

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PERU

**CAJAMARQUILLA, NIEVERÍA, AND CERRO CAMOTE PROJECT –
EXPANSION OF WATER AND SEWERAGE SYSTEMS IN SECTORS
129, 130, 131, 132, 133, 134, AND 135 – DISTRICTS OF
LURIGANCHO AND SAN ANTONIO DE HUAROCHIRÍ**

(PE-L1060)

LOAN PROPOSAL

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ELECTRONIC LINKS
REQUIRED
1. Annual work plan http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=36445769
2. Monitoring and evaluation arrangement http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=36443667
3. Environmental and social management report (ESMR) http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=36363669
4. Procurement plan http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=36445785
OPTIONAL
1. Technical analysis http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=36444603
2. Socioeconomic analysis http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=36438369
3. Financial analysis of SEDAPAL http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=36443613
4. Institutional capacity assessment (ICAS) http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=36443591
5. Project operations manual (draft) http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=36445779

ABBREVIATIONS

CDM	Clean Development Mechanism
DNCP	Dirección Nacional de Contabilidad Pública [National Public Accounting Department]
DNS	Dirección Nacional de Saneamiento [National Sanitation Department]
EIRR	Economic internal rate of return
ESMR	Environmental and Social Management Report
FONAFE	Fondo Nacional de Financiamiento de la Actividad Empresarial del Estado [National Fund for State Enterprise Financing]
ICAS	Institutional capacity assessment system
MEF	Ministry of Economy and Finance
MVCS	Ministry of Housing, Construction, and Sanitation
NPV	Net present value
OSCE	Organismo Supervisor de Contrataciones del Estado [Government Procurement Authority]
PAU	Project administration unit
PNS	Plan Nacional de Saneamiento [National Sanitation Plan]
POM	Project operations manual
SCADA	Supervisory control and data acquisition
SEDAPAL	Servicio de Agua Potable y Alcantarillado de Lima [Lima Water and Sewer Utility Company]
SUNASS	Superintendencia Nacional de Servicios de Saneamiento [National Superintendency of Sanitation Services]
WSS	Water and sanitation services
WTP	Wastewater treatment plant

PROGRAM SUMMARY

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Financial terms and conditions				
Borrower: Republic of Peru Executing agency: Servicio de Agua Potable y Alcantarillado de Lima [Lima Water and Sewer Utility Company] (SEDAPAL)			Source of financing:	IDB
			Amortization period:	25 years
			Grace period:	5 years
			Disbursement period:	4 years and 6 months
Source	Program (US\$)	%	Interest rate:	LIBOR
IDB (Ordinary Capital)	100,000,000	61	Inspection and supervision fee:	*
Local	62,894,000	39		
			Credit fee:	*
Total	162,894,000	100	Currency:	U.S. dollars from the Single Currency Facility of the Ordinary Capital Option of converting to nuevos soles: Local Currency Facility (LCF)
Project at a glance				
Project objective/description: The general objective is to help improve access to water supply, sewerage, and wastewater treatment services in the SEDAPAL service area. The specific objectives are to: (i) expand and improve access to water and sewerage services in the communities in the Cajamarquilla, Nievería, and Cerro Camote Project area; and (ii) treat the sewage generated by these communities and those of Carapongo, Santa María de Huachipa, and Ate-Santa Anita, which would contribute to the objective of reducing cases of diarrhea and parasitic diseases in the Cajamarquilla, Nievería, and Cerro Camote Project area.				
Conditions precedent to the first disbursement: (i) SEDAPAL has approved the project operations manual and it has come into effect, including the environmental and social management plan, in accordance with terms agreed upon in advance with the Bank; and (ii) the agreement on the transfer of the loan proceeds from the borrower to SEDAPAL has been signed (paragraph 3.2).				
Special execution conditions: Prior to disbursement of the funds for individual financing of works, SEDAPAL will submit evidence to the Bank's satisfaction that it has: (i) obtained certification from the National Culture Institute that the project area lies outside the protected archeological zone; (ii) obtained the permits (environmental, health, construction, inspection of works on the public thoroughfare, use of water sources, etc.) stipulated in Peruvian legislation; and (iii) adopted a social and environmental management framework that allows for implementation of the environmental management measures (paragraph 4.3).				

Exceptions to Bank policy: None	
Program qualifies as:	SEQ[X] PTI [X] Sector [] Geographic [X] Headcount []

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

I. BACKGROUND AND DESCRIPTION

A. The water and basic sanitation sector

- 1.1 **Legal and institutional framework.** The sector is predominantly governed by the General Sanitation Services Act (Law 26338 of 24 July 1994) and the General Regulations of the General Sanitation Services Act (Supreme Decree 09-95-PRES) and subsequent updates. The institutional structure has a clear distribution of functions among the different entities. Responsibility for sector policy formulation, and planning is borne by the Ministry of Housing, Construction, and Sanitation (MVCS), the sector's lead agency, created in 2002, through the Office of the Deputy Minister for Construction and Sanitation, and its National Sanitation Department (DNS). Financial regulation and regulation of service quality are the responsibility of the National Superintendency of Sanitation Services (SUNASS), a task that is complemented by the National Water Authority in the areas of water quality, quantity, and management. The municipios are responsible for service and the service providers are responsible for efficient delivery.
- 1.2 **The problem.** According to the Household Survey, in 2010, 76.8% of Peruvian households obtained water through a public system. Coverage in urban areas was 89% and 40.4% in rural ones. Overall sanitation coverage in the same year was 64.8%, with 83.8% in urban areas and 44.7% in rural ones.
- 1.3 The program's service area lies within the purview of the Lima Water and Sewer Utility Company (SEDAPAL) and corresponds to the communities of Cajamarquilla, Nievería, and Cerro Camote (department of Lima, Lurigancho-Chosica districts in the province of Lima, and San Antonio in the province of Huarochirí), which have a population of about 74,500. These are outlying zones in metropolitan Lima, with housing developments that have spread into high-lying areas. In those areas,¹ fewer than 16% of inhabited housing is served through water systems and connections, which deliver water for just one to three hours a day. The water comes from underground sources (wells managed by SEDAPAL and the municipalities) and is not chlorinated. Public standpipes are provided. Sixty-three percent of the population surveyed obtains water from tanker trucks, for average consumption of 3.2 cubic meters per month. Seventeen percent use public standpipes. Fifty-six percent of the people surveyed find that the water they are able to store daily is not sufficient to meet their needs and 100% would be willing to connect to a public water system if the service were available.
- 1.4 As for sanitation in the area, 50% of the population uses storage pits or pit latrines, 38% have latrines, 8% are connected to systems that discharge into the Huaycoloro River, a tributary of the Rímac River. The remaining 4% are recently occupied communities that have no facilities of any kind. According to the Statistics and Information Office of the Chosica II Health Microsystem, infectious intestinal

¹ Source: Documento de proyecto: Esquema Cajamarquilla.” SNIP 135334, prepared by the Huachipa Consortium contracted by SEDAPAL, 2009 ([link](#)).

diseases are the fourth leading cause of illness in the study zone and diseases of the skin rank tenth.

- 1.5 The current treatment capacity of the systems operated by SEDAPAL is low, with 17 plants operating and an average treated flow of 2.55 m³/s, which represents about 17% of the sewage generated. When considering solutions to treat existing sewage and to expand the services, one aspect to be kept in mind is the scarcity of purifiable water sources to supply Lima. In its optimized master plan for 2009, SEDAPAL reports a shortfall in supply of 2.84 m³/s. In this context, reuse of treated liquid waste is an element to be considered in studies on treatment alternatives.
- 1.6 Water and sewerage systems have not reached these areas as yet given SEDAPAL's investment capacity limitations and the priorities established in its investment plans approved by the national authorities, which are to improve management of existing services, increase water source and production capacity, and expand services in the more densely-populated areas and those with less difficult topography.
- 1.7 **Institutional considerations.** SEDAPAL is the company in charge of water and sewerage services in the cities of Lima and Callao, home to 28% of the country's population. SEDAPAL is a State-owned enterprise established as a corporation. It is governed by its by-laws, the Corporations Act, and the provisions applicable to State-owned enterprises. SEDAPAL reports to the Ministry of Economy and Finance (MEF), through the National Fund for State Enterprise Financing (FONAFE), which is responsible for directing the business activities of all State-owned enterprises, including SEDAPAL, as holder of 100% of its shares. In addition, SEDAPAL's involvement in the sanitation sector makes it subject to MVCS national policies and to SUNASS regulation and supervision of management targets and approval of service rates. In accordance with its by-laws, the company has three administrative bodies: the Shareholders' Board (highest body), the Board of Directors, and Management. The Shareholders' Board and the Board of Directors are appointed by FONAFE.
- 1.8 **The country's strategy.** Sector policy is defined in the 2005-2015 National Sanitation Plan (PNS),² approved by Supreme Decree, which has the general objective of "helping to expand the coverage and improve the quality of water, sewerage, sewage treatment, and waste disposal services." This objective is consistent with the Millennium Development Goals. In response to the objectives established in the PNS and reflected in the 2009 master water and sewerage plan for Lima and Callao, SEDAPAL included works to expand the water and sanitary sewerage systems as well as wastewater treatment in the program's area of action.

² Updating the PNS in 2011 has been included as an output of the second-generation sanitation sector reform program (PE-L1091 and PE-L1107).

B. The Bank's strategy

- 1.9 The program is consistent with the country strategy with Peru (document GN-2472-2), since it is intended to improve the quality of life in the communities benefitting from the investments financed under the program and is especially consistent with the area of poverty reduction, particularly through an increase in water and sanitation service (WSS) coverage and better quality of those services and access to them. The program is also aligned with the lending program priorities of the Ninth General Increase in the Resources of the Bank of poverty reduction and equity enhancement, since it contributes to an increase in the coverage of basic services in regions where poverty rates are above the national average, and to climate change, sustainable energy, and environmental sustainability initiatives, since the program involves wastewater treatment works whose end product can be reused and installations to capture greenhouse gas emissions for the production of electric power. This project is consistent with the sector challenges of the Bank's Water and Sanitation Initiative and is expected to contribute to attaining the goals established for the 100 Cities Program.
- 1.10 **Bank sector policies.** The proposed operation promotes access to WSS provided by an operator that has administrative and budgetary autonomy, promotes the financial sustainability of the service provider, and includes a comprehensive analysis of water and sanitation systems intended to avoid and/or minimize environmental problems. It also promotes actions to encourage active community participation in the entire project cycle. It therefore complies with the objectives outlined in the Bank's Public Utilities Policy (OP-708) and its Basic Environmental Sanitation Policy (OP-745).

C. Program design

- 1.11 SEDAPAL provides water and sanitation services in Lima and Callao. It is a State-owned enterprise established as a corporation, providing 92.84% of water coverage and 92.05% of sewerage coverage; 76.3% of its water connections are metered; 94% of connections are invoiced; and non-revenue water amounts to 35%. SEDAPAL will increase its wastewater treatment capacity to 85% in 2014 as a result of the construction under concession of the Taboada and La Chira treatment plants, with capacities of 14 m³/s and 7 m³/s. SEDAPAL serves close to half of the nation's water and sanitation users.
- 1.12 SEDAPAL completed execution of project PE-L1020 in 2011 with a rating of satisfactory as reported in the [Project Completion Report](#). The project, which included the expansion of water and sewerage services similar to the ones proposed here to localities in metropolitan Lima for 21,500 and 18,263 households, respectively, was completed on time, with connection percentages of 97% and 96%. The real consumption of the connected population was higher than estimated. The results of polls conducted by an independent evaluator indicate 93% satisfaction with the service received. In the proposed project, the importance of social work during all project intervention stages to ensure the sustainability of the investments,

and other lessons, such as the use of appropriate technologies, will be taken into account.

- 1.13 Investments will be financed to provide WSS through systems for the population in the Cajamarquilla, Nievería, and Cerro Camote Project area. Based on experience in nearby areas with similar characteristics (Valle Amauta and Manchay Project), where the construction of systems was accompanied by a significant increase in the number of inhabited lots (19% and 34%), SEDAPAL expects that the services to be provided will reach 88,000 people (17,128 dwellings) by the end of the works, 2,256 of which will have their service upgraded. The infrastructure (systems and tanks) is designed for a demand horizon of 2021, given that this solution is the least cost alternative. The expansion represents a 1% increase in coverage of the area currently served by SEDAPAL.
- 1.14 Financing will be provided for the construction of a wastewater treatment plant (WTP) to treat the effluents from the new sewerage services and sewage from other areas with sewerage systems. The WTP will be located in La Atarjea, on an 11-hectare property belonging to SEDAPAL and will initially serve 370,000 people, with a design capacity of 710,000 people and 900 liters per second. It will provide tertiary treatment, which will make the effluent reusable for irrigating parks and gardens, freeing up flow from the Rímac River to help cover purifiable water requirements. The methane emissions generated will provide electric power to be used in the processes. In addition, the solution selected will reduce greenhouse gas emissions by 90% compared to the standard solution, which makes the project eligible for carbon credits under the Clean Development Mechanism (CDM).

II. OBJECTIVE, COMPONENTS, COST, AND EXPECTED OUTCOMES

- 2.1 **Objective.** The general objective of the project is to help improve access to water supply, sewerage, and wastewater treatment services in the SEDAPAL service area. The specific objectives are to: (i) expand and improve access to water and sewerage services in the communities in the Cajamarquilla, Nievería, and Cerro Camote Project area; and (ii) treat the sewage generated by these communities and those of Carapongo, Santa María de Huachipa, and Ate-Santa Anita, which would contribute to the objective of reducing cases of diarrhea and parasitic diseases in the Cajamarquilla, Nievería, and Cerro Camote Project area.
- 2.2 **Component 1. Water supply system.** Includes: studies and designs, community development, electricity supply, procurement of land, evaluation of archeological remains, supervision of studies and works, construction of civil works, structures, hydraulic installations and equipment, water lines, secondary networks, connections, and meters.
- 2.3 **Component 2. Sewerage systems.** Includes: studies and designs, community development, electricity supply, procurement of land, evaluation of archeological

remains, supervision of studies and works, construction of civil works, structures, hydraulic installations and equipment, sewer lines, and connections.

- 2.4 **Component 3. Wastewater treatment system.** Includes: studies and designs, community development, electricity supply, evaluation of archeological remains, supervision of studies and works, construction of civil works, structures, and hydraulic installations and equipment, for preliminary, primary, secondary, and tertiary treatment, decontamination, treatment and final disposal of sludge, administrative area, piping to the plants, and outfalls.

- 2.5 **Program cost and financing.** The program will cost a total of US\$162,894,000, with US\$100 million from an Ordinary Capital loan from the IDB to the Republic of Peru. The operation will be executed as an investment program. The local counterpart will be US\$62,894,000, with SEDAPAL providing the entire amount. The borrower will transfer the loan proceeds to SEDAPAL. The following table presents the distribution of the estimated costs, including audits and evaluations, and the source of financing for each program component.

Table II-1 (US\$000)

Investment category	Total	Bank	Local (SEDAPAL)	%
I. Direct costs	151,317	91,882	59,434	62%
1. General works (water supply, sewerage, and wastewater treatment)	111,346	67,288	44,058	68%
2. Secondary works (water supply, sewerage, and wastewater treatment)	39,971	24,594	15,377	62%
II. Studies and supervision	8,848	7,112	1,736	80%
1. Project studies and designs	2,476	1,981	495	80%
2. Social intervention	2,008	1,647	361	82%
3. Supervision of studies and works	4,278	3,422	856	80%
4. Evaluation of archeological remains	86	62	24	82%
III. Complementary activities	1,279	484	795	38%
1. Land, online systems (SCADA), and power supply	1,279	484	795	38%
2. Project administration (advisory and consulting services)	1,170	293	877	75%
IV. Concurrent costs	280	230	50	82%
1. Operational and financial audits	200	164	36	82%
2. Midterm and ex post evaluations	80	66	14	82%
	162,894	100,000	62,894	61%

- 2.6 **Expected outcomes.** It is expected that 17,128 households will benefit from adequate WSS (increase in coverage of 1% in the area served by SEDAPAL and approximately 4% in urban Peru), wastewater treatment for approximately 370,000 people, with an initial treatment flow of 500 liters per second of adequate quality for environmentally safe reuse in irrigation. This flow will free up an

equivalent volume to be purified at the La Atarjea water treatment plant that takes water from the Rímac River. In addition, beneficiaries will face a significantly lower cost for access to water, which will drop from US\$12.9 per cubic meter to US\$1.72 per cubic meter.

- 2.7 The indicators and outcomes for the different components are presented in Annex II (results matrix). The most relevant indicators and the expected values are:

Table II-2. Key program indicators

Indicators	Target
Number of households with access to piped water through expanded systems	17,128
The cost of water for a typical beneficiary household falls from 46.3 nuevos soles/month to	33 nuevos soles/month
Consumption by a typical household increases from 3.2 m ³ /month to	19 m ³ /month
Number of households with sewer connections (currently 986)	17,128
Increase in the average flow of wastewater treated in Lima (currently 2.55 m ³ /second)	0.5 m ³ /second

III. FINANCING STRUCTURE AND RISKS

A. Financing structure

- 3.1 **Financing conditions.** The amortization period for the Bank loan will be 25 years, counting from the date on which the loan contract is signed. The disbursement period will be four years and six months, and the grace period will be five years counting from the same date.
- 3.2 **Conditions precedent and execution conditions.** The loan contract will include the following as special conditions precedent to the first disbursement of the loan proceeds: **(i) the executing agency has approved the project operations manual and the latter has entered into force, including the environmental and social management plan, in accordance with terms agreed upon in advance with the Bank; and (ii) the agreement whereby the borrower will transfer the loan proceeds to SEDAPAL has been signed.**
- 3.3 The tentative disbursement schedule is shown in the following table:

Table III-1. Tentative disbursement schedule (US\$ millions)

Source	Year 1	Year 2	Year 3	Year 4	Year 5
IDB	3.5	12.1	61.7	17.6	5
Local	0	8.0	19.7	27.2	8.0
Percentage	3.5%	12.1%	61.7%	17.6	5.0%

- 3.4 **Disbursements.** The funds will be disbursed based on the project's real liquidity requirements. Also, considering SEDAPAL's financial administration capacity and internal controls, the review of disbursement processes and requests will be performed ex post by external auditors and/or Bank staff or consultants (see Annex III).
- 3.5 The executing agency will use the e-disbursements tool through the Bank's extranet page to make disbursement requests, once the loan contract has been signed and all the conditions have been fulfilled.
- 3.6 **Reimbursement of expenses out of the loan proceeds.** The Bank may recognize as part of the loan proceeds up to US\$10 million equivalent incurred by SEDAPAL between 27 October 2011 and the date on which this operation is approved by the Bank's Board of Executive Directors, provided those expenditures were made following requirements substantially similar to those established in the loan contract and, in particular, in the Bank's procurement and contracting policies and in compliance with policy OP-504. In addition, proceeds from the loan may be used to reimburse for expenses already incurred or those incurred between the date of approval of the operation and the date of entry into force of the contract, provided the aforementioned requirements were complied with.

B. Environmental and social safeguards

- 3.7 The project will have a high positive impact by expanding and improving access to water and sewerage services in communities of Cajamarquilla, Nievería, and Cerro Camote, in an efficient and sustainable manner, also providing wastewater treatment that enables the treated water to be used to irrigate parks and free up water for human consumption. Among the most important impacts, it will lead to: (i) better living conditions for project beneficiaries; (ii) better health and hygiene; (iii) a reduction in water-borne diseases; (iv) a reduction in the vectors of infectious and contagious diseases; and (v) an increase in property values as a result of access to public water and sewerage systems.
- 3.8 The extent of the negative impacts is considered minor, of short duration, and easily manageable through standard procedures. The environmental and social management report (ESMR),³ which includes an analysis of the typical socioenvironmental implications associated with the works and verified compliance with the IDB's socioenvironmental policies,⁴ sets out the positive and negative impacts during construction and operation of the project and the operational, monitoring, and supervisory measures to be implemented during the entire operation. The special conditions related to socioenvironmental considerations are described in paragraph 4.3 of this document. Pursuant to policy OP-703, the project team has classified this project as a Category B operation.

³ See IDBDOCS 36363669.

⁴ The operation has triggered guidelines B.1, B.2, B.3, B.4, B.5, B.6, B.7, B.9, B.11, and B.17 of policy OP-703; as well as policies OP-704, OP-765, and OP-270 (Operational Policy on Gender Equality in Development). Section VIII of the ESMR analyzes the status of compliance with these policies.

C. Special considerations and feasibility

1. Technical feasibility

3.9 **Works execution and supervision arrangements.** The preliminary designs of the projects were prepared by consulting firms and included an analysis of several alternatives, coordinated by the Special Projects Team of the Projects and Works Office. The detailed designs will be prepared in accordance with Peruvian design standards for water and sewerage works and international engineering practices. In all cases, the works must be consistent with the alternative with the least total cost that can assure service delivery that complies with existing quality standards, for a 20-year planning horizon. The project administration unit (PAU) attached to the Office of the General Manager will be responsible for executing the works, including their environmental and social aspects. The unit has been carrying out these activities for many programs with international financing. Execution of the projects in phase I of the “Water for All” program confirmed that the engineering and works supervision practices used by the company and its contractors are adequate. The works will be contracted with specialized construction companies to be selected in accordance with the Bank’s contracting policies.

3.10 **Operation and maintenance.** The works built under this project will be operated and maintained by SEDAPAL, which has the technical staff and means necessary to perform these activities adequately and the operating and maintenance costs are included in the rate structure applied by the company and approved by SUNASS (paragraph 3.18). The connections to be added account for about 1% of the connections operated by the company.

2. Institutional feasibility

3.11 The institutional and fiduciary capacity of the principals involved in the program was assessed. The Institutional Capacity Assessment System (ICAS) (see link) gave a general rating of 98.96%, which reflects institutional capacity that is sufficiently developed for the functions of programming, execution, and control and allows the operation to be classified as low risk. A review of progress in corporate governance indicates that the process is still ongoing.

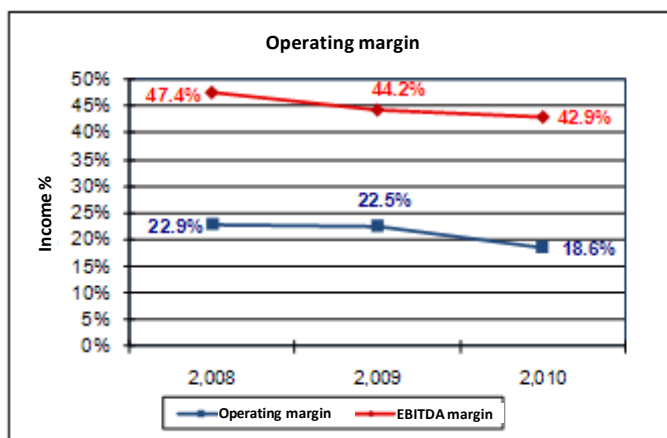
3. Financial feasibility

3.12 **Financial status of SEDAPAL.** The analysis of the company’s historical information is based on its audited financial statements for the 2008-2010 period.⁵ During that period, SEDAPAL’s financial situation has been solid: operating income increased and is sufficient to cover the company’s operating and maintenance costs, finance a larger share of its investments, and cover its financial obligations.

⁵ The end-of-period exchange rates considered were: 3.140 nuevos soles in 2008; 2.890 nuevos soles in 2009; and 2.809 nuevos soles in 2010.

3.13 SEDAPAL's operating income performed positively in the 2008-2010 period, posting annual average growth of 11.3%. However, in 2010, growth in operating income slowed to 3.3%. At the close of 2010, operating income was US\$396.4 million. The higher income mainly came from increased rates.

3.14 In the 2008-2010 period, the operating margin⁶ represented an average of 21.3% of operating revenue. In that period, the margin increased compared to the historical average (14.6%). The EBITDA margin⁷ represented an average of 44.9% of operating revenue. Both the EBITDA and operating



revenue have trended upward, although growth in the EBITDA was slower than growth in operating revenue, which led to a reduction in the margin for the period.

3.15 The operating cash flow was the main source of SEDAPAL's development resources. Cash from operations was higher than the historical average.⁸ The operating cash flow was US\$93.2 million in 2008, US\$130.9 million in 2009, and US\$121.4 million in 2010. Cash was mainly generated from customer payments, whose weight increased compared to cash from operations. This improvement in collections was associated with a reduction in the levels of non-revenue water. Between 2008 and 2010, non-revenue water averaged 37.9%. Compared to earlier years when levels were in the order of 41%, SEDAPAL has improved its water collection efforts to levels below 39%, with the potential for further reductions.

3.16 **Rates and rate structure.** The average rate⁹ (expressed in U.S. dollars) rose on average by 9.8% per year in the 2008-2010 period. In 2009, the average rate grew by 20.2% over 2008, as a result of a rate increase and appreciation of the nuevo sol (8.3%). The main features of SEDAPAL's rate structure are: (i) rate structure systems: water and sewerage; (ii) water rates: fixed charge and variable charge by type of category and consumption range; (iii) sewer rates: variable charge by type of category and consumption range; (iv) categories in the variable water and sewer

⁶ The operating margin is calculated as operating profit divided by operating revenue.

⁷ EBITDA is earnings before interest, taxes, depreciation, and amortization. The EBITDA margin is calculated as EBITDA divided by operating revenue.

⁸ Between 2003 and 2006, cash from operations did not exceed US\$100 million. There was a significant increase in 2007 to US\$123 million.

⁹ The average rate is calculated as income from water and sewer services divided by the invoiced volume of those services, not including revenue from fixed charges (using the SUNASS methodology).

charges: in the residential category, social and household; in the nonresidential category, commercial, industrial, and State; (v) consumption ranges: household (0-10 m³, 10-25 m³, 25-50 m³ and 50 m³ and over) and commercial and industrial (0-1000 m³ and 1000 m³ and over); and (vi) cross subsidies based on differentiated rates by consumption range: lower than average rate for residential users with consumption of under 25 m³, so that nonresidential rates subsidize residential users in this range.

- 3.17 **Financial feasibility.** The feasibility analysis was based on the financial evaluation model for the next 20 years (2011-2030). The results are presented in the financial evaluation ([see link](#)). The scenario is conservative. The analysis indicates that SEDAPAL will be in a position to cover its future financial obligations. According to projections for the invoiced volume and rates in the next 20 years (2011-2030), SEDAPAL will generate operating revenue with average growth of 3.2% per year. The average rate in the 2011-2030 period will rise to an estimated US\$1.042 per m³ (while the figure was US\$0.741/m³ in 2008-2010). The average rate will increase by 1.4% per year on average.
- 3.18 The operating margin will average 9.0% of operating revenue in the 2011-2030 period. Provided the share of operating and maintenance costs is maintained, the operating profit to be attained would be moderate and may grow at an annual average of 4.1%. The EBITDA margin in the next 20 years (2011-2030) will come to an average of 32.8%. The company's higher operating and maintenance costs will affect the higher margin that would be recorded in comparison with the 2008-2010 period (44.9%).
- 3.19 According to expected projections for the invoiced volume and rates over the next 20 years (2011-2030), SEDAPAL expected generate operating revenue that grows at an annual average of 3.0%. The operating cash flow will continue to be SEDAPAL's main source of development funds over the 2011-2030 period. The company's cash balance will be positive in that period. Negative cash flows in the period will be covered with the cash balances from earlier periods, which will maintain the company's financial viability. SEDAPAL's total assets will grow slightly in the coming years although they will shrink starting in 2024. Investments in assets determine the behavior of the company's total assets. In the 2011-2030 period, SEDAPAL will obtain levels of liquidity that cover its short-term obligations (index above 1). The current ratio¹⁰ will rise to an average of 1.26 and the acid test ratio will average 1.15.¹¹
- 3.20 SEDAPAL's liabilities will average 50.6% of total assets in the 2010-2020 period. On average, 84.9% of these liabilities are noncurrent liabilities. Also, the financial debt (both short- and long-term) averages 92.1% of liabilities. SEDAPAL's

¹⁰ Current ratio calculated as current assets divided by current liabilities.

¹¹ Acid test ratio calculated as current assets less stocks and less other current assets divided by current liabilities.

financial leverage will be the equivalent of 50% of its assets in the 2011-2030 period.

- 3.21 In any of the three scenarios evaluated (conservative, optimistic, and pessimistic) SEDAPAL has the capacity to generate enough cash to cover its long-term financial obligations, including disbursements of the loan operation under study to be made in the 2012-2015 period. Its financial viability is grounded in SEDAPAL's effective management of the balance between investments and financing.

4. Economic feasibility

- 3.22 To select the most appropriate alternative for solving the problem, a least economic cost analysis was prepared for the water system, the sewerage system, and the WTP, independently. A cost-benefit analysis was performed of the water and sewerage system and WTP solution as a whole. See the socioeconomic analysis link for details on the methodology and the results.
- 3.23 **Water and sewerage systems.** A demand projection was prepared to design the capacity of the systems. The population projection was based on historical data and two models were used. The demand values were obtained by averaging the results of the models. The population will grow at a rate of 3.97% and SEDAPAL suggests that in year two of operations, the area will see explosive population growth of 24%, based on similar projects carried out Lima's periurban area. The residential demand model was obtained from a representative survey, which found that an average-sized family (5.2 people) not connected to the services uses 3.2 cubic meters per month on average, at a cost of US\$12.9 per cubic meter. They will use 19.2 cubic meters per month as soon as they are connected to the systems, at an average cost of US\$1.72 per cubic meter. Monthly spending on water and sanitation by an average family will fall from US\$46 to US\$32, while its consumption will quintuple. The socioeconomic evaluation was prepared by transforming market prices into economic prices and the cash flow was discounted at a rate of 12%. The economic internal rate of return (EIRR) is 13.7% and the net present value (NPV) is US\$30.5 million. A sensitivity analysis was performed of the assumed variables. First the impact of assumed growth of 24% in year two was calculated. It was assumed that it will only be 4%, like in the other years. The evaluation presents an EIRR of 11.3% and a NPV of negative US\$11.6 million. These results are due to the fact that the project area has low population density, which is expected to triple in 20 years, rising from 70,000 to 210,000 people served. With these results, it was agreed with SEDAPAL that an analysis will be performed in the design stage to give priority to the most densely populated zones.
- 3.24 **Wastewater management.** The collector sewers will make it possible to decontaminate the bodies of water in the region. If left untreated, the sewage from the project would pollute the Rímac River and the Pacific ocean in the vicinity of the mouth of the Rímac River. This would mean that the green areas in metropolitan Lima could not be watered and would be lost, since Lima is a desert with annual average precipitation of close to zero. Also, SEDAPAL will take

- 0.9 m³/sec from the Rímac River and will return that flow to the Surco canal irrigation district. That flow will come from the La Atarjea WTP.
- 3.25 Three WTP alternatives were studied and the least economic cost alternative was selected, including income from carbon credits for capturing and using the methane produced by the sludge. The following benefits were used for the cost-benefit analysis of the best alternative: (i) replacement of the flow in the Surco irrigation canal valued at US\$0.52/m³, which is equivalent to the long-term marginal cost (cost of the Marca II project); (ii) the sale of carbon credits (US\$3.5 million a year); and (iii) user willingness to pay for wastewater treatment (US\$9 month/family). The results of the evaluation are a project with an EIRR of 9.9%, and a NPV of negative US\$22.7 million. Construction of the plant is recommended, given that the analysis did not reflect all of the benefits, such as the impact on Lima's green areas or the damage to Pacific ecosystems. Also, its financing is recommended in light of OP-708, which states that a project can be financed as a mechanism to meet wider national objectives relating to social equity and protection of the environment. Also, the sensitivity analysis detected that the project will continue to be viable with the benefits described in this paragraph, with only a 10% reduction in costs.
- 3.26 **PTI/SEQ.** This operation qualifies as a project that enhances social equity and is targeted to poor beneficiaries (55% of users are poor or marginal according to the census) and is consistent with the provisions of the Report on the Ninth General Increase in the Resources of the Bank (AB-2764).
- 3.27 **Ability to pay.** Ninety percent of the population has the ability to pay for consumption of at least 12 cubic meters per month per family, which is adequate consumption for Lima according to the World Health Organization. This consumption would cost US\$19.6. The regulatory agency is introducing a system of cross subsidies that will permit the remaining 10% to cover the costs of their water and sewerage services.
- 3.28 **Risks.** The execution risks are minimized by SEDAPAL's experience in executing program 1920/OC-PE, as well as its classification as satisfactory and low-risk in the ICAS institutional fiduciary assessments.
- 3.29 **Fiduciary risk.** A risk management exercise was performed following the Bank's methodology. The areas identified include: (i) inadequate coordination between the PAU and SEDAPAL's line offices; and (ii) delays in the selection process and contract execution. The following actions will be carried out to mitigate these risks: training for the staff involved, preparation of a project operations manual, periodic supervisory visits, and contracting of qualified personnel to support project execution.

IV. IMPLEMENTATION AND MANAGEMENT PLAN

A. Execution arrangement

- 4.1 **Borrower and executing agency.** The borrower will be the Republic of Peru and SEDAPAL will execute the project through the PAU attached to the Office of the General Manager, which has experience in executing projects financed with multilateral and bilateral resources. The program will finance a team of individual consultants to strengthen it.
- 4.2 SEDAPAL will be responsible for technical coordination of the project and will provide the necessary resources from its annual budget. Once the eligibility of the investments is verified, loan disbursements will begin.
- 4.3 **Special execution conditions:** Prior to disbursing funds for individual financing of the works, SEDAPAL will submit evidence to the Bank's satisfaction that it has: (i) obtained certification from the National Culture Institute stating that there are no archeological remains; (ii) obtained the permits (environmental, health, construction, inspection of works on the public thoroughfare, and any others that apply) stipulated in Peruvian legislation; (iii) adopted a social and environmental management framework that allows for implementation of the environmental management measures.¹²
- 4.4 Based on the conclusions of the economic and financial evaluation, implementation of option 1 (activated sludge option) for the treatment solution at the La Atarjea WTP requires the operation to be registered with the CDM's Executive Board as eligible to receive carbon credits. This requirement must be complied with before the calls for bids for construction can be issued.
- 4.5 **Project operations manual.** The project will be executed in accordance with the operations manual, which will include responsibilities, rules, and procedures for programming activities and preparing work plans; project review and approval; procurement and contracting; management and filing of supporting documentation for bid processes; financial and accounting management; audits; and the respective monitoring and evaluation system (see link draft project operations manual). The operations manual will have an environmental and social management plan as an annex.
- 4.6 **Operation and maintenance.** The infrastructure works will be operated and maintained by SEDAPAL.
- 4.7 **Financial and accounting management of the program.** SEDAPAL will: (i) maintain specific accounting and budget accounts for handling the project funds; (ii) have a detailed accounting and reporting system for the administration, registration, and payment of contracts for works, goods, and consulting services;

¹² The other conditions specified in section IX of the ESMR and not mentioned in this paragraph will be included in the program's Operating Regulations.

(iii) present the program's consolidated financial reports in a timely manner and make the necessary accounting information available to the Bank and the external auditors; (iv) maintain appropriate records of disbursement requests; and (v) maintain an adequate filing system for documentation supporting eligible expenditures for verification by the Bank and the external auditors.

B. Procurement

- 4.8 **Procurements** will be governed by Bank documents GN-2349-9 and GN-2350-9 and the provisions of Annex III. The annual procurement plan details the procurements to be made during the first 18 months of the project and includes: (i) contracts for works, goods, nonconsulting services, and consulting services; (ii) the proposed methods for contracting works, goods, and nonconsulting services, and for the selection of consultants; and (iii) the procedures applied by the Bank for reviewing contracts. Once the project gets under way, the remaining contracts will be identified and included in the procurement plan. Considering project dynamics and the risk assigned to it, the borrower will update the procurement plan semiannually or when changes occur. The most recent versions of the procurement plans will be made available on the websites of the Bank and the State Office of Supervision and Contracting. The Bank will use ex post reviews.

C. Program monitoring and evaluation

- 4.9 **Monitoring and evaluation** will be carried out using the Bank's supervisory tools, based on a program execution plan, a procurement plan, a results matrix, and a plan to compile information for it designed by SEDAPAL and acceptable to the Bank. The costs of these activities have been included in the program's budget (paragraph 2.5). As an execution condition, two independent evaluations will be conducted—a midterm evaluation when 25% of the budget has been executed but not before 18 months after the loan becomes eligible for disbursement; and a final evaluation prior to six months before the date of the last disbursement. The terms of reference and selection process will be agreed upon with the Bank.
- 4.10 For program monitoring, SEDAPAL will present semiannual status reports that will be used as the basis for preparing the project monitoring reports. Compliance with the program's objectives will be reviewed annually and any problems that arise in execution will be studied and the necessary adjustments will be agreed upon jointly.
- 4.11 **Audits.** Within 120 after the end of the fiscal year, SEDAPAL will submit the project's audited annual financial statements to the Bank. The final audited financial statement will be submitted within 120 days after the date stipulated for the last disbursement of the loan. The external audit will be performed by independent auditors acceptable to the Bank, in accordance with its requirements and based on terms of reference approved in advance. The costs of the audit will be financed from the loan proceeds.

Development Effectiveness Matrix				
Summary				
I. Strategic Alignment				
1. IDB Strategic Development Objectives				
Lending Program	(i) Lending for poverty reduction and equity enhancement, and (ii) Climate chance initiatives, renewable energy and environmental sustainability.			
Regional Development Goals	(i) Incidence of waterborne diseases (per 100,000 inhabitants), and (ii) Stabilization of CO2 equivalent emissions (metric tons per habitant).			
Bank Output Contribution (as defined in Results Framework of IDB-9)	(i) Households with new or upgraded water supply; (ii) Households with new or upgraded sanitary connections, and (iii) Percentage of power generation capacity from low-carbon sources over total generation capacity funded by IDB.			
2. Country Strategy Development Objectives				
Country Strategy Results Matrix	GN-2472	Access to public services: water and sanitation.		
Country Program Results Matrix	GN- 2617	This project is included in the 2011 Country Program Document.		
Relevance of this project to country development challenges (If not aligned to country strategy or country program)				
II. Development Outcomes - Evaluability		Highly Evaluable	Weight	Maximum Score
		9.1		10
3. Evidence-based Assessment & Solution	9.5	25%	10	
4. Ex ante Economic Analysis	10.0	25%	10	
5. Monitoring and Evaluation	7.1	25%	10	
6. Risks & Mitigation Monitoring Matrix	10.0	25%	10	
Overall risks rate = magnitude of risks*likelihood		Medium		
Environmental & social risk classification		B		
III. IDB's Role - Additionality				
The project relies on the use of country systems (VPC/PDP criteria)				
The project uses another country system different from the ones above for implementing the program				
The IDB's involvement promotes improvements of the intended beneficiaries and/or public sector entity in the following dimensions:				
Gender Equality				
Labor				
Environment	Yes	The Project will facilitate the connection of households to the project's sanitation system.		
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	"The Integrated Management Study of Water Resources for the Water Supply of the Metropolitan Area of Lima." undertaken by the consulting firm Nippon Koei LAC (NKLAC). This study was carried out through TC PE-T1112 and its results confirm the need to substitute river water by treated discharges for irrigation in order to liberate water for drinking purposes.		
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.				

The Project will be undertaken in the localities of Cajamarquilla, Nievería and Cerro Camote which are located in the Department of Lima. The population living in these localities totals 74,500. Less than 16% of the dwellings are connected to the water system and only 8% to the sewerage system, which is released to the Huaycoloro River. Intestinal infections are the fourth highest cause of death in the area, and skin diseases take the tenth place. Currently, the capacity of SEDAPAL to treat sewerage is only 17% of the total discharge is generated.

The POD clearly presents the problems confronting the water and sanitation services and the sewerage treatment in the three localities. It also presents the factors causing them. The magnitudes of the problems are provided as are the sources of information used in the diagnosis. The proposed interventions are clearly linked to the problems identified in the diagnosis. The results matrix has vertical logic and the impacts, outcomes and outputs are clearly presented. All the impact and outcome indicators are SMART. However, not all the product indicators are SMART. It is not clear from the indicator "number of committees created and functioning for participation and monitoring," what committee it is referring to. It is suggested that this indicator be made more specific. The indicator "land acquired for infrastructure" is not a product but an activity required to produce the products. All the impact, outcome and output indicators have baselines, targets and sources of information. With regards to the data for the PMR, all outputs have annual targets, however, the project costs are not broken down by outputs as are presented in the results matrix.

The project was analyzed using a cost-benefit analysis. All economic benefits were adequately quantified, the costs used reflect real resource costs, assumptions were spelled out and a sensitivity analysis was undertaken. The operation has a monitoring and evaluation plan, the project will be evaluated using a cost-benefit analysis and a reflexive methodology.

Finally, the risk matrix presents the projects risks which are rated for magnitude and probability. Mitigation measures are presented for each risk as well as indicators to monitor its implementation.

RESULTS MATRIX

Objective	The general objective is to help improve access to water supply, sewerage, and wastewater treatment services in the SEDAPAL service area. The specific objectives are to: (i) expand and improve access to water and sewerage services in the communities of Cajamarquilla, Nievería, and Cerro Camote; and (ii) treat the wastewater generated by these communities and those of Carapongo, Santa María de Huachipa, and Ate-Santa Anita, which would contribute to the objective of reducing cases of diarrhea and parasitic diseases in Cajamarquilla, Nievería, and Cerro Camote.						
Impact indicators (includes country strategy indicators to which this operation contributes)							
	Baseline	Year 1	Year 2	Year 3	Year 4	Target	Comments/Mean of verification
Urban water coverage	87.1% in 2007					90%	Information included in the country strategy/Source: Household Survey, National Statistics Bureau of Peru
Urban sanitation coverage	66.2% in 2007					70%	Information included in the country strategy/Source: Household Survey, National Statistics Bureau of Peru
	Baseline	Year 1	Year 2	Year 3	Year 4	Target	Comments/Mean of verification
Outputs							
Number of committees established and operating for participation and monitoring	0		15	15		30	Records of establishment. Reports by the executing unit. Semiannual reports
Land procured for infrastructure	1	12	6			19	Availability contracts certified. Semiannual reports
Water pressure lines (pipes, trunk lines) constructed (km)	0			30.2	25.5	55.7	Works certificates. Semiannual reports
Number of water wells built	0		1	1		2	Works certificates. Semiannual reports
Number of water wells overhauled	0		3	1		4	Works certificates. Semiannual reports
Number of water storage tanks built	0		4	13	1	18	Works certificates. Semiannual reports
Number of water storage tanks overhauled	0		1	2	1	4	Works certificates. Semiannual reports
Number of water booster stations built	0			12	5	17	Works certificates. Semiannual reports

	Baseline	Year 1	Year 2	Year 3	Year 4	Target	Comments/Mean of verification
Water distribution systems built (km)	0		50	138	90	278	Works certificates. Semiannual reports
Number of residential water connections built	0		2,875	7,934	5,175	15,984	Works certificates. Semiannual reports
Number of residential water meters installed	0		2,899	7,934	5,475	16,308	Works certificates. Semiannual reports
Number of wastewater pumping stations built	0			2		2	Works certificates. Semiannual reports
Main collector sewers built (km)	0			30	5	34.7	Works certificates. Semiannual reports
Sewer systems built (km)	0		25	122	65	212	Works certificates. Semiannual reports
Number of sewer connections built	0		1,885	9,199	4,900	15,984	Works certificates. Semiannual reports
Wastewater treatment plant (la Atarjea) built and operating	0				1	1	Works certificates. Semiannual reports
Outfalls to and from the WTP built (km)	0			8.5		8.5	Works certificates. Semiannual reports
Outcomes							
Households with access to piped water through expanded systems	2,257			9,600	5,311	17,168	Commercial system reports, central department. Semiannual reports.
% of households with access to piped water through expanded systems (cumulative)	13.1	13.1	13.1	69.1	100	100	Commercial system reports, central department. Semiannual reports.
Households with access to improved water service (with continuity) ¹	0			1,200	1,057	2,257	Consumption reports and complaints regarding the operating and commercial systems. Pressure measurements in the system. Semiannual reports.
% of households with service continuity in the area. Indicator: Under 8 hours/day Over 18 hours/day	100% 0%					0% 100%	SEDAPAL's SCADA and commercial system reports Semiannual reports.

¹ Note: "Improved" means increases in the quantity of water compared to the baseline (l/person/day or m³/family/month) and continuity (hours/day).

	Baseline	Year 1	Year 2	Year 3	Year 4	Target	Comments/Mean of verification
Cost of water for a typical household	46.3 nuevos soles /month					33 nuevos soles /month	Commercial system reports, central department, SEDAPAL. Semiannual reports.
Amount of water consumed by a typical household	3.6 m ³ /month					19 m ³ /month	Commercial system reports, central department, SEDAPAL. Semiannual reports.
Households with new sewer connections	986			11,084	5,098	17,168	Commercial system reports, central department, SEDAPAL. Semiannual reports.
% of households with new sewer connections (cumulative)	5.7	5.7	5.7	70.2	100	100	Commercial system reports, central department, SEDAPAL. Semiannual reports.
Households with access to wastewater treatment services	0			62,000	16,000	78,000	Commercial system reports, central department. Semiannual reports.
% of households with access to wastewater treatment services	0			79.5	100	100	Commercial system reports, central department. Semiannual reports.
	Baseline	Year 1	Year 2	Year 3	Year 4	Target	Comments/Mean of verification
Average treated flow (m ³ /sec)	2.55				0.5	3.05	SEDAPAL's SCADA system reports. Semiannual reports.
Increase in average flow available at the intake of the La Atarjea water treatment plant (m ³ /s)	20				0.5	20.5	Agreement on use of water for irrigation and SCADA system measurements at the intake (these measurements will allow values to be assessed over the longer term). Semiannual reports.
Sale of carbon credits (tons CO ² equivalent/year)	0					50,000	Project approved by the CDM Board and sales contract signed. Sales will begin when the plant has come on line, i.e. after the program has ended. Final program report.
Income from the sale of carbon credits (nuevos soles millions/year)					3.52	3.52	Project approved by the CDM Board and sales contract signed. Sales will begin when the plant has come on line, i.e. after the program has ended. Final program report.

FIDUCIARY AGREEMENTS AND REQUIREMENTS

Country:	Peru
Project number:	PE-L1060
Name:	Cajamarquilla, Nievería, and Cerro Camote – Expansion of water and sewerage systems in sectors 129, 130, 131, 132, 133, 134, and 135 – Districts of Lurigancho and San Antonio de Huarochirí
Executing agency:	Servicio de Agua Potable y Alcantarillado de Lima [Lima Water and Sewer Utility Company (SEDAPAL)]
Prepared by:	Víctor Hugo Escala, Guillermo Lopez, and German Zappani (PDP/CPE)

I. EXECUTIVE SUMMARY

- 1.1 The evaluation of the fiduciary situation was based on an institutional analysis of SEDAPAL and the project administration unit (PAU), which will be the SEDAPAL unit in charge of project execution (executing agency), the risk analysis exercise, meetings with key personnel of the executing agency, frequent meetings with the project team, and the experience and knowledge gained by the Bank in execution of SEDAPAL I, which ended in June 2011.
- 1.2 The country financial management systems are effective and reliable. The study conducted in 2009 found some shortcomings in terms of the quality and timeliness of budgetary control in the country, and in the internal and external control system, which needs to be modernized in order to make it more efficient. With regard to country procurement systems, at present no country procurement procedures are being used for loans financed by international lending organizations because they do not reflect all the principles of good international practices that are embodied in the Bank's procurement policies and procedures. SEDAPAL is a State-owned enterprise that uses its own financial management systems but comes under the National Control Act and is governed by the Public Procurement Act.

II. FIDUCIARY CONTEXT OF THE EXECUTING AGENCY

- 2.1 The executing agency will be SEDAPAL through the project administration unit (PAU). The unit is responsible for executing investment projects and reports to the General Manager. The institutional analysis of the executing agency found that it is an organized unit with a division of tasks and responsibilities in accordance with manuals currently in force. It will require additional human

resources with experience in the execution of projects with external financing to carry out the proposed project.

III. FIDUCIARY RISK EVALUATION AND MITIGATION MEASURES

- 3.1 The risk assessment exercise performed during the design stage found that the overall risk of the project is medium. The risk in fiduciary matters is also considered medium. See the annex on project risk management.

IV. CONSIDERATIONS FOR THE SPECIAL CONDITIONS OF THE LOAN CONTRACT

1. Conditions precedent to the first disbursement: Project Operations Manual approved by the Bank;
2. Exchange rate for rendering accounts: the exchange rate will be the monetization rate;
3. Annual audited financial statements, with specific terms of reference and an eligibility level I or II firm;
4. Precise description of the key positions in the project's executing agency
5. The two-envelope procedure will not be allowed for the procurement of goods, works, and nonconsulting services
6. As a condition for the presentation of bids or proposals and/or for awarding contracts, it will not be necessary for suppliers or consultants: (i) to be registered in Peru; (ii) to have a representative in Peru; or (iii) to be associated or hold subcontracts with Peruvian suppliers, contractors, or consultants.
7. Calls for tenders, bidding documents, reports on the opening of bids, calls for expression of interest, and the summary of reports on bid evaluations and proposals for all goods, nonconsulting services, and consulting services, as the case may be, will be published on the website of the Government Procurement Authority (OSCE) in a manner acceptable to the Bank.
8. A significant difference between the amount of the least cost bid and the reference value will not be considered cause for annulling the bidding process unless, after investigating the reasons behind the excessive cost, it is determined to the Bank's satisfaction that the reference value is correct and in line with real conditions.
9. The borrower will publish the procurement plan in the Procurement Plan Execution System (SEPA), updating it at least semiannually or as required by the Bank to reflect the actual needs of project implementation and the progress made.

V. AGREEMENTS AND REQUIREMENTS FOR PROCUREMENT EXECUTION

5.1 The fiduciary agreements and requirements on procurement establish the provisions that apply for the execution of all procurement planned for the project.

1. Procurement execution

Procurement will be carried out in accordance with documents GN-2349-9 and GN-2350-9.

- a. **Procurement of works, goods, and nonconsulting services.** Contracts for works, goods, and nonconsulting services¹ generated by the project and subject to international competitive bidding (ICB) will be carried out using the standard bidding documents (SBD) issued by the Bank. Bids subject to national competitive bidding (NCB) will be carried out using national bidding documents agreed upon with the Bank (or satisfactory to the Bank if they have not yet been agreed upon). The review of the technical specifications for procurement during the preparation of procurement processes is the responsibility of the project's sector specialist.
- b. **Selection and contracting of consultants:** Consulting service contracts for the project will be carried out using the standard request for proposals (RFP) issued by the Bank or agreed upon with the Bank, regardless of the amount of the contract (or satisfactory to the Bank if it has not been yet agreed upon). The review of the terms of reference for contracting consulting services is the responsibility of the project's sector specialist.
 - **Selection of individual consultants:** This will be based on their qualifications to perform the job at hand, and will require a comparison of the qualifications of at least three candidates. When so required by the circumstances, advertisements may be published in the local or international press.

2. Table of thresholds (US\$)

Works			Goods ²			Consulting services	
International competitive bidding	National competitive bidding	Shopping	International competitive bidding	National competitive bidding	Shopping	International publicity	Shortlist 100% National
≥ 3,000,000	<3,000,000 and ≥ 250,000	< 250,000	≥ 250,000	< 250,000 y ≥ 50,000	< 50,000	≥ 200,000	< 350,000

¹ According to the IDB procurement policy, nonconsulting services are treated as goods.

² Includes nonconsulting services.

- 5.2 The thresholds for ex ante review are determined in accordance with the type of risk procurement represents for the project; this risk has been determined to be medium. Below are the thresholds that will be considered for ex ante review:

Thresholds for ex ante review ³		
Works	Goods ⁴	Consulting services
Processes valued at more than US\$1,000,000; the first process of each method regardless of the amount; all direct contracting	Processes valued at more than US\$150,000; the first process of each procurement method regardless of the amount; all direct contracting	Processes valued at more than US\$100,000; the first process of each selection method regardless of the amount; all direct contracting

- c. **National preference:** Does not apply.

3. **Initial procurement plan (describes the main procurements).** See [IDBDOCS-#36445785-Link – Procurement plan](#)

4. Procurement supervision

- 5.3 Given the project's medium level of risk in fiduciary matters, one inspection visit per year will be considered. In establishing the supervision arrangement, the executing agency's prior experience, capacity, and knowledge of the Bank's procurement procedures were taken into account. Subsequent reviews by the Bank will cover at least one out of every 10 contracts signed, and will include at least two physical inspections of the goods procured.

5. Records and files

- 5.4 The files are to be kept in the offices of the executing agency, under secure conditions.

VI. FINANCIAL MANAGEMENT AGREEMENTS AND REQUIREMENTS

1. Programming and budget

- 6.1 Annual programming and budget preparation will be based on SEDAPAL provisions, through its Finance Office. The budget will be operated through the SAP. The budget assigned to the project will be managed by the executing agency and approved and supervised by SEDAPAL. The Bank will reimburse the project's eligible expenditures in accordance with the budget lines defined and executed by the program. The executing agency will have budgetary autonomy for executing the program.

³ During the course of project execution, the Bank may, without further action, modify the thresholds for ex ante review if it determines that the fiduciary context of the executing agency or of the country has changed. In that case, the Bank will communicate that decision to the executing agency, which will then reflect the new conditions of execution in the procurement plan.

⁴ Includes nonconsulting services

2. Accounting and information systems

- 6.2 The project will use the SAP system, which offers transparency and specific controls in budget execution. The executing agency has taken the initiative of developing a special module for project execution with a SAP interface to issue financial reports on the project and disbursement requests, financial and other statements, exchange rate control, project financial statements, and others in accordance with the Bank's requirements, which will be prepared by PROMESAL staff in coordination with SEDAPAL's Finance Office. A cash basis accounting system will be used, in line with international financial information standards and the directives issued by the Public Accounting Department (DNCP).
- 6.3 Financial statements will be required for the purposes of project supervision, and will include: statement of cash received and disbursements made, statement of cumulative investments and the notes to these financial statements, report on the reasonableness of procurement processes, supporting documents for expenditures, and evaluation of the internal control system. These reports will be submitted annually.

3. Disbursements and cash flow

- 6.4 The project will use SEDAPAL's treasury system for disbursements. Expenditures are subject to the budget and financial execution process and will be recorded in the SAP system. The country's treasury system does not yet have a master account system, so separate accounts are used.
- 6.5 Disbursements will be made in accordance with the project's actual liquidity needs (financial planning). The executing agency will submit disbursement requests to the Bank, along with a schedule of expenditures by annual work plan activity for the next 180 days. Documentation verifying at least 80% of the disbursement amount will be included in the subsequent request, through the statements on expenditures and investments. The executing agency will deliver to the Bank the project's initial financial plan, which should contain the disbursement schedule for the duration of the project, which may be updated periodically. The executing agency will open a bank account exclusively for managing the Bank's funds. Supporting documentation on expenditures will be subject to ex post review by Bank staff and/or consultants, and by the external auditors. Reports will be issued after each ex post review visit.
- 6.6 The exchange rate will be the monetization rate, understood as the exchange rate on the day U.S. dollars are converted to soles.
- 6.7 Expenditures not considered eligible by the Bank will be reimbursed by the counterpart contribution or with other resources, depending on the nature of the ineligibility.

4. Internal control and internal audit

- 6.8 The control environment, control activities, communication and information, and the monitoring of the activities of SEDAPAL are governed by the country's regulations, which are based on the National Control System Law.
- 6.9 The internal audit function within SEDAPAL resides with the Internal Audit Office (OCI), whose staff comes under the Comptroller General of the Republic (CGR). Although the scope of the OCI's work does not usually encompass the project level, it will receive copies of the external audit reports through the government audit system (SAGU), designed by the CGR, by means of which inspections may be performed depending on time and resource availability.
- 6.10 The executing agency will be required to include the principal internal control processes in the operations manual in order to ensure that controls are working effectively.

5. External control and reports

- 6.11 As the lead agency of the National Control System, the CGR outsources the external audits of projects to independent audit firms acceptable to the Bank. Independent audit firms acceptable to the Bank are evaluated periodically by the Bank to ensure their high quality.
- 6.12 The CGR authorizes the executing agency to select and hire the independent audit firm in accordance with Bank policies, and for the entire project execution period, including extensions of the final disbursement period.
- 6.13 Due to the complexity of the project, the following will be necessary:
1. Selection of a level I or II independent audit firm; and
 2. Submission of financial statements audited annually.
- 6.14 The cost of the external audits, which has been estimated at US\$200,000, will be covered by the loan proceeds.

6. Financial supervision plan

Supervision activity	Supervision plan			
	Nature and coverage	Frequency	Responsibility	
			Bank	Third party
OPERATIONAL	Review of physical progress of the works of Component I against disbursements. Inspection visits to a sample of works	Annual	Fiduciary and technical team	
	Review of portfolio with the executing agency and the MEF	Quarterly	Fiduciary and technical team	MEF
	Administration mission	After 18 months	Fiduciary and technical team	
FINANCIAL	Ex post review of disbursements	Annual	Fiduciary team	External auditor
	Financial audit	Annual		External auditor
	Review of disbursement requests and attached reports	Periodic	Fiduciary team	
	Inspection visit to the executing agency/analysis of internal control and control environment	Annual	Fiduciary team	

Supervision activity	Supervision plan			
	Nature and coverage	Frequency	Responsibility	
			Bank	Third party
COMPLIANCE	Annual allocation of budgetary resources required for project implementation	Annual	Fiduciary team	Executing agency
	Delivery of financial statements	Annual	Fiduciary and technical team	External auditor
	Conditions precedent to the first disbursement	Once	Fiduciary and technical team	

7. Execution arrangement

- 7.1 Given the execution arrangements described in the Proposal for Operations Development, an administrative-financial execution structure centralized through the executing agency is required and will be responsible for formulating the budget on an annual basis, for both the local contribution and the IDB contribution. The executing agency will be responsible for making payments and processing disbursements, submitting supporting documentation for the use of funds to the Bank, and coordinating all activities with SEDAPAL's respective offices; these processes will be clearly spelled out in the program's Operations Manual.

8. Other financial management agreements and requirements

- 8.1 Due to the nature and complexity of the program, the executing agency will need to have a follow-up and monitoring system for project activities. In addition, the staff responsible for the project's fiduciary management should have broad experience in public administration and in the management of IDB-financed projects. Another requirement is the implementation of an annex to the Operations Manual.