

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

ARGENTINA

**DRAINAGE AND FLOOD CONTROL PROJECT IN THE PROVINCE
OF BUENOS AIRES**

(AR-L1273)

LOAN PROPOSAL

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ABBREVIATIONS

DPOH	Dirección Provincial de Obras Hidráulicas [Provincial Water Works Department]
EIRR	Economic internal rate of return
EM-DAT	Emergency Events Database
ESMF	Environmental and social management framework
ESMP	Environmental and social management plan
ESMR	Environmental and social management report
ICB	International competitive bidding
INDEC	Instituto Nacional de Estadísticas y Censos [National Statistics and Census Institute]
MIOPyV	Ministry of the Interior, Public Works, and Housing
MISP	Ministry of Infrastructure and Public Services
NCB	National competitive bidding
PBA	Province of Buenos Aires
PCR	Project completion report
PHP	Plan Hidráulico Provincial [Provincial Water Resource Plan]
PMR	Progress monitoring report
PNA	Plan Nacional del Agua [National Water Plan]
QCBS	Quality- and cost-based selection
SSRH	Subsecretaría de Recursos Hídricos [Water Resources Division]
UCEPO	Unidad de Coordinación y Ejecución de Proyectos de Obras [Works Coordination and Execution Unit]

PROJECT SUMMARY

ARGENTINA

DRAINAGE AND FLOOD CONTROL PROJECT IN THE PROVINCE OF BUENOS AIRES

(AR-L1273)

Financial Terms and Conditions				
Borrower: Province of Buenos Aires (PBA) Guarantor: Argentine Republic Executing agency: Province of Buenos Aires (PBA), acting through its Ministry of Infrastructure and Public Services (MISP)			Flexible Financing Facility ^(a)	
			Amortization period:	25 years
			Original WAL:	15.25 years
			Disbursement period:	5 years
Source	Amount (US\$ million)	%	Grace period:	5.5 years
IDB (OC):	150	83.3	Inspection and supervision fee:	^(b)
Local:	30	16.7	Interest rate:	LIBOR-based
			Credit fee:	^(b)
Total:	180	100.0	Approval currency:	U.S. dollars from the Bank's Ordinary Capital (OC)
Project at a Glance				
Objective/description: The objective of the project is to better protect the population from flood risks and reduce the economic costs associated with these events. This objective will be achieved by implementing structural and nonstructural measures.				
Special contractual conditions precedent to the first disbursement: Present evidence, to the Bank's satisfaction, that: (i) the MISP has approved the new structure for the Works Coordination and Execution Unit (UCEPO) that will be used to execute the program; and (ii) the MISP has contracted and/or designated coordinators for the areas mentioned in the execution mechanism (paragraph 3.1); and (iii) the program Operating Regulations have been approved by the MISP and are in force under terms previously agreed upon with the Bank (paragraph 3.3).				
Special environmental and social contractual conditions of execution: See special contractual conditions in Section V of the Environmental and Social Management Report (ESMR) (required electronic link 3) and in Annex III (Fiduciary Agreements and Requirements).				
Period for start of works: The period for the physical start of the works included in the program will be four years from the entry into force of the loan contract (paragraph 3.8).				
Exceptions to Bank policies: None				
Strategic Alignment				
Challenges: ^(c)	SI <input checked="" type="checkbox"/>	PI <input type="checkbox"/>	EI <input type="checkbox"/>	
Crosscutting themes: ^(d)	GD <input type="checkbox"/>	CC <input checked="" type="checkbox"/>	IC <input checked="" type="checkbox"/>	

^(a) Under the Flexible Financing Facility (document FN-655-1), the borrower has the option of requesting changes to the amortization schedule as well as currency and interest rate conversions. The Bank will take operational and risk management considerations into account when reviewing such requests.

^(b) The credit fee and inspection and supervision fee will be established periodically by the Board of Executive Directors during its review of the Bank's lending charges, in accordance with applicable policies.

^(c) SI (Social Inclusion and Equality); PI (Productivity and Innovation); and EI (Economic Integration).

^(d) GD (Gender Equality and Diversity); CC (Climate Change and Environmental Sustainability); and IC (Institutional Capacity and Rule of Law).

I. DESCRIPTION AND RESULTS MONITORING

A. Background, problem to be addressed, and rationale

- 1.1 **Background.** According to the 2010 census projections,¹ Argentina has a population of 44 million. The province of Buenos Aires, covering an area of 170,000 square kilometers, which is 20% of the country's total area (850,000 square kilometers), is home to almost 40% of the nation's population (17.6 million) and generates 30% of the gross domestic product. In general, the productive structure of the province is based on agricultural and livestock activities, mostly without irrigation systems, which account for close to 25% of Argentina's beef and grain production, contributing significantly to the nation's exports.
- 1.2 **Institutional framework of the sector.** In Argentina, the provinces have dominion over the water in their respective jurisdictions or territories, while the national government has jurisdiction over interprovincial rivers and navigable international waters; surface and ground water are in the public domain. The Ministry of Interior, Public Works, and Housing (MIOPyV) has sector responsibility for drainage at the national level through the Water Resources Division (SSRH). The SSRH establishes national policy and planning for drainage and flood control and allocates the largest share of the investment funds for the sector. In this context, the province of Buenos Aires is responsible for formulating and implementing irrigation development policies and projects, formulating and supporting the implementation of integrated watershed management strategies, and promoting the development of regulations aimed at preserving water resources, including flood control management outside urban areas. The municipios are responsible for drainage in the municipal seats.
- 1.3 **Diagnostic assessment of water risk in Argentina and the province of Buenos Aires.** Flooding-related disasters and risks in Argentina are a significant problem. According to the Emergency Events Database (EM-DAT), Argentina is among the 14 countries most affected by catastrophic floods in the world. In the period 1970-2015, the country was struck by 90 large-scale² hydrometeorological disasters (flooding and landslides due to heavy rains) (EM-DAT, 2016), which affected 14 million people and resulted in US\$10 billion in economic losses.³ In recent years, disasters of this type have become increasingly frequent: 27 disasters occurred between 2005 and 2015, compared with only 10 in the 1970s. In recent times, some of the worst disasters have been the flood in the city of Santa Fe in April 2003, which affected more than 100,000 people and resulted in losses of US\$1.028 billion (Economic Commission for Latin America and the Caribbean, 2003), and the flood in the city of La Plata, located in the province of Buenos Aires, in 2013, which led to losses of about US\$1.3 billion. The latter disaster is recorded as the country's most

¹ 2010 National Population and Housing Census, National Statistics and Census Institute (INDEC).

² Disasters that meet at least one of the following criteria: (i) 10 or more deaths; (ii) 100 or more people affected; (iii) declaration of a state of emergency; and (iv) an international request for assistance issued by the national authorities.

³ Direct losses refer to public infrastructure and housing. They do not include indirect losses, including in the flow of goods and services, ecosystems, and historical and cultural assets.

destructive in the last 10 years, having caused 52 deaths, affected more than 350,000 people, and damaged 70,000 homes (EM-DAT, 2016).⁴

- 1.4 Historically, the areas most affected by floods were the urban areas of the Litoral region in the provinces of Corrientes, Chaco, Santa Fe, and Entre Ríos, in the Paraná River watershed. Investments by the Argentine government have reduced the effects of floods on these urban areas. In addition, the urban areas in the northwest, northeast, and central regions of the province of Buenos Aires, located in the Areco, Salado, Arrecifes, Pergamino, and other watersheds, suffer frequent floods. Interventions to reduce the risk and impact of such events in these areas are a priority for the province (paragraph 1.10). The recurring and increasingly intense flooding in the province that is occurring due to the El Niño-Southern Oscillation phenomenon are becoming more devastating with each passing year. As a result of climate change, these fluctuating climate events are expected to occur with greater frequency due to a steepening of the temperature gradient along the equatorial thermocline (Collins et al., 2010). In 2015, heavy rains produced floods in the northwest, northeast, and central regions of the province of Buenos Aires, as well as in a broad region in the southern reaches of the provinces of Córdoba and Santa Fe, in the watersheds of the Luján, Arrecifes, Areco, and Salado Rivers and the Pavón and De La Cruz Creeks. This problem is intensified by the geomorphological characteristics of the rivers: meandering, poorly defined channels with low gradients and poor conveyance capacity (Water Management Plan for the Areco River Watershed 1). From an anthropic standpoint, there are weaknesses in the design of roads and bridges, including poorly lit embankments and culverts, which, coupled with low maintenance levels, impede proper drainage following heavy rains. Moreover, weaknesses in the monitoring and early warning systems, including the absence of early warning systems in most of the watersheds; in institutional coordination for integrated management of the territory; in planning of urban interventions; and in land use management enabling adequate control for enforcement of regulations that restrict housing construction in natural flood plains have led to an intensification of flood impacts on the urban population.⁵
- 1.5 In 2015, 4.1 million hectares were flooded in the province of Buenos Aires (14% of the total area of the province) following rainfall that ranged from 200 millimeters to 300 millimeters in the areas that were hardest hit, far exceeding the average precipitation of the last decades. Effects on the urban areas with the highest population density, such as Luján, San Antonio de Areco, Pergamino, and General Villegas, to cite recent and recurrent examples, include damage to more than 35,000 homes, temporary lodging expenses for 15,000 people, and indeterminate losses in agriculture, livestock, and damaged infrastructure. In the case of Pergamino, a flood on 6 and 7 April 1995 resulted in loss of life and affected both personal property and

⁴ Roughly 2,300 tons of humanitarian assistance were distributed, and 120,000 customers were affected by power outages.

⁵ In Argentina, more than 90% of the population lives in urban centers. The impacts of urbanization on the water cycle are significant. The expansion of cities, pressure on the flood plains, and intervention of the natural systems, combined with changes in the rainfall patterns, pose a major challenge to urban management. The decision to reclaim land from rivers and develop flood zones by building infrastructure such as channels, conduits, and embankments tends to create vulnerability and exposure to floods for the population ([Viand and González, 2012](#)). In general, cities are particularly at risk due to unchecked urban development in flood zones, but also due to insufficient macro-drainage infrastructure, micro-drainage systems in poor maintenance condition (including problems of solid waste blockage), and weak institutional and policy frameworks ([World Bank, 2012](#)).

urban infrastructure. On that occasion, after two days of medium-intensity rainfall, more than 300 millimeters of rain fell over a period of six hours, causing streams to overflow their banks and flood the urban area. The affected area covered 935 hectares of the municipio's total area of approximately 2,300 hectares, and 7,000 people were evacuated or were forced to self-evacuate. The 2017 rains led to the loss of more than 1,114,728 hectares of cultivated cropland in the province (wheat, corn, soybeans, and sunflower), with an estimated monetary loss of US\$1.051 billion.⁶

- 1.6 **Rationale and proposed interventions.** To reduce flood risks and prevent the economic and social damage caused by events such as those of recent years, since 2016 the province of Buenos Aires has been promoting the Provincial Water Resource Plan (PHP).⁶ The plan envisages building canals, embankments, floodgates, locks, spillways, reservoirs, and pumping stations and installing early warning sensors for hydraulic, meteorological, and environmental monitoring in the province's major watersheds. According to the PHP, the investments needed to solve the problem of flooding in the province of Buenos Aires are estimated at US\$4 billion. This amount is being funded with external credit resources in the form of loan operations approved and in preparation from multilateral and bilateral agencies,⁷ including Bank financing through this operation and others in execution (paragraph 1.8), as well as with central government resources.⁸
- 1.7 The effectiveness of the proposed structural and nonstructural interventions has been proven in various studies conducted in similar contexts. There is evidence in the literature as to the negative impact of floods in terms of both financial damage and sanitary conditions.⁹ Conversely, various studies and other assessments demonstrate the effectiveness of structural interventions (infrastructure works for regulation and expansion of flow conveyance capacity¹⁰ and for protection of flood-prone urban areas)¹¹ and nonstructural interventions, such as those proposed¹² under this program (paragraph 1.14).

⁶ According to a study by the Confederación de Asociaciones Rurales de Buenos Aires y La Pampa [Confederation of Rural Associations of Buenos Aires and La Pampa], 28% of all productive land has been affected by the rainfall.

⁷ IBRD loan for the Salado Integrated River Basin Management Support Project, and CAF loan for the Integrated Management Plan for the Luján River Basin (stages I and II). The bilateral agencies include the EXIM Bank.

⁸ Donor activity is coordinated by the province, which determines each donor's areas of action. In this case, there is no regional overlap between donors in terms of either actions or resources.

⁹ For example, Cancado et al. ([Economic consequences of the flood: modelling the impacts in an urban space](#), 2010) create a multisystem model of Brazilian cities to capture the effects of flooding in vulnerable areas on variables such as household income. Ahern et al. ([Global Health Impacts of Floods: Epidemiologic Evidence](#), *Epidemiologic Reviews*, Johns Hopkins Bloomberg School of Public Health, Vol. 27, 2005) observe, based on data from 200 urban floods in over 20 countries, that the largest impacts on mortality and morbidity occur where the infrastructure is precarious or nonexistent and the population at risk has limited financial resources.

¹⁰ Asselman and Klijn (2016). "Making room for rivers: quantification of benefits from a flood risk perspective." E3S Web of Conferences, FLOODrisk 2016 – 3rd European Conference on Flood Risk Management 7 12001 (2016) 0712001 ([link](#)); and De Bruijn et. al., 2015. "The Politics of Resilience in the Dutch 'Room for the River' project." *Procedia Computer Science* 44 (2015) 659 – 668 ([link](#)).

¹¹ Association of State Floodplain Managers, Inc., Edition 4, 2002 ([link](#)) and Carlos E. M. Tucci, *Gestión de Inundaciones Urbanas*, OMM, 2006, page 254 ([link](#)).

¹² A broad compendium is included in [Jha et al. \(2012\)](#), which presents more than 50 case studies of interventions that have been implemented in a variety of urban contexts.

- 1.8 **Bank knowledge of the sector.** The program is associated with a comprehensive strategy by the Bank to support the country in improving drainage management, risk prevention (particularly water risks), and flood control, including two technical cooperation operations to prepare comprehensive drainage and flood control management plans (ATN/OC-14213-AR and ATN/LA-15934-AR) and loans 797/OC-AR and 3256/OC-AR for the Reconquista River Basin Environmental Sanitation Program. The strategy also includes operation 3688/OC-AR (Emergency Program for an Immediate Response to the Flooding in Argentina) and operation 2851/OC-AR (Multisector Preinvestment Program IV), which is financing drainage and flood control master plans in the cities of Salta and Paraná. These interventions address the problem of drainage and flood control management and institutional strengthening for adequate risk prevention and management improvement. Furthermore, the technical work contributes to better understanding of the problem of flooding in the region, which is the issue that this operation seeks to address.
- 1.9 **Lessons learned.** This operation has been prepared taking into consideration the lessons learned that were identified in the evaluation of other similar operations in Argentina, such as 797/OC-AR, and in the region (pursuant to the Water and Sanitation Sector Framework Document, document GN-2781-3), as well as loan operation 3256/OC-AR, executed by the same executing agency. These lessons include: (i) having advanced engineering plans reduces costs and delays during the execution of works; accordingly, program resources are expected to be used to adjust and improve the plans; (ii) ensuring proper coordination between the executing agency and the other institutions associated with the works (municipal or environmental permits) makes it possible to take action to ensure that the works are started on time and carried out according to schedule; and (iii) building the executing agency's capacity can be achieved by hiring technical experts with project supervision and execution experience; to this end, an institutional capacity assessment has been conducted and resources have been allocated to finance the corresponding activities (paragraph 1.14).
- 1.10 **Government strategy.** The program interventions arise from the priorities established in the PHP, based on water risk, sustainability, and social impact criteria, and will be targeted to the northwest region of the province of Buenos Aires. The infrastructure works (paragraph 1.13) are complemented by management strengthening actions aimed at strengthening management capacities at the provincial level and in the northwestern partidos (municipios) to build resilience to extreme events and adapt to and mitigate the effects of climate change, thereby ensuring their sustainability (paragraph 1.14). At the national level, the SSRH has formulated the National Water Plan (PNA) ([optional electronic link 8](#)), which sets out the government strategy for ensuring sustainable management of water resources until 2030.¹³
- 1.11 **Strategic alignment.** The project is aligned with the IDB Group's current country strategy with Argentina 2016-2019 (document GN-2870-1), specifically the strategic priority of business climate improvement, by contributing to the strategic objectives of fostering environmentally sustainable solutions and support for climate change-related disaster risk management and infrastructure improvement for investment and inclusion. In addition, the program is consistent with the Update to the

¹³ The PNA is based on four policy pillars: (i) water and sanitation; (ii) adaptation to extreme climate; (iii) water for production; and (iv) multipurpose uses and biomass.

Institutional Strategy 2010-2020 (document AB-3008) and is directly aligned with the development challenge of social inclusion and equality, considering that the interventions focus on expanding and improving the urban drainage systems in areas in which the percentage of low-income households¹⁴ is higher than the average in the targeted cities¹⁵ (paragraph 1.18). The program is also aligned with the crosscutting areas of the Update to the Institutional Strategy: (i) institutional capacity and rule of law, since it will finance activities to improve the risk management capacity of the Province of Buenos Aires (paragraph 1.14); and (ii) climate change and environmental sustainability, since it will help to reduce the vulnerability of urban areas to flooding associated with a rise in the magnitude and frequency of extreme rainfall events attributed to climate change (paragraph 1.4). This will be achieved through investments in channelization works, bridge replacement and expansion works, and construction of regulating and retaining dams, as well as in activities to strengthen institutional capacity for water risk management, land use plans, and monitoring and early warning systems. All of the above will support the country's efforts to build a long-term adaptation process in line with the priorities established in Argentina's nationally determined contribution. In this regard, all of the operation's resources are being invested in climate change adaptation activities, in accordance with the [multilateral development banks' joint methodology for tracking climate finance](#). These resources contribute to the IDB Group target of increasing financing for projects related to climate change to 30% of all approvals by the end of 2020. The program will contribute to the Corporate Results Framework 2016-2019 (document GN-2727-6) through the output "households protected from the risk of floods." In addition, the program is aligned with the Sustainable Infrastructure Strategy for Competitiveness and Inclusive Growth (document GN-2710-5) in the priority area of promoting access to infrastructure services, particularly in conjunction with the priority area of supporting the construction and maintenance of an environmentally and socially sustainable infrastructure, thus enhancing quality of life. The program is also aligned with the Water and Sanitation Sector Framework Document (document GN-2781-3), particularly the dimension of success defined by projects and programs being environmentally and socially sustainable and incorporating climate change and cultural considerations.

B. Objectives, components, and cost

- 1.12 **Objective.** The objective of the project is to better protect the population from flood risks and reduce the economic costs associated with these events. This objective will be achieved by implementing structural and nonstructural measures. To achieve this objective, the program has the following components:
- 1.13 **Component 1: Structural measures (US\$175 million).** The objective of this component is to improve the conveyance capacity of the targeted rivers (paragraphs 0 and 2.3) and expand the level of protection of urban areas from flood risks. To this end, the component envisages construction of channelization works, replacement and expansion of bridges and floodgates, and construction of floodwater regulating

¹⁴ Homes affected by floods are located in areas that have a percentage of households with an unmet basic need.

¹⁵ Based on data from the INDEC 2010 Population and Housing Census, 78% of the households in the city of San Antonio de Areco and 53% of the households in the city of Pergamino that are most affected by flooding are located in areas with a higher concentration of low-income households than the average for the respective city.

dams and temporary containment dams. In addition, the component will finance the costs associated with inspection of the works and implementation of the environmental and social management plans for the works, which include the property easement/ expropriation plans associated with the works.

- 1.14 **Component 2: Nonstructural measures (US\$4 million).** This component is aimed at strengthening water risk management and the institutional capacities of the relevant authorities in terms of flood management and control, with a view to ensuring adequate operation and maintenance and sustainability of the investments. Accordingly, this component will finance technical assistance (diagnostic assessments, studies, action plans) for the relevant provincial agencies and beneficiary municipal governments for the preparation civil protection plans, the development of land use and environmental plans and policies that include risk mapping designed to make the population less vulnerable, and the implementation of monitoring and early warning systems to build resilience and responsiveness to extreme events. In addition, this component includes preinvestment studies for the projects to be financed by this operation, as well as studies of comprehensive complementary works that add value to the beneficiary communities.
- 1.15 **Program management (US\$1 million).** In addition, the program will finance the costs associated with program administration, supervision of the works, equipment for the Works Coordination and Execution Unit (UCEPO), and contracting of the corresponding external evaluations and audits.
- 1.16 **Cost.** The total cost of the program is US\$180 million, of which US\$150 million will be financed by the Bank with Ordinary Capital resources and US\$30 million will be financed by the local counterpart. Table I-1 shows the consolidated budget by component and source of financing.

Table I-1 – Program cost (in US\$ millions)

Component	IDB	Local	Total
Component 1 – Structural measures	145.0	30.0	175.0
Component 2 – Nonstructural measures	4.0	-	4.0
Program management	1.0	-	1.0
Total	150.0	30.0	180.0
%	83.3	16.7	100.0

C. Key results indicators

- 1.17 The results matrix (Annex II) includes the program outcomes and outputs. Table I-2 presents the key indicators.

Table I-2 – Key indicators

Outcome indicator	Unit of measurement	Baseline	Target*
Expected annual economic damages**	US\$	38,228,187	3,209,302
Households at risk of flooding in the program's area of influence	Households	11,990	1,349
Watersheds with monitoring and early warning systems in operation***	No. of watersheds	0	2

* For San Antonio de Areco and Pergamino. The goals will be updated as more projects are added to the operation.

** Expected annual economic damages are defined as the mathematical expectation of the damages caused by events (rains) considering the probability of occurrence for the different periods of return under consideration (2, 5, 10, and 50 years). The baseline, which is equal to the expected value of total damages without the project, is US\$5,021,030 and US\$32,776,560 for the sample cities of Areco and Pergamino, respectively. If the works are not executed, these damages are not avoided. If the works are executed, the expected damages (target) would be US\$2,958,705 and US\$250,597 for Areco and Pergamino, respectively.

*** A monitoring and early warning system is considered to be in operation when the metering equipment begins to capture automated meteorological and hydrological information and send the information to the central system at the Provincial Water Works Department (DPOH) in the province of Buenos Aires, which issues flood warnings for the watershed and automatically generates daily reports on the water risk in a watershed.

- 1.18 **Beneficiaries.** The program beneficiaries will be households whose wellbeing and quality of life will be improved as their flood risks are reduced as a result of the implementation of the water containment and regulation and drainage works. It is estimated that this operation will benefit some 23,138 residents of San Antonio de Areco who live in areas where the percentage of low-income households¹⁶ exceeds the average for the city;¹⁷ 104,590 residents of Pergamino who live in areas where the percentage of low-income households exceeds the average for the city;¹⁸ and 212,333 residents of General Villegas, Rivadavia, Pehuajó, Carlos Casares, Carlos Tejedor, 9 de Julio, and Trenque Lauquen. Since this is a multiple works program, a series of eligibility and prioritization criteria have been established (paragraph 3.4) and will apply to all projects to be financed by the operation.

II. FINANCING STRUCTURE AND MAIN RISKS

A. Financing instruments

- 2.1 **Financing structure and modality.** The operation has been designed as a multiple works investment loan since it envisages separate drainage and flood control projects in various municipios (works that are similar but mutually independent),

¹⁶ Homes affected by floods in radiuses that have a percentage of households with an unmet basic need.

¹⁷ Based on data from the INDEC's 2010 Population and Housing Census, 78% of the households most heavily affected by floods are located in areas with a lower income level than the average for the city.

¹⁸ The census radiuses (Population and Housing Census, INDEC, 2010) and flood boundaries show that, of the households that flood, 5,776 have a higher unmet basic need percentage than the 4.3% average for the city. These 5,776 households account for 53% of all (10,908) households with a higher unmet basic need percentage than the city average.

subject to eligibility criteria (paragraph 3.4). A representative sample has been analyzed in preparation for the operation, enabling an early start of execution. With a five-year disbursement period, consistent with the multiyear execution plan (PEP) ([required electronic link 1](#)), the operation will address the sequence of priorities set by the Province of Buenos Aires and will be governed by the Operating Regulations ([optional electronic link 5](#)) (paragraph 3.3). The operation will primarily target the northwest region of the province of Buenos Aires. The disbursement schedule is shown in Table II-1 ([optional electronic link 6](#)).

Table II-1 – Disbursement schedule (in US\$ millions)

Source/year	1	2	3	4	5	Total
IDB	12.0	43.0	54.0	26.0	15.0	150.0
Cumulative %	8.0	36.7	72.7	90.0	100.0	
Local contribution	1.9	8.5	11.1	5.3	3.2	30.0
Total	13.9	51.5	65.1	31.3	18.2	180.0
Cumulative %	6.6	35.8	72.0	89.4	100.0	

- 2.2 Representative sample.** To determine the viability of the program and streamline its execution once approved, an analysis was conducted of a sample of projects representative of the type of works to be executed. The sample consists of the following projects:¹⁹ (i) channelization of the Areco River, including adjustment and widening of the Areco River channel along a section of 12.5 kilometers and construction of a new bridge next to the existing bridge over national route No. 8, in order to increase the river's conveyance capacity by eliminating the current constraint and thereby improve flood protection for the city; and (ii) construction of a retaining and regulating dam on the Pergamino Creek, located 3.5 kilometers upstream from the city, to mitigate the peak flows resulting from intense precipitation in the watershed ([optional electronic link 1](#)). The sample projects meet the eligibility criteria established for the operation (paragraph 3.4). That is, they are located in the northwest region of the province of Buenos Aires, they address the need to protect the population centers in this area from the risk of floods, they are technically, institutionally, financially, economically, socially, and environmentally feasible (paragraphs 2.10 to 2.13), and they represent 47% of the total cost of the operation.
- 2.3 Future pipeline of projects.** On a preliminary basis and following the same identification process that was used for the sample, works have been identified in the towns of General Villegas, Rivadavia, Pehuajó, Carlos Casares, Carlos Tejedor, 9 de Julio, and Trenque Lauquen. These works will be subject to financing under this operation once they have been prepared and their feasibility has been verified (paragraphs 2.10 to 2.13) based on the results of specific technical, economic, and environmental studies of each.

¹⁹ The preliminary technical designs of the works involved in the sample projects are described in detail in the [Water Management Plan for the Areco River Watershed](#), prepared in August 2011 by the consulting firm Serman & Asociados S.A. (and supplemented and updated by the same firm in 2017), as well as in the technical report for the [Final Designs for the Stormwater Protection and Drainage Works in the City of Pergamino](#) prepared by the IATASA – ABS S.A. consulting firm consortium in August 2008 (and updated by IATASA in 2017).

B. Environmental and social risks

- 2.4 The investments are expected to produce a positive social and environmental effect on the quality of life and wellbeing of the beneficiaries by controlling floods in the province of Buenos Aires through structural and nonstructural measures. In accordance with the guidelines of the Environment and Safeguards Compliance Policy (OP-703) and available preliminary information, the project was classified as a category “B” operation.
- 2.5 The project will cause certain negative environmental and social impacts. To mitigate these impacts, effective measures are available and have been included in the environmental and social management plan (ESMP) and the property easement/expropriation plan. Since this is a multiple works operation, environmental and social assessments have been conducted for the cities of Pergamino and Areco in advance of the analysis mission, together with their respective ESMPs and property restitution plans (which cover the impacts of physical and economic displacement and of economic losses as provided in Bank policies OP-710 and OP-703). A census has been prepared that includes the final number of affected parties, estimated at 8 individuals/companies in Areco and 29 in Pergamino. (Eligibility will be based on a maximum return period of 50 years.) There is no indication that those affected include members of vulnerable groups or indigenous peoples.
- 2.6 An environmental and social management framework (ESMF) ([optional electronic link 10](#)), which will also include a resettlement framework, has been prepared for future projects that will be incorporated into the operation. These documents have been disclosed on the Bank’s website in accordance with the provisions of operational policy OP-102. Meaningful consultations were conducted in the municipios of Areco (21 attendees) and Pergamino (50 attendees) on 12 September and 26 September 2017, respectively. The report on the results of these consultations has been included in the final version of the environmental and social assessments, which provide evidence that the consultations were meaningful and were conducted in accordance with the guidelines of operational policy OP-703 for category “B” operations. In short, the consultations show the population’s consent to the projects, conditional on the mitigation measures proposed in the ESMPs that were presented ([optional electronic link 9](#)).
- 2.7 The risk management workshop identified potential opposition to project activities by various interest groups (neighborhood associations, nongovernmental organizations, individuals, etc.) as a medium-level environmental and social risk. To mitigate this risk, the program has an ESMF that will require the establishment of formal communication channels to address inquiries and complaints arising during the preparation and execution of the projects, specific and meaningful public consultations, and publication of the program’s environmental and social documents. In addition, arrangements will be made for the inspection of the works, including verification of compliance with the ESMPs by the contractors.
- 2.8 **Fiduciary risks.** The results of the institutional capacity assessment of the executing agency (ICAS) ([optional electronic link 3](#)) indicate a medium degree of development and a medium level of risk. Accordingly, the internal control subsystem needs to be strengthened, for which the program Operating Regulations ([optional electronic link 5](#)) will include a financial and accounting section aimed at mitigating the risks associated with the control environment (Annex III).

- 2.9 **Other risks.** In addition, the risk analysis based on the risk management methodology for sovereign-guaranteed projects identified the executing agency's work overload as another medium-level risk. This overload is particularly significant in the technical areas of the Works Coordination and Execution Unit (UCEPO) and the line offices that support program execution, due to the increase in the number of internationally financed projects currently in execution. To mitigate this risk, the program will finance a program to strengthen the management capacity of the Province of Buenos Aires (AR-L1272) that will include the implementation of information systems (for monitoring of payments, budget, execution, and procurement) and a plan to improve human resources management at the UCEPO and other technical areas in the provincial government (career plan, permanent staff, improvement of work conditions, better pay, etc.), among other activities.

C. Special considerations

- 2.10 **Technical viability.** An evaluation was conducted of the proposed works in the projects that comprise the program's representative sample: (i) adjustment and widening of the Areco River channel, including the construction of two bridges²⁰ to increase the river's drainage capacity and thereby protect the most vulnerable urban areas of the city of San Antonio de Areco from floods; and (ii) construction of a regulating dam on the Pergamino Creek, upstream from the city of Pergamino, for the same purpose. Based on this analysis ([optional electronic link 1](#)), it was concluded that these projects adequately address the needs of the two cities in terms of the size and characteristics of the proposed works. It was also noted that the studies and designs performed were in accordance with generally accepted engineering principles and practices, and that the solutions put forth were the outcome of an analysis of the most effective and convenient alternatives. In addition, it is expected that the physical facilities, conduits, canals, and other components will be properly maintained, in keeping with program requirements. Moreover, nonstructural and institutional management measures will be adopted, including monitoring and early warning systems and delineation of the water risk areas through proper land-use planning, to mitigate the impacts of the recurring floods that affect the two cities. For projects not included in the sample but expected to be financed under the program, the Operating Regulations will establish eligibility and prioritization criteria as well as guidelines for their preparation and review and approval procedures (paragraphs 3.3 and 3.4).
- 2.11 **Socioeconomic viability.** A cost-benefit analysis was performed on a representative sample of the types of project to be financed by the program: a project to improve the conveyance capacity of the Areco River and a project to build retaining works on the Pergamino Creek. The benefits were determined by quantifying the expected value of the damage avoided based on an estimate of damages²¹ in with- and without-project scenarios. The costs considered were incremental investment and operating and maintenance costs, valued without taxes and charges (social prices). The results of the analysis show that the operation is viable, with economic internal rates of return (EIRR) of more than 12% and

²⁰ These are the bridges over provincial routes No. 8 and No. 41. Expansion of the bridge over route No. 41 will be carried out under the route No. 41 expansion project, which is being financed with resources from another Bank operation with the Province of Buenos Aires

²¹ An estimate of the damage produced by flooding was calculated for each of the recurrences using a geographic information system that integrates the damages model with the existence of various types of properties within the flood boundaries.

cost-benefit ratios of more than one. The cost-benefit analysis was supplemented by the corresponding sensitivity and risk analyses as well as by an analysis of the effect of climate change on the severity and frequency of the events and its impact on the expected damages avoided. The sensitivity analysis indicates that the viability results are robust for the project in the city of Pergamino, allowing cost increases of more than 50% and a reduction in expected benefits of up to 50%. For the project in the city of Areco, the results are less robust, allowing cost increases of 15% and benefit reductions of 10%. The analysis of sensitivity to changes in investment cost and the value of benefits shows that, for the Areco project, 90% of the simulations yield an EIRR of more than 13.2%, with a maximum of 17.8%, and for the Pergamino project, 100% of the simulations yield an EIRR of more than 18.5%, with a maximum of 67.0%. The return rate on the projects was also analyzed under the two scenarios, with and without climate change, as if they were alternative scenarios. The results indicate that, since the probable damage avoided is low in the scenario without climate change, the project returns are low too, though the EIRR remains above 12% ([optional electronic link 2](#)). For the projects that were not evaluated, a cost-benefit analysis will be performed and only those projects with an EIRR above 12% will be eligible for financing.

- 2.12 **Financial viability.** The financial capacity of the Province of Buenos Aires was assessed by means of historical and projected financial analyses. For the projected analysis, two scenarios were reviewed: a scenario prepared by the Province of Buenos Aires and a more downside alternative scenario. The Province of Buenos Aires has sufficient borrowing capacity to meet the program's principal and interest payment obligations; the debt and debt service ratios are at reasonable levels in both scenarios. In the alternative scenario, these ratios remain at higher than current levels for a long period. While this indicates that the province's finances may be exposed to macroeconomic shocks, it should be noted that this scenario envisages significant growth in capital expenditures, a reduction in transfers from the central government, and growth in current expenditures in real terms, all of which provide some room to maneuver in the event of unforeseen circumstances. The operating and maintenance expenses are not significant in relation to the amount of current expenditures historically budgeted for water works programs. The local counterpart contribution is also not significant in relation to the capital expenditures projected by the Province of Buenos Aires ([optional electronic link 4](#)).
- 2.13 **Institutional viability.** The institutional capacity of the Province of Buenos Aires's Ministry of Infrastructure and Public Services (MISP) was evaluated using the Institutional Capacity Assessment System (ICAS). The results indicate that the MISP has a medium-level institutional capacity and degree of development and a medium level of risk for execution of the program and subsequent management of the works. It should be noted that the Bank plans to support the MISP in these areas through actions to be included in this operation and in the program to strengthen the management capacity of the Province of Buenos Aires (AR-L1272), which will enable the MISP to strengthen its management capacity to handle the increasing number of externally financed investment projects being generated in recent years ([optional electronic link 3](#)).

III. IMPLEMENTATION AND MANAGEMENT PLAN

A. Summary of implementation arrangements

- 3.1 **Execution mechanism.** The executing agency will be the Province of Buenos Aires (PBA), acting through its Ministry of Infrastructure and Public Services (MISP). The latter will be responsible for general coordination of the program and execution of program activities through its Works Coordination and Execution Unit (UCEPO). The UCEPO will act in coordination with the technical, administrative, and operating areas of the MISP, in keeping with the organizational structure and functions assigned to each such area under the current regulations. Thus, the UCEPO will coordinate technical aspects with the Provincial Water Works Department (DPOH) and procurement processes with the Procurement Department of the MISP. Similarly, the UCEPO will coordinate issuance of the permits and authorizations required to implement the works with the DPOH and the respective beneficiary municipios. For financial management of program resources, the UCEPO will coordinate with the Finance Division of the Province of Buenos Aires's Ministry of Economy, both in relation to the processing of disbursement requests to the Bank and for accounting for the use of resources and contracting of the external audit of the program. The UCEPO will be strengthened by the contracting and/or designation of coordinators for fiduciary issues, environmental and social safeguards, monitoring, and technical issues. To ensure that the program is properly executed, **the following are considered necessary special contractual conditions precedent to the first disbursement of the loan: (i) the MISP has approved the new UCEPO structure that will be used to execute the program; and (ii) the MISP has contracted and/or designated coordinators for the areas mentioned in the execution mechanism.**
- 3.2 The primary responsibilities of the UCEPO include the following: (i) coordinate and supervise the procurement of works, goods, and services; (ii) present the program's operational plans and documents to the Bank, including the Operating Regulations, the payment projections, the procurement plan, and the annual work plan (AWP); (iii) present reports to the Bank (including progress and evaluation reports); (iv) coordinate the supervision and inspection of works and service contracts; (v) coordinate the identification and prioritization of projects to be financed with program resources; and (vi) act as the Bank's interlocutor. The Finance Division will present disbursement requests and the audited financial statements to the Bank. In addition to supervising the works to be carried out by the MISP, it will be essential to finance the contracting of consulting firms to inspect the works in order to ensure that they are properly executed. Prior to initiating execution of each work, the MISP will be required to demonstrate that it has a firm engaged to inspect it.
- 3.3 **Operating Regulations.** Execution of the program will be governed by the provisions of the program Operating Regulations, which will contain, among other aspects, the following: (i) legal and institutional framework, describing the roles and responsibilities of the entities involved; (ii) detailed description of the execution mechanism; (iii) the project cycle, establishing the procedures for preparing subprojects and the intervention strategy in the various phases of the project cycle and of execution of the program's activities; (iv) eligibility criteria and prioritization of projects; (v) the ESMF, including the requirements for social and environmental management; (vi) rules and procedures for the procurement of works, goods, and services; (vii) accounting and financial management rules and procedures designed

to mitigate the issues identified in the institutional capacity assessment, particularly those related to internal control; and (viii) monitoring and evaluation procedures. The Operating Regulations will also include the environmental and social requirements mentioned in the environmental and social management report (ESMR) ([required electronic link 3](#)). To ensure successful execution of the program, **as a special contractual condition precedent to the first disbursement of the loan, the program Operating Regulations will be approved by the MISPP and in force under terms previously agreed upon with the Bank.**

- 3.4 **Eligibility and prioritization criteria.** The following project eligibility criteria will be included in the program Operating Regulations: (i) in the case of infrastructure works, that projects improve drainage and flood control; (ii) that they be located in the northwest region of the province of Buenos Aires; (iii) that they embody the most cost-effective solution; (iv) that they be technically, legally, socially, environmentally, and financially viable based on the methodologies to be established in the Operating Regulations; and (v) that they be classified as category “B” or “C” operations according to the Bank’s Environment and Safeguards Compliance Policy (OP-703).
- 3.5 **Procurement.** The procurement of works, goods, and consulting services will be carried out in accordance with the policies for the procurement of goods and works financed by the IDB (document GN-2349-9) and the policies for the selection and contracting of consultants financed by the IDB (document GN-2350-9). All procurements to be carried out will be included in the procurement plan approved by the Bank using the Procurement Plan Execution System and will abide by the methods and ranges set forth therein, as described in the Fiduciary Agreements and Requirements (Annex III). The executing agency has agreed with the Bank on a procurement plan setting out the procurements for the first 18 months of execution ([required electronic link 4](#)).
- 3.6 **Retroactive financing.** The Bank may provide retroactive financing, chargeable to the loan, for up to US\$150,000 (0.1% of the proposed loan amount) in eligible expenditures incurred by the borrower prior to the loan approval date for design consulting services for the Mercante-Jaureche canal, which is part of the program’s pipeline of projects, provided that requirements substantially similar to those set forth in the loan contract have been met. These expenditures must be incurred on or after 18 September 2017, which is the date of Bank approval of the project profile, but under no circumstances will expenditures incurred more than 18 months prior to the loan approval date be included.
- 3.7 **Advances of funds.** Disbursements will be made in the form of advances of funds based on actual liquidity needs for a maximum period of 180 days, and these advances will be settled when at least 65% of their amount has been expended. This percentage has been selected because experience with the execution of operations in the province of Buenos Aires has shown that the flow of funds involves several institutions, thereby considerably delaying delivery. The financial plan will be developed in accordance with the financial management guidelines for IDB-financed projects (document OP-273-6), as described in Annex III.
- 3.8 **Physical start of works.** In order to ensure that the program is executed as planned within a period of five years (paragraph 2.1), a special condition of execution will be the requirement for the physical start of the works included in the program to occur within four years of the entry into force of the loan contract.

- 3.9 **Audit.** During the loan disbursement period, the executing agency will submit the program's audited annual financial statements to the Bank within 120 days following the end of each fiscal year. The audits will be conducted by the Province of Buenos Aires's Honorable Tribunal de Cuentas [Court of Auditors]. If the Bank deems appropriate, the audit may be conducted by a firm of independent auditors acceptable to the Bank. The scope of the audits and other related issues will be determined in accordance with financial management guidelines for IDB-financed projects (document OP-273-6) and the guidelines for financial reporting and external audits for IDB-financed projects. Program resources may be used to finance the auditing costs. The executing agency will be responsible for contracting the auditing firm.
- 3.10 **Operation and maintenance.** In the first quarter of each calendar year, from the year in which the first of the works financed by the program is completed until three years after the end of the disbursement period, the borrower, acting through the executing agency, will present to the Bank an annual maintenance plan for works and goods financed by the program along with information on the completed operation and maintenance process. If the Bank's inspections or reports that it receives show that the maintenance work fails to meet acceptable standards, the borrower, acting through the executing agency, will take the steps needed to fully correct these deficiencies.

B. Summary of arrangements for monitoring results

- 3.11 Monitoring and evaluation arrangements have been agreed upon, including a data collection plan, the parties responsible, and the allocated budget ([required electronic link 2](#)). The executing agency will be responsible for monitoring and evaluation of the projects to be financed by the program and may contract independent consulting services for that purpose. Monitoring will be carried out using the Bank's supervision tools, which include: a procurement plan, multiyear execution plan (PEP), annual work plan (AWP), results matrix, progress monitoring report (PMR), and results-based management plan. The executing agency will send semiannual reports on progress achieved, results obtained, the AWP for the subsequent year as applicable, and an action plan for the subsequent six-month period, within 60 days following the end of the each six-month period.
- 3.12 The program evaluation arrangements will include a midterm and a final evaluation. The proposed evaluation method is before and after. This consists of measuring the baseline outcome indicators for the project and, once the interventions have been implemented, comparing the measurements to confirm fulfillment of the targets. In addition, there will be an ex post economic evaluation of a set of financed projects to be agreed upon by the borrower and the Bank, based on the ex ante evaluation method but with possible adjustments, as described in the monitoring and evaluation plan ([required electronic link 2](#)). The final evaluation report will be part of the project completion report (PCR).

Development Effectiveness Matrix		
Summary		
I. Corporate and Country Priorities		
1. IDB Development Objectives	Yes	
Development Challenges & Cross-cutting Themes	-Social Inclusion and Equality -Climate Change and Environmental Sustainability -Institutional Capacity and the Rule of Law	
Country Development Results Indicators	-Households protected from flood risk (#)*	
2. Country Development Objectives	Yes	
Country Strategy Results Matrix	GN-2870-1	Development of environmentally sustainable solutions and support for disaster risk management.
Country Program Results Matrix		The intervention is not included in the 2017 Operational Program.
Relevance of this project to country development challenges (If not aligned to country strategy or country program)		
II. Development Outcomes - Evaluability	Evaluable	
3. Evidence-based Assessment & Solution	9.2	
3.1 Program Diagnosis	3.0	
3.2 Proposed Interventions or Solutions	4.0	
3.3 Results Matrix Quality	2.2	
4. Ex ante Economic Analysis	10.0	
4.1 The program has an ERR/NPV, a Cost-Effectiveness Analysis or a General Economic Analysis	4.0	
4.2 Identified and Quantified Benefits	1.5	
4.3 Identified and Quantified Costs	1.5	
4.4 Reasonable Assumptions	1.5	
4.5 Sensitivity Analysis	1.5	
5. Monitoring and Evaluation	7.5	
5.1 Monitoring Mechanisms	2.5	
5.2 Evaluation Plan	5.0	
III. Risks & Mitigation Monitoring Matrix		
Overall risks rate = magnitude of risks*likelihood	Low	
Identified risks have been rated for magnitude and likelihood	Yes	
Mitigation measures have been identified for major risks	Yes	
Mitigation measures have indicators for tracking their implementation	Yes	
Environmental & social risk classification	B	
IV. IDB´s Role - Additionality		
The project relies on the use of country systems		
Fiduciary (VPC/FMP Criteria)	Yes	Financial Management: Budget, Accounting and Reporting.
Non-Fiduciary		
The IDB's involvement promotes additional improvements of the intended beneficiaries and/or public sector entity in the following dimensions:		
Gender Equality		
Labor		
Environment		
Additional (to project preparation) technical assistance was provided to the public sector entity prior to approval to increase the likelihood of success of the project	Yes	AR-T1126 resources were used to complement and update technical, economic and socio-environmental studies for the projects in the sample.
The ex-post impact evaluation of the project will produce evidence to close knowledge gaps in the sector that were identified in the project document and/or in the evaluation plan		

Note: (*) Indicates contribution to the corresponding CRF's Country Development Results Indicator.

The objective of the Program is to help protect the people of the Province of Buenos Aires (PBA) from floods and decrease the resulting economic costs, through structural and non-structural interventions.

The loan proposal presents the problems to be addressed by the project as well as the factors causing them, all of which are based on empirical evidence. The magnitudes of the problems are provided and the proposed interventions are linked to the problems identified in the diagnosis.

The results matrix has vertical logic and includes outcome and output indicators. All indicators are SMART and have sources of information. Due to the nature of multiple works programs, it is not possible to set baselines and targets for the indicators of the projects that are not included in the sample since they will only be identified during execution.

The project was analyzed using a cost-benefit analysis. The economic benefits were adequately quantified and the costs reflect real resource costs to the economy. The benefits were quantified using the expected value of the avoided damages based on the damage estimation with and without the project. The assumptions used were presented and a sensitivity analysis was performed.

The monitoring and evaluation plan comply with the DEM guidelines and are budgeted. The operation will be evaluated using a reflexive methodology and an ex post cost-benefit analysis

Results Matrix										
Program objective	The objective of the project is to better protect the population from flood risks and reduce the economic costs associated with these events. This objective will be achieved by implementing structural and nonstructural measures.									
Indicator	Unit of measurement	Baseline	Baseline year	Year 1	Year 2	Year 3	Year 4	Year 5	Project completion	Comments/ Means of verification
Outcomes										
Outcome 1: Reduction in economic damages caused by flooding										
Expected annual economic damages in the city of San Antonio de Areco ¹	US\$/year	5,201,030	2017	-	-	2,958,705	-	-	2,985,705	Mathematical expectation of damage caused by events (rainfall) considering the probability of occurrence for the various return periods studied (2, 5, 10, and 50 years). Baseline: Estimated cost of the damage without project (ex ante economic evaluation). Areco: The stage I works commence in 2018 and are completed midway through 2019. Pergamino: The works commence in 2018 and are completed in 2019. The benefits are computed from 2020 forward. Means of verification: Ex post socioeconomic evaluation.
Expected annual economic damages in the city of Pergamino	US\$/year	33,027,157	2017	-	-	250,597	-	-	250,597	
Expected annual economic damages in other cities targeted by the program ²	US\$/year	-	-	-	-	-	-	-	-	
Outcome 2: Reduction in water risk as a result of structural measures (drainage and flood control works built) in the province of Buenos Aires										
Households at risk of flooding in the program's area of influence in San Antonio de Areco	Households	2,330	2017	2,330	2,330	2,330	1,349	1,349	1,349	Baseline: According to 2010 census radiuses projected to 2017 within the flood boundaries for a return period of 50 years. Means of verification: Reports from the relevant provincial/municipal units that address the emergency for each extraordinary rainfall event.

¹ The baseline, equal to the total expected damage for floods with return periods of 2, 5, 10, and 50 years, is US\$2,215,325 and US\$32,776,560 for the sample cities of San Antonio de Areco and Pergamino, respectively. That damage is not avoided if the works are not implemented.

² Works have been identified in General Villegas, Rivadavia, Pehuajó, Carlos Casares, Carlos Tejedor, 9 de Julio, and Trenque Lauquen.

Indicator	Unit of measurement	Baseline	Baseline year	Year 1	Year 2	Year 3	Year 4	Year 5	Project completion	Comments/ Means of verification
Households at risk of flooding in the city of Pergamino	Households	9,659	2017	9,659	9,659	9,659	0	0	0	According to household data from the Electric Power Credit Union. Means of verification: Same as above
Households at risk of flooding in the northwest of the province of Buenos Aires	Households	-	-	-	-	-	-	-	-	This indicator will be completed as new eligible projects are added to the program and their interventions are determined. Means of verification: Same as above
Outcome 3: Water risk management strengthened through the implementation of nonstructural measures										
Watersheds with monitoring and early warning systems in operation	Number of watersheds	0	2017	0	0	0	1	1	2	In operation: A monitoring and early warning system is considered to be in operation when it is capable of issuing watershed flood warnings and automatically issues daily reports on the water risk in a watershed. Means of verification: Reports from the Provincial Water Works Department (DPOH) of the Province of Buenos Aires.

Output	Unit of measurement	Associated outcomes	Cost (US\$ millions)	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	Project completion	Comments/ Means of verification
Output indicators											
Component 1: Structural measures											
1. Kilometers of the Areco River channelized	Km	1 and 2	26.3	0	0	3	5	4,4	0	12,4	Channelization of the river consists of widening a section of the channel to facilitate flow conveyance during high water. Means of verification: Work completion certificates and certificate of preliminary acceptance of the work.
2. Bridge over the Areco River expanded	Number of bridges	1 and 2	3.25	0	0	0	1	0	0	1	
3. Regulating dam for the Pergamino Creek built	Number of dams	1 and 2	56.15	0	0	0	0	1	0	1	Consists of a regulating dam to be built of loose materials using the existing soil in the area. Its layout has been determined on the basis of hydraulic requirements, a crest elevation, estimated at 72.00 meters IGM [based on topographic measurements by Argentina's national mapping agency], and its maximum height, measured from its foundation at the highest section. Means of verification: Same as above.

Output	Unit of measurement	Associated outcomes	Cost (US\$ millions)	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	Project completion	Comments/ Means of verification
4. Kilometers of rivers channelized	km	1 and 2	89.32	-	-	-	-	-	-	-	The targets associated with this indicator will be completed as eligible new projects are added to the operation and their interventions are determined. Means of verification: Work completion certificates and certificate of preliminary acceptance of the work.
5. Bridges expanded	Number of bridges	1 and 2		-	-	-	-	-	-	-	
6. Regulating dams built	Number of dams	1 and 2		-	-	-	-	-	-	-	
Component 2: Nonstructural measures											
7. Monitoring and early warning systems developed	Number of monitoring and early warning systems.	3	3.04	0	0	0	1	1	0	2	A monitoring and early warning system is considered to be in operation when the metering equipment begins to capture automated meteorological and hydrological information and send the information to the central system at the Provincial Water Works Department (DPOH) of the Province of Buenos Aires. The monitoring and early warning systems for San Antonio de Areco (two) and Pergamino (one) are considered a project completion target. The target will be adjusted as a function of the monitoring and early warning systems that may be implemented in other watersheds. Means of verification: Reports from the DPOH.
8. Diagnostic assessments, studies, action plans, and/or final designs prepared	Number of studies		0.96	0	0	0	1	1	1	3	Diagnostic assessments, studies, and/or final designs prepared for the San Antonio de Areco, Pergamino, and watersheds in the northwest region of the province. Means of verification: Reports provided by the UCEPO.

FIDUCIARY AGREEMENTS AND REQUIREMENTS

Country: Argentina
Project No.: AR-L1273
Name: Drainage and Flood Control Project in the Province of Buenos Aires
Executing Agency: Ministry of Infrastructure and Public Services of the Province of Buenos Aires (PBA), acting through the Works Coordination and Execution Unit (UCEPO)
Prepared by: Brenda Álvarez and Juan Carlos Lazo (FMP/CAR)

I. EXECUTIVE SUMMARY

- 1.1 Using the Institutional Capacity Assessment System (ICAS), the Bank evaluated the capacity of the executive agency to plan, execute, and implement resource control actions.
- 1.2 The aggregate score of the evaluated systems is 73.74% (of a possible 100%), which indicates a medium-level risk regarding the overall institutional capacity of the Works Coordination and Execution Unit (UCEPO).
- 1.3 The program does not include financing from any other multilateral agency.

II. FIDUCIARY CONTEXT OF THE EXECUTING AGENCY

- 2.1 The institutional capacity of the executing agency was assessed in the areas of programming, administrative organization, personnel management, management of goods and services, financial administration, and internal and external control. The assessment indicates that the executing agency has a medium-level institutional capacity and degree of development and a medium level of risk for execution of the program and subsequent management of the works.

III. FIDUCIARY RISK EVALUATION AND MITIGATION ACTIONS

- 3.1 As concluded by the institutional capacity assessment report, the risk level is medium, owing mainly to the assessment of the internal control subsystem. The report includes a list of the points that need to be reinforced to close the gaps that prevent this subsystem from operating as an optimal control environment. To mitigate this risk, a financial and accounting chapter that covers these points will be included in the program Operating Regulations.

IV. CONSIDERATIONS FOR THE SPECIAL CONDITIONS OF CONTRACTS

- 4.1 To mitigate the risks identified in the institutional capacity assessment of the executing agency, particularly with regard to internal control, the financial and accounting section of the program Operating Regulations will need to address these identified risks.

- 4.2 For purposes of Article 4.10 of the General Conditions, the Parties agree that the applicable exchange rate will be the rate indicated in subparagraph 4.10(b)(i) of that article.
- 4.3 For purposes of determining the equivalence of expenditures incurred in local currency and charged to the local counterpart or the reimbursement of expenditures charged against the loan, the agreed-upon exchange rate will be the prevailing rate on the first business day of the payment month.
- 4.4 For purposes of Article 7.03 of the General Conditions, the external financial audit and other reports that, as of the signature date of this contract, have been identified as necessary for supervising financial management of the program are the program's audited financial statements. These will be submitted to the Bank within 120 days following the end of each fiscal year of the executing agency during the original disbursement period and any extensions thereof, duly audited by an external auditing firm acceptable to the Bank. The last of these audited financial statements will be submitted within 120 days following the conclusion of the original disbursement period or extensions thereof. For purposes of Article 7.03(a) of the General Conditions, the program's fiscal year runs from 1 January to 31 December of each year.

V. AGREEMENTS AND REQUIREMENTS FOR PROCUREMENT EXECUTION

- 5.1 The fiduciary agreements and requirements for procurement establish the applicable provisions for the execution of all procurements anticipated under the program.
- 5.2 Procurement will be conducted in accordance with the policies for procurement of works and goods financed by the Inter-American Development Bank (document GN-2349-9) and the policies for selection and contracting of consultants financed by the Inter-American Development Bank (document GN-2350-9), both of March 2011. Of the country systems approved by the Bank, the information system will be used.
 - a. **Procurement of goods, works, and nonconsulting services.** Procurement of works, goods, and nonconsulting services generated under the program and subject to international competitive bidding (ICB) will be executed using the standard bidding documents issued by the Bank. Procurement subject to national competitive bidding (NCB) will be executed using national bidding documents agreed upon with the Bank. The program's sector specialist will be responsible for reviewing the technical specifications for procurement during the preparation of selection processes.
 - b. **Selection and contracting of consultants.** Consulting service contracts generated under the program will be executed using standard requests for proposals issued by the Bank. The program's sector specialist will be responsible for reviewing the terms of reference for the contracting of consulting services.
 - c. **Selection of individual consultants.** Selection will take the consultants' qualifications for the work into account and will be based on a comparison of the qualifications of at least three candidates, in accordance with the provisions of document GN-2350-9, Section V, paragraphs 5.1 to 5.4.

- d. **Recurrent costs.** Recurrent or operating and maintenance expenses required to implement the program during its useful life will include: per diems, travel insurance, office rental, vehicle rental for supervision work, utilities and communication expenses, translations, bank fees, office supplies, advertising or publicity expenses, photocopies, mail, etc. These expenses will be funded by the program and the administrative procedures of the executing agency will be followed, having been reviewed and accepted by the Bank, provided they do not violate the essential principles of competition, efficiency, and economy. Operating costs do not include salaries of civil servants.
- e. **Retroactive financing.** The Bank may provide retroactive financing, chargeable to the loan, for up to US\$150,000 (0.1% of the proposed loan amount) in eligible expenditures incurred by the borrower prior to the loan approval date for design consulting services for the Mercante-Jaureche canal, which is part of the program's pipeline of projects, provided that requirements substantially similar to those set forth in the loan contract have been met. These expenditures must be incurred on or after 18 September 2017, which is the date of Bank approval of the project profile, but under no circumstances will expenditures incurred more than 18 months prior to the loan approval date be included.

Table 1. Threshold amounts for international competitive bidding and international shortlist (US\$ thousands)

Works			Goods			Consulting services	
ICB	NCB	Shopping	ICB	NCB	Shopping	International advertising Consulting services	Shortlist 100% national
≥25,000,000	< 25,000,000 ≥350,000	< 350,000	≥ 1,500,000	< 1,500,000 ≥100,000	< 100,000	>200,000	≤1,000,000

Table 2. Main procurements

Activity	Type of procurement	Estimated date	Estimated amount (US\$)
Works			
Widening of the Areco River channel downstream from highway RN8 and expansion of bridges over highways RN8 and RN41	ICB	01/01/2018	38,38,951
Regulating dam in the city of Pergamino	ICB	24/06/2018	53,993,267
Improvement of the Mercante – Jaureche canal system. Straightening and channelization of the Jaureche – Mercante canal. Section RP N 65 to La Cautiva Lagoon.	ICB	15/07/2018	45,803,071
Goods			
Monitoring and early warning system and/or contingency plan – Areco River watershed (goods)	NCB	15/01/2018	980,000
Consulting services			
Inspection: Widening of the Areco River channel downstream from highway RN8 and expansion of bridges over highways RN8 and RN41	QCBS	01/12/2017	1,135,478
Inspection: Regulating dam works in the city of Pergamino	QCBS	21/12/2017	2,159,731
Inspection: Improvement of the Mercante – Jaureche canal system. Straightening and channelization of the Jaureche – Mercante canal. Section RP N 65 to La Cautiva lagoon.	QCBS	23/12/2017	1,832,123

- 5.3 **Procurement supervision.** Procurement will be supervised on an ex ante basis, with the exception of shopping, contracting of individual consultants, and NCB for below those indicated below, which will be reviewed ex post. Ex post review visits will be conducted every 12 months. The ex post review reports will include at least one physical inspection visit, selected from among the procurement processes subject to ex post review. At least 10% of the reviewed contracts will be subject to physical inspection during the program.

Table 3. Threshold amounts for ex post reviews

Works	Goods	Consulting services	Individual consulting
< 5,000,000	< 500,000	< 200,000	<50,000

The established threshold amounts for ex post review are applied on the basis of the executing agency's fiduciary execution capacity and may be modified by the Bank if such capacity changes.

- 5.4 **Special provisions.** Address the provisions of the policies contained in documents GN-2349-9 and GN-2350-9 regarding prohibited practices (lists of firms and individuals declared ineligible by multilateral agencies).
- 5.5 **Records and files.** The executing agency will maintain a standardized central filing system with its respective procedures and safeguards and will take care to ensure that the records of each procurement are properly ordered, organized, and filed.

VI. FINANCIAL MANAGEMENT

A. Programming and budget

- 6.1 The executing agency budget has programmatic categories and other classifications by purpose of expenditure (main items), including personnel expenses, supplies, nonpersonnel expenses, fixed assets, transfers, debt service and reduction of other liabilities, other expenses, and representational expenses. Depending on their economic nature, items are current expenses, capital expenses, or financial applications. In addition, internal financing sources may refer to the provincial treasury, credit drawdowns, or own resources.
- 6.2 The budget allocation should be made in advance to ensure that the operation is executed within the established period.

B. Treasury

- 6.3 Payments are made through the Province of Buenos Aires' Treasury, depending on the arrangements approved for each loan. This is facilitated by the smooth relationship with the Office of Financial Services and Administrative Management, which reports to the Finance Division.
- 6.4 In addition, the Finance Division makes the payments related to the components it procures. The Provincial Office for Multilateral Agencies and Bilateral Financing handles the bank accounts that will be opened for the exclusive and separate management of the loan proceeds and the local counterpart resources at Banco de la Provincia de Buenos Aires. Furthermore, this office is responsible for monitoring, on a monthly basis, the balances in the special dollar-denominated accounts and reconciling the program's bank accounts:

- a. Escrow account in U.S. dollars, to receive the loan proceeds.
 - b. Transfers account in dollars, to transfer funds, once converted to local currency, to the paying agencies.
 - c. Payments account for loan proceeds in U.S. dollars, to make payments for procurement by the Finance Division once the funds have been converted to local currency.
 - d. Payments account for local contribution resources, for local counterpart payments for procurement carried out by the Finance Division.
- 6.5 Disbursements will be made on the basis of a detailed financial plan. This plan will be prepared in accordance with Bank guidelines, which establish the disbursement methods, withdrawals of loan proceeds, requirements, designated accounts, conditions applicable to advances of funds, ineligible expenditures, and reimbursements.

C. Accounting and information systems

- 6.6 The executing agency will use the UEPEX system as its financial management system. Accounting will be on a cash basis and International Financial Reporting Standards will be followed when applicable in accordance with established national accounting criteria. The following financial reporting will be required: (i) financial execution plan for up to 180 days following a request for advances of funds; (ii) audited annual financial statements for the program; and (iii) other reports which may be required by the fiduciary specialists.
- 6.7 The accounting area is responsible for the following activities under all programs: (i) entering accounting records in the UEPEX system and filing support documents for recorded payments, invoices, and receipts, along with any other payment records; (ii) submitting sworn statements of payments and responding to any requests; (iii) obtaining a taxpayer identification number at the start of the loan operation as a prerequisite for opening bank accounts in dollars or in pesos; (iv) performing monthly reconciliations of both the designated account (US\$) and the operational account (US\$); and (v) preparing the financial statements for the loan and submitting them to the external auditors for preparation of the relevant reports.
- 6.8 The accounting information is channeled through a chart of accounts that allows classification by expenditure category, component, and source of financing, depending on the structure under the loan financing matrix agreed upon during negotiations.

D. Disbursements and cash flow

- 6.9 The applicable policies will be the the financial management policy for IDB-financed projects (document OP-273-6) and the financial management operational guidelines for IDB-financed projects (document OP-274-2).
- 6.10 Loan proceeds requested of the Bank in the form of advances of funds will be deposited in an account in dollars. These funds will then be converted to local currency based on operational needs and deposited in an account in pesos exclusively for the program. Project expenses and investments will be paid from this account as planned. The executing agency will maintain rigorous and proper control over the use of advances, with mechanisms designed to verify and reconcile the

available balance in the executing agency's records with the equivalent balances in the Bank's records (LMS1 report).

- 6.11 The program will use e-Disbursements, the Bank's online system that allows the executing agency to prepare and send disbursement requests to the Bank electronically, which reduces transaction costs by enabling the Bank to review and process the requests remotely.

E. Internal control and internal audit

- 6.12 The Province's General Accounting Office is tasked with recording and exercising effective control of public expenditures. Accordingly, it becomes involved before each contract is awarded. In addition, it compares budget execution against the authorized budget and approved amendments.

F. External control and reports

- 6.13 The Bank declared the Province of Buenos Aires's Honorable Tribunal de Cuentas [Court of Auditors] eligible to audit Bank-financed operations. Accordingly, and in line with the Bank's strategy to use country systems, the program's external audits will be conducted by the Court, provided that it maintains its eligibility, without the need for a competitive contracting process. In the event that the external audits are not conducted by the Court, the program will contract a firm of independent auditors acceptable to the Bank.
- 6.14 Audits will be conducted on the basis of the new terms of reference prepared by the Bank, version 2017.

G. Financial supervision plan

- 6.15 The financial supervision plan will be based on risk and fiduciary capacity assessments conducted in accordance with the on-site and desk reviews provided for the program, including operational, financing, accounting, compliance, and legal aspects, as well as on the reports issued by the external auditors. In principle, the plan is to conduct an annual financial inspection visit, although this frequency may be adjusted based on the program's risk assessment. Disbursements will be reviewed on an ex post basis.

H. Execution mechanism

- 6.16 The Ministry of Economy of the Province of Buenos Aires, acting through the Provincial Office for Multilateral Agencies and Bilateral Financing, in the Finance Division, is responsible for the financial aspects of the loan and external audits. This ministry is in continuous contact with the Office of Financial Services and Administrative Management, which is the area responsible for the administration of public credit. Its most important duties in relation to the loan are to:
- (i) Monitor and process the requests for advances of funds sent by the agencies carrying out procurement under each of the projects, in order to make payments for works, goods, and services.
 - (ii) Monitor and process the rendering of accounts for incurred expenditures.
 - (iii) Create accounting records of program execution.
 - (iv) Prepare disbursement projections.

- (v) Monitor the balances in the special accounts in dollars and reconcile the program's bank accounts, on a monthly basis.
- (vi) Analyze the accounting balances and issue reconciled trial balances in pesos and in dollars, on a monthly basis.
- (vii) Satisfy the requirements of the audits as applicable, as well as the requirements arising from the periodic financial reviews conducted by the lending agencies.

6.17 **Disbursements.** Disbursements will be made in the form of advances of funds in accordance with a financial plan prepared for a maximum period of 180 days, and these advances of funds will be settled when at least 65% of their amount has been expended. This percentage has been selected because experience with the execution of operations in the province of Buenos Aires has shown that the flow of funds involves several institutions, thereby considerably delaying delivery. A disbursement request will require a completed disbursement request form, the execution status, and a financial plan for the following 180 days. The financial management specialist may request additional information, such as: (i) itemized commitment; and (ii) estimated financial-physical progress achieved on the program. To account for funds advanced, the following information will be submitted to the Bank: (i) disbursement request form; (ii) status of program execution; (iii) reconciliation of Bank resources; (iv) itemization of payments; and (v) other reports to substantiate the program's progress. The rendering of accounts need not be accompanied by support documents for expenditures incurred or payments made. This does not, however, imply Bank approval of the expenditures incurred. The original support documents for the expenditures must be available for review by the Bank upon request.

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-___/17

Argentina. Loan ___/OC-AR to the Province of Buenos Aires
Drainage and Flood Control Project in the
Province of Buenos Aires

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with the Province of Buenos Aires, as Borrower, and with the Argentine Republic, as Guarantor, for the purpose of granting the former a financing to cooperate in the execution of the Drainage and Flood Control Project in the Province of Buenos Aires. Such financing will be for an amount of up to US\$150,000,000 from the Ordinary Capital resources of the Bank, and will be subject to the Financial Terms and Conditions and the Special Contractual Conditions of the Project Summary of the Loan Proposal.

(Adopted on ____ 2017)

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