

ENGLISH
VERSION

ÀREA METROPOLITANA DE BARCELONA

The Barcelona Metropolitan Area: an indisputable reality

The role of cities is taking on more and more importance all over the world. At the same time, it is increasingly obvious that the static concept of the city, as a territory within a delimited set of municipal boundaries, is becoming obsolete. The big cities are breaking out of these boundaries and are spreading and connecting up with the outlying territory to the point where they become the urban continuums we know as metropolitan areas. To confirm this, all you have to do is look at a map of Europe and see what London, Paris, Cologne-Düsseldorf, Amsterdam-Rotterdam, Berlin, Milan... or Barcelona are really like today. Or you could do the same with Mexico City, São Paulo or Mumbai. In addition to containing the majority of the world's population, cities are the site of most of the economic, social and cultural activities, invigorate and draw together their respective surroundings and are the nodes of a global network of increasingly intensive relations.

Barcelona fits full-square within this modern concept of the city. If we speak in metropolitan terms, it is in order to provide a response to this phenomenon. We need to project this metropolitan reality, articulate it and give it meaning, just as happens everywhere else, but looking for what is specific and singular in the case of Barcelona. The fact of being a

metropolis, a city of cities as we like to call it, has a number of advantages: a wealth of initiatives, a multiplicity of local identities, desirable competition among towns and cities, and detailed local knowledge of the territory.

Most of the major urban areas have set up organisational structures according to models which have various similarities, as one might expect, but also divergences. One of the aspects in which the singularity of each organisational instrument is most sharply defined is the role given to the different units making up the whole. This is something the Barcelona area has been clear on right from the very start: the sum of the different parts must not dilute these parts, but strengthen them and help them to grow. Since the regional development laws of 1987, the metropolitan municipalities have been grouped into two organisations, the Transport Association and the Environmental Agency and, in addition to this, most of them are voluntarily grouped into a Mancomunitat, or Association, which has been the meeting point for local councils to work together and take advantage of Barcelona's dynamism.

The current institutional fragmentation, with the lack of a government commanding a full array of competencies and resources, has a number of drawbacks, such as the difficulty of joint planning and decision-making in various fields of action. For many years now efforts have been made

to secure the co-operation of the social agents. In this regard, the Metropolitan Strategic Plan, which has become a means for reflection and putting forward proposals on economic, social and territorial perspectives, and the guidelines to be followed in order to achieve a better future for the people living in this space, has played a crucial part.

The big wish of the metropolitan municipalities is to have a single metropolitan institution that is well endowed with resources and competencies. The formation of a government by a newly elected left-wing majority in the Catalan autonomous parliament in 2003 opened the door to the hope of reinstating the metropolitan area by means of a specific act of this parliament. However, work on this never got off the ground and so, in March 2006, practically all the metropolitan mayors met together and solemnly approved a manifesto urging the government of the Generalitat to present such a bill. The setting up of a unified body, the manifesto said, would simplify and rationalise the current situation by unifying spheres of activity and competencies. When it looked as though the request would finally be met, the calling of an election before the end of the government's four-year term prevented the bill from going through, but we are convinced that, with the new government in place, it will eventually be passed.

A positive balance sheet of the work done

During this four-year period, the territorial management of works and services has covered everything that has a metropolitan character and meaning. The experience built up over the years has turned the present institutions into real specialists in providing the common front-line services required by the municipalities, particularly local services. The Metropolitan Transport Association is responsible for planning

and managing mobility in an area with a population that makes 700 million journeys a year by public transport. The Metropolitan Environmental Agency is in charge of dealing with the water cycle and the 4,500 tonnes of refuse generated every day in the metropolis. And the MMAMB has specialised in the metropolitan public space, and during this term has executed over 250 works, as well as developing social housing and looking after the metropolitan beaches and parks network, including the huge Collserola Park.

I would like to highlight, also, the creation of the metropolitan magazine ÀMB. This has given us the means to reflect the dynamic reality of the metropolitan world. In short, during these four years, we have worked together to unify each urban nucleus by means of far-ranging public measures of urban renewal and operations to preserve the natural spaces in order to achieve an equivalent quality of life and the provision of basic services for the more than three million people who share the metropolitan area.

And we have done this without losing sight of more ambitious goals such as social cohesion, well-being and general progress. Continuing to provide these services, continuing to set ourselves these goals, is the challenge we accept in looking forward to the next four-year period, convinced that we can do better, either with the current metropolitan institutions or, let us hope, with a new body that, with more economic resources and a higher level of competencies, will make providing services for the public easier and more effective.

JORDI HEREU BOHER
Chairperson of the Mancomunitat de Municipis de l'Àrea Metropolitana de Barcelona

The Metropolitan Area: a cohesive group, shared goals, optimised resources

The name Àrea Metropolitana de Barcelona (Barcelona Metropolitan Area – AMB) stands for a group of institutions which, on the basis of the operational area and competencies of each of its components, sets itself far-ranging goals that go beyond the mere provision of services. These goals, which are of both a structural kind –the structuring of the metropolitan territory, the sustainable organisation of the metropolis into a veritable network of towns and cities- and a social kind –cohesion, well-being, more opportunities, better quality of life- can be envisaged due to the fact that the Area, as an institution, is guided by the principles of solidarity and co-operation among municipalities.

The coalition government agreement signed in July 2003 by the three political groups governing the Metropolitan Area includes these aims and develops them in detail in regard to each of the metropolitan organisations, while stressing the unified nature of the objectives of the different institutions as a group and their willingness to work together. That is the reason why it has been possible to draw up what is known as the Consolidated Budget of the Metropolitan Area Group, which is the result of aggregating the consolidated budgets of the three groups of metropolitan organisations: the Association of Municipalities (MMAMB) + IMPSOL, the Metropolitan Transport Association (EMT) + Transports Metropolitans de Barcelona, and the Metropolitan Environmental Agency (EMMA). The figures for this four-year period are given in the table of page 15.

As can be seen, the AMB Group's consolidated budget has increased considerably over the course of the four-

year term, reaching the figure of 1,266 million euros for the year 2007. This money is used to fund the actions of each group in performing its own specific duties, which makes it possible to provide fundamental mobility and environmental services, carry out projects aimed at achieving territorial and social cohesion, and manage the metropolis's natural spaces, striving for excellence in everything they do and attaining an unquestionable optimisation of their resources.

Public transport accounts for the biggest share of these resources, taking between 62 and 66% of the total. This is hardly surprising, as with this money, the Metro and the buses carried 628 million of the nearly 900 million commuters and travellers who made journeys in the Barcelona region in 2006. This expenditure is necessary both for the service in its own right and because public transport is the only kind that provides environmentally sustainable and socially fair mobility.

Environmental management also requires a large slice of the economic resources, accounting for between 18 and 21% of the total available budget. The more than 4,500 tonnes of waste that are generated every day must be dealt with adequately and this means using the most modern and least environmentally aggressive systems. An example of this approach is that at the end of 2006 the Garraf landfill site was closed after having been in operation for 32 years. Maximum attention must also be paid to the water cycle with an appropriate water treatment policy which, following the entry into service of the two major Besòs and Llobregat sewage plants, now covers practically all the waste water.

As already mentioned, structuring the territory is a priority objective of the metropolitan network and one of the basic factors contributing to this is the creation of public space, in the broadest and most genuine sense of the term:

streets, squares, avenues, amenities, green areas and, of course, the 31 metropolitan parks, the 8,000 hectares of Collserola and the 40 kilometres of beaches which together provide splendid places for public recreation and contact with nature. Structuring the territory favours social cohesion, and one of the most important elements in this is the implementation of a resolute subsidised housing policy. Investments in (and management of) territory and housing have accounted for 17-20% of the budget.

MANCOMUNITAT DE MUNICIPIS

(ASSOCIATION OF MUNICIPALITIES)

The Mancomunitat de Municipis (Association of Municipalities – MMAMB) has worked to bring cohesion to the whole of the metropolitan institutional framework. The fact that it is a voluntary association of local governments makes this job easier, as it gives the MMAMB a great ability to adapt to the needs of the different local councils while helping to balance the finances of the body as a whole. It has also been able to put in place forward-looking strategies, providing itself with instruments such as the Metropolitan Strategic Plan, in order to find the paths and projects holding out the best prospects for improving the quality of life of all citizens.

The balance sheet of the past four years is highly satisfactory, as this report will show in reviewing the major axes of what the MMAMB has done. One such axis is the structuring of the territory thanks to an investment plan endowed with 200 million euros, which has made it possible to carry out projects to do with the public space, roads, facilities, etc. Another axis is the management of natural spaces –the beaches, the network of metropolitan parks and the huge Collserola Park– in all cases with the aim of ensuring their conservation while at the same time making them available for the public to enjoy. Lastly, the subsidised housing policy has enabled the MMAMB to hand over 1,500 dwellings –or be about to do so– and have the land and plans to build many more.

Didac Pestaña Rodríguez
First executive deputy chairperson

01. INTRODUCTION

01.1 Goals and basic data

The Mancomunitat de Municipis de l'Àrea Metropolitana de Barcelona (Association of Municipalities of the Barcelona Metropolitan Area – MMAMB) is an association of 31 towns and cities that have come together voluntarily with a view to providing their common territorial and functional domain with greater structure and cohesion, furnishing themselves with shared services (e.g. infrastructures, beaches, parks, Collserola, etc.), harmonising institutional proposals and interventions, and providing technical assistance to the municipalities belonging to it.

The actions taken by the MMAMB are aimed at attaining these objectives. It should be stressed from the outset that the institution's characteristics put it in an extremely good position to develop a vision that is at the same time both metropolitan and local, and optimise public resources through economies of scale. Indeed, it possesses the technical means and tools required to complete the transformation cycle of the territory, harmonising efforts and obviously relying on highly specialised and skilled staff.

These features are particularly evident in the town planning department which operates in agreement with, and at the request of, the town and city councils.

Planning by a supramunicipal body allows for a broader view of the territory while optimising the human and technical resources which many councils are unable to muster on their own. Similarly, the Territorial Information and Studies Service furnishes the councils and other departments of the MMAMB with invaluable support, constantly updating the territory's maps, plans and indicators.

The MMAMB's actions in the public space are especially important in the territory, as they have a considerable bearing on how the metropolis is structured. Such actions are a programme in themselves, a way of conceiving the territory and acting upon it, and range from supramunicipal projects to local works. They include the making of roads, streets and squares, the renovation of inner cities, the provision of social and sports facilities, and so on. The public space also makes up, to a very important degree, the natural space. The work done here involves equipping and managing the beaches along the metropolitan shoreline from Castelldefels to Montgat, creating and maintaining a network of 31 metropolitan parks, and managing the more than 8,000 hectares of the huge natural space of Collserola.

Another key sphere in which the MMAMB acts is in developing subsidised housing in a territory where this is sorely needed in view of the shortage of such homes and the way prices have escalated on the free market. To this end an independent body, the Metropolitan Institute of Land Development and Heritage Management, has been set up to manage land and build housing. It fulfils a social function while also taking care of the landscape, as its aim is to create a quality urban environment.

The MMAMB's organisational structure is headed by the Management Department and two service directorates: the Technical Services Directorate and

the General Services Directorate. The former comprises Public Space and Town Planning, which have the duties described above, except for the Territorial Information and Studies Service, which is attached to the Management Department. Housing, as already mentioned, comes under an independent body. They also have another source of support enabling them to cover the entire technical side of their management responsibilities and guarantee their results. The General Services Directorate, which is to a large extent shared with the other metropolitan institutions, deals with finances, human resources and contracts, among other things. The Institutional Relations Department deals with protocol, the media and communication.

The good results obtained by the MMAMB during this term of office are attested to by indisputable figures: a 200 million euro investment programme comprising over 300 actions; the planning of more than 12,000 hectares of metropolitan territory; a long list of new technical plans for the local councils involving a figure equivalent to 400 million euros in contract budgets; the continuing and increased production of affordable housing; and the efforts to equip the network of parks and beaches and keep them in optimum condition, resulting in their being used and appreciated by huge numbers of people. And they are backed up, perhaps to an even greater extent, by the ongoing solidarity shown by the councils which have contributed resources and demonstrated their willingness to implement a modern, efficient, transparent and professional type of management. As already pointed out, a crucial role in this has been played by the sense of responsibility and good work of the MMAMB's employees.

02. THE PUBLIC SPACE

02.1 Investing in order to structure

Of all the spheres in which the Mancomunitat de Municipis (Association of Municipalities – MMAMB) acts, the public space is one of those to which it attaches the greatest importance. This priority derives from an approach that has its origins in the reasons for which the institution was set up in the first place. The municipalities that created the MMAMB wanted it to be an instrument for developing the structure of the metropolitan territory. Structure means organisation, internal order, consistency and so on. Various elements, such as communication and transport infrastructures, clearly favour such a development. But the MMAMB is convinced that the public space is an extremely important element for structuring a territory. That is because it shapes the physiognomy of the metropolis, imparts character to it, structures it, orders it, etc. The public space creates points of confluence, where the city becomes more of a city, as it is here that its inhabitants meet each other, sharing such spaces and feeling that they belong to them, which they do. And there is also a philosophy of what a city should be in the way public spaces are created. Opting for quality, irrespective of whether the space in question is in the centre or on the periphery, and the will, moreover, to ensure such fairness, denote an egalitarian, harmonious and united conception of what a city should be.

Most of the projects carried out are managed and implemented by the MMAMB's own services, whose technical teams cover every speciality: architecture, engineering, topography, landscaping, installation engineering, agronomy, etc. This means they are in a position to draw up any kind of plan – for parks, avenues,

roads, viaducts, gardens, amenities and so on. Proof of the excellence work done by these teams is to be found in the large number of awards they have been given at both home and abroad.

There are no limitations when it comes to drawing up projects. A considerable volume of economic resources has been invested and this amount has increased in each of the past few four-year periods. In 1996-99 it came to 94 million euros, in 2000-03 it was 144 million and in the current period it has 200 million (€ 200,182,431). The investment plans prioritise the pooling of resources from whatever source, making it possible to implement bigger projects in co-operation with the local councils. An Investment Plan agreed by all the municipalities in the area is passed at the beginning of each four-year period. It is purposely stripped of red tape, but includes information on economic and management matters that is available to the councils in real time. The choice of which projects to implement is made on the basis of requests by the councils, combined, if necessary, with municipal investment plans and taking into consideration the needs of the metropolitan area as a whole. The main criterion for the distribution of resources is the population of each municipality weighted according to various supplementary parameters, such as disposable household income. The resources are divided among the following groups:

- a) Metropolitan Actions Catalogue (€ 100,000,000). All the investment in works carried out by the MMAMB, either directly or in conjunction with the councils. It includes urban spaces, parks, amenities, infrastructures and roads. The total number of projects completed or begun during the period 2003-2007 is over 90.
- b) Structural Operations Plan (€ 62,682,588). Investment in works

carried out by the councils, based on the principles of interterritorial solidarity. More than 150 works have been carried out under this heading during the period.

- c) Strategic Investments (€ 28,499,843). These are investments whose scope and repercussions go beyond a single municipality. During this period, the so-called Contour Actions designed to join up the urban fabric on the boundaries between municipalities, have been grouped together under this heading.
- d) Technical Assistance (€ 9,000,000). This comprises the cases where the MMAMB's technical services help councils in drawing up projects. To a lesser extent, outside professionals are also engaged, for which a separate budget item has been allocated.

The work done in regard to public spaces by the Technical Services Directorate has two main sides to it. One includes plans and works, that is the planning and construction of the various different elements making up the public space. These are grouped together under five major headings:

- urban spaces
- metropolitan parks and open spaces
- infrastructures and roads
- amenities and facilities
- territorial projects

The criteria applied are the attainment of the maximum formal and constructive quality with the minimum of resources while helping to ensure the durability and conservation of the spaces.

The other side deals with management and maintenance of the public space. Its two main spheres of action are:

- the network of metropolitan parks
- the beaches along the metropolitan coast from Castelldefels to Montgat.

It has its own teams and its own budget, which during this four-year period amounted to 34 million euros.

The fact that this Directorate covers both planning and maintenance enables it to complete the productive cycle and increase its competence and effectiveness by transferring expertise from one set of activities to another.

To conclude, it should be pointed out that some of the money spent by the CAME programme is used to acquire land which is eventually allocated for use as public space. This is done either when a good opportunity arises to increase the public stock of land or when it is essential in order to reduce the density of areas that are too tightly packed and where there is little chance otherwise of creating public space.

02.2 Completed works and future projects

Urban spaces

This generic name covers the remodelling and refurbishment of streets and squares, but also certain actions of a wider scope designed to change the conditions or the countenance of a neighbourhood or an inner city area, make pedestrian precincts, etc. Intervention in such spaces is essential for improving the quality of the urban environment, which is a priority goal of any serious public space policy. This work is carried out on the basis of carefully prepared and sober designs seeking optimum adaptation of the space to the demands on its use. To this end, elements and materials are brought in that will as far as possible meet this objective while having a long useful life and being easy and cheap to maintain. An effort is also made, whenever necessary, to preserve and promote the particular character of each place.

Metropolitan parks and open spaces

The network of metropolitan parks has gradually been built up by taking advantage of the opportunities for restoring and shaping spaces for use by the public that have been freed up by planning in places which, for various reasons, have not been occupied by buildings. These are therefore generally parks that are isolated and situated in gaps in the urban fabric whose metropolitan character is not due to the fact that each of them sits astride a number of municipalities, but that they are dotted all over the metropolitan territory and fulfil an essential role in connecting up different urban systems. They share a common conception, function and management, to the extent that they are designed, built and maintained by the MMAMB. The distinctive feature of their social function is that such spaces are a basic necessity, in other words, part and parcel of living thanks to their proximity. This heading also includes other green or open spaces whose size and characteristics preclude them from forming part of the network; for instance, they might originate from former private gardens or constitute a corner of nature in the midst of a built-up area. However, taken all together they make spaces of beauty, nature and peacefulness available to the public.

Infrastructures and roads

The aim of structuring the metropolitan territory inevitably requires the construction and improvement of transport infrastructures. What the MMAMB does in this field is essentially build and repair some of the main municipal roads, and complete metropolitan road networks connecting municipalities to each other, to industrial estates, to new neighbourhoods, etc. It has also built subways under railway

lines, bridges and walkways over gullies, drain systems, and urban and inter-urban roads, always with a view to ensuring their functionality, their integration into the landscape, and keeping their environmental impact down to a minimum.

Facilities

In addition to “open” spaces, amenities and facilities whose main purpose is shared use and the provision of a public service also fall into the category of public spaces. These include libraries, auditoriums, multi-purpose halls, buildings providing public services and sports facilities, including swimming baths. New social needs have led to increased demand for such facilities, especially libraries and swimming pools, and the MMAMB’s technical services have carried out the corresponding adaptation process to meet these requirements while ensuring, as always, that the work performed is of high architectural value. Some of the actions taken in this field have consisted in converting buildings with heritage value for public use.

Territorial projects. Reclaiming the River Llobregat Space

In 2003 the MMAMB drew up an ambitious framework project for environmentally reclaiming the River Llobregat Space along 50 kilometres of its length in the comarca, or district, of the Baix Llobregat. A consortium set up in 2006 by all the administrations involved asked the MMAMB to prepare the project, which has an initial allocation of 12 million euros provided by the Spanish Ministry of the Environment, for action on two stretches.

1. The 8.2 kilometre stretch between Martorell and the Riera de Rubí, for which two major works are planned: pedestrian access to the left bank of the river making use of the so-called Via Augusta path, linked to the historic Pont del Diable, or Devil’s Bridge; and the wetland area of Ca

n’Albereda involving the reclaiming of two pools for replenishing the aquifer.

2. The 6.5 kilometre stretch between the High Speed Train (HST) bridge on the Sant Boi - Sant Joan Despí boundary and the bridge over the C31 road in L’Hospitalet.

Two other actions deserve to be mentioned in this connection: the reconstruction of a meandering river bed by installing a set of deflecting breakwaters; and opening up access on the right bank, from Sant Boi, by creating paths and structures across the river.

The middle stretch, which is the one most heavily affected by the HST works, will be dealt with directly by ADIF (the company responsible for railway infrastructures), although the MMAMB will make sure that the solution adopted is in harmony with that used on the rest of the river.

Awards and acknowledgements

Many projects conceived and executed by the diverse technical services of the City Council have received during the current term of office (even when some them were made by the previous one) awards and acknowledgements given by prestigious organizations both national and international. In particular, they are the following ones: Rosa Barba European Award for Landscape Architecture 3rd European Biennial on landscape of Barcelona brought by Architects School of Catalonia; the Architecture Prize of the International Biennial Barbara Cappochin, called in Padua under the sponsorship of the International Union of Architects; the awards of the 1st Triennial on Architecture of Baix Llobregat, Alt Penedès and El Garraf recently instituted by the demarcation of Barcelona of the Architects School of Catalonia; and the classic FAD awards, Decorative Arts Foment of Barcelona. It’s always positive and stimulating, that year after year there’s a good number of public space works that are considered worth of being highlighted

because of their aesthetic, qualitative, functional and public service values. The list of awarded and selected works can be found in the main body of the book.

02.3 Managing the public space

The Service for the Promotion and Conservation of the Public Space is responsible for managing the metropolitan parks and beaches. These spaces, which are for leisure and bringing people closer to nature, need to be maintained to high standards and possess play, entertainment and cultural facilities appropriate to each one.

Managing the Parks

The metropolitan network comprises 31 parks in 24 municipalities with a total surface area of 250 hectares. These are extremely valuable places due to their natural qualities, environment and landscape, on the one hand, and their social function, on the other, which is enhanced by their proximity, the fact that they form part of the places where people live or their immediate surroundings. Some of them are fully integrated into urban areas, while others are midway between urban systems and forest environments. There are also some historic gardens and singular spaces among them.

The parks are managed by the MMAMB’s technical staff, although the work itself is outsourced to specialist companies. A monthly assessment of the quality of the conservation work is carried out in which the local councils are also involved, and user surveys of users are conducted so that they can express their level of satisfaction.

The maintenance work affects most of the park area and can be divided into three sections:

- conductive maintenance, which comprises a number of regular tasks, including monthly and annual plans: cleaning, gardening, maintenance of facilities and furniture, etc.
- corrective maintenance, which comprises actions in response to unforeseen events: vandalism, breakages, storms, etc.
- improvement actions, which arise out of the aim to continually increase the quality of these spaces.

Sustainability criteria are applied to the selection and maintenance of the vegetable species grown in these spaces, especially as regards the way they are watered. Efficiency is enhanced by means of automation, adapting watering times to suit the conditions and, whenever possible, making use of the groundwater. Action is also taken to protect, and raise public awareness of, certain trees which, due to their size, history, botanical rarity or aesthetic features, deserve particular attention to ensure that they are preserved. Special consideration is also given to historic gardens, valuable but fragile spots, unique creations that are part of the history of towns and cities. At the present time there are seven historic gardens in the parks network: La Molinada, Can Vidalet, Torreblanca, Can Mercader, Can Solei, Ca l’Arnús and the Historical Botanical Garden.

The parks network has grown continuously throughout the more than 15 years it has been in existence (see graph). The annual maintenance cost, including gardening, installations, buildings and refuse collection is € 5,690,375, which works out at € 3.43 / m² / year.

Managing the Beaches

The metropolitan beaches occupy 30 of the 41 kilometres of the coastline from Castelldefels to Montgat, with a total surface area of over 200 hectares of sand.

These are natural spaces that have an important role as recreational areas for the public, who use them en masse, especially in the summer. The hinterland of the beaches in El Barcelonès and El Maresme, which make up a third of the total, is far more built-up than that of the beaches in the Llobregat delta, where the other two thirds are. In this latter area there still exist certain coastal ecosystems of great ecological value, with dunes and their own specific vegetation and fauna.

The goal of managing the beaches is to make them as fit as possible for use by the public without forgetting the fact that they are natural spaces. They are equipped with appropriate furniture which meets the requirements of being of good quality, aesthetically pleasing and functional. Such items include signs, showers, lifeguard chairs and lookout towers, boardwalks, litter bins, benches, playing areas, toilets and safety items. Maintenance of this furniture is outsourced, with the contracts being awarded on the basis of competitive tendering. The intensity of the service varies according to the time of year. During the autumn the furniture is repaired in preparation for the coming season, whereas from March to May everything has to be made ready for the summer which, naturally, is when demand is heaviest. Teams equipped with workshop vehicles are permanently in action on the spot to deal with any eventuality.

Cleanliness and hygiene are priority objectives. Both mechanical and manual means are used for cleaning. At the beginning of the spring the beaches are ploughed to a depth of 50 cm (except in certain specially protected areas) to allow them to be cleaned by contact with the air and the sun. Mechanical cleaning is carried out with two types of machines: large sifters that turn over the sand to a depth of 15 cm and small cleaning machines that can easily get everywhere. During the year the machines are used

once a month or once a year, depending on the time and place. However, when the summer arrives, the pace is frantic. The machines are in action every day, while some 50 people are at work full time to keep the beaches impeccable, a job which involves, for example, emptying 1,000 litter bins a day!

The objective of making sure the beaches are safe for health is taken care of by a monitoring programme which periodically analyses samples from around 20 points on different beaches. These analyses ensure the metropolitan beaches are in excellent condition according to the parameters laid down by the relevant international bodies. From time to time action needs to be taken to deal with storm damage. This is done in collaboration with the Spanish Ministry of the Environment and the local councils.

Work is carried out on spaces with singular natural values to stimulate the presence of the vegetation typical of the areas to the rear of the beaches and the ecosystems of the dunes. This involves planting appropriate species and helping to preserve bird-nesting areas.

The MMAMB’s management of the beaches costs € 2,168,620 a year, which works out at € 1.08 per m², including maintenance of the installations and cleaning of the sand. Users expressed their degree of satisfaction in the latest survey, conducted in the summer of 2006, by awarding the beaches between 7 and 8 out of 10.

Managing the use of the spaces

Another of the Service’s main aims is to publicise these spaces and their values, and promote public-spirited behaviour by those using them. The following means are employed to do this:

- Publications. Guies del parcs metropolitans (Metropolitan Parks

Guidebooks, of which 23 have so far been published) and Fitxes d'arbres i arbusts singulars (Factsheets on singular trees and shrubs, 30 of which have been published) provide detailed information on the parks and trees, their value, history, peculiarities, etc.

— Itineraries. Two routes have been arranged in collaboration with the Barcelona Contemporary Culture Centre: "Besòs. Una segona oportunitat" (Besòs. A Second Chance) takes people on a visit to Les Aigües, Molinet and Litoral parks, while "Llobregat. Darrera possibilitat" (Llobregat. Last Chance) includes visits to the Torreblanca and Can Mercader parks.

— Surveys. Periodical surveys have been carried out since the spring of 2001 to find out the number, type and behaviour of users and their degree of satisfaction.

— Others. The metropolitan beaches have a smart and functional system of signs. In addition to this, every summer campaigns are conducted to help people get to know the beaches better and encourage proper use of them. Other popularising activities include workshops on sailors' knots, which provide an entertaining and pleasant introduction to the world of fishing and sailing.

03. TOWN PLANNING AND TERRITORIAL INFORMATION

03.1 Town planning

Town planning is a basic tool for ordering the territory and rationalising the uses to which it is put, even more so when the area on which it operates is as inherently complex as a major metropolitan agglomeration and is faced with the challenge of progressing towards a city that is cohesive, sustainable and offers a good quality of life.

The MMAMB's urban development activity is mainly of a propositive kind. It uses the advantages of an institution that is sufficiently close to the problems on the ground to deal with them in a thorough manner and yet has enough perspective to take full account of the inter-relations that are peculiar to the metropolitan scale. It is thus able to respond to the specific demands made on it by the local councils that have to do with the deployment of types of town planning and urban management that are very often closely related to the investment and action programmes carried out by the councils and the MMAMB. In particular it lays the urban development foundations for the affordable housing policies implemented by the Institute of Land Development and Management (IMPSOL). The most frequent types of assistance provided have to do with:

- part plans and urban development programmes required for planning the use of residential and industrial building land
- special inner city renewal plans for improving and providing new amenities for consolidated urban areas
- other special plans for specific and singular measures such as roads, environmental facilities, hotel facilities, etc.

- particular amendments to the General Metropolitan Plan that are essential for implementing certain measures
- urban development work on sectors and elements affecting the metropolitan area as a whole that are essential for structuring the territory
- occasionally, international co-operation work

The MMAMB has technical services capable of correctly formulating appropriate intervention proposals. They draw up the planning documents employing the most advanced digital mapping systems. During this four-year period more than 60 jobs of this kind, have been carried out. In addition, other reports have been prepared and numerous enquiries attended to.

03.2 Territorial information and studies

Careful planning and management of the metropolitan territory must be based on quality information systems. Over the past few years, the MMAMB has been working hard to provide a catalogue of information products and services as an aid to modernising the tools used for getting to know and managing the metropolitan municipalities. This effort has ranged from topographic cartography, which is the foundation on which the other thematic representations of the territory can be built up, to developing web map servers. The MMAMB Territorial Information and Studies Service organises and implements the following lines of action: cartography, town planning information and territorial studies.

Production and dissemination of maps

Cartography work is carried out by two teams. The map-making team produces all the in-house cartographic products

and supervises and monitors the quality of those that are outsourced. The cartography co-ordination and dissemination team contracts out certain map-making jobs, takes receipt of the subcontracted work and publicises the MMAMB's catalogue of cartographic products. The main items produced by these teams are described here below.

- Satellite image of the BMA, 2006

This is a digital image of the Barcelona Metropolitan Area taken from the QUICKBIRD satellite in September 2006.

- 1:1000 topographical maps of the metropolitan area

1:1000 scale, 3-D topographical base covering urban and rural regions of the metropolitan area. Maps produced by photogrammetric restitution checked by fieldwork. The first photogrammetric flight in this cartographic series was made in 2002. Since then further such flights were made in 2003 and 2005.

- Historical flights

This is a collection of photographs from historical aerial photography flights belonging to the MMAMB available in CD and DVD formats. It includes all the photographs taken on each flight which can be viewed or downloaded using software supplied in the DVD. The flight records available in this format are those of 1961, 1965, 1977 and 1981.

- 1:50000 scale orthophotographic maps (2000 and 2004)

A 1:50000 scale orthophotographic map of the Barcelona Metropolitan Area (BMA) containing basic place names and municipal boundaries. Its scope is greater than that of the metropolitan area strictly speaking in order to include its immediate surroundings.

- 1:10000 – 1:5000 scale municipal orthophotographic maps (2000 and 2006)

A 1:10000 scale orthophotographic map of each of the municipalities in the Barcelona Metropolitan Area. The individualised presentation of the image of each of the municipalities, with the external territory in a lighter shade, facilitates a clearer understanding of how it fits into the metropolitan fabric.

Town planning information

- Recast Barcelona Metropolitan Area town planning maps

The town planning information team makes, maintains and updates the recast town planning maps. The work of correcting and validating the maps is carried out in close collaboration with the councils' technical services. These maps are then used to generate various other items such as an intranet town planning website and an extranet town planning website for the councils in the Barcelona Metropolitan Area, and, in 2007, work is under way on a free access Internet website. At the same time, work has also begun on a collection of CDs publicising municipal town planning.

Territorial studies

The territorial studies section is arranged into three tiers. The first deals with research and evaluation of the statistical and territorial information from outside sources; the second produces and makes use of the MMAMB's own data; and the third prepares reports and publications on the basis of internal and external data.

The main lines of work are as follows:

- Research and updating of existing data bases containing information affecting the territory.

- Studies on the occupation of the territory.
- Studies of the territorial distribution of population, services, election results, socio-economic factors, etc.
- Comparative studies of Metropolitan, Spanish and European areas.
- Studies of the housing situation and economic activity in the metropolitan area.

Publications

- Barcelona Metropolitan Area Street Guide

The Barcelona Metropolitan Area street guide covers all the municipalities within the scope of the Metropolitan Strategic Plan. It contains information on the streets and their names, post codes, amenities, parks, pedestrian precincts, car parks, one-way streets, street indexes and services. First edition, March 2007: 215.000 copies,

- Developing transformations 1977-2000

Essential book to know the evolution of the urban growth and the land consumption of the metropolitan and Barcelona area during the reference period of time. It shows that less than it was stated with little basis was consumed, which is a data to be taken into consideration when developing new territorial plannings. It's a book of a mainly graphic design (maps and tables), written with the collaboration of the Universitat Politècnica de Catalunya. 164 pages; first edition, October 2005.

04. LAND AND HOUSING DEVELOPMENT

04.1 The Metropolitan Institute for Land Development and Resources Management

The Metropolitan Institute for Land Development and Resources Management (Impsol) is an independent body of the MMAMB with the legal status of a local public business entity (as defined in the 1985 Spanish Local Government Act – LBRL). Its object is the development of subsidised housing and it has the power to manage the entire process, from the acquisition of the land to the construction and allocation of the housing. It acts in accordance with the local councils, bearing in mind the needs of each municipality in particular and the metropolitan area as a whole.

Developing subsidised housing

Ensuring a supply of subsidised housing has been one of the most persistent social concerns of local governments in the metropolitan area. Actually, it is the Catalan autonomous government that has the relevant powers in this domain, but the Generalitat has done next to nothing in the metropolitan neighbourhoods and municipalities, in spite of their extremely urgent need for such housing in view of the high density of population in them. It has been the local councils, grouped together in the MMAMB, that have made a huge effort to build subsidised housing through IMPSOL, the body they set up for this purpose, even though it was on the basis of almost sheer willpower. The outcome, however, is that most of the homes built in the metropolitan territory are the result of this willpower and, although the amount is still insufficient, they have helped to ease the severe shortages in this field.

These assertions are confirmed by the figures. Between 1996 (the year Impsol was founded) and 2006, 2,873 homes belonging to 62 developments have been delivered, while a further 22 developments comprising 1,307 dwellings are currently being built or are at an advanced planning stage and due for completion by 2009. In addition, land is being secured for building another 16 developments providing 1,897 homes by 2012. This means that in a period of little more than 15 years, a total of 6,077 subsidised homes spread across almost all the metropolitan municipalities will have been made available to citizens.

The quality of the housing built by Impsol is an unquestionable priority. Steps have been taken in each and every one of the developments to achieve the highest architectural standards and building quality. Successful attempts have even been made to include design objectives that might serve as architectural models or planning blueprints for future developments. One intended consequence of this tendency to raise standards is that it conditions private developers and stimulates them to improve their own standards. In spite of what has just been said, the projects are carried out within a considerably restrained spending structure and with the aim of achieving financial balance. To this end, they are subjected to a rigorous technical and economic examination.

The surrounding physical and urban landscape is also taken into account. Every effort is made to ensure that each building fits appropriately into its setting and helps to improve the quality, appeal and attractiveness of the area where it is situated. Care is also taken to promote sustainability as regards both urban development and the buildings themselves. It should also be pointed out that many of the features and virtues of these developments are a direct result of the MMAMB's shared, pluridisciplinary

work in the field of town planning and the public space.

Acquiring and building on land

One of the biggest difficulties a subsidised housing policy faces is generating enough suitable land to build on. In addition to the land supplied by the town councils, Impsol also intervenes by investing large amounts of money in buying land (see graph). The urban development plans are drawn up by agreement and in collaboration with the town halls using a variety of formulas ranging from the setting up of consortiums to taking direct management responsibility. Of the actions currently under way, the following are among the most important: Gavà (Pla de Ponent), Santa Coloma de Cervelló (Colònia Güell), Montcada i Reixac (Special PANREAC and Redosa plan): Cervelló (Fàbrica de Vidre and Torre Vileta) and Sant Boi (Saló Central). Altogether Impsol will build over 1,500 homes in these places. In certain cases Impsol's role has consisted mainly in providing the local council with advice, as for example in Sant Adrià de Besòs (La Catalana) and Torrelles de Llobregat (Can Coll), where more than 450 subsidised homes are planned.

Selecting projects

From the very outset, Impsol has chosen to ensure that the buildings it develops are of a high creative and architectural standard and has put in place various mechanisms for this purpose. The architects that draw up the plans are selected by means of a two-round public invitation to tender. In the first round, five architects are short-listed from among all those presenting tenders and in the second one a project is chosen from among the five finalists. The selection is made by a professional jury that takes into consideration not just quality, but also the degree to which the product meets the environmental, architectural and municipal requirements for each particular building.

Allocating housing

The subsidised housing built by Impsol is allocated by means of a completely transparent process based on a set of pre-established criteria. It is the local authorities that arrange and determine the details of this process in their own area. The general eligibility requirements for such housing are that applicants must be young, not own any other dwelling, have an annual income of no more than a set amount and live, or have lived, in the municipality in question. A number of these homes are always reserved for people with disabilities. Applications are made to the corresponding council housing department or Impsol offices. At the end of this period, the provisional lists of applicants are published and, after a further period for any appeals, the lists become final. A draw is then held in public to determine the order in which the successful applicants can choose their dwellings. Once a dwelling has been allocated, a contract is signed and the person concerned has to pay 10% of the overall price. The corresponding deed is executed when the new owner is handed the keys.

04.2 Subsidised housing developments 2003-2007

Completed developments

BARBERÀ DEL VALLÈS. CARRER DE NÀPOLS AND CARRER DE TIerno GALVÁN
These are two developments in the north of Barberà near the boundary with Sabadell and on either side of the main road. The bigger of the two is on the east side and consists of a nucleus of 60 flats in a main seven-storey building and a smaller, lower building. The two buildings are not joined together, but are L-shaped, which has made it possible to create an inner courtyard for use by residents. The other development comprises 36 flats in a six-storey building giving onto three streets

that is made up of two wings joined by a central corridor which acts as an entrance area.

CERDANYOLA DEL VALLÈS. ELS MAIOLS
On the north-western side of the town, Els Maiols has an excellent location, situated at the point where the built-up part of the town is linked to the new growth areas. The project consists of three identical blocks of flats arranged parallel to each other, with access from the side street. Each block has 15 flats, the ones at the back being slightly longer to improve their insulation and provide views of the landscape. There is a communal garden area.

CERVELLÓ. CARRER DE JOSEP JOVÉ
The plan has sought to integrate the construction into the urban fabric. It is located beside the new green spaces opposite La Riera de Cervelló, and has been adapted to the uneven terrain while avoiding a barrier effect. The development consists of three buildings, each with a ground floor and four storeys above that, in a fan-like arrangement. The 57 flats (four on each landing) have balconies and all their main rooms give onto the exterior.

L'HOSPITALET. CARRER DEL MESTRE CANDI
This building is situated at the confluence of Carrer Mestre Candi and Parc de la Serp, with access from the park and from a new public square resulting from the construction. The volumes have been adapted to fit in with the differences in scale between the streets. The building, constructed on an almost square ground plan, has a ground floor containing amenities, four flats on each of the other five storeys, making 20 dwellings in all, and a garage occupying two underground storeys. It is near the Baix Llobregat Metro station.

MOLINS DE REI. LA GRANJA
The three buildings, containing a total of 74 flats, form a block of their own. One of

the buildings, which is constructed on a square ground plan and is taller than the others, provides the axis of orientation and is articulated with the other two, which are linear and lower. They have an extruded twist to the ground plan which gives the ensemble movement and generates different types of dwellings. The buildings have been designed in keeping with the goals of sustainability and energy-saving.

MONTGAT. PLA DE MONTGAT
This sector is a major site of urban development in Montgat. It comprises 844 dwellings, 108 of which have been constructed by Impsol as subsidised housing in three buildings. The first of these is rectangular and all on the same level, in spite of being on a slope. The living-rooms and bedrooms face onto the street and have balconies. The flats in the second building, which has similar characteristics, have a double façade, which enables the living-rooms to be oriented to the south by means of a balcony. The third building resolves the problem of providing sunlight by dividing the flats into two sub-units, a bigger one on a north-south axis, and the other perpendicular to it and facing south.

EL PAPIOL. CARRER MAJOR
This building is in the old part of the town, with its northern façade giving onto Carrer Major, while the south-facing façade gives onto Avinguda de la Generalitat and is at a much lower level and opens onto an urban park. The difference in level is overcome by breaking the building up into two adjacent blocks with independent entrances, but joined together by a courtyard. The 14 flats provide a powerfully urban image in a central place in the town.

SANT ADRIÀ DE BESÒS. ANTIC ESCORXADOR (FORMER ABATTOIR)
A building has been erected in an almost square corner giving onto three streets. The building's U-shape generates an inner courtyard, treated as an urban space,

which contains the entrances. The way in is from Passeig de la Pollancreda. All the rooms in the 25 flats, except for the bathrooms, face outwards. The Municipal School of Music occupies the ground floor.

SANT ANDREU DE LA BARCA. CARRER DE L'ANOIA

This development occupies a large space, which has made it possible to build 162 flats on it in three seven-storey blocks arranged parallel to each other to avoid a continuous frontage that would act as a visual barrier. To achieve a good volumetric balance, each block is made up of two prisms with two hollowed-out parts. The result is a compressed building without inner courtyards, with the best aspects and an effective urban image deriving from its carefully designed and varied vertical composition.

TIANA. CAMÍ DEL MIG D'ALELLA

In this recently created sector, set amid richly varied scenery, 29 subsidised flats have been built with a magnificent sea and/or mountain aspect. An effort has been made to minimise the volumetric impact by giving the building an L shape that defines a newly created public square and does not interrupt the view at street level.

VILADECANS. SALES RESIDENCIAL

Located in a new development area within the urban perimeter of Viladecans, this project was conceived as a clear bar closing the town's north-east façade and helping to consolidate the urban fabric in a sprawling environment. The solid, sturdy building has commercial premises on the ground floor and includes 60 through-type flats with the dining-room, kitchen and main bedroom at the front, and the other rooms at the back.

Developments under construction

BADALONA. TORRENT DE LA FONT

Two buildings are being put up in this part of the north of the town which has

a certain slope that the construction adapts to. One is a prism-shaped building containing 20 flats, the other a rectangular building with 22 flats.

MONTCADA I REIXAC. MASRAMPINYO

A large part of the Masrampinyo neighbourhood has been urbanised and the developments there include three groups of subsidised housing, comprising one, two and three blocks with respectively 39, 62 and 87 flats, making a total of 188 dwellings.

SANT FELIU DE LLOBREGAT.

CAN BERTRAND

Two buildings have been designed for this new pedestrian precinct near an old industrial building that has been earmarked for restoration. The L-shaped constructions face each other and their volumes give the façades an interesting appearance. One hundred and four flats are being built here.

SANT JOAN DESPÍ. ILLA 0 DE L'EIXAMPLE

In this part of the Eixample, or enlargement, of the town, a group of 55 flats has been built in an L-shaped block and a hollow-shaped block. The great frontage is of particular note.

ESPLUGUES DE LLOBREGAT.

SANT LLORENÇ

Two developments are being built in this sector; one consisting of a rectangular block of 72 flats, the other of a block of 48 flats at an angle to the first. In between them there is a space for an urban park.

ESPLUGUES DE LLOBREGAT.

CARRER DE PERE PELEGRÍ

The building being constructed on the corner of this street in the urban centre of Esplugues consists of a ground floor and four upper storeys with a total of 12 flats.

MONTGAT. TURÓ DEL SASTRE

The space here has a steep slope which the two developments being built here

resolve with volumetric and constructive solutions. One consists of a single block of 103 flats, while the other comprises two equal blocks each containing 24 flats.

PALLEJÀ. CARRER DE PRAT DE LA RIBA

Situated in the town's urban centre, a five-storey block containing a total of 31 flats is being built on a corner location giving onto three streets.

SANT ADRIÀ DE BESÒS. SHORE FRONT ON THE RIGHT BANK OF THE RIVER BESÒS

The development is on a flat plot of land on the right bank of the Besòs near the coast. It consists of a rectangular building from which two cubes stick out on the side facing the sea. Thirty-nine flats are being built there.

SANTA COLOMA DE GRAMENET.

CARRER DE JOAN UBACH

Situated in the southernmost part of Santa Coloma, this development consists of an L-shaped building surrounding a landscaped inner courtyard. The long side is visually adapted to the steep slope of the terrain. Fifty flats are being constructed here.

TIANA. CAN JORDANA

The development consists of two buildings comprising a ground floor and two storeys with a total of 55 flats. It is located to the east of Tiana's urban centre.

05. COLLSEROLA PARK

El Parc de Collserola, or Collserola Park, is a major natural space in the metropolitan area, with an extension of 8,400 hectares, 6,500 of which are forest. The park was created by the Mancomunitat de Municipis (Association of Municipalities - MMAMB) on the basis of the planning work that had begun in 1984 and led to the setting up of the Collserola Trust. Since 1999 it has been governed by a Consortium comprising the MMAMB and Barcelona Provincial Council, each of which contributes equally to the annual budget allowing it to implement its action programme. The nine municipalities bordering on the park also form part of the Consortium.

Management of the park is conditioned by the geographical situation of the Collserola range -right in the middle of a metropolitan area with a population of nearly three million people- and the limitations on urban development that have been put in place to protect it. The big challenge facing the park is therefore to ensure that its natural properties are protected and conserved while allowing it to be used for leisure activities by the inhabitants of the metropolis, without forgetting that, due to its particular location, it is also under great pressure as a free space from transport infrastructures (roads, railways, power carriers, etc.), mining and quarrying, and the demand for growth of the surrounding municipalities. That is why, unlike other parks, it requires robust intervention and maintenance.

At any event, a lot of progress has been made since the Special Collserola Range Development and Protection Plan was finally approved in 1987. A considerable investment, coupled with innovative, rational programming, has turned the Collserola Park into one of the most significant benchmarks as far as experiments in managing the natural environment are concerned. One of

these benchmark experiences is the fire prevention and detection system linked to the entire territory of the metropolitan area. Another strategic strand in the way the park has been managed are the efforts aimed at raising public awareness of the need to protect and conserve their natural surroundings. The Can Coll environmental education centre in Cerdanyola, catering for schoolchildren throughout the metropolitan area, and the campaigns, activities and workshops aimed at the general public organised by the Park Information Centre, have played an extremely important role in this connection.

Some of the most significant projects undertaken during the four-year period 2003-2007 are listed here below.

General management of the park

Collaboration with the municipalities in the Consortium has been intensified as regards advice on and participation in town planning, the carrying out of projects in areas in contact with Collserola, technical forestry management plans, and the development of free spaces, which is coming to fruition in some of the fringe areas of the park in the different municipalities.

The Consortium has worked with the Departments of the Environment and Housing, and Regional Policy and Public Works, of the Generalitat de Catalunya, on extending the protected areas of Collserola, including new areas in the Plan for Spaces of Natural Interest and drawing up proposals for expanding the park's boundaries, and on drafting appropriate regulations to accompany its being declared a Natural Park and the dedicated law on the integral protection of Collserola. The reclassification of certain areas so that building is no longer permitted in them, which has been done in a large part of the municipalities in the

park, has made it possible to agree on new park boundaries which, in the future, may enable emblematic spaces such as Turó de Montcada and others that had previously been left out, to be included within it.

The premises of the Can Balasca Biological Station and Wild Fauna Recovery Module have been enlarged, which has enabled it to consolidate its work and take in a larger number and greater variety of species and specimens.

A new integral proposal has been drawn up for regulating hunting in Collserola Park with a view to finding a balanced model that will enable the goals of the Special Plan to be met and ensure control of the animal populations that exceed their threshold equilibrium density.

Restoration and public use works

Work is gradually being carried out on the new Passeig Mirador de les Aigües, a path that runs across the Barcelona side of the range for 20 kilometres, from Esplugues de Llobregat to Torre Baró, providing views of the city. This project is part of the work of planning the Barcelona side of Collserola being done by making integrated sectorial studies that are then used to draw up projects regarding the landscape, public spaces and alterations to town planning arrangements. These studies cover three specific aspects: the organisation of the spaces that are used for a wide variety of leisure activities and purposes; the restoration of public spaces in "no-man's-land" that have often become degraded in regard to the way they are treated and used; and facilitating access by the public and connecting up the urban and peri-urban green spaces.

Work has been completed on restoring the Vallvidrera reservoir (Elies Rogent, 1864) and preparing various sign-posted itineraries round about it. This, together with the restored former reservoir-keeper's

house, makes up a new area for use by the public designed to help people get to know the place and the reptiles and amphibians living in it.

Another measure taken to reclaim the area's architectural heritage was the restoration of the former Can Borni nursery, originally built by Nicolau Maria Rubió i Tudurí in 1919, and which is now open to the public as the Garden of Mediterranean Trees and Shrubs.

Eliminating the physical barriers to access to the park is one of the goals set for the coming years. In fact work has already begun on this, a good example of which is the refurbishment of the entrance to the park from Baixador de Vallvidrera station.

Participation and publicity

The Projecte Bici (Bike Project) is an example of public-sector management, which has involved the organisations and groups to do with the use of bicycles on Collserola in promoting responsible use of such vehicles in a natural space. It has been supplemented by the publication of a bicycle itineraries guide with nearly 200 kilometres of sign-posted routes through the park.

The Riera de Vallvidrera Shared Management Project is another example of participation. In this case a citizens' network for the conservation and custody of the Riera (gully) and the management of the water in it was set up in line with the European Water Framework Directive and the Aarhus Convention on access to information, public participation in decision-making and access to justice in environmental matters, recently ratified by the Spanish government.

Lastly, it should be mentioned that in 2004 the "Guia de Natura del Parc de Collserola" (Nature Guide to Collserola Park) was published. This is an emblematic book with

great potential for spreading knowledge about nature in the Collserola range.

This year, 2007, is the 20th anniversary of the approval of the Special Collserola Park Environment Development and Protection Plan, which led to the setting up of the park and its management bodies. Since then, the actions carried out have ensured the conservation of this unique space, increased its strategic value and consolidated its functions as a place for recreation and as a green lung for the metropolitan area.

ENTIDAD DEL MEDIO AMBIENTE (ENVIRONMENT AUTHORITY)

Managing environmental services, supplying and treating water, and dealing with municipal waste gives the Environmental Agency of the Barcelona Metropolitan Area (EMA) a unique perspective on the real situation of the municipalities which, in spite of their diversity, coincide in their common commitment to sustainability.

As an example of this shared commitment and effort, this report describes the main actions taken over the past four years, including the building of the Besòs and Baix Llobregat sewage works, the closing of the Vall de Joan controlled waste disposal site, the entry into operation of two new ecoparks and completion of the metropolitan network of waste collection and storage depots. These actions, alongside many others, are proof that it is possible to prevent and control environmental impacts if the task is tackled rigorously and responsibly.

That is why I would like to express my thanks to all the people who have demonstrated that improving the quality of the environment in the metropolitan area is not a utopia, but on the contrary, a wish and a reality shared by administration and public alike.

JOSÉ CUERVO ARGUDÍN
Chairperson

01. INTRODUCTION

01.1 Goals and basic data

The concept of a "city of cities" refers to the network of urban systems situated in the metropolitan area of Barcelona that are connected to each other and consequently have common needs.

The metropolitan towns and cities give life to a multinodal system in which it is necessary to decentralise amenities, protect interstitial spaces and, from a functional standpoint, manage this network with an integral approach that takes account of the real city and not just the administrative city. This makes it essential to define clearly the reserves for major supramunicipal environmental utilities while respecting the singularities of the urban systems that make up the metropolitan area.

It is in this complex and ever-changing context that the Metropolitan Water Services and Waste Treatment Authority (EMSHTR), commonly known as the Environmental Authority (EMA), operates. The EMA is a local authority created under Catalan Law 7/1987 of 4 April which lays down and regulates special public actions in the Barcelona conurbation and the comarques (districts) within its sphere of influence, comprising 33 municipalities belonging to the metropolitan area.

Law 7/1987, which set up the Metropolitan Authority, provides for that Authority's competency in respect of water works and drinking water supplies, sanitation and drain systems, treatment and re-use of municipal waste and non-special and inert industrial waste, and co-ordination of the corresponding municipal services.

More particularly, Law 6/1999 of 12 July on the ordering, management and taxing of water, subsequently amended by Legislative Decree 3/2003 of 4 November, which approved the amended text setting out the legislation on water in Catalonia, declares the Metropolitan Authority a Basic Local Water Authority for downstream water supply and treatment. It also confers on it the status of a supramunicipal body as defined in article 89 of Royal Legislative Decree 1/2002 of 20 July, which approved the amended text of the Spanish Water Act, and of a public body representing the municipalities of the urban agglomeration. This confirms its territorial scope in the terms laid down in article 3 of Royal Decree Law 11/1995 of 28 December, which transposes Directive 91/271/EEC on urban waste water treatment into Spanish law.

Among its other functions, the competency for supplying drinking or downstream water includes the power to approve the charges for the supply of potable water, without prejudice to the subsequent pricing policy exercised by the Catalan autonomous government, the Generalitat, with the authorisation of the Prices Commission of Catalonia.

Articles 44 and 46 of Catalan Law 6/1993 of 15 July concerning waste defines the competencies of the Environmental Authority as the power to programme, execute works and manage the municipal waste recycling, energy recovery and disposal service, set up waste collection and storage depots, and co-ordinate municipal waste collection services.

Relations with the Catalan Administration are to be channelled via the Waste Agency of Catalonia, which comes under the Catalan government's Department of the Environment. The municipal services are co-ordinated in relation to the separate collection of the organic fraction, the various separate collections of inorganic fractions (light packaging, paper and cardboard, glass, etc.) and the municipal waste collection and storage depot service.

This means that the EMA's operations within this particular framework of competencies must always bear in mind that the territory is a limited good requiring careful intervention and solid strategies based on a commitment to sustainability, co-operation among different institutions and solidarity across the territory.

The work of the past four years has been marked by the consolidation of the metropolitan waste water treatment system due to the completion of the two major metropolitan waste water treatment plants: the Besòs and the Baix Llobregat sewage plants. On the one hand, the entry into service of the biological treatment installation at the Besòs sewage plant has made it possible to guarantee that absolutely all treated water is up to standard. Moreover, this is done in a facility that is fully integrated into its surroundings. On the other hand, the Baix Llobregat sewage plant stands out not only due to its size, but also for its contribution to the amount of water rendered suitable for re-use by the tertiary treatment which entered its trial stage at the end of 2006. The gradual incorporation of tertiary treatments in all the sewage plants, coupled with advances in the treatment and management of sludge, and the continuous improvements in the metropolitan sewer system, represent a major development of the metropolitan waste water treatment system which is set to play a key role regarding the re-use of certain water flows in the future.

The Master Plan for Rainwater Management (PDAP) has been completed with a series of studies, including one which proposes the setting up of a remote monitoring network and an automated gully maintenance programme, as well as completion of the retention tank in El Camp de l'Empedrat in Cornellà.

As far as waste management is concerned, the work of these past four years has been marked by the development of the ecoparks and the closure of the Vall d'en Joan controlled disposal site (also known as the Garraf disposal site).

Fulfilling the commitment made in the Metropolitan Municipal Waste Management Programme (PMGRM), the Garraf site, which had been an essential facility over the past three decades, was finally closed for good on 31 December 2006. There is no doubt that the key to achieving this goal lay in the progress made in selective municipal waste collection and the deployment of advanced waste treatment technologies, such as ecoparks, which enable energy and materials to be recovered from various types of waste.

During the period 2003-2007, Ecopark 2 (Montcada i Reixac) and Ecopark 3 (Sant Adrià de Besòs) entered operation, and the contract for building a fourth ecopark in Els Hostalets de Pierola has been awarded. Moreover, as laid down by the resolution regarding the installation of Ecopark 2, the energy recovery plant in Montcada was closed down and dismantled in 2004. In addition to the major facilities, the treatment capacity of the Gavà-Viladecans packaging waste sorting plant and the composting plants has been increased and the first voluminous waste treatment plant has been opened. The waste collection and storage depot network, comprising over 40 depots, has been completed and the mobile depot service has been stepped up.

On the waste prevention front, the campaigns to promote non-material consumption and the repairing of goods, and the Metropolitan Waste Treatment and Disposal Tax (TMTR) discount scheme for continued use of the waste collection and storage depots, have been particularly important. During this period the metropolitan waste treatment rates were also revised so that since 2004 the new TMTR has included a variable part, different for each municipality, which favours those municipalities with the highest rates of selective waste collection.

The PMGRM Review Committee met in 2004 to begin work on reviewing the programme, which it completed in 2006. The results included extending the programme until 2008, validating the ecopark treatment model and confirming the strategic guidelines governing operations following the closure of the Vall d'en Joan landfill site.

Meeting all these challenges has required a considerable management and investment effort that has been made within the framework of a cost-containment policy while never the less guaranteeing good service provision to the councils and inhabitants of the Barcelona metropolitan area.

02. THE WATER CYCLE

The integral water cycle includes all the activities related to the capture, storage, transport, treatment and evacuation of water, whatever its origin and properties. The EMA, as the Local Water Authority (ELA), has competencies in regard to most of these activities, which favours integral management of the potable water supply and integral waste water treatment across the territory of the Barcelona Metropolitan Area.

On the supply side, in 2003-2007 an effort was made to gather and order information on the metropolitan network by compiling an inventory of the Barcelona Metropolitan Area (BMA) Supply Network and commissioning a study by the Urban Ecology Agency entitled "The Water Supply in the Metropolitan Area: a balance sheet and a proposal for measures to manage demand".

On the treatment side, the installations provided for in the Urban Waste Water Treatment Programme (PSARU) have been completed. The Begues waste water treatment plant has been renovated, the two major metropolitan treatment facilities – the new Besòs sewage plant and the Baix Llobregat plant – guaranteeing treatment of all the waste water from the municipalities in the metropolitan area, have entered operation.

As far as flood prevention is concerned, drafting of the Master Plan for Rainwater Management has been completed and the criteria and the start of the measures included in it have been approved.

Two new technologies have been incorporated to help with environmental inspection and monitoring that have enabled the number of samples taken and analysed to be increased and the quality of the data obtained to be improved. The

laboratory has also renewed its ISO 17025 certificate attesting to the fact that it is technically competent and capable of producing technically valid results.

In 2005 the Metropolitan Advanced Urban Drainage Management Service was set up to co-ordinate the sewer systems through indirect management provided by the mixed capital company Clavegueram de Barcelona, SA. This service has the mission of supporting the local councils and helping them to solve their management problems in relation to drainage and sewer systems. In 2006 a Contract Programme was approved which regulates the activities of this company.

Lastly, the drought of 2005 must be mentioned as a stimulus serving to intensify water-saving and re-use policies over the coming years.

02.1 Supply

Some 85% of water resources in the metropolitan area come from surface sources belonging to the river Llobregat and river Ter basins, while the remaining 15% is supplied by certain underground sources in the Vall Baixa and Llobregat delta aquifers, the Sant Andreu basin and the Barcelona plain, and the Besòs aquifer.

The year 2005 was one of the driest in the last 40 years. In response, the Generalitat, the autonomous government of Catalonia, issued Decree 93/2005 of 17 May which laid down exceptional measures in relation to the use of water resources. The Decree, applicable to the whole of Catalonia, introduced special measures and set up monitoring committees in an effort to optimise the use made of the scarce water resources.

The water treated at the Abrera, Sant Joan Despí and Cardedeu waterworks is taken to the tanks at the head of the system.

Downstream supply, which begins at these tanks, is the responsibility of the EMA, owner of the potable water supply in the municipalities within the territory covered by it. The EMA provides the service and approves the prices charged.

There are seven different companies responsible for downstream water supply to the users in the different municipalities in the area covered by the EMA.

During the period 2003-2007, a contract programme was signed with Societat General d'Aigües de Barcelona setting out plans for achieving better quality and greater efficiency in the service through measures such as the elimination of lead connection pipes and supply based on flow-rate measurements.

The BMA Supply Network Inventory was completed in 2004. This provides detailed information on wells and pumping stations, pipes, tanks and the points at which ownership of the pipes changes hands. Since then the Inventory has been gradually broadened and expanded in an extremely detailed fashion.

The exceptional situation due to the drought in 2005 led the EMA to take various steps, such as making contingency plans in all the metropolitan municipalities, irrespective of whether or not implementation of the drought decree was compulsory.

The result of all these measures, the efforts of the town councils and raised awareness among the public was a 3.66% diminution in average water consumption, which fell from 125.67 litres per inhabitant per day in 2004 to 121.07 litres per inhabitant per day between 2004 and 2005.

Lastly, mention must be made of the increase in the data gathered and the information obtained on the use and

consumption of water in the BMA, all of which can be consulted in the series of documents entitled Dades Ambientals Metropolitanas (Metropolitan Environmental Data).

Ø2.2 Sanitation

A key element for the ecological recovery of the river Llobregat and the river Besòs with a view to improving the quality of the seawater and regenerating the Mediterranean shore, is adequate sewage treatment. Such treatment needs to ensure that, on the one hand, waste waters released into the environment do not disturb the natural spaces so that these can again be used, among other things, for recreation by the public, and on the other, water resources are optimised.

The EMA, which was originally set up under the Water Development, Management and Taxation Act (LOGTA) and is classed as a Local Water Authority (ELA) under the amended legislation concerning water in Catalonia, manages the metropolitan sanitation network through Empresa Metropolitana de Sanejament, SA (EMSSA), a company wholly owned by the public sector. EMSSA runs and maintains all the infrastructures in service:

- over 200 kilometres of primary sewage mains
- 7 waste water treatment plants (EDAR)
- 3 undersea outlets
- pumping stations

In 2003 the Baix Llobregat sewage plant (use of which was transferred to the EMA by the central government in 2006) came into service followed, in 2004, by the entry into operation of the pre-treatment and primary treatment installations of the new Besòs plant on the occasion of the Forum of Cultures. The biological treatment facility came into operation in mid-2006, thereby complying with the requirements

of the European Union directives.

Also during 2004, the Begues waterworks, which has a modern treatment system for eliminating phosphorus and nitrogen, was inaugurated, and the thermal sludge drying cycles at the Baix Llobregat and the digestion process at the Sant Feliu de Llobregat sewage plant were started up. Both these plants have power cogeneration facilities.

During 2005, construction was completed of the upstream sewers in Vallpineda and the La Floresta sector, and the connection of the Sant Feliu sewage works to the sanitation system.

The basic plans have been drawn up for the new sewage works in Vallvidrera and the tertiary systems at the Sant Feliu and Gavà-Viladecans plants. All these projects were financed with European cohesion funds and work on them will begin in 2007 with a complementary contribution from the Catalan Water Agency.

Most of the actions in the Sanitation Plan in our area which had not yet been carried out, such as the Can Güell sewer in Torrelles and the Riera de Palau sewer in Sant Andreu de la Barca, were completed this year.

SANT ADRIÀ SEWAGE PLANT
In spite of its huge treatment capacity (525,000 m³/day), this sewage works is fully integrated into the urban fabric. In 2006 its secondary treatment system came into operation, enabling it to improve the quality of the treated water even more.

BAIX LLOBREGAT SEWAGE PLANT
Its size (it occupies 36 hectares) and treatment capacity make it one of the biggest sewage works in Europe. In 2006, its phosphorus and nitrogen reduction process and tertiary treatment systems began operating on a trial basis. Once they are fully operative, among other things,

they will enable the treated water to be re-used in the wetlands of the Llobregat delta as a barrier stopping the salt water from getting in, for irrigation, and for maintaining the flow of the river Llobregat.

GAVÀ-VILADECANS SEWAGE PLANT
With a design flow of 72,000 m³/day, it enables recovery of a flow of around 4-5 hm³/year for the maintenance of the Llobregat delta irrigation channels.

SANT FELIU DE LLOBREGAT SEWAGE PLANT
With a design flow of 72,000 m³/day, it has a tertiary (filtration and disinfection) treatment system and irrigation water recovery facilities enabling re-use, at times of water shortages, of around 0.7 hm³/year for agricultural irrigation.

BEGUES SEWAGE PLANT
In spite of its small size in relation to the other metropolitan waste water treatment plants, its location, in the municipality of Begues, with an especially valuable natural environment, made the complete renovation of the plant in 2005, with the introduction of a powerful tertiary treatment system to eliminate and disinfect nutrients, particularly important.

MONTCADA I REIXAC SEWAGE PLANT
A design flow of 72,000 m³/day enables the re-use of around 2 hm³/year for the maintenance of urban wetlands.

VALLVIDRERA SEWAGE PLANT
This historic water-treatment system of reduced dimensions is in process of modernization so that it can continue lending service to the mountain range of Collserola core of population.

Ø2.3 Flood prevention

The main infrastructures towns and cities have for channelling spates of water, regulating their flow and reducing the

risk of flooding from torrential rainfall are their drains and sewer network, to which regulating and anti-unitary system discharge tanks are gradually being added.

During 2004 the Metropolitan Council decided to incorporate the observations and suggestions made by the metropolitan local governments into the Master Plan for Rainwater Management (PDAP). In 2005 the PDAP was supplemented by various additional measures, including a proposal for a remote monitoring network and a programme for automating gully cleaning and maintenance.

WORKS

- Repairs to Riera de Carol/Sant Climent and replacement of the outlet drain in Sant Climent de Llobregat
- Retention tank in Camp de l'Empedrat in Cornellà
- Riera de Sant Llorenç lamination pool (stage 2 in execution)

STUDIES AND PROJECTS

- A study of the ownership and management of the basic drains network and other drainage axes in the EMSHTR area.
- Work additional to the Master Plan for Rainwater Mangement in the EMSHTR area.
- Plans for the construction of a drain in Avinguda de la Generalitat in Santa Coloma de Gramenet.
- Plans for the construction of diversion and tank drains in the eastern basin of the high part of Salines in Sant Boi de Llobregat.
- Plans for the construction of a tank in Parc de Torreblanca and other complementary tanks in Riera de Pahissa (municipal boundary of Sant Just Desvern, Sant Feliu de Llobregat and Sant Joan Despí).
- Plans for the construction of the Bunyola i l'Aviació anti-unitary system discharge tank in El Prat de Llobregat

Gully cleaning and maintenance

Every year the EMA carries out a programme for cleaning and maintaining the beds of the gullies which is funded by the Catalan Water Agency's maintenance and conservation programmes. The aim is to maintain the gullies' hydraulic capacity in order to reduce flooding as far as possible in the event of very heavy rain. During the period 2003-2007, such work was carried out on all 184 kilometres of gully beds.

Ø2.4 Water re-use

Re-use consists in employing waste water for certain agricultural, urban, industrial or environmental purposes. Before being re-used the water is treated to make it suitable for the new purpose to which it is put and under no circumstances is it fit for drinking. Re-use, then, is defined as the use a user makes of water which, before leaving the waterworks, has been treated so that it is regenerated and made fit to be put to a new use.

Although at the beginning of the period re-use of waste water was just beginning, the drought of 2005 made it quite obvious, on the one hand, that there was a need to systematise and consolidate the mechanisms for using water more than once, and on the other, that it was necessary to have clear and appropriate sanitary criteria for each of the purposes for which water was to be re-used.

At the present time, the Sant Feliu de Llobregat sewage plant has a tertiary (filtration and chlorination) treatment system allowing the waste water treated by it to be occasionally used in the summer to supply water to those needing it for irrigation in the Sant Vicenç dels Horts area. Water from the Gavà-Viladecans sewage works is also indirectly re-used, as part of the treated water from the plant is

returned to the delta's irrigation channels and some of the water resources are thus replenished.

Lastly, mention must be made of the Baix Llobregat sewage plant's re-use project involving tertiary treatment and membrane filtering. A trial run was started in 2006 with the following aims:

- maintenance irrigation of the wetlands
- making up losses in the delta's saline intrusion barrier
- providing agricultural users with quality water
- returning water to the environment to maintain flows

The EMSHTR, in collaboration with the Catalan Water Agency, is responsible for the re-use of regenerated water from its waste water treatment plants. Its most significant action is the one linked to the Baix Llobregat waterworks with a flow of 3.25 m³/s. It has signed an agreement with the Catalan Water Agency transferring the re-use installations linked to the Baix Llobregat waterworks which were built by the central government with European Union funds.

Ø2.5 Environmental inspection and monitoring

The Environmental Inspection and Monitoring Service has been monitoring environmental pollution in the Barcelona metropolitan area since 1998.

Control of pollution at source, by means of restrictions and prohibitions, is aimed mainly at preventing pollution and minimising the environmental impact of waste disposal on the natural environment and metropolitan sanitation systems. The goal is to protect the basins receiving waste by eliminating all chronic and acute toxic effects on either humans or natural resources, and maintain the quality of the

medium receiving the waste, taking into account the type of waste treatment.

Major improvements include the introduction in 2005 of a mobile unit capable of taking samples and continuously monitoring various parameters of factory output. To do this, the unit is equipped with sensors for measuring pH, conductivity, organic matter, solids in suspension, flow, redox and cloudiness. It is powered by solar energy and batteries and can accumulate and store information.

At the end of 2006 the use of PDA-type portable devices capable of recording inspection results and recording them in real time on a data transmission system was introduced for the first time in Catalonia. This new tool will lead to a big reduction in the time spent on this work, which will now be automated.

02.6 The laboratory

In the period 2003-2007, the EMA Laboratory consolidated its function of providing analysis and technical support services for the various different agencies of the Barcelona Metropolitan Area in everything to do with environmental sampling: analysis of sewage, surface water and drinking water, air quality, in terms of both immissions and emissions, contaminated soils and solid waste.

One of the things to which it has devoted most effort is the introduction of a quality management system. In 2004 it obtained certification from the Spanish National Accreditation Agency (ENAC) which has a higher status than the ISO 9000 certificate which it already had. The ENAC accreditation is the only one guaranteeing that the laboratory is technically competent and ensures the reliability and international recognition of the analyses it carries out.

Improving the computerised management system has been a key factor in the laboratory's development, as, since 2003, it has enabled the traceability of all the actions performed and automatic transmission of the data obtained.

Validation studies of the analytic methods have been carried out in accordance with the monitoring parameters laid down by the Metropolitan Regulations on the Dumping of Waste Waters which were passed in 2004. These studies have provided the technical capacity to establish common criteria among the BMA laboratories.

The increase in the laboratory's activity over the past few years made it necessary to optimise the functionality of its installations. That is why work was carried out in 2006 to enlarge the laboratory, which has led to an improvement in health and safety conditions at work and the quality of its services.

03. WASTE

In the period 2003-2007, the facilities scheduled in the Metropolitan Urban Waste Management Programme (PMGRM) have been completed, although certain modifications were also made in the second review of the PMGRM and the subsequent extension of the Programme which open up the way for a new programme from 2008 onwards.

The second Ecopark, in Montcada i Reixac, entered operation and the third Ecopark, in Sant Adrià de Besòs, is undergoing a trial period. This has made it possible to attain the goal of closing the Vall d'en Joan controlled waste disposal site as planned on 31 December 2006. Thus, as provided for in the PMGRM, the Vall d'en Joan landfill site has been closed and zones 1 and 2 have been restored. Restoration of zones 3 and 4 is due to get under way in 2007 with a view to eventually enabling the space to be integrated into the Garraf Natural Park.

One of the main changes affecting waste management has been the modification of the Catalan Waste Act 6/93 of 15 July which introduced a return charge, made the producers of commercial waste responsible for managing their own waste from 2003 and, for the first time, introduced a waste disposal tax. The main source of funding for treating waste has been the Metropolitan Waste Treatment and Disposal Tax (TMTR) and the income obtained in virtue of Law 11/97 of 24 April on packaging and packaging waste (LERE).

The EMA has continued to support campaigns to encourage selective collection of organic waste, packaging and packaging waste, and promote the use of the waste collection and storage depots. During the past period new lines of waste prevention work aimed at the inhabitants of the metropolitan area have been opened up.

Lastly, mention must be made of the fact that on 20 July 2006 the Metropolitan Council approved the Second Review of the PMGRM 2004-2006 and extended it until 2008. The Second Review confirmed the closure of the Garraf waste disposal site at the end of 2006 and ratified the strategy of treating the remainder fraction and the organic fraction of municipal waste in the ecoparks.

03.1 Prevention

In 2005, 1,638,074 tonnes of waste were generated, an average of 1.44 kg per inhabitant per day. Following four years of growth, this figure represents a return to the level of 2003. However, this needs to be interpreted cautiously and an eye kept on how it evolves over the next few years (for further information, see the document entitled Dades Ambientals Metropolitanas 05 [Metropolitan Data 05] which can be downloaded from the EMA website).

The primary objectives set by the PMGRM are the prevention and minimisation of waste; in other words, to achieve a quantitative and qualitative reduction. In order to move forward in this direction, the EMA has put in place various programmes: home composting, the promotion of non-material consumption, and the publicising of second-hand markets and appliance repairs.

By the end of 2006, over 400 composters of various kinds had been installed in the municipalities in the metropolitan area. Households, communities and schools that have joined the campaign were given beginners' training courses and received two follow-up visits to make sure they were succeeding in obtaining compost from their own waste without the need for selective or industrial waste collection. The EMA also provided the necessary equipment: composters, tools and guidebooks. Some local councils have

realised the usefulness of the scheme and have considerably increased the number of composters in their area.

Following certain experiments that have been tried in central Europe, work has been done on promoting an alternative idea. This consists in suggesting to the public that they gradually replace their consumption of material goods, which produces waste, by the consumption of services and non-material goods, which produces far less. As a way of spreading this idea, an interactive stand has been prepared that can be set up at fairs and markets to explain the proposal. The educators who accompany the information stand invite children to play with a giant jigsaw puzzle that reproduces a childlike picture of how the Garraf controlled waste disposal site will look once it has been completely restored now that no more waste is being dumped there. The campaign also gathers ideas from adults on alternative presents that generate little waste. To thank them for their ideas, some firms have supplied vouchers enabling them to get to know activities of facilities that provide collective services. The campaign was given the name of Idees amb AEffecte (Ideas with AEffect).

In the middle of 2006 a service providing information on, and promoting, second-hand and product repair markets, entered operation. In addition to setting up a telephone helpline, the campaign gives out information on which establishments enable the public to extend the useful life of their objects, either by repairing them when they are broken or by helping to find new owners for those that someone no longer has a use for. To make the campaign highly visible, it has a stand that travels round the metropolitan towns and cities displaying some of the objects that have been found in the street and whose appearance has been improved by a few small repairs.

Other projects that are well established, but have less direct impact on the public,

include improvements in the internal management of waste generated by EMA's own activities and various studies to assess the possibilities of introducing new projects, such as reducing the waste generated by old people's homes.

03.2 SELECTIVE COLLECTION

Selective waste collection gradually increased during the period 2003-2007. In 2006, selective collection accounted for 28% of all waste generated. If the remainder fraction treated at the ecoparks is taken into account, which means including recovered waste in the calculation, the proportion goes up to 40%.

More and more specific types of waste have their own dedicated collection and treatment channels, one of the most important of which is the Gavà voluminous articles treatment plant. An agreement was signed at the end of 2006 which will allow local councils to offset the cost of selectively collecting waste electrical and electronic equipment (WEEE).

Although the Environmental Agency stopped providing support to municipal selective waste collection in 2003, it has continued to be involved through prevention and selective packaging collection campaigns, promoting waste collection and storage depots, etc. Moreover, it has continued to act as the metropolitan local governments' representative in dealings with the integrated packaging management systems and in drawing up statistical balance sheets on waste collection in the metropolitan area.

03.3 TREATMENT

There are many installations for domestic residues treatment in the metropolitan area. The already existing installations

and the ones predicted in the PMGRM are directed to achieve the objective of recovering up to 60% of the residues and to destine only 40% to final disposal (incineration and deposit). In these installations they treat the fractions of the residues in a specialized way: compost or biogas is obtained from the organic matter, raw material is obtained from the different fractions of selective collection, which is reintroduced in the productive circuit (paper, glass, plastics and metals); the residues that cannot be recovered or that have not been able to be recovered from the improper of some fraction are taken to final disposal in some installations that observe the environment protection requests demanded by the European regulations. The objective of the PMGRM is to process 100% of the residues, covering those that, although cannot be recovered, its potential contaminant and/or its volume can be diminished.

Waste Collection and Storage Depots

These depots selectively receive and store waste that is not selectively collected by households. The network of metropolitan depots was completed in 2006 with the entry into service of the Begues depot and the awarding of the contract for the construction of the Sant Adrià de Besòs depot. The number of mobile depots in service also went up, from two to three. In addition, more and more local councils have their own mobile or mini-depots (L'Hospitalet de Llobregat, El Prat de Llobregat, Barcelona, etc.)

Sorting Plants

Until 2005, there were three sorting plants in operation in the metropolitan area, in Gavà-Viladecans, Sant Feliu de Llobregat and Molins de Rei (a minimum waste-type sorting plant). According to the second review of the PMGRM, the Sant Feliu plant is due to be replaced by a new plant in the

Besòs region, which will make it possible to rebalance the primary waste transport flows. In the meantime, the treatment capacity of the Gavà-Viladecans plant has been increased. In 2005 the metropolitan plants treated a total of 15,435 tonnes of packaging and 14,707 tonnes of inorganic waste collected in the municipalities operating the minimum waste model.

Voluminous Treatment Plants

This facility gradually entered service beginning in 2005. Its function is to classify and grind clean wood and voluminous waste and it has a capacity of 40,000 tonnes a year.

Composting Plants

Selectively collected organic waste and pruning and gardening refuse is taken to the plants in Castelldefels and Torrelles de Llobregat, and the ecoparks. Until 2003 part of the organic waste was treated at the Botarell plant and until 2004 at the plant in Sant Cugat del Vallès.

Ecoparks

Ecoparks are treatment complexes containing installations for treating different types of waste within the same compound. Their primary objective is to recover the organic matter in order to obtain compost and energy, which means that they make a big contribution to reducing greenhouse gas emissions. Ecoparks also reclaim materials that should have been collected separately, but were not selected at origin: glass, paper and cardboard, packaging, etc.

During the period 2003-2007, Ecopark 2 (Montcada i Reixac) entered service and Ecopark 3 (Sant Adrià de Besòs) started to operate on a trial performance basis. At the beginning of 2006, the installations and procedures of Ecopark 1 were overhauled to improve certain aspects and enhance

their efficiency.

A Plenary Council Meeting on 23 June 2005 decided to invite tenders for plans to build and run Ecopark 4 with a treatment capacity of 300,000 tonnes/year. This new facility is to specialise mainly in treating the remainder fraction and is to have a treatment capacity of 75,000 tonnes/year. On 27 October 2005 the contract to build a plant in Els Hostalets de Pierola, next to the already existing Can Mata controlled waste disposal site, was awarded to CESPA.

Energy Recovery Plants

Part of the waste that is not collected selectively and part of the refuse from other treatment facilities is used to obtain energy. The Montcada i Reixac incinerator was closed down in 2004 and dismantled between July and September 2005, so that at the present time there is only one facility of this kind, in Sant Adrià de Besòs. In 2005, 337,325 tonnes of waste were incinerated and 160,405 MWh of energy generated. The Besòs incinerator has modern gas elimination systems and supplementary purifying devices, in compliance with Directive 2000/76/EEC of 4 December. The latest improvement carried out enables the plant to cut nitrogen oxide emissions even further, optimise the neutralisation of acid gases and increase its particle capturing capacity.

The Vall de Joan Controlled Disposal Site

The Vall d'en Joan controlled disposal site in the Garraf massif is possibly one of the most emblematic facilities in the metropolitan area. This site, which had been in operation since 1974, was closed as scheduled in the PMGRM on 31 December 2006. In 2005 it received 645,949 tonnes of waste and a similar amount is estimated to have been

deposited there in 2006. A battery of measures has therefore been put in place as of 2007 with the aim of reducing the remainder fraction which from 2009 will be treated at Ecopark 4, to 350,000 tonnes.

During the period 2003-2007, restoration of zones 1 and 2 of the site was completed and the project moved on to the post-closure maintenance and monitoring phase. The first results of the restoration have shown that the early stages of vegetable regrowth are becoming consolidated as planned. Restoration of zones 3 and 4 is due to begin shortly.

As regards the environment, the amount of energy obtained from biogas in 2006 was 81,165 MWh. Also in 2006 improvements were made to the leachates plant with the installation of a modern ultrafiltration system and, while the site was still operating, the pilot scheme for disposing of refuse in bales continued, with initially good results.

In the not too distant future this space will be fit to become part of the new Garraf Natural Park run by Barcelona Provincial Council.

04. COMMUNICATION AND ENVIRONMENTAL MANAGEMENT

04.1 The communication instruments

The official website

Over the past few years the EMA website has become established as a means of exchanging information with the public and technical staff in the different metropolitan municipalities and companies. Additions to the site over the past period have included:

- ___ A specific section dedicated to regulations and procedures
- ___ Environmental education games to do with the water cycle and waste management
- ___ A dynamic presentation of Ecopark 2
- ___ A database on the "Idees amb a/efecte" (A/effective ideas) campaign in favour of non-material consumption and the 100% old, better than new campaign
- ___ Quarterly details regarding Ecopark 2

The number of visits has gone up to 1,100 a month, an average of 200 queries a year have been answered via e-mail and the list of subscribers to the electronic information newsletter now includes 600 registered users.

In addition to the public-sector platform, mention should be made of the private-sector part of the site (also known as a virtual community) which was used as a means of exchanging documents and opinions by the more than 50 people involved in working on the second review of the PMGRM.

Seminars and other informative activities

In the period 2003-2007 the workshops on waste were reviewed and converted

into environmental workshops so as to incorporate aspects of the management of the water cycle. In addition to the exchange of information between EMA and the town councils, the seminar programme included practical visits to the Baix Llobregat sewage works, the Vall d'en Joan landfill site and Ecoparc 3, among others. EMA also took part in various congresses, conferences and the like organised by other entities.

04.2. Environmental information and education actions

"Compartim un futur" (We share a future)

This is a programme of activities aimed at groups of citizens who want to get to know the solid waste and/or water cycle facilities at first hand.

The waste treatment facilities the public has been able to visit are the Ecoparks in Barcelona, Montcada and Sant Adrià (since it was opened in 2006), the Vall d'en Joan landfill site during its last stages as a rubbish dump and the subsequent restoration work on the site, the packaging waste sorting plant in Gava-Viladecans, the inorganic waste sorting plant in Molins de Rei, the composting plants in Castelldefels and Torrelles, the metropolitan network of waste collection and storage depots, and the energy recovery plant in Montcada i Reixac until it was finally closed down.

The water cycle facilities the public has been able to visit are the sewage works in Gavà, Montcada i Reixac, Sant Feliu and Baix Llobregat (since it came into operation in 2004) and the Besòs plant. The Besòs waterworks, which are integrated into the urban surroundings of the space known as El Fòrum, received a particularly large

number of visitors while the Universal Forum of Cultures was on, as it was on the route of the facilities people could visit. As the result of an agreement with Agbar, groups have also been able to visit the Sant Joan Despí drinking water treatment plant as part of a circuit dealing with the water cycle.

Visits to the Montcada i Reixac and Besòs waste water treatment plants have been restricted to technicians and special groups in view of their complexity. Visits to the Barcelona Ecopark were temporarily suspended from 2004 due to the remodelling work being carried out on this facility. The Montcada Ecopark was opened in April 2005 with a festival in which the inhabitants of the surrounding municipalities were invited to take part. The Environmental Education Centre in the Can Joan farmhouse, in the grounds of the Garraf disposal site, was also opened.

The total number of visitors in the "We share a future" activities programme during the school years 2002/03 to 2005/06 was 44,784, around 38% of whom visited water cycle facilities, while the remainder visited waste treatment installations. The participation of secondary school students was very considerable, as they represented nearly half of all visitors in the scheme.

Promoting selective collection of organic matter

Information campaigns were carried by means of specific agreements with metropolitan local councils beginning selective collection of organic matter in their municipality. The campaigns consisted in providing information to the public and offering them the basic materials to start collecting such matter separately in their kitchens. Campaigns were carried out to accompany the start-up of this type of collection and to strengthen involvement in municipalities where it had already been introduced.

Promoting selective collection of packaging

The funds allotted to this campaign come from the Ecoembes and Ecovidrio Integrated Management Systems which are responsible for managing packaging waste. The actions they have taken include a television commercial encouraging the public to separate such items correctly. This has also been backed up by the "Tria i Mola" (Select and Be Cool) campaign designed to provide all the schools with dedicated containers.

Encouraging use of the waste collection and storage depots

The "Anar a la deixalleria té premi" (Going to the depot has a reward) campaign was launched in 2006. Waste collection and storage depot users can ask for a user's card on which their visits to these facilities are recorded and at the end of the year they receive a rebate on the Metropolitan Waste Treatment and Disposal Tax of up to 14%.

EMA's participation in various events

EMA took part in the Ecomed fair (which is held every two years) with a stand and organised various parallel events at the Environmental Forum held there.

It was also present at various municipal and environmental fairs in Santa Coloma de Gramenet, Santa Coloma de Cervelló, Montgat, Esplugues de Llobregat, Sant Vicenç dels Horts and Sant Andreu de la Barca, as well as the Fira de la Terra (Earth Fair) in Barcelona. Bags of compost were given out at most of these events as an incentive to collecting organic matter separately. A scale model of the new Baix Llobregat Treatment Plant was displayed at the fair in L'Hospitalet.

In collaboration with the Abacus co-operative, three display cabinets were set up in its shops dealing with the water cycle,

saving water and waste electrical and electronic equipment. At the same time, workshops were put on for children.

Lastly, EMA took part in various national and international working and co-operation conferences to do with waste.

Informative material

To facilitate access by the public to EMA's publications, the latest items, in hard copy and/or audiovisual format, have been sent out to all the libraries in the metropolitan area.

In addition to this, several brochures and other materials designed to promote waste collection have been published to accompany the various public information actions.

04.3 The environmental management system at the EMA offices

During the fourth quarter of 2005, the first environmental diagnosis exercise was carried out at the EMA offices. This produced a picture of the environmental impact produced by the EMA offices in Zona Franca: consumption, emissions, waste generation, good environmental practice by the staff, etc.

The results of the diagnosis led to the introduction in 2006 of an Environmental Management System in line with the European Ecomanagement and Audit Scheme and the ISO 14000:2004 standard which is scheduled to be verified in 2007. Selective waste collection has been introduced in EMA's offices and the service areas it shares with other departments (canteen, waste storeroom), all staff have been given special training and the first Environmental Programme for the period 2006-2007 has been approved.

ENTITAT METROPOLITANA DEL TRANSPORT (METROPOLITAN TRANSPORT ASSOCIATION)

The activities carried out by the Metropolitan Transport Association (EMT) have led to an undisputable improvement in public transport. As regards the Metro network, 55 new trains have been brought in, a large number of stations have been made fully accessible to disabled people and there has been a 10% increase in passengers over the four-year period. As far as the Transports de Barcelona buses are concerned, new lines have been created, weekend services stepped up, new bus garages built, more buses powered by natural gas introduced, the new iBus information service launched and the Bus de Barri local services extended. The number of passengers has gone up by 9% and the entire TB fleet is now fully accessible.

The services provided by other companies to the municipalities in the Barcelona area have almost doubled their number of vehicles, adding 224 buses to bring the current total up to 569. Service frequency has been improved, new routes created and connections with Metro and railway introduced. Improvements have been made to the Bus de Barri service, accessibility and the Nitbús service, with buses every 20 minutes on all routes. The number of passengers has increased by 24%. The Metropolitan Taxi Institute (IMT) has improved the organisation of the sector, while Cetransa has managed transport information.

In spite of all the work that has been done, we must continue to strive to respond to the Metropolitan Area's growing mobility needs, promote accessibility to people and neighbourhoods, and contribute to the quality of the environment, getting more people to travel by public transport.

MAITE ARQUÉ FERRER
EMT Chairperson

01. INTRODUCTION

01.1 Goals and basic data

The Metropolitan Transport Association (EMT according to its initials in Catalan) is formed by 18 municipalities in the Barcelona Metropolitan Area (BMA). It was set up in 1987 for the joint provision of public passenger transport services in the territory covered by these municipal districts. This territory is characterised by the physical continuity of the urban fabric and its economic activities, which requires integrated planning and management of the transport system. On 28 April 1988 the Metropolitan Council decided to provide the public passenger transport service in this area, which has the status of an urban transport service, on a joint basis. The EMT runs and manages this service in accordance with its competencies.

The public transport services for which the EMT is responsible are divided into those it manages directly, which are provided by Transports Metropolitans de Barcelona (Metro and bus public-sector companies), and those it manages indirectly, which are provided by private companies that are contracted by the EMT for this purpose.

In 2006, these services transported a total of 626.8 million passengers in the 18 municipalities in their area. This volume represents nearly 70% of the journeys made by public transport, including suburban trains, in the metropolitan region. The 11% overall growth in demand for EMT's transport services between 2002 and 2006 meant that it provided an extra 61.9 million public transport journeys in the period.

The EMT's competencies are:

— To develop, manage and co-ordinate the public passenger transport services whose regular and non-regular routes

are within its area. This includes the granting of concessions for regular routes and authorisation for non-regular services, as well as concessions and authorisation for passenger stations.

- To provide the Metro service in Barcelona and 6 other metropolitan municipalities.
- To intervene on behalf of the administration in the taxi service.
- To programme traffic in the basic road network and provide technical assistance to the local councils in regard to urban traffic.

EMT finances the public transport services through the following formulas:

- A contract-programme funding the Metro and bus services.
- Having a share, together with the companies awarded the contracts, in the operating profits of the transport services.
- The amounts allocated to compensate for social fare pricing and integrated fares.

02. MOBILITY IN THE EMT AREA

In the area covered by the 18 municipalities belonging to the Metropolitan Transport Association, 32.2 million journeys are made each week, 81.0% of them on weekdays, 11.0% on Saturdays and 8.0% on Sundays.

The graphs below show the details of this mobility. It should be added that as far as public transport is concerned, the Metro is used for 15.3% of journeys and buses for 12.1%. In spite of the introduction of intermodality, most people still use only one means of transport for their journeys (88.9%). Lastly, women's mobility is slightly less than men's (11.4 and 12.3 journeys per week, respectively).

03. DIRECTLY MANAGED SERVICES: TMB

03.1 Transports Metropolitans de Barcelona (TMB)

Ferrocarril Metropolità de Barcelona S.A. and Transports de Barcelona S.A. are two public-sector companies belonging to the Metropolitan Transport Association, each with its own legal status. In a co-ordinated fashion and under joint management, they provide the passenger transport service under the common name of Transports Metropolitans de Barcelona (TMB).

03.2 Ferrocarril Metropolità de Barcelona SA

The Metropolitan Transport Association directly runs the Metro network service in Barcelona and other municipalities in the surrounding area through its public-sector company Ferrocarril Metropolità de Barcelona S.A.

The branch of TMB that has registered the biggest passenger growth is the Metro network, with 10% more journeys, bringing the total up to 353.4 million passengers in 2006. The city's economic and social activity, plus the improvements made to the networks during this period, have contributed to greater use by the public.

The improvements have focused on safety, easier access to stations, cleanliness and comfort, and, in particular, an appreciable increase in the frequency of trains (due to the introduction of new, extra trains) and a major renovation of the vehicles. The Metro is scheduled to receive 99 new trains between 2006 and 2007, some of which are already in service.

Actions in 2003

- Start of service on the new L11 Metro

line between Trinitat Nova and Can Cuiàs with five new stations.

- Entry into service of the Maresme-Fòrum station on L4.
- Extension of night-time services on Sundays and public holidays, the first trains being brought forward to 5 a.m.
- Completion of the improvement work on Marina station on L1.
- Opening of a new entrance to Maria Cristina station on L3.

Actions in 2004

- The new line, L11, was operated without any major incidents, continuously increasing the number of passengers so that by the first quarter of 2005 it had carried 15.2% more passengers than in the first quarter of 2004.
- The process of adapting stations for use by people with reduced mobility, with the installation of lifts and the removal of steps, received a big boost this year. Among other measures, the flooring of Catalunya station on L3 was renovated and access to Sants-Estació (L3 and L5) improved by getting rid of the stairs in the corridor between the two lines, putting in six lifts and building a new station hall for L3. By 2004, 85 stations had already been adapted, while work was under way on adapting another eight.
- From 9 May to 26 September, the period during which the Universal Forum of Cultures was on, the Metro service was reinforced, particularly on line 4.
- During this year the security and surveillance resources in the Metro were increased by 13.4%.
- In October the Montjuïc cable car line was closed so that the whole system could be completely renovated with new cars and new stations.
- The collective bargaining agreement covering the Metro was signed in November, to run for four years.
- Work began on building the new Sagrera interchange (L1 and L5) affecting

various entrances and the corridor between the two lines.

- The Trambaix and Trambesòs tram network came into operation with four new lines, 18.5 kilometres of track and 39 stops.

Actions in 2005

- The process of adapting Metro stations to the needs of people with reduced mobility continued.
- A special bus service was set up while work was being carried out on the Montjuïc cable car system. This service operated on weekdays during the summer months, as the Parc Montjuïc bus route, which runs at the weekends, already reached that far.
- Construction work also continued on the new Sagrera interchange (L1, L5 and the future L9 and L4). The Carrer de Garcilaso entrances were closed and the sections of the line between Clot and Fàbra i Puig on line 1, and Sagrera and Maragall on line 5, were closed during August.
- The times when bicycles can be taken on the Metro were extended as follows: 5 to 7 a.m.; 9.30 a.m to 5.30 p.m.; and after 8.30 p.m., on weekdays. On Saturdays, Sundays and public holidays, as well as during the whole of July and August, bicycles can be taken on the Metro at any time while it is in service.
- A new corridor has been opened at Clot station providing a more direct connection to line 2 (in the direction of Pep Ventura) and line 1 (in the direction of Hospital de Bellvitge).
- The new Metro unit built by CAF came into operation on line 5.
- The Montjuïc Funicular was temporarily closed for a couple of months to allow safety improvement work to be carried out.
- The section of the Metro between Artigues/Sant Adrià and Pep Ventura on line 2 was temporarily closed

for infrastructure work and track improvements to be carried out.

- Start-up of the first stage of mobile telephony capability on the Metro on the central sections of various lines.
- Presentation of the EMT Action Plan for 2006, drawn up jointly by the EMT and Transports Metropolitans de Barcelona. It included an increase in annual spending on the Metro network of €14.5 million, an associated investment of €83 million. The resources will be allocated to increasing safety measures, improving the cleanliness, layout and adaptation of stations, eliminating architectural barriers, increasing frequencies and upgrading the fleet with 24 new trains at rush hours and 18 refurbished trains.
- As a consequence of the Action Plan, a start was made at the end of the year on increasing the number of trains running at peak times. The number of trains on line 3 went up from 21 to 22 and their frequency rose from 3'30" to 3'10"; on line 4, from 17 to 19 trains with a train passing every 3'50" minutes instead of every 4'30"; and on line 5, from 26 to 27 trains, with an improved frequency of 2'50" compared to 3'00".

Actions in 2006

- Entry into service of improved access to Metro stations, with the provision of lifts, tactile guide paths for the blind and partially sighted, and other measures:
 - Glòries, Santa Eulàlia, Rocafort, Baró de Viver (L1)
 - Sants-Estació (L3)
 - Via Júlia, Alfons X, Lluçmajor, Joanic (L4)
 - Hospital Clínic, Pubilla Casas, Entença, Can Boixeres (L5)
- Increased Metro service frequency at off-peak times on Saturdays and Sundays.
- Doubling of security staff on line 5 as part of the Safety Improvement Plan.

- ___ Integral maintenance of the Pep Ventura, Gorg, Sant Roc, Artigues/Sant Adrià and Verneda stations on line 2, included in the Stations Maintenance Plan.
- ___ Entry into service of the first series 9000 units on line 2, replacing the series 2100 trains which were to be transferred to line 4 as part of the Rolling Stock Renovation and Expansion Programme.
- ___ Seminar on the conversion of conventional Metro lines into automatically operated driverless ones, organised by the Technological Centre for Automatic Metro Driving (Cetecam).
- ___ Agreement with the Catalan autonomous government, the Generalitat, whereby the EMT was charged with providing the public passenger transport service on section 4 of the future line 9 of the Barcelona Metro. Agreement by the EMT to provide and directly manage this service via Ferrocarril Metropolità de Barcelona S.A.

Actions in 2007

- ___ Renovation and expansion of the fleet

Barcelona Metro is in the middle of a major renovation and expansion of its fleet of trains. A total of 99 trains have been ordered through the Metropolitan Transport Authority (ATM): 39 series S5000, 10 series S6000 and 50 series S9000 trains. This purchase of nearly a hundred trains is exceptional, especially bearing in mind that the existing stock in the middle of 2005 comprised 118 trains.

By 31 December 2006, 32 of the 39 series S5000 trains had been received and four series S9000 trains were already running on line 4 of the Metro. The incorporation of these trains has not only renovated the fleet, but also ensured that it will be possible to carry out the plan to improve frequencies on the Barcelona Metro.

It is planned that 12 series S9000 trains will be running by May 2007, all on line 2. In addition, three series S5000 trains are being brought into service on line 3 and a further four trains of the same series on line 5. When this happens, the entire line 5 fleet will have been completely renovated.

- ___ Frequency Improvement Plan

Implementation of the plan for improving the service frequency on the Metro network began in October 2005. Since then, improvements have been made on nearly all the lines, on every day of the week and in almost every time band. Between January and May 2007, improvements were introduced on L2 and L3 at weekday peak and/or off-peak times as follows: L2: + 5 trains (peak) / + 4 trains (off-peak); L3: + 2 trains (peak) / + 1 train (off-peak);

The following additions to the service on Saturdays, Sundays and public holidays were made between January and May 2007 (these trains run between 10 a.m. and 9 p.m.): L1: + 1 train; L2: + 3 trains; L3: + 5 trains; L4: + 3 trains.

- ___ All-night Metro service on Saturdays and on the eve of public holidays

In order to satisfy the demand for night-time mobility at the weekends, the Metro will be open throughout the night from Saturday to Sunday morning and on the eve of public holidays. A non-stop service will be provided from first thing (5 a.m.) on Saturday morning right the way through to last thing on Sunday night (12 midnight). This measure comes into affect at Easter and lasts until Barcelona's Mercè festivities in late September. During this period the extra night-time trains will operate at an interval of 15 minutes.

- ___ Entry into service of the Montjuïc cable cars

The new Montjuïc cable car route will come

into service by May 2007. It was closed in October 2004 for a complete overhaul. It has three stations: one at the bottom of the hill (by Plaça de Dante), one in the middle (near the Jardins del Mirador de l'Alcalde) and one at the top (next to the Montjuïc castle walls). It should be pointed out that advantage was taken of the work being carried out to remodel the station at the top to make it suitable for use by people with restricted mobility.

03.3 Transports de Barcelona SA

The Metropolitan Transport Association runs the bus service in Barcelona and other nearby municipalities on a direct management basis through its public-sector company Transports de Barcelona S.A.

In 2006, Transports de Barcelona S.A. buses carried 207.7 million passengers, a growth of 9.4% over the period 2002-2006.

This service, directly managed by the EMT, has also been significantly improved: new routes have been introduced, others have been extended, weekday services have been reinforced and special attention has been paid to weekend services. Some of the new and extended routes are part of Barcelona's Bus de Barri, or local neighbourhood, service. Operation of most of the routes of this local service has been extended to Sundays and public holidays. Other important developments that have helped to improve the quality of the service provided by Transports Metropolitans de Barcelona include the entry into service of new bus garages, trials with alternative energies, the introduction of more vehicles driven by natural gas and the introduction of the iBus information service.

A particularly important development is that, with the acquisition during 2006 of 215 buses and an investment of € 50.4

million, by the beginning of 2007 the entire fleet of buses was completely adapted for use by people with reduced mobility.

Actions in 2003

- ___ Entry into service of the Horta bus garage with a capacity for 305 vehicles.
- ___ Handing over to the city of the spaces of the former Borbó bus garage.
- ___ Construction of a plant to produce and supply hydrogen to drive buses.
- ___ Entry into service of three hydrogen-powered, completely non-contaminating buses that will operate during the next two years as part of the European Union Cute project.
- ___ Trials of a hybrid bus with an electric motor and a natural gas-powered turbine .
- ___ Extension of various bus routes in Barcelona.
- ___ Extension of the bus lane network to 101 kilometres.

Actions in 2004

- ___ Acquisition of nearly 300 new vehicles to renovate the fleet of buses by means of a public invitation to tender. Of these new buses, 145 (90 powered by natural gas, almost half high-capacity articulated vehicles) were due to start operating in 2005 and the rest in 2006. Implementation of this programme would mean that 100% of the bus fleet would eventually have low platforms and be suitable for people with reduced mobility (this year the figure was 71%).
- ___ The proportion of the fleet running on non-contaminating fuels (natural gas and hydrogen) rose to 7.3%.
- ___ A total of 16 routes began operating to a timetable, mainly those with a frequency interval of more than 20 minutes at the weekends or on weekdays. An information campaign was launched to publicise this improvement in the quality of the service.

- ___ The Bus de Barri service had 18 routes in operation in 2004, while the number of passengers carried went up by 8.7% to 3.5 million during the year. Route 125 was extended.
- ___ From 9 May to 26 September, the period during which the Universal Forum of Cultures was on, the bus services were reinforced, particularly on five routes. An extra Bus Turístic route to the Fòrum site was put into operation.
- ___ 150,000 copies of a new bus map were published.

Actions in 2005

- ___ Presentation of 45 new vehicles to join the network in accordance with the plan for renovating and expanding the fleet.
- ___ Incorporation of 91 new buses that run on natural gas, 51 of which are articulated.
- ___ The CUTE project, in which eight other European countries are involved, continued with three hydrogen-driven buses. A survey was carried out which showed that this measure met with a high degree of approval.
- ___ During the summer, the number of routes operating to a fixed timetable at each of the stops went up to 39. The number of buses in operation was also increased by 5% compared to the year before.
- ___ The Bus de Barri service had 18 routes in operation in 2005. Route 127 was extended as far as Sant Andreu.
- ___ A shuttle service was set up from Plaça de Catalunya to take people to and from the Feria de Abril, which was held in the Fòrum in Barcelona.
- ___ Route 72 (Bonanova – Polígon Pedrosa) was extended as far as the Gran Via Montjuïc-2 fairground in L'Hospitalet de Llobregat.
- ___ A new bus route was started up linking the Hospital de Sant Pau to El Poblenou, via El Clot.
- ___ The new iBus service came into

- operation enabling passengers to obtain on-line information via their cell phones on times when buses are expected.
- ___ Transports Metropolitans de Barcelona (TMB) launched a new service enabling the public to take a virtual 3-D run through its public transport routes via the "Vull Anar" (I want to go) application on its website (www.tmb.net).
- ___ Publication of 200,000 copies of a new bus map.
- ___ Presentation of the EMT's Action Plan for 2006, drawn up jointly by EMT and Transports Metropolitans de Barcelona, which scheduled an increase in annual expenditure of € 10.8 million euros, an associated investment of € 65 million and the introduction of 215 new and renovated buses. The extra money was to be used to provide more local and neighbourhood buses, introduce seven new routes and extend another 11, increase the frequency on 12 existing routes, introduce new routes and increase frequencies at weekends, and expand the service during the summer.

Actions in 2006

- ___ Expansion and extension of various routes: 14 to El Poblenou, 17 to Vall d'Hebron, 36 as far as Can Dragó, 120 to La Ribera, 123 to Parc Sanitari Pere Virgili, 124 to Els Penitents, and 127 to Sant Andreu.
- ___ Extension of the Bus de Barri service to Sundays and public holidays.
- ___ Entry into service of a third Bus Turístic route: the Fòrum route.
- ___ Joint operating trials of 15 buses powered by biodiesel fuel between TMB and Petrocat.
- ___ Operation of urban route 155 in Montcada i Reixac on Sundays and public holidays, and an extended service on weekdays.
- ___ The new iBus service, which enables passengers to obtain on-line information via their cell phones

on times when buses are expected, reached the figure of a thousand enquiries a day. The service was expanded to 33 lines.

— Summer services increased by 16% over the year before.

— New route 21 between El Prat de Llobregat, Zona Franca and Avinguda del Paral·lel (linking up with Metro L3) with buses every 20 minutes.

— New Bus de Barri route 130, between Sarrià and Can Caralleu, with buses every 30 minutes.

— Incorporation of 35 new buses to renovate the fleet and reinforce certain routes.

— New Bus de Barri route 131 to El Putxet operating at 30-minute intervals.

— New route 46 from Plaça d'Espanya to Barcelona airport operating at 30-minute intervals.

— New Bus de Barri route in El Coll operating at 30-minute intervals.

— New route 196 between Plaça Kennedy and El Bellesguard operating on weekdays at 15-minute intervals.

— New route 26 from Poblenou to Virrei Amat operating on weekdays at intervals of 16-18 minutes.

— New route 156 in Montcada Nova and El Pla d'en Coll in Montcada i Reixac, operating at 25-minute intervals.

Actions in 2007

— Consolidation of the 2006 Action Plan

In 2006 the TMB bus network benefited from an ambitious Action Plan that allowed it to make a number of important improvements. As of 1 January 2007, all the measures in the plan were in operation.

Improved weekday services: seven new or reinforced local bus services, nine regular bus routes newly introduced or extended, 13 regular bus routes reinforced.

Improved weekday and summer services: 22 new routes at weekends, nine routes

reinforced at weekends, 23,000 more hours of services on weekdays during the summer.

— A fully accessible fleet

In 2006, 125 vehicles were acquired for the bus service at a cost of € 50.4 million. Of these new buses, 154 have been used to replace old ones, while the remaining 61 were used to expand the fleet. It is worth pointing out that the introduction of these vehicles has meant that TMB started 2007 with all of its bus fleet adapted for use by people with reduced mobility.

— Extended weekend services

During 2007 the process of extending services outside of the working week is continuing. In the first quarter of the year, 100 extra vehicles are being brought into service on Saturdays and 50 more on Sundays and public holidays.

04. INDIRECTLY MANAGED SERVICES

The Metropolitan Transport Association indirectly manages the other transport services, which it provides via various private operators. The contracts made with the vast majority of these companies are such that the EMT receives a share of the profits accruing from operating the transport services in question.

During the period 2003-2007, integral improvement measures were introduced on most of the services in the first ring of towns surrounding Barcelona. These included:

— Significantly increasing the frequency of buses on the routes.

— Providing services in areas not previously covered and setting up new routes both within towns and between the 18 municipalities.

— Catering specially for hard-to-get-to neighbourhoods and areas.

— Promoting accessibility for all through vehicles with low platforms of the right size for each particular need.

— Improving and co-ordinating connections with the Metro and railway within the framework of an integrated fares system.

— Consolidating the growth of the metropolitan night bus service (Nitbús).

In regard to the indirectly managed bus network, the EMT's Action Plan for 2006 programmed an increase in annual expenditure of € 14.5 million euros, an associated investment of € 20 million and the acquisition of 116 new vehicles, all with low platforms and accessible by people with reduced mobility. Other resources were allocated to measures such as the creation of local neighbourhood and urban routes, connections with Metro and railway stations, new routes and links (the airport, Avinguda Diagonal, the banks of the rivers

Llobregat and Besòs, etc.), the creation of 18 new routes and the lengthening of 13 others, and increasing the frequency of the service on 23 routes.

After the trams, the EMT's indirectly managed bus services are the public transport system that has registered the biggest growth in passengers in the whole of the metropolitan region. In 2006, they carried 65.7 million passengers, a similar figure to Ferrocarrils de la Generalitat, and 6.9% more than the year before. Two factors explain a large part of this growth: the economic and social dynamism of the municipalities in the first ring round Barcelona, and the improvements made during the year in the metropolitan bus network.

04.1 Barcelonès Nord service (TUSGSAL)

The Barcelonès Nord service comprises the bus network of the municipalities of Badalona, Santa Coloma de Gramenet, Sant Adrià de Besòs, Montcada i Reixac, Montgat and Tiana.

The period 2002-2006 saw moderate growth in the number of passengers, up by 4%, in view of the fact that most of the measures contained in the Action Plan have been put in place only since the end of 2006, according to the delivery schedule of new vehicles.

The main measures have consisted in introducing five new local neighbourhood bus routes in Badalona i Santa Coloma de Gramenet, and new links between Badalona and Nou Barris / Vall d'Hebron, between Sant Adrià and Sant Andreu, and between Montcada i Reixac and Hospital de Can Ruti.

Main actions in 2003-2007

— Renovation of the fleet through the

purchase and entry into service of 25 medium-sized (midibus-type) vehicles and 41 standard vehicles.

— Creation of urban route 801 in Santa Coloma de Gramenet (with a 30-minute frequency) and strengthening of the Bus de Barri local service with the creation of microbus routes 802 and 803 in the Singuerlín, Oliveras and Església neighbourhoods.

— Creation of route BD2 in Badalona running between Pep Ventura Metro station and the cemetery, via El Carme nursing home and day centre, Institut Guttman and Hospital de Can Ruti.

— Creation of new route B31 between Plaça de la Vila in Santa Coloma de Gramenet and the Canyadó neighbourhood in Badalona, to reinforce the existing B30 route every 10 minutes.

— Setting up of two bus routes, one from Badalona and the other from Santa Coloma de Gramenet to the Forum of Cultures site while this event was on.

— Reinforcement of route B27 between Fondo Metro station and the centre of Badalona, with the creation of route B17 (4 vehicles and 5-minute intervals between the buses on the two routes).

— Improved frequency on route B-29 (Montigalà – Tiana) on weekdays (every 15 minutes) and Saturdays, and on route B27 on Saturdays.

— Improved service on urban route TM (Montgat and Tiana) with the incorporation of an additional vehicle, the extension of the route to the centre and north of Montgat, to the east of Tiana and as far as the Can Gaietà housing development in Tiana.

Reduction of the interval between buses from 40 to 20-25 minutes on the central section.

— Improved frequency on urban routes BD1 (from 20 to every 15 minutes) and BD3 and BD4 (from 12 to every 10 minutes).

— Lengthening of route BD4 to El Carme nursing home and day centre

(Badalona), route B21 to Avinguda Ramon Berenguer (Santa Coloma de Gramenet), route B23 to La Maquinista and Sant Andreu (Barcelona), and route B30 to Can Franquesa (Santa Coloma de Gramenet).

— Improvements in public transport serving Hospital de Can Ruti: creation of circular route BD0 between Hospital Germans Trias i Pujol, Institut Guttman and Badalona cemetery. Buses every 15 minutes.

— Extension of the Bus de Barri service in Badalona with the introduction of a new microbus route, BD5, in the neighbourhoods of La Salut, Nova Lloreda, Sistrells and Sant Crist running as far as the centre of Badalona and the RENFE railway station with buses every 20 minutes.

— Extension of the Bus de Barri service to the neighbourhoods situated between Badalona and Santa Coloma de Gramenet, with the creation of a new microbus route, B15, running between Can Peixauet, Santa Rosa, Circumval·lació and Fondo (Metro L1) every 20 minutes.

— A new transversal urban route, BD6, in Badalona running between La Salut, El Fondo, Rambla França, Montigalà, Molí de la Torre, La Morera, El Pomar, Les Guixeres, Canyadó and Centre every 20 minutes.

— A new route, BD7, running along the sea front between Badalona RENFE railway station and the centre of Badalona and Sant Adrià de Besòs RENFE railway station via Badalona port.

— Doubling of the frequency on route B18 between Santa Coloma de Gramenet and Montcada i Reixac, from 60 to every 35 minutes.

— Improved frequency on three intermunicipal routes: B22 to 20', B23 to 20', B26 to 10'.

— Introduction of three new routes: B12 between Hospital de Can Ruti and Montcada i Reixac RENFE railway station; B14 running along the bank of

the river Besòs between Santa Coloma de Gramenet (Can Franquesa) and Sant Adrià de Besòs (RENFE railway station), via Hospital de l'Esperit Sant; and B16 between Badalona and La Vall d'Hebron in Barcelona, via Nou Barris and Santa Coloma de Gramenet.

- A study and surveys of the characteristics of the passengers using the new 801 urban route.
- A study concerning the restructuring and improvement of the bus network with the perspective of the extension of the Metro and tram network to Barcelonès Nord. The results have been incorporated in the Surface Transport Plan 2005-2007 and EMT's Action Plan 2006.
- Entry into operation of Tusgal's Operating and Information Assistance System (SAEI) involving a satellite tracking system and the installation of information screens at the main stops. Exploitation of the data supplied by the system.
- Four-year extension of the "interested management" contract (management by the local authority with a profit-sharing arrangement) for the Barcelonès Nord urban transport service between the EMT and Tusgal.

04.2 L'Hospitalet de Llobregat and other municipalities service (Rosanbús SL)

In addition to L'Hospitalet de Llobregat, the service covers El Prat de Llobregat and other municipalities on the left bank of the river Llobregat: Cornellà de Llobregat, Sant Joan Despí, Esplugues de Llobregat and Sant Just Desvern.

During the period from the end of 2002 to the end of 2006, there was an extremely sharp rise in the number of passengers, up by 75%. In addition to the region's great urban dynamism, the improvements made

to the service –greater frequency, the creation of new urban and neighbourhood services (such as the new Prat de Llobregat urban service), and the reinforcement of links with Barcelona (especially with Avinguda Diagonal)- have also played a major part in producing this increase.

In February 2003, the new daytime bus network serving L'Hospitalet de Llobregat and five neighbouring municipalities started operating following the public invitation to tender which resulted in the contract for the service being awarded to Rosanbús S.L. The new network has incorporated an additional 14 vehicles into the fleet, bringing the number of buses running on weekdays up to 37.

Main actions 2003-2007

- Creation of the L14 route between Bellvitge and Avinguda Diagonal in Barcelona (5 vehicles with a 15-minute frequency) and the L16 route between Zona Franca and Pubilla Casas (4 vehicles with a 15-minute frequency).
- Reinforcement of the L12 route between Cornellà de Llobregat, L'Hospitalet de Llobregat and Barcelona (Avinguda Diagonal), and extension of the route to Almeda de Cornellà. Improved frequency from 12 to 10 minutes.
- Expansion of the L10 route to Sant Just Desvern, with a new entrance to the municipality via Rambla de Sant Just and extension of the route to the cemetery and the south-west industrial estate. Reinforcement of the central section and improved frequency.
- Reinforcement of route L14 between Hospitalet de Llobregat (Bellvitge) and Barcelona (Avinguda Diagonal) with intervals between buses down from 12 to 11 minutes.
- Introduction of four midibus-type vehicles on route L16 to improve its penetration into the urban fabric and help speed up commercial traffic.
- Expansion of routes LH1, LH2 and L10

to improve access to the hospital and university facilities of Hospital de Bellvitge. Extension of route LH1 to link up with line 5 of the Metro, and of route LH2 to serve the cemetery in L'Hospitalet. Incorporation of five new midibuses to reduce the interval between buses from 20 to 15 minutes on weekdays, and from 40 to 30 minutes at weekends and on public holidays.

- Creation of various urban routes in El Prat de Llobregat: PR1, PR2, PR3, between the RENFE railway station, Carrer Lleida and the cemetery, combined every 15 minutes on the central section. Extension of route PR3 to serve the local beach in the summer. Extension of route PR1 to the airport. Endowment of four midibuses.
- Survey of the characteristics of passengers on the new network and a planning study of the improvements to be carried out in the period 2003-2005.
- Development of the company's Operating and Information Assistance System (SAEI) using a satellite tracking system. Acquisition of the SAEI equipment for 20 buses belonging to the fleet of L'Hospitalet de Llobregat and other municipalities.
- Collaboration agreement between EMT and El Prat de Llobregat town council to define the characteristics and funding of the urban bus service.

04.3 Viladecans and Gavà service (Mohn SL)

This bus service covers the municipalities of Viladecans and Gavà, and their connections with neighbouring municipalities and Barcelona.

Between the end of 2002 and 2006, the number of passengers grew by 20%. In addition to the economic and social dynamism of the municipalities involved and of the surrounding Baix Llobregat

region, various improvements to the service have contributed to this increase. These include the strengthening of the Gavabús and Vilabús urban services, improved links between Viladecans and Barcelona and L'Hospitalet de Llobregat, and a considerable increase in the links between these municipalities and the Diagonal in Barcelona, especially as regards frequency (with buses every 10 minutes during the morning rush hour).

Main actions in 2003-2007

- Expansion of the L97 route through the urban centres of Gavà and Viladecans, linking these municipalities directly to Avinguda Diagonal in Barcelona.
- Improved frequency on route L96, with the interval between buses down from 30 to 20 minutes thanks to the incorporation of two extra vehicles.
- Extension of the Gavà urban route (Gavabús) to the neighbourhoods of La Sentiu/Ca n'Espinós and Gavamar. Incorporation of new midibuses, increasing frequency to every 20 minutes.
- Extension of the Gavabús to the Barnasud shopping centre. Collaboration agreement with Gavà town council and the Parc Comercial Barnasud Conservation Body.
- Expansion of the Viladecans urban service with the introduction of a new Vilabús route (VB2) and an additional midibus-type vehicle. Location of the beginning and end of routes VB1 and VB2 in Plaça de l'Estació. This expansion means that new neighbourhoods in the municipality are served and buses run between the town centre and the RENFE railway station every 15 minutes. Following this, the VB3 route was set up which, combined with the other Vilabús routes, produced a 10-minute service frequency. Equipped with two midibuses it serves La Roureda and the Parc de Negocis.

- Provision of the Vilabús service on Saturdays (other than public holidays).
- Lengthening of the L80, L81, L82 and L85 routes from Avinguda d'Eramprunyà to Avinguda de Joan Carles I (Les Bòbiles). Measures taken to improve regularity on all these routes.
- Extension of route L85 from Cornellà de Llobregat (Sant Ildefons) to L'Hospitalet de Llobregat (Santa Eulàlia) with the incorporation of two new vehicles. Combination of timetables with route L82 to provide together a 15-minute interval between buses on weekdays and a 20-minute interval on Saturdays, Sundays and public holidays on the common section.
- Renovation of the fleet on routes L86, L87 and L88 between Sant Climent de Llobregat and Viladecans with the incorporation of new vehicles. Reorganisation and extension of the L88 timetable on every day of the week.
- Improved frequency on routes L86 and L87 between Viladecans and Barcelona with a combined frequency of buses every 15 minutes.
- Extension of Castelldefels urban route CF1 on Sundays and public holidays.
- A study and surveys of the characteristics of the passengers using the new Vilabús and Gavabús routes.
- Development of the company's Operating and Information Assistance System (SAEI) using a satellite tracking system.

04.3 Sant Boi de Llobregat and other municipalities service (Oliveras SA)

This bus service meets public transport needs in Sant Boi de Llobregat as well as connecting it to the neighbouring municipalities and Barcelona. A route has also been added between L'Hospitalet de Llobregat, Cornellà de Llobregat, Sant Joan Despí and Sant Feliu de Llobregat.

Between the end of 2002 and the end of 2006 there was a very considerable increase in the number of passengers, which went up by 37%. In addition to Sant Boi de Llobregat's urban dynamism, various improvements in the service, including the extension of the urban routes in Sant Boi de Llobregat, a new link between the Sant Boi FGC railway station and the airport, and a new direct route between the town centres of El Prat and Sant Boi, have also contributed to this growth.

In February 2003, the new Sant Boi de Llobregat daytime bus network started operating as a result of the amended contract with Oliveras, S.A. This led to the fleet being increased by six vehicles, bringing the number of buses running on weekdays up to 22.

Main actions 2003-2007

- Conversion of route SB1 into one directly serving the railway station and linking the neighbourhoods and the main amenities, equipping it with six midibuses and reducing the interval between buses from 30 to 15 minutes.
- Creation of a second urban route, SB2, linking the town centre with the peripheral neighbourhoods built on the hill, with a microbus every 15 minutes, and a third urban route, SB3, with a microbus every 60 minutes.
- Reinforcement of route L75 with the creation of a new route, L74 running via Plaça de Catalunya, achieving a 15-minute interval between buses between Sant Boi and Cornellà de Llobregat (RENFE, Trambaix and Metro L5) with the addition of two standard buses.
- Extension of the L72 route from Camps Blancs to Ciutat Cooperativa, with buses every 20 minutes. Co-ordination of this route with the L70 to achieve a joint frequency between Sant Boi and Barcelona of a bus every 10 minutes.

- Improved frequency on route L96 linking Viladecans, Gavà and Castelldefels.
- Inclusion of route L46 between Sant Just Desvern, Sant Joan Despí and Cornellà de Llobregat in the indirectly managed service. Extension of route to Plaça del Parador in Sant Just, with the incorporation of an additional vehicle.
- Creation of route L77 between the Sant Boi de Llobregat FGC railway station and Barcelona airport with three vehicles and a service frequency of 15 minutes. The route is co-ordinated with FGC's Metro del Baix Llobregat service.
- Creation of route L78 between the town centres of Sant Boi de Llobregat and El Prat de Llobregat with five vehicles and a 20-minute service frequency.
- A study and surveys of the characteristics of the passengers using the new Sant Boi de Llobregat network and possible improvements in the Sant Feliu de Llobregat urban service.
- Development of the company's Operating and Information Assistance System (SAEI) using a satellite tracking system.

Ø4. 5 Castelldefels service (Mohn SL)

This indirectly managed service covers Castelldefels and its links with Barcelona and neighbouring municipalities in a way that also provides public transport for Gavà, Viladecans and Sant Boi de Llobregat.

The Castelldefels services recorded a big increase in the number of passengers carried, the figure doubling during the period 2003-2007. This process was driven by the improved service frequency in the Castelldefels-Gavà-Viladecans corridor, as well as the considerable growth in the links between these municipalities and the Diagonal in Barcelona. There was also a major increase in public transport on the Castelldefels and Gavà coast.

In February 2003, the new Barcelona to Castelldefels daytime bus network started operating as a result of the amended contract with Mohn, S.L. The entry into service of the new network led to the fleet being increased by seven vehicles, bringing the number of buses running on weekdays up to 18.

Main actions 2003-2007

- Reduction of the interval between buses on routes L95 and L96 from 30 to 20 minutes and co-ordination of the timetables of the two routes so that there is a bus every 10 minutes within Castelldefels. Modification of the L95 route so as to provide a better service to the Gavà Mar neighbourhood in the direction of Barcelona, lengthening of the route to the neighbourhoods of La Pineda and El Poal and to the Can Bou health centre, and extension of its operating hours. The routes were provided with eight additional vehicles in two stages to reduce the interval between buses from 20 to 15 minutes on weekdays throughout the year and on weekdays and public holidays in the summertime.
- Extension of the service on route L94 along the Castelldefels sea front (taking in the neighbourhoods of Bellamar and El Poal), Gavà and Viladecans to Barcelona (Plaça de Catalunya) all year round, with a 30-minute frequency on weekdays during the winter and a 20-minute frequency during the summer.
- Improved links between Castelldefels, Gavà, Viladecans and Avinguda Diagonal in Barcelona by reinforcing the morning rush hour service frequency in the direction of Barcelona to 10 minutes and the frequency throughout the afternoon in the Llobregat direction to 15 minutes.
- Creation of an urban route, CF1, between the town centre, Vista Alegre and the higher parts of the neighbourhoods of Montemar, Bellamar

and El Poal, and as far as Les Botigues de Sitges, with two midibuses and a frequency of 45 minutes.

- Reduction of the interval between buses on route L97 from 60 to 30 minutes with the incorporation of two additional vehicles. Operation of this route extended to include August.
- A study and surveys of the characteristics of the passengers using the new urban CF1 route and the modified L97 route.
- Development of the company's Operating and Information Assistance System (SAEI) using a satellite tracking system
- Extension of the "interested management" contract for the service with Mohn, S.L. to the end of 2008 and approval of the extension and improvement measures associated with the extension.

Ø4.6 Esplugues de Llobregat, Sant Just Desvern and Sant Feliu de Llobregat service (Soler i Sauret SA)

These three municipalities have two services, one covering the urban services of Esplugues de Llobregat and Sant Just Desvern, the other the urban service of Sant Feliu de Llobregat.

There was an 80% increase in the number of passengers between the end of 2002 and the end of 2006. The main reason for this was the success of the link between Sant Just Desvern and Zona Universitària (Justmetro), but the dynamism of the Esplubús, Justtram and de Sant Feliu urban routes also played a part.

Main actions 2003-2007

- Extension of the Justmetro route with new stops in the high part of Esplugues (Ciutat Diagonal, Finestrelles) and in La Plana-Bellsolig in Sant Just to

meet the demand from local residents. Extension of the service to include Saturdays (other than public holidays) and an additional hour on weekdays.

- Improved urban public transport service in Sant Feliu de Llobregat with the incorporation of two additional midibus-type vehicles and a reduction of the interval between buses from 30 to 20 minutes on both routes. Lengthening of the route to El Pla industrial estate and Les Grasses, and a 30-minute extension to the service in both the morning and the evening.
- Creation of the Esplubús urban route in Esplugues with three medium-sized vehicles and a frequency of 30 minutes.
- Creation of the new Justtram route, an urban route serving Sant Just Desvern with one microbus and a frequency of 40 minutes.
- Creation of the EPB2 urban route in Esplugues de Llobregat between La Miranda, Ciutat Diagonal and El Gall, with one microbus operating every 30 minutes.
- Creation of the EPB3 urban route in Esplugues de Llobregat between Sant Joan de Déu, Finestrelles, Pont d'Esplugues and El Gall, with one midibus operating every 30 minutes.
- Creation of the EPB4 urban route in Esplugues de Llobregat between Can Vidalet, Pont d'Esplugues and Parc de Collserola (Plaça Mireia), with one midibus operating at weekends.

Ø4.7 Indirectly managed services in Barcelona

The Metropolitan Transport Association directly manages the bus service it provides in the city of Barcelona through Transports de Barcelona S.A. However, there are also three indirectly managed services:

- The service in the Nou Barris district (routes 80, 81, 82 and 83), which is run by Transports Lydia S.L.

- The service in the districts of Gràcia and Horta-Guinardó (routes 86 and 87), which is run by Transports Ciutat Comtal S.A.
- The Tombbús public passenger transport service covering various shopping areas in the centre of Barcelona, which runs between Plaça de Catalunya and Plaça de Pius XII in Avinguda Diagonal. This route is equipped with medium-sized vehicles adapted to the specific needs of passengers using the service to go shopping. These buses therefore have spacious interiors, seating for all passengers, high-standard features and extreme comfort, among other things. In view of these characteristics, the fares are different from those of the other buses and the tickets are not part of the integrated fares system.

Main actions 2003-2007

- Renovation of the fleet of routes 86 and 87 in the Horta and Gràcia neighbourhoods with the incorporation of five midibuses. Improved frequency on route 86 between Horta and El Carmel, with the interval between buses reduced from 15 to 10 minutes, and on route 87 Gràcia, Vallcarca, El Carmel and Horta, with the interval between buses reduced from 12 to 10 minutes at peak periods.
- Creation of route 80 between Vallbona, Ciutat Meridiana, Torre Baró, Trinitat Nova and Via Júlia, as a reinforcement for route 81 every 30 minutes.

Ø4.8 Service between El Prat de Llobregat and the ZAL (Logistical Activities Zone) (Transports Ciutat Comtal 2 SL)

The establishment of new companies in the Logistical Activities Zone next to the port of Barcelona (ZAL 1 and

ZAL 2), coupled with the lack of public transport serving the Pratenc industrial estate and the needs of Mercabarna, Barcelona's wholesale market, have made it necessary to provide these areas with a public transport service linking them to El Prat de Llobregat and its RENFE railway station. To this end, route PR4 between El Prat de Llobregat and the Logistical Activities Area came into operation in June 2006. Since this is a service for the companies in these zones, the Metropolitan Transport Association sought an agreement and a sharing of responsibilities between the public bodies and private companies in the logistics sector.

As a consequence, on 12 January 2006 a collaboration agreement was signed between the EMT, El Prat de Llobregat town council, the Catalan autonomous government (the Generalitat de Catalunya), the Barcelona Port Authority, the Zona Franca Consortium, the Intermodal Logistics Centre (CILSA), Mercabarna and the Pratenc Industrial Estate Owners' Association defining the characteristics and funding of this service.

In May 2006 the "interested management" contract for the service was awarded to Transports Ciutat Comtal 2 S.L. following a public invitation to tender. Finally, on 20 June 2006, the route started operating with three vehicles timed to link up with the suburban train services at El Prat de Llobregat railway station. The route goes through a large part of the town's built-up area, enters Mercabarna, goes through the Pratenc industrial estate and ZAL2 in El Prat, and terminates in ZAL1 in Barcelona. It also serves part of the Zona Franca. In view of the importance of this service for the people working in these areas, an integrated fare system is in operation.

04.9 Aerobús service (Transports Ciutat Comtal SA)

The Metropolitan Transport Association owns the Aerobús public passenger transport service running between Plaça Catalunya in Barcelona and Barcelona El Prat airport. This route is operated by large vehicles suited to the specific needs of airline passengers: room for luggage, seating for all passengers, high-standard features and extreme comfort, among other things. In view of these characteristics, the fares are different from those of the other buses and the tickets are not part of the integrated fares system.

There has been a big increase in the demand for this service linking Barcelona and the airport, and by the end of 2006 it was carrying twice the number of passengers than at the end of 2002. This is a consequence of the airport's acknowledged dynamism coupled with continuous improvements in the buses, their features and their frequency, which is now every 6 minutes throughout almost the whole day and on every day of the week.

Main actions 2003-2007

- Incorporation into the Aerobús service, at the beginning of the period, of an additional large-capacity, 14.5 metre-long, low-platform vehicle accessible by people with reduced mobility. In December 2005, incorporation of three new 15-metre long SETRA buses and reduction of the interval between buses to 8 minutes on weekdays and 10 minutes at weekends and on public holidays.
- The current Aerobús service was established in October 2006. It consists of a departure in each direction every six minutes every day of the year. To this end, three new vehicles were incorporated, bringing the operational fleet up to 15 specially designed

vehicles (with spaces for luggage and seating for all passengers).

- Extension of the contract for the concession of the public passenger transport service between Barcelona and El Prat airport (Aerobús) provided by Transports Ciutat Comtal S.A. to December 2009.

04.10 Nitbús service (TUSGSAL and Mohn, SL)

The Nitbús metropolitan night bus network operates every night of the year in the 18 municipalities comprising the EMT. The number of passengers using this service has steadily increased, rising by 12% between the end of 2002 and the end of 2006.

The basis for this growth are the considerable improvements that have been introduced into the network. This culminated in November 2006 in an extension to the network and an increase of the service frequency to every 20 minutes, first between Thursday and Saturday, then on every night of the year, with a reinforced service every 10 minutes at weekends in the centre of Barcelona. Following these improvements, the number of passengers is expected to grow more intensely over the coming months.

Main actions 2003-2007

- Improvements to and rationalisation of the N6 and N8 routes in Santa Coloma de Gramenet.
- Reduction of the interval between buses on route N13 (between Barcelona and Sant Boi de Llobregat via L'Hospitalet de Llobregat and Cornellà) from 60 to 30 minutes, every night of the year.
- Incorporation of an additional vehicle on route N14 from Barcelona to Castelldefels to ensure a regular service.
- Creation of route N16 between

Barcelona (Plaça Catalunya) and Castelldefels, via El Prat de Llobregat, to reinforce route N14 every 30 minutes.

- Creation of route N17 between Barcelona (Plaça Catalunya) and El Prat de Llobregat airport via El Prat de Llobregat.
- Extension of the timetable on all night routes in the Baix Llobregat with more departures at the beginning and end of the service.
- Extension of the "interested management" contract for the night passenger service with Tugsal and Mohn S.L., and approval of the extension and improvement measurements associated with this extension of the contract.
- The "interested management" contract for the urban night public passenger transport service in Barcelona and other municipalities in the EMT's North zone awarded to Tugsal following an open public invitation to tender.
- As a consequence of the measures contained in the Action Plan 2006 for the Nitbús service, in November 2006 a first batch of improvements was introduced consisting in the incorporation of 29 additional vehicles allocated as follows:
 - Improved frequency on Thursday to Saturday nights with a 20-minute interval between buses on routes N0, N2, N3, N4, N6, N8, N9 and N11.
 - Extension of the timetable at the beginning and end of the service to link up with the daytime Metro and bus services, on routes N1, N2, N3, N6, N8, N9 and 1.
 - Extension of route N2 to L'Hospitalet de Llobregat, route N3 to Montcada i Reixac, route N4 to Canyelles, route N6 to the Fòrum, route N7 to Diagonal Mar and Pedralbes, route N8 to Can Caralleu and route N11 to Can Ruti.
 - Creation of a new route, N5, from Plaça Catalunya to Vallcarca and El Carmel via Carrer Balmes.

- Modification and redistribution of the stops in Plaça de Catalunya.
- As a consequence of the measures contained in the Action Plan 2006 for the Nitbús service, in April 2007 a second batch of improvements was introduced consisting in the incorporation of 30 additional vehicles allocated as follows:
 - All routes operate every night of the year with a 20-minute service frequency.
 - Extensions to the N2 to Morera (Badalona) and the N16 to Bellamar/El Poal (Castelldefels).

04.11 Special and non-regular services

Services catering for people with severely reduced mobility

The Metropolitan Transport Association has special vehicles to provide these services. The EMT has also continued to update and manage agreements with the relevant institutions. In particular, it has signed agreements with Badalona, Barcelona, L'Hospitalet de Llobregat, Montcada i Reixac and Santa Coloma de Gramenet town councils and the Baix Llobregat and Barcelonès district councils.

Main actions 2003-2007

- The Metropolitan Transport Association received special recognition in 2003 from the European Conference of Transport Ministers and the European Disability Forum which gave it an award for the integration and accessibility of its transport system and for its taxi and bus services catering specially for people with reduced mobility. Also in 2003 a conference was held on "Specially adapted transport, a present and future model" in collaboration with the Barcelona Municipal Institute of People with Disability.

- Following the relevant public invitation to tender, the interested management contract for the specially adapted door-to-door public passenger transport service for people with severely reduced mobility was awarded to Transports Ciutat Comtal S.A. in Barcelona and Rosanbús S.L. in L'Hospitalet.
- Agreements were made with the institutions to offset the economic deficit resulting from the provision of this service.
- The fleet of vehicles for this service was renovated with three new buses in Barcelona and one in L'Hospitalet de Llobregat. The bus fleet was subsequently expanded, with 16 extra vehicles in Barcelona and three in L'Hospitalet de Llobregat, as was the special taxi fleet. The area covered by the service was also enlarged and the times it operated were expanded to coincide with those of the Metro.

05. CERTAIN ASPECTS OF THE PROVISION OF THE SERVICE

05.1 Metropolitan social fare system

The Metropolitan Transport Association's social fares system is designed to make travelling more affordable for beneficiaries using public transport – Metro, buses, trams and FGC trains – within the 18 municipalities belonging to the EMT. The system comprises the following travel passes:

- Targeta Rosa or Carnet Rosa metropolità (Metropolitan Pink Card): Allows the pass holder to use the Metro, bus, tram and FGC railway services within the 18 municipalities free of charge without any restrictions on the number or times of the journeys. Any citizen aged over 62 (or over 65 in some municipalities) or who has a disability of 33% or more, whose total income from all sources is less than the Public Income Indicator for Multiple Purposes (IPREM) and whose name is on the municipal register of any of the EMT municipalities, is entitled to this card.
- Carnet Rosa metropolità de tarifa reduïda (Reduced Rate Metropolitan Pink Card): Allows the pass holder to a discount of approximately 50% on a T-4 integrated card for use on the Metro, bus, tram and FGC railway services within the 18 municipalities. Any citizen aged over 62 (or over 65 in some municipalities) or who has a disability of 33% or more, whose total income from all sources is between once and twice the amount of the Public Income Indicator for Multiple Purposes (IPREM), and whose name is on the municipal register of any of the EMT municipalities, is entitled to this card.

— Passi Metropolità d’Acompanyant (Metropolitan Companion’s Pass): Allows the pass-holder to use the EMT Metro and bus services with a companion without the companion having to pay for the journey. Any citizen on the municipal register in one of the EMT municipalities providing proof of the need to be accompanied on their daily journeys on public passenger transport is entitled to one of these passes.

Main actions 2003-2007

- Management of the T-4 multi-journey card revenue and expenditure clearing house covering the different operators with which it is valid. Modification in 2005 of its operating rules and procedures. Inclusion of the following operators into the clearing house: Tramvia Metropolità S.A., Tramvia Metropolità del Besòs S.A., and Transports Ciutat Comtal 2 S.L.
- Extension of the benefits of the social fares system to people aged between 60 and 61 residing in Barcelona or Sant Adrià de Besòs, through collaboration agreements with the respective local councils.
- Signing of an agreement between the Metropolitan Transport Association and Sant Joan Despí and Viladecans town councils to reduce the age of entitlement to the social fares system.
- Extension of entitlement to the social fares system to citizens aged between 60 and 64 living in Cornellà de Llobregat, by means of a collaboration agreement with the local council.
- Extension of entitlement to the social fares system to citizens aged between 60 and 61 living in L’Hospitalet de Llobregat, by means of a collaboration agreement with the local council.
- Extension of the metropolitan social fares system to the new tram network (Trambaix and Trambesòs).
- Replacement of the minimum wage by

the Public Income Indicator for Multiple Purposes (IPREM) as the indicator or reference regarding household income for entitlement to benefit from the social fares system.

- The EMT signed the collaboration agreement between the State Tax Administration Agency and the Spanish Federation of Municipalities and Provinces on supplying tax information to local bodies in order to speed up the procedures for issuing metropolitan pink cards.
- Extension of entitlement to the social fares system to citizens aged between 62 and 64 living in Sant Just Desvern, by means of a collaboration agreement with the local council.

05.2 Service quality control

The work done by the EMT during this four-year period and the previous one on controlling the quality of the service provided by the indirect management operators has been certified by the Spanish Standardisation and Certification Association (AENOR) which awarded it the AENOR N Certified Service Mark for Public Passenger Transport in accordance with European standard UNE EN 13816:2003 and AENOR Regulations RP A37.01.

It should be pointed out that the Metropolitan Transport Association is the first public administration body in Spain to obtain the above-mentioned certificate for public passenger transport in accordance with the European standard.

During the period 2003-2007, annual quality control exercises were performed on the indirectly managed services. This control is carried out in accordance with European Standard UNE 13816 on the basis of three quality indicators:

- The Customer Satisfaction Index (ISC), which is obtained by means of on-the-

spot surveys of users of the bus service. A total of 21,938 people were surveyed during the period 2003-2006.

- The Supply Quality Index (IQO), which is obtained on the basis of random quality checks at 39 points in the metropolitan network. During the period 2003-2006 a total of 1,150 seven-hour days of control checks were carried out on the public highway.
- The Interior Quality Index (IQI), which is obtained on the basis of controls inside the vehicles using the “hidden customer” technique. During the period 2003-2006 a total of 5,756 vehicle control visits were made.

The findings from this fieldwork have been used to determine the economic incentives and penalties in making the payments provided for in the “interested management” contracts with the different companies operating the indirectly managed services.

Main actions 2003-2007

- In 2003 incentives and penalties for the quality of the service were applied for the first time to various bus services: L’Hospitalet de Llobregat and other municipalities, Sant Boi de Llobregat and Sant Feliu de Llobregat (U-2 concession), and Castelldefels to Barcelona. Modifications were made to the Interior Quality Index (IQI) to make it better suited to the reality of the operating conditions.
- The visual inspections in the street used to monitor the regularity of the buses belonging to the Barcelonès Nord urban passenger transport service were replaced by analysis of the Operating and Information Assistance System (SAEI) databases. The analysis is performed by the Metropolitan Transport Association itself by means of a direct link with Tugsal’s SAEI databases.
- A number of campaigns were

carried out counting the origins and destinations of the passengers using various routes to find out the journeys made between different stops.

- The documentation needed to obtain recognition as a Certified Public Passenger Transport Service in accordance with European standard UNE EN 13816:2003 and AENOR Regulation RP A37.01 was prepared.

05.3 Signalling and maintenance of stops and information

The Metropolitan Transport Association’s technical departments has worked on this important aspect of the service in collaboration with Cetransa (Centre Metropolità d’Informació i Promoció del Transport S.A.), the public transport service operators and the metropolitan town councils, among others.

The job of providing people with information on public transport and encouraging them to use it has been done by publishing various informative leaflets on the services available and updating the metropolitan transport guides. Immediate information is still given mainly via the 010 telephone helpline.

The bus stops and shelters in the area covered by the Metropolitan Transport Association are maintained, renovated and added to on an ongoing basis. Strips providing route information were designed, produced and put up on the stops, and all the surface routes in the metropolitan public transport network were graphically plotted on a map.

Lastly, mention must be made of the job of receiving, reporting and answering complaints and claims regarding public transport received via various channels (010 telephone helpline, town councils, letters, e-mails, operators, etc.).

Main actions 2003-2007

- Production and publication of 60,000 copies of the 2003 general Metropolitan Transport Guide, 50,000 copies of the Nitbús Guide, and 25,000 copies each of the Baix Llobregat and Besòs Guides. The latter two were republished in 2004 with a print-run of 15,000 copies each.
- Design and management of specific information campaigns regarding the following services: Gavabús; Vilabús; L’Hospitalet de Llobregat and other municipalities; Sant Boi de Llobregat; Castelldefels; Sant Feliu de Llobregat; routes 86 and 87 in Barcelona, etc. In some cases agreements were made with the local councils concerned to design, finance and run the campaigns jointly.
- Publication of public transport guides for Sant Just Desvern and Esplugues de Llobregat following improvements made to the services.
- Production in 2006 of two metropolitan transport guides, one for Barcelona and El Baix Llobregat, the other for Barcelona and El Besòs. For the first time these guides included maps covering public transport in both Barcelona and the other two municipalities. Publication of 50,000 copies of a new edition of these guides in 2007.
- Inclusion of the maintenance of the bus stop information panels and the updating of the information on them, and the remuneration for this work, in the contracts for Concessió U-1 and Concessió U-2, and the “interested management” contracts for the public passenger transport services in Castelldefels and L’Hospitalet de Llobregat and other municipalities.

05.4 Collaboration with other institutions

Metropolitan Transport Authority (ATM)

The Metropolitan Transport Association’s collaboration with the Metropolitan Transport Authority, of which it is a member, in the period 2003-2007, can be summarised by listing the working groups, committees and governing bodies in which it participated:

- The Board of Directors, of which the EMT is the second deputy-chair.
- The Board of Directors’ Executive Committee.
- The Users’ and Beneficiaries’ Committee, of which the EMT is the chair.
- The Operators’ Technical Committee, via TMB.
- The Integrated Fares Monitoring Committee.
- The Technical, Economic, Legal Advice and Names Committees.
- Various monitoring committees and technical working parties dealing with particular projects and studies.

Main instances of collaboration between the EMT and the ATM 2003-2007

- Approval of the contract-programmes between the General Administration of the State and the Metropolitan Transport Authority for the periods 2002-2004 and 2005-2006.
- Approval of the amendments to the Metropolitan Transport Authority’s statutes to bring them into line with Law 9/03 on mobility.
- Public transport services plan 2002-2005.
- Sagrera-Meridiana and La Torrassa interchanges.
- Metro line 9.
- El Baix Llobregat and El Besòs trams.

- ___ Route 12 Castelldefels – Sarrià project.
- ___ Studies on bus lanes and the roads leading into Barcelona.
- ___ Study on the development of Barcelona’s network of interurban transport terminals.
- ___ Plans for connecting the EMT to the ATM’s SAE information server in order to analyse data for quality control of the service.
- ___ Participation in Sustainable and Safe Mobility Week 2006.
- ___ Everyday Mobility Survey 2006. In particular, extension of sample-gathering to certain municipalities belonging to the Metropolitan Transport Association where information of greater statistical significance was required.

Other institutions and bodies

Main instances of collaboration 2003-2007

- ___ Barcelona Metropolitan Strategic Plan (PEM). Approved in 2003. The Metropolitan Transport Association was actively involved, forming part of the vice-presidency of the General Council of the PEM Association, the PEM Association Delegate Committee and the Metropolitan Model, Transport and Housing Sub-Committee of the Forward Planning Committee.
- ___ Generalitat de Catalunya (Catalan Autonomous Government). The EMT participated in the committees monitoring the construction plans and information studies concerning various sections of line 9 of the Metro.
- ___ Association for the Promotion of Public Transport. An annual agreement was signed for collaborating on and publishing the magazine “Mobilitat sostenible i segura” (Sustainable and Safe Mobility).
- ___ Spanish Federation of Municipalities and Provinces (FEMP). Participation in

- the National Social Services Institute (Inerso) – FEMP collaboration programme to promote the introduction of low-platform buses.
- ___ Autonomous University of Barcelona. Analysis of existing experiences of funding public transport in metropolitan areas and a study of the public’s perception of public transport funding in the BMA.
- ___ Catalunya Carsharing S.A. The EMT participated, through Ferrocarril Metropolità de Barcelona S.A., in the project to introduce a mobility service consisting in the temporary use of shared vehicle fleets.
- ___ Barcelona Council of Trading, Services and Tourism Associations. An agreement was signed for a study to be carried out on the mobility generated by commercial and services activities.
- ___ Sitges Town Council. A collaboration agreement to study transport in Les Botigues, a neighbourhood bordering on Castelldefels.
- ___ Consortium of the Eastern Interuniversity Centre. The EMT joined the consortium comprising Barcelona and Sant Adrià de Besòs councils, and the Barcelonès council.
- ___ Tramvia Metropolità S.A. and Tramvia Metropolità del Besòs S.A. Agreements were signed for providing these companies with economic compensation for the use of the EMT’s reduced social fare passes on the current tram network and any future extensions to the network within the EMT’s area.
- ___ Barcelona Urban Ecology Agency. Agreement to make a detailed study of the priority bus corridors in the area covered by the EMT.
- ___ Catalan Land Institute. Collaboration agreement, in conjunction with El Prat de Llobregat town council, regulating the transfer to the EMT of the land required for the Bus Management Operational Centre project in the Prat de Llobregat municipal district.

06. THE METROPOLITAN TAXI INSTITUTE (IMT)

The Metropolitan Taxi Institute (IMT) is the Metropolitan Transport Association’s independent body responsible for regulating and organising the taxi service in the Barcelona Metropolitan Area. In this period the IMT has concentrated on modernising and developing the regulations governing the operation of taxis and boosting the use of new technologies to improve taxi-drivers’ work and the quality of the service

Metropolitan taxi regulations

The IMT has been instrumental in getting a new set of updated Taxi Regulations approved. These regulations have brought the rules governing the operation of taxis in the Barcelona Metropolitan District into line with current reality and the Taxi Act passed by the Catalan Parliament in 2003. The Regulations were approved in 2004 following a consultation process involving all the organisations representing the taxi industry during which an effort was made to ensure that the proposed contents were widely known. The new text provides legal security for the operators, takes into account current social reality and allows for the sector’s future development. The new regulations have been distributed free of charge to all taxi licence holders.

Taxi fares

In 2004 the Transport Innovation Centre (CENIT) was commissioned to carry out a study on the profitability of the taxi sector in the BMA with a view to defining a methodology for the setting of fares. The methodology to be employed for the annual fares review was defined in 2005 in accordance with the industry’s organisations. The work is done by an economist who is designated by the Economists’ Association and hired

specifically for the job. The representatives of the organisations in the industry actively participate in discussing the methodology.

New technologies

The accelerated development of new communication technologies applied to vehicles has enabled taxis to be equipped with devices that help to improve the work and safety of professional taxi drivers.

Together with the Ports and Transport Department of the Generalitat de Catalunya and representatives of the sector, the IMT has carried out the SECUTAXI project which has made it possible to create a new specific safety system for taxi drivers in Catalonia which is connected to the 112 Emergency Centre. To facilitate the incorporation of the taxi safety team, in 2004 a line of subsidies was set up together with the Generalitat de Catalunya and the Spanish Ministry of Science and Technology. By January 2008, all licensed vehicles will have to be connected to the localisation system. By the end of 2006, 2,488 taxi drivers already had the equipment fitted in their vehicles and the IMT had allocated 380,534 euros for this purpose.

Appropriate measures have been taken resulting in 96.7% of automatic taximeters having the compulsory display in accordance with the relevant EU directive.

Subsidies have been given to 70% of taxi licence holders to install a receipt printer. On 1 January 2009 it will become compulsory to have such a device in all taxis.

Various campaigns have been organised to familiarise taxi drivers with the new technologies capable of improving the quality of the service and the treatment given to users, and, especially, optimising the supply in accordance with the demand for taxis.

A new website portal has been created for taxi drivers to be able to check their licence status, make an appointment to have compulsory ITV or metropolitan roadworthiness tests carried out on their vehicles, join the corporate mail list or register on-line to participate in the future SMS information service the IMT is going to make available to taxi drivers in 2007.

Mobility and sustainability

To promote sustainable and safe mobility in the taxi industry, a specific department was set up in the IMT structure through which it has participated in:

- ___ The Master Mobility Plan for the Barcelona Metropolitan Region of the Port Authority.
- ___ The Action Plan, launched by the Catalan autonomous government’s Department of the Environment and Housing, to reduce emissions of nitrogen oxide and particles in suspension of less than 10 microns (PM10).
- ___ The Sustainable and Safe Mobility Prize Competition 2005-2006.

In co-ordination with the Catalan Energy Institute and the Royal Automobile Club of Catalonia (RACC), it organised and ran 597 courses on economic and efficient driving for professional taxi drivers. The aim is to cut fuel consumption by 20%, with the benefits this has for the environment and the savings it produces for taxi drivers. At the same time, 5,000 information leaflets were distributed to encourage good mobility practice in the sector.

Work began on a taxi rank project and the entire Barcelona Metropolitan Area network has been updated and mapped. The updated cartographic information has been included in the street maps of all the metropolitan municipalities and posted on the IMT’s website so that it can be consulted on-line.

A collaboration agreement was concluded with the Catalan Biodiesel Association (ACB) to promote the use of biodiesel fuel in taxis in the Barcelona Metropolitan Area.

In line with the criteria of sustainability policies, the IMT decided to award a 50% discount on the tax payable for vehicles to be authorised for use as taxis to all manufacturers making electrical or bimodal models, or ones powered by biogas, compressed natural gas, methane, hydrogen or vegetable oil derivatives.

Accessible taxis

To ensure that more people with mobility problems are able to benefit from the adapted taxi service, during this period the collaboration agreement with the IMSERSO (Institute of Migrations and Social Services) and the ONCE (Spanish National Organisation for the Blind) Foundation. So far 48 taxi drivers have received grants under this agreement enabling them to adapt their vehicles to the technical requirements for providing this service.

Airport service

During this period the taxi rank at Barcelona airport’s Terminal A was enlarged and the management, control and organisation of the taxi service at the airport was improved.

In 2005, AENA (the body in charge of airports in Spain) took over the cost of managing the taxi service at Barcelona airport. Following an agreement with AENA and the organisations in the sector, the taxi rank was divided into two, one part attending only to the demand from the Barcelona-Madrid air shuttle terminal, the other serving Terminals A and B. This measure has substantially improved the taxi service for the air shuttle terminal, reducing waiting time for both users and drivers.

Taxi fleet

The fleet of taxis has been renovated at the rate of 1,500 vehicles a year and most of the taxis are in the medium-high range of vehicles. Six new commercial models were authorised for use as taxis and, in order to ensure that previously authorised models were still up to the required quality standards, the best variants of the different brands were selected. At the same time, the information given to professional taxi drivers about this was improved.

Each year over 10,000 roadworthiness tests have been carried out in the metropolitan area by the ITV network and the IMT's technical services and the required standards regarding the upkeep, cleanliness and functionality of the vehicles have been raised. The service provided for taxi drivers by the ITV network has been improved by lengthening the times during the day when it is open and reducing waiting times for an appointment. In order to maintain the quality of the vehicle fleet, specific campaigns have been waged, aimed particularly at owners of vehicles over 10 years old, encouraging drivers to have their taxis overhauled by IMT technicians.

Inspection and sanctions service

During this period the IMT inspection team carried out an average of more than six thousand inspections a year at various points in the Barcelona Metropolitan Area. Between 2003 and 2006, the Sanctions Department recorded 4,546 complaints, opened 2,583 sanction procedures and applied 779 sanctions.

A number of disputes between taxi drivers and users were referred to the Consumers Arbitration Board and during this period the Board arbitrated in 35 cases.

Training

Work has continued on promoting the necessary measures and instruments to guarantee the initial and ongoing training of professional taxi drivers. Throughout this whole period, various meetings have been held with the heads of the taxi driver training schools to plan and review the knowledge and skills required to enter the profession. It was decided that all new taxi drivers should take the course in economic and efficient driving and receive credits for this.

A collaboration agreement was signed with Barcelona Activa, as part of the Equal, passarel·les cap a l'ocupació (Equal, bridges to employment) programme, to help unemployed people find work in the taxi sector. The IMT also participated in the NOA programme, which helps women to enter sectors where few of them had hitherto been working.

The IMT website has helped taxi driver training schools by adding tools enabling their pupils to enrol for the examinations for entrance into the profession and consult the marks they obtain, on-line.

Customer service

The service office dealt with enquiries from an average of 17,000 taxi drivers a year while the lost property department received an average of 28,500 calls from taxi users reporting the loss of a personal object in a taxi or claiming an item lost in one.

Firataxi

The Metropolitan Taxi Institute was a member of the organising committee for the first FIRATAXI, which was held in Barcelona in April 2006. The IMT took part in this fair with its own stand which was visited by many public figures in the city and a large number of taxi drivers.

Specific documentation and graphic materials were produced to publicise the services currently offered by the IMT to taxi drivers in particular and the public in general.

First Meeting of Municipal Taxi Managers

Coinciding with FIRATAXI, the IMT organised the First Meeting of Municipal Taxi Managers in which representatives from Pamplona, San Sebastian, Bilbao, La Coruña, Málaga, Valencia, Las Palmas de Gran Canaria, Granollers and Lleida took part. The meeting dealt with matters of common interest such as the organisation of the service, legislation and regulations, training, safety, new technologies, the concept of quality in the taxi service and subsidy policies for adapted vehicles.

The Taxi City Project (Ciutat del Taxi)

The IMT presented the organisations in the sector with a project to set up the Ciutat del Taxi, or Taxi City, in view of repeated requests from taxi drivers. It invited the sector to examine it and formulate proposals based on the principle that the draft project would only be viable with the participation of the sector that would be responsible for managing it.

Communication and external relations

In the period 2003-2007, the IMT kept in constant touch with taxi drivers through its bimonthly publication Revista Taxi.

Taxi drivers have had an information website available to them which was modernised and updated at the end of 2006 with the addition of various functions making it easier for them to find the information they are looking for and carry out the administrative procedures related to their work.

Every year a party paying tribute to retired taxi drivers has been organised with the collaboration of Badalona, Montcada i Reixac, Sant Joan Despí and Santa Coloma de Gramenet town councils.

Five thousand information leaflets were published in conjunction with the Catalan autonomous government's Department of Mobility and Sustainability. Another 5,000 leaflets were published for Firataxi and a corporate video was produced.

The IMT has maintained an ongoing presence in the daily newspapers, the television, the news agencies and the radios in Catalonia and Spain. Members of the management team have participated in a large number of debates and interviews on various subjects to do with the organisation's activities.

07. CETRAMSA

In order to fulfil its role of providing information on and promoting public transport, the Metropolitan Transport Association not only has its own technical services, but also CETRAMSA (Centre Metropolità d'Informació i Promoció del Transport S.A.), a metropolitan limited company which was set up in 1986 as a directly managed body belonging to the Association. The most important actions taken by CETRAMSA during the period 2003-2007 were as follows:

Metropolitan 010

— The 010 general telephone helpline is the usual system for making enquiries regarding public transport in the metropolitan area, although some enquiries are made via specific calls. The number of calls received is shown in the correspondent table.

Documentation and databases

— Maintenance of the Transport Information and Informer Support System (SITSI). Ongoing updating of the information on the public transport network in the BMA kept in a documentary base which supports the metropolitan transport information helpline and provides the basis for the publication of guides and maps, and putting up signs.

— Introduction of improved broadband data transmission links with the councils and the provision of appropriate training and technical assistance.

— Fielding complaints and passing them on to the people responsible for the transport service in question.

— Day-to-day management of the Metropolitan Transport Association's public e-mail bag which includes complaints, claims, enquiries and suggestions.

Internet

— Management of the EMT's website and its "On vols anar" (Where do you want to go?) application, which enables users to find out the best public transport routes for their journeys. The site also contains route details and the timetables of all routes. La pàgina ha passat de 3,5 a 16 milions de visites entre 2003 i 2006.

— Inclusion in the site of maps of the indirectly managed bus routes.

— An agreement with Transports Metropolitans de Barcelona to broaden the scope of the "Vull anar" (I want to go) website application to cover all 18 municipalities belonging to the Metropolitan Transport Association.

Promotion of public transport

— A commission from the EMT to design, update and publish the general guides for the Llobregat and Besòs sectors of the metropolitan transport system (see maintenance of the information panels at bus stops) and the graphic marking elements at bus stops.

— The publication, in collaboration with the corresponding town councils, of the transport guides for Sant Just Desvern, Esplugues de Llobregat, Castelldefels, Gavà and El Prat de Llobregat

— Publication of a Sustainable Transport Guide for the Zona Franca industrial estate in Barcelona.

— Collaboration with Barcelona City Council in publishing the City Guide and the "Barcelona Bona Nit" (Barcelona Good Evening) and "Ens movem per Barcelona" (We Get about Barcelona) guides.

— Collaboration with Mohn and Tusgsal in publishing the Nitbús guide, and with Tramvia Metropolità SA in publishing the "A la feina en Tramvia" (To Work by Tram) guide.

— Production of 100,000 plastic ticket wallets on the occasion of the Universal Forum of Cultures 2004.

— Work commissioned by other institutions and bodies: the Pamiás publishing house, market survey companies, the Catalan autonomous government, local governments, etc.

Special reduced fares

- Requests for such fares, those granted and renewals can be seen in the correspondent table, which also shows the specific calls received on this matter.
- Periodical renewals, incidents and duplicates were also dealt with, support was given to the districts and the Multichannel Citizen Service Platform (PMAC), and correspondence attended to.

Special transport service for people with severely reduced mobility

- This service is mostly provided in response to calls received via the one-stop requests line through which requests are allocated to the door-to-door service or, in some cases, referred to regular public transport.
- The automatic answering services dealt with 8,067 messages concerning cancellations and complaints, while the e-mail request reply service dealt with 1,471 e-mails in 2006.

PARTICIPATION IN CONSORTIUMS AND INFLUENCE ABROAD

The Barcelona Metropolitan Area institutions play an active part - contributing resources and work- in various bodies made up of public and/or private organisations that have come together to strengthen their actions in spheres where they have obviously similar aims and interests. These associations are particularly qualified to act as vehicles for international contacts and to raising the prestige of the metropolitan world abroad. Either through these associations or directly, the metropolitan area carries on a considerable activity in the field of development co-operation.

THE METROPOLITAN STRATEGIC PLAN

One of the lines of action in the programme agreed by the Catalan autonomous government in 2003 was the commitment to draw up a Metropolitan Strategic Plan. This plan is conceived as an instrument for developing the metropolitan area in the most efficient way possible. The purpose of the plan is not executive; its intention is rather to reflect on the economic, social and territorial prospects of the metropolis and put forward broad guidelines and specific measures to be taken to achieve the type of development that will guarantee the economic prosperity, well-being and quality of life of the population of the metropolis, and the maximum cohesion of the entire territory.

This plan is a direct descendant of the old Strategic Plans for Barcelona. In fact, it was the very dynamic of these plans that highlighted the need for the metropolitan dimension, bearing in mind that the metropolitan area is the real city, made up of a network of municipalities in a rich and complex territory with huge potential, as it is the motor of Catalonia and one of the leading metropolitan regions in Europe. Reaching an agreement on what the position of this real city ought to be in the European, Mediterranean and world context is one of the challenges facing the Plan.

Constituted formally as an association, it has been promoted by the local governments, and all 36 metropolitan municipal councils, as well as other administrative bodies, belong to it. However, from the very beginning, in drawing up the plan it has had the benefit of the participation of the economic and social agents operating in the territory, including the trade unions, the employers' associations, the universities, the Chamber of Commerce, the Zona Franca Consortium and the Port Authority. The General Council is made up of 300 members. And this representativity and the spirit of collaboration around common goals are one of the Plan's main assets and a condition for the success of the proposals it formulates. For operational purposes, a Delegate Committee comprising 30 members manages the day-to-day affairs of the Plan with the support of the Strategic Development Council. As far as

specific activity is concerned, the following committees have been set up: the Forward Planning Committee, which analyses and studies trends and critical issues; the Strategy Committee, which puts forward practical measures and lines of advance; and the Liaison Committees, which provide information on matters to do with the Plan's aims. The Plan also has a general co-ordinator and a technical secretariat.

www.bcn2000.es

ECONOMIC PROMOTION

Fira de Barcelona

La Fira is essential to the metropolitan area's economic development and that is why the MMAMB has supported the fairground's expansion with a contribution of 15.7 million euros. This is a strategic, forward-looking investment, as La Fira aims to grow on the basis of innovation and quality, strengthening the exhibitions already in existence and creating new ones. In spite of the large slice of the budget allocated to this, it promises to pay considerable dividends in the medium and long term, making it an extremely beneficial contribution to the whole of the metropolis. In fact, La Fira is already metropolitan, as it is no longer physically located just in Barcelona, but also in L'Hospitalet. On the other hand, in addition to the direct and indirect benefits, there are deeper factors at work, such as the fact that La Fira has acted as a motor driving the transformation of the part of the conurbation where the enlargement has been carried out. It also provides value added, since, as an institution strongly rooted in the metropolitan territory, it significantly helps to position the Barcelona metropolitan area as a site of ongoing innovation and economic activity that can attract investment, as well as enhancing its international image.

www.firabcn.cat

The Industrial Pact

The Metropolitan Region Industrial Pact, which has now been in existence for ten years, arose in response to the changes experienced by industry throughout Europe. It sought, among other things, to determine the industrial activities that were most suitable or held out the best prospects for the future in our area, and to detect the strengths and weaknesses of the system. The Pact is a meeting place for bodies and organisations that have to do with the world of industry (local government, employers' associations, trade unions, universities, etc.) and are therefore in the best position to detect its problems and needs. Starting out from the issues where the interests of the different participants tend to coincide, the intense work that has been done has produced a broad range of results. These include maps of vocational training and industrial land, economic surveys, analyses of similar European contexts, publications, etc. and the recent setting up of the Metropolitan Economic Activity and Innovation Information Service (SIMAE), a useful, modern instrument that takes advantage of the opportunities for accessing information provided by the new technologies and applies this to the specific situation and needs of the industrial sector in the metropolitan territory.

www.pacteind.org

THE BARCELONA INSTITUTE OF REGIONAL AND METROPOLITAN STUDIES

The Barcelona Institute of Regional and Metropolitan Studies (IERBM) is a research consortium for studying economic, social and territorial issues in urban, metropolitan and regional contexts where the interests of universities, public

administrations and institutions for economic promotion converge.

In the period 2003-2007, the IERMB consortium's territorial and industrial base was enlarged with the incorporation of the Catalan autonomous government (Generalitat de Catalunya) and Pompeu Fabra University, so that at the present time, in accordance with the statutes approved in 2006, the Consortium is formed by:

- ___ The Generalitat de Catalunya
- ___ Barcelona City Council
- ___ Barcelona Provincial Council
- ___ The Association of Municipalities of the Barcelona Metropolitan Area (MMAMB)
- ___ The Autonomous University of Barcelona
- ___ Barcelona University
- ___ The Polytechnic University of Catalonia
- ___ Pompeu Fabra University
- ___ The Barcelona Official Chamber of Commerce, Industry and Shipping
- ___ The Federation of Municipalities of Catalonia
- ___ The Zona Franca Consortium

The Institute's Governing Council is chaired by the chairperson of the MMAMB and mayor of Barcelona, with the vice-chancellor of the Autonomous University of Barcelona, the chairperson of the Barcelona Official Chamber of Commerce, Industry and Shipping, and a representative of the Generalitat de Catalunya as deputy chairs. The delegate chair of the Executive Committee is the first deputy chairperson of the MMAMB.

The IERMB is organised into four research areas (Society, Territory, Economy and Mobility) and three research support areas (Fieldwork, Statistics and Cartography). Its research team comprises doctorate-holders and graduates in various disciplines, including Geography, Sociology, Economics, Environmental Sciences and

Architecture. The main topics of study are:

- ___ The population's habits and living conditions.
- ___ Citizens' security and crime victims.
- ___ Territorial analysis and the planning of infrastructures, amenities and services.
- ___ The labour market.
- ___ Mobility and transport.

As part of its basic research line, in the past few the IERMB has produced the Enquesta de Condicions de Vida i Hàbits de la Població de Catalunya 2005 (Survey of the Living Conditions and Habits of the Population of Catalonia 2005) and the Enquesta de Mobilitat Quotidiana 2006 (Daily Mobility Survey 2006) as well as the annual Enquesta de victimització i percepció de la seguretat (Survey of Crime Victims and the Perception of Security).

The applied research issues dealt with by the IERBM cover a very wide range. We might pick out its analyses of the social use of time, studies on industrial and tertiary activity estates, and studies on the availability of housing in Barcelona and the surrounding area. Mention must also be made of its studies of the behaviour of the labour market and the observatory of entrepreneurial activity (GEM-Catalunya).

Since 1991 the IERMB has published the journal PAPERS whose aim is to act as a site for the debate on issues, problems and choices to do with the Barcelona metropolitan region, ranging from more or less theoretical reflections on the metropolitan question to more specific contributions to do with the organisation and provision of services.

www.iermb.uab.es

INTERNATIONAL METROPOLITAN ASSOCIATIONS

Metropolis

Metropolis is a worldwide association of cities and metropolitan regions grouping together some 90 cities across the world. Since December 2006, the chairperson of the MMAMB, Jordi Hereu, has been the first executive vice-president and European vice-president of Metropolis. The Secretary-General of Metropolis is a member of the Barcelona Metropolitan Area's International Relations Co-ordinating Committee (CCR), which is chaired by Clemente Murillo and has the job of co-ordinating activities of common interest.

Metropolis was set up in 1985, with the Barcelona Metropolitan Area as a founder member. Since 2000 the General Secretariat has been based in Barcelona, in a building in Carrer d'Avinyó made available by Barcelona City Council. The association has regional secretariats in Abidjan (Africa), Montreal (North America), São Paulo (Latin America and the Caribbean) Melbourne (Asia-Pacific) and Paris (Europe).

Metropolis's mission is to promote the transfer of knowledge and experience between cities, encourage co-operation and technical assistance, defend metropolitan interests in regard to international organisations, and foster debate on trends in the evolution of the metropolises.

Its 2005-2008 action plan, approved at the Berlin conference in 2005, set up standing commissions on six different topics as follows:

- ___ Commission 1. Ecological Regions. President: Île-de-France; Vice-President: Toronto.
- ___ Commission 2: Funding Urban Services

- and Infrastructures. President: Montreal; Vice-President: São Paulo.
- ___ Commission 3: Integral Neighbourhood Regeneration. President: Barcelona; Vice-President: Rio de Janeiro.
- ___ Commission 4: Urban Mobility Management. President: Berlin; Vice-President: Seoul.
- ___ Commission 5: Metropolitan Results Indicators. President: Melbourne; Vice-President: Mexico State.
- ___ Commission 6: Water Management. President: Mexico State; Vice-President.

Barcelona is president of the Commission on Integral Neighbourhood Regeneration and plays an active part in the other commissions. The projects in the Action Plan 2005-2008 include training and technical assistance activities, a women's network, a working party on the establishment of a cities' bank and the production of a global report on metropolises which is to be presented to the Metropolis 2008 Congress in Sydney.

Metropolis is also the metropolitan section of United Cities and Local Governments (UCLG) with which it acts jointly in defending and representing the interests of local governments with regard to national bodies. This organisation shares the Carrer d'Avinyó premises.

www.metropolis.org

Medcities

Medcities is a network of coastal cities in the north and south of the Mediterranean which was set up in 1991 in Barcelona with the aim of strengthening the environmental management capability of local governments, establishing co-operation policies and promoting public knowledge and awareness. The Environmental Agency acts as the Secretary-General via the Office for Urban

Development Programmes. During this period the network's General Assembly was held at the AMB's headquarters in Barcelona in 2004. It was attended by politicians and technical experts from a large number of Mediterranean member and specially invited cities, as well as international institutions. Throughout this period the network has focused on promoting and co-ordinating sustainable development projects, the most important of which are listed here below.

Completed projects

- ___ Improvements to the Koraat Sbaa Neighbourhood in Tetouan (Morocco). A plan for the integral urbanisation of a marginal neighbourhood in Tetouan.
- ___ Urban Waste Management in the Mediterranean. Improving such management in Alexandria (Egypt), Zarqa (Jordan) and Limassol (Cyprus).
- ___ Improving Air Quality by means of air quality and mobility plans, and the setting up of air quality laboratories and services. Co-ordinated by the Catalan Energy Institute and Medcities, with the participation of Larnaca, Limassol, Tripoli and Tetouan.
- ___ Sousse Urban Journeys Plan. (Tunisia). Improvements in urban mobility and the setting up of a local traffic service.
- ___ Greater Sfax Strategic Plan / Local 21 Agenda (Tunisia). Co-operation for the implementation of a sustainable development strategy.
- ___ Urban Solid Waste Management in Countries in the Near East and the Maghreb. Adoption of integrated and sustainable management in Mediterranean Arab countries.
- ___ European Sustainable Cities and Towns Campaign.

Projects under way

- ___ Alexandria Lake Mariout Integrated Management.

- Integrated Management of the South Coast of Sfax. In both cases these are plans for sustainable development and the protection of the environment.
- Sustainable Urban Development Strategy in the Urban Community of Al-Fayhaa (municipalities of Tripoli, El Minah and El Badawi, Lebanon).
- Sfax Sustainable Development Strategy
- Sham. Plan for waste management, tourism and economic development projects in Sousse and Mahdia (Tunisia), and Bosra (Syria).
- Actor. Creation of a website to facilitate sustainable urban management in Europe.

Most of these projects have received funding from the European Union. There have also been contributions from organisations such as the World Bank, Cities Alliance, etc., as well as involvement by cities in the North and the governments of various countries. Medcities also participates in other international activities such as the European Sustainable Cities and Towns Campaign, the Mediterranean Commission on Sustainable Development /Mediterranean Action Plan (MCSD/MAP), and the UCLG Mediterranean Commission.

www.medcities.org

DEVELOPMENT CO-OPERATION

The metropolitan development co-operation policy implemented in the period 2003-2007 has sought to ensure that all its actions and programmes were carried out in accordance with an up-to-date concept of co-operation, understood as an instrument for helping, fostering and accompanying the processes put in place by local communities in the countries of the South, who are the protagonists of their own destiny. The processes in question are ones that will enable them

to strengthen their society and construct democratic systems and the rule of law as a way of fostering the human and sustainable development of peoples.

The political will of the metropolitan institutions has guided this co-operation area with the intention of helping, with its modest contribution, to build a better world in which people's welfare increasingly becomes a really universal right. We have striven to ensure constant improvement of the quality and effectiveness of our international co-operation.

It should be pointed out that an effort has been made to provide co-operation with a strategic focus capable of establishing a coherent link between all the components of the process. These include the guiding principles of governability, participation, peace, human rights and gender, on the one hand, and the different sectorial priorities formulated by our counterparts in the South, on the other. However, they also include our competences and know-how, and the geographical priorities flowing from historical ties, the new phenomena of immigration, and the desire not to forget the most impoverished region on the planet, sub-Saharan Africa.

The main objectives achieved are as follows:

- An above-inflation increase in the budget allocated to metropolitan international solidarity and co-operation.
- Approval of the Master Plan 2007-2010 for international development co-operation and the promotion of solidarity.
- The planning and prioritisation of metropolitan co-operation, channelling it towards the areas in which we have competences: water and waste management, mobility and transport, management of the public space, etc.

- The setting up of a co-ordinating sphere between the AMB and the metropolitan local councils.
- The AMB's resolute participation in the networks of local institutions dealing with co-operation.
- The creation of the Trobades de cooperació internacional (International Co-operation Meetings) as a stable space for reflection and debate with the metropolitan local councils and other co-operation agents.

www.amb.cat