

REFERENCE BUSINESS PLAN - BLOCK 3

**PROJECT FOR REGIONALIZED CONCESSION OF WATER SUPPLY AND
SANITATION SERVICES IN THE MUNICIPALITIES OF RIO DE JANEIRO STATE
CURRENTLY SERVED BY CEDAE**

SUMMARY

1	Presentation	4
2	Introduction	6
2.1	Territorial Characterization and Municipalities Served in the Project - Block 3.....	6
2.2	Executive summary	13
3	PROJECTIONS AND PREMISES - BLOCK 3	16
3.1	Revenue	16
3.1.1	Default	19
3.2	Investment	21
3.2.1	Investment Valuation Premises.....	24
3.2.2	Projection of Investments.....	25
3.3	Operating Costs	28
3.3.1	Operating Cost Assessment Premises	28
3.3.2	Cost Projection	31
3.4	Working Capital	32
3.5	Taxation.....	32
3.5.1	Tax Immunity	32
3.5.2	Taxation on Revenue.....	32
3.5.3	Taxation on Profit	34
3.6	Financing Structure.....	35
3.6.1	Bridge Financing.....	35
3.6.2	Long Term Financing.....	36
3.6.3	<i>Covenants</i>	37
3.6.4	<i>Tax Shield</i>	37
4	Attachments	39
4.1	Active Water Units Projections	39
4.2	Active Sewage Units Projections.....	41
4.3	Billed Revenue	42
4.4	Default Projection	43
4.5	Water and Sanitation Investment Projection	44
4.6	Water and Sanitation Investment Projection	45
4.7	Non-Exhaustive List of Assets - Block 3	47

1. PRESENTATION

1 PRESENTATION

This document was prepared based on information provided by employees and collaborators from Cedae, BNDES, municipal governments and Rio de Janeiro State Government, in addition to primary and secondary sources of information gathered by **CONSORTIUM FATOR/CONCREMAT/VGP - RIO DE JANEIRO SANITATION**. Such information was considered truthful, therefore, the Consortium does not undertake any liability for the accuracy of the information from reports and/or other documents provided by the sources consulted.

The figures presented in this report may undergo updates and/or monetary corrections, leading to potential future changes in the information and projections presented herein.

2. INTRODUCTION

2 INTRODUCTION

This Report presents the project for the Regionalized Concessions of the water supply¹ and sanitation services² of all the municipalities in the state of Rio de Janeiro included in Block 3, and, for municipalities served by large production systems in the Metropolitan Region of Rio de Janeiro, the concession of water supply will only be of the system called “*downstream*”, which covers the water distribution systems to end users from CEDAE’s water macro meters, in addition to the sewage system.

Such delegation will be granted to a private company directly by the State of Rio de Janeiro, through public bidding and from a delegation originally received from the holders of the sanitation service. Water production in the municipalities where the private contractor will operate *downstream* will continue to be the responsibility of CEDAE. This Company will be responsible for the abstraction and treatment of raw water and the delivery of treated water at appropriate standards and quality levels. The relationship between CEDAE and the concessionaire will be governed by an Interdependence Agreement to be entered into between the parties, which will establish the water purchase price and the governance of the operation.

In all 21 municipalities to be granted, the commercial management of water and sanitation services will be the responsibility of the private contractor, except in those locations where this commercial management is already performed by some other concessionaire.

2.1 Territorial Characterization and Municipalities Served in the Project - Block 3

The study covers the economic-financial assessment of the water supply and sanitation systems in urban areas in the 19 municipalities in which Cedae operates at least the water supply system of the location, including the districts of the municipalities and the municipalities of Itatiaia and Carmo, which are currently operated by the municipal government. The exception is the sanitation system already under concession to a private contractor in Planning Area 5 - PA5, in the city of Rio de Janeiro. The following results refer to the municipalities and districts of the municipalities of Block 3.

¹ Consisting of the services, infrastructure and facilities necessary for the public supply of drinking water, from abstraction to household connections and their measurement instruments.

² Consisting of the services, infrastructure and operational facilities for collection, transportation, treatment and final disposal of sewage, from the household connections to their final disposal into the environment, for a period of 35 (thirty-five) years.

ATable 1: lists the municipalities of the study and includes the current contractor for each type of service and Figure 1 displays the spatial location of each municipality.

The Business Plan was based on the geographic separation by block, showing greater technical-operational feasibility, given that in some cases the operation of water and sanitation services can sometimes be limited to this geographic area. It is worth mentioning that CEDAE will continue to produce and treat water and sell it to the concessionaire in the following municipalities in Block 3: Rio de Janeiro - PA5; Itaguaí; Seropédica and Paracambi.

The areas operated by CEDAE were divided into four blocks, with the municipalities in block 3 listed in the table below:

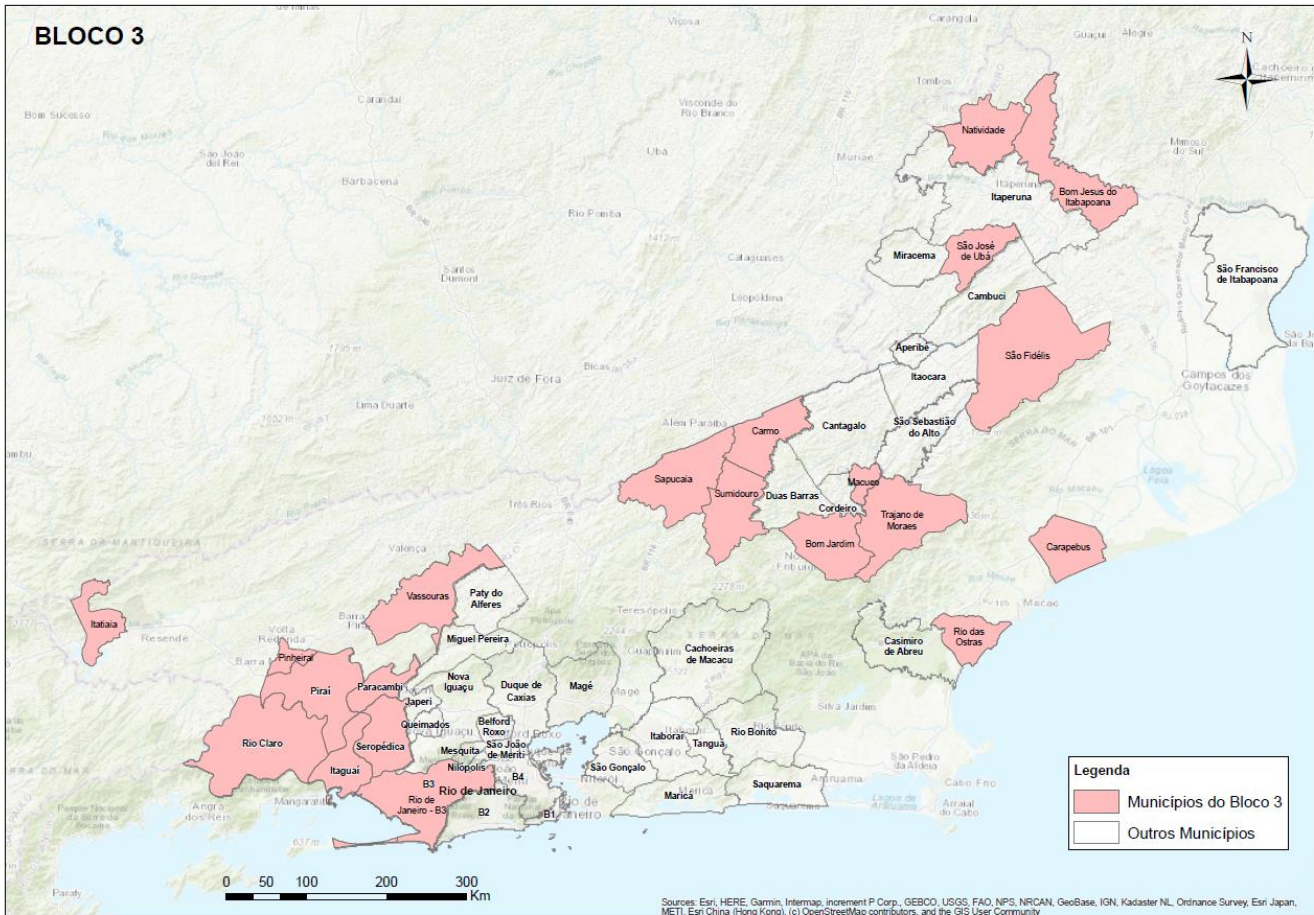
Table 1: List of Water and Sewage System Providers

No.	Municipality	Contractor	Contractor's acronym	Type of service	GE019 - Where it provides water supply	GE020 - Where it provides sanitation services
1	Bom Jardim	State Water and Sanitation Company	CEDAE	Water	Both	Does not serve
2	Bom Jesus do Itabapoana	State Water and Sanitation Company	CEDAE	Water	Both	Does not serve
3	Carapebus	State Water and Sanitation Company	CEDAE	Water	Municipal Main Region	Does not serve
4	Carmo	City Hall of Carmo	SAEC	Water and Sanitation	Both	Both
5	Itaguaí	State Water and Sanitation Company	CEDAE	Water and Sanitation	Municipal Main Region	Municipal Main Region
6	Itatiaia	Municipal Works and Public Utilities Service	SMOSP	Water and Sanitation	Both	Both
7	Macuco	State Water and Sanitation Company	CEDAE	Water and Sanitation	Municipal Main Region	Municipal Main Region
8	Natividade	State Water and Sanitation Company	CEDAE	Water	Both	Does not serve
9	Paracambi	State Water and Sanitation Company	CEDAE	Water and Sanitation	Municipal Main Region	Municipal Main Region
10	Pinheiral	State Water and Sanitation Company	CEDAE	Water	Municipal Main Region	Does not serve
11	Piraí	State Water and Sanitation Company	CEDAE	Water and Sanitation	Both	Municipal Main Region
12	Rio Claro	State Water and Sanitation Company	CEDAE	Water	Both	Does not serve
13	Rio das Ostras	State Water and Sanitation Company	CEDAE	Water	Municipal Main Region	Outsourced
14	Rio de Janeiro - PA5	State Water and Sanitation Company	CEDAE	Water and Sanitation	Municipal Main Region	Municipal Main Region
15	São Fidélis	State Water and Sanitation Company	CEDAE	Water	Both	Does not serve
16	São José de Ubá	State Water and Sanitation Company	CEDAE	Water	Municipal Main Region	Does not serve
17	Sapucaia	State Water and Sanitation Company	CEDAE	Water	Both	Does not serve
18	Seropédica	State Water and Sanitation Company	CEDAE	Water and Sanitation	Municipal Main Region	Municipal Main Region
19	Sumidouro	State Water and Sanitation Company	CEDAE	Water	Municipal Main Region	Does not serve
20	Trajano de	State Water and Sanitation Company	CEDAE	Water	Municipal Main Region	Does not serve

No.	Municipality	Contractor	Contractor's acronym	Type of service	GE019 - Where it provides water supply	GE020 - Where it provides sanitation services
21	Vassouras	State Water and Sanitation Company	CEDAE	Water	Both	Does not serve

Source: SNIS, 2019 adapted by the Consortium

Figure1 : Location of the municipalities and respective operational management of CEDAE



The city of Rio de Janeiro was divided into Regions, as shown in the table below. Region 3 was included in Block 3:

Table 2: Division of Regions of the City of Rio de Janeiro

Regions	Neighbourhoods
Rio de Janeiro - Region 3 (PA5)	Bangu, Barra de Guaratiba, Campo dos Afonsos, Campo Grande, Cosmos, Deodoro, Gericinó, Guaratiba, Inhoaíba, Jardim Sulacap, Magalhães Bastos, Paciência, Padre Miguel, Pedra de Guaratiba, Realengo, Santa Cruz, Santíssimo, Senador Camará, Senador Vasconcelos, Sepetiba, Vila Kennedy, Vila Militar

The following is information on the geographical characterization, which includes information on territorial extension and population (total, served with the water service and served with the sanitation service).

Table 3: Territorial Extension and Population Served

Geographical Characterization Block 3 - 2022 estimates	
Total Population (inhab.)	2,585,556
WSS Served Population (inhab.)	2,345,711
SSS Population Served (hab.)	242.366 ⁽¹⁾

(1) - Excluding city of Rio de Janeiro - PA5, with outsourced operation

Source: GIS and Cedae

The table below presents the main water courses of each municipality, which serve the water supply system, not including any anomalies in the supply, as long as the criteria for water loss reduction and per capita water consumption are met and they are able to receive treated sewage.

Table 4: Water Catchments and Rivers

Municipality	Water Catchments	Rivers
Bom Jardim	WC VII - River Dois Rios	Ribeirão São José, Ribeirão Santo Antônio
Bom Jesus do Itabapoana	WC IX - Baixo Paraíba do Sul and Itabapoana	Itabapoana River
Carapebus	WC VIII - Macaé and das Ostras	Macaé-Campos Channel
	WC IX - Baixo Paraíba do Sul and Itabapoana	Barreiro River, Areia Stream, Lameiro Stream
Carmo	WC III - Médio Paraíba do Sul	Batalha River, Borges Spring
Itaguaí	WC II - Guandu	Mazomba River, Guarda River
Itatiaia	WC III - Médio Paraíba do Sul	Santo Antonio River, Acará River, Campo Belo River, Preto River and das Pedras River
Macuco	WC VII - River Dois Rios	Ribeirão Dourado
Natividade	WC IX - Baixo Paraíba do Sul and Itabapoana	Carangola River
Paracambi	WC II - Guandu	Macacos Stream, Santana River
Pinheiral	WC III - Médio Paraíba do Sul	Paraíba do Sul River, Pau d'alho Stream, Maria-preta Stream
Piraí	WC II - Guandu	Piraí River, Cacaria River
	WC III - Médio Paraíba do Sul	Pau d'alho Stream, João-Congo Stream
Rio Claro	WC II - Guandu	Piraí River
	WC III - Médio Paraíba do Sul	Paraíba do Sul River
	WC II - Guandu	Piraí River
	WC III - Médio Paraíba do Sul	Paraíba do Sul River
Rio das Ostras	WC VI - São João Lakes	Palmital Stream
	WC VIII - Macaé and das Ostras	Das Ostras River and Iriri, Salgada and Itapebussus Lakes
Rio de Janeiro Lot III	WC V - Guanabara Bay	Paineiras River, Rio Grande River, Marangá River, Jacarepaguá Lake
São Fidélis	WC IX - Baixo Paraíba do Sul and Itabapoana	Paraíba do Sul River
	WC VII - River Dois Rios	Dois Rios River
São José de Ubá	WC IX - Baixo Paraíba do Sul and Itabapoana	Ubá Stream and São Domingos River
Sapucaia	WC IV - Piabanha	Paraíba do Sul River and Piabinha River
Seropédica	WC II - Guandu	Piranema River, Piloto River, Areia Stream
Sumidouro	WC IV - Piabanha	Paraíba do Sul River, Piabinha River, Paquequer River and Rio Preto River
Trajano de	WC IX - Baixo Paraíba do Sul	Trajano de Moraes Stream

Moraes	and Itabapoana	
	WC VII - River Dois Rios	Macabu River
Vassouras	WC II - Guandu	Guandu river
	WC III - Médio Paraíba do Sul	Paraíba do Sul River

2.2 Executive summary

The Business Plan presented herein is a reference, not binding on the future concession. Potential bidders should carry out their own studies and estimates in order to participate in the bidding process and may not claim that the estimates contained herein have not been achieved as a basis for contract rebalancing claims.

This document contains the following topics:

Opening of (i) Revenue, including Default, (ii) Investment; (iii) Operating Costs; (iv) Taxation; (v) Financing Structure.

Table 5: Units

The number of water and sewage units projected for the end of the plans is presented below:

Municipalities	Water Unit (End of Plan)	Sewage Unit (End of Plan)	Water + Sewage Unit (End of Plan)
Bom Jardim	11,301	10,274	21,575
Bom Jesus do Itabapoana	16,513	14,802	31,315
Carapebus	7,670	6,972	14,642
Carmo	7,885	6,857	14,742
Itaguaí	56,372	51,247	107,619
Itatiaia	13,383	12,166	25,548
Macuco	2,606	2,369	4,975
Natividade	4,945	4,821	9,766
Paracambi	21,294	19,358	40,652
Pinheiral	12,648	11,498	24,146
Piraí	13,943	12,383	26,326
Rio Claro	8,082	6,794	14,876
Rio das Ostras	65,078	56,089	121,167
Rio de Janeiro - PA5	686,729	0	686,729
São Fidélis	14,925	13,572	28,497
São José de Ubá	2,621	2,379	5,000
Sapucaia	6,987	6,352	13,339

Municipalities	Water Unit (End of Plan)	Sewage Unit (End of Plan)	Water + Sewage Unit (End of Plan)
Seropédica	37,839	34,658	72,497
Sumidouro	4,359	3,963	8,322
Trajano de Moraes	3,231	2,937	6,168
Vassouras	14,695	13,054	27,749

Table 6: Main Results

The main indicators and financial figures of the Block are presented below:

R\$ thousand except when indicated otherwise	Block 3
Investments	4,725,280
Water and Sanitation Revenue	42,293,299
EBITDA	17,570,479
Water sale price by CEDAE (R\$/m ³)	1.87 (up to 4th year) and 1.79 (other years) ³

In some tables throughout this document, data for the municipalities of Carmo and Itatiaia do not appear, as the water supply and sanitation systems of these municipalities are not operated by CEDAE and, therefore, no disaggregated information was made available to allow the inclusion of them in the descriptive tables.

³ In the economic-financial modeling, the values of R\$ 1.70/m³ (up to 4th year) and R\$ 1.63/m³ (other years) were considered, considering the base date of the model of Dec/2020

3. PROJECTIONS AND PREMISES - BLOCK 3

3 PROJECTIONS AND PREMISES - BLOCK 3

3.1 Revenue

The revenues generated from the provision of water supply and sewage collection and treatment services were taken into account.

In order to assess the sanitation service revenue, the same water tariff table was applied on the volume of sewage to be served.

The current average tariff in each municipality for each type of consumption (social, residential, industrial, commercial and public tariff) and the *per capita* consumption, hydrometration and served population values were taken into account in order to calculate the tariff revenue.

Based on the studies carried out by the technical team, it was considered that the private partner would achieve a hydrometric index of 100% by the 5th year of Concession.

Table 7: Average Water and Sanitation Tariffs by Typology

Município	Residencial		Comercial	Industrial	Público
	Social	Residencial			
Carapebus	R\$ 3,26	R\$ 7,88	R\$ 38,55	R\$ -	R\$ 17,29
Rio das Ostras	R\$ 7,99	R\$ 7,99	R\$ 20,75	R\$ 28,17	R\$ 3,27
Trajano de Morais	R\$ 3,26	R\$ 6,75	R\$ 25,92	R\$ -	R\$ 2,50
Pinheiral	R\$ 6,77	R\$ 6,77	R\$ 24,55	R\$ 28,32	R\$ 2,44
Pirai	R\$ 3,26	R\$ 6,51	R\$ 23,95	R\$ 39,51	R\$ 2,11
Rio Claro	R\$ 3,26	R\$ 6,25	R\$ 18,30	R\$ -	R\$ 1,11
Vassouras	R\$ 3,26	R\$ 6,68	R\$ 23,92	R\$ 28,11	R\$ 5,88
Bom Jesus do Itabapoana	R\$ 1,85	R\$ 6,69	R\$ 18,48	R\$ 72,38	R\$ 3,78
Natividade	R\$ 1,82	R\$ 6,65	R\$ 20,84	R\$ 36,28	R\$ 1,50
Sao Jose de Uba	R\$ 3,26	R\$ 7,22	R\$ 32,54	R\$ -	R\$ 1,59
Sao Fidelis	R\$ 7,33	R\$ 7,33	R\$ 24,24	R\$ 0,68	R\$ 7,50
Bom Jardim	R\$ 3,26	R\$ 6,62	R\$ 21,75	R\$ 27,17	R\$ 1,54
Macuco	R\$ 3,26	R\$ 6,17	R\$ 18,77	R\$ 28,31	R\$ 1,26
Sapucaia	R\$ 3,26	R\$ 6,61	R\$ 22,38	R\$ 23,87	R\$ 4,18
Sumidouro	R\$ 3,26	R\$ 5,74	R\$ 23,23	R\$ 35,82	R\$ 0,71
Itaguaí	R\$ 8,26	R\$ 8,26	R\$ 23,17	R\$ 22,47	R\$ 1,77
Paracambi	R\$ 3,26	R\$ 6,68	R\$ 20,16	R\$ 22,30	R\$ 4,97
Rio de Janeiro	R\$ 3,26	R\$ 5,02	R\$ 16,03	R\$ 23,40	R\$ 11,41
Seropédica	R\$ 5,26	R\$ 5,26	R\$ 16,54	R\$ 24,04	R\$ 0,19

It is worth mentioning that the engineering team has adopted the premise of water consumption of 182 l/inhab/day in Rio de Janeiro (capital), 150 l/inhab/day in the other municipalities, 200 l/inhab/day in the irregular areas of the municipality of Rio de Janeiro. It is worth mentioning that the the analysis was based on the current per capita informed by CEDAE and it was considered that within 10 years the project per capita of the presented premises will be achieved. These estimates were considered for the following reasons: projected loss reduction, greater commercial control, alignment with the per capita already used by CEDAE in its projections, among others.

Similarly, the target for the total water loss index in distribution is 25%, to be achieved in 10 years.

The following is a table with information on the current per capita consumption and loss index in the municipalities of Block 3, which should be linearly reduced to the mentioned project values.

Table 8: Current per capita and loss index

Municipality	Current per capita (L/inhab.d)	Current Losses
Bom Jardim	179	35
Bom Jesus do Itabapoana	186	52
Carapebus	173	43
Carmo	195	33
Itaguaí	231	26
Itatiaia	200	50
Macuco	211	30
Natividade	178	64
Paracambi	219	25
Pinheiral	175	48
Piraí	180	52
Rio Claro	184	25
Rio das Ostras	189	25
Rio de Janeiro	182	39
São Fidélis	175	61
São José de Ubá	179	31
Sapucaia	170	47
Seropédica	218	27

Sumidouro	185	25
Trajano de Moraes	174	38
Vassouras	183	29

Among the main levers for revenue growth in the first ten years, the main *driver* is the increase in the supply index.

It was considered that indirect revenues would be 2.5% in the 1st year of the concession, reaching 5% from the 5th year of the concession onwards and maintaining this level throughout the operation.

Rio de Janeiro is the municipality that is the most relevant in terms of revenue for Block 3.

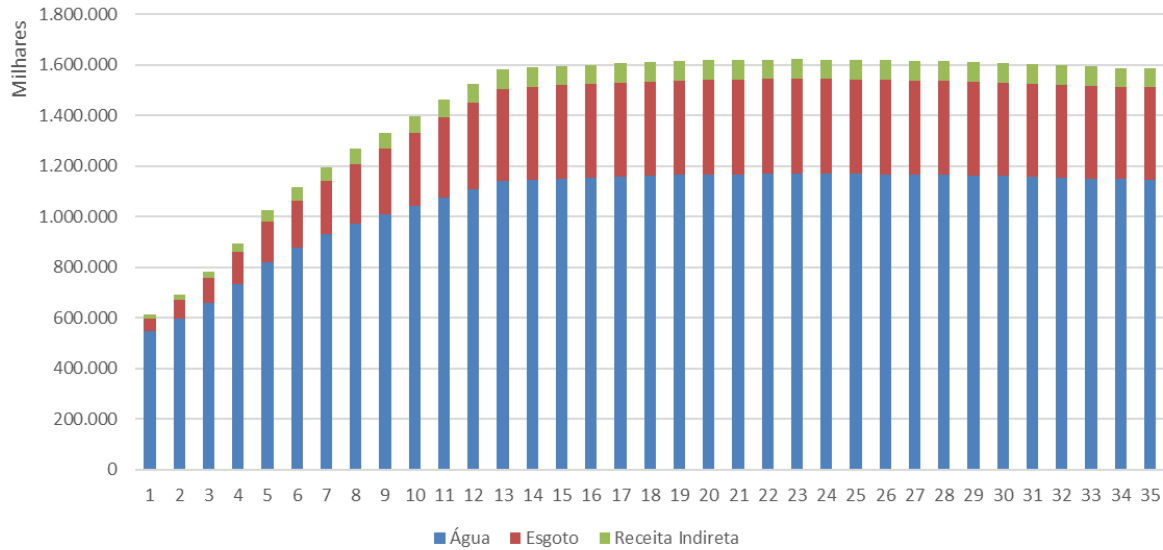
Table 9: Water and sewage revenue - Block 3

Receita (R\$)	1	2	3	4	5	10	20	30	35
Água	737.983.345	742.296.141	820.445.255	896.332.121	985.097.321	1.086.016.879	1.088.110.733	1.069.261.068	1.047.904.099
Esgoto	45.087.780	45.648.075	70.763.760	101.781.348	136.614.806	170.041.181	175.643.720	173.622.023	169.958.345
Total	783.071.126	787.944.217	891.209.015	998.113.469	1.121.712.127	1.256.058.060	1.263.754.453	1.242.883.090	1.217.862.444

The graph below presents the annual water and sewage tariff revenue⁴:

⁴ Irregular areas are present only in the municipality of Rio de Janeiro

Graph 1: Revenue - Block 3



3.1.1 Default

The initial projected default value considered the history of CEDAE in each municipality, and was incorporated into the model to differentiate between invoiced and collected revenue.

Since practice demonstrates that the private partner has better ability to mitigate default, due to more effective commercial management, the economic and financial modeling considered a reduction of default to 10% by the 15th year of the Concession, established jointly with BNDES on the basis of *peers'* default⁵.

The default values in 2019, per municipality of Block 3 are presented below:

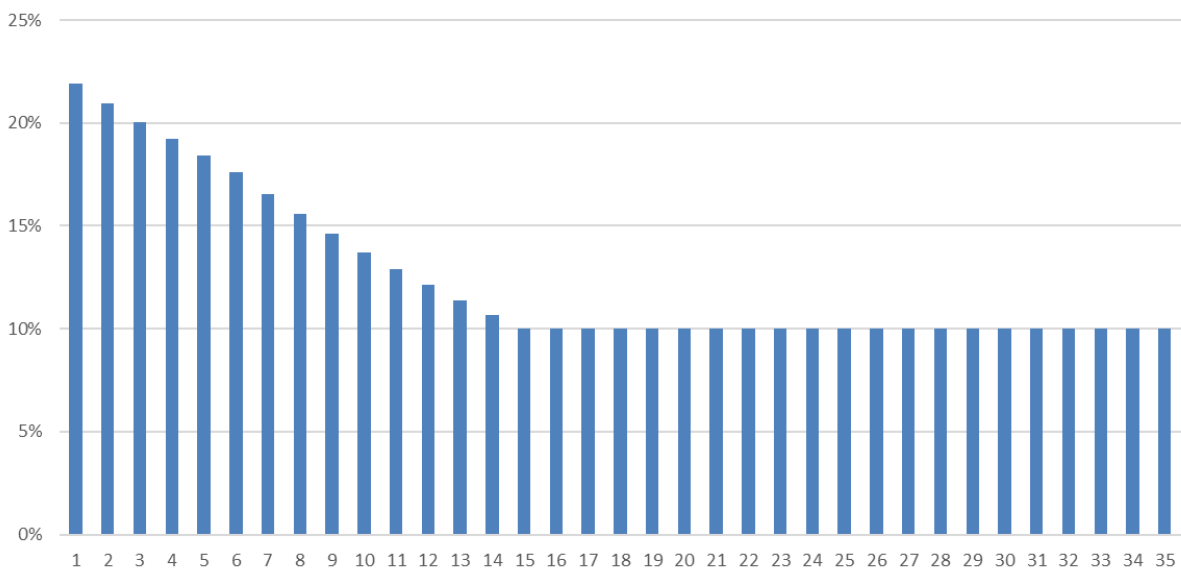
Table 10: Default

⁵ Analyzing the default of state-owned companies (SABESP, COPASA, SANUPAR) and the main private sanitation companies (GS Inima, BRK, Águas do Brasil, AEGEA), as well as the historical difficulty of billing for sanitation in the downtown area, the assumption of 10% was adopted.

Município	Inadimplência
Carapebus	0,02%
Rio das Ostras	0,03%
Trajano de Moraes	0,00%
Pinheiral	0,35%
Pirai	0,93%
Rio Claro	0,99%
Vassouras	0,36%
Bom Jesus do Itabapoana	0,12%
Natividade	0,24%
Sao Jose de Uba	0,19%
Sao Fidelis	0,00%
Bom Jardim	0,40%
Macuco	0,23%
Sapucaia	0,35%
Sumidouro	0,06%
Itaguaí	0,00%
Paracambi	0,00%
Rio de Janeiro	25,65%
Seropédica	0,99%

Below is a graph with the expected curve of default reduction of the block, until it reaches 10% in year 15:

Graph 2: Evolution of Default



3.2 Investment

The investments needed to achieve the universalisation targets of water supply and sanitation services were estimated as presented in the tables below, whose evolution is linear. It is worth mentioning that the municipalities of Itaguaí, Paracambi, Piraí, Rio Claro and Seropédica, located in the Guandu River catchment, have the target of reaching the universalization of water supply and sanitation in only 5 years, in order to ensure the quality of the water from the main source of water supply of the MR of RJ.

These projections and the methodology used in the investment estimates are detailed below.

Table 11: Service Targets - Water (%)

Municipality	Year 5	Year 8	Year 11
Bom Jardim	90	95	99
Bom Jesus do Itabapoana	91	95	99
Carapebus	52	75	99
Carmo	99	99	99
Itaguaí	99	99	99
Itatiaia	87	93	99
Macuco	93	96	99.0
Natividade	94	96	99
Paracambi	99	99	99
Pinheiral	90	94	99
Piraí	99	99	99
Rio Claro	99	99	99
Rio das Ostras	84	91	99
Rio de Janeiro	98	99	99
São Fidélis	92	96	99
São José de Ubá	96	98	99
Sapucaia	98	99	99
Seropédica	99	99	99
Sumidouro	70	84	99
Trajano de Moraes	73	86	99
Vassouras	99	99	99

(*) Sanitation system already under concession

Table 12: Service Targets - Sewage (%)

Municipality	Year 5	Year 11
Bom Jardim	36	90
Bom Jesus do Itabapoana	36	90
Carapebus	44	90
Carmo	44	90
Itaguaí	90	90
Itatiaia	60	90
Macuco	68	90
Natividade	75	90
Paracambi	90	90
Pinheiral	75	90
Piraí	90	90
Rio Claro	90	90
Rio das Ostras	36	90
Rio de Janeiro (*)	0	-
São Fidélis	65	90
São José de Ubá	36	90
Sapucaia	90	90
Seropédica	90	90
Sumidouro	42	90
Trajano de Moraes	36	90
Vassouras	90	90

(*) Sanitation system already under concession



3.2.1 Investment Valuation Premises

3.2.1.1 Calculation Basis

The following reference spreadsheets were adopted to calculate the costs of engineering works and services:

- Bulletin EMOP - Empresa de Obras Públicas do Estado do Rio de Janeiro, base December/2020
- SINAPI-RJ - Dec/20, exceptionally in the absence of any EMOP unit cost;
- CEDAE benchmark quotes.

For the Indirect Benefits and Expenses (IBE), the value of 24% was used, an average value admitted by the Federal Audit Court - TCU for basic sanitation works.

3.2.1.2 Parametric Costs and Cost Curves

Two methodologies were used for the preparation of the Capex: parametric cost calculation and cost curve elaboration.

The parametric costs were used for the following works: water distribution and sewage collection networks, water and sewage connections, internal household connections, replacement of hydrometers, deep wells, pipelines and discharge lines and operation in irregular areas.

Cost curves were drawn up for the following works: raw water abstraction, water and sewage treatment plants, water and sewage lifting stations and for water reservoirs.

3.2.1.3 Reinvestment

For reinvestment, which represents the disbursement with replacement of capital already invested, the following percentages were adopted in relation to assets, whether existing or to be built, which were established jointly with CEDAE:

Equipment: 5% a year

Telemetry and automation: 5% per year

3.2.1.4 Other Investments

For automation and telemetry, it was considered the cost equivalent to 5% of the CAPEX of civil works and related equipment (abstractions, treatment stations and lifting stations and reservoirs) and for studies and designs the value equivalent to 5% of the total cost of the work, which includes geotechnics and topographic registration services.

For expropriations, the unit cost of the land was obtained through internet research.

3.2.2 Projection of Investments

The Tables Table 13: Investment Water - Block 3 and Table 14: Investment Sanitation - Block 3 present the investment projections for the 35 (thirty-five) years of concession of Block 3, with the opening of the projections by investment sector (water, sanitation and production systems) and details of each structure for the highlighted sectors.

Table 13: Investment Water - Block 3

Ano do Contrato de Concessão		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
	PERCENTUAL DO TOTAL	SOMA																			
CAPEX Total de Água por Categoria	100,00%	2.407.163	87.575	189.883	246.994	273.388	277.908	157.912	114.985	104.619	82.876	73.791	71.513	56.100	48.178	54.996	39.866	43.964	36.460	43.474	35.144
Obras Cíveis - Produção de Água	13,52%	325.418	17.844	18.606	67.526	81.206	81.675	39.903	8.913	5.577	290	241	259	573	451	450	138	122	121	121	120
Obras Cíveis - Distribuição	55,19%	1.328.458	57.022	143.450	147.338	159.415	163.386	89.868	76.808	70.738	56.219	47.680	45.744	35.635	28.338	34.843	21.070	25.161	17.068	23.928	15.910
Sistemas - Produção de Água	0,95%	22.761	500	1.305	3.831	4.294	4.347	2.406	640	472	179	179	179	268	201	201	179	179	179	179	179
Sistemas - Distribuição de Água	3,45%	82.971	2.658	7.263	7.893	8.751	9.013	5.354	5.041	4.433	3.329	2.851	2.682	2.173	1.822	2.143	1.472	1.682	1.272	1.601	1.211
Equipamentos - Produção de Água	7,40%	178.045	675	3.934	5.081	4.397	4.162	4.185	5.997	5.904	5.304	5.304	5.304	5.474	5.470	5.470	5.304	5.304	5.304	5.304	5.304
Equipamentos - Distribuição de Água	16,62%	400.111	8.492	8.492	8.492	8.492	8.492	9.363	10.753	10.662	10.722	10.703	10.512	11.912	11.830	11.824	11.637	11.449	12.448	12.271	12.349
Capex Total de Água do Carmo	1,24%	29.917	-	2.991	2.991	2.991	2.991	2.991	2.991	2.991	2.991	2.991	2.991	2	2	-	-	-	-	-	-
Capex Total de Água do Itatiaia	1,64%	39.481	384	3.842	3.842	3.842	3.842	3.842	3.842	3.842	3.842	3.842	3.842	63	64	65	66	67	68	70	71

Ano do Contrato de Concessão		20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	
	PERCENTUAL DO TOTAL	SOMA																
CAPEX Total de Água por Categoria	100%	2.407.163	28.385	35.857	28.019	27.349	26.757	23.396	22.809	23.040	19.936	19.907	18.437	18.416	19.206	19.071	18.760	18.190
Obras Cíveis - Produção de Água	13,52%	325.418	90	90	90	90	90	78	78	78	78	78	74	74	74	74	73	73
Obras Cíveis - Distribuição	55,19%	1.328.458	9.891	17.111	8.850	8.298	7.751	5.067	4.523	3.982	1.116	1.116	275	275	275	275	16	16
Sistemas - Produção de Água	0,95%	22.761	179	179	179	179	179	179	179	179	179	179	179	179	179	179	179	179
Sistemas - Distribuição de Água	3,45%	82.971	916	1.270	867	840	813	681	657	631	491	491	448	450	450	450	437	435
Equipamentos - Produção de Água	7,40%	178.045	5.304	5.304	5.304	5.304	5.304	5.304	5.304	5.304	5.304	5.304	5.304	5.304	5.304	5.304	5.304	5.304
Equipamentos - Distribuição de Água	16,62%	400.111	11.933	11.830	12.729	12.638	12.620	12.087	12.068	12.866	12.768	12.739	12.157	12.134	12.924	12.789	12.751	12.183
Capex Total de Água do Carmo	1,24%	29.917	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Capex Total de Água do Itatiaia	1,64%	39.481	72	73	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: The total investment of RJM's undeveloped irregular areas is considered in the water capex

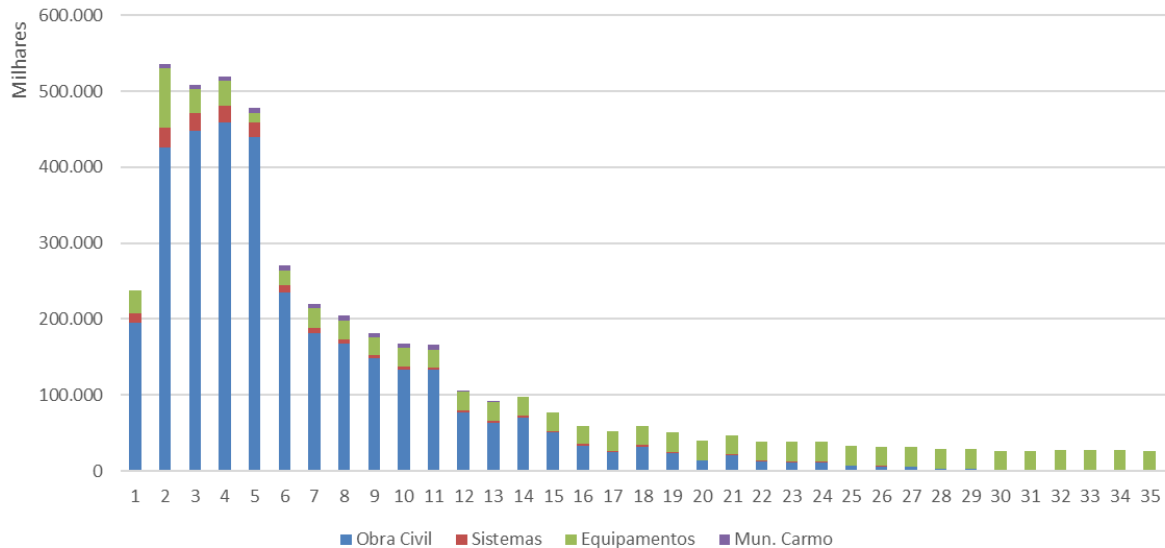
Table 14: Investment Sanitation - Block 3

Ano do Contrato de Concessão	PERCENTUAL DO TOTAL	SOMA	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
CAPEX Total de Esgoto por Categoria	100%	2.318.117	150.790	358.645	273.538	258.627	212.150	124.489	117.081	111.833	111.329	105.887	106.573	49.055	42.871	42.885	37.858	15.922	15.933	15.899	15.957
Obras Cíveis - Coleta de Esgoto	41,63%	964.965	39.309	151.981	130.264	141.489	131.045	53.362	45.654	44.004	44.429	39.946	40.591	18.264	12.281	12.295	7.508	7.512	7.520	7.484	7.538
Obras Cíveis - Tratamento de Esgoto	13,24%	306.974	59.511	89.818	78.600	33.141	19.974	7.879	5.767	2.733	2.703	1.916	1.938	339	305	305	189	190	189	189	189
Sistemas - Coleta de Esgoto	1,19%	27.601	2.591	4.701	3.717	4.231	3.336	1.579	1.147	956	955	847	866	488	318	318	191	191	192	191	192
Sistemas - Tratamento de Esgoto	1,50%	34.775	6.401	12.904	8.615	3.890	1.579	799	378	145	64	-	-	-	-	-	-	-	-	-	-
Equipamentos - Coleta de Esgoto	1,28%	29.578	11.851	3.824	2.316	4.930	466	1.088	1.086	129	129	129	129	129	129	129	129	129	129	129	129
Equipamentos - Tratamento de Esgoto	14,28%	330.985	8.334	62.265	14.654	15.634	438	4.470	7.737	8.554	7.737	7.737	7.737	7.737	7.737	7.737	7.737	7.737	7.737	7.737	7.737
Capex Total de Esgoto do Rio das Ostras	7,74%	179.500	-	-	2.220	22.160	22.160	22.160	22.160	22.160	22.160	22.160	22.160	-	-	-	-	-	-	-	-
Capex Total de Esgoto do Rio de Janeiro -	14,20%	329.160	21.944	21.944	21.944	21.944	21.944	21.944	21.944	21.944	21.944	21.944	21.944	21.944	21.944	21.944	21.944	-	-	-	-
Capex Total de Esgoto do Carmo	1,17%	27.202	-	2.720	2.720	2.720	2.720	2.720	2.720	2.720	2.720	2.720	2.720	2	2	-	-	-	-	-	-
Capex Total de Esgoto do Itaitiaia	3,77%	87.378	849	8.488	8.488	8.488	8.488	8.488	8.488	8.488	8.488	8.488	8.488	152	154	157	160	163	166	169	172

Ano do Contrato de Concessão	PERCENTUAL DO TOTAL	SOMA	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
CAPEX Total de Esgoto por Categoria	100,00%	2.318.117	11.259	11.281	11.094	11.091	11.569	9.676	8.978	8.979	8.968	8.959	8.190	8.182	8.198	8.174	8.163	8.035
Obras Cíveis - Coleta de Esgoto	41,63%	964.965	3.045	3.064	3.055	3.051	3.508	1.276	1.025	1.025	1.015	1.006	268	260	275	252	243	121
Obras Cíveis - Tratamento de Esgoto	13,24%	306.974	97	97	97	98	97	65	63	63	63	63	50	50	50	50	48	48
Sistemas - Coleta de Esgoto	1,19%	27.601	76	76	76	76	98	64	24	25	24	24	6	6	7	6	6	-
Sistemas - Tratamento de Esgoto	1,50%	34.775	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Equipamentos - Coleta de Esgoto	1,28%	29.578	129	129	129	129	129	534	129	129	129	129	129	129	129	129	129	129
Equipamentos - Tratamento de Esgoto	14,28%	330.985	7.737	7.737	7.737	7.737	7.737	7.737	7.737	7.737	7.737	7.737	7.737	7.737	7.737	7.737	7.737	7.737
Capex Total de Esgoto do Rio das Ostras	7,74%	179.500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Capex Total de Esgoto do Rio de Janeiro -	14,20%	329.160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Capex Total de Esgoto do Carmo	1,17%	27.202	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Capex Total de Esgoto do Itaitiaia	3,77%	87.378	175	178	-	-	-	-	-	-	-	-	-	-	-	-	-	-

The graphs below present the annual investments in water and sanitation:

Graph 3: Investment - Block 3



3.3 Operating Costs

3.3.1 Operating Cost Assessment Premises

Significant operating expenses are human resources, electric power, chemical products and sludge transportation, in addition to others such as maintenance of civil works, equipment and miscellaneous.

3.3.1.1 Chemicals

The following consumptions of chemicals were admitted, information received from CEDAE, as summarized in the table below.

Table 15: Water and sewage chemicals

Chemicals - Water	
Aluminum Sulfate	40 mg/L
Lime	20 mg/L
Chlorine	3 mg/L
Sludge polymer	5 kg/ton. sludge



Chemicals - Water

Fluosilicic acid	1 mg/L
------------------	--------

Chemicals - Sewage

Chlorine	8 mg/L
Sludge polymer	5 kg/ton. sludge

3.3.1.2 Energy (kW)

The average unit tariff was provided by CEDAE, considering that the demand cost is included in consumption, in the amount of 1.07 R\$/kWh

- Annual consumption: *Consumo médio x 24h x 365 dias*

3.3.1.3 Human Resources

Operational Cost spreadsheets were prepared for the economic model of Concession of sanitation services of CEDAE, except for the Producer System composed by the Guandu, Lajes, Acari and Imunana-Laranjal Systems.

The updated average unit labor cost for Dec/2020 is R\$134,580.90⁶/employee for all municipalities, except Rio de Janeiro, which is R\$146,919.29, regardless of role or type of employment relationship (own or outsourced), effective from year 1.

As far as productivity is concerned, a rate of 643 units⁷/employee was proposed, based on the productivity of the Sanepar (Paraná) and Copasa (Minas Gerais) concessionaires, which have a size compatible with CEDAE, regardless of position or employment link.

3.3.1.4 Sludge transportation

The sludge generated in the WTPs and STPs will be transported to the nearest licensed outlet. The average distance considered for transportation is 40 (forty) kilometers.

⁶ SNIS (Copasa and Sanepar)

⁷ SNIS



The estimated sludge production volume for the water and sewage treatment plant are as follows:

- WTP sludge: $\frac{Q_{m^3}}{ano} \times \frac{1}{10.000} t/ano$
- Activated sludge with drying bed: 95 g/inhab.day;
- Centrifuge activated sludge: 127 g/inhab.day
- UASB + Filter with drying bed: 27 g/inhab.day;

The unit cost of sludge transport and disposal are as follows, updated for Dec/2020:

- Transport cost: 4,33 R\$/ton*km (EMOP base);
- Disposal cost: 77,56 R\$/ton. (CEDAE basis)

3.3.1.5 Maintenance of Civil Works and Equipment

For the maintenance cost, the parameter of R\$ 148.38/connection for the municipality of Rio de Janeiro and R\$31.24/connection for the other municipalities was used, based on the CEDAE balance sheet and CEDAE recommendations.

3.3.1.6 Miscellaneous

The main costs considered as miscellaneous are: concession fees, rentals and machinery, equipment and vehicles, real estate rentals, insurance costs, advertising and publicity, communication and data transmission, advertisements and notices, laboratory services, graphic services, bank fees, mobility (vehicles), materials (administrative and cleaning), permits, licensing, etc.

The rate used is 61,68 R\$/connection (CEDAE base).

3.3.1.7 Performance Guarantee Costs

There are performance guarantee costs that represent the costs associated with hiring construction, operation insurances, System Works and System Operation, Maintenance and Conservation Performance Guarantees.

A cost of 2.0% in relation to the value of the policy, calculated on the basis of practices in similar contracts, was used to measure these values.

3.3.1.8 Water Purchase Costs

It is projected that in some municipalities, as specified above, the Concessionaire will purchase water that will be produced by CEDAE, at a price of R\$1.70/m³ for the first 4 years and R\$1.63/m³ for the other years. These prices, established in the draft of the Interdependence Agreement, updated for the base date of November 2021, are at the values of R\$ 1.87m³ and 1.79/m³.

3.3.1.9 AGENERSA and INEA Fees

Expenses with the AGENERSA (Rio de Janeiro State Energy and Basic Sanitation Regulatory Agency) and INEA (State Environment Institute) fees were projected, estimated at 0.5% and 0.25% of revenues, net of PIS and Cofins taxes, respectively.

3.3.1.10 Contingencies

The costs with contingencies were included as a form of protection against minor fluctuations in the main operating cost items of the Concessionaire. For this purpose, a value of 0.5% on operating costs was foreseen (treatment materials, energy, personnel, maintenance, other operating costs, purchase of water from CEDAE, Surety and Insurance Coverages).

3.3.2 Cost Projection

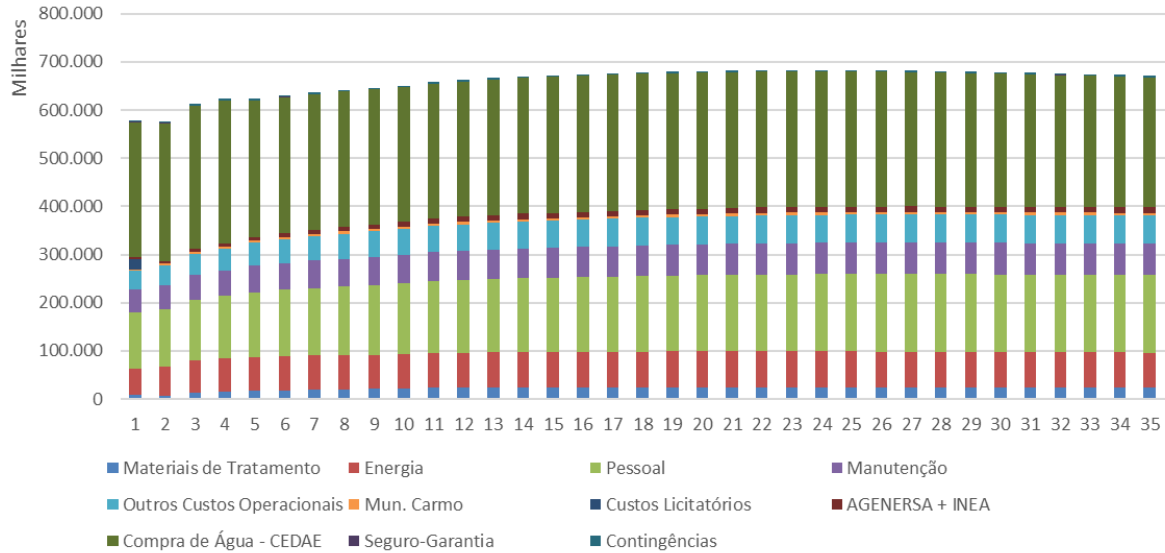
The estimated annual operating cost figures are presented, with details of the main items.

Table 16: Operating Cost

Custo Total	ANO							TOTAL
	1 - 5	6-10	11-15	16-20	21-25	26-30	31-35	
Custo Total	3.055.289	3.260.690	3.395.457	3.463.238	3.491.274	3.480.850	3.449.920	23.596.719
Materiais de Tratamento	62.397	99.253	120.512	122.462	122.094	120.674	118.467	765.859
Energia	319.698	355.537	363.197	370.324	372.749	371.268	366.717	2.519.490
Pessoal	625.776	711.855	757.682	782.699	798.462	804.071	804.477	5.285.022
Manutenção	256.727	289.698	307.755	317.954	324.449	326.755	326.907	2.150.245
Outros Custos Operacionais	217.540	257.577	276.419	285.030	290.099	291.890	292.074	1.910.629
Mun. Carmo	19.883	24.204	25.639	25.840	25.840	25.840	25.840	173.085
Mun. Itatiaia	39.875	53.619	65.009	70.859	74.602	74.602	74.602	453.168
Custos Licitatórios	21.141	0	0	0	0	0	0	21.141
AGENERSA + INEA	29.589	45.906	55.800	57.656	57.911	57.560	56.986	361.409
Compra de Água - CEDAE	1.443.393	1.404.271	1.404.808	1.411.824	1.406.522	1.389.817	1.362.851	9.823.486
Seguro-Garantia	2.953	1.497	807	463	299	177	2.953	9.150
Contingências	14.651	15.607	16.164	16.462	16.582	16.532	16.381	112.378
Seguros	1.665	1.665	1.665	1.665	1.665	1.665	1.665	11.657

The graph below shows annual water and sewage costs:

Graph 4: Operating Cost - Block 3



3.4 Working Capital

The average payment and receipt terms adopted for the project were considered 30 days for costs and revenues as practiced in the Sanitation market.

3.5 Taxation

3.5.1 Tax Immunity

In September 2015, CEDAE filed a Civil Action before the Brazilian Supreme Court, claiming recognition of the reciprocal tax immunity provided for in art. 150, item VI, paragraph 'a' of the Federal Constitution, as well as the right to the refund of the amounts paid by way of federal taxes in the five years preceding the action, and also of those paid during the course of the action.

In 2017 the decision was challenged by appeals from the Federal Government and CEDAE. CEDAE saved, since 2018, only on Corporate Income Tax and due to the change from the non-cumulative regime to the cumulative regime of PIS/COFINS taxes, around R\$ 476.7 million (R\$ 165.9 million of Corporate Income Tax and R\$ 310.8 million of PIS/COFINS taxes), considering the amounts paid by the Company in 2017.

Finally, it is clarified that immunity has not been considered in this business plan since a private contractor will not be entitled to such tax benefit.

3.5.2 Taxation on Revenue

The regulatory framework establishes that COFINS (Social Security Financing Contribution), PIS (Social Integration Program) and ISS (Services Tax) taxes are levied on the revenues of the Company or of the Specific Purpose Entity.

According to Supplementary Law No. 7/1970, private legal entities are PIS taxpayers, and the calculation of such contribution is based on the revenues earned in accordance with Law No. 9718/98 and at different rates according to the revenue profile as provided for by Law No. 10673/2002.

COFINS, likewise PIS, is currently governed by Law No. 9718/98, which establishes that all legal entities and their equivalents in relation to income tax legislation are CONFINS taxpayers, and its calculation is based on revenues and differentiated rates, in accordance with the terms of the rule that regulates the tax.

In the case of these projects, the SPE is subject to the payment of PIS and COFINS at the rates of 1.65% and 7.60% respectively, over its revenues.

The ISS, substitute of the ISSQN (Tax on Services of Any Nature), is a competence of the municipalities and Federal District and is levied on the provision of services, having as taxable event the list of services set out in Law No. 11.438/1997, and is governed by Complementary Law 116/2003.

Environmental sanitation services, including purification, treatment, sewerage and similar services, as well as water treatment and purification services are not subject to ISS, as described in Message No. 362 of 31 July 2003, which explains the reasons for the Veto on the application:

The application of the tax on environmental sanitation services, including purification, treatment, sewerage and the like, as well as on water treatment and purification services, does not serve the public interest. Taxation could undermine the government's objective of universal access to such basic services. The disincentive that taxation would bring to the sector would have as a long term consequence an increase in expenses in serving the population affected by the lack of access to basic sanitation and treated water. In addition, Bill no. 161 - Complementary expressly revoked art. 11 of Decree-Law no. 406, of December 31, 1968, as amended by Complementary Law no. 22, of December 9, 1974. Thus, the hydraulic and civil construction works hired by the Federal, States, Federal District, Municipalities Governments, independent agencies and concessionaires, previously exempt from the tax, would be taxed, impacting the Government expenses with investments.

Therefore, the taxation of these services does not serve public interest, and the veto of items 7.14 and 7.15, included in the List of Services of this Complementary Bill, is recommended. As a result, for reasons of legislative technique, clauses X and XI of art. 3 of the Bill should also be vetoed.

The Concessionaire is subject to payment of ISS on services not related to the activity of water supply and sanitation.

Table 17: Taxation on Revenue

TAXATION ON REVENUE	
Tax	Rate (%)
ISS	0,00%
COFINS	7,60%
PIS	1,65%

3.5.3 Taxation on Profit

The SPE shall also pay tax over the Project Profit - Corporate Income Tax (IRPJ) and Social Contribution on Net Profit (CSLL).

For the calculation of Corporate Income Tax, the economic-financial modeling used the tax return in the Regime of Real Profit calculated annually, under the terms of the current federal legislation, in compliance with art. 14 of Federal Law No. 9718/1998, which requires legal entities whose total gross revenue, in the previous calendar year, is higher than R\$ 78.000,000.00 (seventy-eight million BRL), or R\$ 6,500,000.00 (six million five hundred thousand BRL), multiplied by the number of months of activity in the previous calendar year, when less than 12 (twelve) months (limit established by Federal Law no. 10,637/2002) to declare Income Tax on the basis of Real Profit.

On Income before tax (LAIR), Corporate Income Tax is levied at a rate of 15% when the real profit portion is lower than the amount resulting from the multiplication of R\$ 20,000.00 (twenty thousand BRL), by the number of months of the respective calculation period. However, when the results of the SPE point to a value higher than this amount, the legislation provides for an additional 10% to be charged on the excess value. However, due to the divergences between real and nominal model projections, which make it impossible to effectively absorb the benefits of differentiating rates according to the minimum level, highlighted by the fact that this level represents little on the annual result of the project, the choice was to mitigate possible inconsistencies by establishing the rate of 25% for Corporate Income Tax.

The payment of Social Contribution on Net Profit-CSLL is regulated by Federal Law No. 7689/1988, which establishes it with the same rules for calculating Corporate Income Tax, having its calculation basis defined in the provisions of Federal Law No. 10684/2003, which determines the application of a rate of 9% on companies using the Real Profit tax return system.

Table 18: Taxation on Profit

TAXATION ON PROFIT	
Tax	Rate (%)
IR	25.00%
CSLL	9.00%
TOTAL	34.00%

3.6 Financing Structure

Since the projects have the potential to use Third Party Capital resources, it is necessary to have a financial structure based mainly on loans that match the debt cash flow with the Project cash flow, in order to provide an adequate debt service ⁸coverage ratio.

Thus, this item includes studies and considerations about the Bridge and Long-Term Financing structure, in which disbursements with investments are financed.

The credit lines taken into account are those usually practiced by financial agents and there is no commitment from these agents to guarantee this credit structure for the concession.

3.6.1 Bridge Financing

The Bridge Financing (short-term loan) may be obtained from a private financial institution that should provide the resources to cover part of the investment expenditure.

For the purposes of economic and financial modeling, we considered obtaining Bridge Financing with a term of one year, with a grace period for amortization for the same period.

The amount foreseen for the bridge loan has been estimated at 70% of the value to be invested in the first two years of the Concession. The interest on the short-term loan is charged on the outstanding balance owed to the financial institution, and is established at the CDI rate + 4%, an amount considered appropriate by the Economics Department of

⁸ The Debt Service Coverage Ratio (DSCR) is calculated by dividing operating cash generation by debt service, based on information recorded in the Financial Statements, in a given period.

Banco Fator in view of the practice by the banks offering short-term credit, and is paid monthly.

In addition, interest expenses included the payment of Structuring Charges and Commissions in the amount of 0.5% of the amount raised, an amount considered appropriate by the Economics Department of Banco Fator, for projects of this size, and the payment of IOF (Tax on Credit Operations, Foreign Exchange and Insurance) expenses on the amount raised.

The repayment system considered for the short-term loan was the *bullet*, whose grace period is equal to the term of the loan and settlement occurs via a single tranche, with the first *tranche* of the long-term loan as *funding*.

3.6.2 Long Term Financing

The Long Term Financing represents the main instrument of funding of the SPE, providing the financial leverage necessary for the bridge financing *swap*, thus allowing the reduction of financial expenses of the Project, and is obtained from public or private financial institutions.

It was considered obtaining a Long Term Financing from a private institution in the *Project Finance* modality, with a term of 12 years (as from the start of the financing - second year of Concession).

Together with the financial institution, the Concessionaire shall raise the amount equivalent to 70% of the investments. For the preliminary analysis, the leverage of the investments of the first two years of concession was considered.

The interest on the long term loan is charged on the outstanding balance with the financial institution, and is established at the IPCA rate + 6.5%, as practiced in the capital market for incentive papers (incentive debentures) with similar risk, according to the Economics Department of Banco Fator, and its payment occurs monthly.

In addition, interest expenses included the payment of Structuring Charges and Commissions in the amount of 0.5% of the amount raised, and the payment of IOF (Tax on Credit Operations, Foreign Exchange and Insurance) expenses on the amount raised. The amortization system used in the financial modeling of the long-term loan was the PRICE.

The releveraging aims at exactly aligning the projection with the premise of a capital structure stipulated in 60% of equity and 40% of debt. The premise of raising funds from third parties with public banks (25% with BNDES and 25% with CEF) and market issues (50%) reflects a trend already evidenced by private companies in the sector of sanitation of diversification of their debt sources.

3.6.3 Covenants

The following *covenants* were considered for the projected financing:

- (i) DSCR (Debt Service Coverage Ratio): is characterized by the ability to pay the Concession debt and is calculated through the generation of operating cash net of taxes divided by the debt service of the company (installments to be amortized for a given period). The *benchmark* used is that the DSCR could not be less than 1.3;
- (ii) NE / Asset: is determined by dividing Net Equity by Assets. The *benchmark* used was that the percentage shall not be lower than 20%;
- (iii) Net Debt / EBITDA: estimated by dividing net debt (calculated by subtracting gross debt from cash and cash equivalents) by EBITDA (*earning before interest taxes depreciation and amortization*). The *benchmark* used is that net debt should be not greater than three times the EBITDA.

3.6.4 Tax Shield

Considering that the Concessionaire's financial expenses are deductible from the Corporate Income Tax and Social Contribution on Net Profit tax bases, the addition of leverage to the Project reduces the expense with Income Tax, generating benefits for the Project.

In the finance, we call this tax benefit *Tax Shield*, which is calculated as the difference between the Tax on Not Leveraged Project Result (Project) and the Tax on Leveraged Project Result (Leveraged).

The *Tax Shield* was incorporated into the Project in the preparation of the Financial Statements (Income Statement, Leveraged Cash Flow and Balance Sheet) in order to incorporate the tax benefits of interest expenses into the project, matching the Tax on Not Leveraged Project Result (Project) with the Tax on Leveraged Project Result (Leveraged), thus reflecting all aspects arising from the leverage of the Project.

4. ATTACHMENTS

4 ATTACHMENTS

4.1 Active Water Units Projections

Ano do Contrato de Concessão	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Carapebus	1.059	1.094	1.578	2.090	2.630	3.182	3.758	4.358	4.980	5.627	6.249	6.887	6.982	7.078	7.173	7.248	7.322	7.396	7.471	7.545
Rio das Ostras	42.437	43.386	45.898	48.476	51.122	53.403	55.724	58.085	60.486	62.927	65.027	67.147	67.527	67.906	68.285	68.389	68.493	68.596	68.700	68.804
Trajano de Moraes	1.192	1.230	1.399	1.575	1.760	1.938	2.122	2.311	2.507	2.708	2.894	3.084	3.119	3.153	3.188	3.206	3.223	3.241	3.259	3.276
Pinheiral	7.481	7.678	8.022	8.374	8.733	9.072	9.417	9.769	10.127	10.491	10.810	11.133	11.283	11.433	11.584	11.699	11.815	11.931	12.046	12.162
Pirai	8.705	8.958	9.214	9.470	9.727	9.976	10.226	10.476	10.726	10.976	11.176	11.375	11.571	11.766	11.961	12.140	12.318	12.497	12.675	12.853
Rio Claro	4.514	4.614	5.181	5.769	6.376	6.971	7.078	7.185	7.292	7.399	7.473	7.548	7.623	7.697	7.772	7.818	7.865	7.911	7.958	8.004
Vassouras	10.384	10.645	10.905	11.165	11.426	11.658	11.891	12.124	12.357	12.590	12.772	12.954	13.136	13.318	13.500	13.628	13.755	13.882	14.010	14.137
Bom Jesus do Itabapoana	11.390	11.632	12.059	12.492	12.934	13.324	13.720	14.122	14.530	14.943	15.290	15.642	15.785	15.928	16.071	16.152	16.234	16.316	16.398	16.480
Natividade	4.303	4.353	4.446	4.540	4.635	4.713	4.792	4.871	4.951	5.032	5.097	5.164	5.184	5.203	5.223	5.233	5.243	5.253	5.263	5.273
Sao Jose de Uba	1.636	1.699	1.770	1.842	1.915	1.976	2.038	2.100	2.162	2.225	2.273	2.321	2.358	2.395	2.431	2.454	2.477	2.500	2.523	2.546
Sao Fidelis	11.631	11.823	12.160	12.503	12.850	13.149	13.454	13.760	14.070	14.383	14.644	14.907	14.997	15.088	15.179	15.220	15.262	15.303	15.344	15.385
Bom Jardim	6.828	7.034	7.367	7.707	8.054	8.362	8.676	8.995	9.320	9.651	9.932	10.217	10.351	10.485	10.619	10.704	10.790	10.875	10.961	11.046
Macuco	1.869	1.907	1.967	2.027	2.088	2.140	2.193	2.246	2.300	2.355	2.400	2.446	2.469	2.491	2.514	2.528	2.542	2.556	2.570	2.584
Sapucaia	5.719	5.844	5.975	6.107	6.239	6.335	6.432	6.529	6.626	6.723	6.785	6.848	6.904	6.959	7.015	7.042	7.069	7.097	7.124	7.151
Sumidouro	1.833	1.869	2.089	2.316	2.549	2.774	3.004	3.238	3.477	3.721	3.954	4.191	4.223	4.255	4.287	4.305	4.324	4.343	4.361	4.380
Itaguaí	30.677	31.418	36.251	41.272	46.482	51.606	52.451	53.296	54.140	54.985	55.515	56.044	56.574	57.103	57.633	57.879	58.124	58.370	58.616	58.861
Paracambi	13.688	13.949	15.289	16.670	18.090	19.460	19.710	19.961	20.211	20.462	20.617	20.773	20.928	21.084	21.239	21.332	21.425	21.518	21.610	21.703
Rio de Janeiro - AP5	542.614	553.843	565.119	574.360	583.536	594.823	603.910	612.926	621.866	628.602	635.217	641.704	648.066	651.756	657.818	661.139	666.899	669.849	675.302	677.880
Seropédica	17.163	17.638	21.288	25.104	29.087	33.052	33.676	34.299	34.922	35.545	35.949	36.354	36.758	37.162	37.566	37.780	37.994	38.208	38.422	38.636
TOTAL	725.125	740.612	767.976	793.860	820.232	847.917	864.270	880.649	897.050	911.345	924.077	936.738	945.835	952.261	961.058	965.896	973.174	977.642	984.612	988.707

Ano do Contrato de Concessão	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Carapebus	7.577	7.609	7.641	7.673	7.705	7.712	7.719	7.726	7.733	7.740	7.728	7.717	7.705	7.693	7.681	7.670
Rio das Ostras	68.708	68.611	68.515	68.419	68.322	68.084	67.845	67.607	67.368	67.129	66.788	66.446	66.104	65.762	65.420	65.078
Trajano de Moraes	3.282	3.287	3.293	3.298	3.304	3.301	3.297	3.294	3.291	3.288	3.278	3.269	3.259	3.250	3.240	3.231
Pinheiral	12.228	12.295	12.362	12.428	12.495	12.525	12.556	12.586	12.617	12.647	12.647	12.648	12.648	12.648	12.648	12.648
Pirai	12.967	13.081	13.195	13.310	13.424	13.492	13.561	13.630	13.698	13.767	13.796	13.826	13.855	13.884	13.914	13.943
Rio Claro	8.028	8.051	8.075	8.098	8.122	8.126	8.131	8.136	8.141	8.145	8.135	8.124	8.114	8.103	8.093	8.082
Vassouras	14.215	14.292	14.370	14.447	14.525	14.560	14.594	14.629	14.664	14.699	14.698	14.698	14.697	14.696	14.696	14.695
Bom Jesus do Itabapoana	16.514	16.549	16.583	16.618	16.652	16.650	16.647	16.645	16.642	16.640	16.608	16.577	16.545	16.513	16.513	16.513
Natividade	5.278	5.282	5.286	5.291	5.295	5.297	5.298	5.300	5.301	5.303	5.303	5.303	5.303	5.303	4.944	4.945
Sao Jose de Uba	2.558	2.570	2.582	2.595	2.607	2.611	2.615	2.620	2.624	2.628	2.626	2.624	2.623	2.621	2.621	2.621
Sao Fidelis	15.388	15.389	15.391	15.393	15.395	15.366	15.337	15.307	15.278	15.248	15.194	15.140	15.087	15.033	14.979	14.925
Bom Jardim	11.093	11.139	11.186	11.233	11.280	11.295	11.311	11.327	11.342	11.358	11.349	11.339	11.330	11.320	11.311	11.301
Macuco	2.591	2.598	2.606	2.613	2.620	2.621	2.623	2.624	2.625	2.627	2.623	2.620	2.617	2.613	2.610	2.606
Sapucaia	7.157	7.162	7.168	7.174	7.179	7.168	7.158	7.147	7.136	7.125	7.102	7.079	7.056	7.033	7.010	6.987
Sumidouro	4.388	4.395	4.403	4.411	4.418	4.417	4.416	4.414	4.413	4.412	4.403	4.394	4.385	4.376	4.368	4.359
Itaguaí	58.877	58.892	58.908	58.924	58.939	58.777	58.614	58.452	58.289	58.127	57.834	57.542	57.249	56.957	56.665	56.372
Paracambi	21.729	21.754	21.780	21.805	21.831	21.805	21.779	21.753	21.727	21.701	21.633	21.565	21.498	21.430	21.362	21.294
Rio de Janeiro - AP5	680.259	685.227	687.232	689.040	690.652	692.067	693.288	694.315	692.239	692.863	693.298	693.543	690.660	690.516	687.251	686.729
Seropédica	38.701	38.765	38.829	38.893	38.958	38.905	38.852	38.799	38.746	38.693	38.550	38.408	38.266	38.123	37.981	37.839
TOTAL	991.536	996.951	999.405	1.001.662	1.003.722	1.004.779	1.005.642	1.006.310	1.003.876	1.004.141	1.003.596	1.002.861	998.999	997.876	993.305	991.838

4.2 Active Sewage Units Projections

Ano do Contrato de Concessão	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
Carapebus	700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.859	
Rio das Ostras	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trajanos de Moraes	-	-	235	483	746	1.015	1.294	1.583	1.883	2.193	2.495	2.804	2.835	2.867	2.898	2.914	2.930	2.946	2.962	2.978	-	-
Pinheiral	5.821	5.974	6.365	6.767	7.180	7.583	7.997	8.420	8.854	9.298	9.706	10.120	10.257	10.394	10.531	10.636	10.741	10.846	10.951	11.056	-	-
Pirai	2.138	2.200	3.753	5.388	7.104	8.894	9.112	9.330	9.547	9.765	9.938	10.110	10.283	10.456	10.628	10.787	10.945	11.103	11.261	11.419	-	-
Rio Claro	3.536	3.610	4.152	4.712	5.291	5.864	6.037	6.124	6.211	6.273	6.334	6.396	6.457	6.519	6.558	6.597	6.636	6.675	6.714	-	-	-
Vassouras	7.876	8.073	8.640	9.223	9.825	10.419	10.626	10.835	11.043	11.250	11.413	11.574	11.737	11.898	12.060	12.170	12.281	12.392	12.502	12.613	-	-
Bom Jesus do Itabapoana	-	-	1.234	2.518	3.852	5.214	6.615	8.054	9.533	11.051	12.549	14.072	14.202	14.331	14.460	14.534	14.609	14.683	14.757	14.831	-	-
Natividade	-	-	3.936	3.466	3.629	3.780	3.932	4.087	4.243	4.401	4.547	4.694	4.712	4.730	4.749	4.758	4.767	4.776	4.785	4.794	-	-
Sao Jose de Uba	-	-	168	349	541	740	950	1.168	1.397	1.635	1.869	2.110	2.144	2.177	2.210	2.231	2.252	2.273	2.294	2.314	-	-
Sao Fidelis	5.521	5.615	6.372	7.148	7.942	8.721	9.512	10.316	11.132	11.960	12.752	13.552	13.634	13.716	13.799	13.836	13.874	13.911	13.949	13.986	-	-
Bom Jardim	1.070	1.102	1.756	2.525	3.293	4.075	4.887	5.729	6.600	7.501	8.384	9.288	9.410	9.532	9.653	9.731	9.809	9.886	9.964	10.042	-	-
Maucos	1.121	1.144	1.246	1.352	1.460	1.565	1.672	1.781	1.893	2.007	2.115	2.224	2.244	2.265	2.285	2.298	2.311	2.324	2.336	2.349	-	-
Sapucaia	3.666	3.763	4.021	4.283	4.549	4.793	5.038	5.285	5.534	5.784	6.005	6.225	6.276	6.326	6.377	6.402	6.427	6.451	6.476	6.501	-	-
Sumidouro	352	359	670	992	1.326	1.661	2.005	2.356	2.715	3.082	3.443	3.810	3.839	3.868	3.897	3.914	3.931	3.948	3.965	3.982	-	-
Itaguaí	12.877	13.188	21.153	29.470	38.141	46.915	47.683	48.451	49.219	49.987	50.488	50.949	51.431	51.912	52.394	52.617	52.840	53.064	53.287	53.510	-	-
Paracambi	13.463	13.719	14.893	15.993	16.719	17.691	17.918	18.146	18.374	18.602	18.743	18.884	19.026	19.167	19.308	19.393	19.477	19.562	19.646	19.730	-	-
Rio de Janeiro - AP5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Seropédica	7.106	7.302	12.627	18.221	24.084	30.048	30.614	31.181	31.747	32.314	32.681	33.049	33.416	33.783	34.151	34.345	34.540	34.735	34.929	35.124	-	-
TOTAL	68.359	69.923	91.612	114.259	137.864	161.688	169.066	176.593	184.267	192.088	199.027	206.062	208.189	210.314	212.441	213.713	214.985	216.258	217.530	218.803	-	-

Ano do Contrato de Concessão	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Carapebus	6.888	6.917	6.946	6.976	7.005	7.011	7.017	7.024	7.030	7.036	7.026	7.015	7.004	6.994	6.983	6.972
Rio das Ostras	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trajanos de Moraes	2.983	2.988	2.993	2.998	3.003	3.000	2.998	2.995	2.992	2.989	2.980	2.972	2.963	2.954	2.946	2.937
Pinheiral	11.117	11.177	11.238	11.299	11.359	11.387	11.414	11.442	11.470	11.498	11.498	11.498	11.498	11.498	11.498	11.498
Pirai	11.520	11.621	11.722	11.823	11.924	11.985	12.046	12.106	12.167	12.228	12.254	12.280	12.306	12.332	12.357	12.383
Rio Claro	6.734	6.755	6.775	6.796	6.816	6.821	6.826	6.831	6.836	6.841	6.833	6.825	6.818	6.810	6.802	6.794
Vassouras	12.678	12.744	12.810	12.876	12.943	12.970	12.997	13.026	13.053	13.080	13.076	13.071	13.067	13.062	13.057	13.054
Bom Jesus do Itabapoana	14.862	14.983	14.925	14.956	14.987	14.985	14.982	14.980	14.978	14.976	14.974	14.918	14.889	14.860	14.831	14.802
Natividade	4.798	4.802	4.806	4.810	4.814	4.815	4.817	4.818	4.819	4.821	4.821	4.821	4.821	4.821	4.821	4.821
Sao Jose de Uba	2.325	2.337	2.348	2.359	2.370	2.374	2.378	2.382	2.385	2.389	2.388	2.386	2.384	2.383	2.381	2.379
Sao Fidelis	13.988	13.990	13.992	13.993	13.995	13.968	13.942	13.915	13.889	13.863	13.814	13.766	13.717	13.669	13.620	13.572
Bom Jardim	10.084	10.127	10.169	10.212	10.254	10.268	10.283	10.297	10.311	10.325	10.317	10.308	10.300	10.291	10.282	10.274
Maucos	2.356	2.362	2.369	2.375	2.382	2.383	2.384	2.385	2.387	2.388	2.385	2.382	2.379	2.376	2.372	2.369
Sapucaia	6.506	6.511	6.516	6.522	6.527	6.517	6.507	6.497	6.487	6.478	6.457	6.436	6.415	6.394	6.373	6.352
Sumidouro	3.989	3.996	4.003	4.010	4.017	4.016	4.014	4.013	4.012	4.011	4.003	3.995	3.987	3.979	3.971	3.963
Itaguaí	53.524	53.539	53.553	53.567	53.581	53.434	53.286	53.138	52.990	52.843	52.577	52.311	52.045	51.779	51.513	51.247
Paracambi	19.753	19.777	19.800	19.823	19.846	19.823	19.799	19.776	19.752	19.728	19.667	19.605	19.543	19.482	19.420	19.358
Rio de Janeiro - AP5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Seropédica	35.182	35.241	35.299	35.358	35.416	35.368	35.320	35.272	35.223	35.175	35.046	34.916	34.787	34.658	34.528	34.400
TOTAL	219.289	219.776	220.263	220.751	221.238	221.124	221.010	220.896	220.782	220.668	220.086	219.503	218.922	218.339	217.886	217.433

4.3 Billed Revenue

RECEITA FATURADA	ANO							
	1 - 5	6-10	11-15	16-20	21-25	26-30	31-35	TOTAL
ÁGUA	3.355.359	4.830.657	5.620.809	5.801.986	5.839.899	5.817.591	5.753.548	37.019.849
Carapebus	8.646	25.279	40.348	43.808	44.491	44.468	44.020	251.060
Rio das Ostras	184.734	397.380	586.593	614.152	608.414	597.186	582.870	3.571.329
Trajano de Morais	5.743	10.336	14.507	15.379	15.464	15.351	15.124	91.905
Pinheiral	32.940	49.323	64.541	69.280	71.153	72.056	72.169	431.462
Pirai	41.854	49.644	57.286	61.213	63.349	64.546	65.010	402.903
Rio Claro	19.527	26.477	32.873	34.551	35.038	35.142	34.942	218.550
Vassouras	57.011	65.426	73.794	77.841	79.862	80.798	80.832	515.562
Bom Jesus do Itabapoana	48.787	65.995	81.831	85.860	86.813	86.771	86.013	542.070
Natividade	20.125	22.870	25.335	25.780	25.827	25.833	25.835	171.605
Sao Jose de Uba	6.971	10.171	13.198	14.211	14.587	14.735	14.713	88.586
Sao Fidelis	49.229	69.605	87.956	91.349	91.288	90.310	88.788	568.525
Bom Jardim	32.046	43.444	54.192	57.740	59.089	59.605	59.471	365.587
Macuco	13.013	14.685	16.298	16.924	17.175	17.236	17.147	112.479
Sapucaia	25.836	30.167	34.169	35.125	35.138	34.773	34.196	229.402
Sumidouro	8.907	14.932	20.382	21.526	21.724	21.694	21.499	130.663
Itaguaí	215.170	413.959	592.114	621.628	617.852	606.395	590.652	3.657.770
Paracambi	45.586	85.103	120.550	127.236	127.763	126.820	124.932	757.989
Rio de Janeiro	2.395.854	3.167.437	3.366.728	3.426.745	3.454.818	3.455.837	3.430.860	22.698.279
Seropedica	58.112	122.079	179.799	190.966	191.589	189.571	186.014	1.118.129
Carmo	14.725	22.918	23.000	23.181	23.181	23.181	23.181	153.365
Itatiaia	70.543	123.427	135.315	147.491	155.284	155.284	155.284	942.629
ESGOTO	508.917	1.178.204	1.760.625	1.863.138	1.875.393	1.860.487	1.832.629	10.879.392
Carapebus	7.032	22.491	36.675	39.821	40.442	40.421	40.014	226.896
Rio das Ostras	7.872	110.083	268.324	286.413	284.662	280.816	275.469	1.513.638
Trajano de Morais	1.184	5.200	9.029	9.634	9.734	9.684	9.538	54.003
Pinheiral	26.693	43.181	58.669	62.977	64.680	65.501	65.604	387.306
Pirai	24.402	44.216	50.940	54.419	56.311	57.370	57.778	345.437
Rio Claro	12.592	22.286	27.638	29.045	29.466	29.573	29.428	180.028
Vassouras	47.160	58.549	66.019	69.573	71.302	72.053	71.989	456.646
Bom Jesus do Itabapoana	10.474	44.190	74.388	78.050	78.917	78.879	78.189	443.086
Natividade	14.581	19.292	23.027	23.432	23.475	23.480	23.482	150.769
Sao Jose de Uba	1.432	6.672	11.994	12.914	13.256	13.391	13.371	73.030
Sao Fidelis	28.616	55.398	79.955	83.040	82.984	82.095	80.711	492.800
Bom Jardim	6.965	29.215	49.261	52.486	53.713	54.182	54.060	299.882
Macuco	8.690	12.091	14.812	15.381	15.609	15.665	15.583	97.831
Sapucaia	18.474	25.356	31.058	31.927	31.939	31.607	31.082	201.443
Sumidouro	3.913	11.690	18.525	19.564	19.744	19.717	19.540	112.693
Itaguaí	157.717	375.662	537.360	564.157	560.726	550.313	536.001	3.281.936
Paracambi	42.732	77.363	109.587	115.664	116.144	115.286	113.570	690.345
Rio de Janeiro - AP5	0	0	0	0	0	0	0	0
Seropedica	43.464	110.978	163.449	173.601	174.167	172.333	169.099	1.007.090
Carmo	1.484	5.159	6.900	6.955	6.955	6.955	6.955	41.361
Itatiaia	43.441	99.132	123.013	134.084	141.168	141.168	141.168	823.173
RECEITA INDIRETA	144.888	300.439	369.067	383.251	385.760	383.899	379.304	2.346.609
TOTAL	4.009.164	6.309.300	7.750.500	8.048.375	8.101.052	8.061.978	7.965.482	50.245.850

4.4 Default Projection

Município	Inadimpência
Carapebus	0,02%
Rio das Ostras	0,03%
Trajano de Moraes	0,00%
Pinheiral	0,35%
Pirai	0,93%
Rio Claro	0,99%
Vassouras	0,36%
Bom Jesus do Itabapoana	0,12%
Natividade	0,24%
Sao Jose de Uba	0,19%
Sao Fidelis	0,00%
Bom Jardim	0,40%
Macuco	0,23%
Sapucaia	0,35%
Sumidouro	0,06%
Itaguaí	0,00%
Paracambi	0,00%
Rio de Janeiro	25,65%
Seropédica	0,99%

4.5 Water and Sanitation Investment Projection

INVESTIMENTO	ANO							TOTAL
	1 - 5	6-10	11-15	16-20	21-25	26-30	31-35	
Carapebus	42.396	39.293	17.150	6.584	4.786	2.822	2.501	115.532
Rio das Ostras	114.161	142.129	44.502	11.906	11.297	11.297	11.297	346.589
Trajano de Morais	30.763	17.215	5.840	2.511	2.042	1.931	1.895	62.197
Pinheiral	45.795	29.658	17.902	11.427	7.980	5.565	3.871	122.198
Pirai	81.068	26.310	19.740	17.849	13.771	10.781	8.073	177.592
Rio Claro	59.047	10.813	7.173	5.544	4.377	3.528	3.251	93.733
Vassouras	89.172	26.317	20.918	17.081	14.054	11.574	10.252	189.368
Bom Jesus do Itabapoana	112.304	58.493	20.958	10.517	8.893	7.903	7.927	226.995
Natividade	25.853	10.069	5.928	2.735	2.512	2.389	2.279	51.765
Sao Jose de Uba	17.124	8.680	3.790	2.094	1.698	1.411	1.287	36.084
Sao Fidelis	68.407	35.601	14.715	8.092	6.854	6.489	6.493	146.651
Bom Jardim	70.031	40.478	15.970	7.974	6.193	4.836	4.135	149.617
Macuco	15.983	6.317	3.363	2.180	1.859	1.628	1.577	32.907
Sapucaia	40.570	19.822	7.795	4.934	4.649	4.077	4.080	85.927
Sumidouro	23.731	22.724	5.744	2.495	2.025	1.742	1.742	60.203
Itaguaí	456.251	83.574	46.216	26.957	14.371	13.541	13.541	654.451
Paracambi	89.944	25.768	13.329	9.752	7.252	6.376	6.376	158.797
Rio de Janeiro	510.189	352.982	225.090	88.080	67.355	39.797	33.302	1.316.795
Seropédica	363.312	58.354	34.841	22.492	13.870	10.516	10.516	513.901
Carmo	22.844	28.555	5.720	0	0	0	0	57.119
Itatiaia	50.554	61.652	13.211	1.191	251	0	0	126.859
TOTAL	2.329.499	1.104.804	549.895	262.395	196.089	148.203	134.395	4.725.280

4.6 Water and Sanitation Investment Projection

Ano do Contrato de Concessão		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
	PERCENTUAL DO TOTAL	SOMA																			
CAPEX Total de Água por Categoria	100,00%	2.407.163	87.575	189.883	246.994	273.388	277.908	157.912	114.985	104.619	82.876	73.791	71.513	56.100	48.178	54.996	39.866	43.964	36.460	43.474	35.144
Obras Cíveis - Produção de Água	13,52%	325.418	17.844	18.606	67.526	81.206	81.675	39.903	8.913	5.577	290	241	259	573	451	450	138	122	121	121	120
Obras Cíveis - Distribuição	55,19%	1.328.458	57.022	143.450	147.338	159.415	163.386	89.868	76.808	70.738	56.219	47.680	45.744	35.635	28.338	34.843	21.070	25.161	17.068	23.928	15.910
Sistemas - Produção de Água	0,95%	22.761	500	1.305	3.831	4.294	4.347	2.406	640	472	179	179	179	268	201	201	179	179	179	179	179
Sistemas - Distribuição de Água	3,45%	82.971	2.658	7.263	7.893	8.751	9.013	5.354	5.041	4.433	3.329	2.851	2.682	2.173	1.822	2.143	1.472	1.682	1.272	1.601	1.211
Equipamentos - Produção de Água	7,40%	178.045	675	3.934	5.081	4.397	4.162	4.185	5.997	5.904	5.304	5.304	5.474	5.470	5.304	5.304	5.304	5.304	5.304	5.304	5.304
Equipamentos - Distribuição de Água	16,62%	400.111	8.492	8.492	8.492	8.492	8.492	9.363	10.753	10.662	10.722	10.703	10.512	11.912	11.830	11.824	11.637	11.449	12.448	12.271	12.349
Capex Total de Água do Carmo	1,24%	29.917	-	2.991	2.991	2.991	2.991	2.991	2.991	2.991	2.991	2.991	2.991	2	2	-	-	-	-	-	-
Capex Total de Água do Itaiaia	1,64%	39.481	384	3.842	3.842	3.842	3.842	3.842	3.842	3.842	3.842	3.842	3.842	63	64	65	66	67	68	70	71

Ano do Contrato de Concessão		20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	
	PERCENTUAL DO TOTAL	SOMA																
CAPEX Total de Água por Categoria	100%	2.407.163	28.385	35.857	28.019	27.349	26.757	23.396	22.809	23.040	19.936	19.907	18.437	18.416	19.206	19.071	18.780	18.190
Obras Cíveis - Produção de Água	13,52%	325.418	90	90	90	90	90	78	78	78	78	78	74	74	74	74	73	73
Obras Cíveis - Distribuição	55,19%	1.328.458	9.891	17.111	8.850	8.298	7.751	5.067	4.523	3.982	1.116	1.116	275	275	275	275	16	16
Sistemas - Produção de Água	0,95%	22.761	179	179	179	179	179	179	179	179	179	179	179	179	179	179	179	179
Sistemas - Distribuição de Água	3,45%	82.971	916	1.270	867	840	813	681	657	631	491	491	448	450	450	450	437	435
Equipamentos - Produção de Água	7,40%	178.045	5.304	5.304	5.304	5.304	5.304	5.304	5.304	5.304	5.304	5.304	5.304	5.304	5.304	5.304	5.304	5.304
Equipamentos - Distribuição de Água	16,62%	400.111	11.933	11.830	12.729	12.638	12.620	12.087	12.068	12.866	12.768	12.739	12.157	12.134	12.924	12.789	12.751	12.183
Capex Total de Água do Carmo	1,24%	29.917	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Capex Total de Água do Itaiaia	1,64%	39.481	72	73	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Ano do Contrato de Concessão		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
	PERCENTUAL DO TOTAL	SOMA																			
CAPEX Total de Esgoto por Categoria	100%	2.318.117	150.790	358.645	273.538	258.627	212.150	124.489	117.081	111.833	111.329	105.887	106.573	49.055	42.871	42.885	37.858	15.922	15.933	15.899	15.957
Obras Cíveis - Coleta de Esgoto	41,63%	964.965	39.309	151.981	130.264	141.489	131.045	53.362	45.654	44.004	44.429	39.946	40.591	18.264	12.281	12.295	7.508	7.512	7.520	7.484	7.538
Obras Cíveis - Tratamento de Esgoto	13,24%	306.974	59.511	89.818	78.600	33.141	19.974	7.879	5.767	2.733	2.703	1.916	1.938	339	305	305	189	190	189	189	189
Sistemas - Coleta de Esgoto	1,19%	27.601	2.591	4.701	3.717	4.231	3.336	1.579	1.147	956	955	847	866	488	318	318	191	191	192	191	192
Sistemas - Tratamento de Esgoto	1,50%	34.775	6.401	12.904	8.615	3.890	1.579	799	378	145	64	-	-	-	-	-	-	-	-	-	-
Equipamentos - Coleta de Esgoto	1,28%	29.578	11.851	3.824	2.316	4.930	466	1.088	1.086	129	129	129	129	129	129	129	129	129	129	129	129
Equipamentos - Tratamento de Esgoto	14,28%	330.985	8.334	62.265	14.654	15.634	438	4.470	7.737	8.554	7.737	7.737	7.737	7.737	7.737	7.737	7.737	7.737	7.737	7.737	7.737
Capex Total de Esgoto do Rio das Ostras	7,74%	179.500	-	-	2.220	22.160	22.160	22.160	22.160	22.160	22.160	22.160	22.160	-	-	-	-	-	-	-	-
Capex Total de Esgoto do Rio de Janeiro -	14,20%	329.160	21.944	21.944	21.944	21.944	21.944	21.944	21.944	21.944	21.944	21.944	21.944	21.944	21.944	21.944	21.944	21.944	21.944	21.944	21.944
Capex Total de Esgoto do Carmo	1,17%	27.202	-	2.720	2.720	2.720	2.720	2.720	2.720	2.720	2.720	2.720	2	2	-	-	-	-	-	-	-
Capex Total de Esgoto do Itaiaia	3,77%	87.378	849	8.488	8.488	8.488	8.488	8.488	8.488	8.488	8.488	8.488	152	154	157	160	163	166	169	172	

Ano do Contrato de Concessão		20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	
	PERCENTUAL DO TOTAL	SOMA																
CAPEX Total de Esgoto por Categoria	100,00%	2.318.117	11.259	11.281	11.094	11.091	11.569	9.676	8.978	8.979	8.968	8.959	8.190	8.182	8.198	8.174	8.163	8.035
Obras Cíveis - Coleta de Esgoto	41,68%	964.965	3.045	3.064	3.065	3.051	3.508	1.276	1.025	1.025	1.015	1.006	268	260	275	252	243	121
Obras Cíveis - Tratamento de Esgoto	13,24%	306.974	97	97	97	98	97	65	63	63	63	63	50	50	50	50	48	48
Sistemas - Coleta de Esgoto	1,19%	27.801	76	76	76	76	98	64	24	25	24	24	6	6	7	6	6	-
Sistemas - Tratamento de Esgoto	1,50%	34.775	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Equipamentos - Coleta de Esgoto	1,28%	29.578	129	129	129	129	534	129	129	129	129	129	129	129	129	129	129	129
Equipamentos - Tratamento de Esgoto	14,28%	330.965	7.737	7.737	7.737	7.737	7.737	7.737	7.737	7.737	7.737	7.737	7.737	7.737	7.737	7.737	7.737	7.737
Capex Total de Esgoto do Rio das Ostras	7,74%	179.500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Capex Total de Esgoto do Rio de Janeiro -	14,20%	329.160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Capex Total de Esgoto do Carmo	1,17%	27.202	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Capex Total de Esgoto do Itatiba	3,77%	87.378	175	178	-	-	-	-	-	-	-	-	-	-	-	-	-	-

4.7 Non-Exhaustive List of Assets - Block 3

MUNICIPALITY	UNIT	LOCATION
BOM JARDIM	MOINHO ABSTRACTION	MOINHO STREAM
BOM JARDIM	ORNELAS ABSTRACTION	JEQUITIBÁ STREAM
BOM JARDIM	JEQUITIBÁ ABSTRACTION	ORNELAS STREAM
BOM JARDIM	SANTA TERESA ABSTRACTION	SANTA TERESA STREAM
BOM JARDIM	WATER TREATMENT PLANT	WTP BOM JARDIM
BOM JARDIM	WATER TREATMENT PLANT	WTP BANQUETE
BOM JARDIM	WATER TREATMENT PLANT	WTP S.JOSÉ DO RIBEIRÃO
BOM JARDIM	RESERVOIR	TWSR1-BOM JARDIM
BOM JARDIM	RESERVOIR	TWSR2-BOM JARDIM
BOM JARDIM	RESERVOIR	TWSR1-BOM JARDIM
BOM JARDIM	RESERVOIR	TWSR1-BOM JARDIM
BOM JARDIM	RESERVOIR	TWSR2-BOM JARDIM
BOM JARDIM	RESERVOIR	TWSR3-BANQUETE
BOM JARDIM	RESERVOIR	TWSR4-BANQUETE
BOM JARDIM	RESERVOIR	TWSR5-S. JOSÉ DO RIBEIRÃO
BOM JESUS DO ITABAPOANA	SURFACE ABSTRACTION	HEADQUARTERS
BOM JESUS DO ITABAPOANA	SURFACE ABSTRACTION	BARRA DE PIRAPETINGA
BOM JESUS DO ITABAPOANA	SURFACE ABSTRACTION	CARABUÇU
BOM JESUS DO ITABAPOANA	SURFACE ABSTRACTION	SANTA MARIA
BOM JESUS DO ITABAPOANA	SURFACE ABSTRACTION	ROSAL
BOM JESUS DO ITABAPOANA	WATER TREATMENT PLANT	HEADQUARTERS
BOM JESUS DO ITABAPOANA	WATER TREATMENT PLANT	BARRA DE PIRAPETINGA
BOM JESUS DO ITABAPOANA	WATER TREATMENT PLANT	CARABUÇU
BOM JESUS DO ITABAPOANA	WATER TREATMENT PLANT	SANTA MARIA
BOM JESUS DO ITABAPOANA	WATER TREATMENT PLANT	ROSAL
BOM JESUS DO ITABAPOANA	RESERVOIR	HEADQUARTERS
BOM JESUS DO ITABAPOANA	RESERVOIR	BARRA DE PIRAPETINGA
BOM JESUS DO ITABAPOANA	RESERVOIR	CARABUÇU
BOM JESUS DO ITABAPOANA	RESERVOIR	SANTA MARIA
BOM JESUS DO ITABAPOANA	RESERVOIR	ROSAL
CARAPEBUS	RAW WATER SURFACE ABSTRACTION	GRANDE STREAM
CARAPEBUS	RAW WATER SURFACE ABSTRACTION	MARICOTA DAM
CARAPEBUS	RAW WATER LIFTING STATION	CÓRREGO GRANDE ABSTRACTION
CARAPEBUS	RAW WATER LIFTING STATION	MARICOTA DAM ABSTRACTION
CARAPEBUS	WATER TREATMENT PLANT	CARAPEBUS
CARAPEBUS	TREATED WATER LIFTING STATION	WTP CARAPEBUS
CARAPEBUS	RESERVOIR	CARAPEBUS
ITÁGUAÍ	TREATED WATER PIPELINE	PIPELINE RIBEIRÃO DAS LAGES 1 AND 2

MUNICIPALITY	UNIT	LOCATION
ITÁGUAI	RAW WATER SURFACE ABSTRACTION	MAZOMBA
ITÁGUAI	TREATED WATER LIFTING STATION	BOOSTER CHAPERÓ
ITÁGUAI	TREATED WATER LIFTING STATION	E.E. DECEMBER 26
MACUCO	RAW WATER SURFACE ABSTRACTION	RIO DOURADO DAM
MACUCO	RAW WATER LIFTING STATION	RIO DOURADO DAM
MACUCO	WATER TREATMENT PLANT	MACUCO
MACUCO	RESERVOIR	MORRO DA IGREJA
NATIVIDADE	RAW WATER SURFACE ABSTRACTION	CARANGOLA RIVER
NATIVIDADE	RAW WATER LIFTING STATION	RIVER CARANGOLA ABSTRACTION
NATIVIDADE	WATER TREATMENT PLANT	NATIVIDADE
NATIVIDADE	RESERVOIR	WTP NATIVIDADE
PARACAMBI	TREATED WATER LIFTING STATION	BOOSTER PARACAMBI
PARACAMBI	RESERVOIR	PARACAMBI RESERVOIR
PINHEIRAL	RAW WATER SURFACE ABSTRACTION	PINHEIRAL ABSTRACTION - PARAÍBA DO SUL RIVER
PINHEIRAL	WATER TREATMENT PLANT	WTP PINHEIRAL
PINHEIRAL	RESERVOIR	PLANALTO DO SOL RESERVOIR
PINHEIRAL	RESERVOIR	PINHEIRAL RESERVOIR (MAIN)
PIRAÍ	RAW WATER SURFACE ABSTRACTION	ABST ROSA MACHADO
PIRAÍ	RAW WATER SURFACE ABSTRACTION	ABST VARJÃO PIRAÍ
PIRAÍ	RAW WATER SURFACE ABSTRACTION	SANTANESIA PIRAÍ ABSTRACTION
PIRAÍ	RAW WATER SURFACE ABSTRACTION	PIRAÍ ABSTRACTION - HEADQUARTERS - RIBEIRÃO DAS LAJES DAM
PIRAÍ	WATER TREATMENT PLANT	WTP SANTANESIA PIRAÍ
PIRAÍ	WATER TREATMENT PLANT	WTP ARROZAL PIRAÍ
PIRAÍ	WATER TREATMENT PLANT	WTP VARJÃO PIRAÍ
PIRAÍ	WATER TREATMENT PLANT	WTP PIRAÍ - HEADQUARTERS
PIRAÍ	SEWAGE TREATMENT PLANT	STT PIRAÍ I
PIRAÍ	SEWAGE TREATMENT PLANT	STT PIRAÍ II
PIRAÍ	RAW WATER LIFTING STATION	RWLS VARJÃO PIRAÍ
PIRAÍ	RAW WATER LIFTING STATION	RWLS BICAME - PIRAÍ HEADQUARTERS
PIRAÍ	TREATED WATER LIFTING STATION	TWLS ROSA MACHADO
PIRAÍ	TREATED WATER LIFTING STATION	TWLS SANTANESIA PIRAÍ
PIRAÍ	TREATED WATER LIFTING STATION	BOISTER PEDREIRA
PIRAÍ	TREATED WATER LIFTING STATION	BOOSTER TRAPICHE
PIRAÍ	TREATED WATER LIFTING STATION	TWLS ARROZAL PIRAÍ
PIRAÍ	TREATED WATER LIFTING STATION	BOOSTER JAQUEIRA
PIRAÍ	TREATED WATER LIFTING STATION	BOOSTER RUA A, MORRO SAROLE
PIRAÍ	TREATED WATER LIFTING STATION	TWLS PIRAÍ HEADQUARTERS
PIRAÍ	SEWAGE LIFTING STATION	RWS SLS PIRAÍ I
PIRAÍ	SEWAGE LIFTING STATION	RAW SLS PIRAÍ
PIRAÍ	RESERVOIR	ARROZAL PIRAÍ RESERVOIR
PIRAÍ	RESERVOIR	RESERV. VARJÃO PIRAÍ

MUNICIPALITY	UNIT	LOCATION
PIRAÍ	RESERVOIR	RESERVOIR CHAPADÃO DO ASILO
PIRAÍ	RESERVOIR	CAPELINHA RESERVOIR (MAIN)
PIRAÍ	RESERVOIR	MORRO DO CRUZEIRO RESERVOIR
PIRAÍ	RESERVOIR	MORRO DO SAROLE RESERVOIR
RIO CLARO	RAW WATER SURFACE ABSTRACTION	RIVER PIRAI - RIO CLARO RIVER
RIO CLARO	RAW WATER SURFACE ABSTRACTION	RIO PARADO - LIDICE
RIO CLARO	WATER TREATMENT PLANT	WTP RIO CLARO
RIO CLARO	WATER TREATMENT PLANT	WTP LIDICE
RIO CLARO	RAW WATER LIFTING STATION	RWLS RIO CLARO HEADQUARTERS
RIO CLARO	TREATED WATER LIFTING STATION	TWLS - RIO CLARO HEADQUARTERS
RIO CLARO	TREATED WATER LIFTING STATION	TWLS LÍDICE
RIO CLARO	RESERVOIR	FIBER RESERVOIR
RIO CLARO	RESERVOIR	RES-500 M3
RIO CLARO	RESERVOIR	RES-240 LIDICE
RIO DAS OSTRAS	RAW WATER SURFACE ABSTRACTION	MACAÉ RIVER (SHARED WITH DISTRICT OF BARRA DE SÃO JOÃO)
RIO DAS OSTRAS	RAW WATER LIFTING STATION	ABSTRACTION (SHARED WITH DISTRICT OF BARRA DE SÃO JOÃO)
RIO DAS OSTRAS	WATER TREATMENT PLANT	WTP RIO DOURADO (SHARED WITH DISTRICT OF BARRA DE SÃO JOÃO)
RIO DAS OSTRAS	RESERVOIR	RIO DAS OSTRAS
RIO DE JANEIRO	TREATED WATER LIFTING STATION	TWP BARRA DE GUARATIBA
RIO DE JANEIRO	TREATED WATER LIFTING STATION	TWP VILAR CARIOCA
RIO DE JANEIRO	TREATED WATER LIFTING STATION	TWP VICTOR KONDER
RIO DE JANEIRO	TREATED WATER LIFTING STATION	TWP TANGARÁ
RIO DE JANEIRO	RESERVOIR	BANGU RESERVOIR
RIO DE JANEIRO	RESERVOIR	MIRANTE
RIO DE JANEIRO	RESERVOIR	VILAR CARIOCA
RIO DE JANEIRO	RESERVOIR	VICTOR KONDER
RIO DE JANEIRO	RESERVOIR	MORIÇABA
SÃO FIDÉLIS	RAW WATER SURFACE ABSTRACTION	PARAÍBA DO SUL RIVER
SÃO FIDÉLIS	RAW WATER LIFTING STATION	PARAÍBA DO SUL RIVER ABSTRACTION
SÃO FIDÉLIS	WATER TREATMENT PLANT	SÃO FIDELIS HEADQUARTERS
SÃO FIDÉLIS	RESERVOIR	WTP S. FIDELIS
SÃO FIDÉLIS	TREATED WATER LIFTING STATION	WTP S. FIDELIS
SÃO JOSÉ DE UBÁ	RAW WATER SURFACE ABSTRACTION	MURIAÉ RIVER
SÃO JOSÉ DE UBÁ	RAW WATER LIFTING STATION	MURIAÉ RIVER ABSTRACTION
SÃO JOSÉ DE UBÁ	WATER TREATMENT PLANT	SÃO JOSÉ DE UBÁ HEADQUARTERS
SÃO JOSÉ DE UBÁ	TREATED WATER LIFTING STATION	WTP S. JOSÉ DE UBÁ
SÃO JOSÉ DE UBÁ	RESERVOIR	SÃO JOSÉ DE UBÁ HEADQUARTERS
SAPUCAIA	RAW WATER SURFACE ABSTRACTION	PARAÍBA DO SUL RIVER
SAPUCAIA	RAW WATER LIFTING STATION	PARAÍBA DO SUL RIVER ABSTRACTION
SAPUCAIA	WATER TREATMENT PLANT	HEADQUARTERS OF SAPUCAIA
SAPUCAIA	TREATED WATER LIFTING STATION	WTP SAPUCAIA

MUNICIPALITY	UNIT	LOCATION
SAPUCAIA	HEADQUARTERS RESERVOIR	HEADQUARTERS OF SAPUCAIA
SAPUCAIA	RESERVOIR S. JOÃO	HEADQUARTERS OF SAPUCAIA
SEROPÉDICA	TREATED WATER PIPELINE	WTP RIBEIRÃO DAS LAJES
SEROPÉDICA	RESERVOIR	BOA FÉ RESERVOIR
SEROPÉDICA	RESERVOIR	PIRANEMA RESERVOIR
SUMIDOURO	RAW WATER SURFACE ABSTRACTION	PAQUEQUER STREAM
SUMIDOURO	RAW WATER SURFACE ABSTRACTION	SANTA RITA STREAM
SUMIDOURO	RAW WATER LIFTING STATION	PAQUEQUER STREAM ABSTRACTION
SUMIDOURO	WATER TREATMENT PLANT	HEADQUARTERS OF SUMIDOURO
SUMIDOURO	TREATED WATER LIFTING STATION	WTP SUMIDOURO
SUMIDOURO	RESERVOIR	SUMIDOURO HEADQUARTERS
TRAJANO DE MORAES	RAW WATER SURFACE ABSTRACTION	SOLEADE STREAM
TRAJANO DE MORAES	RAW WATER LIFTING STATION	SOLEDADE STREAM ABSTRACTION
TRAJANO DE MORAES	RAW WATER LIFTING STATION	RAW WATER PIPELINE
TRAJANO DE MORAES	WATER TREATMENT PLANT	TRAJANO DE MORAES HEADQUARTERS
TRAJANO DE MORAES	TREATED WATER LIFTING STATION	WTP TRAJANO DE MORAES
TRAJANO DE MORAES	HEADQUARTERS RESERVOIR	HEADQUARTERS OF SAPUCAIA
VASSOURAS	RAW WATER SURFACE ABSTRACTION	VASSOURAS ABSTRACTION - PARAÍBA DO SUL RIVER
VASSOURAS	WATER TREATMENT PLANT	STS VASSOURAS - HEADQUARTERS SYSTEM
VASSOURAS	RAW WATER LIFTING STATION	RWSP VASSOURAS - HEADQUARTERS SYSTEM
VASSOURAS	TREATED WATER LIFTING STATION	TWLS VASSOURAS - HEADQUARTERS SYSTEM
VASSOURAS	RESERVOIR	VASSOURAS RESERVOIR - HEADQUARTERS SYSTEM (MAIN)