

FEDERAL DISTRICT BASIC SANITATION PROGRAM**(BR-0345)****EXECUTIVE SUMMARY**

Borrower:	Federal District of the Federative Republic of Brazil	
Guarantor:	Federative Republic of Brazil	
Executing agency:	Department of Infrastructure and Works of the Federal District Government	
Amount and source:	IDB (OC):	US\$130 million
	Local:	US\$130 million
	Total:	US\$260 million
Financial terms and conditions:	Amortization period:	25 years
	Grace period:	5 years
	Disbursement period:	5 years
	Interest rate:	variable
	Inspection and supervision:	1%
	Credit fee:	0.75%
Objectives:	Currency:	Currency pool
	The general objective is to improve sanitation for the inhabitants of the Federal District by expanding the existing sanitation infrastructure and strengthening the service providers. This will be achieved through the following specific objectives:	
	a. Expand coverage and improve management of water supply, sanitary sewerage, and wastewater treatment services.	
	b. Expand current stormwater collection and drainage coverage.	
Description:	c. Support the establishment of an adequate framework for environmental management and the efficient provision of water supply, sanitary sewerage, and wastewater treatment and disposal services.	
	The program totals US\$260 million and is broken down into three subprograms.	

Subprogram 1: Increasing coverage and improving management of water, sewerage, and wastewater treatment services. The direct cost of this subprogram is US\$81.2 million, and it has three components:

- a. **Water supply.** Investments for this component total US\$36.3 million and involve rehabilitation works for the Brasilia water treatment plant, improvements to the Contagem-Sobradinho conduit, construction of the Contagem-Paranoazinho-Sobradinho water treatment plant, construction and improvement of supply systems for various low-income housing complexes, the sectorization and upgrading of distribution systems in Lago Sul, and the completion of the Pipiripau water supply system;
- b. **Wastewater.** The investment for this component is US\$43.4 million to build the sewerage systems, pumping stations, and intercepting sewers for the localities of Gama, Planaltina, Lago Sul and Lago Norte, and the treatment plants for wastewater and outfalls from the Melchior and Gama systems; and
- c. **Increasing efficiency.** The investment for this component is US\$1.4 million, to be divided among three activities. The first is the preparation of a strategic planning study to modernize the business sector and improve customer service and the overall organization of the enterprise. This study is expected to make concrete recommendations on increasing efficiency, including the necessary recommendations on reducing staff size. The second activity supports the sale of shares of up to 49% of its capital to the private sector, a process in which Companhia de Saneamento do Distrito Federal [Federal District Sanitation Company] (CAESB) is involved. This process is expected to provide shareholders with adequate market incentives for adopting the efficiency-enhancing measures identified in the strategic planning study. These advisory services would calculate the value of the shares, make a recommendation as to the format and characteristics of the sale, and provide support for CAESB throughout the process. The third activity is the preparation of the CAESB master water and sewerage plan.

Subprogram 2: Flooding and erosion control. The subprogram has a direct cost of US\$114 million and includes road paving and storm drainage works in the localities of Santa Maria, Samambaia, São Sebastião, Recanto das Emas, and Riacho Fundo II.

Subprogram 3: Improving the regulatory framework for public utilities, water resources management, and environmental management. The direct cost of this subprogram is US\$4.7 million. It involves: (i) establishing a regulatory agency for water supply and sanitation services, including nonrecurring expenses for the launching of a small, efficient, and independent regulatory agency; (ii) establishing the Water Resources Regulatory Agency and implementing the Federal District water resources program, which includes an integrated water resources management and monitoring plan; (iii) implementing the Federal District environmental management program, which includes plans to monitor the Lake Paranoá basin and protect the Aguas Emendadas Ecological Reserve; and (iv) implementing the institutional development program of the Federal District Environment and Water Resources Department (SEMARH), which includes environmental education and human resources training programs.

**The Bank's
country and
sector strategy:**

The Bank's action in Brazil over the 2000-2003 period will focus on four strategic areas: modernization of the State, competitiveness, poverty, and the environment. The Bank will be deepening its action in the area of administrative and fiscal modernization; will support efforts to recover investment levels and establish appropriate regulatory frameworks; will support furthering social sector reform; and, in the sanitation sector, will continue to support the establishment of regulatory frameworks, access to services for broad sectors of the population, private-sector participation, increased efficiency in service delivery, and environmental protection. On the environmental front, emphasis will be placed on urban sanitation and environmental pollution in general. The proposed program is therefore consistent with the strategy decided on by the Bank and the country, since it promotes the establishment of a regulatory agency, supports private-sector participation through the sale of CAESB shares, helps to improve the quality of life of the low-income population by improving public water supply, sanitation, and storm drainage services, and includes projects aimed at preserving and improving the environment, by treating wastewater and strengthening the environmental control agency.

**Environmental
and social
review:**

The works to be performed under the project will help improve the hygienic conditions, health, and well-being of the communities. The works are localized and well-defined. The impact mitigation measures have been identified and their estimated costs have been included in the program costs. Licenses were applied for in accordance with current legislation. The program's environmental management strategy is to prepare for, prevent, reduce, eliminate, and offset the negative impacts whenever possible and optimize the positive ones.

Accordingly, program management efforts include: training for stakeholders, environmental licensing of works, implementation of environmental control plans, and plans for recovery of degraded areas for each work, as well as monitoring and follow-up. Pursuant to Federal District law, the environmental impact assessments (EIAs) for the sanitation programs were presented to the communities at a public hearing and were transmitted to the Public Information Centers (PICs) (at Headquarters and in the Country Office in Brazil) on 29 July 2000. The social and environmental impact report was approved by the Committee on Environment and Social Impact's Technical Review Group (CESI/TRG) on 22 September 2000, and the committee's recommendations were duly incorporated into this operation (paragraphs 3.20 and 3.21).

Benefits:

The main program benefit is the improvement in basic sanitation services in the Federal District. For the population there, this translates into better coverage of water supply and sewerage services, proper discharge of wastewater, fewer incidences of flooding caused by heavy rain, and better control of soil erosion.

These benefits are obtained not only through the new infrastructure, but also through the institutional support lent to the responsible agencies, by both increasing efficiency in service provision and supporting planning to allow for effective expansion in the future.

At the same time, the program will help to establish and strengthen an appropriate regulatory framework that ensures suitable quality in service delivery. This regulatory framework, together with the proposed financial-sustainability measures, should be sufficient to guarantee that the improvements made are sustainable.

Risks:

Risks related to the financial sustainability of the services have been identified that could affect program success. In the past, both the Federal District Government and the CAESB have experienced financial difficulties, which have an inevitable impact on the quality of the services provided. The Federal District Government rescheduled its existing debt and improved tax collection; and CAESB raised rates in both 1997 and 1999. As a result, the aforementioned financial difficulties have been overcome.

The risk of the Federal District Government again experiencing financial difficulties that impact the counterpart contributions and the availability of funds to properly maintain the storm drainage infrastructure is mitigated by the District government's current sound position and the performance agreement signed with the federal government for maintaining and improving the infrastructure.

The risk of the CAESB again having financial difficulties that would affect its ability to make the counterpart contribution and properly operate and maintain the facilities built under the program is mitigated by the recent rate change, the improvements in efficiency made as a result of the strategic planning study, and the influence of the private partner and regulatory agency for maintaining suitable efficiency in delivering services.

Lastly, risks of a regulatory nature have been offset by actions included in the program and the issuing of a decree that will define the organization of the regulatory agency and will ensure its independence, before the sale of shares begins. These actions are expected to promote the development of an appropriate system consistent with best practices in the area.

**Special
contractual
clauses:**

Prior to the first disbursement:

- a. Presentation of the agreements signed between: (i) the Federal District Government and CAESB on the transfer of funds and execution of the sanitation works; and (ii) the Federal District Government and NOVACAP on executing the storm drainage and paving works (paragraph 3.7).
- b. Signature of the agreement to guarantee that CAESB will repay the loan to the Federal District Government (paragraph 5.19).
- c. Creation of the program management unit (PMU) and the CAESB and NOVACAP local management units (LMUs) and appointment of the personnel decided on with the Bank (paragraphs 3.3, 3.4, and 3.6).
- d. Bid allocation for the consulting firm that will advise the PMU and LMUs on the planning and execution of program activities (paragraph 3.6).

Other special conditions that will be included in the contract are:

- e. Within 18 months of the signature of the contract, present evidence that a firm has been hired to prepare the integrated water resources management plan, the environmental monitoring plan for the Paranoá basin, the Federal District water resources monitoring program, and the standardization and optimization of environmental methods and multimedia environmental education (paragraph 3.9).
- f. Prior to calls for bids for each of the works, present evidence that building permits have been obtained and the bidding documents

include the environmental control measures for the construction phase required by SEMARH (paragraph 3.20).

- g. Within 24 months of the signature of the contract, evidence that establishment of the district water agency has begun, with personnel appointed and its operating budget allocated (paragraph 3.19).
- h. Prior to contracting consulting services to set up the water supply and sewerage regulation unit, the decree defining the organization of the public utilities regulatory agency of the Federal District and ensuring the independence of the regulatory agency will have been issued (paragraph 3.11).

**Social equity
and poverty
reduction
classification:**

This operation qualifies as a social-equity enhancing program, as described in the indicative targets mandated by the Bank's Eighth Replenishment (document AB-1704). Furthermore this operation qualifies as a poverty-targeted investment (PTI), since an estimated 53% of the beneficiaries are low-income persons (paragraph 5.41). The borrower will not be using the 10 percentage points in additional financing.

**Exceptions to
Bank policy:**

In keeping with the request of the Government of Brazil, the guarantee contract to be entered into will not include a guarantee by the federal government to contribute the local counterpart resources or to be accountable for the borrower's obligations to perform that are not the legal competence of the federal government. This decision was taken bearing in mind the country's constitutional and legal provisions on administrative decentralization, as well as the government policy seeking to make government spending more disciplined.

Procurement:

Bank policy on procuring goods, contracting works, and hiring consulting services to be financed using program resources will be applied. When Bank resources are used, international competitive bidding will be required for procurements over US\$5 million for works and US\$350,000 for goods and related services. The threshold over which international competitive bidding will be required for engaging consulting services is US\$200,000.

I. FRAME OF REFERENCE

A. General

- 1.1 When the city of Brasilia was built in the early 1960s, satellite cities emerged. They were built where temporary camps had been set up for the families of the workers involved in the various construction works for what is today the Federal District. They are a response to the development model implemented in Brazil in the 1960s, which accelerated the migration of the rural population to large cities in search of work and housing. The migrants settled primarily on the outskirts of cities, transforming Brazil into an essentially urban country. Today, over 80% of the population lives in urban areas.
- 1.2 Migration to the Federal District has increased over time, because of certain policies that were adopted. In particular, the Government of the Federal District's policy of distributing land to migrants stepped up migration to the area around Brasilia. The current population of the Federal District is nearly two million, divided into 19 administrative regions (ARs); Brasilia is the main AR, with 225,000 inhabitants. Within the District there are several urban clusters, with a total population of roughly 300,000; they have precarious sanitation and urbanization conditions that fail to provide adequate living conditions and pollute the rivers.

B. The sanitation sector in the Federal District

- 1.3 The water supply service currently covers 91% of the population in the Federal District and sanitary sewerage service, 88%. These percentages, although relatively high compared to other utilities in the country, mean that nearly 170,000 inhabitants of the Federal District do not have water supply service and approximately 250,000 are not connected to the sanitary sewerage system. Furthermore, 62% of wastewater in the Federal District is treated before being discharged into watercourses.
- 1.4 The Companhia de Saneamento do Distrito Federal [Federal District Sanitation Company] (CAESB), an independent enterprise attached to the Environment and Water Resources Department (SEMARH), is responsible for the delivery of water supply and sewerage services. In terms of service sustainability, the enterprise is viable, with sufficient cash flow for operations to meet its financial needs. Nonetheless, its operating efficiency, particularly in the area of human resources, could be enhanced since CAESB has almost seven employees per 1,000 water users, which is higher than the efficiency levels accepted by utilities in the sector, which tend to be less than five. With regard to business management, at the end of 1999 accounts receivable were US\$34 million, equivalent to almost three months of billings.
- 1.5 Until a few months ago, CAESB had the authority to set its own rates, with no clear separation between its regulatory and service delivery functions. However, in May 2000, the Federal District Government established a public utilities regulatory

agency, through State Decree 21,170, attached to the Cabinet of the Federal District Government. Its function is to set rates based on cost efficiency. Given CAESB's management situation, the Federal District Government would like to implement plans to boost the company's efficiency. As a result, possible private-sector participation in the company, through the sale of part of the shares of CAESB to private investors, is being studied.

C. Storm drainage in the Federal District

- 1.6 Brasilia and some of its satellite cities have paved roads and storm drainage systems that work adequately. However, in the areas most recently urbanized, the absence of paving and a storm drainage system, which is associated with impermeable soil that erodes easily, results in washouts that threaten the existing infrastructure and deposit sediments in the watercourses. As a result, city streets often flood during the rainy season (six months out of the year), affecting some of the housing in these areas. In addition, unpaved urban roads cause major disturbances for the population because of the dust generated during the dry season and the mud that blocks access to homes during the rainy season.
- 1.7 The Department of Infrastructure and Physical Works of the Federal District Government is responsible for building and maintaining the storm drainage system and paving roads. Traditionally, it has relied on the Companhia Urbanizadora da Nova Capital do Brasil [Urbanization Agency of the New Capital of Brazil] (NOVACAP) for construction and maintenance. NOVACAP is a public agency; most of its operating budget comes out of the general budget of the Federal District Government.

D. The environment in the Federal District

- 1.8 The Federal District is located in a region that is the source of several watersheds; therefore the watercourses are relatively small. In recent decades, the rise in agriculture and livestock production, infrastructure, industrial activity, and use of the subsoil, as well as population growth, have transformed the region's environmental profile. The way in which this growth has come about has a negative impact on environmental conservation. Land is used for agriculture without proper management techniques; crop pesticides are overused; vegetation along rivers has been destroyed; soil erosion and river sedimentation are constant, leading to reduced flows and harm to local biodiversity. The limited capacity of the watercourses to assimilate and dilute the effluent loads impairs the rivers' ability to purify themselves. Efficient, comprehensive action must be taken in this area; however first a master water resources plan that encompasses all the actions must be prepared.
- 1.9 The Federal District Government agency responsible for formulating, coordinating, and executing environmental policy in the Federal District is SEMARH. In addition

to water resources management, it is responsible for protecting water sources. SEMARH has weaknesses in fulfilling its regulatory, planning, and environmental control functions.

E. Regulation and oversight

- 1.10 Until District Decree No. 21,170 was issued, there was no independent regulation of water supply and sewerage services. CAESB played the dual role of operator and supervisor in its areas of competence. This, together with the monopolistic nature of these activities, resulted in clear inefficiencies and conflicts of interest. Since the aforementioned decree was issued, creating the public utilities regulatory agency of the Federal District (ARSEP), there has been legal separation between the enterprise responsible for providing service and the public utility regulatory agency. Nonetheless, effective separation of these two functions requires implementation of the regulatory and oversight agency for the services. As a first step in that direction, the Federal District Government is sending a new decree to the legislature to lay out the structure of the regulatory agency; it includes a series of articles aimed at making the utility autonomous and the regulatory agency independent.
- 1.11 The proposed new decree established the agency as an autarchy with its own budget and administrative autonomy. Another set of articles defines how the regulatory agency is designated, the length of its mandate, and the rules for removing it from this position. In principle, the executive branch appoints the regulatory agency to a four-year mandate. However, the Federal District Government is drafting a list of serious offenses for which the agency could be barred from exercising this function. According to the Federal District Government schedule, regulatory rules will first be set for the transport sector. The water and sanitation sector, which will have support from this operation, will be second. The regulatory framework proposed by the Federal District Government and the structure of the program presented herein are consistent with the Bank's policy in this regard.
- 1.12 Federal law regulates water resources management and protection of water sources. However, the supervision and implementation of this federal law is the responsibility of the States; in the case of the Federal District this is done through SEMARH. Today, SEMARH does not have a specialized unit for the supervision and enforcement of federal laws on these topics.

F. Bank and country strategy in the sector

- 1.13 The federal government's strategy for the sector aims to establish a new legal, institutional, and financial framework for the delivery of basic sanitation services. The federal government is now sending two bills to the national congress: one to determine the issue of ownership of the services in metropolitan areas and one to set conditions for service delivery.

- 1.14 Bank activities in Brazil for the period 2000-2003 will focus on four strategic areas: State modernization, competitiveness, poverty reduction, and the environment. In the area of State modernization, the Bank will advance its administrative and fiscal modernization activities at the federal, state, and municipal levels. For competitiveness, efforts will be made, *inter alia*, to revive investment in infrastructure and establish appropriate regulatory frameworks. The fight against poverty involves implementing and furthering reforms in the social sectors, including urban and municipal development, to improve the efficiency, equity, and quality of the services provided to the people. Specifically, in the sanitation sector, it will continue to support the establishment of regulatory frameworks that promote long-term self-sustainability, access by broad sectors of the population to service, the involvement of private initiative, increased efficiency in service delivery, and environmental protection. Finally, Bank activities on the environment place special emphasis on urban sanitation, including water, sewerage, wastewater and solid waste disposal, and environmental pollution in general.

G. Bank involvement in the sector

- 1.15 Bank involvement in the sanitation and environmental protection sector in Brazil is reflected in its 24 loans totaling US\$2.2 billion. The loans benefit over 30 million primarily low-income persons, by providing access to water supply, sanitary sewerage, storm drainage, and solid waste collection and disposal services. Specifically in the Federal District, the Bank has been involved in the following projects: (i) the operation financed through loan 296/SF-BR executed phase one of the Descoberto River water supply project; (ii) funds from loans 526/OC-BR and 814/SF-BR, for US\$80 million and US\$20 million respectively were used to execute the program to expand and improve water supply and sewerage systems in Brasilia, approved in 1987; and (iii) funds from loans 622/OC-BR and 856/SF-BR financed the social action program in sanitation (PROSEGE), which built two sanitary sewerage systems in the Federal District.
- 1.16 In the most recent project (loans 526/OC and 814/SF), completed in 1997, the Federal District Government was the borrower and CAESB, the executing agency. The project completion report (PCR) made a series of recommendations, including some highlighting execution risks that arise when a project requires close cooperation between agencies at different levels of government. In that case, difficulties arose between the Caixa Econômica Federal [Federal Economic Agency] (CEF), the agency responsible for the local counterpart contribution, and the Federal District Government, which delayed project execution and pushed back its completion by four years. Another fact that contributed to the extension of the execution period was the insufficient technical quality of some of the drawings; because of this, additional studies had to be conducted during the construction of the works. Nonetheless, the program achieved virtually all of its objectives and the physical goals established did generate the operating results anticipated at the outset. The financial conditions established in that operation (coverage of operating

costs, maintenance, and depreciation and return on fixed assets over 3.5%) that CAESB was not meeting in 1997, are being met today. The lessons learned from the program have been incorporated into this operation through: (i) a tighter institutional plan for execution, maintaining the operating and/or contractual hierarchy among the participating agencies and concentrating the counterpart contribution obligations in the Federal District Government and CAESB, which is directly attached to the Federal District Government; and (ii) the final drawings will be available when the project is approved.

H. Program conclusions and strategy

- 1.17 Although the Federal District Government is seeking to prevent haphazard population growth in the future by implementing a Master Plan for Land-use Management, current infrastructure is insufficient, due to accelerated urbanization resulting from migration and a housing policy that ultimately led to new waves of migration. Urban infrastructure shortfalls in the Federal District affect in particular the recently-urbanized sectors occupied by low-income populations and cause health and welfare problems, because of the lack of water supply and sewerage and protection against flooding during the rainy season. In addition to these infrastructure deficiencies, there are also institutional weaknesses. With regard to this program, it should be noted that there is no effective separation between regulatory functions and water supply and sewerage service delivery, and there is no entity to guarantee compliance with federal regulations on water resources management and protecting water sources. As a result, the Federal District needs a program to supplement its sanitation infrastructure and strengthen the agencies responsible for promoting adequate environmental quality and water and sanitation services.
- 1.18 The program is designed to improve the following public utilities in the Federal District: water supply, sanitary sewerage, wastewater treatment, and storm drainage. The program's strategy is two-fold: first, these services will be equipped with the necessary infrastructure; and second, an adequate regulatory framework will be promoted for quality control, including proper environmental and water resources management.
- 1.19 In terms of the institutions involved in the program, in general their current operational and financial performance is satisfactory. As a result, no radical changes are going to be promoted; instead the institutions will be strengthened to enhance their performance. In the specific case of CAESB, the program will support private-sector participation through the sale of part of its social capital; this is not a policy measure that was decided on with the Bank, but rather a response to the financial goals of the Federal District Government. Unlike other private-sector participation initiatives, this concrete process should not be viewed as a necessary condition for ensuring the agency's financial viability or for adequate service delivery. In reality, the potential sale of CAESB shares is contingent upon the

performance contract signed between the Federal District Government and the federal government in the Fiscal Adjustment Program. One goal of that program is the sale of shares of the agencies in which the Federal District Government has a stake, as a way to generate resources to meet some of the Federal District Government's obligations to the federal government.

- 1.20 Thus, the sale of CAESB shares should be viewed as a simple public-sector disinvestment process. In other words, the program would be perfectly workable without the sale of shares; it is simply taking advantage of this Federal District Government initiative, as the sole shareholder in CAESB, to add an additional control element in the agency and bring in resources that will further improve the Federal District Government's financial situation.

II. THE PROGRAM

A. Objectives and goals

2.1 The general objective is to improve sanitation for the inhabitants of the Federal District by expanding the existing sanitation infrastructure and strengthening the service providers. This will be achieved through the following specific objectives:

- a. Expand coverage and improve management of water supply, sanitary sewerage, and wastewater treatment services.
- b. Expand current stormwater collection and drainage coverage.
- c. Support the establishment of an adequate framework for environmental management and the efficient provision of water supply, sanitary sewerage, and wastewater treatment and disposal services.

2.2 The program targets are as follows:

- a. **Service coverage.** Increase the number of water and sewerage connections by 30,000 and 15,000 respectively; with the current population, coverage will rise from 91% to 95% for water supply and from 88% to 90% for sewerage. In terms of wastewater, the target is to increase the volume treated by approximately 30 million m³ per year, increasing treatment levels from 62% to 95%.
- b. **Water quality in bodies of water receiving effluent.** Reduce biochemical oxygen demand (BOD) and coliform bacteria levels and raise dissolved oxygen (DO) levels in the Melchior system bodies of water and in the Ponte Alta en Gama River by the end of treatment works construction as follows:

	BOD (mg/l)	DO (mg/l)	Coliform (MPN/100ml)
Melchior System	From 276 to 11	From 0 to 4	From 1.23 E7 to 2.72 E3
Ponte Alta	From 86 to 8	From 6 to 7	From 2.34 E7 to 2.41 E4

- c. **Service management.** Improve the institutional incentive structure through private-sector participation in the services for more efficient management. In particular, support the current CAESB staff downsizing process – the staff at the end of 1999 was 4,600, has been reduced to 3,871 at present, and is expected to be cut to 3,350 by the end of 2003; reduce unaccounted-for water from the

current level of 24% to 20% at program's end; and reduce the overdue accounts-currently three months of billings – to a maximum of one month.

- d. **Storm drainage.** Eliminate the problem of periodic flooding and/or erosion caused by heavy rains at ten critical points identified for the areas in which the drainage works will be built.
- e. **Regulation and control.** Launch the regulatory agency for water supply services; have SEMARH fully performing its environmental control functions; and prepare a master water resources plan for the Federal District Government that will make it possible to enforce the recent federal law on the use of these resources.

B. Program structure

2.3 The program totals US\$260 million and is broken down into three subprograms.

2.4 **Subprogram 1: Increasing coverage and improving management of water, sewerage, and wastewater treatment services.** The direct cost of this subprogram is US\$81.2 million, and it has 3 components:

- a. **Water supply.** Investments for this component total US\$36.3 million and involve rehabilitation works for the Brasilia water treatment plants, improvements to the Contagem-Sobradinho conduit, construction of the Contagem-Paranoazinho-Sobradinho water treatment plant, construction and improvement of supply systems for various low-income housing complexes, the sectorization and upgrading of distribution systems in Lago Sul, and the completion of the Pipiripau water supply system;
- b. **Wastewater.** The investment for this component is US\$43.4 million to build the sewerage systems, pumping stations, and intercepting sewers for the localities of Gama, Planaltina, Lago Sul and Lago Norte and the treatment plants for wastewater and outfalls from the Melchior and Gama systems; and
- c. **Increasing efficiency.** The investment for this component is US\$1.4 million, to be divided among three activities. The first is the preparation of a strategic planning study to modernize the business sector and improve customer service and the overall organization of the enterprise. This study is expected to make concrete recommendations on increasing efficiency, including the necessary recommendations on reducing staff size. The second activity supports the sale of shares of up to 49% of its capital to the private sector, a process in which CAESB is involved. This process is expected to provide shareholders with adequate market incentives for adopting the efficiency-enhancing measures identified in the strategic planning study. These advisory services would calculate the value of the shares, make a recommendation as to the format and characteristics of the sale, and provide support for CAESB throughout the

process. The third activity is the preparation of CAESB's master water and sewerage plan.

- 2.5 **Subprogram 2: Flooding and erosion control.** The subprogram has a direct cost of US\$114 million and includes road paving and storm drainage works in the localities of Santa Maria, Samambaia, São Sebastião, Recanto das Emas, and Riacho Fundo II.
- 2.6 **Subprogram 3: Improving the regulatory framework for public utilities, water resources management, and environmental management.** The direct cost of this subprogram is US\$4.7 million. It involves: (i) establishing a regulatory agency for water supply and sanitation services, including nonrecurring expenses for the launching of a small, efficient, and independent regulatory agency; (ii) establishing the Water Resources Regulatory Agency and implementing the Federal District water resources program, which includes an integrated water resources management and monitoring plan; (iii) implementing the Federal District environmental management program, which includes plans to monitor the Lake Paranoá basin and protect the Aguas Emendadas Ecological Reserve; and (iv) implementing the SEMARH institutional development program, which includes environmental education and human resources training programs.

C. Cost and financing

- 2.7 The total cost of the proposed program is estimated to be equivalent to US\$260 million. The breakdown by source of financing and investment category is as follows:

PROGRAM COST (in thousands of U.S. dollars)				
CATEGORIES	TOTAL PER FUND			
	IDB-OC	LOCAL	TOTAL	%
I. ENGINEERING AND ADMINISTRATION	5,129	-	5,129	1.9
Studies and consulting services	865	-	865	0.3
Supervision and administration	4,264	-	4,264	1.6
II. DIRECT COSTS	107,400	92,422	199,822	76.8
Subprogram 1	61,047	20,111	81,158	31.2
Water supply	27,094	9,239	36,333	13.9
Wastewater	33,953	9,418	43,371	16.7
Increasing efficiency	-	1,454	1,454	0.6
Subprogram 2	41,669	72,311	113,981	43.8
Erosion and flood control	41,669	72,311	113,981	43.8
Subprogram 3	4,685	-	4,685	1.8
Improving regulations and environmental control	4,685	-	4,685	1.8
III. ASSOCIATED COSTS	300	1,000	1,300	0.5
Land and easements	-	1,000	1,000	0.4
Auditing and evaluations	300	-	300	0.1
IV. UNALLOCATED	15,871	8,518	24,389	9.4
Contingencies	10,533	8,518	19,351	7.3
Escalation	5,337	-	5,337	2.1
V. FINANCIAL COSTS	1,300	28,064	29,364	11.3
Interest	-	26,326	26,326	10.1
Credit fee	-	1,735	1,735	0.7
Inspection and supervision	1,300	-	1,300	0.5
TOTAL	130,000	130,000	260,000	100.0
%	50	50	100	

2.8 The program's main investment categories are described below:

1. Engineering and administration (US\$5.1 million)

2.9 This item, which accounts for 1.9% of the total program cost, is made up of the following categories:

- a. **Studies and consulting services (US\$0.9 million).** This includes the consulting services needed to support the drafting of the master drainage plan.
- b. **Supervision and administration (US\$4.2 million).** This includes the hiring of specific consulting services to support the executing agencies in program management and supervision, the cost of the equipment needed to supervise the works, the expenses of the executing unit, and those related to program dissemination.

2. Direct costs (US\$199.8 million)

2.10 This category accounts for 76.8% of the total program cost and includes the following subcategories:

a. **Subprogram 1 (US\$81.1 million).** This subprogram represents 31.2% of the total program cost and has three components:

(i) **Water supply (US\$36.3 million).** This component includes the labor, materials, and equipment needed for the procurement, transport, laying, and testing of piping and the execution of the civil works, inspection chambers, and masonry works to expand the water supply distribution system in the Federal District. It also includes labor, materials, and equipment for execution of the civil works and the supply and installation of electromechanical equipment at the pumping stations and water treatment plants.

(ii) **Sewerage and wastewater (US\$43.4 million).** This includes the labor, materials, and equipment needed for the procurement, transport, laying, and testing of piping and the execution of the civil works, inspection chambers, and masonry works to expand the wastewater sewerage system in the Federal District. It also includes labor, materials, and equipment for execution of the civil works and the supply and installation of electromechanical equipment at the pumping stations and water treatment plants.

(iii) **Increasing efficiency (US\$1.4 million).** This component involves contracting the strategic planning study and advisory services for the sale of CAESB shares and for the Federal District water and sewerage master plan.

b. **Subprogram 2 (US\$113.9 million).** This subprogram represents 43.8% of the total program cost and includes the labor, materials, and equipment needed to execute the paving, civil works, tunnels and channels, inspection chambers, and masonry works, as well as the procurement, transport, laying, and testing of piping to expand the drainage system.

c. **Subprogram 3 (US\$4.7 million).** This subprogram represents 1.8% of the total program cost and includes contracting the following studies: (i) master water resources plan for the Federal District; (ii) regulatory framework for public utilities in the Federal District; and (iii) SEMARH human-resources training and environmental education programs.

3. Associated costs (US\$1.3 million)

- 2.11 This category accounts for 0.5% of the total program cost and includes the price of the land needed for the different works and the required auditing and evaluations. The price of the land was calculated based on the area required for the different works and the unit cost of recent CAESB procurements.

4. Unallocated (US\$24.4 million)

- 2.12 This category represents 9.4% of the total program cost and includes a potential increase in costs, due to contingencies in the specific program components. Contingencies were estimated at 10% of the direct costs. Escalation was calculated based on the exchange and inflation rates forecast for the period.

5. Financial costs (US\$29.4 million)

- 2.13 This category represents 11.3% of the total program cost for: (a) the interest accrued during the execution period; (b) the corresponding credit fee; and (c) Bank inspection and supervision expenses for the program.

D. Program financing

- 2.14 The Bank, applying the financing matrix for the country, will contribute 50% of the total program cost, which is equivalent to US\$130 million from the Bank's Ordinary Capital, to be disbursed in foreign currencies in keeping with Bank policy. The local contribution, equivalent to US\$130 million, or 50% of the total program cost, will come from two sources: CAESB will contribute US\$20 million and the Federal District Government, US\$110 million.
- 2.15 The terms of the loan are as follows: (i) variable interest rate; (ii) credit fee of 0.75%; (iii) inspection and supervision fee of 1%; (iv) disbursement period of five years; (v) grace period of five years; (vi) amortization period of 25 years; and (vii) currency pool.

III. PROGRAM EXECUTION

A. Borrower, guarantor, and executing agency

- 3.1 The program borrower would be the Government of the Federal District and the guarantor, the Government of the Federative Republic of Brazil. The Department of Infrastructure and Physical Works of the Federal District is responsible for program execution, for which it will establish a program management unit (PMU) linked to the Secretary's Cabinet.

B. Execution plan

- 3.2 The PMU will be the only party to communicate with the Bank and will coordinate the activities of the two co-executing agencies: CAESB and NOVACAP. CAESB will be responsible for the water supply and sewerage works, since it is the service-delivery agency; and NOVACAP will be in charge of the drainage and paving works, since it has traditionally executed infrastructure works for the Federal District Government.
- 3.3 The PMU will be responsible for general program planning, financial administration, and the preparation and presentation of all the reports required by the Bank. A condition precedent to the first disbursement is that the PMU be established, and the staff agreed on with the Bank assigned or hired. The PMU will be made up of three professionals: a general coordinator, an administrative/financial specialist, and a technical specialist. The unit will also directly execute the studies related to the Department of Physical Works and SEMARH and will be responsible for coordinating with other Federal and Planning District Government agencies that could be important to proper program execution, such as the Finance and Planning Department and the Attorney General's Office. The PMU will also be responsible for: (i) transferring the funds to the co-executing agencies; (ii) requesting the corresponding rendering of accounts from the co-executing agencies; (iii) coordinating information needs with the co-executing agencies, in order to implement financial and accounting controls on program execution and prepare the program's financial statements, as required by the Bank.
- 3.4 Two separate local management units (LMUs) will be set up within the two co-executing agencies (CAESB and NOVACAP); they will provide advising on the execution of the works and other specific program activities, within their spheres of competence. The LMUs will be made up of three professionals each: a general coordinator, an administrative/financial specialist, and a technical specialist. The LMUs will also have the full support of the institutions that make them up. In executing the different components, the LMUs will be responsible for preparing the respective bidding documents and calls for bids for the construction works and/or purchasing related goods and services; conducting the bidding process; and

preparing the respective contract. Furthermore, the LMUs are responsible for hirings, which includes preparing the terms of reference; specific consulting services and the control and technical supervision of the works and studies contracted. Each LMU will be responsible for: (i) establishing separate, specific bank accounts for managing the financing and local counterpart resources (when appropriate); (ii) periodically rendering accounts to the PMU; and (iii) establishing and maintaining a proper filing system for all documents supporting eligible program expenses; those documents must be available for review by Bank staff and the program's external auditors.

- 3.5 To support the PMU and LMUs in program execution, a consulting firm that specializes in managing works will be hired; its main function will be to support the executing units in tasks related to planning, support, and control of program startup and development.
- 3.6 A condition precedent to the first disbursement is proof that the program management unit (PMU) and the CAESB and NOVACAP LMUs have been set up with the assigned personnel and the contract for the consulting firm has been awarded.
- 3.7 For program execution, the movement of loan funds will be formalized in two (2) agreements prepared in keeping with models approved by the Bank, between: (i) the Federal District Government and CAESB for the construction and maintenance of the water supply, sewerage, and wastewater treatment works, the transfer of funds, the borrowing of the counterpart contribution, and repayment of the loan; and (ii) the Federal District Government and NOVACAP for the construction and maintenance of the storm drainage and paving works. The transfer of funds to CAESB will be made under the same Bank lending conditions, including the exchange risk. The aforementioned agreement also provides for a mechanism to guarantee that CAESB will repay the loan from the Federal District Government; it involves an agreement between CAESB, the Federal District Government, and the Banco de Brasilia (BRB), as a broker, in which the latter secures for the Federal District Government the revenue from the services if CAESB does not make the debt service payments for the part of the loan transferred to it, minus any payments that the Federal District Government may owe CAESB. A signed copy of these agreements will be required prior to the first disbursement.

C. Level of program preparation

- 3.8 The final drawings of the different works to be executed were prepared based on the master plans on water supply, wastewater collection and disposal, and drainage and paving. All the projects have been concluded, and there are execution drawings. A socio-economic analysis was conducted using the amounts for the works determined in the basic and execution projects. Unit prices were calculated as of

September 2000. The drainage and paving projects to be financed were prioritized based on economic criteria.

- 3.9 Consulting services will be contracted within 18 months of signing the contract to prepare: (i) an environmental monitoring plan for the Paranoá basin; (ii) a water resources monitoring program for the Federal District; and (iii) a study for the Standardization and Optimization of Environmental and Multimedia Environmental Education Methods. The corresponding terms of reference have been prepared, and the consulting firms selected for this task must have broad international experience in the subject under study.
- 3.10 To prepare the preliminary draft regulatory order for the regulatory framework for water supply and wastewater collection and treatment services in the Federal District, a specialized firm will be hired to: (i) assess the current status of regulation and control of the delivery of sanitation services; (ii) present the needs of the legal framework to achieve the regulatory objectives; (iii) present alternatives and an analysis of the institutional regulation plans; (iv) present the structure of the regulatory agency and its relationship to other utility regulatory agencies, such as the Department of the Environment, to avoid the duplication of functions; (v) prepare the terms of reference of the regulatory agency's technical staff; (vi) present financing options for the agency; and (vi) present a plan for disclosure to the interested parties, including the executive and legislative branches of the Federal District, CAESB officials, and users, so they may discuss the advantages of the proposed plan.
- 3.11 To ensure the success of the sale of shares, the different stages of the offering will be coordinated, insofar as possible, with the implementation of the regulatory framework for water supply and sewerage services. In other words, prior to the launching of the offering, the Federal District Government is expected to have issued the decree defining the regulatory agency's organization and ensuring its independence.

D. Status of land, rights, and easements

- 3.12 In general, the proposed program will pose no significant problems in terms of procuring land, since most of the works, such as the water supply, sewerage, and drainage systems, will be built along public roadways. However, US\$1 million in land will have to be procured.
- 3.13 No difficulties or conflicts are anticipated in the procurement of the land needed for program execution, since by law land can be expropriated for a public purpose. Nonetheless, prior to the call for bids for specific works, the executing agency must prove ownership and the availability of the necessary land for construction.

- 3.14 While no families are expected to be resettled as a result of program execution, for works for the Pipiripau water production system, the contracts cannot be signed until the farmers located in the protection area around the catchment site have been compensated.

E. Execution period and disbursement schedule

- 3.15 The disbursement period for loan resources is five years. After all the conditions precedent to the first disbursement have been met, the Bank can advance resources from the financing to establish a revolving fund of up to a maximum of 5% of the loan amount. Those resources must be managed in a special bank account in the program's name. The PMU must present, within 60 days of the end of each six-month period in the calendar year, consolidated reports on the status of resources in the revolving fund in its control and in each of the LMUs. The following table summarizes the program investment schedule.

PROGRAM INVESTMENT SCHEDULE (in millions of US\$)				
YEAR	IDB	LOCAL	TOTAL	%
1		7,238	7,238	2.8
2	57,709	50,267	107,976	41.5
3	51,035	47,007	98,042	37.7
4	10,479	13,382	23,861	9.2
5	10,777	12,106	22,883	8.8
TOTAL	130,000	130,000	260,000	100.0
%	50	50	100	

F. Bidding procedures and schedule

- 3.16 The procurement of goods and related services and contracting of the construction works will be consistent with the Bank procedures set forth in Annex B to the loan contract. International competitive bidding will be mandatory for procurements valued at over US\$350,000 for goods and related services and at US\$5 million for construction works. These amounts are consistent with those recommended by the Bank's Procurement Unit for this sector in Brazil. Competitive bidding under those amounts will be carried out based on national law, provided it is consistent with Bank procedures. With these cut-off points, an estimated 70% of all bidding anticipated for program execution will be by international bidding. Consulting services will be engaged in keeping with the procedures set forth in Annex C to the loan contract. Contracting of works and services will be grouped together as indicated in Annex V.

G. Recognition of previous expenditures

- 3.17 The Federal District Government has requested that the Bank recognize as part of the local counterpart contribution the expenditures made since June 1999 to contract the drainage, road paving, water supply, sewerage, and wastewater treatment works included in the program for up to US\$7.2 million. The analysis mission confirmed that the bidding for those works was conducted in accordance with Bank policies on the matter.

H. Environmental considerations

- 3.18 The Technical Review group of the Committee on Environment and Social Impact (CESI/TRG) considered the project's environmental and social impact brief on 16 June 2000, and the Committee's recommendations and observations from the orientation mission were borne in mind when preparing this operation. The Federal District environmental licensing system implemented through SEMARH, which is consistent with the National Environmental Policy, requires environmental impact assessments (EIAs) for water supply and sewage treatment programs. The respective EIAs were presented to the communities through public hearings and were transmitted to the PICs (at Headquarters and in the Country Office in Brazil) on 29 July 2000. No EIA was requested for the drainage and paving program. SEMARH is in the final phase of clearing past permits and reviewing renewal of building permits for the works. Program works have been issued licenses by SEMARH. The CESI/TRG considered the program's environmental and social impact report (ESIR) on 22 September 2000. The CESI/TRG recommendations were taken into account in the program's preparation.
- 3.19 These recommendations focus on the following points and were incorporated into the program: the preparation of the integrated water resources management plan, which must be contracted out within 18 months of the signature of the contract; establishment of the District Water Agency, which will begin 24 months from signature of the contract; information to the affected community about the construction and operation of the works and fee and environmental-quality dimensions to be financed with program resources; monitoring the implementation of mitigation measures that will be the subject of annual reports on implementation, costs and efficiency of the measures to mitigate the works' negative environmental impacts.
- 3.20 Evidence that facilities licenses have been issued will be a condition precedent to the works tendering process. For the paving and drainage works, NOVACAP is reviewing the project's technical specifications and incorporating the impact mitigation measures. Evidence of these changes will be a condition precedent to bidding out the respective works.

I. Program monitoring and evaluation

- 3.21 Control and monitoring of program execution will be done through the Bank's Country Office in Brazil. The executing agency will present an initial report to the Bank, which must include an update to the Logical Framework presented in Annex I. It will also submit annual progress reports. If program execution is not satisfactory, the executing agency must present to the Bank, within 60 days of the latter's recommendations, the corrective measures it will implement and the corresponding calendar. If necessary, the Country Office will refuse to authorize further bidding until the corrective measures presented are adopted.
- 3.22 The annual progress reports that the PMU will present to the Bank within the first 90 days of each year must include the progress made in the indicators in the logical framework, the status of compliance with contractual clauses, the program's physical and financial progress, and progress made in the activities to mitigate the environmental impact, in keeping with the environmental monitoring plans approved by SEMARH. Within 120 days of the end of the fiscal year, the financial statements for the program and CAESB must be submitted. Those financial statements will be presented throughout program execution and are to be duly audited by an independent auditing firm acceptable to the Bank; the auditing costs will be funded using the Bank financing. In addition to giving their opinion on the financial standing of the program and CAESB, the auditors will weigh in on compliance with the financial clauses. Furthermore, an environmental audit will be conducted annually to verify compliance with the contract's environmental clauses.
- 3.23 The reports prepared by the Country Office on the status of the loan will record any problems that arise during project execution and the solutions implemented. A summary of these elements will be included in the annual report on the Bank's portfolio in Brazil. There can be an ex post review or review by sampling of requests for disbursements; however the Country Office reserves the right to return to the traditional method of reviewing such requests, if necessary.

J. Ex post evaluation

- 3.24 The Federal District Government will compile and process data for a possible ex post evaluation of the program. The evaluation will be conducted using a similar methodology to the one employed for the ex ante analysis, including a cost-benefit and internal rate of return analysis and other relevant socio-economic results. The data compiled will be submitted to the Bank in annual reports, starting in the first year of execution. The first report will present a detailed description of the procedures used to compile and process the data and must include: (i) budgeted and real cost of the works; (ii) number of households actually connected to the water supply and sewerage services; (iii) chemical/physical properties of effluents from the treatment plants; (iv) cost and effectiveness of the measures to reduce the environmental impact; (v) incidence of acute diarrheal disease in children under 5

in health centers in the program area; and (vi) incidence of other water-borne diseases in health centers in the program area.

IV. FINANCIAL AND INSTITUTIONAL ANALYSIS

A. Government of the Federal District

1. Main characteristics and organization

- 4.1 The Federal District has a population of nearly two million in an area just under 6,000 km². Within the Federal District is the city of Brasilia, which is the capital of the Federative Republic of Brazil and the seat of the federal executive, legislative, and judicial branches and the different diplomatic missions. As a result, the Federal District Government differs in some ways from the other states in Brazil, such as its designation as a state and a municipality and the fact that it receives funds from the National Treasury to provide for public safety, education and health services. Economic activity in the Federal District is concentrated in the business and services sector, which represents 93% of the state GDP. Industrial activity accounts for only 7%, and agricultural activity is almost nonexistent.
- 4.2 The Federal District Government has approximately 145,000 public officials; of those, 109,000 are active employees, which represents the highest ratio of public officials per inhabitant in the country. The Federal District Government is structured around the 24 departments, seven public and semi-public agencies, two foundations, eleven independent authorities, and one bank.

2. Financial situation

- 4.3 The following table provides a summary of the results of annual budget execution for the period 1996-1999 in millions of U.S. dollars. The substantial drop in the figures in 1999 is the result of the conversion of U.S. dollars because of the change in the exchange rate in that year; however this does not mean that there was the same drop in those amounts in local currency. The exchange rates used were R\$1.00/US\$1.00 for 1996, R\$1.10/US\$1.00 for 1997, R\$1.20/US\$1.00 for 1998, and R\$1.80/US\$1.00 for 1999.

FDG BALANCE SHEET (in millions of U.S. dollars)				
	1996	1997	1998	1999
Current income	3,381	3,267	3,410	2,459
Current expenditures	(3249)	(3101)	(3176)	(2,274)
Financial expenses	(73)	(63)	(74)	(29)
Current savings	59	103	160	156
Debt amortization	(43)	(33)	(70)	(28)
Current profits	16	70	90	128
Capital earnings	84	196	160	4
Available for investment	100	266	250	132
Investments	(303)	(327)	(265)	(96)
Surplus or deficit	(203)	(61)	(15)	36

- 4.4 As seen above, the Federal District Government's financial situation is gradually improving, resulting in current profits in 1999 of US\$132 million, due basically to a rebounding of current savings by increasing tax collection and cutting expenses.
- 4.5 The Federal District Government has two major sources of revenue: tax collection, which accounted for 36% of revenue in 1999, and transfers from the Federal Government, accounting for 54%. As a result of tax reforms that lowered tax rates but increased collection and broadened the taxpayer base, tax revenue in 1999 rose 11% over the previous year. Transfers from the federal government for public safety, education, and health were legalized in 1998 through a constitutional amendment that eliminated the risk that existed until then of a serious federal government crisis or political crisis between the federal and district governments endangering these transfers, which would affect the financial stability of the Federal District Government.
- 4.6 Roughly 74% of current expenditures are for personnel expenses; federal government transfers cover approximately two-thirds of that amount. The Federal District Government has one public official for every 13 inhabitants -- a much higher ratio than the national average of 1 per 50 inhabitants, although one can argue that the particular characteristics of the Federal District justify a high number of public officials.
- 4.7 The ratio of the Federal District Government's debt (US\$577 million in 1999) to its revenue is low compared to other states. However, due to its short-term maturity structure and the impact on the availability of resources for normal government activities, there was a restructuring in 1999 brokered by the federal government. As a result, US\$300.5 million was refinanced for a 30-year term and US\$75.2 million for a 3-year term.
- 4.8 At the same time, the Federal District Government agreed on a Fiscal Adjustment Program with the federal government that seeks to boost tax collection, reduce

personnel expenses, and establish a mechanism of ratios for sustained debt growth. The main commitments made by the Federal District Government in the Fiscal Adjustment Program and the current status of its fulfillment are summarized in the following table:

CURRENT STATUS OF THE FULFILLMENT OF THE INDICATORS IN THE FDG PERFORMANCE AGREEMENT WITH THE FEDERAL GOVERNMENT	
Commitment	Current status
The existing debt at the time of the restructuring remains below a real liquid income ceiling ¹ that falls from 25% in 2000 to 7% in 2012.	Ratio value as of 30 June 2000: 20%
Total debt remains below a real liquid income ceiling that rises from 33% in 2000 to 49% in 2002 and back down to 11% in 2012.	Ratio value as of 30 June 2000: 22%
Produce primary profits ² of 4% of real liquid income in 2000 and 2001.	Estimated ratio value for 2000 ³ : 2%
Personnel expenses are kept under 62% of current income in 2000 and 60% in 2001.	Ratio value as of 30 June 2000: 59%
Tax revenue rises 3.2% in 2000 and 3.9% in 2001.	Rise in tax revenue as of 30 June 2000: 26% (revenue from the first six months, annualized)
Investments remain below 10% of real liquid income in 2000 and 11% in 2001.	Ratio value as of 30 June 2000: 4%

- 4.9 In addition, the Federal District Government is part of the Support for Administrative and Fiscal Management of Municipalities program being financed by the Bank through loan operation 1194/OC-BR. This operation is helping to strengthen the tax functions of the Federal District Government by contributing technology and adequate processes and through more direct contact with taxpayers.

B. NOVACAP

- 4.10 NOVACAP, established in 1956, is a public enterprise governed by private law to coordinate and supervise the construction of Brasilia. Its purpose is to execute, for compensation, civil construction works and services for the Federal District; it can also be contracted directly by other public and private agencies. More specifically,

¹ Real liquid income is calculated as the sum of current income and capital (excluding income from credit operations, disposal of property, and loan amortization).

² This is calculated as real liquid income (excluding financial revenue), minus current expenses and capital (excluding debt service).

³ Here, there will be a primary profit but it will not reach 4% of real liquid income as required for 2000. It is estimated that this minimum could be reached in 2001.

NOVACAP does design, budget preparation, execution, and control and maintenance for public works in the areas of education, culture, health, public safety, and urban infrastructure in general.

- 4.11 NOVACAP's shareholders are the Federal District Government (with a 56.12% stake) and the federal government (with the remaining 43.88%). Federal District Government shareholder control of NOVACAP is executed through the Department of Infrastructure and Physical Works, to which it is linked. NOVACAP is governed through a Shareholders' Assembly that appoints an Administrative Board, which in turn appoints the Director/President and the other Directors.
- 4.12 NOVACAP has 4,515 employees, divided among the Director/President's different advisory bodies and the four bureaus: construction, urbanization, administrative, and finance. The Construction Bureau programs, coordinates, and supervises civil works projects, buildings, and building preservation. The Urbanization Bureau programs, coordinates, and supervises urbanization projects and maintenance projects for urbanized areas. The Administrative Bureau is responsible for managing NOVACAP's assets and human resources. Finally the Finance Bureau manages the funds and monitors budget execution.
- 4.13 Regarding finances, most of NOVACAP's operating budget is from the general budget of the Federal District Government, which it receives through the Department of Infrastructure and Physical Works. NOVACAP also receives income from managing and supervising public works and from a portion of the property taxes.
- 4.14 NOVACAP is participating in the program as a co-executing agency, but assumes no responsibility for the loan obligations or the counterpart contribution. Its functions in the program will be to bid out the storm drainage and paving works, contract works with the private sector, and supervise the contractors; it will be specifically delegated by the Federal District Government to perform these functions, through an official agreement. These functions are part of NOVACAP's normal activities in executing its mission.

C. CAESB

1. Legal and organizational considerations

- 4.15 CAESB is a public enterprise governed by private law, established through Executive Order No. 524 of 8 April 1969. Its purpose is to implement activities in the sanitation sector, including the planning, execution, and management of water supply and wastewater collection and treatment systems. CAESB was also delegated to provide water supply and sewerage services in Brasilia in the aforementioned Executive Order.

- 4.16 CAESB has approximately US\$275 million in equity, which currently belongs entirely to the Federal District Government. CAESB's highest governing body is its Shareholders' Assembly, which elects 12 representatives who, together with the company's president, make up the Administrative Board.
- 4.17 As of May 2000, CAESB had 2,431 direct employees in the Office of the President and the four bureaus: water, sewerage, finance and business, and administrative. The Water Bureau employs 38% of the staff and is responsible for the expansion and operation of water supply service. The Sewerage Bureau employs 19% of the staff and is responsible for expanding and operating sanitary sewerage and wastewater treatment and disposal services. The Financial and Business Bureau employs 18% of the staff and is in charge of the agency's accounting and finances, data processing, and the business management of the services. Finally, the Administrative Bureau employs 21% of the staff and is responsible for human resources, supplies, transportation, and general services. The remaining 4% of the staff works for the Office of the President. In addition to its own staff, CAESB has roughly 1,440 freelancers spread out among the different areas of the enterprise.

2. Main operating indicators

- 4.18 CAESB currently serves 91% of the population in the Federal District for water supply service and 88% for sewerage service. Approximately 62% of wastewater is treated before final discharge. In terms of number of users, at the end of 1999 CAESB had 334,000 water supply connections and 311,000 sewerage connections; given the high density of multi-family buildings in the Federal District, this corresponds to a significantly higher number of users, who for that period totaled 702,000 for water supply and 665,000 for sewerage.
- 4.19 Water supply production in 1999 was 184 million m³, with a physical loss rate of 23%. Commercial losses are virtually nonexistent, since micromeasuring coverage is 99%.
- 4.20 The main weakness of CAESB in terms of its operating indicators is its large staff. At the end of 1999, CAESB had 4,600 employees (staffers and freelancers) or an average of almost 7 per 1,000 water supply users. CAESB has already begun to downsize; thus the total number of employees in July 2000 had already fallen to 3,871 and is expected to reach 3,350 by the end of 2003; however, this last figure may vary based on the findings of the strategic planning study that will be conducted as part of the program.

3. Rates and collections

- 4.21 CAESB's average rate (water, sewerage and treatment) in 1999 was US\$0.99 per m³ of water billings, which made it possible to cover 112% of operating costs, maintenance, and depreciation that year. The rate, which had not been updated since

1997, was revised at the end of 1999. As a result of that change, in 2000 CAESB has a new average rate of US\$1.06 per m³ of water billings.

- 4.22 With regard to collections, the percentage of billings collected has fluctuated around 95% in the last four years. CAESB's accounts receivable at the end of 1999 were equivalent to just under three months of billings, which is a reasonable rate, particularly since approximately half of the accounts receivable correspond to public agencies. In other words, of the US\$34 million in accounts receivable at the end of 1999, 44% corresponded to units of the Federal District Government and 15% to units of the federal government.

4. Financial situation

- 4.23 Below is the financial situation of CAESB for the period 1996-1999 in millions of U.S. dollars. The substantial drop in the figures in 1999 is the result of the conversion of U.S. dollars because of the change in the exchange rate in that year; however this does not mean that there was the same drop in those amounts in local currency. The following table summarizes annual performance. The exchange rates used were R\$1.00/US\$1.00 for 1996, R\$1.10/US\$1.00 for 1997, R\$1.20/US\$1.00 for 1998, and R\$1.80/US\$1.00 for 1999.

CAESB INCOME STATEMENT (in millions of U.S. dollars)				
	1996	1997	1998	1999
Operating income	228	228	209	145
Operating expenses	(164)	(164)	(157)	(106)
Operating profit	64	64	52	39
Depreciation	(41)	(40)	(38)	(24)
PBTI (1)	23	24	14	15
Financial income/(expenses)	(27)	(21)	(18)	(12)
PBT (2)	(4)	3	(4)	3
Taxes	(2)	(2)	(1)	(1)
Net performance	(6)	1	(5)	2

1. Profit before taxes and interest

2. Profit before taxes

4.24 CAESB's cash flow position is as follows:

CAESB CASH FLOW STATEMENT (in millions of U.S. dollars)			
	1997	1998	1999
INITIAL CASH	9	10	3
Operating cash	53	49	29
Interest	(21)	(18)	(12)
Debt amortization	(18)	(12)	(4)
Cash for investment	14	19	13
Investments in fixed assets	(36)	(55)	(18)
Other fees/(payments)	(1)	(2)	(2)
Other investments/(disinvestments)	(10)	(4)	(4)
Surplus/(Deficit)	(33)	(42)	(11)
New credit operations	20	32	9
Capital contributions	14	5	4
Net cash flow	1	(5)	2
FINAL CASH FLOW	10	5	5

4.25 As seen in the tables above, CAESB generated a profit in 1999, with 111% coverage of operating costs, maintenance, and depreciation in 1996, 112% in 1997, 107% in 1998, and 112% in 1999. In terms of cash flow, CAESB's rates have generated sufficient funds to be able to respond in a timely manner not only to payments for system operation and maintenance, but also to interest and debt-service payments.

4.26 As mentioned earlier, CAESB's accounts receivable represent just under three months of billings, which is a reasonable amount. In terms of its financial structure, CAESB's debt level is low, with a debt ratio of 25%. As a result, CAESB is considered to be financially sound.

V. PROGRAM FEASIBILITY

A. Environmental feasibility

- 5.1 The works to be executed under the project will help to improve the hygiene and health conditions and well-being of the populations. The works are targeted and defined, and permits have been requested, pursuant to current law. The EIAs prepared in order to obtain permits, the respective environmental control and clean-up plans, and the revision of the technical files for the paving and drainage works will incorporate measures to mitigate the potential environmental impact into the bidding conditions for the works and into system operations. Support for SEMARH, so that it may perform its environmental control functions well, and for the independent auditing system during execution of the works will facilitate the borrower's efforts to mitigate the negative environmental impact of these works.

B. Technical feasibility

- 5.2 The program is deemed feasible and justified from a technical standpoint, since it responds to the need to resolve flooding problems caused by insufficient drainage and public health and environmental pollution problems caused by the absence or shortage of water supply and wastewater collection, treatment, and disposal. The project's studies and final drawings were prepared in accordance with generally-accepted engineering principles and standards. The drawings prepared are for the lowest cost alternatives that are technically feasible.
- 5.3 The experience CAESB gained in executing the previous operation corresponding to loan operations 526/OC and 814/SF, and NOVACAP's experience in other programs similar to the one being proposed here guarantees the necessary technical and administrative capacity to execute the works. Furthermore, there are national and foreign enterprises trained to execute the works and supply the materials and equipment.
- 5.4 The execution schedule was developed bearing in mind the specifications of the works, the processing periods for prequalification and competitive bidding, and the experience gained by CAESB and NOVACAP while executing similar works.
- 5.5 The institutional strengthening component in the proposed program will help to ensure that once the works are constructed, they will be properly run and maintained.

C. Institutional feasibility

- 5.6 The program's institutional feasibility was analyzed from the standpoint of the capacity of the executing agency and sub-executing agencies to complete the

program's works, studies, and technical assistance activities. Their capacity to operate and maintain the facilities financed under the program was also examined.

- 5.7 Program execution at the Federal District Government level will be carried out through a unit of the Department of Infrastructure and Physical Works (the PMU), with the involvement of other units of the federal government – the Department of Finance and Planning, and Office of the Attorney General – to ensure that the necessary resources are available and to guarantee flexibility in the competitive bidding process. The PMU, which will communicate with the Bank on behalf of the Federal District Government, will be supported by the two co-executing agencies – CAESB and NOVACAP. A private firm will also support and provide advisory services to the PMU, CAESB, and NOVACAP. The outlining of the functions of each of these entities and proper coordination between them for decision making make it possible to foresee proper program execution.
- 5.8 CAESB already has experience executing Bank projects, since it implemented a project to expand its water and sanitation systems (LO-526/OC and 814/SF). Consequently, CAESB already has an executing unit that is familiar with Bank bidding and contracting procedures, which were implemented in executing the previous project. At the systems operation level, CAESB is already satisfactorily running and maintaining water supply and sanitation systems, including wastewater treatment plants. Based on that experience, CAESB is thought to have the capacity needed to operate and maintain the facilities built under the program.
- 5.9 NOVACAP also already has a unit for bidding out and contracting works, since it has already issued calls for bids that will be recognized as part of the local counterpart contribution for the program. In fulfillment of its mission, for many years NOVACAP has been maintaining storm drainage systems on behalf of the Federal District Government and has adequate capacity to do so.

D. Financial feasibility

1. The Federal District Government's borrowing capacity and ability to make the counterpart contribution

- 5.10 The Federal District Government will take on the full amount of the loan and the corresponding debt-service and local counterpart contribution obligations. Nonetheless, the part of the loan, debt service, and counterpart contribution corresponding to the water supply and sewerage works will be transferred to CAESB.
- 5.11 The following table projects the finances of the Federal District Government for the next five years in millions of current U.S. dollars. It does not assume any major changes from the current situation, with a rise in current income in 2001 of just 5% and expenditures held steady in real terms. Servicing the existing debt has been

adapted to the results of the recent restructuring, with a rise in the first three years, because of the 36-month debt.

**CASH-GENERATION CAPACITY OF THE
FEDERAL DISTRICT GOVERNMENT**
(In millions of U.S. dollars)

	2000	2001	2002	2003	2004	2005
Current income	2,690	2,800	2,884	2,970	3,059	3,152
Current expenditures	(2,446)	(2,462)	(2,496)	(2,532)	(2,569)	(2,506)
Financial expenses	(54)	(49)	(42)	(37)	(35)	(33)
Current savings	190	289	346	401	455	513
Debt amortization	(55)	(59)	(49)	(21)	(19)	(18)
Available to service new debt and invest	135	230	297	380	436	495

- 5.12 As seen above, current profits are on the rise and can be used either for investment or for higher debt service on additional borrowings – which include the Bank loan and are estimated at approximately US\$15 million in the first year it is callable, i.e. 2005. Regarding investment, the only project that currently affects Federal District Government resources is the construction of the metro. The construction work is being financed with Federal District Government resources, federal government contributions, and BNDES financing. The Federal District Government's contribution commitments for this are US\$40 million in 2000 and US\$9 million in 2001. In terms of new borrowings, the Federal District Government is within the parameters set during the debt restructuring, and the potential Bank loan was taken into account when calculating those parameters.
- 5.13 In addition to this improved financial situation, approximately US\$61 million of the US\$130 million loan will be transferred to CAESB; the corresponding debt service will therefore not be a burden to the Federal District Government. Likewise, CAESB will contribute approximately US\$20 million of the US\$130 million counterpart contribution.
- 5.14 The Federal District Government has already included in its proposed 2001 budget the amounts corresponding to borrowings and the local counterpart contribution, for the full amount for the year, apart from the portion that corresponds to CAESB. In view of the foregoing, Federal District Government borrowings for program implementation and for the corresponding counterpart contribution are considered financially feasible.
- 2. CAESB's borrowing capacity and ability to make the counterpart contribution**
- 5.15 CAESB will be responsible for the part of the loan that will finance the water supply and sewerage works (US\$61 million), as well as the local counterpart contribution for these (US\$20 million). The financial projections for CAESB used

the current rates, assuming that the value of those rates remains the same in real terms. There were no assumptions regarding the improved efficiency expected to result from the strategic planning study, the effect of the regulatory agency beginning to operate, or private-sector participation in the utility. The results of these financial projections, in terms of its income and cash flow statements, are presented in the following tables. The exchange rate for R\$/US\$ was estimated assuming an inflation rate differential of seven points between Brazil and the United States.

CAESB INCOME STATEMENT (in millions of U.S. dollars)						
	2000	2001	2002	2003	2004	2005
Operating income	151	155	161	168	173	177
Operating expenses	(108)	(110)	(115)	(120)	(123)	(126)
Operating profit	43	45	46	48	50	51
Depreciation	(23)	(22)	(23)	(23)	(22)	(21)
PBTI (1)	20	22	23	24	27	30
Financial revenue/(expenses)	(12)	(11)	(10)	(9)	(10)	(13)
PBT (2)	8	11	13	16	17	17
Taxes	(3)	(4)	(5)	(6)	(6)	(7)
Net profit	5	7	8	9	10	10

1. Profit before taxes and interest
2. Profit before taxes

CAESB CASH-GENERATION CAPACITY (in millions of U.S. dollars)						
	2000	2001	2002	2003	2004	2005
Operating cash	33	36	36	37	37	39
Interest on existing debt	(12)	(12)	(11)	(10)	(13)	(12)
Amortization of existing debt	(3)	(3)	(3)	(3)	(3)	(3)
Available to service new debt and invest	18	21	22	23	21	24

- 5.16 As seen above, the projections show a profit for CAESB, with coverage of operating, maintenance and depreciation costs rising gradually from 115% in 2000, to 117% from 2001 to 2003, 119% in 2004, and 121% in 2005.
- 5.17 In terms of cash flow, there is a net generation of resources for investment and debt servicing, enabling it to make the local counterpart contribution (US\$20 million distributed over five years, US\$6.2 million of which has already been recognized) and service the debt upon completion of program execution (approximately US\$7 million, starting in 2005). Another point in this favorable outlook is that CAESB is considering the possibility of selling shares to a third party, which would generate additional resources that could be used for investment or for the Federal District

Government to pay off early the portion of the debt that was refinanced for a 36-month term.

- 5.18 One condition in the loan contract is that the borrower and CAESB must commit to taking the necessary steps, acceptable to the Bank, to see that the revenue from the rates CAESB charges for its services are sufficient to cover 117% of the operating, maintenance, and depreciation costs of the services in the first two years of execution, and 119% in the third year, and 121% from the fourth year on. Those measures will involve revising existing rates, reducing costs, or a combination of the two. The marginal cost of providing the services will be taken into account in setting the rates. The borrower and CAESB also agree to maintain the collections rate at 95% of service revenue for the length of program execution. In any event, the resources generated from the rates charged must be sufficient for the timely and complete servicing of all of CAESB's financial obligations and the corresponding counterpart contribution for proper program execution.
- 5.19 CAESB's commitments to the Federal District Government for program execution will be formalized in a funds transfer agreement, which must be signed as a condition precedent to the first disbursement. The terms of the transfer of loan funds from the Federal District Government to CAESB (interest, grace period, and amortization period) will be the same as those governing the Bank's contract with the Federal District Government. In order to guarantee repayment of the debt to the Federal District Government, an agreement will be signed between CAESB, the Federal District Government, and the Banco de Brasilia, as a broker, in which the latter secures for the Federal District Government the revenue from the services if CAESB does not make the debt service payments for the part of the loan transferred to it. Evidence of the establishment of the collateral mechanism will be a condition precedent to the first disbursement of the loan.

E. Economic feasibility

- 5.20 A socio-economic evaluation was conducted for each of the program's subprojects. It was based on an economic cost-benefit comparison with and without the project. The program is composed of three types of subprojects: drainage and paving, water supply and sanitation, and just sanitation.
- 5.21 The costs considered in the evaluation were the incremental investment, operating, and maintenance costs, assessed at efficiency, cash, and currency prices. It also included the opportunity cost of the land used for the treatment plants, even though it belongs to the Federal District Government.

1. Drainage and paving

- 5.22 In the evaluation with no project, there are low-income residential neighborhoods (with foot traffic primarily) whose unpaved access roads flood, making them

difficult to use. Housing also floods sporadically, although the flooding is not major.

- 5.23 One benefit of drainage is that it enhances the well-being of the beneficiaries, by reducing property damage, the need to clean after each flood, and disturbances caused by flooding of the roadways. The value of these benefits was calculated based on willingness to pay (WTP). The WTP was determined by contingent valuation (CV); the average value was R\$18.3 per family per month for drainage and paving and R\$15.3 for just drainage (3.5% and 2.9% of income, respectively).
- 5.24 The WTP data was obtained through a representative survey. The data on the number of beneficiaries was obtained from the land registries and on-site inspection. Occupancy growth rates for the area were deduced from occupancy in the last five years. Similar rates were applied for the next five years and were gradually lowered through the 20th year of project operation, when the natural growth rate of Brazil is reached. The following table presents the results of the analysis of the projects that would be financed:

LOCALITIES	POPULATION (YEAR)		TOTAL COST (R\$1000)	NPV (R\$1000)	EIRR (%)
	2001	2022			
São Sebastião	33,351	55,518	9,957	7,922	22.1
Santa Maria	95,607	129,070	25,140	11,055	17.8
Samambaia	149,410	226,457	48,432	9,634	14.6
Recanto das Emas	132,353	226,295	52,480	4,857	13.4
Riacho Fundo II	21,032	91,772	16,035	337	12.2

2. Water supply

- 5.25 The projects to be financed under this program are: (i) adaptation of the ETA Brasilia main treatment plan; (ii) water supply for the populations in Sobradinho and Planaltina through the Pipiripau system; and (iii) optimization works in other systems, including supplementing water supply for the population of Sobradinho through improvements in ETA Contagem-Paranoazinho, construction of the Contagem conveyance line and R2 and R6 reservoirs, and the sectorization of Lago Sul and Planaltina.

a. ETA Brasilia

- 5.26 For the subproject to adapt the main ETA treatment plant, if there were no project, the quality of the water from the sources would change due to biotic processes in the Santa Maria reservoir, producing a high level of suspended solids (because of

high algae content) that were not present when the system was built. Since the Bank's last loan to CAESB, efforts have been made to control this problem through reforestation and controlling agricultural production in the basin that drains into the reservoir. Since satisfactory results were not achieved, a decision was made to change the treatment system.

b. Pipiripau system

- 5.27 Currently in the localities of Planaltina and Sobradinho, which will be served by the Pipiripau system, there is sporadic rationing, and water treatment costs are high: R\$0.10/m³ because of the cloudiness of the source. The project would eliminate rationing through 2012, when phase two of the proposed system would be built. The current sources would also be closed, thus lowering treatment costs to R\$0.04/m³.

c. Other systems

- 5.28 The principal objective of the other works to be carried out in other systems is to maximize system operations and increase supply by reducing losses.

d. Economic evaluation

- 5.29 For the economic evaluation of the ETA Brasília subproject, the benefits considered were: saving resources by reducing the loss of the water used to wash filters and reduced changing of household filters in housing connected to the system served from this source. The value of the recovered water was calculated as the long-term marginal cost of collection, conveyance, and treatment.
- 5.30 For the other projects the benefits considered were: increased use (using price elasticity) and more resources freed up, consistent with the cost savings mentioned in the previous paragraph. The data on current use and the freeing up of resources were obtained through a survey in the areas that would be served by the projects. Information on elasticity and future use was obtained from data in a survey in the Federal District, which was processed and used to estimate an econometric demand model (price elasticity -0.58 and income elasticity 0.32). Growth rates were deduced from land registry data from the last five years as follows: 1% for the Pipiripau system and 2.5% for São Sebastião.
- 5.31 The SIMOP model was used to calculate the net present value (NPV) and the economic internal rate of return (EIRR) of each project. The results are as follows:

NAME	COST (in millions of R\$)	NPV (in millions of R\$)	EIRR
ETA Brasilia	15.1	13.5	26.3
Pipiripau system	37.0	3.5	13.6
Other systems	19.3	67.2	30.9

3. Sanitation

- 5.32 The program proposes two types of subprojects: (i) a sewerage system with the respective wastewater treatment plant; and (ii) treatment plants in sewerage systems that are dumping wastewater into watercourses. For the former, without the project wastewater would be discharged into public waterways in 30% of cases, and septic tanks that contaminate the ground water would be used in the remaining 70%. For the latter, without the project there would be contaminated watercourses with a foul odor in riparian neighborhoods and villages.
- 5.33 For the first type of project, the benefits are that the well-being of the beneficiaries is enhanced, by improving the environment around the housing and health in the home, and resources are saved by eliminating septic tank maintenance and construction. In the second type of project, well-being is enhanced by improving the environment through the elimination of odors and the possibility of alternate use of the watercourses that are cleaned up, such as recreation. In watercourses with over 1 but less than 3 mg/l of dissolved oxygen, odors disappear, and those with over 3 mg could be used for recreation. The value of these benefits was assessed through WTP. The WTP was determined using the contingent valuation methodology much like in the drainage projects. The WTP value found was US\$19 per family per month for a sewerage system, US\$3.5 per family per month for rivers that can be used, and US\$0.8 per family per month for odorless rivers. The results of the economic evaluation are as follows:

NAME	PROJECT TYPE	COST (in millions of R\$)	NPV (in millions of R\$)	EIRR
Gama	Plant	8.6	0.9	14.1
Melchior system	Plant & Interc.	34.9	7.4	15.4

4. Sensitivity analysis

- 5.34 A sensitivity analysis of the benefits was conducted, in particular on the estimated parameters that could have an impact on the result of the economic evaluation. Those parameters are price elasticity in the water supply projects and willingness to pay (WTP) in the wastewater disposal and drainage projects. A cost-sensitivity analysis was also conducted.

- 5.35 This analysis consisted in determining parameter values that would make the project unfeasible. Then, the probability of such values occurring was calculated. The feasibility results were strong, except in the Riacho Fundo II and Pipiripau system subprojects, which may possibly be unprofitable, however that is not very probable.

5. Incentives for rational use of the services

- 5.36 CAESB has good micromeasuring coverage: 99%; and it starts charging for m^3 used at $10 \text{ m}^3/\text{month}$. This structure encourages rational water use.
- 5.37 With regard to the rate structure, CAESB's system has specific rates depending on the type of user (residential, commercial, industrial, and government) and level of use. For residential use, the current structure has a rising marginal rate that goes from R\$0.64 per m^3 for the first 10 m^3 up to R\$6.10 per m^3 for 100 m^3 or more. For commercial use, the structure begins at R\$2.20 per m^3 for the first 10 m^3 up to R\$5.02 for more than 25 m^3 . The structures for industry and government are similar to the commercial sector, ranging from R\$2.56 to R\$3.44 and from R\$2.64 to R\$5.04, respectively.
- 5.38 The weighted average rate based on use is R\$1.40 for residential use and R\$3.02 for the other sectors. The long-term marginal economic cost is R\$1.58. It is subsidized for residential use up to 25 m^3 . However, only the first 10 m^3 have a high enough subsidy (R\$0.94 per m^3) for families with little ability to pay.
- 5.39 In conclusion, the rate structure for the residential sector suggests that the long-term marginal costs are consistent with the Bank's rate policy for utilities and is adequate to encourage the rational use of residential service. However, rates for the other sectors are high and could encourage the improper use of ground water and discourage the installation of industries or businesses in the region.

F. Analysis of beneficiaries

1. Ability to pay

- 5.40 The ability of the beneficiaries to pay for the water supply and sanitation system was calculated. It was not calculated for the drainage and paving projects, since there will be no cost recovery there.
- 5.41 The ability-to-pay analysis verified that the amount of monthly accounts for service was less than 5% of family income. The basic payment amount is R\$5.55. Based on income distribution data in Planaltina, where service will be implemented, 3.4% and 7.1% of families will have difficulty paying. This does not pose a financial problem for the water company, since these accounts represent less than 1% of the total. The families, in turn, could apply for the social rate of R\$3.5, not to exceed 5% of family income.

2. Impact on low-income groups

- 5.42 The proposed program qualifies as a poverty-targeted investment. The percentage of low-income beneficiaries is 53%, bearing in mind that the low-income level for Brazil is R\$118 per capita per month as of May 2000.

G. Benefits

- 5.43 The main program benefit is the improvement in basic sanitation services in the Federal District. For the population there, this translates into better coverage of water supply and sewerage services, proper discharge of wastewater, fewer incidences of flooding caused by heavy rain, and better control of soil erosion.
- 5.44 These benefits are obtained not only through the new infrastructure, but also through the institutional support lent to the responsible agencies, by both increasing efficiency in service provision and supporting planning to allow for adequate expansion in the future.
- 5.45 At the same time, the program helps to establish and strengthen an appropriate regulatory framework that ensures adequate quality in service delivery. This regulatory framework, together with the proposed financial-sustainability measures, should be sufficient to guarantee that the improvements made are sustainable.

H. Risks

- 5.46 Risks related to the financial sustainability of the services have been identified that could affect program success. In the past, both the Federal District Government and CAESB have experienced financial difficulties, which have an inevitable impact on the quality of the services provided. The Federal District Government rescheduled its existing debt and improved tax collection; and CAESB raised rates in both 1997 and 1999. As a result, the aforementioned financial difficulties have been overcome.
- 5.47 The risk of the Federal District Government again experiencing financial difficulties that impact the counterpart contributions and the availability of funds to properly maintain the storm drainage infrastructure is mitigated by the District Government's current sound position and the performance agreement signed with the federal government for maintaining and improving the infrastructure.
- 5.48 The risk of CAESB again having financial difficulties that would affect its ability to make the counterpart contribution and properly operate and maintain the facilities built under the program is mitigated by the recent rate change, the improvements in efficiency made as a result of the strategic planning study, and the influence of the private partner and regulatory agency for maintaining suitable efficiency in delivering services.

- 5.49 Lastly, risks of a regulatory nature have been offset by actions included in the program and the issuing of a decree that will define the organization of the regulatory agency and will ensure its independence, before the sale of shares begins. These actions are expected to promote the development of an appropriate system consistent with best practices in the area.

SANITATION PROGRAM FOR THE FEDERAL DISTRICT (BR-0345)

Logical Framework

NARRATIVE SUMMARY	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
OBJECTIVE To improve sanitation for the inhabitants of the Federal District and reduce environmental pollution.			
PURPOSE 1. Expand coverage and improve management of water supply, sanitary sewerage, and wastewater treatment services. 2. Expand current stormwater collection and drainage coverage. 3. Support the establishment of an adequate framework for environmental management and the efficient provision of water supply, sanitary sewerage, and wastewater treatment and disposal services.	Coverage of water supply services rises from 91% to 95%; sewerage from 88% to 90%; and wastewater treatment from 62% to 95% The storm drainage system is extended to five areas in the city not currently covered (Santa Maria, São Sebastião, Samambaia, Recanto das Emas, and Riacho Fundo II) SEMARH and CAESB are strengthened for the implementation of their respective responsibilities, and the regulatory agency for water and sanitation services is launched	CAESB business system statistics Statistics from the Department of Infrastructure and Physical Works of the GDF Bank inspection and monitoring visits	Other factors that have an impact on the sanitation conditions of the population (such as solid waste collection) do not worsen.
PURPOSE 1. Expand the coverage and quality of the water supply, sanitary sewerage, and wastewater treatment services.			
OUTPUTS • A drop in the incidence of water-borne illnesses and those caused by a lack of basic sanitation.	• Visits per year for acute diarrheal disease fall from 9,000 to 1,500	FD Hospital Foundation	Operation and maintenance of the systems is adequate.

NARRATIVE SUMMARY	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
<ul style="list-style-type: none"> Improved water quality in wastewater receptors. Improved efficiency in CAESB service delivery. 	<ul style="list-style-type: none"> Water quality in the receptors in the Melchior system: BOD from 276 to 11 mg/l; DO from 0 to 4 mg/l; coliforms from 1.23 E7 to 2.72 E3 MPN/100mm Water quality in the Ponte Alta en Gama River: BOD from 86 to 8 mg/l; DO from 6 to 7 mg/l; coliforms from 2.34 E7 to 2.41 E4 MPN/100mm The strategic planning study has been prepared and its recommendations implemented The sale of shares is successfully completed A master water and sewerage plan is prepared ETA Descoberto and ETE Brasilia Norte have received ISO 14,001 certification The rate of unaccounted for water falls from 24% to 20% by program's end The total number of employees has fallen from the current level of 3,900 to 3,350 in 2004 Coverage of operating, maintenance, and deprecation costs is 117% from 2001 to 2003, 119% in 2004, and 121% in 2005; and the collections rate remains at 95% of billings The debt ratio remains below 35% 	<p>CAESB monitoring of water quality</p> <p>Bank approval of the final reports and documents; operating statistics and financial statements audited by CAESB</p>	<p>An urban settlement policy is maintained, and population growth is within the projected parameters.</p> <p>There is no secret dumping in the water receptors.</p>

NARRATIVE SUMMARY	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
ACTIVITIES <ul style="list-style-type: none"> Improvements in production systems and water quality; and sectorization, adaptation, and construction of water distribution systems Construction of sewerage systems and wastewater and effluent treatment plants 	BUDGET <ul style="list-style-type: none"> Works in the water supply system: US\$36.3 million Works in the sewerage and wastewater treatment and disposal system: US\$43.4 million 	Semiannual progress reports and program financial statements	The bidding process for the works is successful and execution satisfactory
PURPOSE 2. Expand the existing infrastructure for stormwater collection and drainage.			
OUTPUTS <ul style="list-style-type: none"> Fewer incidences of flooding from heavy rain Less washing away and accumulation of sediment from stormwater 	<ul style="list-style-type: none"> The current flooding problems at 6 points in the area benefiting from the works are eliminated. The current flooding problems at 4 points in the area benefiting from the works are eliminated. 	Civil defense statistics	Maintenance of the systems is adequate.
ACTIVITIES <ul style="list-style-type: none"> Construction of storm drainage systems and paving of roads in Santa Maria, São Sebastião, Samambaia, Recando das Emas, and Riacho Fundo II 	BUDGET Works in Santa Maria: US\$24.3 million Works in São Sebastião: US\$9.4 million Works in Samambaia: US\$38.3 million Works in Recanto das Emas: US\$30.5 million Works in Riacho Fundo II: US\$11.1 million	Semiannual progress reports and program financial statements	The bidding process for the works is successful and execution satisfactory

NARRATIVE SUMMARY	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
PURPOSE 3. Support the establishment of an adequate framework for environmental management and the efficient delivery of water supply, sanitation, and wastewater treatment and disposal service.			
OUTPUTS			
<ul style="list-style-type: none"> • SEMARH has the necessary instruments to perform its environmental control functions. • The regulatory agency for the water supply, sanitary sewerage, and wastewater treatment and disposal services has begun to operate. • The District Water Agency has begun to operate, to regulate and implement the FD water resources policy. 	<ul style="list-style-type: none"> • The various studies in the program have been prepared • The various studies in the program have been prepared • The various studies in the program have been prepared, and the system for issuing authorization for the rational use of water resources has been launched 	Bank approval of the final reports and documents	The necessary appointments have been made to fill personnel categories in the two regulatory agencies; staff at SEMARH, the regulatory agencies, and CAESB adequately assimilate the conclusions from the studies; and there is the political will to implement the studies' recommendations.
ACTIVITIES <ul style="list-style-type: none"> • Water resources program • Environmental management program • Institutional development program 	BUDGET Studies and consulting services: US\$2 million Studies and consulting services: US\$0.7 million Studies and consulting services: US\$0.4 million	Semiannual progress reports and program financial statements	The bidding process for the works is successful and execution satisfactory

PROCUREMENT TABLE

NUMBER	BIDDING CATEGORIES	VALUE (US\$) x 1000		TYPE OF BIDDING	PUBLICATION DATE
		IDB	FDG		
	I – GOODS				
	a. REGULATION AND ENVIRONMENTAL CONTROL				
1	Installation of the District Water Resources Agency and systematization and optimization of environmental licensing procedures	52		LI	March/2001
2	Paranoá basin – environmental monitoring plan	87		LI	June/2001
3	Environmental management system – pilot experiment	37		LI	October/2001
4	Program to protect the Águas Emendadas Ecological Reserve	157		S	May/2001
5	Training volunteer crews in conservation unit	138		S	February/2001
6	Multimedia environmental education	249		S	August/2001
7	Public utilities regulatory agency – installation	1,000		LCB	October/2001
8	Water resources monitoring	341		LCB	March/2001
	II – WORKS				
	a. SANITARY SEWERAGE				
9	Melchior system – wastewater treatment plant, intercepting sewer, and drainage channel	20,377	7,616	ICB	November/2000
10	Gama system – wastewater treatment plant, pumping station, and depression line	4,230	1,802	ICB	February/2001
11	Lago Sul and Lago Norte – network, intercepting sewer, and pumping station	7,088		ICB	September/2002
12	Installation of the Mestre D'Armas collector system	2,258		LI	August/2003
	b. WATER SUPPLY				
13	Pipiripau (production) – conduit for treated water, automation of the ETA, treated water pumping station and Buritis reservoir	7,201	54	ICB	December/2000
14	Mestre D' Armas complex – reservoir and network	2,530		ICB	August/2003
15	Sobradinho system - R6 reservoir, Contagem/Paranoazinho water treatment plant, improvements in the Contagem conduit, and expansion of the R2 reservoir	2,699	440	ICB	May/2001
16	Sectorization of the Planaltina and Lago Sul network	5,822	341	ICB	June/2001
17	Brasilia water treatment plant	8,842	2,260	ICB	June/2001

NUMBER	BIDDING CATEGORIES	VALUE (US\$) x 1000		TYPE OF BIDDING	PUBLICATION DATE
		IDB	FDG		
	c. URBAN DRAINAGE				
18	Drainage and paving in Recanto das Emas	30,518		ICB	December/2000
19	Drainage and paving in Riacho Fundo II	11,150		ICB	December/2000
	d. ENVIRONMENTAL CONTROL				
20	Clean-up of water sources - implementation	292		S	June/2002
	III – CONSULTING SERVICES				
	a. REGULATION AND ENVIRONMENTAL CONTROL				
21	Master drainage plan	865		ICB	March/2001
22	Public Utilities Regulatory Agency	500		ICB	March/2001
23	Integrated water resources management plan	1,298		ICB	March/2001
24	Clean-up of water sources	38		LI	December/2001
25	Installation of the District Water Resources Agency	78		LI	March/2001
26	Automation and streamlining of environmental licensing procedures	79		LI	March/2001
27	Paranoá basin – environmental monitoring plan	140		S	February/2001
28	Environmental management system – pilot experiment	60		LI	August/2001
29	Program to protect the Águas Emendadas Ecological Reserve	103		S	May/2001
30	Multimedia environmental education	36		LI	April/2001
	c. SUPERVISION AND ADMINISTRATION				
31	Communication program	270		ICB	March/2001
32	Management company	3,994		ICB	September/2000

LI Letter of invitation
LCB Local competitive bidding
ICB International competitive bidding
S Shopping

PROPOSED RESOLUTION

BRAZIL. LOAN /OC-BR TO THE FEDERAL DISTRICT OF THE FEDERAL REPUBLIC OF BRAZIL (Federal District Basic Sanitation Program)

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with Federal District of the Federative Republic 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 a basic sanitation project. Such financing will be for the amount of up to US\$ 130,000,000, or its equivalent in other currencies, except that of the Federative Republic of Brazil, which are part of the Ordinary Capital resources of the Bank, and will be subject to the "Special Contractual Conditions" and the "Financial Terms and Conditions" of the Executive Summary of the Loan Proposal.