

**PROJECT INFORMATION DOCUMENT (PID)
APPRAISAL STAGE**

Report No.: AB3109

Project Name	BR - INTEGRATED WATER MANAGEMENT IN METROPOLITAN SAO PAULO
Region	LATIN AMERICA AND CARIBBEAN
Sector	General water, sanitation and flood protection sector (100%)
Project ID	P006553
Borrower(s)	São Paulo State, State Water Company and the Municipalities of Guarulhos and São Bernardo do Campo
Implementing Agency	Municipalities of São Bernardo do Campo (PMSBC), São Paulo (PMSP) and Guarulhos (PMG); the São Paulo State Water Utility (SABESP) and the State Government of São Paulo (GESP) through three executing agencies: the State Secretariat for Housing (SH) (through the State Company for Housing and Urban Development, CDHU); the State Secretariat for the Environment (SMA); and the State Secretariat for Water and Energy (SSE).
Environment Category	<input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> FI <input type="checkbox"/> TBD (to be determined)
Date PID Prepared	July 20, 2007
Date of Appraisal Authorization	July 30, 2007
Date of Board Approval	November 13, 2007

1. Country and Sector Background

*Brazilian cities under stress*¹ During the last 30 years Brazil has undergone a sea change in its spatial structure, as urban areas absorbed over 80 million people and the urban share of the population grew from 56 to over 80 percent. Today cities account for 90 percent of the country's GDP and include half of its poor. After consistent productivity increases in the 1970s and 1980s, the largest Brazilian cities have shown a steady decline in per capita GDP and productivity over the last 15 years. While major world cities position themselves to generate economic innovation and expansion, Brazilian cities grapple with the need to host the informal poor, control crime and violence, improve services, and clean up the environment. As one of the most urbanized countries in the world, and among the largest economies, Brazil's competitiveness and prospects for sustainable growth rest on the capacity of its major cities to respond to these pressures. Brazil's biggest cities are still by far the most productive in the urban hierarchy, but their problems need decisive responses to allow them to maintain their dynamism and the country its economic growth and international competitiveness. Although Brazil has had a relatively stable poverty rate of 28-30 percent in recent years, economic slowdowns have led to higher unemployment, lower labor income and greater informality in cities, especially in metropolitan areas of the Southeast. Brazil's urban

¹ *Brazil: Inputs for a Strategy for Cities: A Contribution with a Focus on Cities and Municipalities*, World Bank Report N° 35749-BR (June 2006).

poor now outnumber the rural poor. Slums have become part of the urban landscape in the majority of Brazilian cities. These ubiquitous low-income, informal settlements present city administrators with significant challenges related to social and economic inclusion, service delivery provision and environmental degradation.

São Paulo's strategic importance² The sprawling Metropolitan Region of São Paulo (MRSP) is emblematic of the urban challenges facing Brazil. Housing 19.3 million people in 39 municipalities covering 8,050 km², it is the fourth largest urban area in the world, South America's biggest economic and technological hub, and accounts for 17 percent of national GDP and 10 percent of the population. MRSP's share of the GDP is, however, declining as diseconomies of scale and decreasing competitiveness predominate (per capita output has fallen 2 percent annually in recent years). Rapid urbanization, and a process of deindustrialization and economic stagnation, have resulted in a region afflicted by social problems, including rising unemployment and persistent criminality, and a declining capacity to compete with other regions in Brazil to attract investment. The city faces a number of challenges to recover higher rates of growth, and to recuperate standards of service delivery and quality of life for its population – metropolitan challenges that require responses and coordination by both state and municipal governments. The institutional framework for such pan-metropolitan coordinated action is, however, lacking in MRSP, as it is in all metropolitan regions in Brazil.

São Paulo's water challenges³ Among the pressing problems facing MRSP, the region's water supply and demand balance is a critical issue for the city's competitiveness and economic growth, and its social and environmental sustainability. MRSP's extremely low per capita water availability is comparable to that prevailing in the driest areas of the Brazilian Northeast. Half of the city's potable supply is imported from neighboring river systems, which is contentious given the demands of other conurbations vying for the same water. The remainder comes from headwater-reservoir systems ('*mananciais*') within MRSP itself. The *Guarapiranga* and *Billings* reservoirs make crucial contributions, together providing potable water for some 28 percent of MRSP's population (or some 5.4 million people). Recent forecasts for the metropolitan region indicate that by 2010 there is serious risk of demand outstripping supply – with such projections assuming that MRSP's currently operational *mananciais* (Guarapiranga, Billings and other systems) will remain fully utilized or further expanded. Should Guarapiranga and Billings be lost as raw water bodies for the city supply, the next-nearest sources to replace them are at great distance and could only be brought to MRSP at multi-billion *Real* costs.

The land-use/environmental nexus Some 1.8 million people reside in the Guarapiranga and Billings river basins – the vast majority of whom are poor, having illegally occupied these areas given their proximity to the city center. The industrial and commercial areas along the banks of the River Pinheiros (today the city's leading business and economic development region) have long been a magnet for job seekers. This market of employment and opportunity is strategically close to the informal settlements of Guarapiranga and Billings – the latter areas now playing an important role in the city's fabric, and attracting some 14,000 new households annually. The

² Brazil: *São Paulo: Inputs for a Sustainable Competitive City Strategy*, World Bank Report No. 37324, March 10, 2007.

³ Mônica Porto, '*Recursos Hídricos e Saneamento na Região Metropolitana de São Paulo: Um Desafio do Tamanho da Cidade*' Série Água Brasil 3, World Bank (2003).

informal/slum settlements cause direct pollution of the reservoirs through wastewater and garbage discharge, storm run-off and silting, thus threatening their future as water bodies for potable supplies and other uses. To tackle this problem, action is necessary to bring together key urban upgrading interventions locally with metropolitan-wide initiatives in wastewater collection and treatment, drainage and solid waste management, and to do so within the context of the urban river basin. The state water company, SABESB, is the major actor for wastewater collection and treatment. The 1988 Constitution and the 2001 City Statute⁴ confer upon municipal governments the responsibility for land use planning, including the elaboration of urban master plans and the control of land zoning and development. In addition they are locally responsible for drainage and solid waste management. Coordinated vertical and horizontal action between the state and municipal governments to safeguard and capitalize upon the city's critical water resources is one of MRSP's main development challenges and a priority of the State Government and the municipal governments of the region.

Water resources management in São Paulo State According to the State Water Resources Management Law⁵, São Paulo's WRM model is based on three principles: decentralization, integration and participation. It adopts the river basin as the basis for planning and management, and it recognizes the economic value of water through the user/polluter pays principle. The State water resources policy defines three instruments for implementation of the model: (i) licensing the use of water resources; (ii) charging for water use; and (iii) dividing the costs of multiple-use interventions which have collective benefit. The São Paulo WRM model also contains: (a) water resources plans (both at the state and the river basin level); (b) an institutional system of management through deliberative, tripartite bodies (both centrally and at the river basin) with state, municipal and civil society representation; and (c) a state water resources fund (FEHIDRO). The State water resources plan (WRP) is based on the respective river basin plans and is periodically updated and approved by state law. The river basin plans contain parameters that are intended to guide the preparation of municipal master plans in accordance with the overarching goals of water resources recovery, protection and conservation. In the state's heavily urbanized river basins, such as in MRSP, the challenges to sustainable water resources management require that medium- to long-term multi-sectoral responses are identified in the plans, instead of the standalone, uncoordinated single sector interventions of the past. One of the key elements of such integrated approaches, especially in highly urbanized areas, is the critical issue of land use management. The river basin plans recognize this requirement, proposing strong articulation with municipal governments regarding their responsibilities concerning land use patterns and local service delivery.

The Alto Tietê River Basin The Alto Tietê river basin consists of the area drained by the Tietê River from its headwaters in Salesópolis at the extreme eastern end of MRSP to the Rasgão Dam in the municipality of Pirapora do Bom Jesus. The basin is characterized by a low level of water availability *vis-à-vis* MRSP's substantial demands and by numerous ongoing and potential conflicts over water use. Extending over 5,985 km², the Alto Tietê basin covers a highly urbanized area, virtually coinciding with the physical limits of MRSP, and containing 35 municipalities and a population of 17.7 million. Headwaters Protection Areas (APRMs) account for about 54 percent of the total area of MRSP (4,356 km² of the total 8,051 km²) and for 73

⁴ Federal law 10.257, July 10, 2001

⁵ São Paulo State law 7.662, December 30, 1991

percent of the drainage area of the Alto Tietê basin. The APRMs contain 2.2 million inhabitants, three-quarters of whom live in the Guarapiranga and Billings sub-basins. The Alto Tietê river basin plan (PBAT), which subdivides the basin into seven sub-basins⁶, was first elaborated in 2002 and is currently undergoing revision. The water resources-land management nexus is a key element of the PBAT's recommended areas of focus.

Urban growth and informality Various surveys and data sources forecast a population for MRSP of around 23 million by 2025 (representing an annual average increase of 0.5-1 percent). The studies also indicate increasing migration of the population towards the fringes of the city and a population decline in the more central areas. One out of six inhabitants of the municipality of São Paulo⁷ lives in a slum, representing 400,000 families, or between 1.6 and 2 million people (equivalent to the population of Curitiba), living in substandard housing in 1,538 settlements occupying 30 km². Four years ago some 290,000 families (or 1.3 million people) lived in these conditions in the municipality. The 38 percent increase in this population, according to specialists, is not attributed to increased poverty but to demographic growth. Despite this growth, the area occupied by the slums continues to be virtually the same demonstrating an increase in urban density and more 'verticalisation' of dwellings.

Water supply and sanitation in São Paulo State SABESP provides water supply and wastewater services in 367 of the state's 645 municipalities. Of the remainder, 274 receive their services from municipal utilities and four from private companies. Of the 35 municipalities in the Alto Tietê basin, 29 of them (representing 79 percent of the region's urban population, or 39% of the total state urban population) receive their WSS services directly from SABESP. The remaining six municipalities⁸ receive treated bulk water from SABESP and distribute and bill for it via municipal utilities. Some of these also send their collected wastewater to SABESP's treatment works – a trend that is currently increasing. The recently approved federal law for water supply and sanitation⁹ brings long-awaited clarity to the institutional, regulatory, planning and service provision aspects of the sector, and recognizes and regulates regional service providers. The law requires, *inter alia*, that states and municipalities formalize contractual arrangements between service providers and local governments, introduce regulatory and watchdog mechanisms, and prepare WSS plans.

State WRM strategy Despite the advances in WRM in the state, many challenges remain. The state government (GESP) needs to develop, refine and implement effective WRM instruments, and adopt pragmatic approaches to the creation of political and organization capacity in the sector, in order to promote efficient water use by stakeholders. Alternatives to 'command and control' tools need to be developed, and innovative, proactive, and integrated approaches adopted to ensure the promotion of sustainable and efficient water resources use in the state, including for groundwater. The state's WRM model needs to provide tangible incentives for water users to adopt good water management practices, such as water pricing and eligibility criteria for access to FEHIDRO and other financing. In order to tackle the state's most pressing

⁶ Alto Tamanduateí, Billings, Cabeceiras, Cotia-Guarapiranga, Juqueri-Cantareira, Penha-Pinheiros and Pinheiros-Pirapora.

⁷ Study by the Municipal Government of São Paulo and Cities Alliance, 2007 (reference).

⁸ Diadema, Guarulhos, Mauá, Mogi das Cruzes, Santo André and São Caetano do Sul

⁹ Federal law 11.445, January 5, 2007

WRM challenges, GESP's WRM strategy promotes an integrated approach and collaborative, coordinated planning and management that involves local governments and other stakeholders as well as basin committees.

State WSS strategy GESP has identified the following as the main challenges of the WSS sector in the state: (i) maintaining water supply services at high coverage levels and quality, while promoting efficiency improvements; (ii) obtaining universal wastewater collection; (iii) increasing the amount of wastewater treated; and (iv) complying with the requirements of the new federal WSS law. GESP intends to achieve this through: (a) developing a more effective and cooperative approach to WSS provision with municipalities; (b) promoting articulation of the WSS sector with environmental, water resources and urban development planning and management; (c) making clearer the roles and responsibilities of policy making and those of sector planning, regulation and service provision; (d) implementing a new state-wide regulatory agency; and (e) developing and implementing alternative funding sources for the sector to complement existing mechanisms and to provide incentives for efficiency.

Joint strategy for improving water quality and land-use in MRSP The main challenges of the land-use/urban informality/environmental nexus in MRSP are to (i) improve water quality and to guarantee the long-term sustainability of water supply in the region's watersheds and headwaters; (ii) improve the quality of life and living conditions of the low-income population living in the region's slums and irregular settlements, (iii) implement better urban development and land-use planning, management and control; and (iv) build a new metropolitan governance model based on cooperation among stakeholders and integration of sectors. The state, municipal and non-governmental actors engaged in these issues recognize that achieving socio-environmental sustainability and better urban land-use and development in MRSP's poorest areas are key to controlling water pollution and improving living conditions of the resident population. To achieve these goals key stakeholders have initiated the articulation of a joint strategy based on integrated interventions in infrastructure provision in environmentally sensitive areas and integrated interventions in urban upgrading, thus encouraging a systematic, sustainable approach to development and urban occupation in the river basins by the public authorities.

2. Objectives

The overall objectives of the APL are (i) to protect and maintain the quality and reliability of MRSP's water resources and potable water sources; (ii) to improve the quality of life of the poor populations residing in key targeted urban river basins in MRSP; and (iii) to strengthen institutional capacity and improve metropolitan management and coordination in MRSP in water resources management, water pollution control, land-use policy and basic service provision.

The Project has been developed in support of the vision for a more equitable, sustainable and competitive Brazil outlined in the federal government's pluri-annual development plan (PPA). The Project is emblematic of the challenges facing metropolitan regions and large/mega cities in Brazil as it grapples with constraints to growth, social inclusion, environmental degradation, and the appropriate planning and management of services.

The 2004-2007 CAS¹⁰ built on the PPA and outlines a program to support multi-sectoral urban environmental and service delivery operations. The CAS highlights the important role of enhanced and more equitable access to urban basic services such as WSS, better water quality and water resources management, more sustainable land management, protection of forests and biodiversity, and greater social inclusion. It further recognizes that many urban poor are not served by water and sanitation services that water pollution, and its health consequences, is predominantly an urban problem which mostly affects the poor, and that the continued growth of informal settlements strains local government capacity. The CAS emphasizes the importance of integrated approaches to water pollution control and urban upgrading, which promote cooperation among a variety of actors and revitalize metropolitan governance, and recognizes the importance of sub-national level support in realizing broader growth and economic development as a means to achieving environmental stability and social equity in Brazil's urban conurbations.

In June 2006 the Bank's Board of Directors approved a Progress Report¹¹ based on activities undertaken in support of the 2004-2007 CAS, which recognizes that awareness has grown in Brazil with regard to the importance of water quality and scarcity issues and that more needs to be done to advance sustainable WSS services. The PR includes a re-focus of support to those areas where less progress has been made where Bank support could increase, including: (i) investing in growth, including enhanced emphasis on improving competitiveness and investing in infrastructure; and (ii) improving the sustainability of 'green' and 'brown' environmental policies and development strategies.

3. Rationale for Bank Involvement

Programmatic engagement in the São Paulo water sector The state government and the Bank intend to develop a 10-15 year programmatic engagement in the water sector to address the key statewide challenges of water resources management, water supply and sanitation, and water pollution control. This programmatic engagement includes ongoing initiatives to implement sustainable land use and water resources management in rural river basins, and large-scale restoration of riparian forests in the Cerrado and Atlantic Forest biomes, through the São Paulo Land Management program and the GEF Ecosystem Restoration of Riparian Forests project, respectively. The proposed *Programa Réagua* project, the *carta consulta* for which was recently presented to the federal government, is another key piece in this programmatic engagement, having a results-based design to address issues of water quality recovery and water quantity conservation throughout the state. The proposed Mananciais Project, which is the object of this PAD, represents a key vehicle in the Bank's programmatic engagement with São Paulo state in its water sector as it is designed to help the state and municipal governments of MRSP in tackling the water quality and urban informality challenges in the state capital described above.

Bank as catalyst and convening power The Bank has a unique role to play under the proposed Mananciais Project in bringing the myriad state, municipal and non-governmental actors together to tackle MRSP's land use and water resources challenges. This role of catalyst and

¹⁰ Report No. 27043-BR, November 10, 2003.

¹¹ CAS Progress Report, Report N^o. 36116-BR, May 8, 2006.

convening power was achieved under the preceding Bank-financed Guarapiranga project¹² but to a smaller degree (for only one of the *mananciais* and with fewer actors). The Bank's 'honest-broker' role has been demonstrated during the preparation of the Project's federal government approval document (*carta consulta*, CC) – a significant feat of bringing a dozen state entities and municipal governments together around a common vision, program and *modus operandi* within a single CC. This achievement was due in large part to the presence of the Bank through the use of a PHRD grant as a vehicle for promoting such cooperation. The water resources/urban informality challenge can only be tackled and reversed if such horizontal and vertical collaboration can be maintained and replicated in the medium- to long-term. The Project would provide the institutional consolidation for this cooperation and the crucial continuity during the frequent electoral cycles. As well as leveraging state and municipal debt capacity to achieve broader and deeper impact, and providing a framework of common goals and complementary action plans for each player, the Project would promote the participation of other such actors in the future.

Consolidating an unfinished agenda As reflected in the ICR and in the IEG's Review and subsequent PPAR¹³ for the predecessor Guarapiranga project, as well as in the Bank's 2003 Water Resources Sector Strategy, persistence, patience, pragmatism and flexibility are needed to implement innovative programs such as the proposed operation. Some of the key cutting-edge work initiated under the Guarapiranga project only came to legal fruition following project closure (the state water charging law, and the new state land-use law for the Guarapiranga basin). The Guarapiranga project was groundbreaking with regard to its hybrid approach of tackling the inter-related issues of urban water pollution and poverty/land use, but timid in its approach – the key executors 'kept their heads beneath the parapet' since, in Brazil of the 1990s, it was unpopular to suggest that the low-income settlements and slums crowding in on the reservoirs should be consolidated to prevent them from polluting, rather than being subjected to the mass removals that environmental lobbyists were then advocating.

The proposed Mananciais Project represents the continuation of a program that fundamentally changed Brazil's approach to urban water resources and land-use management, pollution control and urban poverty alleviation in large, densely-occupied conurbations with high degrees of informal settlements – a pressing issue facing cities throughout Brazil and the developing world.

The state WRM and land-use systems are incipient and evolving and are entering a critical phase (water extraction/pollution charges are due to be introduced in the Alto Tietê river basin in 2008). The proposed Project would assist the state and municipal governments of MRSP in moving forward the agenda of metropolitan coordination, management and planning in the areas of land-use, water pollution and related urban-environmental service delivery, – issues that are among the major paradigmatic challenges facing Brazilian cities today.

Bank knowledge The Bank is ideally placed to leverage international experience to help with diagnoses and prognoses of the complex metropolitan, water resources and land use issues that

¹² *São Paulo, Paraná and Federal Government Water Quality & Pollution Control Project* SAR N° BR-28962 (1992); Loan Agreement BR-3503 (1992).

¹³ *São Paulo, Paraná and Federal Government Water Quality & Pollution Control Project* ICR Report N° 28962 (June 2004). IEG Review (September 2004); IEG draft Project Performance Assessment Report (March 2007).

the Project intends to tackle. The Bank would serve as a knowledge conduit: bringing experience and lessons from Brazil and elsewhere to bear on Project implementation, and taking the Project's own lessons to other Brazilian cities and to those in other countries suffering similar pressures. The Bank would also bring to bear its specific sector knowledge and technical expertise from Brazil and elsewhere in the fields of water pollution control, urban water resources management, urban/slum upgrading, and basic service delivery in peri-urban areas.

4. Description

The proposed Mananciais Project is designed to respond to the land-use, water resources, environmental and social challenges. The Project will provide a vehicle which brings together state and municipal government interventions designed to reverse the deterioration in the headwaters (*mananciais*) water bodies, improve land-use planning and control, increase the living conditions of the peri-urban poor residing in the reservoir basins, and promote metropolitan cooperation and institutional capacity building in these fields. It will do so by building on the experience and the lessons learned from the predecessor Bank-financed Guarapiranga Program and from other, related state and municipal government initiatives in MRSP.

The interventions under the respective components of the Project were identified by adopting the following analytical methodology: the current land-use patterns in the two mostly highly urbanized reservoir basins, Guarapiranga and Billings (where three-quarters of the Projects resources will be invested), were mapped and loaded into a land-use/water quality computer-based mathematical model (MQUAL2). This model was then used to identify the major pollution sources in the two reservoirs. There was a very strong correlation identified between the highly urbanized areas of the basins, in general, and pollution load and between the informal and densely occupied areas of the basin, more specifically, and the pollution rates. The mapping also identified the pockets of poverty in these two basins and established their correlation with pollution loads. This mapping and modeling exercise of land-use, pollution loads and poverty rates was then used as a basis to identify and prioritize the types of physical intervention to be undertaken in the two basins: water supply; wastewater collection and treatment; solid waste management and disposal; drainage; urban upgrading; social inclusion interventions; and leisure areas and parks.

As identified under the mapping and modeling exercise, the Project will undertake physical interventions in urban-environmental infrastructure and urban upgrading with a prioritization of activities in those MRSP river basins that are already heavily urbanized and degraded (Guarapiranga and Billings), as well as initiating actions in those basins that are further from the city center but also witnessing similar pressure of informal urbanization (in order to help them get 'ahead of the curve' with regard to land-use planning and water pollution control and thus not become the Guarapiranga and Billings of the next generation) – namely, the Alto Tietê-Cabeceiras, the Juqueri-Cantareira, and the Alto and Baixo Cotia basins. Under the leadership of GESP, the Project will also support strategic activities to promote the sustainability of the interventions as well as to promote metropolitan wide management and coordination on those issues of relevance to the Project's objectives.

The Horizontal APL has been organized into four components: (i) Institutional Capacity Building; (ii) Urban Integration; (iii) Environmental Protection and Recovery; and (iv) Integrated Water Supply and Sanitation – the last component incorporates activities related to a broader concept of integrated water supply and sanitation, as described in the recently-approved Federal WSS Law (11.445/2007), namely: water supply, sanitation, drainage, and solid waste management. A more detailed description of the components, their activities and costs is presented in Annex 4.

The proposed Project will be implemented as a series of loans under a Horizontal APL, implemented over a six-year period. The participants under the Horizontal APL will be: the State Government of São Paulo (GESP); the State Water Utility (SABESP); and the municipal governments of São Paulo (PMSP), São Bernardo do Campo (PMSBC) and Guarulhos (PMG). PMSP will be a co-financier of the APL, while the remaining participants will all be borrowers under four individual Specific Investment Loans.

Component 1 – Institutional Capacity Building (US\$ 32.92 million total, US\$12.79 million loan). To achieve the objectives of the Mananciais Project and to ensure its long term sustainability, an Institutional Capacity Building component has been designed to support GESP and the other executing agencies by strengthening their institutional capacity and promoting improved metropolitan management and coordination with regard to the key metropolitan challenges of water resources management, water pollution control, land-use policy, and basic service provision. The component will support the following activities: (i) Improved integrated land-use and water resources management and coordination at the metropolitan level, through (a) support to the preparation and implementation of sub-basin *Environmental Development and Protection Plans* and their corresponding specific land-use laws, (b) drafting of *MRSP Metropolitan Water Governance* structure and corresponding legal/institutional instruments and implementation strategy, (c) creation of a forum for seminars on *Metropolitan Governance and Water in MRSP*; (ii) Carrying out of studies on (a) metropolitan governance, (b) MRSP water demand profiles and scenarios, (c) water demand management policy preparation, (d) water reservoir behavior and potable water treatment improvements, etc (iii) Environmental and water quality monitoring; (iv) environmental education and social outreach; (v) Creation and operationalization of the *State WSS Regulatory Agency*; and (vi) Project management, monitoring, evaluation and dissemination..

Component 2 – Urban Integration (US\$ 111.48 million total, US\$ 12.21 million loan). The component's objectives are to improve the standards and layouts of urban occupation in the targeted sub-basins and improve the quality of life of the residents of these sub-basins, especially the low-income communities living in informal settlements, through the following activities: (i) Urbanization of slums and irregular settlements; (ii) Recuperation of high-risk and degraded areas; (iii) Involuntary resettlement; (iv) Preparation of housing plans; (v) Environmental and urban layout standardization of settlements; and (vi) Socio-environmental supervision for urban upgrading and housing interventions.

Component 3 – Environmental Protection and Recovery (US\$ 24.89 million total, US\$ 12.57 million loan). The component's objectives are to protect and recover natural habitats and environmentally sensitive and degraded areas in the sub-basins with a view to improving

environmental quality, by supporting the following activities: (i) Revegetation and reforestation; (ii) Urbanization of public areas with creation of green and leisure spaces for common use; (iii) Establishment of environmentally protected areas; (iv) Rehabilitation and protection of reservoirs and water production systems; and (iv) Control of the transportation of hazardous substances in the region.

Component 4 – Integrated Water Supply and Sanitation (US\$ 121.70 million total, US\$ 90.16 million loan). The component’s objectives are to reverse the main factors that contribute to the pollution of the reservoirs and to provide integrated WSS services to the poor, by supporting: (i) Wastewater management improvements; (ii) Water supply system improvements; and (iii) Solid waste management improvements..

The Project’s borrowers, and the co-financer, will not each be undertaking all of the activities listed above under the four Project components. Nor will each of the activities be carried out in all of the sub-basins of the MRSP. The table in Annex 4 presents the component activities and shows which executing agency will be undertaking them in which sub-basins.

5. Financing

Source:	(US\$ M.)
Borrower	163.27
International Bank for Reconstruction and Development	129.02
Total	292.29

6. Implementation

The participants under the Horizontal APL will be GESP, SABESP, PMSP, PMSBC and PMG. PMSP will be a co-financer of the APL, while the remaining participants will all be borrowers under four individual Specific Investment Loans. GESP will have an overall coordinating role of the APL, and will implement its activities under the APL through three executing agencies: the State Secretariat for Housing (SH) through its State Company for Housing and Urban Development (CDHU); the State Secretariat for the Environment (SMA); and the State Secretariat for Water and Energy (SSE) – the latter will be responsible for coordinating both GESP’s activities under the APL, as well as the overall APL itself. The implementation arrangements for the Project are organized around three themes: (i) strategic advisory support; (ii) general coordination; and (iii) operational execution/coordination. The main functions of each of the bodies involved under these three themes are described below and more details can be found in Annex 6.

Strategic advisory support The Project will receive advisory support from a *Committee of Coordinators* (CDC), which will be legally created and composed of technical staff from each executing agency. The CDC will undertake the following activities: (i) monitor the attainment of the Project’s objectives and goals; (ii) guide Project implementation and review next steps; (iii) review and comment on the Project’s results and outcomes; (iv) provide support/technical assistance to the coordinators of the Project Management Unit (UGP) and the Local Management Units (UGLs); and (v) continually monitor and evaluate the implementation progress of all

Project components and activities. In addition, the Alto Tietê River Basin Committee (CAT) will provide the Project executing agencies with periodic policy and strategy guidance on issues within the field of CAT's competence. CAT will receive support in providing this guidance from the respective Alto Tietê sub-basins committees, namely those of Cabeceiras, Juqueri-Cantareira, Cotia-Guarapiranga, Billings-Tamanduateí, and Pinheiros-Pirapora.

General coordination Overall coordination of the Project will be provided by SSE through a UGP created by state decree, staffed with GESP and SABESP public servants, and fully embedded within the day-to-day workings of the Secretariat. The core of the UGP team is already in place and has gained considerable experience during the preparation of the proposed Project and the implementation of its PHRD grant, as well as – in some important cases – during the implementation of the predecessor Guarapiranga Program. The UGP will be responsible for orienting, planning, coordinating, technically approving, supervising and technically auditing all aspects of the Project's implementation, including those undertaken by the other borrowers and by the co-financer.

Operational execution/coordination Each of the borrowers and the co-financer will create by effectiveness their own project management units at the local level (UGLs) which will be created using an appropriate legal instrument issued by the respective mayors (PMSP, PMSBC and PMG) and by the president of the company (in the case of SABESP). The UGLs will be staffed with public servants of the respective borrowers and fully embedded within its day-to-day workings. The UGP will be responsible for, *inter alia*: (i) evaluating and approving the appropriateness of subcomponent and activity proposals and designs (from a technical, financial, social, environmental/safeguard and resettlement perspective) before they are forwarded to the Bank; (ii) reviewing and approving related procurement documentation before they are forwarded to the Bank for no-objection; (iii) monitoring and evaluating the implementation of all components, subcomponents and activities under the Project; (iv) reviewing borrower/co-financer periodic progress reports, and consolidating the information therein into periodic overarching Project progress reports. The UGP will be assisted by a management consultancy firm, which will be responsible for supporting it on Bank-specific technical, operational, administrative, financial, procurement, safeguard and M&E aspects of Project implementation. Each UGL will be assisted by specialized individual consultants, on an as-needed basis, to support Project implementation on issues that are Bank-specific (such as procurement, FM and safeguards issues).

The CDC and CAT will have regular meetings with the UGP to discuss and evaluate Project implementation progress. Furthermore, during the sub-basin committees' regular bimonthly meetings, the UGP will present the Project's implementation progress and will raise any specific important issues for discussion. In addition, the UGP will participate in specific meetings as and when requested by the CAT or by the respective sub-basin committees. The CDC will meet periodically, as defined in the Operational Manual, to discuss Project implementation and evaluation. The implementation arrangements are further described in Annex 6 and will be detailed in the Operational Manual.

7. Sustainability

The proposed Mananciais Project, and the overarching program of interventions supported by the state, municipal governments and other MRSP stakeholders within which the Project sits, is very much concerned with the medium- to long-term sustainability of water resources management and land use in the metropolitan region. The Project has a specific component, encompassing numerous activities, which focuses on institutional capacity building and policy and strategy development/refinement for the water and land-use sectoral issues being faced in the metropolis. These activities will be targeted to those stakeholders – the state government, the state water company, the municipal governments, and the river committees and agency – that have a direct role in ensuring the sustainability of the interventions, and will help bring these stakeholders together under a program of complementary interventions with common goals. The activities include: (i) preparation of sub-basin PDPAs and specific land-use laws; (ii) TA to municipalities to ensure their urban master plans are consistent with the PDPAs; (iii) TA to municipal and state actors responsible for enforcement of land-use patterns; (iv) drafting of a metropolitan water governance structure and creation of forum for discussing this issue; (v) studies on metropolitan governance, water demand profiles, scenarios and policy, water reservoir behavior and potable water treatment improvements; (vi) environmental and sanitary education campaigns and social outreach to promote issues including community self-regulation in controlling/enforcing appropriate land-use patterns; (vii) TA for environmental and water quality monitoring; and (viii) creation/operationalization of the State WSS Regulatory Agency.

At the community level, the beneficiary stakeholders will be fully engaged in the design and implementation of the neighborhood interventions and will further benefit from social outreach and environmental/sanitary promotion campaigns which are designed to promote the sustainability of Project activities at this level. The capacity building activities targeted at the Alto Tietê river basin committee and agency, and at the sub-basin committees, together with the reformulation of the Alto Tietê river basin plan and the corresponding PDPAs and specific land-use laws, are designed to allow these entities to successfully navigate the ‘start up’ period they are currently confronting and move to a scenario of sustainable self-management. Likewise, the challenges of sustainable services delivery to peri-urban communities in the headwaters regions of MRSP will be addressed during Project implementation with the corresponding stakeholders (SABESP for WSS, and the municipal and state governments for other services).

8. Lessons Learned from Past Operations in the Country/Sector

The main lessons learned and reflected in the Project design come from the predecessor Bank-financed Guarapiranga PQA project (São Paulo Water Quality and Pollution Control Project, BR-P006541) and the accompanying Curitiba and Belo Horizonte PQA projects. The lessons presented in the projects’ joint ICR, and in IEG’s Review and subsequent Project Performance Assessment Report¹⁴, were reviewed and incorporated into the design of the proposed Mananciais Project as described below. In addition the state and municipal agencies involved in the principal urban integration, environmental protection and recovery, and integrated WSS activities under the proposed Project themselves have considerable experience in their respective

¹⁴ *São Paulo, Paraná and Federal Government Water Quality & Pollution Control Project ICR Report N° 28962* (June 2004); IEG Review (September 2004); IEG draft Project Performance Assessment Report (March 2007).

fields, which has also been drawn on during preparation and will be further leveraged during implementation.

The ICR presented the following conclusions and recommendations, among others: (i) Problems related to water quality management, pollution control, the brown environmental agenda and urban upgrading, especially in river basins of metropolitan regions, are complex and cannot be resolved with simple approaches or isolated sector interventions; (ii) Both the institutional and the environmental objectives associated with such projects should be treated as long-term program goals rather than short- to medium-term project objectives ; (iii) Integrated approaches to water quality management and urban upgrading can enhance the benefits of a wide range of interventions and contribute to poverty alleviation; (iv) Tackling the shortfalls in metropolitan planning and governance in Brazil is crucial, and PQA-type projects should be used as vehicles to re-engage stakeholders in a debate of metropolitan planning and governance to help move this key agenda forward; (v) Persistence, patience and flexibility are needed to implement such innovative which should be customized to the unique characteristics of each basin; (vi) Consensus building, though time consuming, is critical for reaching agreement on project design and achieving institutional and policy reform. (vii) The Guarapiranga PQA project demonstrated an equitable approach to urban resettlement and provides a useful model in which resettlement is seen as part of the urban upgrading solution, contributing to the improvement of quality of life in the slums.

The PPAR was extremely positive in its findings and recommendations with regard to the relevance of the first generation of PQA projects in Brazil, and came to the following conclusions about these types of projects:

- They laid the groundwork for a new approach to managing water quality in large urban areas, breaking the conventional mold and representing important new standards of policy and practice in Bank assistance to the WSS sector in Brazil – and establishing the rudiments of global best practice in urban WRM involving the poor.
- The projects moved the emphasis to a basin-wide scale to achieve quality and efficiency objectives in dense urban areas, while learning that the water quality challenges were inextricably linked with urban poverty issues.
- Brazil is still far from consolidating the approach to sustainable urban water resources and land use management, and that experience from developed countries suggests that consolidation may require many decades.
- The projects were implemented in complex metropolitan settings, and the policy achievements are therefore all the more noteworthy – the water basin approach is one method, urgent, convenient, and operationally relevant, to address metropolitan -wide issues.
- The drawbacks of the hybrid approach, in turn, are the complexity of management and possible tradeoffs in depth and scope of policy reform.
- No separate project approach –be it slum upgrading or WSS alone – has succeeded any better on purely water quality objectives as the PQA hybrids.
- The projects contributed to an understanding of how to manage difficult inter-sectoral issues involving the many actors in Brazilian metropolises.

- The fusion of poverty and water basin components into a single approach created a new stage on which technical and policy agents could work out complex problems in a coherent framework.
- The projects solved one of the two big problems in metropolitan governance: large metropolitan areas must solve technical issues of economic evaluation and planning, and they must decide priorities and budgets.
- The PQA projects took important steps in what constitutes a feasibility test showing that policy issues linking poverty reduction, the provision of basic services, and environmental improvement at the regional scale can be successfully tackled together.
- The projects show that complex undertakings do not have to be ‘Christmas trees’ – but to keep projects from becoming unmanageable clear policy objectives are needed, and the Bank and borrower need to be committed for several, even many, decades.
- The Bank can take steps to keep political transitions and partisan disruptions from becoming blind spots, including multi-party briefings to educate opposition groups and the public on the project.
- More structured learning may be useful during preparation and implementation for both project units and basin committees.

9. Safeguard Policies (including public consultation)

The proposed Project has received an Environmental Category A rating in accordance with the corresponding safeguard policies. The borrowers’ capacity to handle safeguard issues is generally good. The State Secretariat for Water and Energy (SSE) led the preparation of the regional strategic environmental assessment, the social assessment and the resettlement policy framework for the Program in close collaboration with the State Secretariat for the Environment and the State Secretariat for Housing. All three Secretariats, as well as the State water company, have considerable experience with World Bank, IDB, JBIC and other financiers for programs which include environmental and resettlement issues. These three secretariats were responsible for the implementation of the Bank-financed Guarapiranga project from 1992-2000, at a total cost of US\$ 400 million, which successfully implemented similar environmental and resettlement activities in the Guarapiranga sub-basin. The Project triggers and addresses the following Bank safeguard policies as described below and in more detail in Annex 10:

Environmental Assessment (OP 4.01) A regional strategic environmental assessment was prepared by the Borrower in conjunction with the State Secretariat for the Environment. The infrastructure interventions will generate temporary negative environmental impacts during their respective construction periods, even in those cases where the interventions are intended to mitigate existing areas of degradation and risk. It will therefore be necessary to adhere to the appropriate criteria and procedures contained in the EIA report’s Environmental Manual for Construction. The environmental impacts of the Program works interventions are duly described in the EIA report and summarized in Annex 10 for each executing agency. The list includes a group of activities, studies and programs to mitigate, attenuate and/or counteract the negative impacts caused by the implementation of the civil works, as well as highlighting the expected positive effects of the interventions. These activities are also presented in the respective annexes of the EIA report itself and in the Environmental Management Plans of each executing agency.

Natural Habitats (OP 4.04) Category 1 and Permanent Preservation Areas (APPs) are located along the banks of the reservoirs and the watercourses which are targeted under the Project. These contain a number of stretches which have been degraded by irregular urban occupation, including poorly-constructed dwellings. They also contain a number of conservation areas as well as other areas that could be recuperated. The interventions in these areas will focus on relocating families, and subsequent environmental and landscape recuperation of the degraded area in question. In the case of partially degraded areas or those that are still preserved, the strategy will be to protect and preserve them with actions to recuperate and establish a number of parks (including linear parks on the banks of the Billings Reservoir).

Involuntary Resettlement (OP 4.12) A Resettlement Policy Framework (RPF) for guiding the involuntary resettlement to be carried out under the Project has been prepared in accordance with Bank guidelines and safeguards. The Resettlement Action Plans (RAPs) for each Project intervention that entails resettlement will be prepared together with the engineering designs during Project implementation. Each RAP will be sent to the Bank for review and clearance before the associated civil works contract is signed.

Safety of Dams (OP 4.37) The Project foresees dredging/desilting works in three of the reservoirs currently used as part of MRSP's water supply system, namely the Isolina Superior and Isolina Inferior reservoirs in the Cotia system, and the Paiva Castro reservoir in the Cantareira system. These dredging/desilting works are programmed to take place only after the second year of Project implementation. The reservoirs are formed by small dams in two of the cases (Isolina Superior and Isolina Inferior), and by a large dam in the other case (Paiva Castro, which is 22 meters high). During the preparation of the engineering designs for the dredging/desilting interventions for the Paiva Castro dam, an evaluation of the security of the dam will also be undertaken in conformity with OP 4.37.

Protection of Physical Cultural Resources (OP 11.03) The Project will include construction and excavation activities to expand and replace infrastructure, therefore the SEA included screening for any known cultural property in the Project area and incorporated 'chance find' procedures in the event that culturally significant resources are discovered during implementation. In addition, Brazil has a well-developed legislative and normative framework, which is under the oversight of the National Institute for Protection of Historical and Archeological Sites (IPHAN).

Consultations. During Project preparation, a number of consultations and discussions were carried out with the Alto Tiete basin committee and agency, and with the basin sub-committees of the Juqueri-Cantareira, Tiete-Cabeceiras, Cotia-Guarapiranga, Billings-Tamanduateí and Pinheiros-Pirapora sub-basins. The committee and the subcommittees are composed of representatives of state and municipal governments, civil society and academia, amongst others. In addition, a number of municipal and local entities and organizations were involved in these discussions/consultations. Another round of consultations, following the dissemination of the EIA report, was undertaken in June, 2007 following the Pre-Appraisal mission. The Project design and objectives were endorsed during these consultations.

During preparation and implementation of the engineering designs, especially those related to the urbanization of slums and irregular settlements and to the provision of WSS and related services, a considerable amount of social participation and feedback is anticipated, as was the case during

implementation of the Guarapiranga Program. In addition, the proposed Project includes for community overview of civil works interventions, and for undertaking public opinion surveys to register and mitigate any unsatisfactory aspects of the Project interventions.

Component 1 includes complementary activities that will contribute to the strengthening of communication and social participation, including: (i) capacity building events for environmental agents; (ii) workshops for community participation; (iii) development of educational videos and radio programs and the carrying out of environmental education programs for stakeholders; (iv) preparation of environmental and social diagnosis for awareness building; (v) the carrying out beneficiary surveys; (vi) support to community mobilization, social outreach and other civil society initiatives; and (vii) the implementation of environmental education centers.

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment (OP/BP 4.01)	[X]	[]
Natural Habitats (OP/BP 4.04)	[X]	[]
Pest Management (OP 4.09)	[]	[X]
Physical Cultural Resources (OP/BP 4.11)	[X]	[]
Involuntary Resettlement (OP/BP 4.12)	[X]	[]
Indigenous Peoples (OP/BP 4.10)	[]	[X]
Forests (OP/BP 4.36)	[]	[X]
Safety of Dams (OP/BP 4.37)	[X]	[]
Projects in Disputed Areas (OP/BP 7.60)*	[]	[X]
Projects on International Waterways (OP/BP 7.50)	[]	[X]

10. List of Factual Technical Documents

- Environmental Assessment Report plus Annexes
- Project Information Document and ISDS (appraisal stage)
- Project Information Document and ISDS (PCN stage)
- Preparation Mission Aides Memoire
- PCN and PCN Meeting Minutes
- QER PAD and QER Meeting Minutes
- Executive Summary of the Environmental Assessment
- Operational Manual
- “Carta Consulta”
- Economic and Financial Evaluation
- Institutional Assessment
- Social Assessment
- Procurement Plan
- Involuntary Resettlement Report
- Decree n° 50.667, of 03/30/2006, State of São Paulo
- Law n° 12.183, of 12/29/2005, State of São Paulo

* *By supporting the proposed project, the Bank does not intend to prejudice the final determination of the parties' claims on the disputed areas*

- Decree nº 51.686, of 03/22/2007, State of São Paulo
- Law nº 12.233, 01/16/2006, State of São Paulo
- Law nº 11.445/07 – Federal

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