DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

BRAZIL

SÃO PAULO METROPOLITAN TRANSPORTATION INVESTMENT PROGRAM

(BR-L1162)

(Procurement of rolling stock and systems for Companhia Paulista de Trens Metropolitanos (CPTM); and studies, designs, and expropriations to implement:
Second Phase of Line 5 (Purple), of Companhia do Metropolitano de São Paulo (METRÔ), from Largo 13 to Chácara Klabin)

LOAN PROPOSAL

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ELECTRONIC LINKS AND REFERENCES
REQUIRED
1. Annual work plan http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=1315845
2. Monitoring and evaluation plan http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=1315860
3. Environmental and Social Management Report If required, as specified in Policy OP-730 and the Disaster Risk Management Policy http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=1315873
4. Procurement plan http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=1316475
OPTIONAL
1. Economic evaluation http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=1315867
2. Evaluation of the State of São Paulo's financial capacity http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=1315961
3. Maps http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=1315870

ABBREVIATIONS

CPTM	Companhia Paulista de Trens Metropolitanos
FEPASA	Ferrovía Paulista S.A.
IRR	Internal rate of return
METRÔ	Companhia do Metropolitano de São Paulo
PCU	Program coordination unit
STM	Secretaria de los Transportes Metropolitanos [Metropolitan Transportation Department]

PROJECT SUMMARY

BRAZIL
SÃO PAULO METROPOLITAN TRANSPORTATION INVESTMENT PROGRAM
(BR-L1162)

Financial Terms and Conditions			
Borrower: Government of the State of São Paulo **Guarantor**: Government of Brazil **Executing agency**: Government of the State of São Paulo, acting through the Metropolitan Transportation Department (STM)		Amortization period:	25 years
		Grace period:	4.5 years
		Disbursement period:	4.5 years
		Interest rate:	LIBOR
IDB (Ordinary Capital)	US$168,000,000	Inspection and supervision fee:	*
Local	US$ 73,000,000	Credit fee:	*
Total	US$241,000,000	Currency:	U.S. dollars from the Single Currency Facility

Project at a glance

Project objective and description:

The purpose of the program is to meet growing demand for urban railway transportation services in the São Paulo metropolitan region, increasing passenger capacity on the metropolitan train system and enhancing levels of transportation mobility, connectivity, safety, and comfort for a large part of the low-income population living in the southwestern and southern zones of the greater metropolitan region. To that end, the program will support modernization and expansion of the capacity of Line 9 (formerly Line C), operated by the Companhia Paulista de Trens Metropolitanos (CPTM), and will finance preparatory activities for the future expansion of Line 5, operated by Companhia do Metropolitano de São Paulo (METRÔ).

Special conditions precedent to the first disbursement:

(i) Entry into force of subsidiary execution agreements between the executing agency and each of the subexecuting agencies (CPTM and METRÔ), under terms agreed upon with the Bank (paragraph 3.2); and (ii) creation of the program coordination unit (PCU) and appointment of key personnel under terms agreed upon with the Bank (paragraph 3.3).

Special execution condition:

Presentation to the Bank of the order for expropriation for the purpose of public utility for the area required to install the switchyard for the expansion of METRÔ Line 5 (paragraph 2.12), within 12 months of the entry into force of the loan contract.

Exceptions to Bank policies: None.

Project consistent with country strategy: Yes [X] No [ ]

Project qualifies as: SEQ [ ] PTI [X] Sector [ ] Geographic [ ] Headcount [ ]

* The credit fee and inspection and supervision fee will be established periodically by the Board of Executive Directors as part of its review of the Bank's lending charges, in accordance with the applicable provisions of the Bank's policy on lending rate methodology for Ordinary Capital loans. In no case will the credit fee exceed 0.75% or the inspection and supervision fee exceed, in a given six-month period, the amount that would result from applying 1% to the loan amount divided by the number of six-month periods included in the original disbursement period.

I. DESCRIPTION AND RESULTS MONITORING

A. Introduction

1.1 **The metropolitan region of São Paulo** covers an area of 800 km^2 and has roughly 18.5 million inhabitants (11% of Brazil's total population) living in 39 municípios. It is the country's largest city (2,245 inhabitants per km^2) and main economic hub, generating over 20% of national GDP. Unlike in other large Latin American cities, 61% of the metropolitan region's population and most of its jobs are concentrated in its urban center, in the city of São Paulo. The repercussions of this on the life of the city come in the form of long travel distances and heavy traffic congestion.

B. Background, problem, and rationale

1.2 **The metropolitan public transportation system** is organized on two levels. At the state level, under the Metropolitan Transportation Department (STM), it consists of: (i) the suburban train system, managed by Companhia Paulista de Trens Metropolitanos (CPTM); (ii) the metro system run by Companhia do Metropolitano de São Paulo (METRÔ); and (iii) the intermunicipal bus system operated by the Empresa Metropolitana de Transportes Urbanos. At the second level are the municipal bus systems. The largest of these is the São Paulo system, which is run by the public enterprise SP-Trans and has some 15,000 vehicles carrying 8.6 million passengers per day.

1.3 An estimated 39 million trips are taken every day in the metropolitan region, of which 13 million (33%) are made on foot, 14 million (37%) by automobile, and the remaining 30% on the public transportation system. The vast majority of daily trips using public transportation are made by bus (78%), with metro and train trips accounting for 14% and 8%, respectively. Of the roughly 12 million daily trips using public transportation, an estimated one third of all passengers use more than one mode of transportation per trip. Specifically, 78% of metro trips, 61% of train trips, and 16% of bus trips involve at least one transfer.

1.4 **Management of the public transportation system**. Decentralization of the metropolitan passenger rail system was included in the 1988 constitutional reform, which explicitly delegated responsibility for urban and metropolitan transportation to state and municipal authorities. This delegation of the metropolitan railway system posed major operational and institutional challenges for the state government, in light of the need to coordinate and integrate the different components of the system. The creation of the STM in 1991, through Law 7450, largely met that challenge, since its main functions involved coordination, regulation, and inspection of the public transportation system, as well as the formulation of policy guidelines and a strategy for public transportation within the metropolitan region. The STM operates the railway system through the CPTM and METRÔ.

1.5 The **CPTM** was created in 1992, under Law 7861, to integrate the above-ground suburban train system in the metropolitan region. For this task, it assumed responsibility for the trains operated until then by Companhia Brasileira de Trens

Urbanos and Ferrovia Paulista S.A. Today, the CPTM is responsible for a 262-km network (Mapas-IDBDOCS#1315870) consisting of seven lines, on which 349 electric trains, of between 5 and 47 years old, circulate. It serves 22 municípios, 19 within the São Paulo region, and carries about 1.6 million passengers daily, of whom 63.7% have household incomes of up to four times the minimum wage.[1]

1.6 **METRÔ** operates a 61.3-km network of four lines within the city of São Paulo, handling about 14% of all mass transit trips and carrying some 2.7 million passengers per day. The São Paulo metro system is among the largest in the world in terms of ridership, moving an average of 9.5 million passengers per kilometer of track per year, and it is expanding. Line 5 (paragraph 1.16) came into operation in 2002, and Line 4, currently under construction, is expected to start operating in 2010.

	Line 1 - Blue	**Line 2 - Green**	**Line 3 - Red**	**Line 5 - Purple**	**Total network**
Passengers 2006 (millions)	227.1	55.2	262.8	18.5	563.6
Passengers/km of track (millions)	16.58	10.16	15.11	1.78	9.5

1.7 For many years, the metropolitan public transportation system was poorly integrated, both in terms of physical infrastructure and pricing, largely excluding low-income groups from using it. In 2002, the system's low-income users mostly rode buses owing to the number of bus lines that served outlying areas of the city. Between 2000 and 2005, a number of actions were taken to make the railway system more accessible and comfortable, including: (i) physical integration of the CPTM and METRÔ systems and the introduction of free transfers; and (ii) Bank-financed improvements on CPTM Line 9 (formerly Line C), and the construction of METRÔ Line 5 (paragraph 1.16). In 2006, the STM signed an agreement with the city of São Paulo's Municipal Transportation Department, creating a Joint Transportation Steering Committee to integrate the policies, plans, and designs of the respective mass transit and road systems. One of the main actions taken by the Steering Committee was to create a mass transit pass, enabling users to travel throughout the train network and transfer freely to the metro system, at four hub stations, and to the municipal bus system, for a period of up to two hours, lowering the price by roughly 25% compared to the cost of individual tickets on the rail and bus systems.

1.8 The positive effects of these operational and pricing improvements were mainly seen in ridership in the CPTM system, which grew from around 870,000 passengers on a typical workday in 2000 to 1.28 million in 2005 (50% growth); metro ridership grew from 2.37 to 2.42 million passengers per day in the same period. System improvements also benefited low-income groups, by reducing the amount that poor

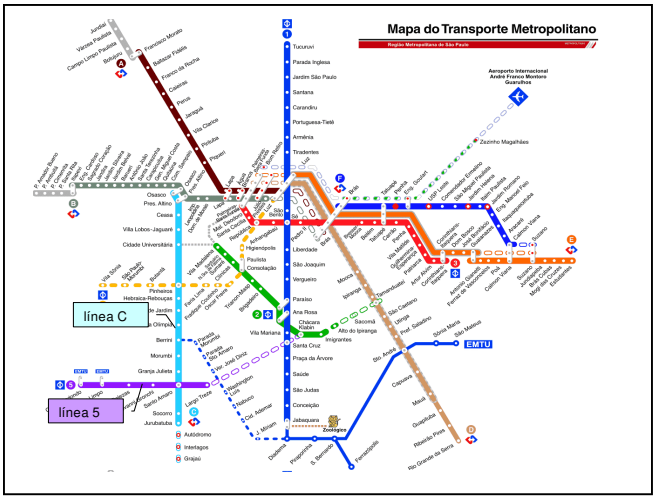
[1] The poverty line for a family in the São Paulo metropolitan region is four times the minimum wage, one of the country's highest owing to the high cost of living in the metropolitan region.

families spend on transportation from 27.3% to 19.7% of their income (families with incomes of less than twice the minimum wage), and significantly increased the percentage of rail users in low-income groups (see table).

	Users with income less than four times the minimum wage (% of total passengers)		
	2001	**2005**	**2006**
CPTM	37.7	63.7	-
METRÔ	20.3	28.0	35.0
Total network	**25.0**	**40.0**	**44.3**

1.9 **Demand on the railway system.** Integrated pricing between the rail and bus systems has resulted in demand growth of 12% and 15% on the CPTM and METRÔ networks, respectively, in just one year (between the first half of 2006 and the same period in 2007). However, this growth in demand has not been matched by the necessary investments, so the quality of urban rail services has clearly declined, as reflected in high passenger density (10 passengers per m^2 on some lines during peak hours), long travel times (2.5 hours per day from outlying areas to the center of the city), infrequent service, and safety problems.

1.10 **Situation in the program's area of influence.** CPTM Line 9 (formerly Line C), and METRÔ Line 5 comprise the southern project, which aims to better integrate the southern and southwestern regions of metropolitan São Paulo, where much of the low-income population lives, with the western and central zones of the region. These projects have been prioritized in the integrated transportation studies conducted since the late 1960s and are included in the STM's Integrated Urban Transportation Plan-2025.



1.11 Line 9 (the north-south segment in the western part of the network) from Osasco to Jurubatuba is 24.3-km long and has a total of 15 stations. Many of the metropolitan

area's jobs are located along the line, making it one of the busiest lines in the system. On average, it carried 107,000 passengers per day in 2006 (8% of all CPTM passengers). With the extension of this line to Grajaú (8.5 km and three stations), demand is expected to rise to 170,000 passengers per day. In 2010, when METRÔ Line 4 opens,[2] demand is forecast to reach 420,000 riders per day. Users of this line have lower income and educational levels than the average CPTM user, with an estimated 64% having household incomes of four times the minimum wage or less. In terms of operations, Line 9 is running several old trains and just five modern trains, which have eight cars each and were purchased in 2000 using the proceeds of a loan from the Bank.[3] Passenger capacity is roughly 9,300 during peak hours; passenger density is 7.4 riders per m^2 (i.e., higher than the acceptable standard of 6.0 riders per m^2); the interval between trains during peak hours is six minutes; and total travel time from one end of the line to the other is roughly 41 minutes. Line 9 connects to the metro system (Line 5) at one of its stations and to the bus system at four stations.

1.12 The 8.4-km existing segment of METRÔ Line 5 (east-west segment in the southwestern corner of the network) has six stations and links the southernmost part of the city (Capão Redondo) with the Largo Treze shopping center, where it also connects with Line 9. Although just inaugurated in 2002, Line 5 has seen a substantial increase in demand, with 18.5 million passengers in 2006. In terms of operations, the average commercial speed is 41 km per hour (maximum speed of 68 km per hour), the fleet consists of 48 cars, and the interval between trains at peak hours is six minutes. This line is set to be extended to downtown São Paulo—the Chácara Klabin station (connection with Line 2 – Green)—a distance of 11.6 km and 11 stations. Construction of the first section, between the stations of Largo Treze (in service) and Adolfo Pinheiro (a tunnel roughly 1-km long of which 500 m are already open), is slated to begin in 2009. Once operational, it will accommodate an increase in ridership demand from 91,000 to 653,000 passengers per day.

1.13 **Strategy and investment plan of the Government of the State of São Paulo.** The State of São Paulo's comprehensive urban transportation action strategy sets out the following priorities: (i) integration of metropolitan systems with those of the other municípios in the metropolitan region; (ii) improvement in the quality of rail services; (iii) better coordination with operators and users; (iv) development of an integrated strategy for land use, urban transportation, and air quality; (v) introduction of financial mechanisms to guarantee the long-term sustainability of the public transportation system and reduce subsidies; and (vi) more diversified funding sources, including greater private sector participation.

1.14 As part of this strategy, the STM plans to invest roughly R$19.6 billion (US$11 billion) in the metropolitan railway system in the period 2007-2012. The

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[2] Line 4 will give Line 9 riders a quicker and more convenient way to get to the city center.

[3] By late 2008, following the arrival of new trains purchased with own resources (paragraph 1.16), the old trains will be replaced and Line 9 will be operating with 10 modern, eight-car trains.

projects in this ambitious plan include modernization of all METRÔ and CPTM lines, with expansion and upgrading of stations (including better access for pedestrians and people with disabilities, installation of elevators, and covered spaces to store bicycles, etc.); procurement of new trains; and modernization of signaling and other systems. Also planned are a 57% expansion of the metro network, for a total of 96.5 km in 2012, and a 17% expansion in the train network (to 310 km in 2012).[4] These investments will be financed by the State of São Paulo's own resources (38%), borrowing (31%), and other sources (e.g., the São Paulo municipal government, the private sector, etc.).

1.15 The State of São Paulo is currently processing an operation for US$1.55 billion, of which US$1.08 billion would be financed by the World Bank and the Japan Bank for International Cooperation. This operation calls for: (i) the procurement of 40 eight-car trains for CPTM Lines A and F, and 17 six-car trains for METRÔ Lines 1, 2, and 3; (ii) the installation of signaling, energy, and telecommunications systems; and (iii) institution-strengthening and implementation management. The State of São Paulo is also studying the possibility of handing over the expansion, upgrading, operation, and maintenance of CPTM infrastructure, consisting of lines and stations, to the private sector, while keeping the expansion, operation, and maintenance of rolling stock and systems in public-sector hands. Construction of the extension of METRÔ Line 5, the studies for which would be financed under this operation (paragraph 1.1), could also be included in that public-private partnership.

1.16 **Rationale.** Bank support for São Paulo's public transportation sector began 15 years ago with the approval of loan 844/OC-BR, which funded the construction of the first section of METRÔ Line 5 from Capão Redondo to Largo Treze (9.3 km), in service since 2002, and the modernization of Line 9 between Osasco and Jurubatuba (physical improvements along 15 km of track, construction of seven stations, and the purchase of five eight-car trains). In 2005, using State of São Paulo own resources (US$215 million), the CPTM began extension work on 8.5 km of Line 9, the Jurubatuba-Grajaú section, which is scheduled for completion in the first half of 2008. It also purchased six eight-car trains that will enter into service this year. The proposed program represents a continuation of the Bank's participation in the modernization and expansion of lines 9 and 5, improving transportation conditions and increasing access to social services and jobs for a large proportion of the low-income population served by these lines. The proposed areas of activity are consistent with the Bank's country strategy with Brazil, in which the key objectives are to promote sustained and environmentally appropriate growth, reduce poverty, and promote social inclusion.

[4] Railway connection between downtown São Paulo, Guarulhos, and the airport, the Tucuruvi-Guarulhos corridor, the Diadema-Brooklin corridor, the Noreste-Campinas corridor, the Baixada Santista integrated metropolitan system, etc.

C. Objectives, components, and costs

1. Objective

1.17 The purpose of the program is to meet growing demand for urban railway transportation services in the São Paulo metropolitan region, increasing passenger capacity on the metropolitan train system and enhancing levels of transportation mobility, connectivity, safety, and comfort for a large part of the low-income population living in the southwestern and southern zones of the greater metropolitan region. To that end, the program will support modernization and expansion of the capacity of CPTM Line 9 and will finance preparatory activities for the future expansion of METRÔ Line 5.

2. Components

1.18 The program will have three main components: (i) *investments* in: (a) equipment and systems for CPTM Line 9 and the corresponding technical supervision; and (b) studies and projects for the future expansion of METRÔ Line 5 and land purchases; (ii) *institutional strengthening* of the CPTM and METRÔ; and (iii) *engineering and program administration*.

Component 1: Investments (US$227.2 million)

1.19 **Subcomponent 1.1: CPTM investments.** This subcomponent will finance: (i) the procurement of eight new eight-car trains to supplement the existing fleet and meet the growing demand that is expected on Line 9; (ii) the modernization and expansion of the corresponding signaling, electric power transmission, and telecommunications systems for Line 9; (iii) small-scale infrastructure works associated with Line 9; and (iv) technical supervision of the procurement and operation of rolling stock and the corresponding systems.

1.20 **Subcomponent 1.2: METRÔ investments.** This subcomponent will finance part of the technical, economic, and environmental studies needed to build and operate the extension of METRÔ Line 5. Resources from the local counterpart contribution will be used to partly finance the land purchases needed for the switchyard for the Line 5 extension, known as the Guido Caloi switchyard, and other procurements for Line 5 (stations, ventilation systems, etc.). Given the rapid pace of urban growth, the resulting scarcity of large lots, and the corresponding rise in property values in the area along the new line, the proposed lots for the switchyard (102,000 m^2) must be procured in the immediate term to ensure program feasibility. The lots consist of eight properties of between 1,600 m^2 and 48,000 m^2 that are mostly vacant and have no resident population.

Component 2: Institution-strengthening (US$2.0 million)

1.21 **Subcomponent 2.1. Institutional strengthening of the CPTM.** Financing will be provided for: (i) the public-private financial model for management of the system's infrastructure; and (ii) the technical and functional studies relating to the modernization and urban integration of Line 9.

1.22 **Subcomponent 2.2. Institutional strengthening of the METRÔ.** Financing will be provided for, among other items: (i) the financial model for the construction and operation of Line 5; and (ii) updating of the origin-destination matrix and the corresponding demand studies.

1.23 **Component 3: Engineering and program administration (US$11.8 million)**. This component will finance the following: (i) technical, economic, and financial studies to support preparation of the program; (ii) field studies and specific designs for the extension of Line 5 (topography, geotechnical sounding, environmental liabilities, vibration and noise, etc.); (iii) the cadastre, evaluation of properties, and management of expropriations for the entire length of Line 5; (iv) operating expenses of the program coordination unit (PCU); (v) management and supervision of program execution; and (vi) an independent financial audit of the program.

3. Costs

1.24 The total estimated cost of the program will be US$241 million, of which US$168 million (69.7%) will be contributed by the Bank and the remaining US$73 million (30.3%) will be contributed by the local counterpart. The budget summary, broken down by component and financing source, is shown below (in U.S. dollars).

Components	Total	Bank	Local
Component 1 - Investments	**227,240,000**	**158,937,000**	**68,303,000**
1.1 CPTM investments	184,825,000	128,468,500	56,356,500
1.2 METRÔ investments	42,415,000	30,468,500	11,946,500
Component 2 - Institution-strengthening	**2,000,000**	**1,800,000**	**200,000**
2.1 CPTM	1,000,000	900,000	100,000
2.2 METRÔ	1,000,000	900,000	100,000
Component 3 - Engineering and program administration	**11,760,000**	**7,263,000**	**4,497,000**
3.1 Studies and designs	2,610,000	0	2,610,000
3.2 Coordination and management unit	9,000,000	7,113,000	1,887,000
3.2 Audit	150,000	150,000	0
Total	**241,000,000**	**168,000,000**	**73,000,000**

D. Results matrix and key indicators (Project Performance Monitoring Report)

1.25 The key specific outcomes expected from program implementation are summarized below and described in detail in the results matrix attached as Annex 1.

Expected outcome for Line 9	Indicator
Shorter total travel times	From 41 to 33 minutes
Greater capacity	From 9,300 to 20,000 places/hour/direction
Shorter intervals between trains	From 6 to 4 minutes
Passengers per km per working day	From 1.48 to 5.02 passengers/km/day
Increase in the number of transfers between Line 9 and METRÔ	From 24,300 to 171,700 passengers per day
Expected outcome for Line 5	**Indicator**
Capacity to start Line 5 extension works	Delivery of technical, economic, social, and environmental studies

II. FINANCING STRUCTURE AND MAIN RISKS

A. Financing instrument and contractual clauses

2.1 The São Paulo Metropolitan Transportation Investment Program will be executed as an investment loan. The term of the loan will be 25 years, with a 4.5-year disbursement period, although most of the proceeds are expected to be disbursed in the first 2.5 years.

Annual Disbursement Schedule (US$ million)

	2008	2009	2010	2011	2012	TOTAL
IDB	34.0	48.8	81.5	2.5	1.2	168.0
State of São Paulo	4.3	14.5	46.7	5.2	2.3	73.0
Total	**38.3**	**63.3**	**128.2**	**7.7**	**3.5**	**241.0**

B. Environmental and social risks and mitigation measures

2.2 The proposed program will have positive environmental and social impacts. The limitations of São Paulo's mass transit system have resulted in excessive use of private vehicles, with direct negative impacts on congestion, air quality, and the accident rate. In 2006, 4.3 million vehicles were registered in the greater metropolitan region and were responsible for between 73% and 95% of the city's air pollution. Traffic congestion has worsened 20% per year, with estimated costs of US$6 million per day in wasted time and fuel. In 2006, there were 150,000 traffic accidents in the metropolitan region, resulting in 35,000 injuries, 1,500 deaths, and costs of US$1.5 million per day. By upgrading the quality of the public transportation system and drawing passengers who currently take the bus or drive a private vehicle, the proposed program will help to reduce vehicle congestion, environmental pollution, and greenhouse gas emissions, while also reducing traffic accidents in the metropolitan area. The Bank has approved two

technical-cooperation operations[5] with funds from its Sustainable Energy and Climate Change Initiative to develop a Clean Development Mechanism. Implementation of these technical-cooperation operations will make it possible to certify reductions in greenhouse gas emissions resulting from changes in modes of transportation in metropolitan São Paulo due to operational and pricing improvements in the railway system and the forthcoming entry into operation of Line 4 (2010) and the extension of METRÔ Line 5.

2.3 The specific physical works in the proposed operation will be small in scale and executed entirely within the existing right-of-way for Line 9. The works are not expected to have any direct effects on people, and land purchases in the Guido Caloi area will not have a direct impact on low-income groups. Potential negative impacts would be minor, with current conditions remaining practically unchanged or improving (better physical access to stations, etc).

2.4 During preparation of the operation, socioenvironmental studies were reviewed and considered sufficient and adequate, as were the technical specifications, and the status of the environmental and social management plan for the 8.5-km extension of CPTM Line 9, which is in the final phase of implementation. These works are accompanied by the necessary environmental permits.

2.5 The program has been classified as a category "C" operation, in accordance with the Bank's Environment and Safeguards Compliance Policy (OP-703).

2.6 Both the CPTM and METRÔ have the capacity needed to guarantee sustainable program implementation. The CPTM has an environmental management system to improve solid waste management and reduce the environmental impacts resulting from operation and maintenance of the railway system. It also has rules for executing works and services in the right-of-way, which include environmental and safety precautions, along with specific standards on workplace safety and hygiene for contractors and third parties. The CPTM has a **Special Environmental Commission**, attached to the Office of the President, to promote application of the environmental management system, arrange for environmental training for staff (over 5,000 personnel have already been trained), and obtain environmental permits for the construction and operation of the new segments. The CPTM is implementing the corporate environmental management system in accordance with NBR-ISO 14.001:2004 - Environmental Management Systems, to be applied in all CPTM activities.

2.7 METRÔ has an Environmental Management and Sustainability Advisory Service, which is responsible for implementing the METRÔ program to reduce greenhouse gas emissions, which was instituted in 2005. This body also has an environmental management system, which calls for activities including environmental education for staff, partners, and the general public; the inclusion of environmental

[5] ATN/OC-11008-BR and ATN/OC-11009-BR, totaling US$1,040,000 under the Sustainable Energy and Climate Change Initiative.

specifications in guidelines for the operation and maintenance of the network and stations; and the reuse of water used to wash the trains.

C. Fiduciary risk

2.8 No institutional or fiduciary problems are anticipated. Analyses of the State of São Paulo's financial capacity (IDBDOCS#1315961) show that the State has generated consecutive primary surpluses over the last seven years, confirming its ability to pay and provide counterpart resources. It has also complied with the limits set by the Fiscal Accountability Law: its debt/income ratio is 188% (limit: 200%); its payroll/revenue ratio is 44% (limit: 60%); the debt service ratio is 11% (limit: 11.5%); and credit operations/revenue is 0.5% (limit: 16%). The State has the borrowing capacity (US$3 billion authorized by the federal government in the last debt renegotiation exercise) and financial capacity needed to make the local counterpart contributions and the corresponding payments on the Bank's loan.

2.9 In addition, the STM, through the CPTM, has strong previous experience as the executing agency for loan 844/OC-BR. The key factors in the success of that operation were the CPTM's dedication to its role to coordinate the various participating entities and monitor the physical and financial aspects of the operation and the State of São Paulo's guarantee of local counterpart funding (considering the 90% increase in local contributions during the execution period).

D. Other issues and risks

2.10 *Purchase of trains vs. other possible options.* The CPTM has carefully studied the various options available for dealing with the train shortage caused by an increase in demand. These include: (i) the refurbishment of retired trains (the time and cost overruns associated with earlier refurbishment initiatives by the CPTM tend to argue against this option); (ii) purchase of secondhand trains; and (iii) rental of trains (this option was ruled out owing to the lack of tax incentives).

2.11 As the program mainly involves the procurement of equipment and systems, the main risks consist of potential obstacles to procurement and contract award processes, overpricing, delays in equipment delivery, etc. It is worth noting that the STM is in the process of procuring trains and corresponding operating systems financed under the World Bank/Japan Bank for International Cooperation program (paragraph 1.15), which will make it possible to ascertain conditions in the supply market, incorporate lessons learned into the proposed program, and mitigate any risks.

2.12 Lastly, as mentioned above, the feasibility of the extension of METRÔ Line 5 depends on promptly obtaining land in the Guido Caloi area. Thus, to minimize risks associated with the procurement of the properties in question, as a special execution condition, the order for expropriation for the purpose of public utility must be published within 12 months of the entry into force of the loan contract.

2.13 *Economic feasibility*. The CPTM conducted an economic evaluation of the project for the procurement of railway equipment and the procurement and implementation of systems by comparing the baseline scenario, without the project, against a scenario with the program (IDBDOCS#1315867). It modeled ridership demand, estimating trip statistics under both scenarios, particularly with respect to time savings. The demand model enabled the CPTM to estimate the operating costs of a significantly higher-quality service. These two items are the main factors affecting the economic return.

2.14 Other direct benefits considered were a decrease in the bus system's operating costs, owing to a reduction in fleet size and resultant savings on road maintenance. Indirect benefits stem from a decrease in accidents and vehicle emissions. The economic value of these items is significantly less than those mentioned in the previous paragraph.

2.15 The savings were then compared with the investment costs, with the following results: (i) an internal rate of return (IRR) of 20.4%; (ii) net present value of US$123 million (using a discount rate of 12%); and (iii) a benefit-cost ratio of 1.19.

2.16 The sensitivity analysis shows that a 5% reduction in the time-saving benefits for users reduces the IRR to 13.8%, while a similar percentage increase in operating costs reduces it to 16.0%. A significant increase in investment costs (20%) would reduce the IRR to 13.6%.

2.17 *Financial position of the CPTM*. Under the Fiscal Accountability Law, the CPTM is classified as a public enterprise dependent on the State Treasury, since it receives State funds to meet payroll expenses. However, the per-passenger operating subsidy (net of capital amortization) is expected to decline gradually, demonstrating the efficiency gains obtained from the new investments. The CPTM earns income from fares (R$477 million in 2006), which, from an accounting standpoint, constitutes its only operating income. It also receives an operating subsidy from the State of São Paulo primarily for revenue losses following introduction of the mass transit pass (R$342 million). The two items together (R$819 million) are greater than operating costs (R$713 million) excluding depreciation and amortization costs (R$208 million), which are borne by the State of São Paulo.

2.18 *Financial position of METRÔ*. As it does not receive transfers for payroll expenses, under the Fiscal Accountability Law, METRÔ is a public enterprise that is not dependent on the State Treasury. Its fare revenue (R$853 million in 2006), together with transfers arising from the introduction of the mass transit pass (R$149 million) are greater than the costs of services provided (R$919 million), producing an operating surplus. This will continue to be the case when the system is expanded. However, from an accounting standpoint, when capital depreciation is considered along with financial performance, the enterprise posts ongoing losses.

III. IMPLEMENTATION AND MANAGEMENT PLAN

3.1 **Borrower, executing agency, and guarantor.** The borrower will be the State of São Paulo, and the executing agency will be its Metropolitan Transportation Department. The Republic of Brazil will guarantee the financial obligations arising from the loan contract signed by the borrower and the Bank.

3.2 **Execution mechanism.** The STM will act through its decentralized enterprises, the CPTM and METRÔ, which will serve as subexecuting agencies of the program with responsibility for the technical, administrative, and financial execution of its specific components. The signing and entry into force of a subsidiary execution agreement, in accordance with terms previously agreed on with the Bank, between the executing agency (STM) and the subexecuting agencies (the CPTM and METRÔ) will be a condition precedent to the first program disbursement.

3.3 For the specific purpose of coordinating program activities, a program coordination unit (PCU) will be created, consisting of a general coordinator from the STM and two sector coordinators and two associate coordinators from the CPTM and METRÔ, respectively. As a condition precedent to the first disbursement, the PCU will be created and key staff will be appointed. The PCU will fulfill all functions relating to technical, administrative, and financial procedures for program implementation, and perform program monitoring and evaluation.

3.4 The PCU's specific functions include the following: (i) planning the execution of the loan and preparing annual work plans; (ii) preparing and updating procurement plans; (iii) reviewing bidding documents for the procurement of consulting services, works, and goods to ensure they are consistent with the Bank's procurement policies, for the STM, the CPTM, and METRÔ; (iv) supporting and monitoring the status of contracts for consulting services, works, and goods; (v) preparing and processing the corresponding payments; (vi) preparing financial statements and disbursement requests; and (vii) monitoring and evaluating program execution. The PCU will be assisted by a management firm hired with program resources that will provide specific technical support.

3.5 **Procurement**. In its capacity as executing agency, the STM will be responsible for procuring the trains and for conducting other procurement processes envisaged in the program. The STM may, in accordance with the terms set out in the execution agreement (paragraph 3.2), instruct: (i) the CPTM to procure consulting services and systems for signaling, electric power supply, and telecommunications in relation to Line 9; and (ii) METRÔ to commission studies and designs and procure land for the extension of Line 5. All goods, works, and services will be procured in accordance with the Bank policies set forth in documents GN-2349-7 and GN-2350-7, approved in July 2006, as detailed in the procurement plan, attached as Annex II.

3.6 All procurements of goods, works, and consulting services financed with proceeds from the Bank's loan will be subject to ex ante review until the Bank authorizes ex post reviews, pursuant to the policies mentioned in paragraph 3.5.

3.7 The program envisages advance contracting and the retroactive recognition of expenditures of up to US$6 million charged against the local counterpart contribution and up to US$35 million charged against the Bank's loan, incurred to commission consulting studies and procure goods (including down payments on trains and/or systems).

3.8 **Evaluation and monitoring.** The PCU will submit semiannual progress reports to the Bank, indicating the status of each component and the program's overall performance, based on the indicators agreed upon in the results matrix. In addition, the reports should include: (i) a description of activities; (ii) up-to-date physical execution and disbursement timetables; (iii) the degree of fulfillment of the execution indicators agreed upon; (iv) a schedule of activities for the subsequent six-month period; (v) a summary of the status of the program's financial execution and the resource flow envisaged for the subsequent six-month period; and (vi) a section identifying possible developments or events that could put program execution at risk. In addition, a final program evaluation will be conducted within 90 days after the last disbursement. At a minimum, it will cover: (i) the results of financial execution by component; (ii) the degree of fulfillment of the established targets, in accordance with the outcome indicators agreed upon; and (iii) the degree of fulfillment of contractual commitments.

3.9 **Special account.** The STM will make arrangements to open a special account to manage proceeds from the Bank's loan and the local counterpart contribution.

3.10 **Revolving fund**. For the purpose of program disbursements, a revolving fund equivalent to 5% of the total loan amount will be set up, pursuant to Bank procedures. The STM, acting through the PCU, will control use of the fund, prepare disbursement requests on behalf of the borrower, and deliver reports to the Bank on the status of the fund, within 60 days after the end of each six-month calendar period.

3.11 **External audit.** Throughout the execution period, the STM, acting through the PCU, will file with the Bank annual consolidated financial statements for the program, within 120 days after the end of the respective fiscal year. For this purpose, it will commission an external audit by a firm of independent auditors acceptable to the Bank and pursuant to its requirements, based on the guidelines contained in the terms of reference for external audits of projects financed by the IDB (document AF-400). The audit firm will be selected and contracted in accordance with the procedures set out in the document on the standard procedures for contracting external audit services (document AF-200). The costs of the audit are part of program costs. In addition, semiannual audits of disbursements will be conducted and will be accompanied by an opinion issued by the external auditors.

The corresponding reports will be delivered within 60 days after the end of the respective six-month period.

SÃO PAULO METROPOLITAN TRANSPORTATION INVESTMENT PROGRAM (BR-L1162)
RESULTS MATRIX

Project Objective	To meet growing demand for urban railway transportation services, increasing passenger capacity on the metropolitan train system and enhancing mobility, connectivity, safety, and comfort.						
	Base year 2007	**Year 1 2008**	**Year 2 2009**	**Year 3 2010**	**Year 4 2011**	**Year 5 2012**	**Frequency**
I. Outcome indicators							
Operational - Line 9							
No. of trains/hour (peak hours)[1]	10	10	10	12	15	15	Annual
Travel time between terminal points on the line (min.)	41	41	35	35	33	33	Annual
Wait time between trains – peak hours (min.)	6	6	6	5	4	4	Annual
Average distance between breakdowns (thousands of km)	1,508	1,650	1,850	1,900	2,000	2,000	Annual
Demand and quality of service							
Increase in demand (passengers per workday) [2]	0	37,863	8,399	254,963	4,783	3,588	Annual
Passenger transfers between Line 9 and METRÔ (passengers per workday)	24,300	40,375	52,431	229,890	196,643	171,707	Annual
Passengers/km (million passengers/km per workday)	1.48	3.67	4.76	5.85	5.43	5.02	Annual
No. of users/workday with incomes below 4 times the minimum wage – Line 9 (baseline 2005)	63,311	81,940	86,072	211,500	213,854	215,619	Annual
Financial							
Operating income (excluding PIS/COFINS contributions) – Operating expenses (excluding depreciation) (R$ million)	11.60	12.70	13.00	19.40	20.30	21.10	Annual
II. Output indicators							
CPTM-Line 9							
Delivery of trains			Delivery of trains	Trial operation	Entry into service		
Delivery of signaling, electric power transmission, and telecommunications systems				Entry into service			
	Base year 2007	**Year 1 2008**	**Year 2 2009**	**Year 3 2010**	**Year 4 2011**	**Year 5 2012**	**Frequency**
METRÔ-Line 5							
Presentation of technical, economic, and environmental studies		Launch of studies				Final reports	

[1] In 2007, Line 9 was operating with just five 8-car trains (IDB I) and five old, poorly performing 3-car trains. All the new trains purchased using the State of São Paulo own resources will be in service by the start of 2009; the trains to be financed by the program will start to enter into service in 2010 and will be fully operational in 2011.

[2] Demand increases in 2008 following completion of the extension of the line to Grajaú. In 2010, demand increases significantly, mainly owing to the entry into service of METRÔ Line 4.

SÃO PAULO METROPOLITAN TRANSPORTATION INVESTMENT PROGRAM
(BR-L1162)

Procurement Plan Table

Description	Estimated contract cost (US$)	Procurement method	Review	Source of financing and percentage		Prequalification (Yes/No)	Estimated dates	Status
				IDB %	Local %		Publication of specific procurement notice	
1. Goods								
1. Eight trains of 8 cars each - CPTM Line 9	145,000,000	ICB	ex ante	70	30	No	January 2008	Pending
2. Electric power supply - CPTM Line 9	20,280,000	ICB	ex ante	80	20	No	February 2008	Pending
3. Signaling - CPTM Line 9	9,843,000	ICB	ex ante	80	20	No	February 2008	Pending
4. Telecommunications - CPTM Line 9	5,830,000	ICB	ex ante	80	20	No	February 2008	Pending

Description	Estimated contract cost (US$)	Procurement method	Review	Source of financing and percentage		Prequalification (Yes/No)	Estimated dates	Status
				IDB %	Local %		Publication of specific procurement notice	
2. Works								
NO WORKS ARE PLANNED.								

Description	Estimated contract cost (US$)	Procurement method	Review	Source of financing and percentage		Prequalification (Yes/No)	Estimated dates	Status
				IDB %	Local %		Publication of specific procurement notice	
3. Consulting services								
1. Support manager	7,920,000	QBS	ex ante	90	10	No	January 2008	Pending
2. Civil works designs - METRÔ	18,720,000	QCBS	ex ante	95	5	No	January 2008	Pending
3. Permanent route design - METRÔ	490,000	QCBS	ex ante	95	5	No	January 2008	Pending
4. Systems designs - METRÔ	11,200,000	QCBS	ex ante	95	5	No	January 2008	Pending
5. Rolling stock designs - METRÔ	375,000	QCBS	ex ante	95	5	No	January 2008	Pending
6. Environmental impact studies: EIA/RIMA + PBA – METRÔ	1,390,000	QCBS	ex ante	95	5	No	February 2008	Pending
7. Technical supervision of rolling stock - CPTM	1,352,000.	QCBS	ex ante	90	10	No	January 2008	Pending
8. Technical supervision of systems - CPTM	2,200,000	QCBS	ex ante	90	10	No	January 2008	Pending
9. Program accounting audit	150,000	QCBS	ex ante	90	10	No	June 2008	Pending
10. Macro evaluation ruling for order of public utility - METRÔ	170,000	LCS	ex ante	0	100	No	January 2008	Pending
11. Cadastre for expropriations - METRÔ	140,000	LCS	ex ante	0	100	No	January 2008	Pending
12. Property valuation for expropriations - METRÔ	140,000	LCS	ex ante	0	100	No	August 2008	Pending
13. Precautionary surveys - METRÔ	330,000	LCS	ex ante	0	100	No	August 2008	
14. Management of expropriations - METRÔ	110,000	LCS	ex ante	0	100	No	August 2008	
15. Designs and studies for other lines - CPTM	50,000	QCBS	ex ante	90	10	No	October 2009	
16. Technical specifications of systems for other lines - CPTM	50,000	QCBS	ex ante	90	10	No	October 2009	

Description	Estimated contract cost (US$)	Procurement method	Review	Source of financing and percentage		Prequalification (Yes/No)	Estimated dates	Status
				IDB %	Local %		Publication of specific procurement notice	
3. Consulting services								
17. Financial model for concession of CPTM lines	1,000,000	QBS	ex ante	90	10	No	January 2009	
18. Updating of demand studies and METRÔ mathematical model	500,000	QBS	ex ante	90	10	No	May 2008	
19. Updating of feasibility study for extension of METRÔ Line 5	250,000	QBS	ex ante	90	10	No	August 2009	
20. Financial model for the construction of METRÔ Line 5	250,000	QBS	ex ante	90	10	No	January 2009	

Goods and Works: **ICB**: International competitive bidding; **LIB**: limited international bidding; **NCB**: national competitive bidding; **PC**: price comparison; **DC**: direct contracting; **FA**: force account; **PSA**: Procurement through Specialized Agencies; **PA:** Procurement Agents; **IA:** Inspection Agents; **PLFI**: Procurement in Loans to Financial Intermediaries; **BOO/BOT/BOOT:** Build, Own, Operate/Build, Operate, Transfer/Build, Own, Operate, Transfer; **PBP**: Performance-Based Procurement; **PLGB:** Procurement under Loans Guaranteed by the Bank; **PCP**: Community participation procurement. **Consulting Firms**: **QCBS**: Quality- and Cost-Based Selection **QBS**: Quality-Based Selection **FBS**: Selection under a Fixed Budget; **LCS**: Least-Cost Selection; **CQS**: Selection based on the Consultants' Qualifications; **SSS:** Single-Source Selection. **Individual Consultants**: **NICQ**: National Individual Consultant selection based on Qualifications; **IICC**: International Individual Consultant selection based on Qualifications.

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-___/08

Brazil. Loan ___/OC-BR to the Government of the State of São Paulo
São Paulo Metropolitan Transportation Investment Program

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with the Government of the State of São Paulo, as Borrower, and with the Federative Republic of Brazil, as Guarantor, for the purpose of granting the former a financing to cooperate in the execution of the São Paulo metropolitan transportation investment program. Such financing will be for an amount of up to US$168,000,000 from the Single Currency Facility of the Ordinary Capital resources of the Bank, and will be subject to the Financial Terms and Conditions and the Special Contractual Conditions of the Project Summary of the Loan Proposal.

LEG/SGO/CSC/IDBDOCS#1328127
BR-L1162

Resoluciones versión firmada:

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