

PROJECT INFORMATION DOCUMENT (PID)
CONCEPT STAGE
March 2009

Report No.: AB4607

Project Name	Rio Bogota Environmental Infrastructure
Region	LATIN AMERICA AND CARIBBEAN
Sector	Sewerage (70%); Flood protection (30%)
Project ID	P111479
Borrower(s)	CORPORACION AUTONOMA REGIONAL DE CUNDINAMARCA (CAR)
Implementing Agency	
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Environment Category	<input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> FI <input type="checkbox"/> TBD (to be determined)
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1. Key development issues and rationale for Bank involvement

The Río Bogotá is a medium sized river that traverses the western perimeter of the Bogotá city. Despite decades of planning, the Río Bogotá remains highly contaminated and is an environmental and public health liability.

The key development challenge is to transform the Río Bogotá from an environmental liability into a healthy river that will provide economic and environmental benefits to the Bogotá metropolitan region. The proposed *Plan de Saneamiento* has evolved over time, and represents a first step towards the long-term goal of creating a healthy river system. The World Bank involvement will help refine the *Plan de Saneamiento* and establish the basis for a long-term program to improve the water environment in the basin. The Bank's expertise in integrated urban water management, combined with its deep understanding of urban development issues, will enable it to help guide Bogotá towards a sustainable approach to improving the river and creating an urban environmental asset. The objective is to create an internationally recognized model project for urban river recuperation that incorporates water quality improvements, flood control, wetlands, and multifunctional parks.

Plan de Saneamiento del Río Bogotá: The Río Bogotá starts at an elevation of 3,400 meters and flows 370 kms before discharging into the Río Magdalena at an elevation of 280 meters. The Basin covers 6,000 km² and is divided into three parts: i) upper basin north of Bogotá; ii) middle basin in the Bogotá metropolitan area; and iii) lower basin below Bogotá. The average flow before entering the city is 10 m³/s, and Bogotá discharges an additional 22 m³/s of wastewater. After leaving Bogotá, the river plunges 2000 meters in a short distance into the Río Magdalena valley. The Bogotá power company (EMGESA) has constructed a hydropower facility (1124 MWs installed capacity) downstream of Bogotá to take advantage of the river flow and elevation drop. The holding reservoir for the EMGESA power complex is

the 853 ha Muña reservoir, which is also highly contaminated. The spectacular “Falls of Tequendama” are located downstream of the Muña reservoir.

The original wastewater master plan for Bogotá was conceived in the late 1980s, and called for the construction of one 22 m³/s wastewater treatment plant (WWTP) downstream of the city. In the early 1990s, however, the municipal government changed course and decided to pursue 3 medium-sized wastewater treatment plants (WWTPs), one for each of the three micro-basins (Salitre, Fucha, and Tunjuelo) in Bogotá city. In 1994, the city entered into a build-operate-transfer (BOT) concession contract with a French consortium for a 4 m³/s primary WWTP called Salitre, which is located in the northern part of Bogotá. The plant started operations in 2000, and in December 2003 the District cancelled the contract, purchased the plant from the consortium, and turned over its operation to EAAB.

The key government entities charged with implementing the Plan include: i) the municipal government of the Bogotá Capital District; ii) the regional environmental agency—*Corporación Autónoma Regional de Cundinamarca* (CAR); and iii) *the Empresa de Agua y Alcantarillado de Bogotá* (EAAB). In December 2004, the *Departamento Nacional de Planeación* (DNP) issued a strategic planning document for the Río Bogotá, which called for upgrading and expanding Salitre WWTP to an 8 m³/s secondary plant and the construction of a large plant (14 m³/s) downstream of Bogotá called Canoas to treat wastewater from the Fucha, Tunjuelo and Saocha basins. The large wastewater interceptors to convey wastewater to Canoas identified in the DNP plan are either completed or under construction by EAAB, thereby locking in the two-plant approach. In addition, the DNP called for expanding wastewater treatment in the upper basin, as well as interim measures to improve environmental impacts associated with Muña reservoir

The strategy calls for improving the Bogota River in a phased manner, and going from upstream to downstream. The first phase involves improving wastewater treatment in the numerous small municipalities in the upper basin. The second phase focuses on improving the river the Bogotá metropolitan area by expanding the existing Salitre WWTP; intercepting wastewater from the rest of the city and conveying it downstream of Bogotá; and improving flood control protection. The third phase consists of constructing a second WWTP downstream of Bogotá, referred to as Canoas (14 m³/s) to treat the waters that will be conveyed out of Bogota under the second phase. Given the cost of the Canoas plant, treatment levels are planned to be gradually increased over time. This approach is consistent with the evolution of wastewater management in OECD countries, which generally followed a phased approach that balances environmental improvements with affordability and economic growth.

In 2007 the three key parties: the CAR, the EAAB, and the Bogotá Municipal Government signed *Convenio 171* which defined the responsibility of the various parties. The CAR committed to finance the expansion of Salitre WWTP, and the Río Bogotá flood control works from Puente La Virgen to Alicachín. The urban area of Bogotá has expanded to the western edge of the Río Bogotá, and the existing low flood control standards of 10-25 year return floods need to be upgraded. In addition, CAR has also committed to river recuperation by enlarging the flood plains, restoring wetlands, and creating multi-functional parks. The EAAB assumed responsibility for financing and constructing the necessary large wastewater interceptors, and operating both the Salitre and Canoas WWTPs. The construction phasing (preliminary, primary, and secondary treatment) and financing for the Canoas WWTP is still under consideration by the Colombian government and courts.

Rationale for Bank Involvement: The World Bank can bring international expertise to help refine the *Plan de Saneamiento*, and integrate the investments into a broader urban development and environmental management perspective. The World Bank has been deeply involved in urban development and water supply and sanitation issues in Bogotá over the past decades.

The Bank has supported the water sector in Bogotá through five operations, with the most recent project, Santa Fe I (P006894), closed in 2005 with satisfactory ratings. During the Santa Fe project, EAAB made

substantial progress toward the key policy objective of transforming itself into a commercial water utility with a corporate culture based on professional responsibility and accountability. EAAB is owned and controlled by the Bogotá municipal government. In 2003 EAAB contracted three firms to provide customer service, and operation and maintenance of its small diameter water distribution system. EAAB also started the process of restoring the urban wetlands that drain into the Río Bogotá under the Santa Fe project

The Bank has also supported the broader development agenda in Bogotá, most recently with the on-going Bogotá Urban Services Project. The Project focuses on the issues of affordable housing, the improvement of marginalized settlements, improving public transport, comprehensive road maintenance, and inter-agency coordination. The Bank has financed the second phase of the Transmilenio, and is currently helping Bogotá with planning studies for the proposed Metro system.

The proposed project is consistent with the Colombia-World Bank Country Partnership Strategy which highlights environmental sustainability, in particular integrated management of water resources, as one of the five pillars in Colombia's national development strategy.

2. Proposed objective

The project development objective (PDO) is to transform the Río Bogotá from an environmental liability into an urban asset for the metropolitan region by improving water quality, reducing flood risk, and creating a series of multi-functional parks along the river. The preliminary PDO indicators (values to be determined during preparation) are:

- The Río Bogotá meets interim water quality standards
- Flood control standard of 100 years within the Bogotá urban area
- Creation and/or improvement of parks and wetlands along the Río Bogotá with aquatic ecosystems.

3. Preliminary description

Brief description of the four main components of this Project is presented below.

Component 1: Salitre WWTP: This component includes the upgrading and expansion of the existing 4 m³/s primary treatment plant to an 8 m³/s secondary treatment plant.

Component 2: Flood Control and Environmental Works in the Río Bogotá: This component will finance a comprehensive river recuperation program that incorporates best practice in urban river restoration. This component consists of improving flood control from an existing 10-25-year return period to a 100-year period, restoring part of the river flood plain, creating and enhancing wetlands and multifunctional parks, and complementing wastewater infrastructure with in-situ wastewater treatment when possible.

Component 3: Water and Environmental Planning: The upgraded Salitre WWTP, along with the interception and conveyance of other wastewater flows out of Bogotá, will improve water quality but much more analysis and work will be needed to recuperate the Bogotá River. This component will therefore finance a number of studies and actions that will provide a framework for future water quality and environmental improvements. Studies will be funded to promote integrated urban water planning. Potential topics include point and non-point pollution control, sewage and stormwater collection, and ecological restoration. The goal is to create cost-effective water quality improvement actions that combine conventional and natural approaches, as well as water reuse for wetland and river restoration, agriculture

in the adjacent La Ramada irrigation district, and hydropower in the Muña hydropower complex. The component will also provide planning support for the Canoas WWTP and recuperation of the Muña reservoir. A study to develop a biosolids management plan for EAAB is also under consideration.

Component 4: Project Management: The CAR currently has a strong project team of around 12 professionals preparing the project who will continue to support the implementation. The professionals include a wastewater engineer, hydrologist, environmental scientists, social specialist, resettlement expert, lawyer, procurement and financial management specialists, and two project managers.

4. Safeguard policies that might apply

SAFEGUARD POLICIES THAT MIGHT APPLY

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

Although the environmental benefits of the project will be significant, the project is categorized as a Category A project due to its size and potential impacts. Portions of approximately 400 lots along the river will be purchased by CAR in order to move the Rio Bogota river embankment in the mainly rural western bank, as well to create a riparian buffer zone. Approximately 100 households in the low-income area of Porvenir, most of them without title to the property, will be relocated. A RAP that meets Bank resettlement requirements will be prepared to guide the land acquisition and relocation activities.

Since the project activities will take place in and along there river in an area which has been inhabited for thousands of years, there may be chance archeological finds during construction. Therefore, the OP 4.11, Physical Cultural Resources, is triggered.

5. Tentative financing

Source:	(\$m.)
Borrower--CAR	196
International Bank for Reconstruction and Development	250
	Total 446

6. Contact point

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