DIGITAL MAPPING AND URBAN DRAINAGE FOR RIO DE JANEIRO MUNICIPALITY (Guanabara)

(BR-0183)

EXECUTIVE SUMMARY

BORROWER:	Municipality of Rio de Janeiro	
GUARANTOR:	Federal Government of Brazil	
EXECUTING AGENCY:	Coordenadoria de Recursos Externos (CRE) of the Secretaria Municipal da Fazenda (SMF).	
AMOUNT AND SOURCE:	IDB: (OC)	US$28 million (foreign exch.) US$ 2 million (local currency)
	Total IDB:	US$30 million
	Local counterpart funding:	US$30 million (local currency)
	Total:	US$60 million
FINANCIAL TERMS AND CONDITIONS:	Amortization period:	25 years
	Disbursement period:	5 years
	Interest rate:	variable on foreign exchange 4% on local currency
	Inspection and supervision:	1%
	Credit fee:	0.75% (on foreign exchange)

OBJECTIVES: Basic Sanitation for the Guanabara Bay, a US$793,000,000 program (including US$350,000,000 in Bank loan funds) was approved by the IDB Board of Executive Directors in November 1993. The program is financing sanitation works, industrial pollution clean-up, environmental education, drainage, and digital mapping for most of the Bay's municipalities (for additional detail see Document PR-1950). As approved, the program's three objectives are: (a) to clean up the Guanabara Bay and adjacent basin areas; (b) to improve the quality of life of those 7.3 million residents of the basin area; and (c) strengthen those local government institutions whose activities can positively affect the Bay. As explained below, because this proposed project is an important part of the Basic Sanitation for the Guanabara Bay Program, it shares these overall objectives.

DESCRIPTION:

This US$60 million project will finance two subprojects, digital mapping/cadastral update and urban drainage for the municipality of Rio de Janeiro. Because feasibility work for these subprojects was not completed when the original program was approved in late 1993, a decision was made to process a separate operation in 1994. These subprojects are detailed below:

a. Digital mapping/cadastral update (US$19,600,000)

This subproject will: (i) produce a digitized cadastral map of the municipality of Rio de Janeiro; (ii) create an automated geographic data base and information system that brings together the land and building data bank for Rio de Janeiro municipality; (iii) provide direct computer access and interface to this expanded information by technical staff; and (iv) undertake an official cadastral survey of all of the city's "favelas".

b. Urban drainage (US$15,200,000 works, US$3,000,000 resettlement)

This subproject will: (i) build a series of works to prevent flooding and improve transport in one of the municipality's most densely populated areas, the Timbó/Faria river basin area; and (ii) as part of the construction process resettle some 3,600 residents who live along the Banks of the Faria/Timbó rivers.

ENVIRONMENTAL CLASSIFICATION:

The Environmental Management Committee, at its meeting of August 26, 1991, classified this as a Category III operation. The environmental summary for the Basic Sanitation Program for the Guanabara Bay Basin, of which these subprojects are a part, was approved on July 13, 1993.

POVERTY-TARGETED CRITERIA:

The urban drainage subproject in the amount of US$18,200,000 meets the criteria for poverty targeting under the eighth replenishment. This subproject has a distributive impact coefficient of 61% (see paragraph 5.15).

BENEFITS:

Benchmarks for each of the two subprojects are detailed in the project description. It is anticipated that the digital mapping subproject will increase property tax revenues, improve the productivity of the municipality in land use, and help in planning future "favela" improvements. The urban drainage subproject will dramatically reduce

flooding in one of Rio's most densely populated areas and improve traffic conditions in one of Rio's most heavily travelled access routes.

RISKS:

Timely execution of the drainage works depends upon successful implementation of the resettlement plan. To minimize this risk, the Bank has reviewed in considerable detail the preliminary plan, which incorporates the Bank's suggested changes. The Bank will also have the opportunity to review the final settlement plan as a condition prior to contracting for drainage works.

THE BANK'S COUNTRY AND SECTOR STRATEGY:

The proposed project fits within the overall strategy developed during the 1994 Programming Mission. During the mission it was agreed that projects for the 1994-95 operative program would emphasize actions in support of environmental cleanup and protection, management of natural resources, environmental sanitation, and strengthening of public services which manage the environment. The proposed project is fully consistent with this strategy.

Brazil's Federal Government has made the solution of environmental problems an important objective and has requested IDB support in this effort. In 1992, the Bank approved loans in sanitation and related areas for São Paulo Tietê River in the amount of US$450 million and for Fortaleza in the amount of US$200 million. In 1993, the Guanabara Sanitation Project was approved with a loan amount of US$350 million. The proposed operation is a part of this program. In 1993, a loan was also approved to clean up the Guaíba River basin in the amount of US$132.3 million. For 1994/1995, a US$90 million sanitation loan is scheduled to be approved for Manaus, a US$305 million drainage program for São Paulo and a US$180 million loan for Baía de Todos os Santos.

SPECIAL CONTRACTUAL CONDITIONS:

Prior to first disbursement the contract will require the following:

(a) a mechanism to assure coordination between the executing agency and the project's co-executors (see paragraph 3.1); and

(b) the contracting of a management firm to support the executing agency in financial and technical areas (see paragraphs: 3.1 and 4.14).

Other special contractual conditions to be included in the contract are:

(a) Prior to bidding for drainage works: (i) evidence of the municipality's ownership of lands required for resettlement as presented in the preliminary resettlement plan; (ii) evidence that the municipality has issued an invitation for bids for a consulting firm to manage the resettlement; and (iii) evidence that works at resettlement have been called for bid (paragraph 3.11);

(b) prior to bidding for drainage works for the replacement of a railroad bridge, evidence that agreement has been reached with the appropriate authority for maintenance of these works (paragraph 3.19);

(c) prior to adjudicating works for drainage, evidence that: (i) the installation license has been granted by the appropriate environmental authorities; (ii) a firm for management of the resettlement has been contracted; and (iii) the final plan for resettlement has been presented to the Bank (paragraph 3.12);

(d) prior to contracting for digital mapping services, evidence that a consulting firm has been contracted for technical supervision (see paragraph 3.7);

(e) for digital mapping, presentation of terms of reference for maintenance studies of the geographic information system within on year and presentation of a maintenance plan within two years (see paragraph 3.32);

(f) during the period of execution and within the last 120 days of each year, presentation of the audited financial statements of the Project (see paragraph 5.13);

(g) US$100,000 of IPLANRIO's prior expenses to be recognized as counterpart and US$400,000 to be reimbursed with loan funds (see paragraph 3.17); and

(h) the requirement that an annual maintenance plan for the drainage works be submitted to the Bank for 10 years (see 3.26).

I. FRAME OF REFERENCE

A. The setting

1.1 The greater Guanabara Bay basin is an important part of both the State of Rio de Janeiro and Brazil's economies. With 6,000 industries, a major port, and one of the country's largest oil refineries, the area generates nearly 90% of the State's GDP and 10% of the country's.

1.2 Guanabara Bay occupies an area of over 300 square kilometers and the area which is defined as its basin includes 35 tributary rivers and is nearly 4,000 km^2. In 1991, it was estimated that nearly 7.3 million people inhabited the basin area, which constitutes nearly 70% of Rio's metropolitan area population. As with most urban areas in Brazil, the Guanabara Basin experienced rapid population growth in the 1960s and 1970s. In the decade of the 1960s the Rio's metropolitan area nearly doubled in size and growth rates for many of the municipalities exceeded 5% per year well into the late 1970s.

1.3 The Guanabara Bay basin is made up of Rio de Janeiro municipality and the municipalities of Nilópolis, São João de Meriti, Duque de Caxias, which lie to the west of the bay; and Mage, Cachoeiras de Macaco, Itaborai, São Gonçalo and parts of the municipalities of Petrópolis, Rio Bonito, and Niterói, all which lie East of the Bay. Rio municipality is the most densely populated with nearly 4,500 inhabitants per square kilometer (and has over 50% of the population of the Basin area), followed by those municipalities with easiest access to Rio -- Niterói, São Gonçalo, São João de Meriti, and Duque de Caxias.

1.4 Statistics on the region's population density are not truly reflective of the high concentration of population in many of the Basin's urban areas. This uniquely mountainous urban setting bordering on the Atlantic Ocean severely limits available land for urban settlement and has resulted in the establishment of "favelas" on very marginal and often precarious terrain--ie. mountain sides and along the banks of canals and rivers. Fully 25% of the area's urban population is now estimated to reside in these marginal areas.

B. The problem

1.5 Providing even the most basic urban services in these densely populated areas has proven to be both technically difficult and costly. This difficulty in providing service has been further exacerbated by Brazil's lingering economic crisis. Since the 1980s, few resources have been available each year to maintain and expand urban services and infrastructure to meet the increasing demand.

The result has been that services have not been expanded at a rate sufficient to keep pace with population growth.

1.6 Rio's rapid urbanization and the inability of services to keep pace with population growth have contributed to high levels of contamination in the bay area. The principal sources of the bay's contamination include: 478 tons of untreated sewage entering the bay daily; 600 tons of uncollected trash; dump sites including the Rio landfill at Duque de Caxias (Gramacho) which generates an organic load of 4 tons per day; an industrial park emitting 82 tons of organic material per day; 16 petroleum terminals which spill .5 tons of oil daily; and an oil refinery which in addition to heavy metals and phenol, spills 1.75 tons of oil daily into the bay.

C. The approach

1. The approved project/Basic Sanitation Program for the Guanabara Bay Basin

1.7 To address the problem of expanding urban services and reduce the high levels of contamination in the area, the Bank approved a Phase I Basic Sanitation Program for the Guanabara Bay Basin in December 1993. The loan proposal (Document PR-1950) describes the details of the project. The objectives of this program are to: (a) improve the quality of life of the 7.3 million inhabitants residing in the Guanabara Bay Basin; (b) clean up the Guanabara Bay and adjacent basin area; and (c) strengthen those local government institutions whose activities can positively affect the Bay. This $793,000,000 million program, which includes a $350 million Bank loan, would finance: 1/

a. sewage collection and treatment--treatment plants, collectors, trunk lines, and connections concentrated in 10 of the bay's most heavily populated areas. These works, to be executed by the Companhia Estadual de Água e Esgoto (CEDAE), will increase the number of households with sewage connections from 35% to 50% and will increase the amount of sewage which receives treatment from 15% to 50%;

b. potable water--pumping stations and distribution tanks and networks, household connections and water meters. These works will provide a reliable water supply to over 1,000,000 residents, full water systems to 19 previously underserviced "favelas", and increase the percentage of households with water meters in the basin area from 25% to 70% pollution control;

c. solid waste collection, treatment and disposal in six municipalities surrounding the Guanabara Bay -- improve

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1/ A table detailing the elements of the Basic Sanitation Program for the Guanabara Bay Basin is included as Annex I-1 to this document.

collection systems in low-income areas, rehabilitate two existing transfer stations, construct three compost and recycling facilities, build three sanitary landfills, and strengthen the municipalities in the solid waste management area;

d. canal and river drainage--construction of a series of works to prevent flooding and improve transport in the Rio Acari region of the bay and provide equipment to the state agency Superintendência Estadual de Rios e Lagoas (SERLA) for improved canal maintenance;

e. complementary environmental programs-- reduce by 90% industrial waste entering the bay by strengthening of the capacity of Fundação Estadual de Engenharia do Meio Ambiente (FEEMA) to carry out a major program in industrial pollution control; and

f. digital mapping and municipal development to modernize municipal information systems and improve planning capability in all municipalities in the bay area except Rio de Janeiro.

2. The proposed project-Digital Mapping and Urban Drainage

1.8 With over 50% of the bay's population residing in the municipality of Rio de Janeiro, Rio's full participation in this effort to reverse the deterioration of the bay and improve the quality of life for its residents is critical. Three important subprojects involving Rio municipal agencies - improvements at the Rio municipal landfill (Gramacho), a major effort to improve Rio's digital mapping for planning, tax collection, and land titling, and urban drainage to resolve problems in one of Rio's major waterways - were not included in the original project when it was presented last year. They were left out because the studies and cost estimates for these subprojects were not complete when the other elements of the program were ready for presentation. A decision was made during the course of the review to process a separate operation for these components in 1994.

1.9 The Municipality has requested that an operation move forward this year for digital mapping and urban drainage. Because studies for the Gramacho subproject are now being bid within the 1993 approved loan, and are not scheduled for completion for another 18 months, the Municipality has requested that improvements at the landfill be deferred and included as part of a later operation.

D. Digital mapping system/Rio de Janeiro

1.10 As detailed in the Loan Proposal for Guanabara Bay Sanitation (Document PR-1950, paragraphs 1.31 - 1.34), the municipal governments which make up the basin play an important role in environmental control in the area. Directly, these municipalities are responsible for the collection and disposal of solid wastes (see paragraphs 1.22 - 1.24 Guanabara project report) and the

maintenance of drainage systems. Indirectly, thorough land-use planning, these municipalities exercise a strong influence over the quality of the urban environment, defining the guidelines for commercial, industrial, and residential land use, as well as the size and characteristics of conservation and recreation areas. Under the operation approved last year, digital mapping and assistance in the planning area are being provided to all of the bay's municipalities except Rio.

1.11 The cadastral mapping system of the municipality of Rio, which acts as a legal and technical information base for a number of critical functions of the city -- including property taxation, land use and public works planning, and the control and regulation of new urban development -- is in serious need of restructuring.

1.12 Before 1960, when Rio de Janeiro functioned as a Federal District (due to its status as national capital), the city operated and maintained an efficient cadastral system. This was because its main source of operating revenues was its property tax, the Imposto Predial e Territorial Urbano (IPTU). When the Federal District became the state of Guanabara (1960-1975), however, it was able to draw revenues from the national tax on commerce, the Imposto Comercial (ICM). This legal source of revenue for state government was a considerably more lucrative source than the property tax. With a change in the source of revenue, the city's property tax system -- and along with it, the cadastral system -- fell into neglect and disrepair. Staff in the property taxation unit of the city's Finance Department was reduced to a paltry number. Property assessments stopped being updated; new building construction and subdivisions went unregistered or, when registered by the Planning Department, often failed to have this information transferred to the Finance Department.

1.13 This coincided with a period of major physical expansion of the city, in the traditional central business district, the southeastern residential districts of the city, and the mushrooming new irregular and illegal subdivisions in the outlying western and northern areas of its jurisdiction. Because of weaknesses in the cadastral and property registration system, much of this growth went unrecorded, representing substantial revenue losses for the city.

1.14 In 1975, when Rio de Janeiro was reconverted into a municipal level of government (the State of Guanabara disappeared) it no longer derived its revenues from the ICM. Thus, the IPTU again became important. By this time it was estimated that Rio had lost between 30% and 45% of its potential property tax revenues from unreported construction. The weaknesses in the cadastral system also constrained the city's ability to improve conditions in the city's "favelas" and other illegal settlements; without an accurate cadastre, regularization of tenure became virtually impossible, and the planning of infrastructure improvements a risk laden exercise.

1.15 Initial efforts to update cadastres (which did not take place until the mid-80s) met with mixed success. While new property valuation procedures have permitted the city to correct the serious undervaluation of its present stock of registered properties, the identification of previously unregistered construction continues to be a problem. Between 1984 and 1987 an attempt was made to bring up to date the city's building stock inventory. However, the effort was limited in scope and methodological difficulties resulted in widespread legal disputes with property owners.

1.16 One of the Municipality's principal difficulties in correcting its cadastre is the outdated and weak cartographic base used for the exercise. The last systematic aerial mapping of the city was undertaken in 1975. This map, which was designed as a tool for the Planning Department, was determined to be too large a scale to be used for the property tax cadastre without substantial field verification work. As problems in working with the 1975 map continued, it became evident that the city required a new aerial photographic survey, as well as a more permanent integrated geoinformation system that could be shared among the various departmental units of the city dealing with property and land use mapping.

1.17 Having unsuccessfully attempted the alternative of utilizing the 1975 map to updated the city's information system, the city's semi-autonomous planning and data processing institute, IPLANRIO, initiated a series of pilot projects in the late 1980s, aimed at producing an automated (digitized) cadastral mapping of the city. These pilot projects were based on the successful use of digitized cadastral mapping technology in the most densely populated cities of the near East and Asia. Based on these pilot experiences, which covered a total of approximately 200 km^2 of strategically selected urban land, the city has been able to establish its cadastral survey procedures and methodology. The digital mapping subproject, described in chapter II of this document, has been proposed with a view to expanding this recent experience to the entire city, producing a new multi-purpose cadastral mapping and geographic information system for the municipality.

E. Drainage in Rio de Janeiro

1.18 As was noted in the Guanabara Bay project report (see paragraphs 1.26 and 1.27 of Document PR-1950), Rio's rapid growth over the past few decades has outstripped the capacity of urban rivers and other natural drainage channels to handle flows during periods of heavy rainfall. This situation is the result mainly of surface sealing of urban soils, a phenomenon that blocks infiltration and the retention of water in the subsoil. A further contributing factor has been the low-income settlements that have sprung up haphazardly in flood-prone areas along the banks of these waterways. The end result has been periodic urban flooding that has taken a high toll in terms of damage to homes, interrupted

traffic, and even loss of human life. The previous project included canalization and improvement works on the Acari River, one of the metropolitan area's most important rivers.

1.19 The Faria and Timbó Rivers make up the second largest natural drainage system in the Rio metropolitan area. Since they run through a densely populated residential area and are crossed by several major thoroughfares, they have been assigned priority for expansion and upgrading activities. The two rivers' combined watershed covers roughly 40 square kilometers, 80 per cent of which is developed land. The area's total population is estimated at around 580,000, divided up among 15 predominantly residential districts. Most of the rivers in this area have preserved their natural state, although in some cases dwellings, bridges, conduits, and other, inappropriate structures have been built on their banks. Given the problems with the city's refuse collection services, people often end up dumping their garbage in these two rivers, with the consequent impact on flow capacity levels. The result is frequent flooding, attaining serious proportions each year. Some 22,000 people are affected by flooding each year in the project's service area, not to mention the damage caused to stores and businesses in the area (most of the industries located here work in the clothing and food-processing sectors). An estimated 652 low-income families would have to be relocated in order to carry out the works to deepen, realign, and channelize the riverbeds, along roughly 14 kilometers. Resettlement of these families will not only make it possible to upgrade the drainage system, but it will also move these families away from areas at high risk of flooding.

F. Bank and country strategy

1.20 The proposed project, as a supplement to the Basic Sanitation Program for the Guanabara Bay, fits within the overall strategy developed during the 1994 Programming Mission. During the mission it was agreed that projects for the 1994-95 operative program would emphasize social needs through programs which increase potable water and sewerage coverage and actions in support of environmental cleanup and protection, management of natural resources, environmental sanitation, and strengthening of public services which manage the environment. The proposed project is fully consistent with this strategy.

1.21 Brazil's Federal Government has made the solution of environmental problems an important objective and has requested IDB support in this effort. In 1992, the Bank approved loans in sanitation and related areas for São Paulo-River Tietê in the amount of US$450 million and for Fortaleza in the amount of US$200 million. In 1993, the Guanabara Sanitation project was approved with a loan amount of US$350 million. The proposed operation is a part of this program. In 1993, a loan was also approved to clean up the Guaíba River Basin in the amount of US$132.3 million. For 1994/1995, a US$302 million drainage loan for São Paulo was approved.

1. Experience of other donors and the Bank

1.22 The World Bank is financing a US$175 million flood reconstruction loan for the State of Rio de Janeiro which was approved in 1988 and is scheduled for completion in early 1995. The loan, which was made to the State of Rio de Janeiro, is financing works for flood control, water supply, and sanitation in low income areas. The loan's principal executors are CEDAE and SERLA, through the Executive Group for Emergency Works (GEROE). Under the program, SERLA completed 15 major drainage works, 20 water supply systems were completed for "favelas", and 10 sewage systems. The World Bank's experience with the State in the execution of the loan was mixed. Though the project was delayed due to the lack of available counterpart funds and institutional difficulties with the executing agency, the impact of the works on flood control and quality of life in "favelas" has been significant.

1.23 As discussed above, the Bank approved a US$350 million loan for basic sanitation for the Guanabara Bay in December of 1993. This project is in the very early stages of execution and bidding for most of the project's major works is now underway.

II. THE PROJECT

A. Objectives

2.1 Because this project is an important part of the Basic Sanitation Program for the Guanabara Bay Basin, it shares the same overall objectives. These objectives are to: (a) clean up the Guanabara Bay and adjacent basin area; (b) improve the quality of life of those 7.3 million inhabitants residing in the bay area; and (c) strengthen those local government institutions whose activities can positively affect the bay.

B. Subprojects

2.2 This US$60 million project will finance two subprojects, digital mapping/cadastral update and urban drainage. These two subprojects will further the project's objectives of cleaning up the Bay, improving the quality of life, and strengthening local institutions. Financing these subprojects will also ensure a greater role for the Municipality of Rio in the overall program.

2.3 The two subprojects are discussed in part D below. It is anticipated that the digital mapping subproject will increase property tax revenues, improve the productivity of the municipality in land use, and help in planning future "favela" improvements. The urban drainage subproject will dramatically reduce flooding in one of Rio's more densely populated areas, improving both the quality of life of residents and traffic conditions in a heavily travelled area.

C. Execution

2.4 As detailed in chapters III and IV, the Coordenadoria de Recursos Externos (CRE) of the Secretaria Municipal da Fazenda (SMF) will serve as the project's executing agency. The other four units involved in the project's execution are the Empresa Municipal de Informática e Planejamento (IPLANRIO), the Coordenação de Imposto sobre a Propriedade Predial e Territorial Urbana (CIP) in the Secretaria Municipal de Fazenda, the Empresa Municipal de Urbanização (RioUrbe), and the Secretaria de Habitação (SEH).

D. Description of subprojects

2.5 Subprojects including their benchmarks, locations, executing agencies and works are described below:

1. Digital mapping and cadastral update (US$19,600,000)

a. Benchmarks

a. increase the property tax revenues collected by the municipality of Rio de Janeiro by 25%, by updating the property and building cadastre of the city;

b. improve the productivity of the municipality in the areas of land use and environmental planning, as well as building and subdivision control by: (i) creating an automated geographic data base and information system that brings together the land and building data banks presently handled separately by the departments of finance, planning, environment, and public works; and (ii) providing direct computer access and interface to this expanded information system by all relevant technical staff; and

c. undertake an official cadastral survey of all the municipality's 630 "favelas" with a view to initiating the regularization of land tenure and the planning of infrastructure improvements for these communities.

b. Activities

2.6 This subproject will be undertaken as two separate but interdependent activities, one under the direction of IPLANRIO and a second under the direction of the Municipality's Coordenação de Imposto (CIP) in the Secretaria Municipal de Fazenda.

(i) IPLANRIO activity

2.7 In the first activity, IPLANRIO will produce a digitized cadastral map of the city of Rio de Janeiro, scale 1:2,000, covering approximately 600 km^2 of the municipal land area designated for urban use. This will complement the urban land already digitally mapped by IPLANRIO in a series of pilot projects (see paragraph 1.17), thus completing the cadastral mapping of the urban land use areas of the city. (The remaining 400 km^2 of municipal land, which are reserved for environmental, open space uses, are being mapped separately by IPLANRIO, at a larger non-cadastral scale, with a view to combining it with the urban cadastral mappings into a single automated map of the municipality.)

2.8 Unlike the previous mapping work done in the city, this exercise will be totally automated for computer use. This will allow the municipality to fuse its map data with the normal (alphanumeric) data banks that exist in its various departments, thus creating a complete, multi-purpose Geographic Information System (GIS). This in turn will permit a more effective exchange of data and information between departments, such as Planning and Finance, whose lack of coordination in the past has seriously hampered the effectiveness of the cadastral system.

2.9 For the IPLANRIO activity, the project will fund the acquisition of a full array of digital mapping equipment and software, along with the computers, GIS software, and communication and networking hardware and software necessary to set up a geographic information system with direct access to outside departments. Moreover, the principal institutional users of the system will be furnished with independent workstations fully networked with the central core unit in IPLANRIO. These include:

a. the property taxation and physical assets units of the Finance Department;

b. the micro and macro planning units and the building and subdivision permitting division of the Planning Department (SMU);

c. the Serviço do Meio Ambiente (SEMA);

d. the Serviço Municipal das Obras(SMO); and

e. the urban infrastructure unit of the Housing Department (SEH).

2.10 In addition to the hardware and software for the respective workstations, IPLANRIO will offer the core staff users in each of these municipal agencies a series of technical seminars and on site training options to aid in the use of the new geographic information system. Furthermore, to assist in the start up of the new system, as well as its initial operation and the design of training seminars, an international firm will be hired to assume responsibility for technical supervision and quality enhancement of IPLANRIO's activities.

2.11 Of special note within this activity is the cadastral mapping that will be undertaken of the city's shantytown, or "favela", neighborhoods. These precarious, low-income communities, which harbor nearly 25% of the city's total population, are so densely inhabited and so inaccessible to outside visitors that reliable cadastral surveys have not been obtained for them in the past. As part of its recent pilot mapping efforts, however, IPLANRIO has developed surveying techniques that now enable it to obtain technically and legally reliable cadastral maps of "favela" subdivisions, based on more elaborate field verification work than is customary in normal cadastral work. This constitutes an important breakthrough for the upgrading of these communities: with these maps the municipality can proceed more easily to regularize the land tenure status of these neighborhoods; moreover, the maps will provide an important source of site information, not previously available, for the planning of infrastructure improvements for these neighborhoods.

(ii) Coordenação de Imposto (CIP)

2.12 In the initial pilot exercises undertaken by the Municipality to update the urban property cadastre, frequent legal disputes arose between the government and property owners as regards the use classification and dimensioning of new property and buildings. The techniques used by the municipality for measuring these two characteristics were found not to be rigorous enough to withstand the legal scrutiny that followed the reassessments. To withstand legal scrutiny, the aerial mapping needs to be complemented by a thorough process of field verification and cross-checking with alternative information sources, using licensed assessors and following strict procedures defined by the law.

2.13 This activity will undertake the required verification work necessary to convert IPLANRIO's cadastral mapping into a legally acceptable instrument for the reassessment of property taxes. The task, consists of four phases of verification, including:

a. research and cross-referencing with other property-related data banks and files, in the Finance and Planning departments;

b. detailed, property-by-property field survey;

c. random sample, quality control verification of field surveys; and

d. official correction of property tax assessments and, as a by-product, correction of other related local taxes (such as the Imposto Sobre Serviços (ISS)).

2.14 The costs of the activity will be mostly by way of the specialized and non-specialized personnel that will be hired to undertake these tasks. Additional resources are also being budgeted for the leasing of vehicles and other equipment necessary to accompany the execution of the component.

2. Drainage in the Faria-Timbó Rivers (US$15.2 million for works, US$3 million for resettlement).

a. Benchmarks

a. to benefit approximately 200,000 people and numerous stores and businesses located in flood-prone areas, by significantly increasing the flow capacity of the two rivers;

b. to improve access to neighborhoods situated along the Timbó River, thereby facilitating refuse collection, the construction of sewer mains, and maintenance of canals that are to be built; and

c. to upgrade conditions for downtown-bound rail and road traffic that must pass through flood-prone areas.

b. Activities

(i) Construction

2.15 The following drainage works are proposed for the Faria-Timbó watershed: (a) canalization of 4.7 kilometers of the Timbó River; (b) dredging of 2.3 kilometers of the Faria River that have already been canalized; (c) repair of retaining walls along that canal; and (d) earthwork canalization of 640 meters of the Faria River, upstream from its confluence with the Jacaré River (see map).

2.16 The following road works will be carried out in conjunction with the drainage works: (a) construction of two roads parallel to the Timbó River canal, 4.7 kilometers each; and (b) replacement of a 32-meter railroad bridge over the Faria River.

(ii) Resettlement

2.17 Construction of drainage works requires the resettlement of 652 families (3,600 residents) living in the 596 dwellings where the works will be executed. These families reside illegally along the banks of the Faria/Timbó Rivers. Unlike the São Paulo drainage project, services will not be expanded in adjacent areas since these areas have access to urban services. Before construction of the works, families will be resettled in phases to coincide with the schedule of works.

2.18 A draft resettlement plan has been reviewed and meetings have been held with affected residents. A full cadastral and socio-economic survey will be carried out as the first step in elaborating the final resettlement plans for each of the affected communities, and will be carried out shortly before families will be resettled, in order to avoid speculation and minimize uncertainty and trauma. The Bank's approval of a final resettlement plan will be required as a condition to bidding for drainage works (see loan contract).

2.19 The draft resettlement plan proposes different alternative housing solutions from which Faria-Timbó residents will be able to choose. These alternatives are: (a) finished houses with room for expansion; (b) cash settlement; and (c) sites and services and basic materials.

2.20 For alternatives other than a cash settlement, families to be resettled have the option either of becoming full owners of the new property (if they also meet minimum criteria for accessing the Sistema Financeiro de Habitação) or acquiring the right of use without ownership (cessão real de uso). In the latter case, there is no cost to the families. To acquire full ownership there is some cost recovery from the resettled families, since they would reimburse part of the cost by paying the equivalent of 10% of the monthly minimum salary (or approximately US$6.50 at the current rate) for a period of 25 years.

2.21 Construction of new housing sites will be the responsibility of RioUrbe. RioUrbe will also administer the cost recovery aspects. The Secretaria de Habitação (SEH) will be responsible for the overall coordination of resettlement, including community organization, phasing, relocation and follow-up. They will be assisted in the management and execution of this effort by a consulting firm.

2.22 The distribution of alternative housing option for the resettlement is based on a preliminary assessment of the market values of the present dwellings. Community participation in planning for resettlement is underway and will continue throughout the process.

3. Cost of the project

2.23 The total cost of the project is estimated at US$60 million dollars. Costs distributed per the financial plan are included on the next page, as well as a disbursement schedule.

Digital Mapping and Urban Drainage
Sources of Funds (US$000)

Categories	IDB - Foreign Exchange	IDB - Local Currency	Local Counterpart	Total
1. Engineering and administration	0	0	6,034	6,034
1.1 Studies (mapping)	0	0	280	280
1.2 Administration (MOF, SEH, CIP)	0	0	2,804	2,804
1.3 Supervision (resettlement, mapping, drainage)	0	0	2,950	2,950
2. Direct Costs	25,013	319	8,661	33,933
2.1 Drainage (civil works)	14,087	319	759	15,165
2.2 Digital mapping	10,926	0	3,322	14,248
2.3 Cadastral update	0	0	4,580	4,580
3. Concurrent Costs	0	1,661	2,158	3,819
3.1 Resettlement	0	1,661	946	2,607
3.2 Lots	0	0	354	354
3.3 Maintenance (cadastral update)	0	0	858	858
4. Unallocated costs	2,707	0	2,580	5,287
4.1 Contingencies	2,052	0	2,053	4,105
4.2 Cost escalation	655	0	527	1,182
5. Financial costs	280	20	10,567	10,867
5.1 Interest	0	0	10,181	10,181
5.2 Credit fee	0	0	386	386
5.3 Inspection and supervision	280	20	0	300
TOTAL	28,000	2,000	30,000	60,000
%	47%	3%	50%	100%

Disbursement Schedule (US$ 000)						
	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Loan	650	6,408	16,000	6,742	200	30,000
Counterpart	100	11,300	9,520	5,080	4,000	30,000
Total	750	17,708	25,520	11,822	4,200	60,000

4. Financing

a. Resources from the Bank

2.24 The Bank will contribute 50% of project's costs or US$30 million in ordinary capital (US$28 million in foreign exchange and US$2 million in local currency).

Terms and Conditions	Foreign Exchange (OC)	Local Currency (OC)
Interest rate	Variable	4%
Credit fee	0,75%	0
Inspection and supervision	1,0%	1.0%
Disbursement	5 years	5 years
Grace period	5 years	5 years
Amortization period	25 years	25 years

b. Local contribution

2.25 Resources for the local contribution, which represent 50% of total costs, will be provided by the municipality. The impact of this contribution on the Municipality of Rio's budget is discussed in chapter IV.

III. PROJECT EXECUTION

A. The executing and coexecuting agencies

1. Coordenadoria de Recursos Externos

3.1 The functions of the Coordenadoria de Recursos Externos (CRE) are detailed in chapter V. The CRE is a Department of the Secretaria Municipal de Fazenda of the Municipality and was created as the unit of the municipality to coordinate all development projects financed with external resources. The CRE will act as the executing agency for this project and, as detailed in chapter V, will utilize the services of a firm to provide management support in the program's execution. The contracting of a firm will be a requirement for first disbursement. The program's co-executors, whose functions are described below, are RioUrbe, the Secretaria de Habitação, IPLANRIO, and the Coordenação de Imposto (CIP) in the Secretaria Municipal da Fazenda (SMF). A mechanism (i.e. signed agreements and decrees) to assure coordination between the co-executors and the executing agency will be a requirement for first disbursement.

2. RioUrbe

a. Drainage

3.2 The Empresa Municipal de Urbanização (RioUrbe), which is attached to the Secretaria Municipal de Obras e Serviços Públicos, will be the agency in charge of carrying out drainage works on the Faria and Timbó Rivers. RioUrbe has contracted out and supervised the preparation of the technical and engineering studies for the drainage component.

b. Resettlement

3.3 For resettlement, RioUrbe will be responsible for construction and for administering cost recovery for the housing.

3.4 RioUrbe was set up as a public-sector company by municipal decree in July 1975 and is responsible for low-income housing, urban development, and roadway projects. RioUrbe has four departments, one of which is the Department of Housing and Urban and Special Works, which will carry out and oversee this project.

3. Secretaria de Habitação

3.5 The responsibility for the preparation and execution of the resettlement plan rests with the recently created Secretaria de Habitação, which will coordinate resettlement activities with RioUrbe. To direct a unit specifically for this purpose, SEH will

hire a consulting firm to manage the resettlement effort. This firm will carry out the detailed cadastral and socio-economic survey, prepare the final resettlement plans, and assist in the coordination, monitoring and evaluation of the resettlement plan.

4. IPLANRIO

3.6 The first activity of the digital mapping subproject, dealing with the cartographic mapping and establishment of a geographic information system for the municipality, will be implemented by the Instituto de Planejamento Municipal (IPLANRIO), a decentralized public agency created in 1981 to provide the central municipal administration with high-level technical expertise in the areas of statistical analysis, planning, and the design and management of information systems. IPLANRIO will be responsible for all the work associated with the production of a complete digitized map of the municipality, at a cadastral scale, including aerial photography and related field survey work, photogrammetric restoration, and the compilation of hard copy maps and a digital cartographic data base. It will also be responsible for the design, implementation, and management of a geographic information system to be shared, initially, by the municipal departments of Finance, Urban Planning, Environment, and Public Works.

3.7 IPLANRIO, which has an overall staff of 353 professionals, will implement the component through its Diretoria de Informação Gerencial (DIG), currently staffed by 40 professionals. The lessons learned from the initial digital mapping projects undertaken by DIG over the last five years, covering 200 km^2, have provided this unit with substantial expertise in this line work. In order to undertake the remaining 600 km^2 of mapping work, as well as create new capacity in the management of geographic information systems, DIG will reorganize internally, creating a new subunit in charge of geographic information systems, and expand its staff with 45 new professionals. Moreover, it will hire two consulting firms to assist in the implementation of the component: one international firm to provide quality enhancement and technical supervision for overall implementation of this subproject (a condition prior to contracting for digital mapping services) and a second firm to convert the present municipal data source into a consolidated data bank. Three studies in maintenance of the database will also be undertaken (see paragraphs 3.29-3.31).

5. Coordenação de Imposto

3.8 The Coordenação de Imposto sobre a Propriedade Predial e Territorial Urbana (CIP), of the Secretaria Municipal da Fazenda (SMF), will have responsibility for implementing of the second component of the digital mapping subproject. It will be responsible for undertaking a complete verification and legalization of the cadastral data provided by IPLANRIO with the first digital mapping component. This will require a thorough process of cross-referencing with the major property and building

data banks in the municipality, including principally those in the Urban Planning Department and in the Municipal Finance Department itself, as well as a complete door-to-door field verification survey of each property identified by IPLANRIO's mapping.

3.9 The CIP at present functions with a staff of 196 professionals, working mostly in the area of property assessments and maintenance of the present property tax roles. Only recently, as a result of the difficulties encountered in the cadastral updating efforts by the municipality since 1987, has the CIP begun shifting its attention to the need to systematically correct the tax rolls, identifying unregistered properties and constructions. Since 1990, through pilot studies linked to the IPLANRIO pilot mappings, CIP has acquired valuable experience in cadastral updating and field verification. On the basis of this experience a new unit is being created in CIP, the Grupo de Apoio Técnico (GAP), to take charge of direct implementation of the second digital mapping component. Initially staffed by 40 professionals, as the program progresses, the GAP will be expanded to a total staff of 310 field and office professionals (of which approximately 260 will be on short-term contracts).

B. Status of project preparation

1. Drainage

3.10 RioUrbe has all the technical studies, engineering designs, estimates, building specifications, and other documents needed to issue calls for bids for the proposed drainage works. This documentation was reviewed by the Bank and was found to be viable from the technical, environmental, socio-economic, and financial standpoints.

2. Resettlement

3.11 As soon as the loan contract is signed, RioUrbe in coordination with SEH will start the bidding for the basic infrastructure for the Pinheiros site 2/, which will accommodate the majority of families to be resettled. This site, with a capacity for over 700 families, will house an estimated 400 of the 652 families to be resettled. The work will take place in two phases, and should be completed 18 months after contract signature.

3.12 The contracting of a consulting firm for resettlement will be a condition prior to adjudicating drainage works. SEH would start activities by conducting the comprehensive socio-economic and

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2/ Proof of municipality ownership of the land for resettlement, an invitation for bids for a consulting firm to manage the resettlement, and an invitation for bids for works at the resettlement site, are conditions prior to bidding for drainage works.

cadastral survey, which is the basis for the final resettlement plan. The resulting final resettlement plan would be ready six months later and immediately following its approval by the Bank, the first families would be resettled (months 12 to 14) in time to vacate the area needed for the drainage works. 3/ The second group of families would be resettled between months 19 and 21. Post resettlement assistance to families would continue until final execution. The consulting firm would terminate its services by carrying out a detailed ex-post evaluation of the resettlement plan.

3. Digital mapping

3.13 Both IPLANRIO and CIP have presented complete documentation on their respective components, including terms of reference and technical specifications for all consulting services; estimated budgets; and implementation plans and timetables. These have been reviewed by the project team and, are considered adequate to permit moving ahead with the definitive contracting of services.

3.14 As noted in chapter I, IPLANRIO has already initiated the digital mapping of the municipality's urban land area, with its own resources. Furthermore, it intends to submit to the program two digital mapping projects of "favelas", for retroactive financing prior to the signing of the loan contract with the Bank. Based on these initial mapping inputs by IPLANRIO, the CIP has begun a pilot effort of cadastral verification, aiming to have its full team of 310 professionals in place, as IPLANRIO's new inputs come on line, by the end of the first year of the project.

C. Lands

3.15 Lands along the Faria/Timbó Rivers which require resettlement for drainage works are illegally occupied by the current residents who will be resettled to permit the constructing of drainage works. For the Pinheiros resettlement site, the municipality is in the process of purchasing the land from the Federal Government. A condition to bidding for drainage works will be evidence that the municipality has full ownership of the Pinheiros or a similar site.

D. Environmental licenses

3.16 The pre-license for construction of the drainage works has been approved by State's Fundação Estadual do Meio Ambiente (FEEMA), as required under Brazilian law. The license for installation will be required as a condition precedent to adjudicating the contract for drainage works.

3/ Bank approval of the final settlement plan, signature of a contract to manage the resettlement, and the environmental license for installation of the works are all conditions for adjudicating of the contracts for drainage works.

E. Previous expenses

3.17 IPLANRIO has submitted a request for recognition of previous expenses, US$400,000 to be reimbursed by the loan and US$100,000 to be recognized as counterpart. These expenditures were effected during the periods allowed under Bank policy.

F. Execution period

3.18 The project will be executed in five years. Drainage works and mapping should be completed within three years and the recadastrering effort completed by the end of year five of the project.

G. Procurement limits

3.19 For Bank financing, the contract will require international public bidding when the value of goods and services is US$350,000 and above and when the value of works are estimated US$5,000,000 and above. Procedures to be followed will subject to the procedures outlined in the annexes to the loan contract. These limits are justified taking into account similar projects in Brazil, which require external competition when amounts exceed these limits. Bidding in amounts less than these limits will follow national legislation, which requires public bidding when amount exceed US$100,000.

H. Procurement drainage/mapping

3.20 The bidding schedule for the project's drainage works takes into account the time required for issuing the calls for bids, awarding contracts, hiring construction firms, and performing the scheduled works. 4/ Consideration was also given to the close coordination that should be maintained between the civil works component and all family-relocation activities. A bidding schedule has been prepared. The schedule is felt to be both adequate and compatible with the scope and features of the scheduled works.

3.21 Existing legislation in Brazil prohibits the participation of foreign firms in aerial mapping activities for reasons of national security. In the initial 200km^2 of digital mapping undertaken by the municipality with its own resources, the contracting of these pilot projects was restricted to national bidding. Based on an international cost-comparison exercise undertaken by the Bank and IPLANRIO, however, it appears that substantial cost savings can be obtained in the digital mapping component if these services are submitted to international bidding. For this reason, the Bank and the municipality have agreed to contract out the cartographic

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4/ For bidding for lot three, a condition, will require an agreement with the appropriate authorities for replacement of a railroad bridge.

mapping services in the program through international competitive bidding. The municipality has received an exemption to the national legislation through a presidential waiver.

3.22 The cartographic services undertaken by the program and which required the waiver will be divided into two international contracts, a smaller one of approximately US$1.15 million for the detailed field surveying work accompanying the mapping of the 25 km^2 of "favelas", and a larger one of approximately US$9.12 million for the remainder of the cartographic work. An additional international contract for approximately US$200,000 will be provided in the IPLANRIO component for the hiring of the specialized international firm responsible for quality control enhancement of this component's implementation.

3.23 For the CIP activity, contracting will follow national procurement procedures, insofar as it involves hiring of field surveys personnel and is entirely funded with counterpart funds.

I. Ex post evaluation

3.24 The Municipality has indicated an interest to coordinate with the State in measuring the impact of this projects two components and the overall program. For the two project activities funded by this operation, the impact of mapping on tax collection and "favela" titling will be measured as will the impact of the drainage works on flooding and transport.

J. Operation and maintenance

1. Drainage

3.25 Although RioUrbe will oversee construction of these works, maintenance will be the responsibility of the Departamento Geral de Vias Urbanas (DGVU) at the Secretaria Municipal de Obras e Serviços Públicos. The DGVU will provide maintenance through contracts signed with private, specialized companies to dredge and clean out the canals, following a format similar to the one adopted for the maintenance of the city's other rivers and canals.

3.26 It is recommended that the prospective loan contract stipulate that an annual maintenance plan be presented to the Bank for a period of 10 years, including a report on the previous year's activities and the status of project works.

2. Digital cartographic data base maintenance

3.27 The existing cadastral maps of the city were created from aerial photographs acquired in 1975. Since then, extensive growth combined with the lack of an adequate maintenance and revision program have left the majority of maps irrecoverably out of date, providing more disinformation than reliable information.

3.28 To avoid this happening again after the generation of a new up-to-date cartographic base, IPLANRIO will implement administrative and computer based procedures to more effectively maintain the data base. This will be accomplished principally by integrating within a single, computerized geographic information system the three major sources of data on land use, properties and building construction: the cartographic maps of IPLANRIO; the property tax roles of the SMF; and the data bank on building and subdivision permits handled by the Serviço Municipal Urbano (SMU). This will permit constant updating of the maps, using the alphanumeric inputs of the data banks of SMF and SMU.

3.29 Inter-agency procedures for collecting and incorporating revisions in each of these categories have been established by IPLANRIO; these include incorporation of information from the legal permit process, field inspections, and helicopter reconnaissance and sketch mapping. These procedures are intended to ensure continual maintenance of the data base; however, full implementation of the procedures may be difficult and it is not proven that all revisions will be efficiently obtained in a format prepared for inclusion in the data base.

3.30 In order to assist IPLANRIO, SMF, and SMU in the implementation of the new system, consultancies will be provided in the program to address the continual maintenance issue. This assistance will be coordinated by IPLANRIO and consists of three separate studies. One study, performed by a national consultant working with the Superintendência de Parcelamento e Edificações and IPLANRIO, will focus on strengthening the building permitting process. If functioning properly, the permit system would be the principal source of revision information. It is important, therefore, that a larger percentage of constructions are channelled into the established permitting process.

3.31 The second study, performed by an international consultant working with IPLANRIO, will focus on developing procedures for collecting informal construction information in quick growth areas. This study will determine the feasibility and cost of using a combination of field investigations, aerial surveys using regular helicopter flights and directed periodic, small area aerial photography missions to map informal construction.

3.32 The third study, performed by a national consultant working with the CIP of the Municipal Finance Department, will focus on designing efficient field sampling and verification procedures to improve the property assessment process, and develop integrated linkages between the digital mapping system and property taxation system. The contract will require that within one year from signature, IPLANRIO will submit detailed terms of reference for the three technical assistance studies. Within 24 months of contract signature, IPLANRIO must submit a maintenance plan.

IV. INSTITUTIONAL AND FINANCIAL ANALYSIS

A. Municipality of Rio de Janeiro

1. Institutional considerations

4.1 The borrower would be the Municipality of Rio de Janeiro, which would undertake to provide the local counterpart contribution from its own resources. The program would be carried out through the Coordenadoria de Recursos Externos.

4.2 The Coordenadoria was set up by mayoral decree on September 30, 1987. Originally part of the Secretaria Municipal de Planejamento, it was subsequently transferred to the Secretaria Municipal da Fazenda, the city's finance department.

4.3 The Coordenadoria's main function is to monitor each stage of projects that receive funding from outside sources. When larger projects are involved, consulting firms are hired to provide support for project execution.

4.4 The Coordenadoria is responsible for coordinating fund-mobilization policy and acts as the municipality's liaison office with financial institutions.

4.5 In the area of financial administration, this office coordinates the annual project-budget exercise and makes sure that counterpart funds are available and that they are included in the city's annual budget.

4.6 The Coordenadoria carries out its duties through two units: the Project Development Coordination Unit and the Project Monitoring Coordination Unit.

4.7 The Coordenadoria will be responsible for all the financial aspects of the project proposed herein and for keeping the respective accounting records, for which it will receive support from the municipality's central accounting office.

4.8 The financial administration provided by the Coordenadoria will be monitored continuously by the city's recently created Office of the Comptroller.

4.9 The program will have the following coexecuting agencies: IPLANRIO, which will be responsible for the digital mapping component; the Secretaria da Fazenda, which will be in charge of the cadastral update to be undertaken in conjunction with the digital mapping activities; Empresa Municipal de Urbanização (RioUrbe), which will be responsible for the drainage component; and the Secretaria de Habitação (the city's department of housing

affairs), which will be in charge of relocation activities. The functions of the various coexecuting agencies are described in chapter III.

4.10 Operation and maintenance of the drainage works will be the responsibility of the Departamento Geral de Vias Urbanas.

4.11 The coexecuting agencies' activities will be coordinated by the Coordenadoria de Recursos Externos, which will be the sole liaison with the Bank.

4.12 The Coordenadoria's accounting and administrative offices will be in charge of handling the financial resources allocated for program execution, including those transferred to the coexecuting agencies. These offices will also be responsible for drawing up the program's annual financial statements.

4.13 It is recommended that the loan contract stipulate that financial statements be submitted within the 120 days following the close of each year during the execution period. These statements are to be audited by a firm of independent auditors working under the supervision of the National Treasury Department, which will submit a statement on the auditors' report to the Bank.

4.14 To ensure that the Coordenadoria carries out its functions satisfactorily, it is proposed that a management consulting firm be hired to provide support for financial administration and technical aspects. It is recommended that the loan contract stipulate, as a condition precedent to the first disbursement, that a contract has been signed with a management consulting firm based on terms of reference acceptable to the Bank.

B. Financial situation of the municipality

1. Budget execution

4.15 The municipality's financial resources are administered through the city budget.

4.16 The following table presents a summary of budget execution for the period examined:

Municipality of Rio de Janeiro
Budget Execution
(in thousands of constant U.S. dollars December 31, 1993)

	1991	1992	1993	1994 presup.
Current revenue				
Taxes	701,318	559,907	361,909	717,836
Transfers	345,623	317,620	295,704	417,886
Asset-based	790,630	600,640	506,817	417,886
Other	45,821	23,052	68,568	78,593
Total current revenue	1,883,393	1,501,219	1,232,997	1,648,914
Total current expend.	972,821	1,062,662	771,262	1,197,335
Current savings	910,572	438,557	461,735	451,579
Debt amortization	144,776	71,951	64,121	115,873
Surplus avail. for invest.	765,796	366,606	397,614	335,706
Capital revenue	62,156	97,068	80,921	208,284
Capital expenditure	543,317	665,154	149,631	540,479
Surplus (deficit)	284,635	-201,479	328,904	3,511

4.17 As can be seen from the table, the municipality's current revenue (expressed in constant values) dropped from US$1.883 million equivalent in 1991 to US$1.233 million equivalent in 1993.

4.18 The drop in tax revenue was due in part to the decrease in revenue from the municipal property tax.

4.19 In 1991, all of Brazil's state capitals enacted major property-tax hikes. For 1991, then, the tax revenue levels registered were above normal; those levels could not, in constant terms, be sustained over the ensuing years.

4.20 In 1993, a new city government took office in Rio. City officials attributed the drop in revenue that year to the economic crisis and to accelerated inflation. Also in 1993, discounts were given to taxpayers who paid their tax obligation in full in a single lump-sum payment. That same year, a proposed package of incentives (e.g., waiver of interest, surcharges, and fines) for delinquent taxpayers to pay up back taxes failed to gain legislative approval.

4.21 For 1994, property values have been reassessed and property tax adjustments made that are expected to produce an increase in revenue from this source.

4.22 Asset-based revenue — which comes mainly from the yield on investments of the municipality's liquid holdings — was also off

significantly, dropping from US$790 million in 1991 to US$506 million in 1993.

4.23 Current revenue in each of the years examined was enough to cover current outlays, which in 1993 totaled US$771 million equivalent. As a result of lower current revenues, current savings have also been following a downward pattern, although they have always been sufficient to service the city's debt.

4.24 Investment levels were especially high in 1991 and 1992 due principally to the fact that these were the last two years of the administration's term in office – and this triggered a deficit in budget execution on the order of US$328 million equivalent for 1992.

4.25 In 1993, the city was able to rein in its current expenditures and investments and thus close the gap somewhat.

4.26 It should be noted that the city enters revenue on its books at the time funds are actually received. Expenses, on the other hand, are posted at the time the commitment is incurred and are disbursed at the value at which they were contracted – with no monetary correction for inflation.

4.27 Since inflation has been so high, however, these amounts (which are not adjusted for inflation) end up having lower real values by the time payment is made. Allowance was made for this situation by expressing budget execution in constant figures.

C. Debt of the Municipality of Rio de Janeiro

4.28 The following table shows the municipality's debt for the four-year period under consideration:

	Millions of US$			
	12.31.90	12.31.91	12.31.92	12.31.93
Accounts payable	156	214	201	118
Funded debt				
Bonds	209	178	272	318
Domestic borrowings	225	274	279	290
International borrowings	56	57	57	70
Total funded debt	490	509	608	678
Total debt	646	723	809	796

4.29 The city's debt at the close of the period stood at US$796 million equivalent; US$118 million of that amount were accounts payable pending payment as of December 31, 1993.

4.30 The city's total debt increased in 1991 and 1992, but levelled off in 1993, although the structure of the debt changed.

4.31 As of December 31, 1993, the city had accounts payable totaling US$118 million, which represented 15% of its total debt; one year before, this percentage had been 25%. Bonded debt and loans outstanding, on the other hand, rose from 76% of the total as of December 31, 1992, to 86% by December 31, 1993.

4.32 Throughout the period examined, the city maintained to date payments on its domestic debt. The debt contracted with foreign banks remained stable; since these obligations are affected by the renegotiation of the foreign debt, debt servicing is made in accordance with guidelines issued by the Central Bank.

4.33 The municipality's overall level of indebtedness is within acceptable limits: as of December 31, 1993, the city's debt stood at 65% of its current revenues.

4.34 The local counterpart contribution to the project would total US$30 million equivalent, to be paid over a five-year period. This breaks down to an average annual contribution of US$6 million. Bearing in mind that the city took in US$1.200 million in revenue in 1993, and its available investment funds were roughly US$400 million that year, the municipality should have no problem making its annual contributions. This contribution of US$6 million represents 1.5% of the amount that the city had available for investment purposes in 1993.

4.35 Debt servicing associated with the project would not exceed US$3.1 million during the first year of repayment. This amount represents a very low percentage of fiscal revenue.

D. Project operation and maintenance

4.36 Maintenance of drainage works will be the responsibility of its Departamento Geral de Vias Urbanas. Increasingly larger budget allocations have been made to the department for these activities: from the US$12 million earmarked by the city in 1989, to US$23 million. These figures are indicative of the importance the municipality attaches to maintenance of these works.

V. PROJECT FEASIBILITY

A. Technical feasibility

1. Urban drainage

5.1 The drainage works proposed for the Faria and Timbó Rivers are considered to be technically feasible and fully justified in that they respond to the urgent need to increase these rivers' flow capacities and thereby curb the risk of flooding. The following technical reasons substantiate this justification:

a. all project studies, designs, plans, and specifications have been prepared in keeping with generally accepted principles of hydraulic engineering. The designs represent the most economical and technologically appropriate solutions and the cost estimates are considered to be reasonable;

b. RioUrbe has the necessary technical capacity and experience in order to supervise execution of these works, with the advisory services of a specialized consulting firm. Furthermore, there is an adequate supply of contracting firms to carry out the construction work;

c. the implementation schedule was drawn up taking into account the features of the works and the time required for the family-relocation activities;

d. maintenance of the canals, roads, and other structures associated with the drainage system will be the responsibility of the Departamento Geral de Vias Urbanas, which has ample experience in this area; and

e. the preliminary resettlement plan has been reviewed and is considered adequate, taking into account a reasonable number of alternatives for families being resettled, the importance of community participation in the process, a realistic assessment of costs, and the institutional capacity of SEH to undertake the resettlement.

2. Digital mapping subproject

5.2 The two components that make up the digital mapping subproject have been carefully analyzed by the Bank's project team, and are considered both well justified and technically feasible. Through these two components, the municipality will update its tax rolls, incorporating the large number of previously unregistered properties and building additions. Not only will this correct the unfair distribution of tax burden that exists when only a limited percentage of property owners are shouldering the tax burden, but

it will also inject substantial new revenues into the municipal budget. Furthermore, with this subproject the city will substantially improve the productivity of its urban planners, allowing them to map out alternative planning scenarios more quickly and accurately by way of computerized mapping and design technology. Finally, perhaps of even more importance, the mapping exercise undertaken by the program will make an important contribution to the regularization of "favelas" and informal settlements.

5.3 On the basis of a careful analysis of the investment proposals submitted by the municipal authorities, the Bank has concluded that the subproject is technically feasible for the following reasons:

a. the technical specifications and procedures prepared by IPLANRIO for the cartographic mapping and GIS system conform to internationally accepted standards in the fields of aerial surveying and geoinformatics. The costs estimated for the IPLANRIO component are considered reasonable, having made adjustments for the price distortions that exist in the local market for aerial mapping contracts;

b. both IPLANRIO and the Secretaria Municipal da Fazenda have demonstrated technical ability to undertake their respective tasks in this subproject. In the case of IPLANRIO, given the expanded dimensions of this effort and the rapid technological changes taking place in the field, an international consultancy will be provided as technical reinforcement and quality control during implementation;

c. adequate concerns have been given in both components to the definition of explicit inter-agency mechanisms of coordination. Along similar lines, in the design of the new geographic information system, appropriate levels of training and equipment will be provided to the principal institutional users of the new system;

d. since international bidding procedures will be applied to the contracting of mapping services in the program, it is anticipated that there will be an abundant number of potential contractors available to assure robust price and quality competition in the awarding of contracts;

e. the implementation timetables for the subproject have been projected taking into account the inter-dependency that exists between the inputs of both components;

f. consideration has been given to the long run maintenance of the new cadastral system, by integrating the system with the existing building permits data bank of the Planning Department and the payroll tax system of the Finance Department; and

g. the municipality is undertaking a program to increase tax revenues which includes improving the tax collection system. The system will have the capacity to absorb the increase in activity that will result from the project.

B. Institutional feasibility

5.4 The Coordenadoria de Recursos Externos is considered to have a suitable organizational structure and the experience necessary to coordinate the coexecuting agencies' activities under the program. With the support it will receive from the management consulting firm, it will be able to satisfactorily administer the financial resources entrusted to it for program execution.

C. Financial feasibility

5.5 The local counterpart contribution would average US$6 million each year. Given the municipality's current revenue levels, the annual current savings produced by budget execution, and the internal funds that are available for investment expenses, the municipality should have no problem in making this contribution. The impact of debt servicing on the municipality's budget will be minimal.

5.6 The substantial benefit of increased property tax revenue should contribute significantly to an improvement in the municipality's budget.

D. Economic feasibility

5.7 The economic evaluation was based on cost efficiency calculations for the digital mapping and the cadastral update subproject, and a cost-benefit analysis of the damage prevented resulting from the drainage works. To ensure that prices reflected economic efficiency, conversion factors were used for consumption and unskilled labor. 5/

1. Digital mapping and cadastral update

5.8 The following benefits would accrue from this component: (a) the city would see revenue levels rise, as a result of the property tax and fees charged for public lighting and refuse collection; (b) data would be compiled for the regularization of land tenure in informally settled areas; and (c) up-to-date information would be made available for urban planning activities, programming of infrastructure investments, and management of public utilities.

5.9 The main benefit in the short and medium terms would be the boost in revenue for the city. Since 30% of the city's revenue comes from the property tax (IPTU), it is particularly noteworthy that almost 20 years have gone by since the last general cadastral

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5/ Standard conversion - 0.887; unskilled labor - 0.610.

survey was done (1975). The cadastral update subcomponent would supplement aerophotogrammetric data and produce an up-to-date property cadastre during project execution. Cost savings associated with the topographical surveys for the regularization of land tenure in shantytowns would be another key benefit arising from the city's scheduled programs. Savings in this area would be around 80%, a level that would justify the respective aerophotogrammetric and digital mapping work.

5.10 As previously unregistered properties and construction activities are identified, property tax revenue is expected to go up by 25%. This estimate was based on a pilot program that was carried out in a 10-km^2 area situated in Rio's southern district, and on the number of unregistered properties that the Secretaria da Fazenda's Cadastre Office detects when registering land transfers, inheritances, and new titles. The pilot program revealed that 49.5% of constructions were not registered; as a result, collection subsequently rose by 45%. Also, the experience of the Cadastre Office has shown that for every four taxpayers who request information only three are registered in the municipal property tax cadastre.

5.11 A cost-effectiveness indicator was formulated by comparing project costs (including maintenance costs) for currently titled properties with the increase in property tax revenue (see Table V-1). A cost of 8.1 cents for each dollar collected compares favorably with the cost of administering property taxes in developing countries and is felt to be appropriate. 6/

TABLE V-1

Cost-Effectiveness Indicator
Digital Mapping and Cadastral Update

Tax rate	Present Value Receipts (US$ Millions)	Present Value Invest. & Maint. (US$ Millions)	Cost per Dollar Collected
0.8	264,366	21,327	0.081
0.6	198,275	21,327	0.108

6/ Recent articles have suggested that the cost per dollar collected should be lower, at values ranging between 25 and 10 cents. See William Dillinger, "Urban Property Taxation: Lessons from Brazil" and "Urban Tax Reform: Guidelines and Recommendations," World Bank Working Papers, April 1989 and June 1991.

2. Drainage and adjacent roads

5.12 Flooding of the Timbó and Faria-Timbó Rivers affects some 5,523 families directly and another 36,277 families indirectly. 7/ Flooding of these rivers also causes losses directly and indirectly (owing to delays in shipping) to shops and businesses. The damages suffered by residents in the direct and indirect areas of influence were calculated on the basis of a survey of 500 families living in the area. Commercial and industrial losses were estimated on the basis of the economic cost in terms of the added value that would fail to be generated during periods of major flooding. Using data compiled by the Superintendência Estadual de Rios e Lagos (SERLA) during past inundations, recurrence intervals of more than two years would produce losses equivalent to three days of production and sales. The potential number of establishments affected was determined using data from the city's cadastre and from added-value figures based on the state's value-added tax (ICMS).

5.13 The roads to be built along these rivers would help to deter any future settlement of the area and would improve traffic conditions in the western and downtown areas of the city. The city's road system currently suffers from a lack of suitable crossroads connecting the main north-south arteries. The proposed roadways would cut distances between neighborhoods significantly and would help reduce congestion in downtown Rio. The benefits were estimated on the basis of the origin-destination charts included in the city's mass transit plan.

5.14 Since the various activities scheduled to be undertaken on the Timbó and Faria-Timbó Rivers are all interrelated, the Faria-Timbó River and railroad bridge works were evaluated exclusively as an integral part of this component. As can be seen in Table V-2, below, both the drainage works and the road works are expected to produce benefits well in excess of costs and would have internal rates of return of over 12 percent. An important factor that could affect the rate of return would be the possibility of underestimation of the relocation costs. Nevertheless, given the limited area available for new settlements on the banks of these rivers, it is highly unlikely that the number of families to be relocated or relocation costs would increase by more than four times, which would be the level at which the internal rate of return would fall below 12 percent.

7/ The population directly affected are those people who live in the flood plain defined by a two-year recurrence interval. The population indirectly affected comprises everyone living in the watershed.

TABLE V-2			
Drainage and Road Works Faria-Timbó			
	PV-Cost (US$1,000)	PV-Benefits (US$1.000)	IRR
Timbó River Canalization	9,315	11,331	15,6
Roads	3,780	13,092	39,1
Drainage and Roads	18,955	27,729	18,7

3. Analysis of the distributive impact

5.15 The benefits of the drainage subcomponent are summarized in Table V-3, below. The distributive impact coefficient was calculated at 61 percent. The urban drainage subproject meets the criteria for poverty targeting under the eighth replenishment.

TABLE V-3				
Distributive Impact (Drainage and Road Works)				
CATEGORY	PUBLIC SECTOR	PUBLIC SECTOR		SOCIAL PRICES
		Low-Income	Other	
Benefits		15,070	12,659	27,729
Investment	-18,040	3,608		-14,432
Maintenance	-5,655	1,131		- 4,524
Net benefits	-23,695	19,809	12,659	8,773

DIC = 0.61

RESETTLEMENT

1. Diagnostic assessment of the population to be resettled

The first draft of the preliminary resettlement plan, presented in March of 1994, estimated the number of families to be resettled at 700 (based on an earlier survey carried out in 1993) in 12 illegally occupied areas called "favelas" along the Faría and Timbo rivers. The Bank insisted that this number be verified in situ, in order to more accurately assess the magnitude of the resettlement component, dimension alternative solutions, provide for adequate institutional arrangements and estimate costs. Therefore in May of 1994, the "Secretaria Extraordinária de Habitação (SEH)" asked the team of engineers from RIOURBE responsible for the infrastructure works to accompany its social workers on a field visit to the area in order to count the number of houses and other constructions, observe some physical characteristics of the constructions and inquire about the number of families occupying these structures on the basis of the detailed topographic maps and engineering studies. This exercise revealed that 652 families would have to be resettled, thus basically confirming the previous estimate.

In addition to 596 family dwellings, the exercise revealed that there were an additional 100 structures, including stores, workshops, garages, etc. There were 21 structures under construction. About half of the structures were made out of wood and the other half were brick, indicating some degree of consolidation of these "favelas" and a clear mixture of low and low to middle income families. Only ten percent of the structures had more than one floor. The affected families were described as having demographic characteristics typical of the low or lower middle income groups, with women and children predominating. The large majority of families have some income from formal employment in the city, however, informal activities do represent an important source of family income. Access to health and education facilities is comparable to other areas in the city. However, because of their illegal occupation and the periodic flooding, no public investments in basic services of sanitation, potable water and electricity had been made, and dwellings have improvised systems to connect them clandestinely to the public system. The inappropriate use of butane gas is an additional risk of considerable magnitude. Transportation by public bus is within easy reach.

The actual values of the structures is difficult to determine, because there is no official registration or cadastral records, since the areas are illegally occupied (riverfronts, whether owned privately or publicly are declared 'non-aedificandi'). Also, it was thought to be counterproductive at this stage in the project preparation process to conduct a more comprehensive cadastral survey, so as not to raise expectations, foster speculation among area residents and attract new immigrants to the area, which would all seriously jeopardize the resettlement efforts during project execution. The legislation explicitly forbids expropriation as a way of resettling the population of

these areas, and specifically mentions sites and services and public housing projects as solutions to the resettlement needs. Because of the lack of official records, the team had to estimate housing values on the basis of market indicators, such as notices posted in the area advertising housing sales, information from neighbors, etc. Based on the size (number of rooms) and the quality of material used for its construction (wood, unfinished brick or finished brick), housing values were thought to oscillate between US$200 for a one room wooden dwelling to up to US$6,000 for an eight room finished brick dwelling.

The inhabitants of the different "favelas" affected by the works are all organized in neighborhood associations that were set up to improve access to services and increase the well-being of their members. During 1993 on several occasions, including a general meeting with the municipality's office of social development in July and several hearings with specific neighborhood groups, the affected communities were informed in general terms about the nature, magnitude and benefits of the project, and about the need for resettlement of some families. In general, reaction to the project has been positive.

A full cadastral and socio-economic survey will be carried out as the first step in elaborating the final resettlement plans for each of the affected communities, and will be carried out shortly before families will be resettled, in order to avoid speculation and minimize uncertainty and trauma.

2. Proposed solutions

At the request of the Bank, the executing agency broadened the scope of alternative solutions from one to four, based on the Bank's assessment that the solution originally proposed - finished housing solutions at a distance of up to 60 kms from present location - would be too disruptive to the socio-economic and employment situation of the affected families and too expensive for most to represent a viable solution. Three other options were therefore developed, including monetary compensation for families wishing to seek their own solution or to return to their home state, sites and services on a large nearby terrain still to be provided with infrastructure, and several smaller plots, most of which are already urbanized, and which are reverting back to the Municipality as a result of irregularities during construction or occupation. The following table describes the four alternatives:

Alternative	Location	Capacity	Cost to Municipality/Family
1. Finished House with possibility for expansion	Guandu I Guandu II Estrada de Pedra	512 616 878	US$4700
2. Cash Settlement	n/a	n/a	Based on market value of current house, average value of this group estim. at US$3,240
3. Site and Services and Basic Materials	Pinheiros	728	US$4,366 including US$1,230 for construction materials
4. Site and Services and Basic Materials	Several small nearby sites	257 minimum	US$3,230 including US$1,230 for construction materials

For alternatives 1, 3 and 4 the families to be resettled have the option either of becoming full owners of the new property (if they also meet minimum criteria for accessing the Sistema Financeiro de Habitação) or acquiring the right of use without ownership (cessao real de uso). In the latter case, there is no cost to the families. To acquire full ownership there is some cost recovery from the resettled families, since they would reimburse part of the cost by paying the equivalent of 10 % of the monthly minimum salary (or approximately US$6.50 at the current rate) for a period of 25 years.

Alternative 1: The costliest solution for the municipality; quality of housing, which is already constructed, is good; social services available in immediate vicinity; distance from the center and transport is a problem; solution would be attractive only to an estimated 5 % of families (retirees or people with independent source of income, some women headed households, etc.)

Alternative 2: The only solution that does not involve subsidy on the part of the municipality. Attractive to families who wish to resettle on their own, who have relatively higher incomes or who have business assets: an estimated 15 % of families (based on the size and quality of their present residence) would take this option; in addition, commercial properties for families choosing other options would also be compensated for in cash (this group represents another 14 % of families)

Alternative 3: This large terrain, currently federal property, would be developed as soon as financing is assured. Its benefits include its proximity to current locations, city center and social services and families would be able to resettle as a community. The municipality would provide a basket of basic building materials as well as technical assistance for self-construction. Attractive to an estimated 70 % of families.

Alternative 4: A recently passed law enables the municipality to take over irregular sites (defaulted construction companies, faulty ownership, etc.). So far at least 15 such sites with a total capacity of at least

257 dwellings would be available. The cost to the municipality is less than previous alternative. Most of these areas already have basic infrastructure. As with option 3, families would receive basic construction materials and technical assistance. An estimated 10 % of families would prefer this option.

The monthly payments for families who choose full ownership under alternatives 1, 3 or 5, would be collected and administered by RIOURBE, the municipal housing company that promotes and finances housing solutions. RIOURBE has vast experience in administering these programs and is currently operating 10 low income housing programs that benefit approximately 12.000 families. RIOURBE is the financial agent in Rio for the Sistema Financeiro da Habitação, which in turn receives funding from the Caixa Econômica Federal.

The families who opt for a cash settlement would be closely monitored by the SEH, which would issue payments directly to those providing the housing solution or to suppliers of construction materials, in order to ensure that the cash settlement will be used for alternative housing and to prevent families from resettling in other "favelas".

In addition to the housing solutions, the municipality provides a broad array of social services to assist the families in adjusting to their new environment, especially with regard to finding new employment or income generating activities, school enrollment for the children, etc. In addition the municipality would take charge of moving all people, personal belongings and reusable construction materials when appropriate, and would provide some food aid during the transition phase.

The Municipality, via its Secretaria Municipal de Desenvolvimento Social (SMDS) currently has a number of income generating projects in execution (such as food processing, dress making, cement making, etc.) in the areas where families would be resettled. For those families who will need this kind of assistance, priority will be given to including then in these projects.

3. The legal and institutional framework

The basic responsibility for the preparation and execution of the resettlement plan rests with the recently created Secretaria Extraordinária de Habitação (SEH). They would coordinate activities with RIOURBE, who will supervise construction and administer the cost recovery component. The Secretaria Municipal de Desenvolvimento Social will coordinate income generating activities. Social services will be provided by other social service agencies as required.

Even though the SEH is of recent creation, it integrates the staff of the agencies that preceded it. As a result of major flooding in 1988, there was an urgent need to resettle 27,000 families in need of safer housing. With World Bank financing a low income housing program, based on sites and services, called the Rio Reconstruction Project was initiated. This project encountered some problems and substantial delays in its execution, but was able to resettle more than 5,700 low income families.

The lessons learned from this experience resulted in the restructuring effort which created the SEH, and provided valuable new conceptual redefinitions and methodological approaches that are reflected in this preliminary resettlement proposal.

Although the SEH has an experienced staff of more than 250 people, including a large group of social workers, it will be necessary to hire the specialized services of a consulting firm to carry out the detailed cadastral and socio-economic survey on the basis of which the final resettlement plans for each of the areas corresponding to the bidding packages, will have to be prepared and presented to the Bank for approval prior to initiating the bidding process. This firm would also be asked to carry out the monitoring and evaluation activities, and assist in the overall coordination of the program. Detailed terms of reference have been prepared.

Community participation, which already initiated with the large meeting held in July of 1993, in which more than 100 community representatives were present, and with subsequent smaller meetings with individual communities, will be a key element in the further preparation and execution of the resettlement plan. Following these initial meetings, the Municipality will conduct consultative meetings, which will result in a Protocol of Intent, to be signed by the Municipality and the representative community leaders, that will reflect basic agreements as to the commitments of both the municipality and the community as well as the mechanisms for further community consultation and participation.

4. Cost and timing

As soon as the loan contract is signed, the bidding process for the basic infrastructure of the Pinheiros site will begin. This site has the capacity to accommodate up to 728 families, and which will most likely receive a large majority of the families to be resettled. The work will be realized in two phases and should be completed 18 months after contract signature. The consulting firm would be hired starting in the fourth month and would start activities by conducting the comprehensive socio-economic and cadastral survey. The resulting final resettlement plan would be ready six months later and immediately following its approval, the first families would be resettled (months 12 to 14). The second group of families would be resettled between months 19 and 21. Post resettlement assistance to families would continue until final project execution. The consulting firm would terminate its services by carrying out a detailed ex-post evaluation of the resettlement plan.

The costs associated with the hiring of the consulting service has been estimated to be the equivalent of around US$522,000. The services provided by personnel of the Municipality were estimated to be around US$123,000. The costs of the Pinheiros site and the smaller sites and services plots were estimated to be around US$354,000. The resettlement costs per se can be summarized as follows:

Construction Materials (521 families):	US$	640,000
Basic Infrastructure Pinheiros site :		1.206,000
Finished Housing (33 families)		155,000
Cash Settlements (98 families)		318,000
Additional Cash settlements for commercial buildings (99 buildings)		198,000
Transport and Food aid		90,000
TOTAL		2,607,000

Adding these costs to the administration, supervision and land acquisition costs, the total resettlement costs amounts to about US$3,000,000 which represents a cost well within the range of values obtained in similar resettlement exercises. It bears keeping in mind that these figures do not take into account some cost recovery for those families who qualify and opt for full ownership of their new housing. Similarly, no costs have been included for those services provided by other municipal entities such as RIOURBE, which will provide financial services, nor for SMDH which will assist in the process of providing alternative employment or income generating activities.

APENDICE

PROPOSED RESOLUTION

BRAZIL. LOAN /OC-BR. TO THE MUNICIPALITY OF RIO DE JANEIRO
Digital Mapping and Urban Drainage Project for Rio de Janeiro Municipality (Guanabara Bay).

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 Municipality of Rio de Janeiro, of Brazil, as Borrower, and the Federative Republic of Brazil, as Guarantor, for the purpose of granting the former a financing to cooperate in the execution of Digital Mapping and Urban Drainage Project for Rio de Janeiro Municipality. Such financing will be for the amount of up to thirty million dollars of the United States of America (US$30,000,000), which are part of the Ordinary Capital resources of the Bank. The amount of the financing shall be disbursed as follows: (a) up to twenty eight million dollars (US$28,000,000) or the equivalent thereof in other currencies which are part of the Ordinary Capital of the Bank, except that of the Federative Republic of Brazil; and (b) up to two million dollars (US$2,000,000) in local currency of the Federative Republic of Brazil. This loan shall be subject to the "Special Contractual Conditions" and the "Terms and Financial Conditions" of the Executive Summary of the Loan Proposal.