urban vision it had foreseen for a transformed brownfield. In the run-up to the Olympics, Sydney invested in urban freeways and rail systems. As the center of Olympic activity, Sydney chose to transform a heavily polluted brownfield into a greenfield. To make this area accessible for Olympic peak loads, a rail loop, stations, and access roads had to be built. In downtown, Sydney built a monorail and made its center pedestrian-friendly.

Sydney is located in the southeast of Australia on the Pacific Ocean. The city counted a population of just fewer than 4 million in 2001, which made it Australia’s most

populous city⁶⁴ at the time. On 23 September 1993, Sydney was selected as the hosting city for the Millennium Olympics to be held in the summer of 2000.



Figure 5.12: Sydney

Source: ESRI, ArcGIS Resource Center, World Street Map;

http://resources.esri.com/arcgisdesktop/index.cfm?fa=content&tab=World_Maps

Metropolitan history

Starting in the early 1950s, Sydney and its greater metropolitan region experienced an unprecedented growth stimulated by the postwar economic boom. Industrial clusters spread along the coastal areas; commerce and retailing were located in central Sydney with coastal sub-centers in Newcastle, to its north, and in Wollongong, to its south. Public transport was the primary means of travel anchored in Sydney's central business district (CBD) at Central Station, from which a radial public transport system served other central areas and outer neighborhoods (Punter 2005).

The rapid growth of the region changed Sydney's character as it continued to grow substantially through the 1960s, 1970s and 1980s. High-rise commercial buildings were built in the CBD, while people moved to the suburbs, driven by the desire for detached homes in low density. With this population shift came the rise of the private

⁶⁴ Australian Bureau of Statistics, 2001 Census data; Australian Bureau of Statistics, Sydney Statistical Division population, June 2002.

vehicle. Eventually, the tramway lost its competition with the private cars. Physically aged, run-down, and judged to be unsuitable for their radial role in Sydney, the tracks were removed and replaced by buses, which could perform essentially the same service as trams but were more comfortable, cheaper, safer, faster, and more efficient (Gibbons 1983, p. 176).

In the past 20 years, this trend to population sprawl followed the relocation of employment activities, which led to an inner-city decline of manufacturing, making room for the new service sector. As Sydney continued to grow beyond its original boundaries, the patronage of the rail systems declined further, resulting in a 12.8% drop in the number of trips taken by public transport between 1981 and 1991 (Gee et al. 1996, p. 14). Throughout this transition, Sydney has kept its old CBD, and even though it remains largely car-dependent, high-density development has occurred along existing rail corridors (Department of Planning 1995).

The metropolitan expansion strategy: one region – several cities

Following the County of Cumberland Plan (1948), Sydney's first attempt at land development of the region, the Sydney Region Outline Plan in 1968 proposed two transport strategies to guide the future growth of the largest metropolitan area in Australia. First, linear expansions along communication and rail corridors should be fostered. Second, a strong Sydney-Newcastle-Wollongong corridor along the coast should be developed as one interrelated linear urban complex (Department of Planning 1968). In transport, meeting current and future car demand was a priority (Department of Planning 1988, 1995).

Transport and its integration with land-use along with an emphasis on environmental protection became one of the top priorities for Sydney in the late 1980s, when it became evident that the lack of coordination between them had reinforced Sydney's outward growth and demanded a continuing investment in road infrastructure (Department of Planning 1992). The new key targets were clear: extending the public transport system and its services while simultaneously reducing the need for new roads (Department of Transport 1995).

As Sydney spread upstream towards its hinterlands, secondary employment centers started to evolve. Pursuant to a Department of Planning discussion paper (1993), a new emphasis was placed on strengthening Parramatta's role as the second CBD of Sydney. Parramatta is located 15 kilometer (km) west of Sydney and close to extensive parklands and the wetlands of Millennial Park.

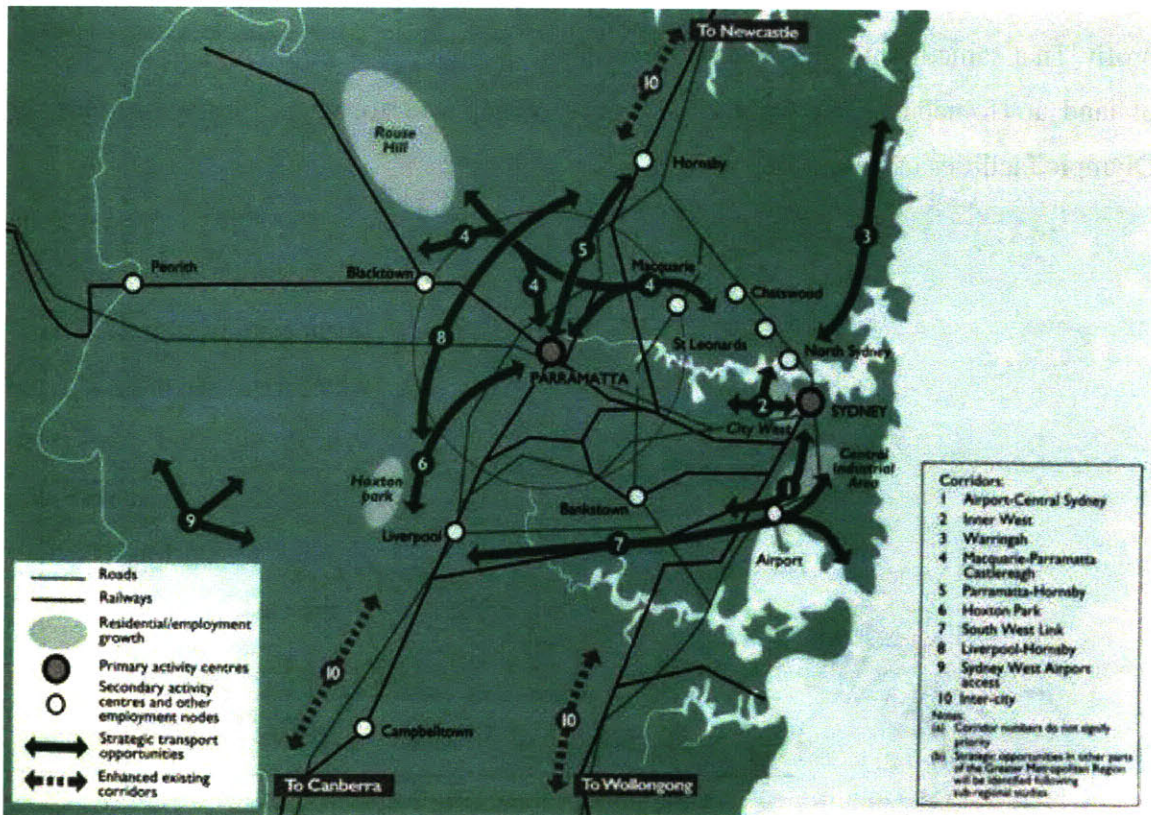


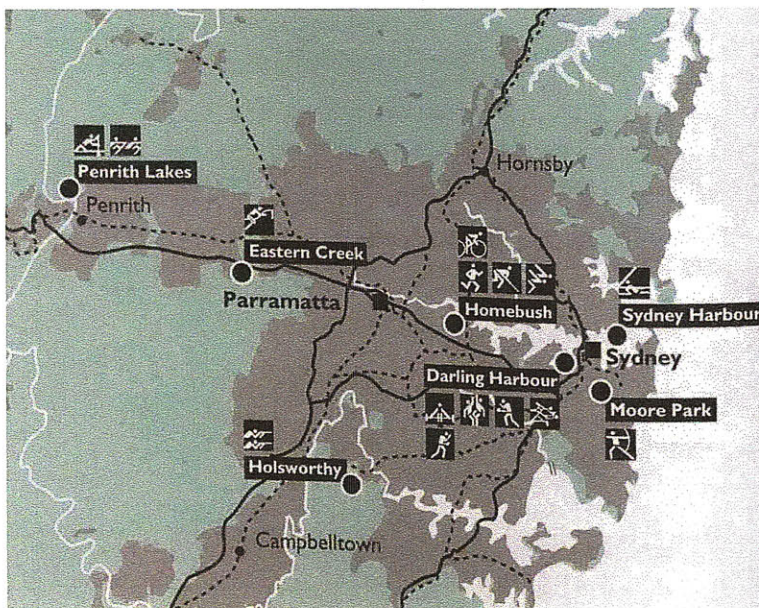
Figure 5.13: Sydney's strategic transport opportunities

Source: (Department of Transport 1995, p. 101) originally published (Department of Planning 1993, p. 42)

Strategic transport opportunities were identified in the early 1990s. From a transport perspective, Sydney and Parramatta presented the best opportunities to encourage public transport use (Department of Planning 1995, p. 101; Department of Transport 1995). Parramatta being the second largest employment center in the Sydney region, the Department of Transport suggested making it a major bus-rail interchange and establishing new transport corridors from the lower North Shore, Hornsby, Rouse Hill and Hoxton Park (Department of Transport 1995, pp. 36-41). Throughout the following years, other departmental plans called for the promotion of public transit and reduction of individual reliance on cars (Department of Urban Affairs and Planning 1997).

Sydney's bid

Sydney's aspiration to host the 2000 Games, started in mid-November of 1990 when the NSW government informed the head of the Australian Olympic Committee that Sydney was interested in bidding for the 2000 Olympics, pending the Baird report, which was assessing the financial feasibility of Sydney staging the Games. This report came out in December of the very same year, concluding that the Games could be staged at a profit. That same month, the Federal government announced it would release 84 hectares of land at Homebush Bay for the Olympics, which was to be the prime location for Olympic facilities (Whitten 2000).



Other location choices followed, building a linear pattern along an east-west axis stretching from Penrith in the west, to Holsworthy, Bankstown, Bondi, and Darling Harbour in the east.

Figure 5.14: Sydney's Major Olympic Locations

Source: (Department of Planning 1995, p. 36)

The facilities were located in two primary Olympic Zones (14 km apart from each other), Homebush and Sydney Harbour (CBD). Twenty-one out of 25 competitions would take place in the two centers, with 80% of all the events held in Homebush (De Frantz et al. 1998).

Transport promises for the Olympics

For transport, these location choices meant that the heaviest travel demand would occur between the Olympic Park at Homebush and Sydney's CBD, as predicted by the IOC transportation working group (De Frantz et al. 1998). At the time, Sydney Olympic

Park area and the Sydney Harbour zone were located relatively close to road systems, rail networks, and water-based services. However, given that Sydney residents' were generally car-oriented, the working group believed that significant communication efforts would be required to divert them towards a high-capacity rail transport mode. The enquiry commission of the International Olympic Committee (IOC) praised Sydney's bid, because it presented well-thought-out planning and required at most travel time of no more than 30 minutes to all venues (Ericsson et al. ca. 1993, pp. 63-65). The commission also noted that the bid offered conditions over and above what was actually required by the IOC; certainly an advantage in the competition to win the Olympic bid.

The Department of Transport (1995, p. 54) ensured the general public that "Olympic transport plans will ... be consistent with integrated plans for the region explored in this [transport] strategy". This goal also was reiterated in the strategic master plan by the Sydney Organizing Committee for the Olympic Games (SOCOG, p. 42) and the Olympic Coordination Authority (OCA) continued to vow in their "state of play" report to the people of NSW, "to make the most of the opportunities the Games present to the city" (OCA 1997, p. 9). In contrast to these promises, the Sydney's metropolitan plans laid out other tasks. Because the Olympic Games fostered the east-west connection, Sydney could not realize most of the strategic transport opportunities identified by the Department of Transport (Figure 5.13).

Persons put in charge of running transport, such as the director for strategic planning within the Olympic Road and Transport Authority (ORTA), Steve McIntyre (2008), recall a different approach to the transport-planning process. "Given that ORTA was created late in the preparation for transport for the Games, he argued he had to take a very pragmatic approach. Legacy issues for Sydney were second-order; the first-order issues were that we actually understood the scope of the task, that we defined responsibilities for what needed to be done, and that we had a robust planning approach."

Institutions and their power

Due to the streamlining of planning controls for the Olympics, the level of control held by local councils over their respective local areas had been reduced. Throughout the preparations for the Olympic Games, this caused some conflicts between local councils

and the state government, which was “single-minded in its approach to Games planning” (Connor et al. 2000, p. 9). For the Olympics, decision power laid within the Sydney Organizing Committee for the Olympic Games (SOCOG), the communication center between the IOC, Australia’s Olympic Committee (AOC), and the governments (Dunn and McGurick 1999). SOCOG’s decision-making power trickled down to agencies with specific functions, which were legislatively empowered to direct state and local agencies.

In charge of running the Games on the ground was the Olympic Coordination Authority (OCA) established in 1995. OCA was a cross-department body set up to ensure a coherent approach to the Olympic planning process, including the task to identify and realize a legacy for Sydney and NSW. Equipped with clear authority control, OCA was in charge of master planning and developing the Games site (Dunn and McGurick 1999).

For transport, a centralized Olympic Road and Transport Authority (ORTA) had been created on April 7th, 1997, primarily as a result of the Atlanta traffic chaos as the IOC Transport working group and interviewees confirm (De Frantz et al. 1997; McIntyre 2008; SOCOG 2001). The working group acknowledged that due to traffic and transport experience at the Atlanta Olympics, a fundamental restructuring of transport planning and operational structures had taken place for Sydney.

ORTA’s task was to integrate and coordinated transport to and from all competition and non-competition venues and the city centre (Curnow 2000; ORTA 1998b). Existing transport agencies such as the Roads and Traffic Authority (RTA), State Rail Authority (SRA), and State Transit Authority (STA), along with the private service providers Bus 2000 and Coach 2000, had to deliver transport results in response to ORTA’s plans and specifications (ORTA 1999b). In principle, ORTA had two clients: the Sydney Organizing Committee for the Olympic Games for the delivery of Olympic Family transport, and the NSW Government for transport of spectators, visitors, and the general public going about their usual business. ORTA also believed that the Olympics provided Sydney with a unique opportunity to promote maximum public transport use and launch innovative transport management practices (James and Myer 1997, p. 9). ORTA’s hope resided in the assumption that if the transport system performed well, more people would use public transport regularly even after the Games.

Sydney's preparations for the Games

Sydney marketed itself to the Olympic Committee by placing a strong emphasis on environmental protection and promising to stage "Green Games" (ORTA 2001). Urban and transport planning, just like all other Olympic changes, were to be guided by strict environmental guidelines (State Environment Planning Policy No. 38) (Dunn and McGurick 1999). A year prior to the 2000 Games selection process (in 1992), the IOC had decided to adopt the principles of sustainable development set forth at the UN Conference on Environment and Development in Rio de Janeiro by UNEP (IOC 1999, p. 9). Retrospectively, Sydney's choice of the "green" theme might have increased Sydney's chances of winning the bid.

Selection of Homebush and defining its future

Heavy industry had abandoned Homebush by 1988, leaving the area polluted, degraded, and contaminated. Homebush was flood-prone and hence unattractive to private investors, yet its surroundings were beautiful. The NSW government had been wanting to purpose-clear Homebush and had been struggling since the mid 1970s to choose between three general development ideas.

- The Bunning Scheme (1973) proposed Homebush as a host for international standard sporting facilities and related administrative buildings. Among the other nineteen alternatives around Sydney, Bunning had identified Homebush as owning significant advantages: its size, its centrality to Sydney, its nodal location in transport network, its public ownership of the land, and the relative lack of development (Waghorn 2000; Weirick 1999). Starting with Sydney's intention to bid for the Olympics, more and more studies supported this scheme, including the Premier's department scheme (1988) and the Homebush Bay development strategy (1989).
- The MacLachlan scheme (1982) combined three development purposes at Homebush - employment, residential, and recreational (Waghorn 2000).
- The Hub Scheme (1983) proposed that Homebush should be Sydney's first technology, industry, and business park, with industry and employment zones located in its heart. Just before bidding for the Games, Sydney had bid for the

“multi-function polis” (in 1987), an Australian - Japanese cooperation. Under this scheme, Homebush was to become a centre for future-oriented high-technology and leisure facilities (Black 1999; Searle 2008; Waghorn 2000).

Due to the Olympics, the Bunning Scheme prevailed and already in 1992, a year before the IOC had to select the 2000 host city, construction work in Homebush Bay had begun. It was planned to contain 14 of the 28 sports venues, all of which had to be built. In close proximity to Homebush, the Olympic Village was built in the Newington urban district, housing all participants and team officials, and some of the judges and the media.

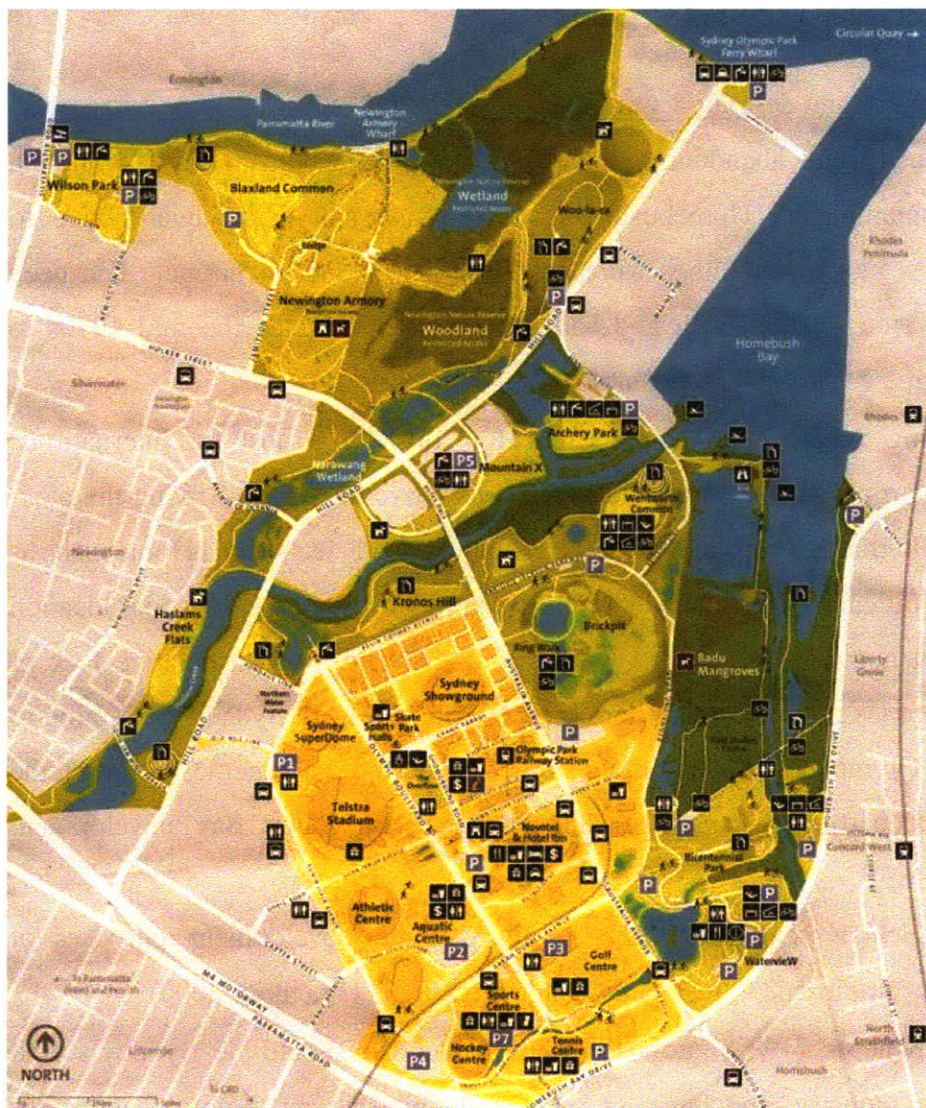


Figure 5.15: Sydney's Olympic Park and railway loop
Source: Tourist center handout in Homebush, obtained February 2008

Plans for “Homebush’s legacy” *officially* existed: the venues were built for multipurpose usage after the Games and Homebush’s master plan (1990) suggested the relocation of the Royal Easter show⁶⁵, previously held in Moore Park, to Homebush. Because it was designed for the throughput of large numbers of people, later usage of Homebush facilities could also include exhibitions and rock concerts (Department of Transport 1995, p. 54). In the broader scheme of metropolitan planning, Homebush was to mirror Moore Park close to the Sydney CBD. As what Moore Park was to Sydney, Homebush was to be to Parramatta (Waghorn 2000).

Early on, these long-term intentions were in doubt. Myer (1996), for example, questioned the long-term planning approach the authorities had pledged to take: “the primary motivation for most of the current activity at Homebush Bay is meeting the requirements of the 2000 Olympics – and longer term planning issues generally appear to receive a lower priority” (Myer 1996, p. 2). In the following analysis, his impression of the planning process became reality for most of the changes Sydney undertook prior to the Olympics.

Transport modifications to access Homebush

Along with planning Homebush came suggestions on how to provide transport services. According to Juliet Grant, a transport strategist for Homebush, the key concerns were the green theme, the capacity needed for the Olympics, and long-term vision for the site. After considering a variety of transport alternatives including exclusive bus transport via an extensive road system, light-rail access, and heavy rail lines, the cabinet decided on the presumably optimal solution (Grant 2008): a rail loop into and rail station for Homebush, a ferry wharf, and an extensive road network within the Olympic park accompanied by many cycling and walking paths. In the end, to provide Homebush with a transport network suitable for the Olympics, \$(AUS)97.7 million for rail and \$(AUS)190 million in road would have to be invested (Jacana Consulting Pty Ltd 1996).

Many grassroots groups opposed the access alternative that had been selected for Homebush. Greenpeace, the Clean Air 2000 Project team and local communities argued for a proposal to build more public transport for the long term, no further roads for the

⁶⁵ The Royal Easter show is a yearly agricultural show drawing hundreds of thousands of visitors to Sydney.

Olympics, and a public transport-oriented Olympic Village, which would reduce the need for local car traffic (Clean Air 2000 Project Team 1996; Greenpeace 1995; James and Myer 1997). Reports and protest, however, came too late to have an impact on the decision. The NSW minister for urban affairs and planning had given consent to the new rail and road infrastructure in February 1996, a year before ORTA was even founded. Given the time pressure to stage the successful Games, there was not enough time to rethink the strategy and include the long-term vision of the Olympics. The option to do such long-range planning had passed; it could (and should) have happened either between 1995-97 or during the bidding stage (McIntyre 2008). As Daniels (2008) confirms in an interview: “the focus becomes so much on the event itself, the completely immovable deadline, and so you have to have everything done by then. Most people focused on what we have to deliver on this date. Not many people thought about what to do afterwards.”

The rail loop and the Homebush station

In 1995, OCA proposed a single rail loop, 5.3 km in length, broadly following an old rail route (OCAe 1995). Searle (2008) recalls that in the beginning, Sydney’s transport planning committee for Olympic transport had thought to handle the Olympic masses exclusively with buses. This idea did resound well with the IOC, likely because of Atlanta’s bad transport performance (De Frantz et al. 1998). Construction of the rail loop began in August 1996, connecting with the Main Western Line at Flemington Junction (OCAe 1995).

The rail loop from the Main Western Line to the Olympic Park was not part of any metropolitan strategy, as Searle (2008) recalls in an interview. This extension of Sydney’s rail system to the Olympic site was rather a necessity, in fact “vital as part of the city’s commitment to holding the first public transport-only Olympic Games in modern times” (Palese et al. 2000, p. 62). These statements support my claim that the Games do not only have a catalytic effect on transport plans, but rather altered them in favor of Olympic objectives.

The construction of the rail loop and the expected passengers to be transported during the Olympics made it necessary to build a high-capacity rail station at Homebush Bay and revive an old one at Lidcombe. Criticism of the rail loop and its junction was

also evident. The report by Jacana Consulting found it unlikely that the rail loop would sustain an economically viable and frequent weekday service after the Olympics, particularly as the station would be at least two kilometers from the residential village (Jacana Consulting Pty Ltd 1996).⁶⁶

The ferry story and the brickpit

New ferry wharves were planned in close proximity to Homebush Bay in order to provide exclusive waterways for premium VIP travel service (Department of Transport 1995, p. 54). The ferry terminal was located at the northern end of the Bennelong road to be operated as a permanent commuter wharf and incorporated into the Sydney Parramatta Rivercat services (OCAc 1995). It was clear from a transport point of view that the wharf was to be built solely for the purpose of athlete and VIP travel and had not been planned before Sydney won the right to stage the Games. As McIntyre (2008) judges the Olympic bids and their later influence on transportation planning in an interview:

I think bids by their definition need to be aspirational. Things get included that are not particularly useful from a transport point of view. You know, using ferry transport for athletes and officials, I mean, that is a wonderful concept and I am sure it is great at the time when bids are considered, but from a transport point of view it is a complete annoyance, really.

Originally the wharf was to be built into an existing Brickpit, allowing direct access to the venues at Homebush. However, these plans had to be changed rapidly when an endangered species of frogs, the green and gold bell frog, was found on site (Allachin 2008). OCA had to relocate the wharf, likely because Sydney had promised it in the bid files. It is evident from this example that in planning for the Olympics a lot of uncertainty hovers over the realization of the plans and there is a clear need for flexibility and contingency planning.

Road development

Sydney's road system also had to bear an increased load, and hence key road enhancements for the bay area and the east-west Olympic corridor and other important

⁶⁶ The residential village referred to the permanent Olympic Village, which would have some 6,000 residents. Not only was the train station 2 km away, its access would involve a mode change (shuttle bus), and another train change at Lidcombe.

access corridors had to be constructed (Department of Transport 1995, p. 54). Furthermore, external road upgrades were essential for access to Homebush (OCAd 1995). The site also had to be equipped with 10,000 parking spaces to facilitate the movements of the buses on the site. As Black (2008), a professor at the University of NSW and long-standing advisor to the government including the Olympics Games, recalls, the commercial pressure for even more parking was immense at the time.

Protesters called for a massive reduction in the 10,000 car park and the road infrastructure of the Olympic site, which was in their perception designed around road transport with a 60 meter-wide Olympic boulevard (6 lanes), and an urban core that was bounded by four main avenues, each four traffic lanes wide (Jacana Consulting Pty Ltd 1996, p. 9). As a result, the critics predicted that the expenditure on internal road works and the large number of car parking spaces would make travel by private motor vehicle attractive for most events during the year (Jacana Consulting Pty Ltd 1996, p. 3). These developments hence were likely to encourage motor vehicle use for 97% of the year, excluding the Royal Easter show.

Unfortunately, OCA had no choice in that matter. Stronger emphasis on public transport, biking, and walking had definitely been thought of; however, it could not be implemented to the extent suggested. As Black (2008), a member of the Olympic transport planning panel assigned by the NSW government, describes the influence of the IOC on planning Homebush's transport during an interview: "The Olympic Village, which is at the other side of the creek, is actually, in my opinion, walking distance. So I pointed out that the athletes could walk, until I was told that under the IOC competition rules, they must be taken everywhere on an official bus." This strict requirement forced the authorities to implement an extensive road network throughout the Olympic Park and provide parking spaces close to each of the 14 venues.

Bicycle and pedestrians

Cycle paths and pedestrian walkways were built mainly in the Olympic Park for easier access to the venues. The goal is to increase public transport use and cycling in Sydney as a legacy of the Games (James and Myer 1997). Cycling and walking is fantastic at Homebush, as Grant (2008) describes in an interview. According to her, the

long-term vision for Homebush, to be primarily accessible by public transport, has been fulfilled.

Selection of Darling Harbour

The second center of Olympic activity was located close to Sydney's CBD, hosting 11 out of the 39 sports. Darling Harbour was supposed to stage five sports (De Frantz et al. 1998) and host the international broadcasting centre, the media, and some villages for officials (Department of Planning 1995, p. 37).

Monorail

A monorail running from Ultimo to Pyrmont opened on 31 August 1997.⁶⁷ Over a stretch of about 800 meters, it was to serve the redeveloped inner-city areas of Darling Harbour linking downtown and the retail core (Department of Transport 1995, p. 54). From the beginning, the proposal to build a circular monorail aroused major antagonism in the city (Punter 2005). Reflecting on the decision taken to build the railway, Allachin (2008) a private developer, believed that it was not a good idea. Rather than taking the monorail, residents would walk, and the rail has become purely a tourist attraction. Given important IOC delegates, referees and judges resided in Ultimo, a new modern rail to the retail core might have been an attractive feature to Sydney's bid.

Road improvement in downtown

Street improvements were made in the Central Business District, mostly to provide a showcase image for visitors and ensure walkability to the venues.

The airport to city center connection

At the time of Sydney's bid, the city's main airport was poorly connected to its center, and the NSW government decided to build a rail link and a new highway to connect them. Both infrastructural projects were "seen as a necessity for the successful running of the Games" (Ben et al. 2000, p. 48). Interesting to note is that both of these developments had been on the political drawing board since the mid-1980s (Black 2008;

⁶⁷ MLR - Technical Stats, Metro Light Rail, retrieved 29 August 2007.

Searle 2008), yet their entry onto the government agenda might have been a direct result of the Sydney Olympic bid.

Rail

In May 2000, Sydney launched its first airport rail link in the run-up to the Olympics for \$(AUS) 700 million (Palese et al. 2000). The route runs underground, taking passengers from all terminals via Mascot and Alexandria to Central Station. Black (2008) stated in an interview that the line was never intended to be a direct airport-to-city-center link; it stopped at various suburban stations. As Daniels (2008) described the catalytic effect and how Sydney planners used it to their advantage: “With the Olympics in mind, we realized we needed that link to get people from the airport. But it is really designed to integrate people from the eastern part of the city; it just runs through the airport.”

Eastern Distributor

The Eastern Distributor – a major new freeway link and tunnel from the city’s south to Sydney airport – opened in December 1999 amidst vigorous public protests. In 1993, the NSW government had promised that no major road infrastructure development would be required for the Olympics (Sydney 2000 1993, p. 84). Yet in November 1997, the NSW government allowed the building of the Eastern Distributor, claiming it was necessary for the Games (Palese et al. 2000, p. 63). For critics, it was unacceptable that new road projects were promoted on the basis that they would help to ease Olympic transport congestion (James and Myer 1997, p. 29).

An explanation for the development in road infrastructure might be that ORTA considered the primary mode of transport for the Olympic Family to be via Sydney’s State Road network (Traffic and Transport Directorate 2001, p. 8). Searle (2008) recalled in an interview that “the Olympic roads authority always had been very keen on completing the Eastern Distributor.” Given that the road was proposed by a private developer at no cost to the government, the project was easily approved and completed before the Games (Black 2008).

Traffic management infrastructure

In the wake of Sydney's transport restructuring process, motivated by the poor traffic conditions during the Atlanta Games, a new Transport Management Centre for Sydney was built (De Frantz et al. 1997, p. 2). The center was intended to keep its function for large events at the Sydney Olympic Park (De Frantz et al. 2000) and was turned over to Sydney's Road and Traffic Authority (RTA) after the Games (SOCOG 2001). To feed the center with real-time information, the RTA installed about 350 cameras on the road network by the beginning of the 2000 Olympics (Traffic and Transport Directorate 2001).

During the Games

During the Olympic Games, 38 million trips occurred on Sydney's public transport system. Most of the demand occurred on Sydney's extensive rail network. It was supported by two temporary bus networks: one serving athletes, the other one serving spectators (see Appendix 3). Of the 28 routes there were 10 Olympic primary routes established for the transportation of athletes, their equipment, and other Olympic Family members. The other 18 were spectator routes, of which 9 were to serve ticket holders to the Olympic Park and the other 9 to serve other Olympic venues. The bus fleet comprised 3350 buses, 1000 only for the Olympic Family, 1700 for spectators, and 650 for sponsors. Officially, public transport captured 75%-85% of the total traffic demand of spectators, volunteers and workforce (Bovy 2000; Hensher and Brewer 2002).

The - from the IOC desired -- free flow of public traffic was supported by parking restrictions and road closures, as well as park-and-ride facilities close to rail stations. The operation was supported by various travel demand management measures, specifically for businesses and other institutions (Traffic and Transport Directorate 2001). In transport management, a key element was the integrated ticketing system (each Olympic entrance ticket provided free public transport access to the venue).

The key to the successful staging of the Olympics according to the IOC evaluation commission was also attributed to the extensive test events at the Royal Easter Shows, held prior to the Olympics (De Frantz, McLatchey et al. 1999; ORTA 1999a, p. 29). Because of these tests, better predictions of Olympic traffic could be made (ORTA

1998a). In the IOC's assessment, ORTA was providing "optimal transport services for the Sydney 2000 Games" (De Frantz, Palmer et al. 1999, p. 53). The IOC was thrilled by Sydney's transport performance: "the Sydney Olympic Games have been a showcase of environmental protection and a tremendous transport success with 100% of spectators moved by public transport" (Bovy 2004b, p. 50).

"Under-promise, over-perform" was the motto Sydney had adopted for transport. As Daniels (2008), a representative from the Department of Planning, describes the media message: "Our focus was on traffic demand management. Before the Olympic we had a program to scare people, so they would take public transport." Currie (2008) explains that Sydney was very careful in managing the expectations for the event. Due to the low expectations people had of the transport services, they were pleasantly surprised by the efficient outcome. This lesson, Sydney likely adopted due to Atlanta's transport performance. Olympic planners in Sydney were aware how crucial residents were in taking public transport. Because Atlanta's friendly encouragement did not work, Sydney's planner used the "big scare."

After the Games left the city

The Games could have been seen as a watershed moment for introducing some key measures that were acceptable to the public and would significantly improve Sydney's transport. Using the Games momentum for resolving problematic issues, such as traffic congestion, parking policies, and integrated ticketing, would have been a few of them. Unfortunately, Sydney rarely took advantage of the momentum the Games provided. "We did a lot of good things during the Olympic Games. We should have learned a lot. But the day after the Olympics, everything went back to normal. And we went back to the mess of transport we have in Sydney and it got worse since 2000" states Dobinson (2008). For this outcome, he blames the state government and their exclusive focus on making the Games an outstanding success. In some instances, however, the Games had created two incentives for the city to pursue in terms of transport.

Sustaining the mega event travel experience

Contrary to ORTA's hope (ORTA 1999a), Sydney's Olympics did not change commuting habits in a general sense (Dobinson 2008). The Games, however, changed the

culture for travel to very large events Black (2008). “The Olympics were a deliberate attempt to refocus, away from the car. To the Royal Easter Show at Moore Park, visitors used to arrive 60-70% by car. When the Easter show moved [to Homebush], [people arrived] 60-70% by public transport. We turned that around” (Grant 2008). Furthermore, operational traffic practices and organizational structures that were used during the Olympics are now implemented for other major events held in the Olympic Park, such as the bus routes for the 2003 Rugby World Cup or the World Youth Day (Grant 2008; Searle 2008).

The introduction of cross-town buses

Because the concept of cross-town buses worked extremely well during the Olympics, Grant (2008), Daniels (2008), and Brockhoff (2008) believe the idea for strategic bus corridors originated during the Olympics. “Some of those bus corridors” Grant (2008) claims, “mirrored very closely those bus corridors that had been used during the Olympics.” By 2003, there was a system of 43 bus corridors serving Sydney and its region.

Missed opportunities

To run public transport as smoothly after the Games as before, significant resources and large investments would have had to be put into public transport. Because no effort was made to sustain the Olympic operations for the long term, everything went back to “business as usual” (Black 2008). Particularly evident is this short-sighted view in the case of Homebush Bay. Here, further development around the park took place, and poses transport access challenges to the city center. This outcome could have been anticipated and should have been planned.

The legacy of the Olympic park at Homebush

A vision for Homebush was only thought of after the Olympics had been staged.⁶⁸ Allachin, a planner working on the Post-Olympics Master plan for Homebush, states that the development of Homebush became a big issue after the Games had taken place.

⁶⁸ As an attempt to bring life and frequent use to the site, the government established the Sydney Olympic Park Authority (SOPA) in 2001, in charge of organizing events, maintaining the Olympic park site, and developing its adjacent property (Daniels 2008).

Daniels (2008) confirmed in her interview that there was no real plan on how to proceed after the Olympics. The first developments to occur close to the Olympic Park were residential dwellings shortly followed by commercial office development, as Searle (2008) states in an interview. After the Olympics had been staged, the public authorities had realized that with costly public space at hand and excellent facilities, it was best to lease the land in order to develop it, remembers Searle (2008). So, he further argues, “the strategic plans really adjusted to the fact that the Olympic Games were held in that location.”

With no decent plan in place to develop Homebush and transport infrastructure designed for exclusive mega event usage, local feel the burden of this legacy. The Newington area, where the Olympic Village was located, was supposed to be a green model for urban design. Transport-wise, however, it did not live up to its billing. A current (2008) resident complained about his journey to work: “But what they [government] did was this silly loop back thing” which required a 20-minute walk and an interchange of trains to reach the city center – way too long for a regular commute. The movie shown regularly (observed on February 15th, 2009) in the tourist shop in Olympic Park claims that currently the Olympic Park receives 8 million visitors a year, of which over 80% arrive by public transport. Contrary to this claim seems to be the following statement by a Lidcombe resident, whom I encountered at the Lidcombe train station waiting for the Olympic Park train: “You are the only person I have ever seen on this platform. I go to the Olympic Park quite frequently.” He believed the loop was experiencing an incredible lack of use, but stated it was now being used as a test ground for new train drivers.

This situation is unlikely to change, because demand for transport services is not high enough. Even though there was a 7.9 meter wide corridor maintained in the median of the Olympic Boulevard to allow for a future light rail transit system, which could provide a link to Camellia/Parramatta and/or North Strathfield/Darling Harbour, “the development of a light rail transit system is not envisaged in the short to medium term” (OCAc 1995, p. 21). Almost 10 years later (2008) the envisioned light rail has not been extended to Newington, where it could potentially serve new housing development (Black 2008).

The development that has occurred since 2000 in Homebush raises questions about the implementation of the rail loop. With Homebush's large public spaces and beautiful surroundings, planners have argued that the rapid rise of land value could have been anticipated.

There were other alternatives for building the railway loop, such as opting to integrate it into Sydney's rail system network and provide Homebush with a regular CBD service. Dobinson (2008) described this alternative as more costly, but with the result of having "a loop for the future. [The Games] would have been a great opportunity to do it."

Leveraging this opportunity, however, was not the task for which the Olympic transport specialists were hired. As Black (2008) stated: "It was very clear that the rail loop was there to serve large crowds associated with major events for Homebush ... and possibly for major football events, soccer, etc. that attract 50,000 people. [For that,] special rail services are run on that loop. The answer is very clear: it was to serve these major events and the Royal Easter Show on an ongoing basis."

From the perspective of 2008, this transport development task is seen in a different light. Allachin (2008) argued that a better connection, running the rail north to south, routing it through the Olympic Park, and terminating it in Parramatta would have been a much better choice. In fact, his suggestion matches the strategic transport opportunities by the Department of Transport (Figure 5.13). Daniels (2008) admitted that the transport link had always been problematic. Due to the loop's poor connection to the main rail network, patronage had significantly declined in ridership and frequency. In the NSW Department of Planning newest Metropolitan strategy Homebush was identified as one of Sydney's strategic and "specialized centers." Hence, she concludes: "We'll probably need to improve transport links to really function and match [Homebush's] potential. We spent a fair bit of money in the first place and now we have to spend a fair bit of money more to make sure that it works."

Conclusion

Sydney's attempt to align its urban vision with the Olympic requirements fell short on the necessary broader investments, especially in public transport infrastructure. Realizing the vision that Homebush was to mirror Moore Park would have required

public transport connections to downtown Parramatta and fostering Homebush's future growth to downtown Sydney.

The Department of Transport viewed the Olympics as a case study for transport planners rather than an opportunity. "As such, Olympic transport plans may prove to be a valuable case study of the task which every day faces planners concerned with getting the most out of Sydney's transport system for the least expenditure and environment impact" (Department of Transport 1995, p. 54). Viewing the Olympics from such a perspective, the potential such a mega event can bring in terms of its catalytic role is neglected. Sydney did use the Olympics as a catalyst in selected examples: to clean up a long-abandoned area by turning a former brownfield into a beautiful leisure park, and enhancing their airport city-center connection while improving access for communities. However, the influence of the IOC on local plans is reflected in the designation of Homebush as a mainly sports-oriented park.

The long-term transport impacts governmental agencies had promised the public do not exist. No thorough plans for Homebush's use (besides for other mega events) have been made, and the city is still in the process of developing sustainable solutions, forced to work with the infrastructure that had been implemented during and exclusively for the Olympics. The public-transport infrastructure (a rail loop) allows only poor access to the city center for potential adjacent communities and employers, whereas the extensive parking spaces around the Olympic park allow for car access – a good (yet more polluting) and frequently used alternative. In downtown, the Games brought the impetus for a light rail train, probably to provide access for referees and judges to the main shopping district. This train – barely 800 m in length – is now primarily used by tourists; most locals opt to walk the short distance instead.

In retrospect, an integrated planning process building the case concurrently for the Games and the post-Games scenario would have been essential. For that, a separate entity would have been needed, because ORTA was so busy with the delivery of the Olympics, that there was neither staff time nor mental capacity to worry about a sustainable legacy (McIntyre 2008).

IOC's perspective and its influence on hosting cities

Sydney, following Atlanta, was in a special position to prove a car-oriented city could stage successful and efficient Games. For the first time, an Olympic transport advisor, Bovy, was exclusively assigned to evaluate transport and advise on potential hazards and offer solutions. According to IOC's transport advisor, Olympic transport functioned outstandingly during the Sydney Olympics. As a lesson for future hosting cities, he identified 12 factors that contributed to the success of Sydney's Olympic transport (Bovy 2000). These factors all fell under the rubrics of significance for future hosts, transport policy, and transport management and operations. But his report completely ignores the legacy of the built infrastructure and its potential future use. In Grant's opinion, the IOC had clear priorities in inquiring about transport – none of which included legacy:

The IOC had an interest in athlete [and] VIP transport as opposed to the visitor and spectator transport. They had a role and interest in setting the standards of what we [ORTA] had to provide for those athletes, and there was this whole hierarchy of who got what level of service. There was this whole contract the government had to provide to the IOC. So [the IOC's] role was really setting the standard of what they were expecting. They did not set quantities [for cars and buses], they set times and levels of service. It was up to us how to fulfill those. We worked on how to best meet that level of service.

Source: (Grant 2008)

It is abundantly clear that IOC transport working groups and their advisors primarily seek to ensure that transport during the Games works perfectly; the later use of the facilities is left to the city. Frequently, this responsibility is too much to handle for cities under a tight deadline and with only seven years of preparation. Even if cities understand the need to plan for the city's long-term development, the hurdle of winning the bid while ensuring the city's future development seems too high. Black, a member of the strategic planning team, recalls the task at hand when a transport strategy had to be identified for Homebush: “[Potentially, some] commercial development up close. [But] not housing – that wasn't part of any discussion, certainly *not* the understanding of what we were actually trying to design for” (Black 2008). With the IOC's dominating

influence on local planning and its power to decide which city is going to win the bid, candidate cities are extra careful in ensuring the requirements are met.

Athens (2004) – changing a congested city?

Athens, like Barcelona, attempted to use the Olympics as a catalyst for urban change, primarily focusing on its transport system. After the Games, Athens was left with an Olympic legacy encompassing a new airport, more than 100 km of new and modern roads, 90 km of upgraded roads, transportation accessible to all people with disabilities, 9.6 km of metro line extensions, 23.6 km of tram network, 32 km of suburban rail, many new parking lots in various locations, new management systems, modern train stations, and a new, ultra-modern traffic management center (ATHOC 2002, p. 121). The Olympics gave Athens a tremendous momentum to finally move the city's transport plans towards more public transit. Retrospectively, Athens could not have used the Games better than they did – as a stimulus. In my assessment, however, they fell short of using them entirely for the benefit of the citizens and instead gave in to the pressure of the IOC.

Athens, located on the peninsula of Attica on the Mediterranean Sea, is the capital of Greece. On 5 September 1997 at the 106th IOC Session in Lausanne, Athens was elected as the Host City for the Games of the XXVIII Olympiad in 2004. At the time of the Olympics, in 2004, the city counted a population of nearly 4.5 million people.



Figure 5.16: Athens and Attica region

Source: ESRI, ArcGIS Resource Center, World Street Map;

http://resources.esri.com/arcgisdesktop/index.cfm?fa=content&tab=World_Maps

Athens urban and transport history

In the absence of any land-use regulations, Athens has grown uncontrolled, spreading from its port, Piraeus, to its hinterlands and along its coastal areas. The growth has resulted in a colorful mix of incompatible land uses, (e.g., adjacent industrial and residential areas) without social amenities and green spaces. Adequate infrastructure facilities to support a growing metropolis were lacking, “particularly those related to mass transport,” which resulted in traffic congestion and air pollution (Ministry of the Environment 2009). Efforts to improve the situation and develop a comprehensive urban, and regional plan for Athens and its surrounding areas started after World War II. More or less successful attempts, such as the Master plan of 1965 for the greater Athens area and the framework-plan “Capital 2000”, provided the first legislative context and set goals for the city’s further development, which was primarily build around road infrastructure (Ministry of the Environment 2009, Law 2052/92; OECD 2004). Even

though the plans had been established, no significant process had been made until Athens was awarded the right to stage the Olympic Games. As Stathopoulos (2007) believes: “Atlanta and Sydney did not need the Games, Greece needed them.”

Transport before the Games and a new transport planning approach

Because Athens was designed around an extensive road network, it had severely neglected its public transportation network and lagged far behind developments compared to other European cities in the mid-1990s (OECD 2004). The random spread of the road network, according to Milakis et al. (2008), caused major problems for the operation of Athens’ public transportation system that was mainly based on buses.⁶⁹ Additionally, there were two railway lines operating, connecting Athens to other Greek and European cities. Inner-city residents were served by a metro system consisting of a single line (Line 1).⁷⁰

Calling for a fundamental approach in 1996 to remedy current traffic conditions, the Greek government established the Attiko Metro S.A., tasked to expand the current metro line into a network for the Athens metropolitan area by 2020 (Attiko Metro 1997). The metro development study of 1996 set forth a key strategy for Athens’ further development based on the current and expected land-use patterns, projected employment zones, and Athens’ future transport needs. According to Deloukas (2007), all infrastructural developments up to today follow this general transport plan.⁷¹

The metro development study identified three major problems. First, car ownership in the greater Athens region had seen a rapid increase and led to severe congestion in the inner city.⁷² Second, the number of illegally parked vehicles was

⁶⁹ Two bus companies, ETHEL (buses) and ILPAP (trolley buses), covering a 5000 km network with 7000 bus stops served 1.3 million passengers daily.

⁷⁰ Since 1869, it has connected the port in the south with the city center and Kiffissias in the north, serving 300,000 passengers daily.

⁷¹ As we shall see later, this statement does not hold up under analysis.

⁷² From the first transport study by Smith (1973) to the OAS study (1983) to the metro study (1996), car ownership had almost tripled. In 1996, out of 7 million trips per day, 31% were taken by public transport, and 55% by private transport (including 6% motorcycle and 10% taxis). By 2020, the metropolitan transport study predicted a further 83% increase in car ownership, if no further measures to control this growth were taken.

extremely high (22,000 vehicles per day).⁷³ Third, the public transportation system performed well, but was facing a severe overload (Attiko-Metro 1996b).

To solve these urgent problems, the metropolitan development study issued policy recommendations on how to tackle the task lying ahead and concrete plans were set forth to develop a road and public transport network that could potentially alleviate the traffic congestion (Attiko-Metro 1996b).

The road plan

The road plan called for the completion of four ring roads, in order to relieve inner-city congestion and to serve new developments in the region. Furthermore, upgrading of the congested arterial roads was necessary. In total, the plan called for 187 new road infrastructure projects to be completed by the year 2020 (Attiko-Metro 1996b, pp. 24-33).

The public transport plan

The public transport plan entailed a massive expansion of the metropolitan public transport network. First, it laid out the plan for two further metro lines (Attiko-Metro 1996b, p. 34).⁷⁴ Second, an extensive tram network was to span the central city and extend to the west to Salamina and to the east to Alimos (Attiko-Metro 1996b, p. 37). Third, the commuter rail network would gain a new circular line, connecting the new airport to the city center and serving more distant neighborhoods of Athens (Attiko-Metro 1996b, p. 39).

Transport organizations

Responsibilities for transport development and operations in Athens were divided between the “Ministry of the Environment, Physical Planning and Public Works”, which was responsible for the construction of any type of transport, and the “Ministry of Transportation,” which was responsible for operating all urban public transport systems and networks on the built infrastructure (Athens 2004 1997; ATHOC 2004). Because intensive negotiations and coordination were required among the ministries, the Athens

⁷³ This share comprised 45% of all on-street parking, even though 97% of inner city parking was free.

⁷⁴ Line 2 was to be built from Thevon via Syntagma to Glyfada. Line 3 was supposed to run from Piraeus via Aegaleo and Stavros to the new airport

Organizing Committee for the Olympic Games (ATHOC), which was established in 1998 by Law 2598/1998, was put in charge of leading such negotiations. Athens Urban Transport Organization (OASA) supervises the operation of six transport providers and organizes the provision of public transport services (ATHOC 2004; OASA 2009). From then on, ATHOC, in conjunction with the National Olympic Committee (NOC), was responsible for the preparation of the Games, and required to correspond intensively with the IOC, from which it received direct instructions (Alexandridis 2007).

For transportation, a Transport Division was established within ATHOC, which proclaimed its mission “to ensure effective and efficient delivery of transport services to the Olympic and Paralympic families and to the spectators of the Athens Olympic and Paralympic⁷⁵ Games while securing optimal financial results and minimum environmental impacts” in its Olympic Transport Strategic plan (ATHOC 2001). The person placed in charge of this division was Protopsaltis, who considered a clear strategy and an integrated transport approach to be essential for the Olympics, and for any mega event, to be successful (Interview, 2007).

The Olympic Games plan

The Pan-Hellenic Federation of University Graduate Engineer Civil Servant Unions and independent writers argued that the 2004 bid plan lacked feasible technical solutions to obvious problems, such as traffic congestion, and assigned an inadequate budget (Pan-Hellenic Federation of University Graduate Engineer Civil Servant Unions 2001). Overall, the “planning process [for the 2004 Olympics] seems to have been addressed very superficially” (Telloglou 2004, p. 33).

Land-use choices and Athens’ transport vision

For the 2004 bid, ATHOC decided, partly driven by the locations of existing sports venues, upon two major competition sites: the OAKA complex, located in the north of Athens, and the Faliro complex, located in the south close to the Piraeus port (Papadimitriou 2004). The Helliniko Olympic complex, located by the old airport, was added after Athens had won the candidacy to avoid potential conflicts with existing town

⁷⁵ Olympic Games for the disabled.

planning legislations (ATHOC 2005). This decision, so Telloglou (2004) argues, had a tremendous impact on further development of the city. In moving the stadiums to Helliniko, the construction of a public-transport mode became inevitable, because the “IOC was not satisfied with [access being provided solely by private car] and put pressure [on ATHOC] to create [a public transport option]” (p. 180).

Table 5.4: Barcelona’s four Olympic areas

	(1) OAKA	(2) Faliro	(3) Hellinikon
Area in Fig. 5.17	North	southwest	southeast
# of venues	10	10	7
# of sports	6	4	6

Source: compiled by the author from (Papadimitriou 2004)

Further sporting facilities were located along the coastal lines to the east and west of Athens and its hinterland. (All venues are marked by the purple areas in Figure 5.17.)

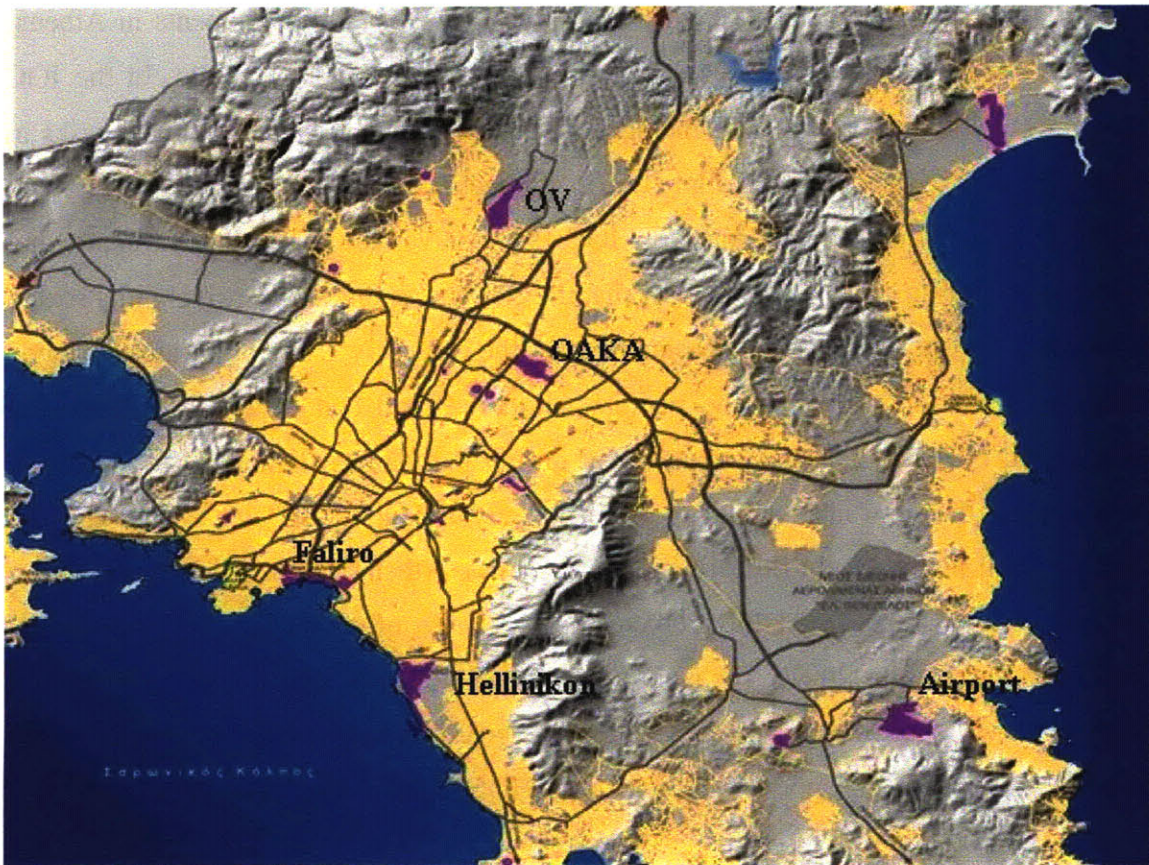


Figure 5.17: Olympic Venues Athens (2004)

Source: (Papadimitriou 2004) modified by author

The Olympic Village (OV) was built in the north of Athens, in Parnitha, a beautiful area without an industrial history, but lacking adequate transport connections. Hence, a road had to be built to connect the village to Athens' arterial roads. According to Babis (2007), ATHOC chose this site because it was close to all major roads, Attiki Odos and within a 5km radius of OAKA. Furthermore, it was publicly owned land, easy and cheap to acquire, and, most important, the site was not in a rundown area (Babis 2007). Other options that had been considered were located in the south, which had experienced industrial pollution and still faced severe environmental problems. For these sites to be "Olympically presentable," the entire south would have had to be cleaned up (Babis 2007). The "Olympically presentable" requirement also influenced the selection of the Olympic road network: "we encountered this problem when planning the Olympic route network. You do not want to have an Olympic route passing through a bad neighborhood; you want them to pass through nice ones" (Babis 2007).

These land-use choices set forth the necessity for vast improvements in Athens' road and public infrastructure to fulfill the promises made in its bid file. In the IOC interim evaluation report, the IOC members believed Athens to have two major tasks in order to be able to handle the Olympic traffic: alleviating congestion in the inner city and solving the problems with airport access (IOC 1997). Given the current infrastructure and traffic conditions in Athens, it was clear that the city had to invest extensively in a strong north-south transport connection passing through the inner city⁷⁶, a public-transport mode along the coast for spectators and visitors, improved road connections to all selected venues, and efficient transport management during the Games (Dimitriou et al. 2004). Furthermore, the new airport had to be efficiently linked to the city centre and the Olympic road network. "In preparing for the Games, Athens had a huge transportation problem at hand, and faced the tremendous challenge of preparing the city for the Games" (Frantzeskakis 2007). The planner's approach to tackle this task seemed to be on target as the Athens transport division states: "the goal was to maximize the legacy of the Games to the Athens transportation system" (ATHOC 2004, p. 6).

⁷⁶ The important north-south transport connection that was needed for the Games already existed in the form of the only metro line operating at the time of the bid (Line 1 in figure above). Conveniently, it connected two of the three main Olympic complexes, OAKA and Faliro.

Preparing the city for the Games

Even though the need for development was clear, in the first 3 to 4 years Athens barely made any progress in fulfilling its bid promises and implementing the necessary infrastructure (Frantzeskakis 2007). Olympic preparations were stalled by inter- and intra-agency feuds between the ministries, because responsibilities for building and running the infrastructure had not been clearly assigned before the bid (Alexandridis 2007). Other sources (who wished to remain anonymous) claimed in an interview (2007) that construction companies purposely delayed public works in order to increase their payment. As a result, it was feared that the hasty construction led not only to increased costs but also a significant decrease in the quality of the projects delivered (Pan-Hellenic Federation of University Graduate Engineer Civil Servant Unions 2001).

These delays did not remain without consequences. Because Athens lagged greatly behind its implementation schedule, the IOC showed Athens the “yellow card”.⁷⁷ The influence of the Olympic Games on preparations was seen as a dominating influence and perturbation of the city development process.

Interviewee: “We (Athens) got blackmailed during the Olympics.”

Interviewer: “What do you mean by ‘blackmailed’?”

Interviewee: “We [Athens] were given the yellow card, which means: DO whatever WE [IOC] want!”

Extract from an interview with an academic involved in the planning process, who preferred to remain anonymous, September 3, 2007.

The imminent threat of losing the Olympics led to an internal restructuring process and replacement of some of the people who were running the Olympic operations. For Stathopoulos, this step was crucial. “If she [Gianna Angelopoulou-Daskalaki] had not taken office, the Games would have gone downhill. It is a matter of the right people at the right time with strong political support. “

The delay of certain Olympic-related construction projects resulted in the need to complete them in half the time originally allocated. The following years and months leading up to the Opening Ceremony of the 2004 Olympics became a race against the

⁷⁷ A yellow card means that the IOC feels the successful staging of the Games is in danger. A red card, then ultimately means that the Olympic Games are given to another city (Frantzeskakis 2007).

clock, which came to be famously known as the Syrtaki principle⁷⁸. “Consequently, many compromises had to [be made] in order for everything to be ready on time” (Alexandridis 2007, p. 9).

Necessary public transport infrastructure

In the following years Athens developed new infrastructure for its public transport system, as the bid file had proposed, while all transport agencies renewed their rolling stock (Kalapoutis 2007; Patrikalakis 2007).

Table 5.5: Athens’ public transport modifications

Metro	Suburban	Tram	Special bus network
Lengthening of platforms for Metro line 1	New suburban rail ⁷⁹ connecting the center of Athens to the airport	New tram line 1 ⁸⁰	Olympic Family bus network ⁸¹
New metro line 2		New tramline 2 ⁸²	Spectator bus network
New metro line 3			

Source: compiled by the author. (Athens 2004 Transport Division 2003; ATHOC 2005, p. 225; Attiko-Metro 1996a).

Necessary road infrastructure

As the bid file had proposed, Athens underwent significant improvements in its road infrastructure (see the Figure 5.18). New highways were built and key roads upgraded to carry the Olympic traffic.

Access from the inner city to the new airport was insufficient at the time of Athens’ bid. A new highway, called Attiki Odos, was planned to bypass the city to its north in parallel to the proposed suburban rail line. It was completed shortly before the Games. Without the road, Chalkias (2007) believes, “the transport for the Olympic Games would have been a nightmare.” The plan for the highway had existed at least since 1992, and the Games provided the catalyst for finally building it (Frantzeskakis 2007). In 2009, Attiki Odos provides a connection between two major interstates in the Attica

⁷⁸ The Syrtaki is a famous Greek dance, whose rhythm significantly increases towards the end of the song.

⁷⁹ Bypassing Athens in its north, the suburban line intersected with metro lines 1 and 3.

⁸⁰ The new tram lines served the coastal venues from Glyfada via the Hellinikon Complex to the Faliro venues

⁸¹ The Olympic network consisted of 22 express routes, which served 33 competition venues running on exclusive bus lines called Olympic priority lines (ATHOC 2004).

⁸² Splitting in Amina, the second line connected with the city centre.

region and remains the backbone for the transportation network of Athens (Chalkias 2007).

Other major road infrastructure was mainly geared to improve access to the competition sites by improving the road capacities of the predicted Olympic transport routes. The decision process on which roads to upgrade, Babis (2007) described as follows: “You have, for example, 500 buses during 8am and 9am in the morning and they have to go there. What road is it? And at this road we have one lane, because for normal traffic you wouldn’t expect more. So you have one lane plus whatever you expect for the Olympics. So what do you do? You build another lane.”

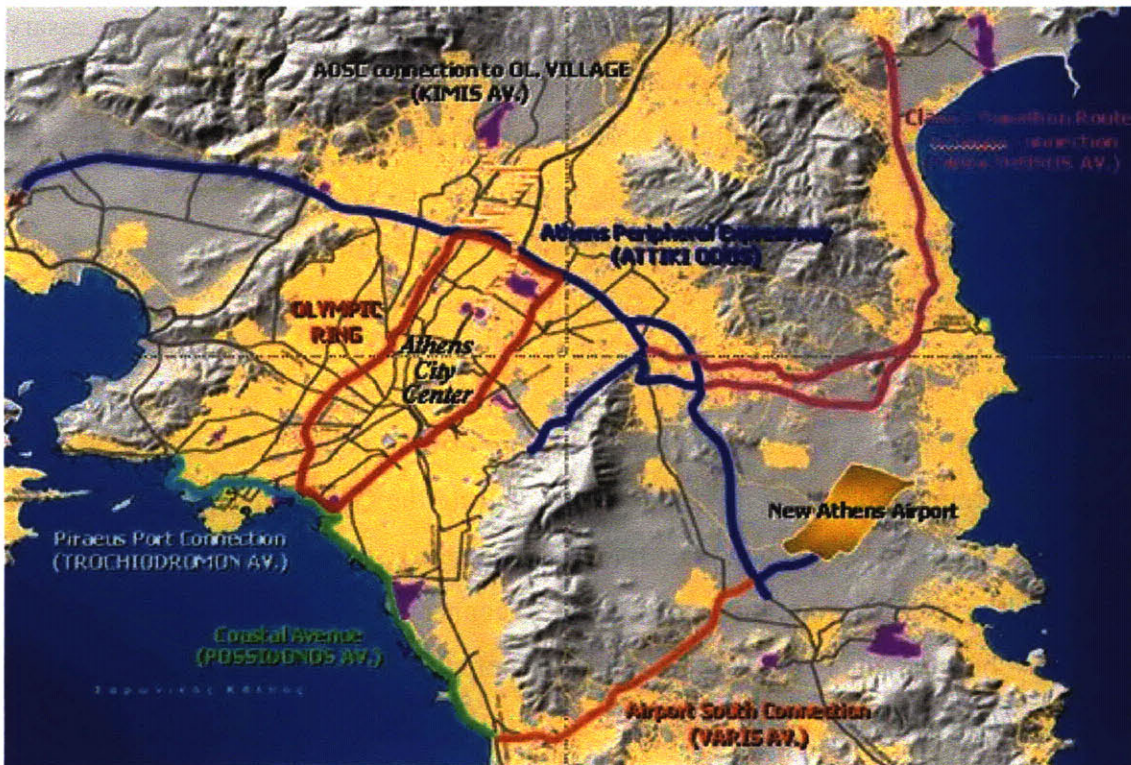


Figure 5.18: Olympic transport major road projects in Athens

Source: (ATHOC 2002, 2004; 2005, p. 225; Papadimitriou 2004, slide 12)

* Legend: Kifisos Avenue provides access to the Piraeus port and connects to Poseidonos Avenue. Before the Olympic Games it was upgraded to a 3+3 lanes roadway. It was the most important section of the Olympic Ring, the main travel corridor for the Olympic Family. Poseidonos Avenue was upgraded to a double lane and received new junctions with Amfithea and Kalamaki Avenue. The road runs in parallel to the newly constructed tramline. Markopoulo Avenue is a newly constructed road connecting the Olympic venues to the city. Varis Koropiou Avenue connects the coastal zone with the International Airport and was upgraded to a 2+2 lane. Olympic Village Avenue is a new road construction connecting the Olympic Village to the National Road from Athens to Thessaloniki. Marathon Avenue is upgraded from the current road to a 2+2 lane.

Especially the ring road (marked in red in the Figure 5.18) was essential in the coordination of the Opening ceremony convoy. The roads had to have a capacity of 200 buses lined up by country without blocking regular traffic (Chalkias 2007). With all these modifications in place, ATHOC's Transport Division believed that these transport changes would lead to a new culture of transport behavior – taking more public transport (ATHOC 2002, p. 121).

During the Olympics – a smooth transport experience

This success was attributed primarily to the coordination efforts among all transport agencies, which functioned virtually as one entity (Gonzalez et al. 2000). According to Frantzeskakis (2007), the Games provided for the first time the necessary impetus for coordination between the Ministry of the Environment, Physical Planning, and Public Works and the Ministry of Transportation, supported by three main circumstances that made possible implementing the Olympic vision: a concrete implementation plan was in place, everyone had a fixed deadline, and the need to fulfill obligations to the IOC provided the necessary pressure.

Public transport

The Olympic transport vision was to give priority to public transport and to meet the target of being 100% on time (Babis 2007). During the Games, a 90% public transit share was achieved, while public transport operated under excellent conditions (Frantzeskakis 2007). Additional shuttle lines connected the metro stations to the Olympic venues (Kalapoutis 2007). Free transport for all modes was provided for Olympic ticket holders.

Private transport

During the Olympics, transport officials believed, Athens had very good traffic management (Kalapoutis 2007; Patrikalakis 2007). The planners believe strict enforcement was essential. “During the Olympics, the traffic police [were] almost the Siamese [twin of] Olympic transport” (Protopsaltis 2007). Strict parking controls in the inner city, high fines for using the exclusive Olympic lanes, and crowd management within a 3km radius around the venues were all implemented (Frantzeskakis 2007).

The role of the media.

The international media pressured transport to perform perfectly during the Olympics. “Transport is very sensitive, very exposed. Olympic buses made more than 10,000 trips. Each one of these trips had a significance of its own. If even one failed to make it - either it was too late, or had lost its way, or had broken down, or was blocked by a car accident - transport was going to make the headlines” (Protopsaltis 2007). Athens had experienced this bitter taste of media criticism in the run-up to the Olympics and Atlanta as the warning example that bad media reports could cloud the international judgment of overall good Games.

The need for intensive planning and flexibility

Flexibility is essential; in the run-up to the Olympics, changes do occur. Even small changes, according to Babis (2007), can have a great impact on the overall performance and operations of the transport system.

Leaving the city with a desirable Olympic legacy?

The positive impacts the Olympics have had on Athens lie definitely in the catalyzing of some infrastructural projects. Through the Olympics Athens was able to significantly improve the infrastructure of its public transport system (Frantzeskakis 2007). As a result of these investments, the managing director of OASA (in 2007), Konstantinos Matalas, states that additional riders have been attracted to the public transport system.

The overall assessment of the long-term impacts, however, is disillusioning: “The effect the Games have had on the city is that, up to 2004, there was proper planning, proper implementation, and a very big improvement in everything. After this improvement, unfortunately, nothing has continued” (Frantzeskakis 2007). In 2008, traffic congestion was severe and traffic speeds were quite slow (Milakis et al. 2008). Essentially, Athens had the same traffic problems after the Games as it had before them. Arguably, though, the current situation might have been worse if no public transport infrastructure had been built.

Frantzeskakis (2007) also admitted that the rushing of decisions made in transport planning for the Olympics caused mistakes. By 2007 six or seven studies were underway

to completely reorganize the public transport system. Overall, Telloglou (2004) summarizes the common confession of protagonists: "The urban regeneration has been the greatest failure in the Olympic works" (p. 179).

"Greece did not realize how big of an opportunity it had because of the Games," contends the anonymous academic involved in the Olympic planning process who was quoted earlier (Professor X, 2007). The following sections try to pinpoint these opportunities Athens seemingly missed in the run-up to the Olympics. The dynamics of the decision-making process are discussed (whenever possible) and the specific influences the IOC had on transport planning are identified.

No planning for after-event usage

The biggest chance Athens missed out on was the planning for after-event usage of the facilities it had to build for the Olympics (Frantzeskakis 2007). Because of the short time frame Athens was left with after political feuds regarding responsibilities, it had only 3 years remaining to prepare for the Games. Given this pressure, there was no time to think about after-event usage (Frantzeskakis 2007). Prime examples of this missed opportunity are the empty Olympic facilities.

Since the Olympics, seemingly no progress has been made on further development of these sites, contrary to the promises laid out in Athens' 2004 bid file - for example, the refurbishment of the old airport, Hellinikon, where the second largest Olympic complex was located. In 2007, the old airport was still undeveloped. At OAKA, the picture was not much different: dried-up water fountains, empty sites, and no tourists.

The loss of integrated planning

All Greek planners interviewed expressed a continuing wish that the coordination structures implemented during the Games would have been kept after the closing ceremony. Gaining the right to host the Olympics had provided the city with a common vision through which it integrated the metropolitan planning process and was able to coordinate efforts among all agencies. The power to implement such vision and communicate it effectively to the people materialized in the run up to the Games. Protopsaltis (2007) summarized the change: "our country lacked the background of team work and cooperation. The Olympic Games brought that into play, very strongly. And

because of it, we were successful.” The Greek planners envision a metropolitan planning agency in charge of coordinating among agencies while integrating land-use and transportation planning efforts across all transportation modes.

The main reason, why the coordination efforts can not become a permanent reality for Athens, so the Greek planners believe, lies in the existing political structures. In an interview with an academic involved in the Olympic planning process, who prefers to remain anonymous, he said

The Ministry of Environment and the Ministry of Public Works are ONE Ministry, it is so obvious that this cannot work. What should be done, is to extract the Ministry of the Environment out of the Public Works one and unite the Public Works with the one for Transport. This will never ever happen in Greece. And you know why? Not only because the Environmental heads are morons.... no, no one wants to lose power in politics, this is why it can not work.

The same ministerial restructuring process is also supported by Deloukas, because currently, he argues, there is little cooperation among both ministries and their planning entities (Deloukas 2007). Communication per se, only takes place at the highest level between the two ministries (Babis 2007). This lack of coordination originates, so Sermpis (2007) believes, in the lack of a common policy.⁸³ A lack of resources planners saw as a further reason for establishing a metropolitan entity (Babis 2007; Kalapoutis 2007; Protosaltis 2007). A lack of accountability in the existing political system is an additional barrier to realizing coordination. The temporary solution of having ATHOC coordinate between all transport entities had been crucial for the operations during the Games.

After the Olympics the city was left without a vision of how to proceed, and without the coordination structure that had enabled Athens to foster its transport projects. Falling back into the existing structures and old habits, the loss of coordination resulted in a halt in projects immediately after the Games. “For Greece, even an event like the Olympics wasn’t enough to break how we do things” (Babis 2007).

⁸³ The apparent inability to cooperate and integrate is reflected even on lower operating levels. Metro line 1 is operated by a different agency than metro lines 2 and 3.

Road infrastructure and missed environmental targets

Road infrastructure plans deemed to be non-essential for Olympic operations, yet considered necessary for Athens, have been indefinitely postponed. One example is a proposed highway from Piraeus towards Salamina that would reroute traffic currently flowing through the city center and hence significantly alleviate congestion. Three-fourths of the road, though in need of repair, already exists and its refurbishment would cut driving time by one hour as well as reduce pollution in the inner city (Frantzeskakis 2007). This project is still in the planning stages, whereas Attiki Odos has been built, even though both were planned around the same time. Hopes for satisfying the ever-increasing car ownership with the newly built infrastructure for the Games are far away. Since Attiki Odos' inauguration, it has seen a constant demand increase (Attiki-Odos 2007) and its future seems to be predetermined: "[I]t will be just as congested as any other highway" (Chalkias 2007).

Since 1985, the Greek government had been emphasizing the need to protect the urban environment along with urging greater use of public transport and the creation of walking areas (MEPPW 1985; Psaraki 1994). A year after the Games the Athens Olympic Committee claimed that the infrastructural improvements contributed to a significant reduction in atmospheric pollution (ATHOC 2005). Other voices, however, declared the exact opposite. Organizations such as the World Wildlife Fund (WWF) and independent researchers rated the Olympic performance with regards to the environment as poor, and claimed that the environment never had any priority in the planning for the Olympics (WWF-UK 2004; Zagorianakos 2004).

The failed tram due to a change in plans?

"After the Olympics, let's be honest, the tram has not fulfilled its expectations" said an OASA employee, who prefers to remain anonymous. The cause of this failure was, according to Frantzeskakis (2007), the pressure to finish the tram within two years before the Games. Retrospectively, he admitted that mistakes have been made in the implementation process. Because of those, he argues, the Athenians do not believe in the

tram, and hence they do not ride it.⁸⁴ Problems include the long travel times between various destinations and the city center, and the stop's locations, which had been planned according to the venues. Now the venues are abandoned, no further development has taken place, and thus the stops became useless for residents.

According to Stathopoulos, the tram was intended purely as a hop-on and hop-off between the smaller coastal cities. The tram as a travel option from Glyfada to the center is relatively inconvenient. Even though riding the tram along the coastal line is a pleasant experience, it takes about 80 minutes from its origin in Glyfada to the city center. The same distance can be covered in a 30-minute car ride.

The decision-making process for the implementation of the tram reveals the dominating influence of the Games on local transport planning. Given that the tramway was an absolute necessity for the Games, connecting the venues along the coastal cities (Babis 2007; Frantzeskakis 2007), the pressure was on Athens to implement this public transport option, neglecting other options that might have been better for the city. The anonymous academic involved in the Olympic planning process reports that "the tram line was originally planned to extend to Piraeus, but Bovy and a few others [opposed] that plan" (Professor X, 2007). His statement was confirmed by the minutes of the meeting between ATHOC's Transport Division and the IOC on September 12th and October 3rd 2003 on the global review of the tram project⁸⁵; due to the delays in building the tram, it was considered a high-risk project for the Olympics. Urgent actions had to be taken, focusing on the *immediate* needs to provide tram transport to the venues. Hence, the planned extension of the tram to Piraeus port was pushed back. As of 2008, the tram from the Faliro to Piraeus had yet to be completed.

Silence is being maintained, however, on a far more important change of Athens' original transport plans. In the metropolitan plan for 2020 (proposed in the metro development study of 1996), no tram was proposed along the large stretch of the coastal zone between Glyfada and Amina, on which currently – due to the Olympics - a tram is running. Exactly this stretch connected the coastal venues for the Olympic Games. Sugar-coating of such changes in plans are evident in the statement made by Deloukas (2007)

⁸⁴ As one mistake, Kalapoutis (2007) points out the constant congestion on Athens roads. With no right-of-way implemented for the tram, the travel time was enormous. By 2007, the tram had been given priority.

⁸⁵ IOC Archives / Summer Olympic Games of Athens 2004 – transport (restricted access)

that the tram had been intended to serve both the needs of the Olympic Games as well as the future expansion plan of the city. This statement holds for parts of the lines (from Faliro and Syntagma Square to Amina), but not for the extension to Glyfada. The Olympics plainly brought about a change in routes for the trams.

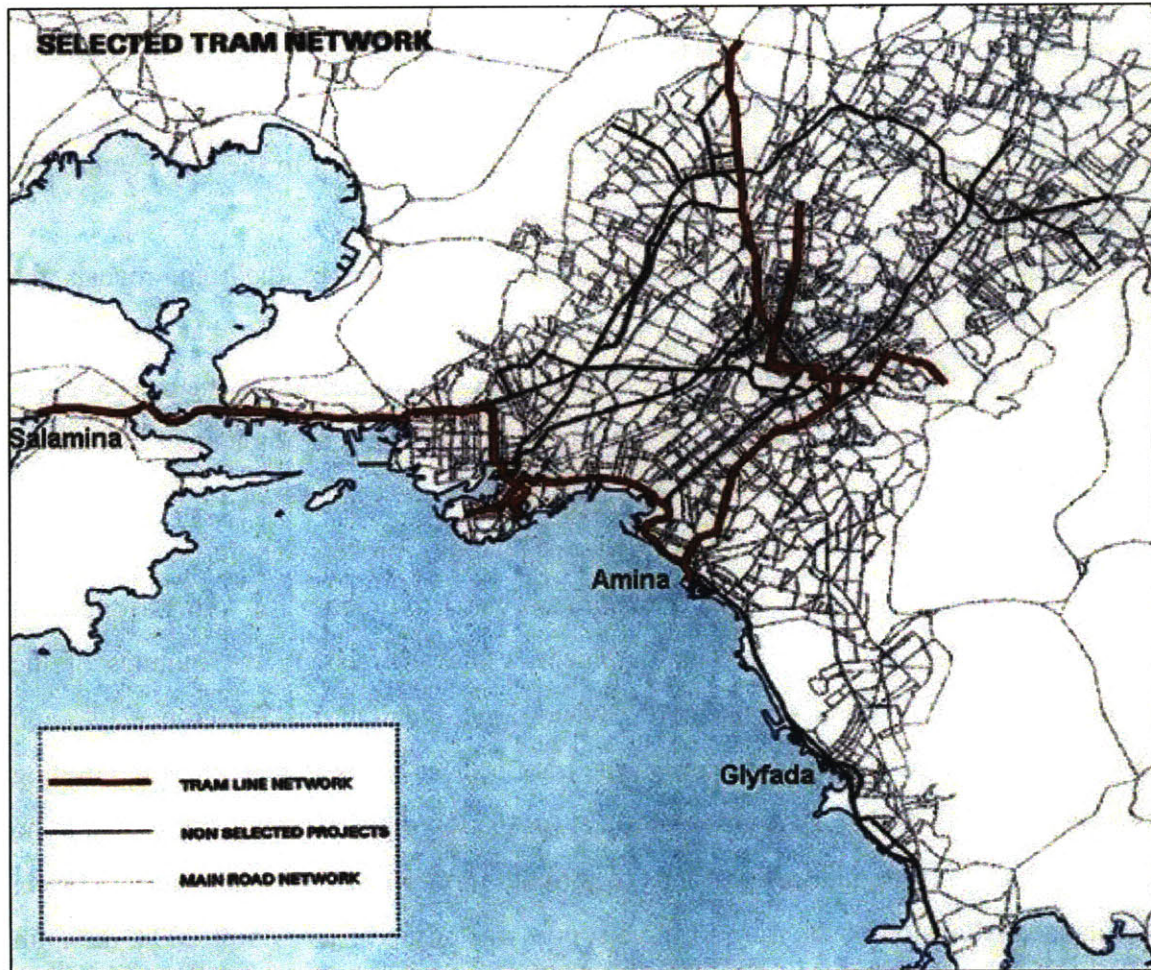


Figure 5.19: Planned tram routes in Athens (1996)

Source: Presentation of MDS (p. 60) in 1999, sent by Deloukas via Email on February 27th, 2009

The original tram development plans (Figure 5.19) had called for a tram extending to the west to Salamina, a city that had been constantly growing but was yet to be integrated in the greater Athens region. Any such tram development has been postponed indefinitely (Deloukas 2007).

The decision taken for the Olympics to develop the tram differently than proposed has to be considered in a wider context: given the failure of the current tram performance

and the halt of further development, will there be further tram development for Athens and the Attica region? Is this failure a result of the Olympics?

The true traffic problem – illegally parked vehicles

Today (2008), the traffic problems in Athens are still severe and it appears the Olympics have just delayed of finding a solution to the real traffic problem: illegally parked vehicles. As Frantzeskakis (2007) sees it, the congestion is inherently founded in not using the existing road space properly and efficiently. The main reason, in his opinion, is the illegally parked vehicles in the centre and the ring roads of Athens. They amount as of 2007 to 30,000 vehicles, frequently parked at crucial locations. “At an intersection, you have three lanes, but only one is used for movement. The other two are taken by illegal parking” (Frantzeskakis 2007).

Vehicles blocking trash removal, vehicles parking in signalized intersections, vehicles stopped with flashing lights at bus stops are common occurrences in Athens. The reasons for such behavior Frantzeskakis (2007) attributes to the lack of police enforcement and blames the politicians for not taking action against such behavior. Their excuse of not having enough police he believes to be invalid, because for the Olympics another 600 policemen had to be hired, who now are deployed elsewhere. The politicians’ true reason, he speculates, lies in their fear of losing votes if they take such action.

Athens, culturally speaking, faces two challenges in reducing such behavior. The first is Athenians’ strong love affair with the private car, still seen as a status symbol (Patrikalakis 2007). The second is the Athenians’ nightlife, which finishes well after public transport has stopped operating (Frantzeskakis 2007). However, Kalapoutis (2007) has argued that the night bus network, which runs in parallel to the metro, alleviates this problem.

For such behavior to change, a combined approach is needed: one that aligns the proper public transport infrastructure and operations with the proper prohibitions. The first, Athens was able to catalyze through the Olympics; the second not, likely due to the prohibitions’ unpopularity with the voters. With no enforcement in place, the situation cannot be solved.

The problem, however, seems to be routed more deeply. In an interview with an academic involved in the Olympic planning process, who prefers to remain anonymous, Professor X (2007) said: "Illegally parked vehicles next to waiting police cars, ministers not using seat belts, not a prime example of how a country should be."⁸⁶ If the nation's role models do not comply with traffic laws, why would the population?

At odds? – four competing transport modes to access the airport

Access to the airport today is provided by several alternatives: private cars and express buses via the Attiki Odos, and the metro line 3 and the suburban rail, both running on the same tracks. This, according to Babis (2007), is economically unsustainable. Competition among these access possibilities is evident, a situation that Professor X (2007), called "ridiculous." Even the IOC felt that the service of the suburban rail and metro line 3 would greatly exceed the demand originating at the airport.⁸⁷

This outcome, however, is largely attributable to the Olympic influence on transport planning. Quite simply, IOC members and Olympic transport advisors did not believe in the suburban rail as a mode of transport for the Olympics. Because the operating company, Proastiakos, was expected to start running its operations only shortly before the Olympic Games (construction of the rail had been significantly delayed), the Olympic transport advisors believed the company would not have enough experience. Even for OASA, it was unclear whether the suburban rail could perform and deliver on time (Kalapoutis 2007). Hence, Olympic organizers as well as public officials doubted the suburban rail could perform to their satisfaction and reliably carry the Olympic peak loads (Babis 2007).

With little time left before the Olympics, a solution was needed - fast, because the connection between the airport and Athens' centre was considered "one of the most crucial things for transport during the Olympics" (Babis 2007). A quick fix provided the extension of metro line 3 to the north, merging with the mostly completed suburban rail tracks leading to the airport. The meeting minutes between ATHOC's Transport Division

⁸⁶ While staying in Athens in 2007, I observed a policeman riding without a helmet on the back of a motor cycle.

⁸⁷ IOC Archives / Summer Olympic Games of Athens 2004 – transport (restricted access)

and the IOC on September 17th and October 3rd 2003 on the global review of the suburban project⁸⁸ shed light on the decision-making process: due to the delays in building the suburban rail, the entire project was deemed “inoperable” (p. 2). Hence, the IOC suggested that “during the Games only Attiko metro shall serve the airport with a very fast service from and to Syntagma every twenty minutes” (p. 3). An alternative solution to the urgent problem was then suggested by the IOC expert Bovy that was implemented in the transport plans for the Olympics. According to a fax sent by the deputy minister Nassos Alevras on October 13th 2003 to Gilbert Felli, the IOC’s Olympic Games Executive Director, subway trains between Doukissis Plakentias and Neratziotissa can be implemented – the alternative scenario that Bovy had proposed (p. 2).⁸⁹ According to Frantzeskakis (2007), the metro people also insisted on extending the metro line with the aim of receiving a large part of the funding available due to the Games.

The current transport set-up, letting the metro line run in parallel with the suburban rail, was not planned. Comparing the original plans of the Metro Development study with the outcomes shows significant differences. The preferred option, as calculated by Attiko Metro S.A., was routing the metro via a northern route converging from the north into the Athens airport (Attiko-Metro 1996b). Hence, the new Olympic metro route – running on a non-selected route (Figure 5.20) - stripped many neighborhoods located to the north of the current rail lines of an option to access the city and the airport via public transport.

⁸⁸ IOC Archives / Summer Olympic Games of Athens 2004 – transport (restricted access)

⁸⁹ IOC Archives / Summer Olympic Games of Athens 2004 – transport (restricted access)

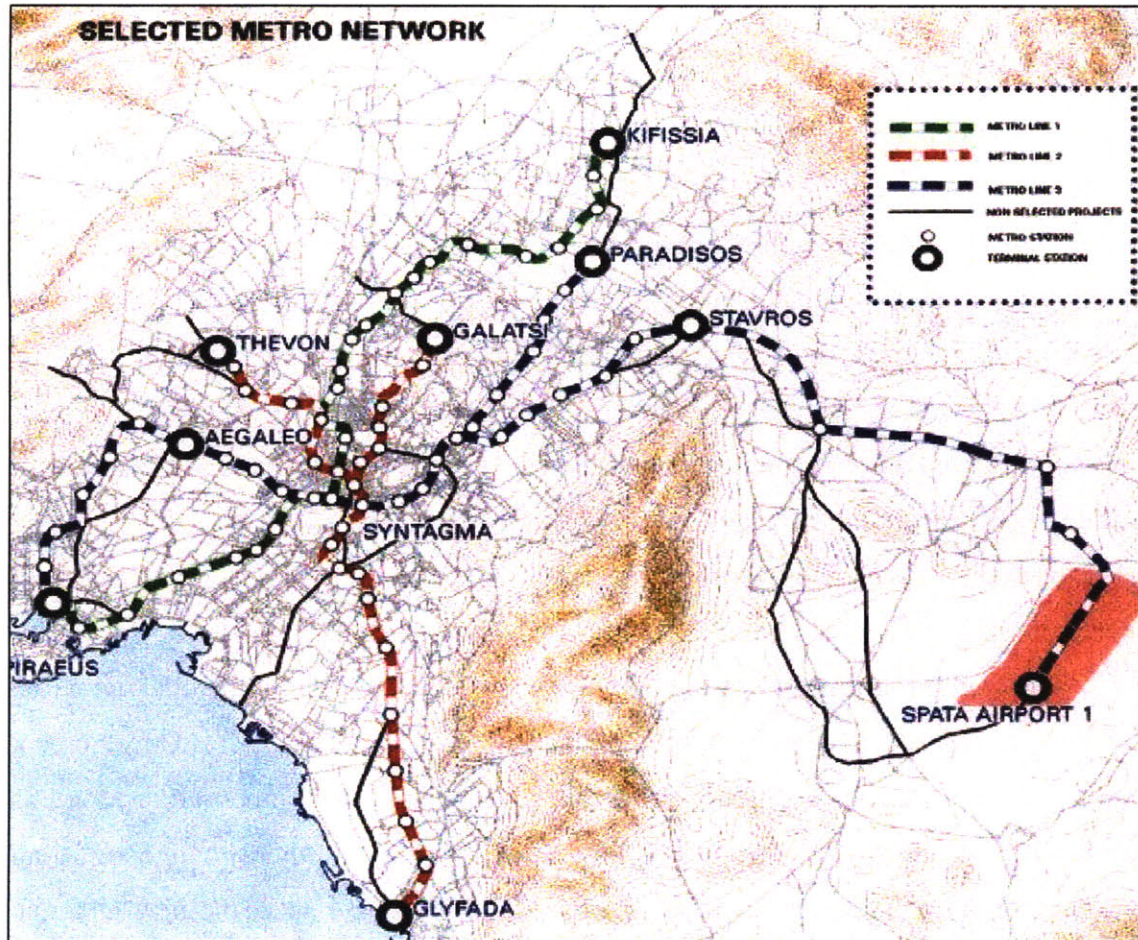


Figure 5.20: Planned subway network in Athens (1996)

Source: Presentation of MDS (p. 59) in 1999, sent by Deloukas via Email on February 27th, 2009

The Traffic Management Center – overbuilt and underperforming

The building of a brand new traffic management center (TMC) is an essential feature for operating the large-scale transport improvement of the Olympics. Or so it is believed by many organizing cities. For Athens, the new TMC was an experiment, just using an opportunity the Olympics presented to the city. Sermpis (2007) describes the decision-making process as follows: “With the Olympics, we had an opportunity to do something like this. So, let’s build it. But we did not really know what to do with it.” The main driver of building the center was, according to Sermpis, the public sector. He describes its attitude as “a kid who can take money from the government, because they were very interested in something like that because of the Olympics.” The entire center was started because of the Olympics with the intent to benefit the city afterwards.

Due to the delayed start of construction, the center started operating just a month prior to the Olympics. The task assigned, and manageable with such short preparation time, was the usage of 500 variable message signs, in order to inform people of ongoing congestion or accidents. Even though for the Olympics 1200 new signal control signs were installed, the staff capacity and knowledge were only able to operate the 500 most important ones during the Games (Sermpis 2007). Even though the coordination of traffic signals would have been important during the Games, it was impossible due to the short preparation period.⁹⁰

After the Olympics, the staff was reduced to a minimum and in 2007 was still in the process of exploring the full potential of the TMC. “You witness failures in operations like illegal parking, traffic lights not working in a synchronized way, because the traffic management centre does not work properly.” (Protopsaltis 2007).

Sustaining operational measures

Sustaining all priority measures, as they were applied during the Olympics would, in the eyes of Patrikalakis (2007), face fierce public resistance; hence, he concludes it would be impossible. However, a few of these new bus lines were kept after the Olympic Games, such as the X-9 serving the airport (Patrikalakis 2007).

Old habits are hard to break

Despite ATHOC’s prediction that the Olympic investments could change public transport behavior, transport planners assess the current situation differently. “In most cases we experienced people going back to their old habits” (Protopsaltis 2007). Unfortunately, with no further enforcements in place compliance with parking restrictions and obedience to traffic laws dissipated after the closure of the Games. “Und diese Chance haben wir verpasst; es gab keine Fortsetzung”⁹¹ (Deloukas 2007).

The IOC perspective on lessons learned from the Athens Olympics

Seminars to prepare cities for the Olympic transport task usually point out the positive aspects, barely warning of the potential pitfalls. Cartalis, who had witnessed the

⁹⁰ By 2007, it had been implemented.

⁹¹ We missed this chance; there was no continuity.

changes in Athens, made claims in a private seminar for the 2012 Applicant City on October 9th 2003 in Lausanne, Switzerland, that do not hold up against the evidence presented in this chapter. He stated that the infrastructural investments made during the Olympics “complied with the Master Plan for the development of Athens” (slide 22). As argued in this Athens analysis, the Olympic transport installations significantly differed from the original Master plan developed by Attiko Metro in 1996; in particular, the tram and metro line 3. Other claims, such as that the Games were aimed to “recover” important sites in Athens, e.g., the old airport of Athens (slide 22), were apparently true, but the outcomes were different. The old Hellinikon airport site has yet to be developed (2008).

Further claims about Athens operations also differ from the opinions of local transport planners. Cartalis (2003) claimed that Athens’ planned legacy became a reality with a well integrated multi-modal transportation system with major post-Olympic usage: buses, metro extension, subways, and suburban rail (slide 22). The opposite view is taken by the former head of transport planning for the Olympic Games, Protopsaltis (2007): “The public transport centre, which does not really have an integration for different modes of transport, buses, trolley buses, trams, or metros. Metro lines 1 [compared to] 2 and 3 are in different organizations, in different entities. This is ridiculous. This is a joke, but it still carries on.” If hosting cities do not pass on the true lesson’s learned and point out potential pitfalls, the same mistakes are likely to be repeated by future cities.

Conclusions

Athens used the Olympic Games as a stimulus to overcome coordination hurdles among agencies and break political barriers that had hindered public transport development in Athens for a long time. No doubt, Athens used the Olympics to bring forward discontinuous change to their transport system. In my assessment, however, they allowed the IOC too much influence on their original transport plans; partially this was the city’s own fault. In preparing for the Games, Athens slacked off and lost three valuable years in its preparation for its future and the Games. Because the IOC saw the Games and their success endangered, they decided to influence the preparations and push

forward solutions that were still implementable within the remaining time before the Opening ceremony.

Different routes for the tram and the metro were built that potentially disadvantaged not only communities adjacent to the formerly planned routes but also other transport infrastructure projects that may never get built due to the low ridership on the Olympics-initiated infrastructure that now exists.

Despite these changes forced by the IOC, Athens managed to catalyze some of the infrastructure laid out in its original urban plan. Building the Attiki Odos had long been planned by the city and improved access to Athens's center. Since the road's inauguration, it has seen a constant demand increase (Attiki-Odos 2007). Yet its future seems to be predetermined: "it will be [congested] just like any other highway" (Halkias 2007).

Hence, the IOC exercised a decisive influence on the city, evidently altering existing urban plans, but unfortunately, contrary to what the government had promised the public, the Games did not solve the city's traffic problems. Indeed, Athens in 2007 faced the same transport problems as it did before: metro usage was stagnating after hitting a peak in 2004 (Deloukas 2007), the tram was officially regarded as not meeting expectations, bus use was diminishing, and the inner city was as heavily congested as ever. One of the major problems was, and still is, the illegally parked vehicles in the city; the city lacks strict enforcement mechanisms. One reason seems to be that politicians fear voter wrath. With no metropolitan planning agency in place, this situation is unlikely to change. "Because Greece is a small country, resources are scarcer. Integration and cooperation is the only way forward, if we want to be successful. The state does not have the courage to integrate [planning] into one operating company. [The Olympic experience] is an example that demonstrates this lack of commitment and vision" (Protopsaltis 2007).

Chapter Six

COMPARATIVE ANALYSIS

Cities implemented various changes into their cities' public and private transport systems with the goal to provide access to Olympic venues⁹² during Games time and to ensure a beneficial legacy for the city after the event. This alignment usually is reflected in the degree to which cities managed (1) to catalyze urban and transport projects manifested in their strategic plan (2) to fulfill their urban vision (3) to meet the goals they had promised the public and (4) to leverage the opportunities the Games brought.

Staging the Games made investments into the transport infrastructure a necessity for cities. Interestingly this new infrastructure shows a similar pattern across cities, which I capture through cross-case comparisons in a model of transport change cities undergo in the run-up to mega events. Hence in this chapter, I support my hypothesis that mega event owners are not mere catalyst for cities but rather constitute an agent of urban change. Besides this new infrastructure, cities also invested in temporary measures. In all four cities, planners implemented numerous common measures spanning management of transit, traffic, and transport demand, such as parking restrictions, park- and-ride stations, and free public transport for event ticket holders. Each measure implemented into the transport system was crucial; combined, they ensured relatively efficient transport operations in most cases during the Olympic Games. After the event, these measures retain the potential to enhance the efficiency of existing transport infrastructure. I do not recount and list all the measures applied, but rather focus on their sustainment within the transport system.

The chapter consists of four sections. In the first, I summarize and comparatively analyze the Olympic transport task for each city. In the second section, I discuss the growing influence of the IOC on the transport planning process. In the third, I discuss the outcomes of such change process by developing a model of change, which shows a similar pattern of outcomes each of the cities experienced in staging the Olympics. This part establishes the IOC as a global force that impacts local processes. Through the

⁹² Olympic venues are usually divided into competition and non-competition venues. Competition venues are stadia, in which the athletes compete. Non-competition venues are places that need special high demand service, such as the airport or the Olympic athlete village.

analysis, I uncover some of the myths, about what the Olympics are claimed to bring to urban regions and their transport systems, and I highlight missed opportunities. In the fourth section, I analyze whether cities aligned their metropolitan plans with the Olympic requirements.

Comparing the Olympic transport tasks

The Olympic transport tasks hosting cities have to handle are immense. Their specific transport operations in handling of the Olympic passenger demands, is crucially determined by the cities' existing infrastructure and the land-use choices for competition venues. In the following section, I provide a short descriptive analysis of each city's land-use choices, transport system size, and respective Olympic transport tasks, in order to shed light on the cities' inherent differences and their individual transport challenges.

Land-use choices and the Olympics

Land-use choices for Olympic venues determine the travel pattern of the Olympic traffic. Interestingly, in interviews, transport planners reported that *first* the venue locations were chosen and *then* transport routes were designed to accommodate traffic and transit flows between all venues, central points of interest, and the city center. These venue locations were primarily driven by pre-existing venues, by the vision the city had specifically regarding the Olympic Village, and by venue sponsors, such as universities, who were willing to pay to maintain a stadium after its Olympic usage. Barcelona wanted to evolve as the new Mediterranean city of Spain and started by placing the Olympic Village in an abandoned industrial district. Atlanta wanted to revitalize its downtown area by placing the Village downtown and building the Centennial Park. Sydney intended to regenerate Homebush by placing the Olympic village adjacent to the area. In contrast Athens' primary focus was to develop a new urban area in its north. Hence, cities have attempted to use the Games primarily to revitalize urban areas treating transport connections as secondary.

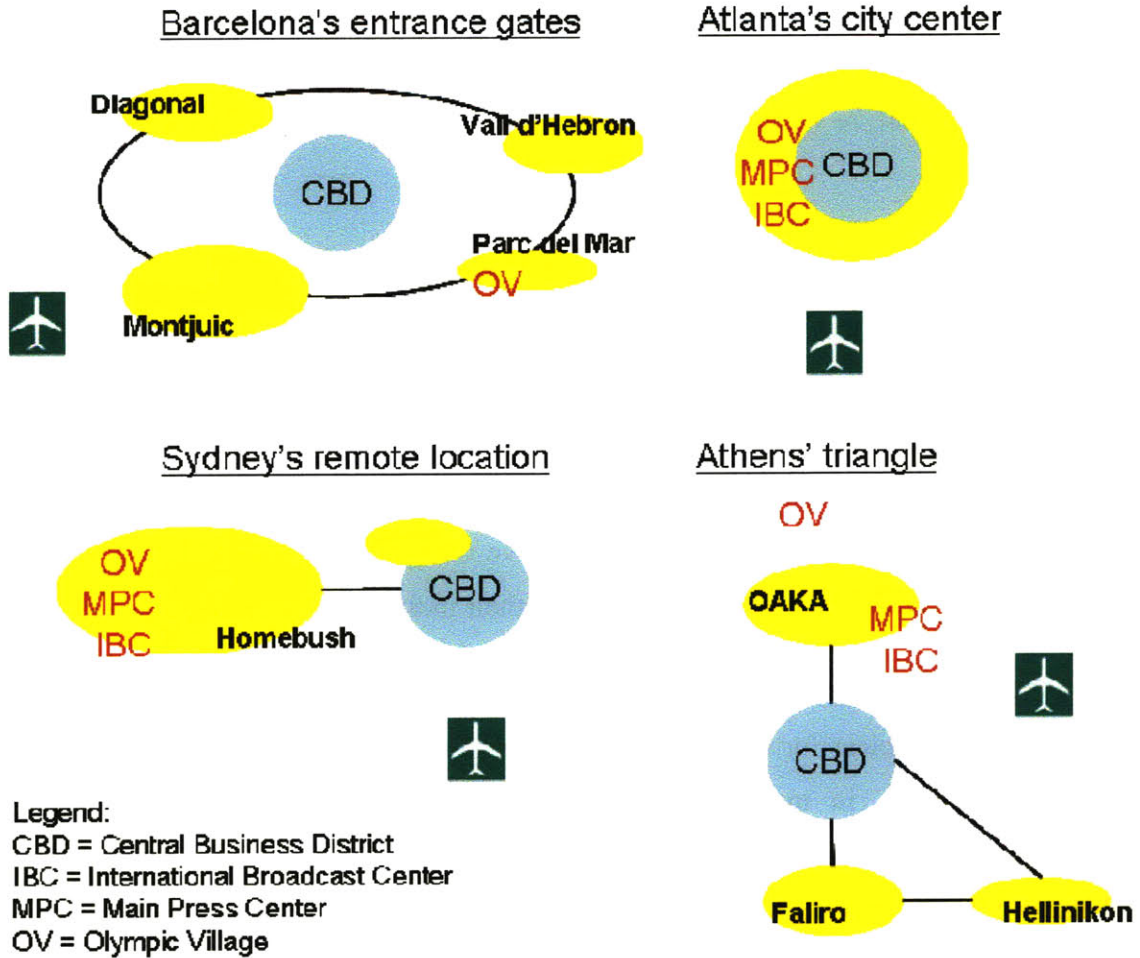


Figure 6.1: Olympic cities' CBD and venue cluster locations
 Source: the author.

As reflected in the Figure 6.1, each city's land-use choice was intrinsically different, and consequently their transport patterns varied greatly. The sizes of the yellow areas reflect an approximation of the expected passenger travel demand to and from each area (Table 6.1).

Table 6.1: Passenger estimates by Olympic area in each city

	Barcelona 1992		Atlanta 1996		Sydney 2000		Athens 2004	
Sports	13	Montjuic	20	Center	20	Homebush	10	OAKA
	7	Diagonal					10	Faliro
	5	Vall d'Hebron					7	Helleniko
	4	Parc del Mar						
Venues	5	Montjuic	11	Center	14	Homebush	6	OAKA
	6	Diagonal					4	Faliro
	5	Vall d'Hebron					6	Helleniko
	2	Parc del Mar						
Passengers on peak day	100,000	Montjuic	400,000	Center	400,000	Homebush	150,000	OAKA
	n.a	Diagonal					75,500	Faliro
	n.a	Vall d'Hebron					75,000	Helleniko
	n.a	Parc del Mar						

Source: NBCSports 1991, BOCOG 1993, ACOG 1993, BOOZ Allen 2001, deFrantz 1998, ORTA 2001, (Papadimitriou 2004), (Transport Department 2000), Archives du CIO / Olympic Games Barcelona 1992 / transport.

Barcelona organized its Olympic transport system in a radial pattern with the Rondas providing fast and easy access to all of them, while avoiding the inner city traffic. Atlanta had almost a 100% match between regular commuter traffic and Olympic Games traffic. According to ACOG (1993), 80% of the Olympic activities were taking place in the inner city due to the location of the Olympic Park, the IBC, the MPC, and 11 Olympic venues hosting 20 sports in the CBD. In Sydney as in Atlanta, the main Olympic activity was concentrated in one center, but Sydney's Olympic transport drastically differed from the regular commuting travel pattern. Regular commuters flowed into the city center, whereas the Homebush area, positioned remotely, required the set-up of completely different travel routes. Athens' location choices form a triangle. The general commuter travel overlapped the Olympic travel flows, with the exception of the Helleniko complex to the east of Athens. For the purpose of my study, it is important to note that OAKA and Faliro lay outside of the CBD.

Most of the time, spectators were able to travel between the venue clusters without switching their transport mode or transferring at stations; frequently, one main line carried all inter-venue traffic. In Barcelona, it was line 3 (the exception was Parc del Mar – line 4), and in Atlanta, the north-south MARTA rail. Sydney ran special rail services between the CBD and Homebush on its Western line, and in Athens metro line 1

connected the main centers (except Helleniko in the east, which required switching from metro to tram).

Transport system capacity and the Olympics

A transport system's capacity, the transport system's daily operation, and prior mega event experience are crucial elements in handling the Olympic peak demands. A proxy for the transport task ahead is the number of tickets sold for Olympic competitions. The Figure 6.2 compares the population of the metropolitan area at the time of the Olympic Games with the tickets that were sold. Atlanta's task was to quadruple, Barcelona's and Sydney's were to triple, and Athens' was to double the usual number of people that had to be moved.

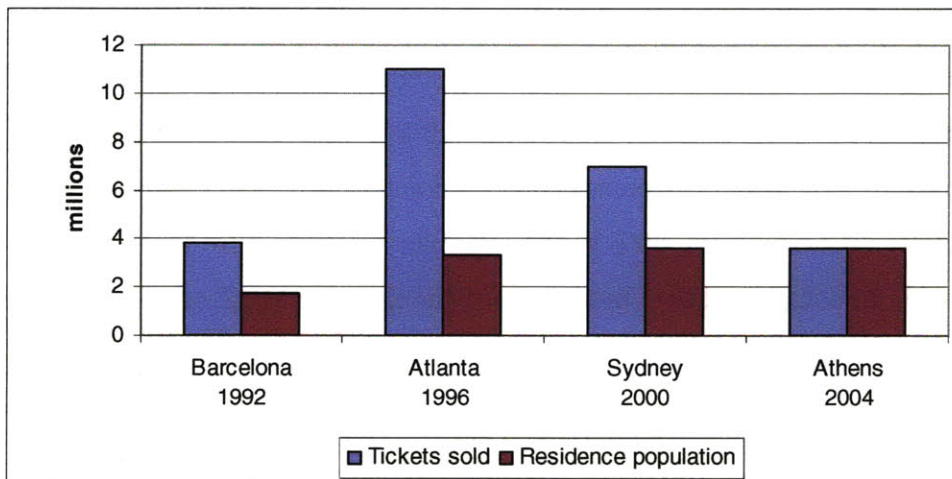


Figure 6.2: Tickets sold and residential population

Source: the author, calculated from Bovy, Currie(2008), Estadística de Barcelona (1992).

From this comparison, it is evident that Atlanta was going to face the highest demand for transport services and potentially see the highest increase in ridership on the city's transport system. Comparatively, however, it had the least equipped public transport system, as shown in Figure 6.3. What we would expect to see, then, is a significant increase in available services for public transport during the Games. Instead, Atlanta offered the least capacity for prospective Olympic riders (Figure 6.4).

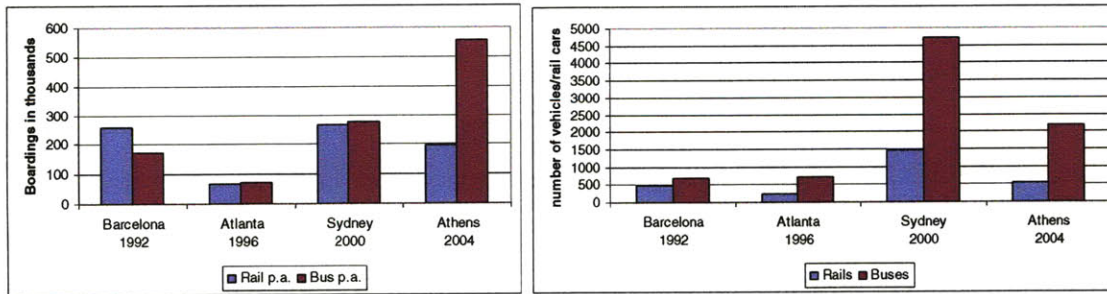


Figure 6.3: Capacity of the transit systems

Figure 6.4: Olympic fleet

Source: the author, calculated from Currie(2008), *Estadística de Barcelona (1992)*.

In retrospect, Atlanta had underestimated the transport volume and was unprepared to handle the Olympic masses.

Dynamics of transport change

I found that the IOC, till now believed to be mere catalyst in the urban change process, is rather an agent of change acting as a powerful initiator of the Olympic vision on the local level. My research suggests that cities frequently succumb to mega event needs and requirements to change their planning priorities. In all these cities, the global dominating force -- the IOC efforts to implement changes ensuring efficient transport during the Games -- has been manifested in local Olympic legacies, which are frequently different from the cities' original plans. Hence, I argue that the IOC exercises a decisive influence on transport planning due to the requirements they impose on Olympic host cities.

Arguably, host cities experienced more or less pressure in providing appropriate Olympic transport facilities. Over the past 30 years, the IOC has gained experience with previous hosts and started creating requirements for host cities to meet; cities have to comply with these requirements and commit to adjustments of their transport systems in their application and bid files. This host contract likely denies cities the chance to grow smarter during their preparations (7 years), because they are locked into the promises they had made during the bidding stage. Through the introduction of the transfer of knowledge (TOK) program, Olympic organizers wanted to ensure that no knowledge gained through experience was lost. Thereafter, the IOC and cities have to undergo a

steep learning curve in the preparation for the Olympics. Because new lessons emerged, cities had to comply with new rules.

As this experience accumulated and knowledge management became more prominent, the IOC's requirements grew substantially and became more stringent.⁹³ While the requirements seemed to be rather lax in Barcelona and Atlanta, Sydney and Athens felt a stronger pressure of transport adjustments that had to be made. Throughout the decade since Atlanta's Games, the IOC has adopted a more rigorous approach to ensure athletes reach competitions and are granted secure rights of way. Because Atlanta's transport performance had been poor, the IOC ensured for future hosts a different approach, even assigning in 1998 a transport advisor (Bovy) to oversee the tasks at hand. Another explanation might be that the IOC did not anticipate any problems (neither in Atlanta nor Barcelona), and hence did not interfere. With that explanation, the interpretation of my findings would be that the degree of change cities are forced to make is directly correlated with the city's preparations and how well they are aligned with the requirements of the IOC. Basically, the more the IOC anticipates problems with the current strategy, the more it will intervene.⁹⁴

Even though staging the Olympics empowers metropolitan governments to expedite the decision making processes, this intervention by the IOC in local transport plans is not well received by local planners: "the IOC is not really interested in [long-term impacts on the city]; all they are really interested in is forcing the Games holder to do a good job. And that often requires partnerships with the holder to pressure their government" (Currie 2008). Because the focus of the IOC seems to be exclusively on the three weeks, without taking the cities' future development into account, poor legacies have remained in cities, e.g., the Olympic requirement to transport Olympic Family members by bus increases the need for cities to invest in highways, which long-term benefits private car ownership. The railway and funiculars investments were a temporary solution sought by cities to accommodate the peak passenger demands, while planners now struggle to accommodate the areas development.

⁹³ The IOC placed successively more requirements on cities as Olympic sports proliferated. For example, the number of competitions to be staged grew between 1992 and 2004 by almost 20%.

⁹⁴ In Athens the lack of planning and late implementation, made the city susceptible to pressure to change the original transport plans significantly.

Maybe out of pride, or for fear of losing public support, cities are reluctant to acknowledge unfulfilled promises or unsuccessful legacies publicly – as Cartalis’ statements in the Athens case make evident, or as Grant’s opinion in Sydney shows. Silence is maintained, especially about the projects that were supposed to bring a positive urban and transport legacy to the city, which are frequently the reasons for the public to support hosting a mega event. Because after the Games the public attention shifts to the next Games, no research or questioning of the legacies has been undertaken and cities are careful about keeping negative outcomes quiet.

If these negative outcomes are not brought forward to at least the future hosts, the same mistakes are likely to be committed yet again. The IOC’s transport advisor earnestly assured me that the IOC was interested in positive legacies for cities, but also agreed that there was a need for past hosts to come forward and identify poor legacies, so that he and other IOC members can be more aware of the possible consequences of the requirements they impose. Ultimately, the power lies within the IOC and so does – to a certain extent – the responsibility for the legacies. The IOC has to share this responsibility, and place some value on those bids that match their Olympic plan with the concurrent metropolitan plan and city vision.

Another pitfall that too many requirements bring to host cities is the almost immediate agreement by hosts to comply. I have witnessed that many planners submit readily to the requirements, barely questioning them or even failing to stand up against the IOC’s desires if modifications are not benefitting the city’s future with the planner’s own expertise. The focus on winning the bid dominates the planning process; so do the IOC’s requirements. As Daniels (2008) summarized the conflict: “Before the Games, the focus is on winning the bid, and once you’ve won the bid, the focus is on delivering the event.”

Future planners for mega events have to be very careful about using the Olympic requirements for the future growth of the city. This requires long preparation time and planning different scenarios, in which the land-use choices and transport investments are considered in the light of the post-Games scenarios. The Games then become a powerful tool in leveraging desirable discontinuous change.

The future of IOC requirements

For future cities, some rules seem to be immutable. Use of cars will be heavily constricted (100% public transport for spectators), an integrated transport management scheme with one central coordination authority is required, exclusive lines for Olympic bus travel, the presence of an Olympic ring containing a majority of venues is preferred, and locations of venues should be chosen close to public mass transport systems (or more specifically, along one major subway line connecting as many stadiums as possible).

Non-static requirements imply that my theory may need to change as more or different requirements evolve. On the one hand, peak demand for spectators is not likely to change and hence the general model of change remains. On the other hand, if the IOC agrees to let athletes travel by rail, other requirements are being imposed, and the model of change may yield different results. In this case, building new public transport infrastructure rather than private roads would be stimulated.

Other world occurrences also have influenced Olympic requirements. After 9/11 for example, security requirements, specifically for transporting athletes, were revised. Additionally bus screenings, individual body searches were required by the IOC, whereas the USA required that a separate team of their own would secure the paramount of the airport and Olympic village. This impact has been most evident in the Games directly subsequent to 2001, and only now are those requirements being slightly lifted due to the immense efforts and costs cities have to undertake.

Model of urban and transport change

Transport changes the Olympics brought to hosting cities have resulted in a similar pattern of outcomes. Conversely, though, each city originally had set very different goals. Barcelona wanted to evolve through the Games as the new glorious Mediterranean city - as an equivalent to the capital of Spain, Madrid. At the other extreme, Atlanta simply wanted to host the Games. Sydney intended, through their proclamation of the Green Games, to change the mindset of the public towards greater caring for the environment. Athens proclaimed its goal as to solve the "traffic mess" in its inner city through heavy transport infrastructure investments stimulated by the Games.

The following sections analyze these transport changes suggesting a model of change cities undergo when staging a mega event.

1) Improved airport-to-city-center connection⁹⁵

The airport-to-city-center connection was improved, because, I argue, it was a crucial route in the Olympic transport system that was traveled by virtually all of the Olympic Family members, and most spectators.

Table 6.2: Infrastructure improvements and new services for the Olympic Games

	Barcelona	Atlanta	Sydney	Athens
Highway	improved	Improved	new	New
Rail line	existed	no	new	New
Metro	no	Existed	no	New
Bus service	new	n.a.	n.a.	New

Source: compiled by the author.

Barcelona’s ring road, according to Olympic planners, improved access to the airport. Whereas rail services (Renfe’s line 10) had been operating prior to the Olympics, a new bus service was inaugurated and maintained after the Olympics. Atlanta’s airport was served by MARTA’s rail system prior to the Olympic Games. Highway systems were improved during the Olympic preparation period (ARC 1999). Sydney built a new highway, the Eastern Distributor and a new rail line both serving regional neighborhoods and passing through the airport. Athens built a new highway, the Athiki Odos, a new metro line, and a new suburban rail connection, and inaugurated express bus service.

For future hosting cities, these results suggest that airport to city center connections will be upgraded, because they represent a vital link in the Olympic transport system.

2) New expressways and additional lanes for roads that carry Olympic buses

All four cities significantly upgraded their road systems. This upgrading spanned from building new highways, to adding shoulders or lanes to the existing roads, to

⁹⁵ Additionally Olympic city airports underwent significant expansions in the run-up to the Olympic Games. Barcelona, Atlanta, and Sydney added a new international terminal; Atlanta added a new, and extended another, runway; and Athens started operating a new airport just before the Olympic Games. As the entrance gate to the city, so planners argued, the airport was giving the first impression to visitors, which should be welcoming, clean, and efficient – everything a modern city should represent.

repairing deficiencies in the old road system. In this section, I propose that precisely those roads were upgraded that were expected to carry Olympic Family and spectator buses, whereas other road projects, not carrying Olympic traffic, received lower priorities.

The most striking features of temporary alterations to the city's transport system are the two Olympic bus networks.⁹⁶ Both bus networks are added to the regular public transport system of the city. Their routes vary across the cities based on the land-use choice for venues, the existing public transport system, and the urban form of the city. The following analysis supports by juxtaposing the upgraded road network with the Olympic routes my proposition of causality: because of the Olympics, these specific roads received upgrades.

Barcelona's upgrading of roads was dependent on the travel routes of the Olympic Family members. The Olympic traffic routes for Olympic Family Members (OFM) ran every 20 minutes primarily on the newly built ring road: from Diagonal, via Vall d'Hebron, the Olympic Village, the port, the Montjuic area and back to Diagonal (COOB'92 1990, p. 28). On the regional scale, these road modifications also match Olympic travel routes, e.g. the new tunnel Vallvidreira (Appendix 2 vs. Figure 5.2).⁹⁷ Atlanta's upgrade of roads seems also mainly guided by the need to ensure smooth rides for the OFM and spectators, e.g., landscaping projects on I-285.⁹⁸ Sydney's upgrade of roads was limited. Overlaying the newly built road infrastructure with the Olympic travel routes, shows that upgrades to these roads were complete during Sydney's candidacy stage (Appendix 4). The crucial link for the OFM route to reach the western competition sites, which is the final section of the motorway M4 connecting Mays Hill and Prospect, was completed (in 1992) shortly before Sydney bid for the Olympics (Zeibots 2003).

⁹⁶ As introduced in Chapter Four, the first one, called the Olympic spectator bus network, has the function to transport spectators across the city and its outskirts to and from various Olympic venues. The second one, called the primary bus network, is dedicated to Olympic Family Members (OFM). This group comprises IOC (International Olympic Committee) members, national heads of state, officials of national sporting teams, the press, and the athletes.

⁹⁷ For further comparisons also see highway of Garraf, the new access road La Garriga-Vic, the new way to Llobregat, and the highway between Girona and Banyoles (Albert 1992).

⁹⁸ Table 5.2 with Atlanta locations of Olympic venues (Appendix 3). For a complete listing refer to (ARC 1996, pp. 8-9)

Athens' upgrade of roads matched the Olympic travel routes almost to 100%. Comparing Figure 5.18⁹⁹ with Appendix 5 powerfully demonstrates a strong correlation.

In conclusion, primarily those roads predicted to carry most Olympic traffic were the roads that were expanded or newly built. Those roads considered essential for the Olympics received priority, whereas others – like the Athens west highway (Chapter Four) - remained on the drawing board.

By comparing the four cities I discern an interesting shift in operations management. The bus networks for the Games of 1992 and 1996, occasionally shared the available road space with private car users, whereas the Games of 2000 and 2004 devoted exclusive lines to the buses transporting spectators and OFM's throughout the entire network. This shift likely was inaugurated because of the unreliable transport services in Atlanta, where even some athletes missed their competitions (Rushin 1996).

For future cities, this exclusive dedication of road space to Olympic transport is likely to be continued. Hence, the need to expand roads along Olympic travel routes is likely to continue. Public transport in the wake of mega events, which goes beyond the lengthening of platforms to increase capacity, requires a more detailed analysis, which is provided in the next section.

3) New measures for road-based public transport

To ensure smooth operation of the road network cities implemented priority measures for buses. If they are sustained in cities after the mega event, they have potential to alleviate traffic congestion and improve transport conditions. A few of these measures have been sustained in cities.

Barcelona implemented a system of bus priority lines in its inner city for the Olympics, some of which cities kept after the Games and were still operated in 2009. Atlanta kept some of the HOV¹⁰⁰ lanes they implemented according to their 2010 transport plan(ARC 1999), and additionally kept some specifically designed for the Olympics (ACOG 1993b). Sydney claimed to have had a good experience with the express buses serving the Olympic Park and therefore implemented Sydney's regional

⁹⁹ These were Kifisos Aenue, Poseidonos Avenue, Markopoulos Avenue, Varis-Koropiou Avenue, the Olympic Village Avenue and the Marathonos Avenue.

¹⁰⁰ An HOV line is dedicated road space for cars with at least two passengers.

bus network. Other voices claim, though, that these plans had been in place for a few years (Warren Centre 2002). However, both sides agree that these Olympic buses were the first to run inter-sectorally in the city. Athens introduced and kept some of their express buses, such as the X9 serving the airport.

This summary shows that some public transport measures were retained as legacies, if cities saw they met a need. They were not sustained because cities thought about how to leverage these temporary measures for the cities' benefit prior to staging the Olympic Games. The variety in outcomes suggests that there may be more ways to plan leveraging these temporary measures for the long term.

Transport Demand Management

The smooth flow of traffic was supported through intensive management of transport demand, with the primary goal of this management scheme being to reduce the city's base load demand.¹⁰¹ Through the reduction of regular riders, each city's transport capacity was partially freed up, making space for spectators and Olympic Family Members.

All cities applied more or less the same measures to reduce the base loads on their transport systems. Special consideration was given to rush hour times, between 7-10am in the morning and 4-7pm in the evening. Most of the measures that were applied focused on encouraging businesses to implement flexible working hours and telecommuting, to relocate workers to branches outside the city, and to enable workers to take vacations during the three weeks of the Olympics. Other measures prohibited certain vehicle types in the inner city and freight deliveries to stores located in the inner city during day time. My interviews Currie (2007), a planner, revealed that this transport scheme alone could result in a base load demand reduction of approximately 20%.

Communication to visitors and residents played a special role in coping with the increased demands on the city's transport system. Organizers wanted to shift as many people as possible from using cars to riding public transit during the Games. The city officials' goal, therefore, was to build public confidence in transportation over the years leading up to the Olympics. Comparison of the intent and messages conveyed to residents

¹⁰¹ The base load demand is the passenger demand for transport services by regular commuters.

reveals a shift from encouragement to fear. Whereas in Barcelona and Atlanta the campaigns were rather informational and residents were “encouraged” to take public transport, in Sydney and Athens the same messages were stronger, with an implication that if people would not follow the recommendations, the city would experience severe traffic congestion and hinder successful staging of the Games.

For future hosts, city officials could think about using the Olympics as a means to introduce and sustain some measures that easily can reduce travel demand.

Traffic restrictions

Road closures, and driving and parking restrictions, were measures applied in all cities, specifically around Olympic venues, the inner city, and key roads, which were predicted to carry higher loads due to Olympic traffic. Special measures to speed up traffic were implemented, e.g., prohibiting left turns. The combination of measures was essential for providing security to athletes and allowing free-flowing access to venues for Olympic Family Members and spectators alike. Overall, cities implemented more or less the same measures (refer to individual cities), but there is an increase in the amount of restrictions and the penalties for breaking them observable over the hosting years of past cities.

In the long term, some restrictions that ease traffic in the inner city could be introduced during Games time and kept thereafter.

4) ITS solutions and new traffic management centers

In general, hosting cities that did not seem to be equipped to handle the Olympics had to upgrade their traffic-management operations significantly. This category comprises Intelligent Transportation Systems measures implemented in the transport networks for Games time with the intent to ease and prioritize traffic flows. After the event, these measures inherit the potential to enhance the capacity of existing transport infrastructure.

Intelligent transport systems for public and private transport

To coordinate and help drivers to comply with both the new Olympic transport network and the existing commuter transport system, traffic management systems across

all four cities were improved. These improvements included the installation of observation cameras along major roads and in close proximity to the venues, information boards about road conditions on highways, and emergency signs for eventual rerouting of traffic. Also, most public transit systems received electronic messaging signs. Because of the Olympics, cities significantly upgraded their incident management systems and were better able to coordinate road conditions, such as by the sequencing of traffic lights.

Traffic Management Centers

In order to coordinate all these measures in a centralized way, all cities opted to build a new traffic management center (TMC). That all of my case study cities established a state-of-the-art traffic management center indicates that significant upgrading in security and coordination between transport modes is necessary for the Olympics. The centers generally seem to be built with excess capacity, and lack the staffing levels or necessary knowledge on the part of the remaining workers to use the TMCs to their full potential. Atlanta for example built a new TMC, arguably also in line with the plans for the new intelligent vehicle scheme. However, in 2009 it was still struggling to find sufficient funding for the center and to maintain it properly. Sydney turned the center over to the Road Transport Authority (RTA) after the Games, and uses it extensively during the Royal Easter Show and other events at Sydney Olympic Park. Athens had too few resources after the Olympics to staff the center and does not use it to its full capacity. One positive outcome, in the transport planners' assessment, however, is the substantial improvements for incident management.

5) Beautification -- new fleets and downtown

While preparing for the Summer Olympics all cities underwent fleet renovations mainly through a rollover of their old fleets towards air-conditioned and environmentally friendlier vehicles. Modernizing of the current bus and metro fleet had by 2009 become a standard feature of preparing for the Olympics (Deloukas 2007).

Furthermore, streets and plazas in the centers of all the cities were made pedestrian friendlier, which Atlanta specifically called "Olympic landscaping." Extensive walkways, pedestrian bridges, and new open spaces were constructed to allow passengers and bikers to access the venues easily.

6) Creating Olympic parks and venue clusters

In the run-up to the Olympics, cities created new public spaces around and in between the venues, such as Montjuic in Barcelona, the Centennial Park in Atlanta, Homebush in Sydney, and OAKA in Athens. After the Olympics, most of these spaces remained empty and unused to a large extent.¹⁰²

Overall Impacts

The Olympic Games have brought a variety of influences to urban regions and transport systems. For the purpose of supporting my hypothesis, I have chosen to highlight the similarities the cities implemented in the run-up to the Games. Referring back to Table 2.2, I attempt to draw up an exemplary table of transport impacts.

Table 6.3: Olympic transport impact

Type	On whom?	Impact	
		Positive	Negative
Cultural	People	Attitude towards public transit changed during the Games, willingness to travel by transit increased significantly	Attitude was not sustained after the Games
Economic	City	Resources and labor power were devoted to public transit temporarily – at the agencies own expense	Resources could not be sustained after the Games; public transit ridership generally did not increase due to the Games
Physical	City	Catalyzed transport infrastructure	Infrastructure exclusively built for the Games
Political	City	Coordination, communication across transport entities, establishment of one agency for public transport	Coordination momentum was lost, coordinating transport entity was dissolved after the Games
Psychological	People	Positive experiences with transport	Negative experiences with transport
Social	People	Car-owners received more benefits out of the Games than public transit riders	

Source: compiled by the author.

¹⁰² Sydney's solution to establish an Olympic Park Authority has been a move to counteract such development.

In Chapter Seven, I will make recommendations based on my findings above and provide suggestions assuming the Games evolve over time how the requirements might change and hence alter this model.

Aligning the Olympic requirements with the metropolitan plan

Academics, researchers, and the IOC have argued that mega events like the Olympic Games are a catalyst for urban change. The purpose of this section is to provide further evidence against their claim, supported by the evidence I have provided so far in establishing the IOC as an agent of change. In this section, I specifically examine whether the four cities aligned the transport requirements with their metropolitan goals. I measure the alignment of transport policies by comparing original city plans published before the Olympics with the actual modifications undertaken in the run-up to the Olympics. I also discuss the urban vision the cities had set out to accomplish through the Olympics: meeting transport goals and leveraging opportunities.

Comparing original city plans with the urban changes cities undertook for the Games, shows the degree to which the IOC has influenced existing metropolitan plans. In Table 6.4, I compare the four cases for the changes the transport system experienced during their Olympic preparations. I distinguish infrastructure developments that had been made in the run-up to the Olympics (completed between the election of the city and hosting the Olympic Games) according to Olympic inspired changes, and catalytic changes.¹⁰³ Olympic inspired changes include those that were significantly altered or built solely because of the Olympics (deviates from, not in urban master plan). Catalytic changes are those that appear in the metropolitan plan prior to winning the Olympic bid.

Table 6.4: Infrastructural developments during the run-up to the Olympics

	Not in urban master plan = deviates from	In urban master plan = catalytic
Barcelona	Escalators	renfe rail tracks
	Subway stop: Vila Olimpica	Rondas
	Funiculars	
Atlanta	Exit I-78	MARTA extensions
		HOV lanes

¹⁰³ Refer to Chapter 3 – methodology – for a detailed discussion.

		IVHS
Sydney	Rail loop	Eastern Distributor
	Monorail Ultimo-Pyrmont	Rail to the airport
	Roads around Homebush	
Athens	Tram (different route)	Metro line 2
	Metro line 3 (different route)	Attiki Odos
	Roads around Olympic Ring	Suburban Rail

Source: compiled by the author.

In the column for catalytic changes, comparatively more roads have been improved than there have been investments into new public transport benefiting residents. Besides the common knowledge that underground systems are more expensive, another hindering factor planners have argued was that the International Olympic Committee pushes for an upgrade of the road infrastructure, because all athletes and VIPs had to be transported by cars or buses. This arrangement, however, is not solely driven by convenience but also by security. Starting already from the airport hosting cities place an emphasis on separating the Olympic Family Members from the general public (Kassens 2005).

In comparison, most of public transport infrastructure had not been in original city plans. In the column for Olympic inspired changes, most of the public infrastructure invested is used for leisure (escalators, funiculars, rails, trams). A strong deviation from the master plan driven by the IOC's influence I witnessed in Athens: because the metro was rerouted to provide the crucial airport to city-center link, it did not pass through suburbs to the north of Athens and stripped the suburban rail of a substantial customer base.¹⁰⁴

Mega events bring catalytic effects to transport projects. With the provision of a fixed deadline and additional funding available, cities can implement transport projects. Thus, I agree with the many researchers who claim that the Games provide an opportunity for urban renewal (Coaffee 2007; Essex and Chalkley 1998; Graham and Marvey 1995). However, in terms of transport developments, I propose that the Games only serve as catalysts for those infrastructure projects that support predicted major passenger movements during the Olympics. Thus, Olympic planners should, in the future,

¹⁰⁴ It is questionable, whether those suburbs will ever receive a metro connection.

align land-use planning for event sites and transport to venues in accordance with the long-term development goals for the hosting city.

Missed opportunities

All the cities had explicitly stated the goal of enhancing urban transport through the Olympics, ideally by keeping those practices that had proven to be beneficial during the event. With daily life returning to the Olympic cities, some practices were sustained, others dropped, legacies discovered, and lost opportunities recognized. With some time to reflect on the Olympic experience, planners have recalled opportunities that they regretted not using. Surprisingly, the same two themes echo in each city.

Coordinating transport planning and operations

The institutional policies implemented during the Games all foster the move towards a more integrated transport system: coordination among agencies, synchronization of transport services, and jointly developed transport and land-use plans. And yet most of the efforts cities had to undertake in preparation for the Olympics could not be sustained. One reason many planners named was the common politician's fear of losing power within their jurisdictions. Another factor was a lack of resources. With the Games moving to the next city, resources were diminished and city budgets exhausted. Institutional changes towards integration and cooperation require a planning process with a post-Olympic vision that cities already have to start during the bidding for the Games. Coordination across transport institutions and one agencies overseeing operations post-event are necessary.

Planning for Olympic legacies

Most cities claimed to have a post-Olympic vision in mind, leveraging the Olympics for a locally attuned outcome. Yet, most leveraged only physical changes – some more and some less successful - and neglected operational ones. For all these plans, however, there seems to be at least one key requirement to make them a reality: pre-Games commitment for post-Games implementation. Yet neither political commitments nor a coordinated strategy beyond the event, were common features in the post-Olympic planning. As an exception to the rule, Sydney established the Olympic Park Authority as

an entity to oversee the further development of the Olympic Park and attract visitors to the regenerated area. Unfortunately, because the Park Authority was established only in 2001, it struggles with the uncoordinated legacies the Olympics have left. As two Sydney interviewees believe, the city now needs to invest even more money into transport, if Homebush is to prosper (Interviews with Dobinson and Allachin 2008). Insuring a legacy beyond the Games is a daunting task, it requires the mindset to leverage every single possibility the Games bring, to expand the planning period as long as possible prior to the Games, and establish an entity that enforces the legacy.

A strategic planning approach has to be adopted already during the bidding stage. The strategic planning approach has to lay out a comprehensive legacy the city could receive out of the Games. A factor that seems to have been misleading cities in their planning for the Olympics is the “short” planning horizon for the Games. Dimitriou et al. (2004) believe that “early planning (3 years in the case of the Athens 2004 Olympics) is necessary [and sufficient] for thoroughly examining all potential operational and planning aspects of the transportation system” (p. 11). However, more seems to have been gained from the Games by the cities that planned the longest for their urban development and just had to take the readymade plans “out of their pockets” or had the functional, coordinated, and integrated institutional set-up in place. Barcelona, for example, started the planning for the Games as early as 1977, whereas the bid was due in 1986.

During the bidding, candidacy, and preparations period an entity has to review the situation consistently. This entity must remain in cities beyond the mega event to ensure legacies are being implemented. It also has to adapt the legacy vision to unexpected changes. As an example, Sydney’s ferry system, planned for the Olympics, had to be revisited after an endangered frog species was discovered during construction of the ferry wharfs. Similarly, Athens metro came to an abrupt halt when ancient artifacts were found during the digging work. These two examples demonstrate the need for a flexible strategy, but also the need for additional time buffers to insure meeting the fixed Olympic opening deadline.

Finally, I would like to draw attention to a set of outcomes all interviewees cited as positive: the experience gained through the event; the increased confidence of being able to stage any mega event; the established procedures that can readily be applied to

other, smaller events; and the better knowledge of workers about the comprehensiveness of the transport system. So far, only Sydney regularly reapplies its knowledge during the Royal Easter Show.

Uncovering the Olympic myths

Widespread beliefs suggest that the Olympics bring significant improvements not only to the infrastructure, but also to operational practices beyond the Games. Switching car commuters to change permanently to mass transit, better integration of the transport systems, and introduction of new ticketing systems are said to be common improvement.

Never switching people permanently to public transit

Organizers and city officials wanted spectators to take public transport during the Olympic Games. Therefore, all four cities implemented extensive measures in public and private transport. To mention a few outlined in previous chapters: park-and-ride facilities with access to public transport, shuttle buses, extended operating hours for trains and buses (24 hours a day), and free public transport was provided to spectators holding an entrance ticket to Olympic competitions. The combination of transit and traffic operations induced commuters to switch.

After the Games, commuting patterns returned to the way they were before the Games. With less enforcement in place and revocation of priority lanes for public transport, traffic reverted to the same old travel pattern in the inner cities. Planners who were interviewed cited decreased levels of services due to limited resources – the standard problem of public transport agencies- as the main reason. During the Games, resources were plentiful and the many volunteers made the exceptional transport performance possible. This argument, however, is only part of the explanation. There is a switch in attitudes regarding public transport during the Games in that people are willing to wait longer for service (Hensher and Brewer 2002). Furthermore, without most of the other measures in place, such as free public transport, driving restrictions, etc., the incentive to use public transport diminishes further. Therefore, it is not the “confidence for public transport” – as planning documents have stated - that needs to be enhanced; it is rather the reliability and service of the public transport system along with economic

incentives, prohibitive regulations, and informative actions that switch users to public transport permanently.

Never leading to institutional change

Institutional change comprises responsibilities, structure, management, and operational policies of transport agencies during the Games, their relationship to each other, and their impact on each other.

Comparing the cities and their institutional changes, I observe a move towards a centralized command, control, and communication structure during the Olympics. Whereas Atlanta had three agencies responsible for transport systems management, Sydney and Athens opted for a single entity. This entity was a special body comprised of various individuals from transport agencies that inherited exceptional governmental power for action, spanning across jurisdictions and all agencies present in the city.

Planning for transport became more sophisticated, more detailed, and more complex in recent Olympic years. It has become common knowledge for hosting cities that the success of efficient transport requires a highly coordinated approach from all planning and transport agencies. Even though transport agencies and planners confirmed the good experience during the event and expressed the desire to continue such collaboration thereafter, regular policies were not implemented. A prime example is the combined ticketing scheme.

Never inaugurating a new ticketing system

With the purchase of an entrance ticket, transportation to and from Olympic competitions was free. The mode was the choice of the spectator. Transport agencies in the region underwent significant coordination efforts to make this possible prior to the Olympics. In the long-term, these coordination efforts could not be sustained. Through 2007, Athens' metro system was made up of two separate companies, which individually charges their users for riding their own lines. In January 2008, Sydney rejected the move towards an integrated ticketing scheme – even though planners cited good experiences during the Games. And Barcelona only recently started implementation of combined ticketing on its transport systems, some 15 years after the Games.

Conclusions

Without doubt, a mega event requires cities to upgrade their transportation system. Despite the current belief, mega events are not pure catalyst. Instead, mega-event owners have influenced cities in their transport-planning decisions and created transport legacies. Some of them are, in my opinion, not beneficial for the city, e.g., public-transit infrastructure that is built solely for the Olympics appeals largely to tourist ridership, e.g., the Barcelona funiculars. Therefore, I argue, implementations and planning have to be considered in a long-term perspective for residents, and no investment can be simply justified as being “good for the Olympics.” With this argument, I take an opposite stand to the claim of Robbins et al. (2007, p. 309): “Even very large-scale festival events cannot justify ... permanent infrastructure enhancement such as new public transport facilities or road construction, with the exception of the largest mega events.” In the case of the Olympics, it seems that global forces – represented as the IOC - dominate local planning decisions. While the IOC exercises a decisive influence on urban projects, local authorities comply with the Olympic requirements despite different urban plans in place. Hence, local forces succumb to global ones, as Beauregard (1995) had suggested in her work.

The influence the IOC has exercised on cities is also reflected in my proposed model of change, a collection of similar transport developments across my case studies in the run-up to the Olympics. Global cities seeking to host Olympic Games are likely to experience the same influences and to undergo the same pattern of change proposed in this chapter. The IOC, however, cannot solely be blamed for undesirable urban change. In the end, cities have to provide the crucial counterpart for such change: their own motivation to stage the perfect transport Olympics in an attempt to display a perfect image to the world. To change the way legacies have fostered roads, innovative ways of transporting athletes have to be found – buses cannot be the only way. The TOK program implemented by the IOC, as of now only perceived as a positive tool in helping cities to prepare for the Olympics, needs to be constantly revisited. Cities seeking advice and just complying with established concepts without questioning them, run the risk that common practice in mega events transport will lead to common mistakes made in fostering transport.

To minimize tradeoffs in planning for the Olympics implies taking advantage of opportunities that the event brings to the city for the benefit of the population. Transport infrastructure and coordinated transport operations is a tangible benefit for cities hosting an event and thus yields the potential for improving the commute and travel within the metropolitan region. In the following chapter, I will provide recommendations on how to leverage the Olympic for urban transport.

Chapter Seven

CONCLUSIONS

Throughout this study, I have argued that mega-event owners exercise a decisive influence on urban and transport planning through the requirements they impose on cities. The IOC has a specific set of goals that it wants to accomplish with regard to transport that are the same no matter which city the Games are staged in. Across cities, the IOC's purpose is the same, its time horizon is the same, its prescribed means of transport are the same. These prescribed means have a powerful impact on the transportation plans of the cities, as evidenced by the case studies presented. Furthermore, I found that these prescribed means led to a recurring pattern of transport change in hosting cities and frequently both created and squandered valuable opportunities for the host city preparing for the event. The evidence of the common urban pattern of past host cities supports my argument that mega-event owners are global agents of urban change and not – as researchers currently assume – merely catalysts for urban change.

Transport dreams and urban realities

In my four case studies, I found that cities pursuing the IOC's transport dream – of highly efficient, integrated, reliable, and all-around excellent transport services during the mega event -- frequently took a short-sighted view. Once the Closing Ceremony ended, cities were confronted with unpalatable urban realities, stemming from the lack of alignment between their own urban vision and the Olympic transport dream. Those included missed opportunities, infrastructural investments with “no future” (high maintenance costs, low ridership), and unforeseen negative outcomes of the planning process. Contrary to the hopes of planners, governments, and residents to use the event as a driver for major transport improvements, transport implementations (except infrastructure) were mainly of temporary nature and led only in a few instances to a long-term benefit for a city's transport systems. The exceptions to this outcome originated from those city planners who took a long view and leveraged the mega event – sometimes against the desires of the IOC.

To help future host cities avoid the pitfalls their predecessors have encountered and instead reap the benefits some gained (or could have), I offer several recommendations in this chapter. Their essence is that if the host city is not prepared with a very clear vision of what it wants to move toward in terms of urban form, if it does not hew to that vision during its bid, both in the land-use decisions and the transportation choices that it makes in order to fulfill the IOC mandate -- then the outcome for the city is going to be short-term changes, likely very expensive, to satisfy the IOC, with minimal positive long-term impact on the transportation system and urban form of the city.

The four cities in retrospect

Cities have a trajectory of change in their urban development which results from the working of the market system, political decision-making, and other factors. The intended long-term future trajectory of change is what can be embodied in a plan. Mega events become a perturbation of this trajectory, which carry the potential either to be an opportunity for discontinuous improvement or a diversion, consumer of resources, and producer of short-term activities. In the latter case, the city is afterwards left to lurch along minus whatever resources and energy it used up in achieving the Olympic goals. Maybe it returns to the trajectory it previously had; but basically, there are no long-term impacts. Alternatively, however, cities that have figured out how to use the currents of the Olympics to build their urban and transport infrastructure can get a big boost that yields lasting benefits.

Barcelona's approach of taking the Olympics as an opportunity to redesign their city was exemplary. Part of this success was that planning began very early – visionary documents reach back to more than 20 years before the Games. In complying with the IOC's requirements for stadiums, the city was forced to add two further areas of refurbishment to the original city plans. The key word here is “add”; while the city complied with the IOC rules, it never gave up its other 10 areas of refurbishment nor did it change its overall vision for Barcelona. In terms of urban form, the requirements of the IOC gave an opportunity to the planners to expand Barcelona's center and redesign the entrance gates to the city. In terms of transport, which followed from the land-use choices, the Games acted as a catalyst for creating the ring road (which had been planned

for 30 years) and other road expansions in the inner city – primarily pushed forward by the desire to present the IOC delegation and athletes with first-rate traveling conditions. The ring road brought long-term alleviation of the traffic conditions in the inner city. In contrast, investments in public transport improvements for Barcelona’s residents fell short because the existing transport infrastructure already served the most important travel routes to and from Olympic stadiums. Hence, other potential metro expansions were delayed till after the Olympic Games.

Atlanta’s example showed that even with minimal resources, Games can be staged. The pre-condition for such an achievement was that plenty of existing stadiums were available for use, and the key transportation approach was to overlay the Olympic passenger flows on top of the daily commuting of Atlanta’s residents. Theoretically, this approach minimizes investments and maximizes the benefits for the residents’ daily commute after the Games. Practically, however, this approach can – and did, according to media reports – result in severe traffic congestion during the mega event. On the one hand, Atlanta remained in control when staging its Games and scarcely “wasted” any money on temporary transport infrastructure. On the other hand, its reputation for transport remained bad even years after the Games. If the organizers in the Atlanta case had paid closer attention to the transport for media and for IOC officials (who influenced the media), then the outcome would have been viewed more positively. Overall, Atlanta planners could have used the Games to further their transport vision: an Atlanta that was known for its modern public transport system. Without the needed funds or public support, such a vision could not be implemented.

Sydney had to dedicate Homebush Bay entirely to sports. In the wake of the Games, Homebush experienced a tremendous development boom in its surrounding areas, which could have been anticipated. Because Olympic planners did not pay much attention to the period after the Games (or predict the boom, for that matter), many opportunities were missed and legacies were built that future planners for Homebush would have to struggle with. The rushed decision to build the train loop resulted in a poor connection to downtown which consequently is rarely used on any regular basis. To keep Homebush lively, the Sydney Olympic park authority organizes frequent events at which ample parking space allows easy and convenient access to the park, and buses are

frequently used. Citywide, the Games did not have the impact they could have had, if land use and transport choices had been made in a manner to foster Sydney's urban vision as laid out in its plans.

Athens, on the one hand, used the Olympic Games to push forward numerous public transport projects, many of which – so planners and citizens agree – would not have been completed were it not for the Olympics. On the other hand, while extraordinary efforts were undertaken to finish the promised infrastructure for the Games on time, the IOC's pressure to implement certain routes using specified modes compromised the original transport plans that the city had envisioned for its future. This change in plans may result in a complete stop of other planned projects due to the success or failure of the differently implemented train, tram, and metro routes.

Each city has gained something and lost something from hosting the Olympic Games. In developing my recommendations, I have drawn upon my comparative analysis, and specifically my model of change to identify the gained and missed opportunities cities have experienced. I offer planning and policy recommendations for leveraging the benefits Games bring to a city – drawing directly on the individual examples from my case studies. The following recommendations highlight that if mega events are used strategically, they can catalyze not only infrastructure but also operational transport operating practices and high-tech information technologies that can significantly improve urban transport in the long run.

Recommendations for sustainable mega events

Based on my analysis, I believe that developments through mega events can be guided towards sustainability¹⁰⁵ -- if not only planners but also city officials view the event as an opportunity for discontinuous change. Therefore, I propose that a transportation strategy contributes the most to urban transport sustainability if it aligns the mega-event requirements with the metropolitan vision by using the mega event as a catalyst for sustainable transport infrastructure along with smart land-use choices for venues and organizing of the excess visitor demand through efficient peak management strategies that can be sustained in cities afterwards.

¹⁰⁵ A definition was given in the introduction chapter.

In this section, I develop recommendations for cities staging mega events as to how to ensure the sustaining of best practices afterwards. However, I caution against blindly adopting all the ideas below. The key to successful implementation lies in a thorough study of the alignment (or mismatch) between the requirements of the IOC -- which are continuously further developed as new lessons (in its view) emerge -- and the individual vision of each city. Usually this alignment is constrained by the existing city infrastructure, the unique culture of the country, and the distinctiveness of the urban plans.

The four cities I have studied are a good set of cases from which to draw meaningful conclusions. However, much more research is necessary to identify completely and understand the broad implications mega events have for cities' transport systems. Given that the present study is a pioneering contribution to a vast topic, these recommendations are provisional and merit review and revision in the light of future experiences.

Policy recommendations for host cities based on the model of change

In this study, I theorized about what impacts the empirical phenomenon of a mega event has on cities. The significance of these impacts is evidenced in former host cities every day. Given this tremendous influence, the number of recurring mega events, and the increasing number of new events and their growing size, there is a genuine opportunity for better informed planners to make a difference in how cities look, and in how they function in the future, by using the mega event as a tool for discontinuous change.

Airport-to-city-center connection

All cities I reviewed upgraded their airport-to-city-center connection (two of them, Sydney and Athens, completely built it). As a result, future hosting cities can expect their airport-to-city-center link to be significantly improved during the run-up to the mega event, because it represents a vital link in the "specific mega-event transport system." For Olympic transport planners, placing new or temporary venues along connecting corridors between the airport and the city center may be a good option, as this direct route will undergo construction or upgrades either way.

New and expanded road network along predicted Olympic travel corridors

For future Olympic transport planners, the pattern of catalyzed road infrastructure in the host cities I compared implies that planning Olympic bus routes during the bidding stages will likely induce the need to increase the capacity of the existing road network along these corridors. Placing venues close to public transport and existing well-maintained roads reduces the need to build new road infrastructure prior to the mega event, as evidenced in the Atlanta case. Careful transport planning along public transport corridors is essential to reducing the need for new infrastructure. If a host city has planned to build a new road, placing venues along such planned improvements will speed up the construction of the road with a “guaranteed” operational start at the beginning of the mega event, as witnessed in Athens.

Measures for road-based public transport

The summary in the previous chapter shows that some public transport measures introduced for the Olympics were retained if cities saw they met a need. However, the variety in outcomes suggests that there may be more ways to plan such a transport system for the long term. For Olympic transport planners, it indicates that the choice of Olympic routes carries the potential to introduce bus priority measures across the city, using the Olympics as an impetus for change. In Atlanta, the introduction of the high occupancy vehicle (HOV) lanes coincided with the Games and they continued to operate afterwards.

For example, bus priority lanes necessary for the Games could be sustained and new bus rapid transit (BRT) lines introduced if they promise to serve a significant portion of regular commuter traffic. Given that surveillance cameras, variable message signs, and incident management technology, especially along Olympic routes, have become a necessity to handle Olympic peak passenger flows, these routes are already set up for BRT and would potentially require – if at all - only minimal additional investment. Here, as in the Atlanta case, overlaying regular commuter traffic with Olympic traffic is beneficial to increase capacity on existing travel routes or, as in the Sydney case, by inaugurating cross-regional bus systems.

Intelligent transportation systems

As hinted at above, for Olympic host city planners the mega event can be a watershed moment for introducing high-tech traffic and transit management solutions; all four cities examined implemented them. At the same time, such investments bear a high risk of future capacity underutilization resulting from shortages of staffing, knowledge, or funding, as seen in the case of Athens. To make the upgrade in traffic management a worthwhile investment, staffing and proper education prior to the Games have to be arranged to sustain after-Games use.

Beautification of downtown

In the run-up to mega events, the city centers have experienced a move towards pedestrianization. Giving priority to pedestrians and bicyclists for the long term is a great contribution to and incentive for sustainable development. Atlanta not only made its downtown walkways pedestrian-friendlier, but also built a new park for its residents.

Venue clusters

Locating venue clusters to stimulate urban growth or regenerate an area is a development strategy frequently applied by hosting cities. Sydney is a prime example of this strategic development approach because it redeveloped the Brownfield at Homebush. In terms of transport, selecting a venue location, in particular venue clusters, implies that transport connections to the area will undergo improvements or even construction of new transport options. Especially big venue clusters generate an Olympic impetus for construction of new rail (Sydney), metro (Athens), and light-rail (Athens) tracks and could thereby foster sustainable transport developments.

Olympic planners have several options for improving transport for metropolitan regions through locating venues. First, it is beneficial if one cluster is located in the CBD because it stimulates the sustaining of temporary event measures for future regular commuters. Second, locating a big venue cluster within a future growth center thereby harnesses the catalytic infrastructure momentum of the mega event. On a smaller scale, single temporary and permanent venues could be located along planned subway or rail systems to make use of the catalytic effect. Third, spreading venue clusters means spreading benefits. As proven by previous hosts and confirmed through the case studies

of Barcelona, Sydney, and Athens, cities *can* assume free-flow traffic conditions for the Olympic Family during the Games due to the willingness of citizens to comply with new traffic and transit measures.

Cities so far have not found a viable solution for using the new public spaces and remaining venues to maximize their own benefit; those who tried have experienced limited success, according to planners. One lesson learned from previous Olympic hosts is that areas adjacent to the Olympic venue clusters *will* experience an Olympic “after-boom,” as evidenced especially in the case of Sydney. Cities have to plan for such an impact prior to the mega event, so that legacies do not hinder the future development of an area or make it car-dependent. Even though I did not seek to explore alternative options in detail (and I will leave finding solutions to future work), the key question to answer with regard to sustainability is: which land uses other than the Olympics require similar high-capacity transport access?

My answer for the time being is that none do, *but a combination of land uses might*. These could include building shopping malls to fill unused open spaces, scheduling festivities in the venues through a “park authority” -- as the Sydney example has illustrated -- and concentrating employment centers in high-rise buildings around the Olympic Park. In contrast, intrusive noise from festivities is likely to cause friction with housing development residents.

Policy recommendations for host cities based on gained and missed opportunities

The three crucial imperatives are: leverage, leverage, leverage! Many opportunities in the wake of the Olympics have been missed because no actions were taken to insure the sustaining of beneficial transport developments the Games had brought to the cities. After the Games were over, cities had lost the vision, the agency wielding temporary power, and the special coordination among transport modes. With this loss, measures were revoked that could potentially have alleviated traffic and significantly improved transport conditions in the city. To forestall this loss, cities should seize the opportunities the Games present by using the Olympic momentum to coordinate transport agencies, to give priority to public transport, and to encourage citizens to use

transit permanently. Hoping for such change, however, is worthless without thorough post-Games plans and guardians who defend them.

Guardians for leveraging the mega event

Guardians are the key for establishing a long-term transport agenda and keeping the good transport practices experienced during the Games. These guardians are strong leaders that leverage the mega event for the city's benefit – sometimes against the IOC's wishes – penetrating different levels of governments and jurisdictions. They are influential figures, who buy into the city's vision, stand up to it against IOC or public resistance, and who are so situated as to be able to influence plans and projects over a long period of time. These guardians can be leading people in a business community (e.g., CEO's of airports) and public figures who remain prestigious over time (e.g., mayors or former mayors, people holding positions in the chamber of commerce, or people who are executive directors in public transport).

Besides this major task, these guardians should secure buy-in from political parties during the bidding stage. Contracts have to be negotiated with government officials and signed on the basis that if temporary measures prove successful during the mega event, politicians will support their continuation thereafter. Setting aside a budget for these or any additional transport modifications necessary for future maintenance of infrastructure, and for the permanent execution of operational tasks is an essential feature in designing these contracts for the long term.

The best way for these guardians to interact is the establishment of an official coordination agency prior to the bid that is solely responsible for planning and securing positive Olympic legacies. This agency should continue to operate after the Games to supervise the implementation of the sustainable legacy.

For transportation, in particular, this coordination element is vital. Crucial for Games operations are centralized planning, communication, and coordination empowering *one* authority to act *across* jurisdictions (ministries, departments, planning councils, etc.). In order for transport to function like clockwork, such a coordinating entity is fundamental and should be sustained after the mega event. For example, ORTA could have taken over public transport coordination in Sydney, or ATHOC's transport

division could have functioned as a link between OASA and the private transport providers in Athens. Yet, given the reduced scope of the transport task, the size of the agency would have to be adjusted to the post-Games operations. All cities had the vision to switch commuters to public transit through the Games. The high public transport usage rates resulted from increased resources and enforcement, but *most* importantly from the mindset of the riders. People in any society are willing to change their behavior and accept new rules if they see the greater good resulting from their action. To sustain continued high transit ridership, this Olympic vision has to be transferred into a sustainable vision for the city.

Comprehensive planning and the long-term planning horizon

A key problem pointed out several times in this study is the short planning horizon for transport: the widespread opinion among Olympic planners is that three years of transport planning is sufficient. To stage the event, this might well be the case, but to ensure sustainable and more comprehensive planning (such as using the momentum of the Games to inaugurate an integrated ticketing system), more time is needed. Therefore, holistic, integrated, and comprehensive planning for sustainability has to start before the bid files are submitted to the International Olympic Committee and has to be geared towards after-event usage.

A further reason for early transport planning is the possibility of testing several alternatives and having great flexibility in decisions. Once the bid files are turned in and the city is awarded the Games, the host city contract prohibits quick and easy changes to the plans.

In the run-up to the Olympics, the rule holds: the closer the Olympic Opening Ceremony, the greater the pressure to meet Olympic demands. With such tremendous pressure on planning, creative alternatives guided by a vision are hard to implement.

Economic incentives, prohibitive regulations, and informative actions

Mega events should be viewed as watershed moments for implementing operational transport measures combined with economic incentives, prohibitive regulations, and informative actions. The incentives the Games bring regarding the management of transit and traffic operations, as well as transport demands, are plentiful,

and the key is to implement new transport measures at Games time with a long-term perspective for the city's future mobility needs. The key question each Olympic transport agency should consider is, which transport operations necessary for the Olympics can improve metropolitan mobility permanently?

Former host cities provide varied examples. With regard to the management of transit operations, there were High Occupancy Vehicle lanes in Atlanta, express buses in Athens, and interregional bus lines in Sydney. Concerning management of traffic operations, state-of-the-art traffic management centers, upgrades in incident management systems, and citywide information and communication systems are a few examples. For the management of transport demand, flexible working hours and fixed freight delivery times exemplify measures that could potentially ease downtown traffic.

Summary

A successful outcome of mega events depends on good strategic planning that minimizes the additional efforts necessary to stage a mega event. Hence, planning should aim for the alignment of the mega event requirements with the strategic plans for city development. The key is to identify win-win elements creatively by testing Olympic scenarios against existing metropolitan plans. It is essential to defend and hold aloft the identified synergies and to use the Games as catalysts for desirable change.

Future research directions and outlook

At the time of writing (2009), the world is in recession and the logical question to think about is whether mega events will ever be the same afterwards. I believe that mega events will continue to take place, as the benefits stemming from them – so countries and cities still believe – are tremendous. As long as cities strive for global status, mega events will continue to be a tool to achieve it – at least for a few weeks in the spotlight.

What is likely to change, however, is the former somewhat easy availability of private and public funds for mega events. For example, ordinary sporting events like baseball games have lost advertisers since the recession started. Advertising, especially during the Olympics, contributes significantly to alleviate the costs; international broadcasters pay for the right to broadcast the Games. On the public side, cities have

been burned – especially Montreal – through a sudden devaluation of money, or – like London, scheduled to stage the Games in 2012 – through a tripling of anticipated costs (from 2005 to 2008). In the case of a continuing world recession, cities would be likely to be more cautious in promising public funds and private advertisers might be more reluctant to spend large amounts of money for advertising during the Olympics. This scenario, I argue, would make my findings even more relevant, because the recommendations I have been presenting are aimed not only at maximizing public benefits, but also at minimizing unnecessary costs.

Another possible scenario for how mega events could change anticipates a move from broadcasting the Olympics on television to individual access to single sporting competitions via the Internet. In either case, the funds raised through advertising will go to purchasing the rights to broadcast. I do not see how this scenario would change the way in which stadiums are built, or people travel. Nor do I believe that the change in broadcasting significantly alters the composition of visitors attending the Games. Overall, any change in broadcasting methods should not significantly affect cities, because only a small portion of this money goes directly to cities.

To stimulate economic recovery, investment in public works is a frequently used strategy. Investments related to mega events thus could be used in bad economic times as strong and motivating catalysts to revitalize cities and their economies.

My findings on Olympic host cities are to a certain extent transferable to other cities hosting other mega events. The impacts of the World Cup or a world exhibition might be smaller in scale, but I believe they will show the same pattern of urban change, because they require similar transport preparations for the peak passenger demands, including officials, athletes, or attendees.

In this study, I focused exclusively on aligning the Olympic transport requirements with the metropolitan transport and urban development strategy of the individual cities. Further work is necessary that captures the true intention of my work and my concept of “alignment”. Beneficial regional development, new employment centers, and environmental protection are likely desirable goals for future hosts. Researchers have to understand and extract Olympic opportunities that can be leveraged in order to realize the broader metropolitan strategy and vision.

Using the mega event as a tool for discontinuous change requires significant public investment. The more fundamental the change being sought, the more money will be necessary. The benefit of using the mega event as a tool is the fixed deadline of the Opening Ceremony, when all projects have to be completed. To ensure the Olympic vision with a great post-Games legacy becomes reality, planning has to carefully acknowledge the potential the Games bring for their city and leverage them to the greatest extent possible.

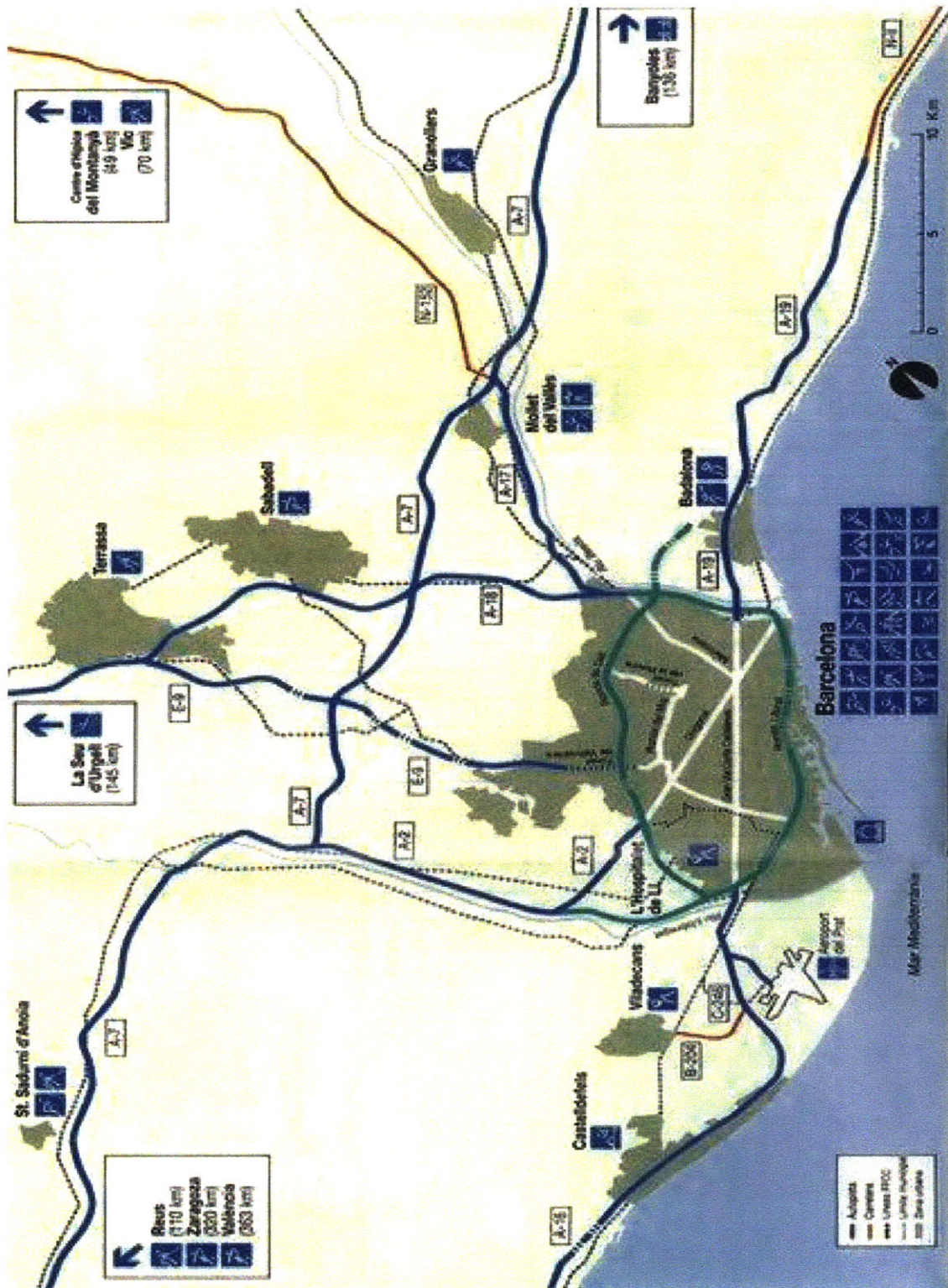
Appendices

Appendix 1: Listing of Olympic Games

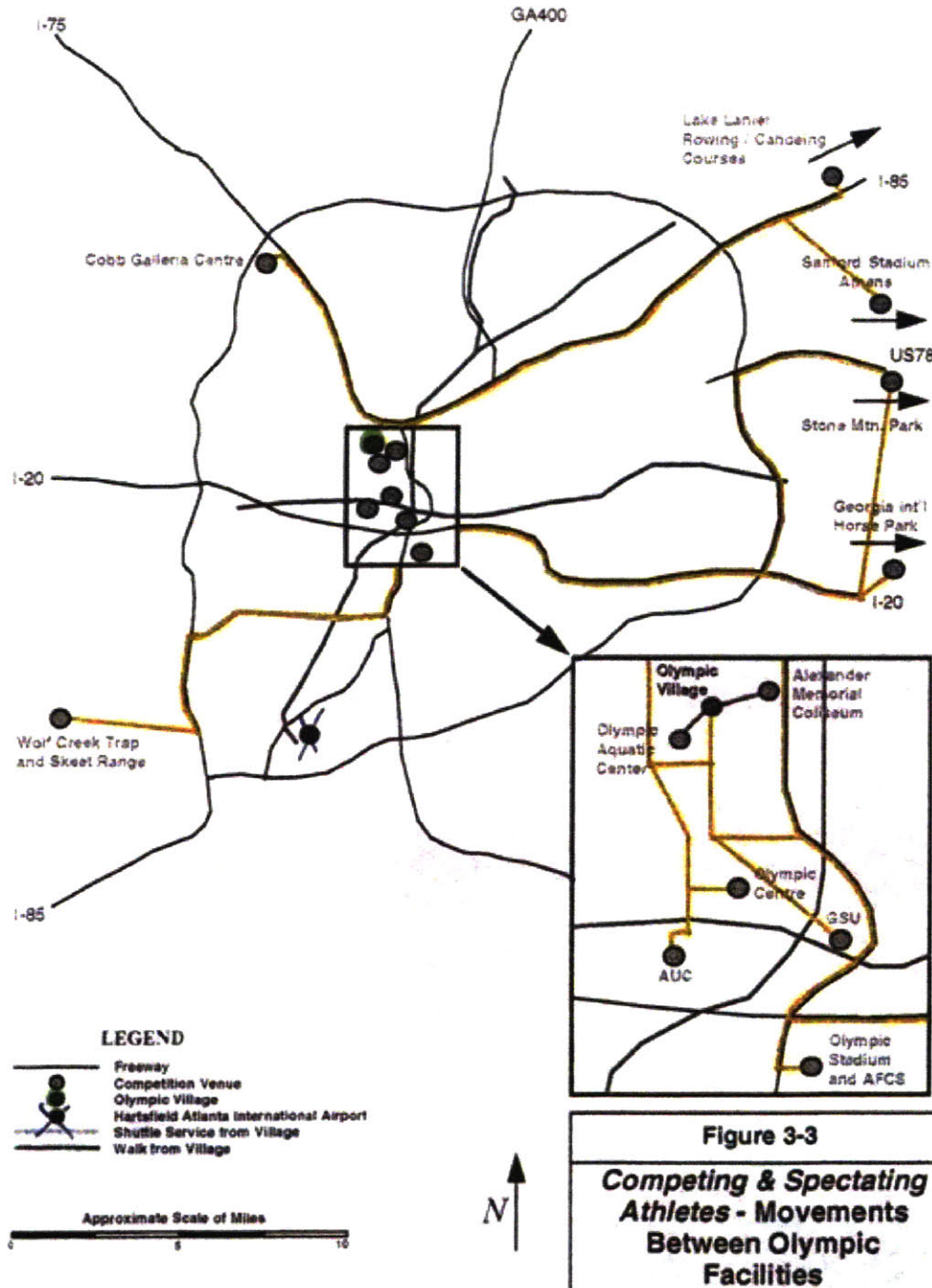
Year	Host City	Country	Visiors
1896	Athens (1)	Greece (1)	700000
1900	Paris (1)	France (1)	?
1904	St. Louis (1)	United States (1)	?
1906	Athens	Greece	300000
1908	London (1)	United Kingdom (1)	300000
1912	Stockholm (1)	Sweden (1)	327288
1916	Berlin	Germany	cancelled
1920	Antwerp (1)	Belgium (1)	349689
1924	Paris (2)	France (2)	612000
1928	Amsterdam (1)	Netherlands (1)	665600
1932	Los Angeles (1)	United States(2)	2,941,057
1936	Berlin (1)	Germany (1)	3769900
1940	Helsinki	Finland	cancelled
1944	London	United Kingdom	cancelled
1948	London (2)	United Kingdom (2)	1247300
1952	Helsinki (1)	Finland (1)	2394099
1956	Melbourne (1) + Stockholm	Australia (1) +Sweden	1.341.500+136.236
1960	Rome (1)	Italy (1)	1436100
1964	Tokyo (1)	Japan (1)	2100000
1968	Mexico City (1)	Mexico (1)	3792350
1972	Munich (1)	Germany (2)	3307100
1976	Montreal (1)	Canada (1)	3187200
1980	Moscow (1)	Soviet Union (1)	5268200
1984	Los Angeles (2)	United States (3)	5720000
1988	Seoul (1)	South Korea (1)	3305950
1992	Barcelona (1)	Spain (1)	3033050
1996	Atlanta (1)	United States (4)	8384300
2000	Sydney (1)	Australia (2)	6700000
2004	Athens (2)	Greece (2)	3581000
2008	Beijing (1)	China (1)	
2012	London (3)	United Kingdom (3)	

Source:(Olympic Museum 2008a).

Appendix 2: Barcelona Olympic venues and travel routes



Appendix 3: Atlanta Olympic venues and travel routes



Source: (ACOG 1994, p. 44)

Appendix 5: Athens Olympic venues and travel routes

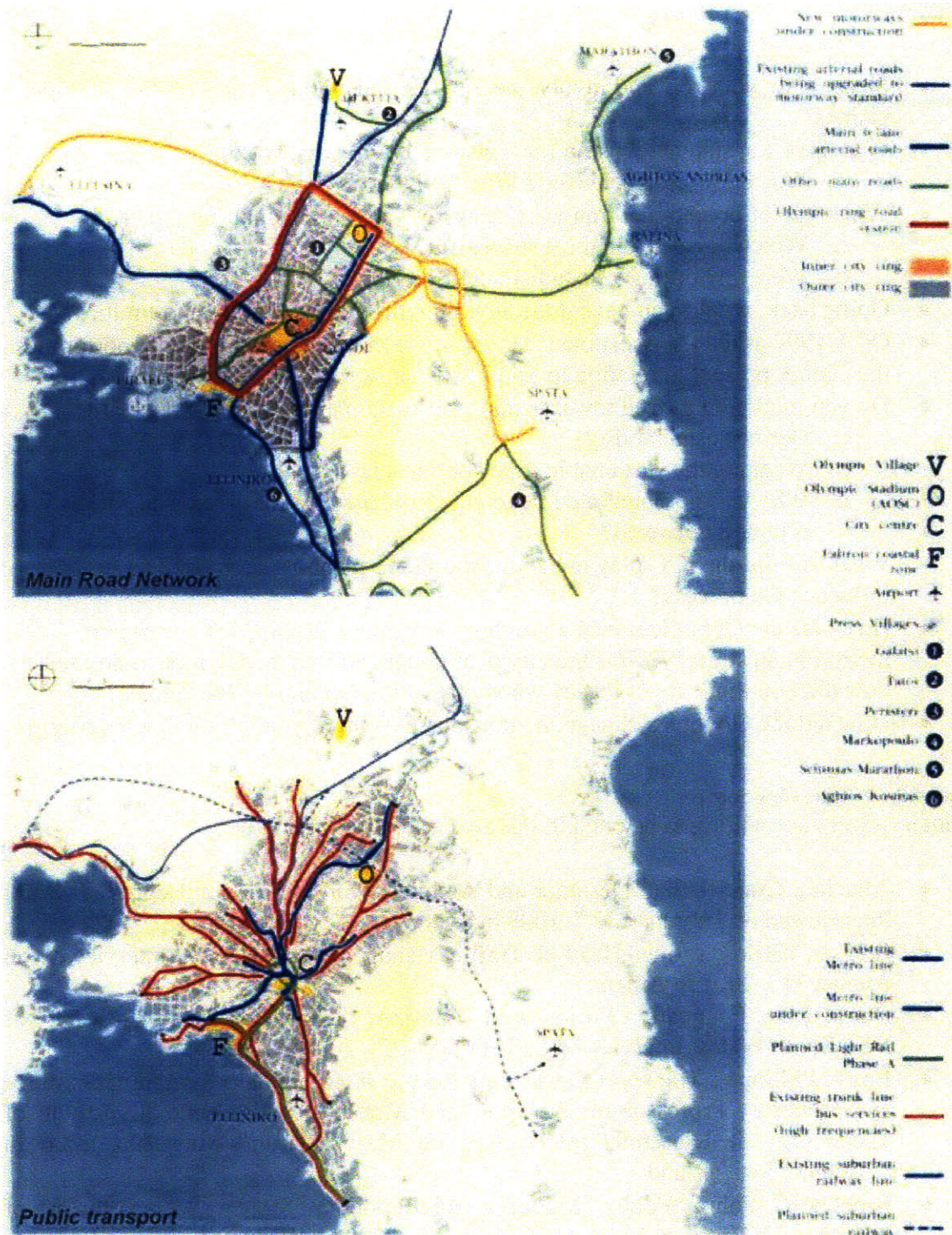


Figure 1: Athens bid file transport master plan
 Source: (ATHOC 2001, 2.3)

Appendix 6: Open-ended interview questions

* interviewees not willing to be cited in this study are disclosed

- Please state your role and involvement in the transport planning for the Olympic Games
- Was there a sustainable vision for transport? If so, what was it?
 - Was that vision achieved? Why? Why not?
- What type of operational transport measures were applied during the OG?
 - Which one was the most successful?
 - Were any of those sustained after the Games?
- Going back, would you have done anything different? Missed opportunities?
- OCA 1997 asked the questions: "How can we make the most of the opportunities the Games present in relation to transport" – how was that followed through?
- Do you think you moved towards transport sustainability through the Games?
 - Define sustainability
 - What are the sustainable transport legacies?
 - Why was not integrated ticketing introduced by the time of the OG as was originally planned?
- What role did the IOC play in the transportation planning process? Did it influence the process?
- How was the Olympic transport strategy integrated into Sydney's transport metropolitan strategy? Was the city plan integrated into the Olympic plans and how did you think about legacy when you were planning for the Games?
- How did the Olympics change the transport system of your city in the long-term?

Appendix 7: Interview Sources

* interviewees not willing to be cited in this study are disclosed

- Allachin, Craig; Urban Designer and Architect working for Six Degrees PtyLtd.; interviewed on February 22nd, 2008 in Sydney
- Babis, Charilos; former Head of Traffic Management, ATHOC.; interviewed on August 31st, 2007 in Athens
- Black, John, Foundation Professor of Transport Engineering at the University of New South Wales; interviewed on February 14th, 2008 in Sydney
- Bovy, Philippe ; Transport Consultant for the International Olympic Committee and Honorary Professor of Transport and Mobility, Swiss Federal Institute of Technology at Lausanne; interviewed on May 22nd and May 29th, 2006 in Lausanne, Switzerland
- Brockhoff, John; Policy Manager, Metropolitan Strategy, Department of Planning, NSW; interviewed on February 21st, 2008 in Sydney
- Brunet, Feran; Professor of Economics at Universitat Autònoma de Barcelona; interviewed on June 12th, 2007 in Barcelona, Spain
- Currie, Graham; Professor of Transportation Planning at Monash University; interviewed on February 22nd, 2008 in Melbourne

- Daniels, Rhonda; Manager Metropolitan Planning, Department of Planning, NSW; interviewed on February 21st, 2008 in Sydney
- Deloukas, Konstantin; Head of Transport, Attiko Metro S.A.; interviewed on September 3rd, 2007 in Athens
- Dobinson, Ken; Transport Planner and Advisor, SOCOG, interviewed on February 15th, 2008 in Sydney
- Dunn, Susie; External relations, transportation planning division of ARC, interviewed on February 17th, 2009 in Atlanta
- Frantzeskakis, Ioannies; Transport Planner and Advisor ATHOC.; interviewed on August 30th, 2007 in Athens
- Grant, Juliet; Manager Transport Planning for the Department of Transportation, NSW; interviewed on February 27th, 2008 in Sydney
- Halkias, Managing Director Athiki Odos; Attikes Diadromes S.A.; interviewed on August 31st, 2007 in Athens
- Hindson, Lisa, Transport and Operations Consultant for the International Olympic Committee; interviewed on June 22nd, 2006 in Lausanne, Switzerland
- Kalapoutis, Anna; Transport Manager, OASA; interviewed on September 3rd, 2007 in Athens
- Matalas, Konstantin, Chief Executive Officer of Athens public transport authority (OASA) ; interviewed on September 5th, 2007 in Athens
- McIntyre, Stephen; Director of Housing and Community Development, Department of Housing NSW, interviewed on February 29th, 2008 in Sydney
- Millet I Serra, Lluís; MBA Associates and leading architect/advisor for BOCOG; interviewed on September 14th, 2007 in Barcelona, Spain
- Pamies, Oriol, Communications officer for Transports Metropolitan de Barcelona; interviewed on September 13th, 2007 in Barcelona, Spain
- Patrikalakis, Dr, Head of public transportation, OASA, former ATHOC member; interviewed on September 3rd, 2007 in Athens
- Protopsaltis, Panos, Planning S.A., Former Head of Transport Division, ATHOC; interviewed on September 4th, 2007 in Athens
- Sala-Schnorkowski, Merce; President of the Economic and Social Council of Catalunya former president of TMB; interviewed on September 12th, 2007 in Barcelona, Spain
- Searle, Glen; Professor of Urban Planning at the University of Technology Sydney, interviewed on February 13th, 2008 in Sydney
- Sermpis, Dimitris V.; Traffic manager working at TMC; interviewed on August 31st, 2007 in Athens
- Stathopoulos, Professor at National Technical University of Athens; interviewed on September 4th, 2007 in Athens
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** Note on unpublished sources: these documents were made available to the author and publication was allowed by permission of the International Olympic Committee (IOC); regular 25-year embargo lifted by the IOC President J. Rogge.*

*** Note on unpublished sources: these documents are only accessible in person; no loans.*

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