INTEGRATED REPORT

2018

BASIC SANITATION AND GENERATING VALUE FOR THE CITY OF CAMPINAS

SANASA CAMPINAS

NOSSA VIDA É INOVAR

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MESSAGE FROM THE CHAIRMAN OF THE BOARD OF DIRECTORS (102-14)

SANASA's Board of Directors acknowledges that 2018 was one of the company's most profitable years, posting a net income of R$162.5 million – up 36.38% versus 2017 – and a 22% rise in operating cash flow as measured by EBITDA. The company's net margin was the highest ever posted in any year, hitting 17.7%.

Investments throughout 2018 continued the business goal of making basic sanitation in the city of Campinas universal. Works on the water and sewage systems received R$92 million, a direct benefit of six thousand new accesses to safe and treated water supply services and eight thousand new accesses to sewage collection and treatment, in addition to the positive impact of environmental preservation. Basic sanitation funding totaled R$567.4 million from 2013 to 2018, with a large part of this amount in sanitary sewage.

The Board of Directors played an active role in discussions pertaining to the Compliance Program. This program was established to protect the business and preserve its integrity in order to both attract investments and safeguard the public assets that SANASA represents for the local community. And the consensus, dictated by the Majority Shareholder, has been to adopt a strategic vision with innovation and management efficiency through programs that are able to preserve capital in consideration of future generations.

SANASA is led by the premise of Human Rights to Water and Basic Sanitation, which includes public health and economic development for all residents. This is sharply reflected in social inclusion, through the provision of quality services and attendance to low-income residents in the same way that it does for other users, contributing to the municipal administration's public health policy. The company also runs social programs geared towards the neediest people in the region – about 232,000 inhabitants – amounting to 19% of the population benefiting from the social tariff.

Our analysis of the company's indicators assures us that achieving universal sanitation is only a few steps away. SANASA is strategic for Campinas in safeguarding citizens and in local human and economic development. The company today is one of the pillars of sustainability from the Metropolitan Region of Campinas in creating value for its inhabitants. ■

PEDRO BENEDITO MACIEL NETO
Chairman of the Board of Directors

MESSAGE FROM THE CHIEF EXECUTIVE OFFICER (102-14)

SANASA has been working for 44 years on extending the supply of treated water and sewage services to all residents in the city of Campinas through the principle of Human Rights to Water and Basic Sanitation. In 2013, the company established goals for investments in order to accelerate universal access in the municipality. That year, Mayor Jonas Donizette instituted sanitation as one of the Administration's pillars of sustainability and company management unveiled the 300% Plan, which prescribes for 100% safe and treated water, 100% collection and disposal, and 100% treatment of sewage by the year 2025. The 300% Plan has been one of the efforts for reinforcing our commitment to the United Nations 2030 Agenda in complying with **Sustainable Development Goal 6**: **Ensure availability and sustainable management of water and sanitation for all.**

We are certain today that the population of Campinas will be fully served by the benefit of universalization in the not-too-distant future. In 2018, SANASA provided safe drinking water to 99.81% of residents, along with a sewage service to 96.05% of the inhabitants. This is the result of an investment that was systematically contributed from 1997, when the capital was opened, up to 2018, totaling R$1.4 billion.

The value generated by sanitation for the local community can be ascertained directly through the health of the inhabitants. Hospitalizations in Campinas for waterborne diseases are 1.78 per 10,000 (Instituto Trata Brasil/2017) while infant mortality rests at 8.88 per 1,000 (IBGE/2017). Economic and social values have also been expressive in the city, where average incomes are R$3,505 per month, while the national average sits at R$2,533 (Instituto Trata Brasil/2017). Through an analysis of this data, we are able to realize that sanitation cannot be treated simply as infrastructure, but must be a public policy for health and human development.

SANASA took an important step in water governance in 2018 by improving the quality of effluent disposal in the Piracicaba, Capivari and Jundiaí river basins. This was done through a partnership between the municipalities of Campinas and Valinhos, transferring operations of the ETE Capuava (Treatment Plant) to SANASA. The program calls for modernizing this unit, which will be transformed into a Water Reuse Production Plant (EPAR, in Portuguese). The contract agreement is for 30 years, with estimated investments of around R$140 million. The ETE Capuava treats 255.6 liters per second. Through modernization, it could have a positive impact on disposals in Ribeirão Pinheiros, located two kilometers from the Campinas collection point. This initiative is a significant step forward in the company's plan to extend its business in the Campinas Metropolitan Region (RMC), impacting the lives of 3,224,443 residents (IBGE/2018).

The challenge this presents to the business is a future where the universalization of sanitation is achieved. The company is already preparing for this new stage by forming a partnership with Unicamp and the Fundação de Amparo à Pesquisa do Estado de São Paulo (São Paulo Research Foundation or FAPESP) for the creation of the **Brazilian Water Research Center – BWRC**. The BWRC will have the aid of renowned researchers from a number of different countries in conducting research endeavors that comply with all of SDG 6's goals, with major contributions to matters related to water. The BWRC is expected to get underway in 2019.

We are increasingly certain that social development is fully intertwined with the progress made in basic sanitation. We are also aware that, if universalization is not achieved, a fair and equitable society with prosperity and peace for all cannot be constructed. ■

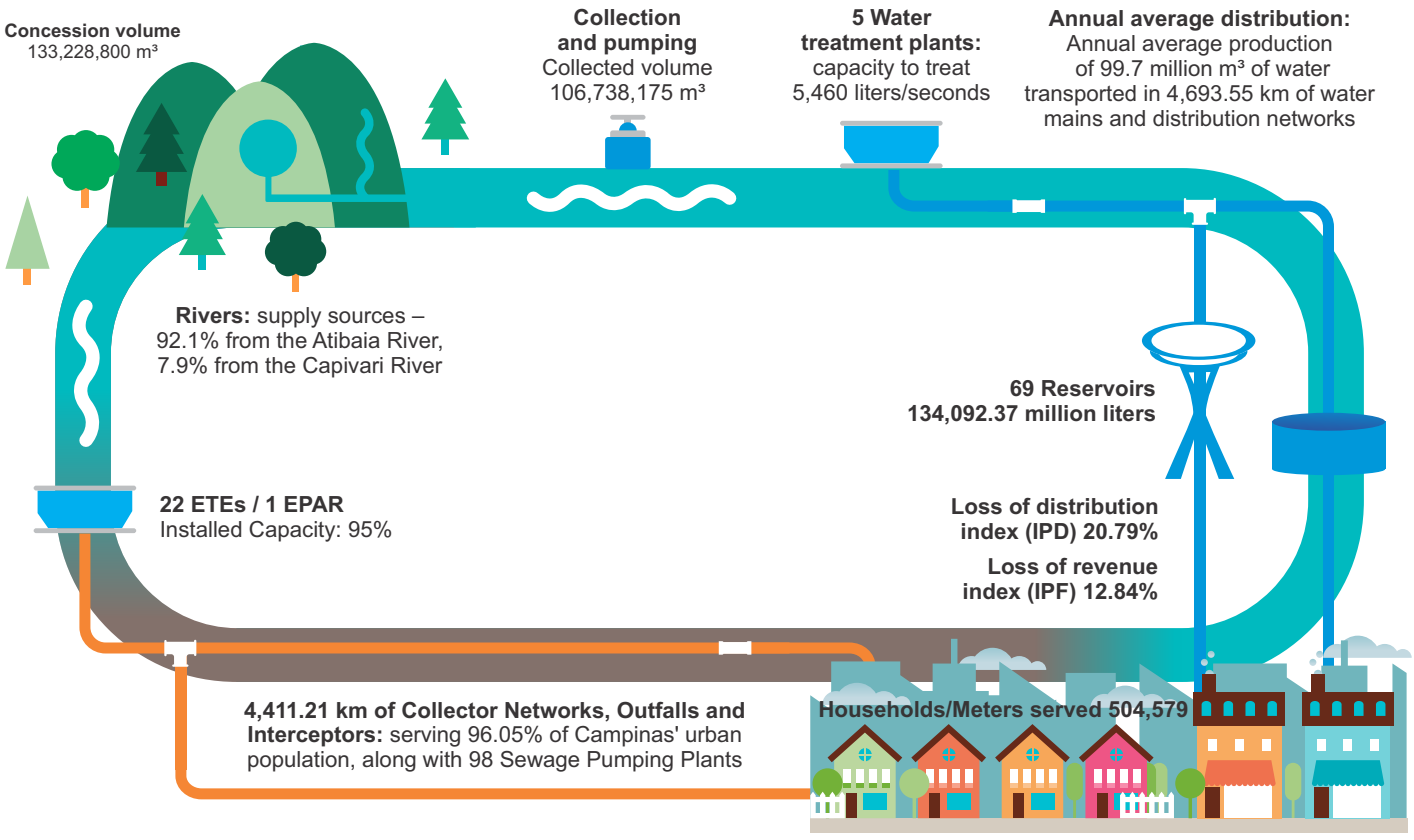
ARLY DE LARA ROMÊO
Chief Executive Officer

ORGANIZATIONAL PROFILE

ORGANIZATIONAL PROFILE
(102-1 / 102-2 / 102-3 / 102-4 / 102-5 / 102-7 / 303-1)

SANASA Campinas - Sociedade de Abastecimento de Águas e Saneamento S/A

2018 Financial Year
Mixed economy: 99.9% of the shares are from the Municipal Government of Campinas
2018 Revenue: R$918,125,449.62 Employees: 2,200



City: SANASA provides service to 99.81% of the population in Campinas with a water supply system (1,194,094 inhabitants) (IBGE 2018)

CORPORATE GOVERNANCE

CORPORATE GOVERNANCE

SDG 16 - To promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.

Values, principles and standards of behavior (102-16)

Mission

Contributing to the population's quality of life, serving the basic sanitation needs of Campinas and the region with excellence, carrying out and promoting social and environmental actions.

Vision

Being a company of excellence that is committed to transparency and ethics, and strives towards making sanitation universal in Campinas, applying cutting-edge technology.

Values

Transparency, Fairness, Integrity and Corporate Responsibility	Appreciation of human capital, with ethical conduct and principles
Sustainability	Continuous improvement

Business Goals

- 100% water supply
- 100% sewage collection and disposal
- 100% sewage treatment
- Guaranteed supply
- New businesses in the sanitation field
- Customer satisfaction rating of 96%

Strategic Guidelines

Business Management: Commitment to the targets and outcomes proposed in the company's Business Plan, based on an assessment of risks and opportunities.

Social Responsibility: Ensuring that the company performs in an ethical and transparent manner in dealing with labor relations, customers, the community and the environment and that the rates it charges are socially equitable and economically viable.

Technological Leadership: Employing innovative solutions in technological and operational processes, promoting internal and external partnerships with certifications and accreditations.

Sustainability: Ensuring social and environmental sustainability practices, pursuing the continuity of the business.

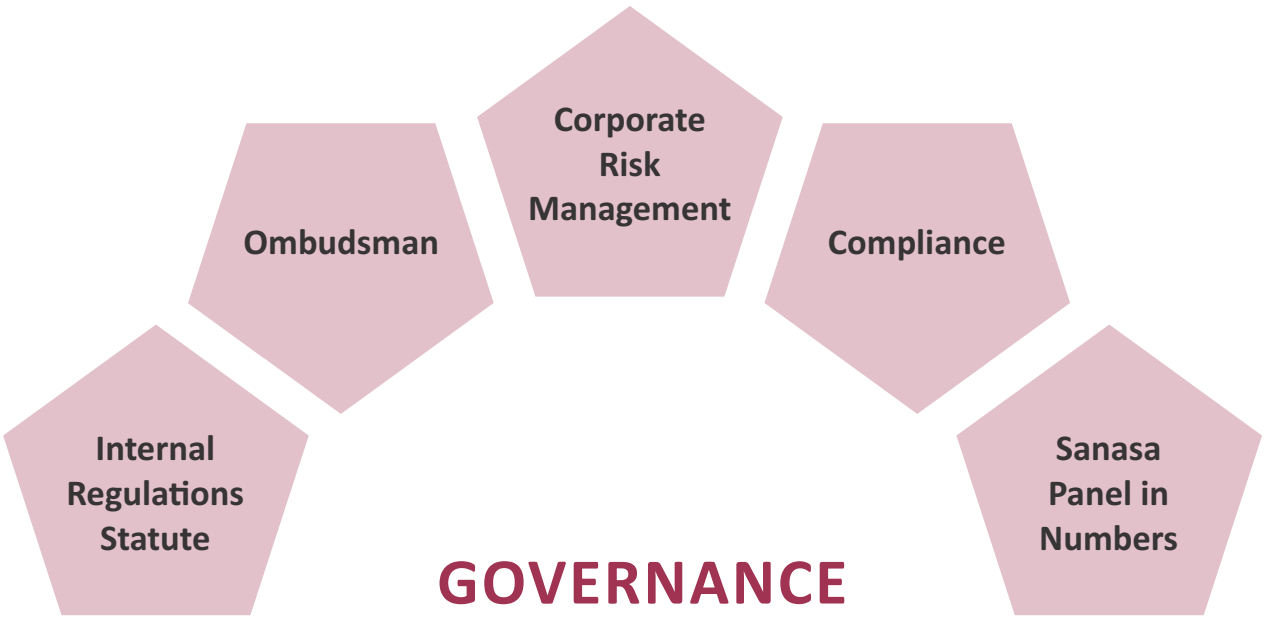
Ethical Principles and Values

- Assiduity
- Punctuality
- Mutual Cooperation
- Dignity
- Eficiency
- Purpose
- Honesty
- Equality
- Impartiality
- Impersonality
- Initiative
- Integrity
- Justice
- Fidelity
- Legality
- Freedom
- Continuous Improvement
- Morals
- Prevalence of the Public Interest
- Advertising
- Social Responsibility
- Environmental Responsibility
- Customer Satisfaction
- Safety

Business Plan (102-26)

The 2017-2025 Business Plan was drafted with the involvement of senior managers and executives and approved by the Board of Directors in December of 2016, in compliance with the State-Owned Enterprises Law (Law 13,303/2016). In December 2018, SANASA's Board of Directors submitted an annual review of the Business Plan to the Board of Directors. This encompassed the technical, administrative and financial guidelines, along with the mission, vision and values statements and a definition of strategies and targets.

Corporate Governance System



SANASA also has other mechanisms to ensure the integrity and transparency of the business:

- Transparency Portal (Governance)
- Internal controls and automated systems
- Electronic auction system (Bids)
- Supervision of contractors (Legal)
- General system of indicators (Quality)
- Internal and External Audits
- A commitment to the 10 Principles of the United Nations Global Compact
- Integrated Reporting – practicing GRI Standards (Global Reporting Initiative)

Governance Structure (102-18)

Conselho de Administração	Mandato de 3 anos
Pedro Benedito Maciel Neto	05/Dec/2016 to 05/Dec/2019
Arly de Lara Romêo	05/Dec/2016 to 05/Dec/2019
Pedro Cláudio da Silva	05/Dec/2016 to 05/Dec/2019
Wanderley de Almeida	05/Dec/2016 to 05/Dec/2019
Michel Abrão Ferreira	05/Dec/2016 to 05/Dec/2019
José Roberto Sundfeld	18/Dec/2018 to 05/Dec/2019
Agenor Soares	05/Dec/2016 to 05/Dec/2019

Conf. Ata da Assembleia Geral Extraordinária de 05/Dec/2016

Conselho Fiscal	Mandato anual
Luis Augusto Michelin da Silva	27/Apr/2018 to 27/Apr/2019
Reinaldo Campanholi	27/Apr/2018 to 27/Apr/2019
Celso Lapa Vettori	27/Apr/2018 to 27/Apr/2019
Suplentes	
Silvana Sabatin Billó	27/Apr/2018 to 27/Apr/2019
João Roberto Lima	27/Apr/2018 to 27/Apr/2019
Marionaldo Fernandes Maciel	27/Apr/2018 to 27/Apr/2019

Conf. Ata da Assembleia Geral Ordinária de 27/Apr/2018

Organization Chart of Management (8/Mar/2019)

Administrative Board
Paulo Jorge Zeraik

- **Procurements and Biddings** — Mariane de Aguiar Pacini
- **Documentation and Memory Center** — Frederico R.B.R. de Almeida
- **Materials Logistics and Inspection** — Ricardo Luis Fiorio
- **Infrastructure Services** — Ederson Marcos Barbosa
- **Transportation** — Renato Boscolo

Commercial Board
Luciano Soares Traldi

- **Customer Service** — Maria Ap. F. de Rocco
- **Billing and Meter Reading** — José Roberto Barreto
- **New Businesses** — Luiz Renato Ribeiro Ferreira
- **Community Relations** — Oldemar Elias

Board
Arly de Lara Romêo

- **Media** — Aberio Diogenes de Almeida Júnior
- **Geotechnology** — Walter Francoso Petito
- **Corporate Governance** — Solange Maroneze
- **Environment** — Rodrigo Hajjar Francisco
- **Human Resources** — Carlos Alberto Barboza
- **Information Technology** — Pedro Cláudio da Silva

Attorney General's Office
Maria Paula Balesteros

- **Legal Affairs** — Claudete P. de M. Salles
- **Legal Litigation** — Gilberto Jacobucci Júnior
- **Real Estate Law** — Wladimir Correia de Mello

Finance and Investor Relations Officer
Pedro Cláudio da Silva

- **Controllership** — Antônio Moreira Franco Júnior
- **Finance and Market** — Manuela Gonçalves Garcia

Technical Board
Marco Antônio dos Santos

- **Integration, Control and Technological Development** — Adriana A. R. V. Isenburg
- **Control of Losses and Systems** — Lina Cabral Adani
- **Regional Districts** — Benevenuto Aparecido Sales
- **Quality Management and Technical Relations** — Alessandro S. Tetzner
- **Maintenance** — Satoshi Ando
- **Outfalls and Pipeline Maintenance** — Geraldo A. Montanhez
- **Construction** — Sidney Ramos Junior
- **Sewage Operation** — Renato Rossetto
- **Planning and Projects** — Luci Lorençon Manara
- **Water Production and Operation** — Vladimir José Pastore

Composition of Upper Management (102-22 / 102-23 / 102-24 / 102-25)

Board of Directors

Members of the Board of Directors are appointed through a process where names are suggested by the Majority Shareholder to the Statutory Eligibility Committee – CEE, whose premise is to comply with the requirements established in the State-Owned Enterprises Law (Law 13,303/2016). Candidates must respond to the investiture form, where they declare to have no conflict of interest, and also submit supporting documentation. After an assessment of the profile and documents, the approved names will be put up for consideration at the Shareholders' Annual Meeting. Since the CEE was created in 2018, a new member for the Company's Board of Directors and another for the Executive Board have already gone through the process. The Board of Directors contains an independent director, who must prove not to have ties with any branches of the government and does not even receive earnings from the company.

The make up of the current Board of Directors is predominantly male, with professionals from the fields of law, economics, engineering, legal and social sciences.

Representation of Stakeholders

From among the members of the Board of Directors, a vacancy is filled by a permanent career employee of the company, chosen through a direct election arranged among the employees, with any automatic replacement for the succession period prohibited.

Composition of the Board of Directors

- Chief Executive Officer of the company and permanent member of the Board of Directors,
- one employee representative,
- at least 25% independent members, i.e., two seats are filled by independent directors, declared as such at the Meeting that elects them, in accordance with the provisions in the State-Owned Enterprises Law (Law 13,303/2016).
- the remaining seats are filled through nominations from the controlling shareholder, one of them being Chairman of the Board.

Statutory Eligibility Committee – CEE

The Statutory Eligibility Committee is composed of three members who are elected and removed through the General Meeting for a unified two-year term, with three consecutive renewals permitted. Members of other committees, employees or board members can be members of the CEE, in compliance with the Brazilian Corporate Law (Law 6.404/1976). Additional compensation, in accordance with the Company's By-Laws, is prohibited. The current CEE is composed of two women and one man with a background in business administration, accounting and law.

Internal Audit

The members of the Internal Audit are selected by the Board of Directors through an indication by the Executive Board, and report directly to the Board of Directors and are administratively linked to the CEO. The Internal Audit is composed of two men and four women, and are permanent staff members who have an irreproachable reputation with knowledge in the fields of accounting, finance, legal, engineering, information technology, bidding and administration.

Internal Audit members may not accumulate other administrative roles in the company whilst exercising the duties of an auditor. The premise is that they remain dissociated from their original activities in order to ensure that the work is conducted with absolute secrecy and autonomy.

Compensation Policy for Board Members (102-35)

Board members receive a compensation of 10% corresponding to the salary of the directors of the company, in accordance with Municipal Decree No. 17,673 of August 13th, 2012. Independent directors receive no other compensation except for what is established by the decree, unless there are cash earnings from any equity interest. The Compensation Policy was approved, along with the Compliance Program, in December of 2018.

Delegation of Authority (102-19 / 102-20 / 102-27 / 102-29 / 102-31)

The delegation of authority for economic, environmental and social topics falls under the responsibility of the respective managers, based on the organization chart and each managers' duties established in the By-Laws and the Internal Regulations. The managers report to the Executive Board and the latter to the Board of Directors.
The Board of Directors has a hand in managing the financial, environmental and social topics from submittal of the financial reports, the investment plan and the Business Plan and Long-Term Strategy.
For each meeting, the agenda is set according to priorities and critical topics within the period. Critical concerns are also addressed to the Board of Directors through Internal Audit reports and presentations, as well as being handled through the Audit Portal on the company's website, with access restricted to Board members.

SANASA has additional tools available to the Board of Directors for managing financial, environmental and social topics:

- Monthly and Annual Balance Sheets
- Integrated Report
- Corporate Risk Management – Risk Map
- Internal Audit – Audit Report

Compliance Program (102-17 / 205-1 / 205-2)

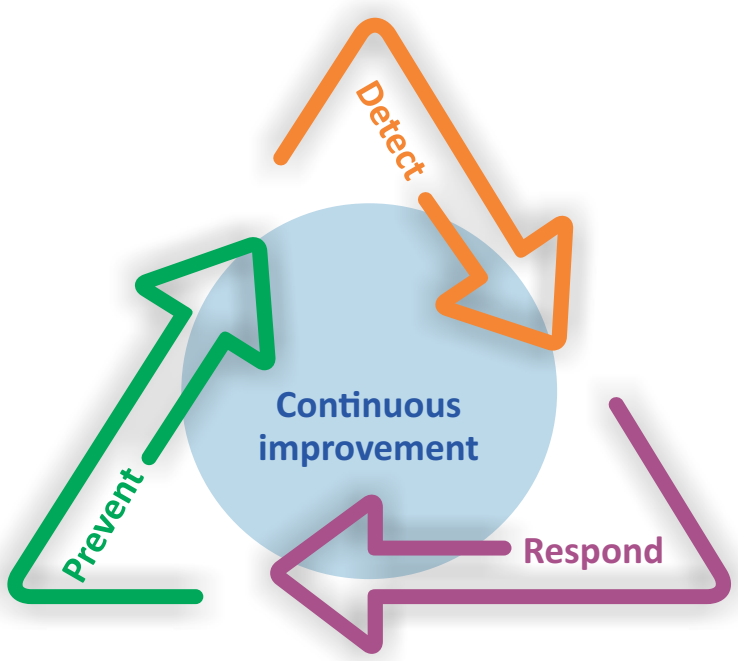
The Compliance Program was drafted on the premise of business integrity, reinforcing ethics and promoting transparency. The Program includes advice and explanations on ethical concerns through its guidance and outreach tools, employee training and Reporting Channel. It is intended to mitigate conflicts of interest, integrity, business sustainability and to protect the company's reputation.

It was assembled to align with the prerogatives defined by the Anti-Corruption Law (Law 12,846/2013), State-Owned Enterprises Law (Law 13,303/2016), Code of Conduct for the Senior Municipal Management of Campinas (Decree No. 17,405/2011), Integrity Program of the Comptroller General's Office, Principle 10 of the United Nations Global Compact and Sustainable Development Goals 16.

The process for establishing the work was thorough, and it was analyzed by the entire Executive Board, Internal Auditors, In-house Attorney and members of the Board of Directors. The appropriate adaptations were incorporated under its purview in order to comply with the State-Owned Enterprises Law. All of the documents that form the Compliance Program, including the Reporting Channel, were unanimously approved by the Board of Directors at its annual meeting on December 18th, 2018.

Corporate Governance Management is responsible for implementing and publicizing the Compliance Program. They work through governance agents and managers in all departments within the company in order to facilitate explanations and guidance about the program.

Structure of the Compliance Program



Prevent
- Code of Conduct
- Training
- Transparency
- Governance Agents

Detect
- Complaint channel
- Risk Management
- Accountability
- Internal Control
- Audits

Respond
- Adapt processes
- Investigating complaints with:
  - Equal treatment
  - Penalties according to the degree of job responsibility

Prevent: to prevent any non-compliance or unethical behavior from occurring. Prevention is done through programs initiated at the company, and publicizing this culture throughout the firm. Prevention measures:

- Commitment by senior management – managers who are already selected through a unanimous approval by the members of the Board of Directors;
- Promotion of the Compliance Program;
- Public transparency;
- Training for all employees;
- Activities by governance agents;
- Guidance and support from Corporate Governance management to senior management and the entire company.

Detect: SANASA keeps track of potential non-compliances, suspected cases of corruption and misconduct by applying management tools such as internal controls, accountability mechanisms, records, internal and external audits and risk management. Through the Reporting Channel, a direct front is opened for pointing out non-compliances and irregularities through which a citizen can, in good faith, collaborate with SANASA's commitment to integrity, transparency and the fight against corruption.

Respond: all complaints, including those filed anonymously, are investigated with equal treatment and include penalties if needed. These sanctions must be suitable to the degree of responsibility of each position. All investigations and responses by the company are intended to improve and refine processes so that new occurrences are prevented – a pillar of this Program.

Codes of Conduct

Once the Compliance Program is approved, employees and suppliers will have access to the Codes of Conduct through the company intranet and on the SANASA website. The portal is already being constructed by the Information Technology Department. Starting in 2019, members of Senior Management and all SANASA employees will be trained specifically on this matter. During training, everyone will be invited to sign the SANASA Term of Commitment (TCS). The document declares awareness of – and a commitment to – compliance with the established rules and labor regulations, in addition to being willing to report violations or suspected violations and to offer full cooperate with any investigation conducted by the Ethical Conduct Committee or by inquiry.

Suppliers

The Compliance Program engages suppliers and outsourced contractors in the initiative to mitigate potential negative impacts that, once they have occurred, could reverberate throughout the chain. This is done through the following documents:

- Code of Conduct for Suppliers
- Training for some outsourced contractors who work directly as company representatives
- An Anti-Corruption Clause in supplier contracts
- Term of Commitment for Outsourced Contractors, which must report any violations or suspected violations and cooperate with any investigation conducted by the Ethics Conduct Committee or through an inquiry
- Commitment Term for Suppliers stating that none of the partners or executives at the contracted company is a third-degree relative of an employee, advisor or person in a position with a committee, working in the area of bidding and/or contract management, nor even with members of the Executive Board or Board of Directors of SANASA.
- Term of Commitment for SANASA's Senior Management, employees and suppliers to declare any circumstances where there is a conflict of interest and situations that fall under the Code of Conduct

Reporting on Critical Concerns (102-33)

The Ombudsman, Internal Audit and Map of Corporate Risks are governance tools to provide notifications on critical business concerns. The Internal Audit reports critical concerns, as well as progress on the work produced, through the Audit Portal. The portal is available on the company's website and access is restricted to the Board Members. Work is also presented at the Board of Directors meetings.

Risk Management (102-15 / 102-30 / 102-34)

Corporate Governance has been overseeing risk management since 2013 in an effort to offer guidance and provide all necessary support to the business areas. As was expected, the work was performed well, with increased participation and engagement by staff over time.

SANASA closed out 2018 with 107 risks, monitored by their respective indicators – which totaled 153, with critical concerns reported throughout this material by these areas according to the issues covered in the topics.

As a result of the ISO 9001 certification and the migration from ABNT NBR ISO 9001:2008 to ABNT NBR ISO 9001:2015, Corporate Risk Management is now integrated into these standards. With this in mind, the External Audit performed by the Brazilian Association of Technical Standards – ABNT in 2017 and 2018 encompassed the Risk Management work at SANASA. At the suggestion of the auditors, the Corporate Governance included the Opportunities and Improvements register in the Risk Management work – information that is completed only if it will be uncovered.

Risk Management

A) Risks related to the company

- Referring to the supply of water
- Referring to the treatment of sewage
- Failing to reach the 300% target
- Non-execution of project and construction

B) Risk related to the controller

- Lack of compliance

C) Risks related to suppliers

- Power outages
- Lack of chemical products
- Referring to the supply chain

D) Risk related to customers

- Drop in revenues/billings

E) Risk related to the sectors of the economy in which the company operates

- Changes in tax policies

F) Risk related to the regulation of sectors in which the company operates

- Federal, state and local legislation on environmental protection

The company employs its own methodology, which identifies risks – classifying them and assessing them as to probability, financial loss and intangible factors –, as well as possible causes and impacts.

The causes and impacts of each risk are monitored by indicators and assessed to make sure that mitigation actions are always suitable. Much of the risk can be mitigated through internal controls, automated systems, training and the provision of guidance to employees.

Actions:

- in the causes of risk – to prevent it from occurring
- in risk itself
- in the impacts – the actions are created to minimize the consequences in circumstances where the risk cannot be prevented

As of 2018, governance teams began to keep track of improvements and opportunities detected in risk monitoring. Key business risks are also reported in the Securities Commission Reference Form (CVM).

Key Business Risks
To the Outfall:
Risk related to the supply of water
A lack of water supply due to technical issues, such as a block in raw water pumping, halt in production, water shortage and contamination, are all risks that are identified and controlled through internal regulations and procedures, along with ANA/DAEE Joint Resolutions, with a satisfactory outcome accompanied by these indicators. However, the water crisis continues to be one of key risk factors for restricting supply to the municipality, due to external causes. These include low rainfall and a reduction of discharge from the Cantareira System "*Sistema Cantareira*" to the PCJ basins that, if they occur, also make it difficult to treat water. There could be serious consequences, including water rationing for the population and a drop in the company's revenues, which may, along with the rising cost of water treatment, cause a major financial loss. This risk is tracked through the level of the Atibaia River and with the municipal government's package of measures enacted in May 2014 – the period when the crisis occurred.

Risks related to the treatment of sewage
Risks related to sewage works are directly linked to environmental factors and may have an impact on the receiving body as to water quality, in any potential flaw in its collection and treatment network.

Risk of not reaching the 300% target by 2025.
300% Goal

- 100% sewage treatment

- 100% sewage collection and disposal
- 100% water supply.

Lacks of funding, licensing or ownership of the areas, along with administrative issues, are all factors that may prevent SANASA from achieving the goals established in its Business Plan. An outcome like this would not only damage the company's image, but particularly the general population, who would not be able to benefit from these endeavors.

Non-execution of project and construction
The risk of delay or inability to complete construction due to technical factors is monitored individually. Each project has its own tracking indicators with month-by-month scheduled and completed deadlines, along with the entire history of occurrences that have created delays and the measures taken, which are specific to each event. Project suspensions can also occur due to a lack of credit – either because there are no credit lines in the market or there is an inability to get them – which has a major impact on SANASA meeting its strategic goals, its image and its outlook for growth. The unfeasibility of complying with the technical and financial schedule for environmental licensing can also lead to a loss of pre-released financing and delays in construction.

To its direct or indirect Controller or Control group:
Compliance Risk
SANASA is concerned with Compliance as a guarantor of a relationship of trust between its stakeholders, whether they are business partners or customers. Because it is a mixed-economy company, where the Municipality of Campinas holds 99% of the shares, political decisions have a direct influence on the company, and transparency and compliance are the cornerstones of this relationship. A number of mitigation measures for Compliance risk have already been taken by the company through its monitoring of other compliance risks, as well as through the rules, systems, or actions of the Ombudsman, Internal Audit and Conduct Committee.

To its Shareholders
SANASA has few minority shareholders – representing less than 1% of the company's shares – so their decisions do not impact risks that may influence investment decisions.

To its Suppliers:

Chemicals

A lack of chemical products has a high impact on business, both financially and socially, and can result in shortages, reduced water quality and customer dissatisfaction. This factor must be monitored consistently, especially in the event of a water crisis, when the cost of the product increases as a result of high demand, and the treatment requires a higher quantity in order to maintain its quality due to water scarcity.

Risks related to the Supply Chain
Actions by a supplier can have an impact on the business, regardless of its degree of relevance. SANASA holds co-responsibility, along with suppliers, for labor, human rights and environmental practices. A corruption scandal with a supplier or a breach in a commitment assumed for sustainability directly affects the company's image.

To its Customers:

Drop in revenues/billings
A loss in revenues may be caused by increased delinquency, the illegal use of the water network in a populated area, the illegal use of the sewage system and an inability to read the water meter due to a lack of employees or a breakdown in the system. During a water crisis, any fall in revenues may also take place more sharply due to savings in consumption.

To the sectors of the economy in which the issuer operates:

Changes in tax policies
The company may be directly affected by changes in tax rules. Some of these risks could include a misappropriation or classification of accounts, accounting information that may lead to different reporting on income or tax calculation, amongst others. SANASA also runs the risk of a justified or unfounded judgment on tax planning procedures, which could have a huge financial impact on retroactive payments of various taxes, over which the company currently has tax immunity.

To the regulation of sectors in which the issuer operates:
SANASA's activities are subject to strict federal, state and municipal legislation with respect to protecting the environment. Environmental

licensing is a procedure whereby the relevant agency permits the placement, installation, expansion and operation of ventures and activities that use environmental resources and that may be considered to be effectively or potentially polluting or those that in any form may cause environmental damage. SANASA makes a request to the environmental agencies for the State of São Paulo in order to obtain a license for implementing and running its activities. The company has taken all the necessary measures to comply with legal and/or regulatory determinations in order to reduce the environmental impacts of their activities.

Social and environmental issues:
The company must pay special attention to licenses and permits because any lack of these permits could result in a breach of compliance when performing construction work. Issues such as receiving environmental liabilities created by third parties due to the lack of proper environmental regularization also need to be monitored. Failure to perform social projects linked to funds financed by the Federal Government may also lead to a suspension of work due to the interruption in the transfer of funds.

The company and society are directly affected by both illegal sewage connections and illegal water connections in occupied areas, with a consequent impact on revenue losses and even sewage contamination.

Transparency
SANASA's Transparency Portal is an information channel that offers citizens a way to track the company's works, financial statements, bidding procedures, etc. This access allows people to learn more about the SANASA Panel in Numbers, which provides information on revenues and expenses, as well as the company's key indicators. Data from this compilation uses the civil calendar.

SANASA in Numbers (102-2 / 102-7)

GENERAL

Campinas Population 1,194,094 *(IBGE 2018)*
Area: 795.35 km² *(IGS)*
Net Revenue 2018 (Thousands): R$918,125
Employees: 2,200
Domasas – Maintenance Districts: 10
Service agencies: 11 stationary and 2 mobile

WATER

Water Supply Index: 99.81%
Water catchments: 2
Treatment Plants/ETAs: 5
ETA/ETL Sludge treatment plant: 1
Extension of water system: 4,700.29 km
Storage and Distribution Centers/CRDs: 41
Reservoirs: 26 elevated and 43 semi-buried
Volume of Reserves: 134,092.37 m³
Volume of treated and distributed water (Accumul./year): 99,660,496 m³
Monthly average of treated and distributed water: 8,305,041 m³
Distribution/booster points: 3
Loss of distribution index/IPD: 20.79%
Loss of revenue index/IPF: 12.95%
Households/Water Meters: 504,983
Connections: 350,640

Residential: 316,892 **Public:** 1,307
Commercial: 32,000 **Industrial**: 441

SEWAGE

Population served (urban) – collection and removal: 96.05%
Installed capacity of sewage treatment: 95%
Treatment Plants/ETEs: 22
Water Reuse Production Plant/EPAR: 1
Pumping stations/EEEs: 98
Extension of sewer system: 4,413.55 km
Households/Water Meters: 462,183
Connections: 326,693

SERVICES

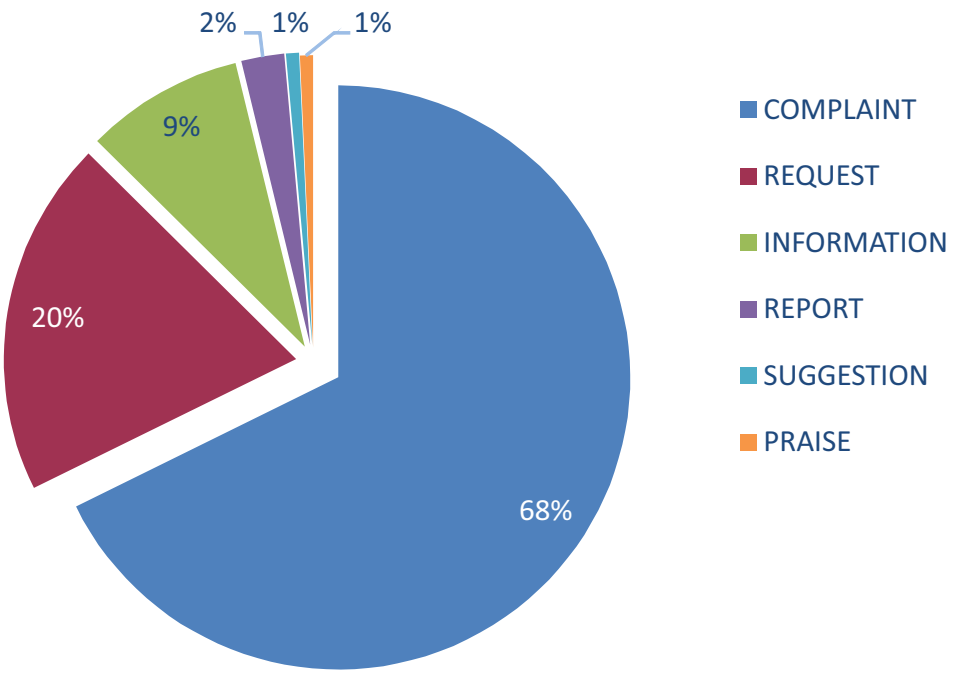
Type		Total in the Month	Total in the Year
Water systems	SANASA run	192.01 m	11,183.22 m
	Developer run	--	5,522.32 m
Sewage networks	SANASA run	865.29 m	15,026.66 m
	Developer run	--	5,744.23 m
Rebuilding floors and sidewalks		998 4,754.94 m²	13,123 57,659.31 m²
Rebuilding roads		495 6,441.90 m²	6,865 101,251.30 m²
Channel and gutter services		111 359.05 m	1,277 5,052.38 m
Leveling manholes in sidewalks and roads		102	1,094
General: connections, water and sewage repairs, inspections		15,059	216,079

Base: Dec/2018

Ombudsman (102-13)

In 2018, the SANASA Ombudsman received and analyzed 1,949 complaints, 98%, or 1,910, were answered and completed by December 31st, 2018. Response time for 81% of the cases was up to five business days, and up to three business days in 72% of the cases. Incoming calls included: Complaints (68%), Service Requests (20%), Information (9%), Reports (2%), Suggestions (1%) and Praise or Thanks (1%).

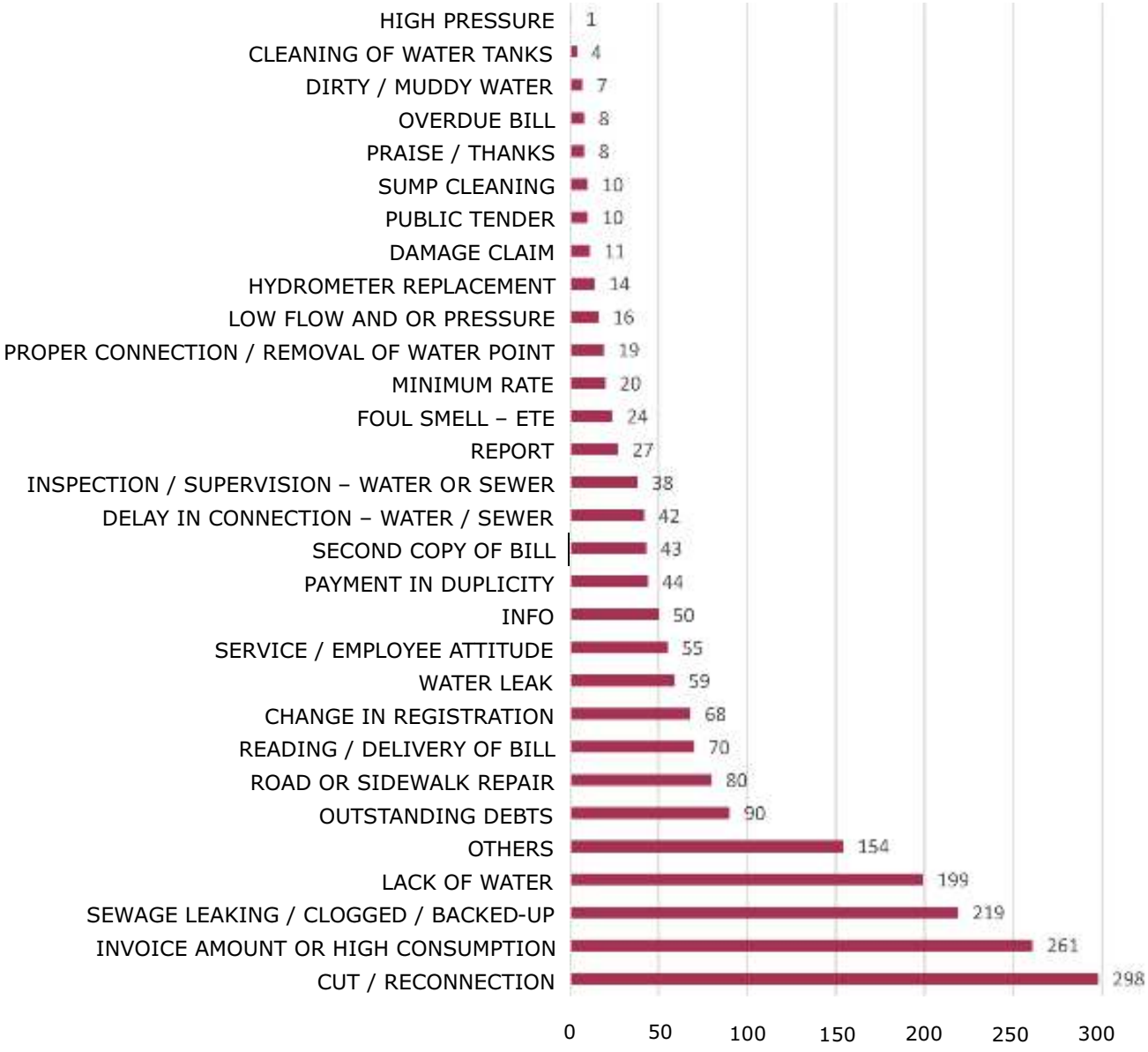
Chart 1: Type of Calls Received



Source: SANASA, Corporate Governance Management.

The issues that represented the majority of complaints received by the Ombudsman, as shown below, were: Cut and Reconnection (15%), Invoice Amount or High Consumption (13%), Sewage Leaking, Backed-up or Clogged (11%) and Lack of Water (10%).

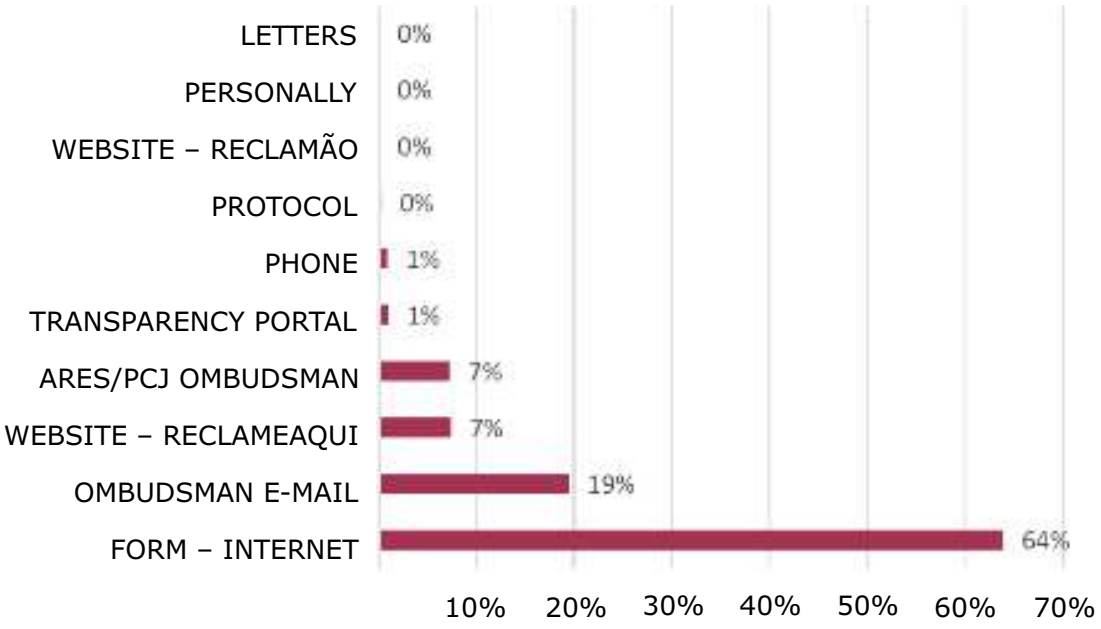
Chart 2: Call Issues



Source: SANASA, Corporate Governance Management.

As for the origins, calls are divided into: 84% were lodged through the internet (in a form on the SANASA website, Transparency Portal or Ombudsman's e-mail), 7% through complaint websites (ReclameAQUI and Reclamão), 7% through the Ombudsman of ARES-PCJ (Piracicaba, Capivari and Jundiaí River Basin Sanitation Services Regulatory Agency) and 1% by telephone.

Chart 3: Origin of Calls



Source: SANASA, Corporate Governance Management.

OUR CAPITAL

OUR CAPITAL

Business Model

During preparations for the presentation of economic, environmental and social information according to the GRI Standards and the principles of Integrated Reporting, SANASA begins the phase for the statement on the involvement of different resources in its activities. Capital can be considered deposits, and the model created by the Integrated Report points out that the value creation of a company not only depends on financial capital, but also on other resources, such as manufactured, intellectual, human, social/relationship and natural ones.

With the challenge of demonstrating, measuring and describing the capital involved in our activities, we initiated a discussion and awareness raising that any creation of value in any capital will lead to a destruction of value in relation to the capitals involved, and the company's objective is to know these capitals and conduct their management effectively.

The results shown in our financial statements for 2018 go beyond the financial return and impact all of society, we therefore point out which capitals were impacted, in understanding of how the company creates value in its general context, with attention to the sustainability of its business over the long-term.
Our efforts were placed on making a connection between distributed added value – reported in the Statement of Added Value (DVA) – with the creation of value in our various capitals in an integrated manner within the statement of information. This reinforces the use of the principle of information connectivity and the context of sustainability, principles that are prominent for both the GRI Standards and for the International Integrated Reporting Council (IIRC).

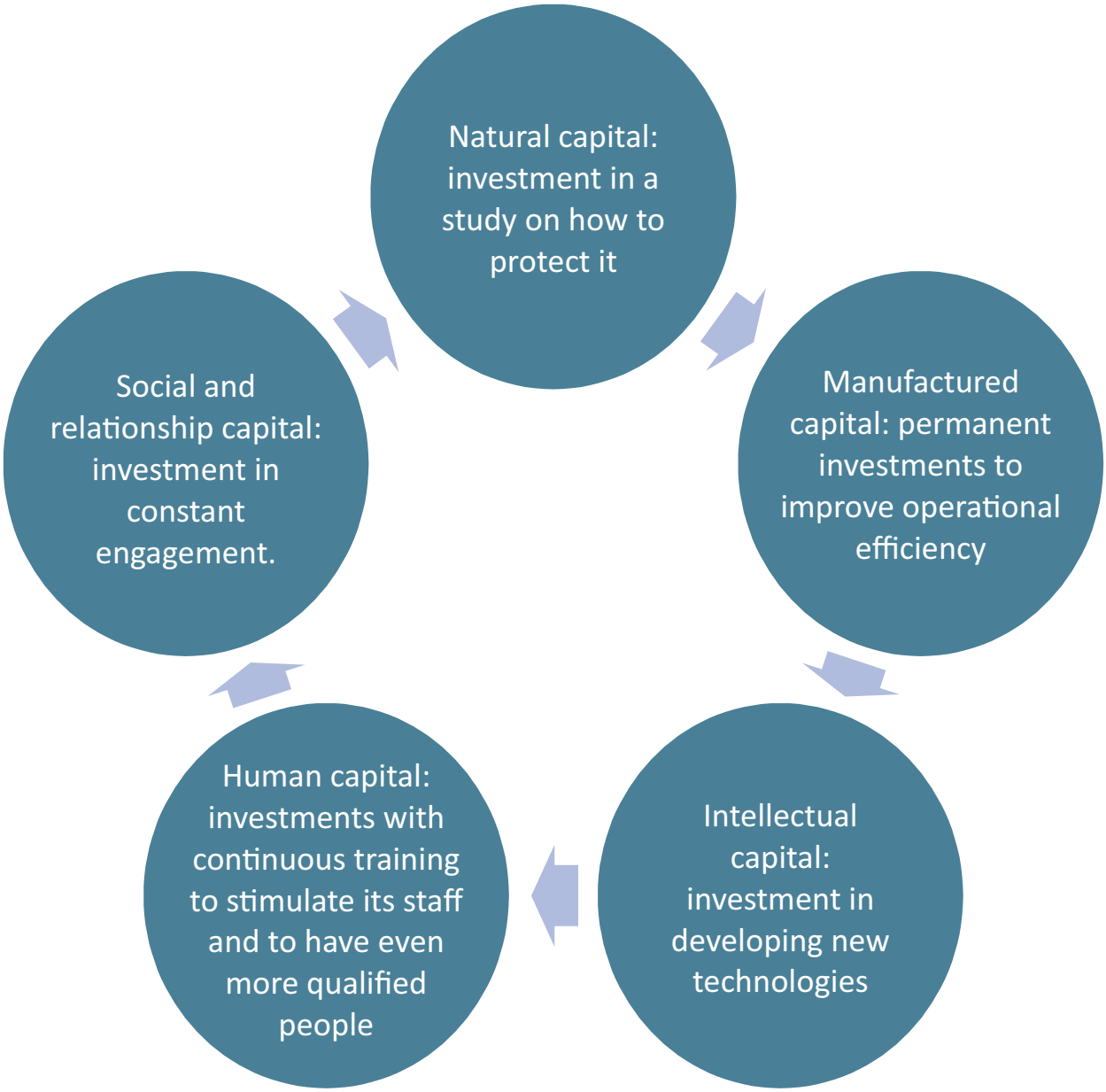
An analysis on the total value that the company has to distribute, and the way it was distributed, is employed to understand how value creation occurs among the different types of capital. These include financial capital when involving third party return on capital; human capital in the form of salary and employee benefits; and social capital and relationship capital in distributions effected through taxes, fees and contributions (federal, state and municipal) transferred to the government.

Information related to SANASA's Distribution of Economic Value is included in Created and Distributed Economic Value (201-1) in this report.

We understand that the company's capital stocks are not fixed, that is, they are altered over time due to the organization's activities. They increase, decrease or even transform, so monitoring them is essential for the continuity of the company's activities.

The capital that SANASA totally depends on for its operations is a natural product – water – which needs to be collected for treatment and distributed to the population of Campinas. Although the company also requires other capital to perform its duty, the fact that water is used as its primary raw material has led SANASA to implement a number of different programs. Some of these programs include environmental education through the conscious use of water, maintenance of spring and water source areas, combating and reducing losses, modernizing the sewage treatment system to raise it from the secondary to tertiary level.

The development of social capital and relationship is treated with the utmost importance. As a sanitation company in the municipality of Campinas, SANASA is committed to providing safe and drinkable water for the local population and to treating sewage with innovation and efficiency, directly impacting the health of residents. Being aware that the company cannot arbitrarily consume its capital, particularly natural capital, a way to reinvest is needed. This reinvestment is part of the interaction and continuous transformation between capitals to achieve integrated reporting and a clear statement of the company's value creation over time.


Natural capital: investment in a study on how to protect it
Manufactured capital: permanent investments to improve operational efficiency
Intellectual capital: investment in developing new technologies
Human capital: investments with continuous training to stimulate its staff and to have even more qualified people
Social and relationship capital: investment in constant engagement.

Intending to reinvest its capital and the continuity of the business, SANASA states its information related to investments in the section titled **Infrastructure Investments and Services Offered (203-1)** in this report.

Discussions on the business model and capital involved are just beginning, but they are already a major step in integrating its information, putting a new way of thinking about the company into place.

In order to define the business of distributing treated water, the schematic of the Water Safety Plan was used, which is contained in the Organizational Profile. The capital used in the company's activities can be seen in this plan.

Business Plan and Long-Term Strategies

At a meeting held on November 28th, 2018, the Board of Directors approved the Business Plan and Long-Term Strategy for 2019 to 2025, pursuant to article 23 of the State-Owned Enterprises Law (Law 13,303/2016). The Business Plan was drafted based on the company's expected performance and accounted for the medium and long-term recovery of the current economic environment in the country. The Business Plan presents the targets and forecasts on how SANASA will create value in the upcoming years, along with risks and uncertainties. For details, see: www.sanasa.com.br/document/noticias/2624.pdf

Our Capitals and Value Creation

Earnings from the sale of the product have an impact on many capitals, for example: financial capital, in the form of profit or loss; manufactured capital, in the form of depreciation of facilities for their use and investments to continue operations; intellectual capital, in the form of investments in new technologies; human capital, in the form of employee capacity utilization, investments in training and the payment of salaries; social and relationship capital, in the way the company reinforces the engagement of its stakeholders and is concerned with obtaining the social license from society to continue operating; and in natural capital, especially when the treated sewage is returned, with particular attention paid to the actions taken by the company to preserve and maintain water.

CAPITAL IN INDICATORS (2018)	QUANTITY	UNIT
Relationship Capital and Human Capital		
Population of Campinas *	1,194,094	Inhabitants
Number of Employees (SANASA) on 12/31/2018	2,200	Employees
Customer Service Locations	11 stationary and 2 mobile	Units
Natural Capital, Relationship Capital and Manufactured Capital – Water		
Population Served with Water	99.81%	Percentage
Households/Water Meters	504,016	Unit
Water Connections	349,693	Unit
Extension of Water System	4,700.29	km
Volume of Treated and Distributed Water (accumulated in 2018)	99,668,750	m³
Water Catchment	2	Unit
Water Treatment Plants	5	Unit
Storage and Distribution Centers	41	Unit
Reservoirs	69	Unit
Loss of Distribution Index (IPD)	20.79%	Percentage
Loss of Revenue Index (IPF)	12.95%	Percentage
Natural Capital, Relationship Capital and Manufactured Capital – Sewage		
Population Served with Sewage Collection and Removal	96.05%	Percentage
Installed Capacity of Sewage Treatment	95.00%	Percentage
Sewage Treatment Index	88.42%	Percentage
Households/Meters	461,430	Unit
Sewage Connections	325,966	Unit
Extension of Sewer System	4,413.55	km
Sewage Pumping Stations	98	Unit
Sewage Treatment Plants	22	Unit
Water Reuse Production Plant	1	Unit
Volume of Treated Sewage (accumulated in 2018)	54,733,736	m³

* IBGE 2018 estimate
NOTE: Data from this table uses the billing calendar.
Source: SANASA, Comptrollership Management.

Natural Capital (102-2)

In 2018, SANASA had a volume of water billed of 83.5 million m³, just 0.08% higher than posted in 2017. The Loss of Distribution Index (IPD), which represents the percentage of volume of water treated but not consumed, was 20.79%. For the Loss of Revenue Index (IPF), which indicates the percentage of the volume of water that is treated and not billed, SANASA reached the 12.95% mark. These indices are considered rather satisfactory, especially when compared to the most recent survey by the National Sanitation Information System – SNIS/2017, which points out the Brazilian averages in IPD of 38.3% and IPF of 36.85%.

The efficiency of the Combat and Control of Losses Program enabled the company to save R$1.2 million, which provided financial sustainability to invest in the expansion of the sanitary sewage system.

With the advent of the larger water crisis in 2014 and 2015, SANASA focused all its efforts on actions that would guarantee the population's supply in order to avoid rationing and to maintain the company's economy at acceptable operating levels. The monitoring guidelines for the Atibaia and Capivari rivers, applied to certify the quality and quantity of treated and distributed water, were intensified during this period. The Water Safety Plan also needed to be revised, along with optimizing water treatment systems.

SANASA monitors its water sources at three points along the Atibaia River, from the municipality of Atibaia to the catchment in Campinas, in the Sousas district, and in the Capivari river at two other points, with a weekly collection. Moreover, 251 points are monitored in the water distribution network, and in 2018, 4,786 samples were collected, which resulted in 51,893 water potability assessment tests, in compliance with Consolidation Ordinance No. 5, Annex XX of the Ministry of Health.

All measures employed for the protection and maintenance of water source areas and the rational use of water are carried out to protect this essential natural capital. Conscious, rational and efficient use is a way to safeguard this capital for future generations. One of the measures used to combat climate change is the innovation of technology, an effort intended to increase the efficiency of sewage treatment through the application of an ultrafiltration membrane. The company's goal by 2020 is to increase sewage treatment operations by 50% from the secondary to the tertiary level and minimize the impact on the Piracicaba, Capivari and Jundiaí river basins.

Manufactured Capital (102-7)

SANASA's infrastructure for the distribution of water includes two Water Collection units, five Water Treatment Plant units, 41 Storage and Distribution Centers and 69 Reservoirs. The infrastructure for sewage includes: 98 Sewage Pumping Stations, 22 Sewage Treatment Plants and a Water Reuse Production Plant.

The company states its information related to Infrastructure investments and Services Offered in the **Infrastructure Investments and Services Offered** report **(203-1)** in this report.

Human Capital (102-8 / 401-1 / 405-2)

The number of SANASA employees hired under the Consolidation of Brazilian Labor Laws (CLT) system, which stood at 2,170 at the close of 2017, rose to 2,200 in December 2018, an increase of 1.15%. The majority of employees are male, white and have an average age of 45 years old. Women represent 19.13% of total employees and hold 30.66% of the leadership positions. Employees of African descent total 26.97% of the staff and occupy 5.11% of the leadership positions. Moreover, the company offers an opportunity for work to 54 trainees and 72 apprentices. Employee turnover in 2018 was 3.36%.

Workforce Indicators	2018	2017
No. of employees at the end of the period	2,200	2,170
No. of hirings during the period	87	30
No. of dismissals during the period	61	103
No. of rehirings during the period	4	0
No. of contracted employees at the end of the period	1,108	998
No. of interns at the end of the period	54	50
No. of youth apprentices at the end of the period	72	62
No. of employees over 45 years old at the end of the period	1,118	1,086
No. of women working in the company at the end of the period	420	408
% of management positions held by women	30.66%	31.54%
Average age of women in senior positions	52	51
Average salary of women	6,868	6,583
Average age of men in management positions	52	51
Average salary of men	5,117	4,903
No. of people of African descent working in the company at the end of the period	591	581
% of management positions held by people of African descent	5.11%	4.62%
Average age of people of African descent in management positions	46	46
Average salary of people of African descent	3,960	3,736
No. of whites working in the company at the end of the period	1,595	1,587
Average salary of whites	6,011	5,766
Number of people with disabilities or special needs at the end of the period	155	157
Average salary of people with special needs	4,235	3,955

Source: Published Social Balance Sheet – http://www.sanasa.com.br/document/noticias/2630.pdf

Intellectual Capital (203-2 / 404)

In 2018, the amount invested in courses and seminars came to R$750,000, with R$748,000 earmarked for specializations and scholarships. During this period, financial efforts for implementing software systems to improve the company's efficiency totaled R$2.8 million. These systems refer to establishing Enterprise Resource Planning (ERP), implementing an integrated operation center and georeferenced database management, and the development and deployment of an information system for converting and transferring graphic and textual elements from the SANASA database.

Social and Relationship Capital (203-2)

Supplies of safe and drinkable water to the local population reached a total of 504,016 individual water meters (households) in 2018, corresponding to 99.81% of the municipality's residents. 461,430 individual meters/households used sanitary sewer services, 96.05% of the population.

SANASA generated values through its payment of taxes, which came to R$120.3 million, a sum that is returned to the community through improvements and public services to overall society. These taxes are collected by the federal, state and municipal governments and divided between taxes, fees and contributions. The division of taxes between the Union, states and municipalities was transferred in the following proportions: R$112.4 million to the Federal level, R$3.1 million to the State level and R$4.8 million to the Municipal government. The company did not possess a Tax Recovery Program with the public administration and its civil, labor and tax liabilities are described in the notes to its financial statements.

The creation of value for suppliers came to R$256.3 million, paid to 20,885 companies. Among these suppliers, 5,585 (26.74%) were from micro and small companies located in the Campinas Metropolitan Region. In this period, SANASA obtained 35 license renewals and 18 grants.

Financial Capital (102-7)

Net operating revenue rose by 8.51% compared to 2017, and was primarily influenced by the following factors: a tariff adjustment of 6.61% for water and sewage tariffs and 2.80% for other services, effective from February 5th, 2018 in accordance with Resolution ARES-PCJ No. 224/2017; and an increase in the number of customers, with 6,525 new accesses to the treated water supply and 8,676 accesses to sewage collection and disposal services.

As for net income, the company posted a growth of 36.38%, with monetary amounts hitting R$162.5 million in 2018 and R$119.2 million in 2017, influenced by higher revenues and managing costs and expenses.

Earnings before interest, taxes, depreciation and amortization (EBITDA), representing the generation of operating cash, reached R$286.6 million in 2018, with R$234.9 million posted in the previous year, representing a 22% growth.

EBITDA margin – calculated by dividing EBITDA with Net Revenue – came to 31.22% in 2018, compared to 27.76% in 2017. This positive result is due to an 8.51% growth in net operating revenue, while operating costs and expenses (excluding effects from depreciations) increased by 3.32%.

In 2018, the breakdown of indebtedness, which shows the percentage of short-term debt to total debt, was 28.88%, compared to the 23.78% noted the year before.

The return on shareholders' equity, which is the percentage of net income earned related to the total amount invested by shareholders, was 39.13%, higher than the 2017 return of 31.20%.

Net debt – total loans and financing net of available cash and cash equivalents – fell 6.41% from R$388.2 million in 2017 to R$363.3 million in 2018. The ratio of net financial debt to EBITDA was also reduced from 1.65 times in 2017 to 1.27 times in 2018.

The total delinquency ratio, which corresponds to overdue and non-collected revenues during a one-year period, reached 4.89% in 2018, higher than the 4.50% index calculated in 2017.

The information related to Infrastructure Investments in the **Infrastructure Investments and Services Offered (203-1)** in this report.

Information relating to Financial Assistance Received from the Government is included in **Financial Assistance Received from the Government** portion **(201-4)** of this report.

FINANCIAL CAPITAL

FINANCIAL CAPITAL

ECONOMIC PERFORMANCE

Direct Economic Value Generated and Distributed (201-1)

Added value shows the wealth generated by the company and its distribution to stakeholders, represented by employees, the government (municipal, state and federal), contractors and shareholders. SANASA's distribution of added value in 2018 reached R$726.1 million, a 6.25% boost compared to 2017, when it distributed R$683.4 million.

Table 1: Statement of Added Value (R$thousands of reais)

	2016	2017	2018
Revenues	825,750	916,911	967,263
Raw Materials Acquired from Third Parties	-195,961	-203,411	-207,327
Retainage	-53,353	-57,205	-59,979
Added Value Received in Transfers	17,905	27,123	26,195
Added Value to Distribute	**594,341**	**683,418**	**726,152**
Distribution of Added Value	**594,341**	**683,418**	**726,152**
Employees (direct compensation, benefits and FGTS)	331,800	352,707	343,052
Government (taxes, fees and contributions)	95,153	110,879	120,290
Federal Taxes	*88,084*	*103,219*	*112,378*
State Taxes	*2,810*	*3,119*	*3,078*
Municipal Taxes	*4,259*	*4,541*	*4,834*
Contractors (interest and rents)	88,571	100,656	100,276
Shareholders (dividends and interest on equity)	78,817	119,176	162,534

Source: SANASA, Comptrollership Management.

The Added Value Statement (DVA) demonstrates the value of economic wealth – the wealth created by the company.

Below is a description of the items that make up the added value to be distributed:

a) **Revenues:** representing all revenues related to water supply, sewage, services provided and other operational revenues;
b) **Raw Materials Acquired from Contractors:** representing raw materials consumed, costs of services sold, costs that include electricity, contracted services and other materials consumed;
c) **Retentions:** representing amounts related to depreciation and amortization;
d) **Added Value Received in Transfer:** referring to Financial Income.

Financial Assistance Received from the Government (201-4)

The Campinas government is the parent company of SANASA, holding 99.9% of shares. Throughout the 2018 financial year, the company received R$4.7 million in granted funding from government subsidies, with R$3.5 million from the Piracicaba, Capivari and Jundiaí River Basin Consortium (PCJ) and R$1.2 million from the Growth Acceleration Program (PAC).

Table 2: Financial Assistance Received from the Government (R$thousands of reais)

Description	2016	2017	2018
	21,599	**11,002**	**4,679**
PAC	3,494	1,101	1,171
PCJ	4,663	2,601	3,508
REÁGUA	13,442	-	-
PRODES	-	7,300	-

Source: SANASA, Comptrollership Management.

In 2018, R$3.5 million of the funds granted from government subsidies was invested in exchange for water network and R$1.2 million in the sewage system, allocated for the following projects:

Table 3: Application of Funding in Projects (R$thousands of reais)

Construction	Amount
Change of Water Network in the Vila Proost Souza Neighborhood	1,491
Change of Water Network in the Jardim Aurélia Neighborhood	1,237
Change of Water Network in the Bonfim Neighbor hood	592
Change of Water Network in the Jardim Madalena Neighborhood	188
Sanitary Sewage Network of the Nova América/Viracopos Region	562
Taubaté Sanitary Sewage System – Step 1	609
TOTAL	**4,679**

Source: SANASA, Comptrollership Management.

Investments in Infrastructure and Services Offered (203-1)

SANASA's investments of R$92.2 million were allocated as follows: 32.34% to constructing water supply systems, 60.22% to sewage collection, removal and treatment systems and the remaining 7.44% were applied to other investments. The company invested R$219.7 million from 2016 to 2018, with the Vertical and Horizontal Analysis of the investments made during this period listed below.

Table 4: Summary of Investment from 2016 to 2018 (R$thousands of reais)

	2016	2017	2018	A. H.%	A. V.%		
					2016	2017	2018
Water Operating System	31,405	18,719	29,817	-40.39%	45.80%	31.76%	32.34%
Sewage Operating System	33,495	35,618	55.532	6.34%	48.84%	60.44%	60.22%
Other Investments	3,674	4,596	6,859	25.09%	5.36%	7.80%	7.44%
Total Investments	**68,574**	**58,934**	**92,208**	**-14.06%**	**100.00%**	**100.00%**	**100.00%**

A.H.% Horizontal Analysis (Percentage Change) *A.V.% Vertical Analysis (Percentage Share)*

Source: SANASA, Comptrollership Management.

Table 5: Summary of 2016 to 2018 Vertical Analysis Investments (R$thousands of reais)

Summary of Investments	2016	2017	2018	Total	A.V.%
Water Operating System	31,405	18,719	29,817	**79,941**	36.38%
Sewage Operating System	33,495	35,618	55.532	**124,645**	56.73%
Other Investments	3,674	4,596	6,859	**15,129**	6.89%
Total Investments	**68,574**	**58,934**	**92,208**	**219,716**	**100.00%**

A.V.% Vertical Analysis (Percentage Share)

Source: SANASA, Comptrollership Management.

R$29.8 million was invested in the water supply systems, notably for performing the following projects (completed and/or in progress): construction of the São Bernardo – DIC sub-pipeline and deployment of the Water Treatment Plant – ETA/DIC tank; installation of four steel tanks in San Conrado, João Erbolato/Chapadão, Jardim Nova Europa and Jardim São Vicente/Vila Georgina; network replacements in the Bonfim, Jardim Aurélia, Vila Proost de Souza and Jardim Madalena neighborhoods; and a Reágua Project.

R$55.5 million was invested in sewage collection, removal and treatment systems, highlighted by the execution of the following construction (completed and/or ongoing): Sewage Treatment Plant (ETE) Boa Vista; Sanitary Sewage System (SES) Taubaté – Stage 1; an SES in CEASA Campinas; expansion of the Parque Pomares SES and reversal of sewage in the Alphaville region; expansion of the Solar de Campinas, Satélite Íris II and III SES; Jardim São Judas Tadeu sewage collection system; extension of the sewage collection system in Vila Orozimbo Maia; and extension and relocation of the sewage collection system in the Jardim Itatinga, Sousas District, Camboriú Park and Jardim Santa Rita de Cássia neighborhoods.

Note that R$567.4 million has already been invested since 2013, most of which (57%) has been invested in the sewage system and enabling the installed capacity for sewage treatment to go from 80% (in December 31st, 2012) to 95% (as of December 31st, 2018).

Table 6: 2013 to 2018 Investment (R$thousands of reais)

YEAR	WATER	SEWAGE	OTHERS	TOTAL
2013	15,823	77,686	9,691	103,200
2014	37,559	65,611	10,239	113,409
2015	69,492	55,497	6,118	131,107
2016	31,405	33,495	3,674	68,574
2017	18,719	35,619	4,596	58,934
2018	29,817	55,532	6,859	92,208
Total	**202,815**	**323,440**	**41,177**	**567,432**

Source: SANASA, Comptrollership Management.

The Company's fixed assets, net of depreciation, totaled R$961 million on December 31st, 2018.

Table 7: Company Property (R$thousands of reais)

DESCRIPTION	AMOUNT
Sewage Operating System	357,101
Water Operating System	213,337
Buildings	134,932
General Facilities	40,634
Fixtures, Machinery and Equipment	37,986
Land	28,901
Improvements to Third-Party Real Estate	9,570
Vehicles	477
Computers and Peripherals	768
Machine Tools	2,100
Works In Progress	135,558
TOTAL	**961,365**

In addition to the continuity of construction projects on the water supply and sewage system, projects related to construction contracted with Caixa Econômica Federal, Bank Credit Notes 441.917-02 and 441.921-63 were executed, which include:

- CCB 441.917-02 – Water Supply System:
  - Pipeline for raw water, with a length of 2,700 m and 1,000 mm in diameter;
  - 6 secondary pipelines, with a length of 31,230 m;
  - 27 tanks totaling 65,330 cubic meters of storage;
  - 4 pumping stations;
  - 57,828 m of water distribution networks.

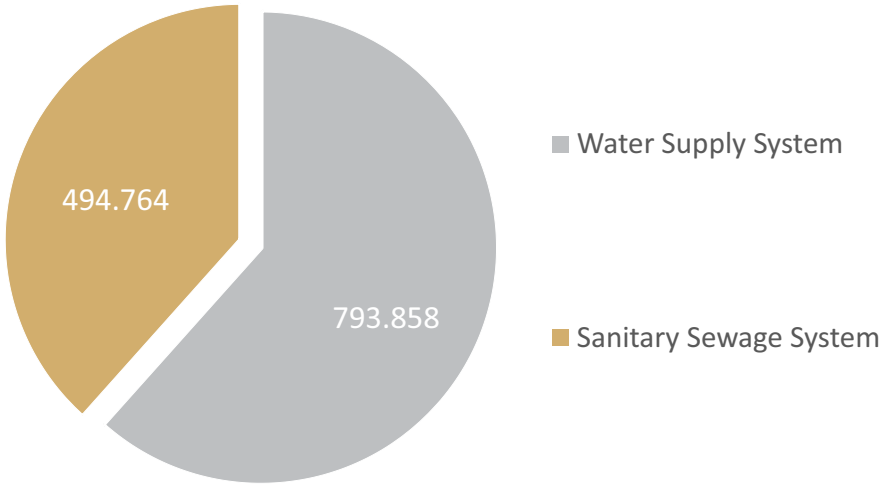
- CCB 441.921-63 – Sanitary Sewage System:
  - Expansion / optimization of 6 sewage treatment plants;
  - 21 sewage pumping stations;
  - 17,226 m of sewage discharge lines;
  - 30,040 m of trunk collectors and interceptors;

- 141,858 m of sewage systems.

In partnership with the Municipal Department of Public Services, the Agronomic Institute of Campinas (IAC) and the Supply Centers of Campinas S.A. – CEASA, SANASA is working on putting a project in place for composting sludge, prunings and fruits & vegetables. The composting plant will be able to produce a fertilizer that can be applied to agricultural activities. SANASA acquired three pieces of equipment to make this project viable: a waste grinder; composter and rotating sieve, amounting to R$5.8 million in funds.

The 2019-2025 Business Plan includes investments that the company will make, focused on the universalization of basic sanitation in the city of Campinas. Of the total to be invested, approximately 62% will go to the water supply system and 39% to the sewage system, as **Chart 1** below illustrates:

Chart 1: 2018 to 2025 Investments (R$thousands of reais)



Source: SANASA, Comptrollership Management.

It should be pointed out here that putting these planned investments into place depends on financing means that will be received from Caixa Econômica Federal. However, this call for financing needs to go through phases of selection, hierarchy, technical and financial viability and qualification through Consultation Letters by the Ministry of Regional Development.

Rate

In order to ensure that the amounts collected from water and sewage fees are sufficient for the continuity and improvement of basic sanitation services, SANASA makes an annual request for a tariff adjustment to the Regulatory Agency for Sanitation Services in the Piracicaba, Capivari and Jundiaí River Basins – ARES PCJ.

The Basic Sanitation Law (Law 11,445/2007) outlines that setting and adjusting public tariffs and prices for these services belongs to the entity responsible for regulation and supervision, a role that was delegated to ARES-PCJ, with the municipality of Campinas as an associate.

As such, the agency conducts technical studies and uses the methodology defined in its Resolution No. 115 of December 17th, 2015 for this process. This resolution applies a parametric formula that evaluates the progress of activities over the last twelve months by the entity responsible for the services. Calculating the tariff accounts for the average shortfall and projects the costs and investments to be made. Expenses include materials, employees' salary, electricity, investments and others.

NATURAL AND MANUFACTURED CAPITAL

NATURAL AND MANUFACTURED CAPITAL

WATER

"Contributing to the population's quality of life, serving the basic sanitation needs of Campinas and the region with excellence, executing and promoting social and environmental actions."

This is SANASA's mission. With this in mind, the company works to meet the goals set by the United Nations 2030 Agenda, particularly those related to SDG 6.

SDG6 – Ensure availability and sustainable management of water and sanitation for all.

6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all

6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all, and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate

6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes

6.a By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programs, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies

6.b Support and strengthen the participation of local communities in improving water and sanitation management

Universalization of Sanitation in the municipality of Campinas (103-1 / 103-2)

SDG6.1 – SDG6.2 – SDG6.3 – SDG6.4 – SDG6.5 – SDG6.6

SDG6 is part of the core business and is acknowledged in the Business Plan and Long-Term Strategy (2018-2020). The company is making efforts towards complying with SDG6, particularly goals 6.1 and 6.2, through initiating the 300% Plan – a proposal that intends to universalize sanitation. The 300% Plan expects to serve 100% of the population with a supply to water, 100% with sanitary sewage and 100% with sewage treatment by the year 2025. In 2018, service in the municipality of Campinas was established in 99.81% of the water supply, 96.05% for sewage collection and removal and 95% of installed capacity for sewage treatment. With the completion of the Boa Vista Sewage Treatment Plant, still under construction and scheduled to begin running in April 2020, the sewage treatment capacity will reach 100% in the municipality of Campinas.

In 2018, construction projects contracted with Caixa Econômica Federal began, including the following:

Water Supply System:

- Pipeline for raw water, with a length of 2,700 m and 1,000 mm in diameter;
- 6 secondary pipelines, with a length of 31,230 m;
- 27 tanks totaling 65,330 cubic meters of storage;
- 4 pumping stations;
- 57,828 m of water distribution networks.

Sanitary Sewage System:

- Expansion / optimization of 6 sewage treatment plants;
- 21 sewage pumping stations;
- 17,226 m of sewage discharge lines;
- 30,040m of trunk collectors and interceptors;
- 141,858 m of sewage systems.

These projects will help in universalizing the water supply system and, for sanitary sewage, the company will take huge strides forward in its efforts to reach the goal of 100% sanitary sewage by 2025, as defined in the Business Plan.

Water Safety Plan – WSP (103-1 / 103-2 / 416-1)

SDG6.3 – SDG6.6

The Water Safety Plan (WSP) was established by SANASA in March 2012 and is an instrument that has a preventive approach. The plan is geared towards ensuring safe water for human consumption by preventing and minimizing any contamination of water sources; elimination of water contamination through the proper treatment process; and preventing contamination (or recontamination) in the water distribution system, both in reservoirs and in the distribution system. This instrument institutes guidelines and methodologies for the monitoring, analysis, tracking, documentation, registration and communication required for all components of the water supply system, from the water source to delivery to the consumer.

The WSP concept was defined by the World Health Organization (WHO) and includes the following steps:

1) Preliminary steps, which involve planning activities; gathering the information needed; and assembling a multidisciplinary technical team to prepare and implement the WSP;

2) System assessment, which involves describing the

water supply system, building and validating a flow diagram; identifying potential hazards and assessing risks; and establishing control measures for critical points;

3) Operational monitoring, intended to control hazards and ensure that health goals are met. It involves determining control measures for water supply systems; selecting the monitoring parameters; and establishing critical limits and corrective measures;

4) Management plans, allowing the WSP to be continually verified and involves the establishment of measures to be applied in routine and emergencies; organizing the system assessment documentation; setting up risk communication; and establishing a validation and periodic verification of the WSP;

5) Revision of the WSP, accounting for the data collected during monitoring; alterations in water sources and watersheds; changes in treatment and distribution; deploying improvement and update programs; and emerging hazards and risks. The WSP should be revised after disasters and emergencies to ensure they are not repeated;

6) Validating and verifying the WSP in order to assess how it is progressing and whether health goals are being met.

Improvement in the quality of collected water (103-1 / 103-2)

SDG6.3 – SDG6.6b

SANASA has been working to improve the quality of bodies of water when disposing the treated effluent. The company signed an agreement in 2018 with the City of Valinhos to assume operations of the Capuava Sewage Treatment Plant. The Capuava Plant (ETE) treats domestic effluent from Valinhos, where it is finally discharged into the Pinheiros creek, whose mouth on the Atibaia river is located about two kilometers upstream from the water catchment point used to supply Campinas. The project plans for an expansion and modernization of the treatment plant by retrofitting and filtering membranes, a technology that will raise the level of treatment from secondary to tertiary and turn the Capuava ETE into a Water Reuse Production Plant (EPAR).

Monitoring (103-3)

SDG6.3 – SDG6.4

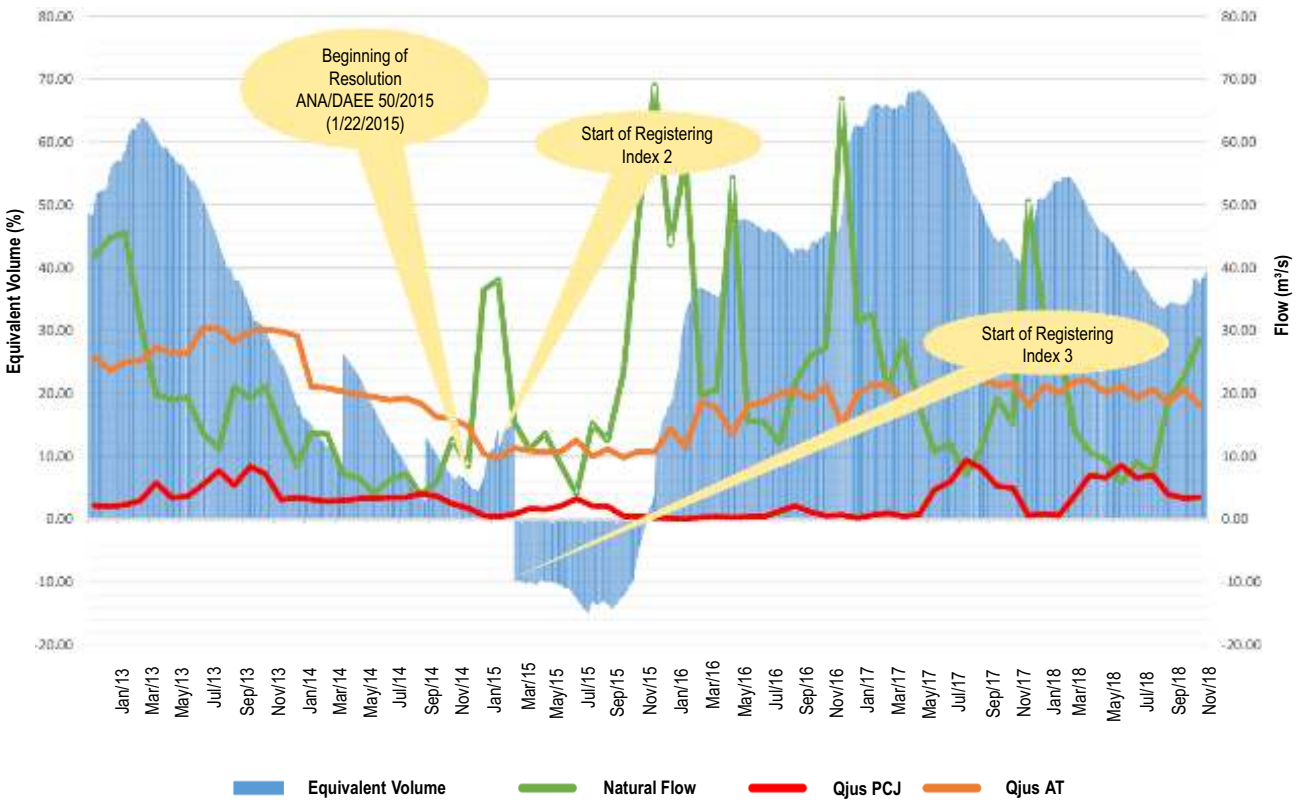
In 2018, SANASA deepened their efforts in pursuit of achieving these environmental goals. As such, there was some progress made during the period.

Water Resources (303-2)

The water crisis of 2014 and 2015 intensified actions for a measurement system through the control and monitoring of water resources throughout the region. In an effort to minimize any risks of shortages, SANASA monitored the water sources in order to anticipate whether any actions would be needed to make sure that the there was no interruption in service to the community. Below are a few indicators and occurrences tracked especially for the period 2011 to 2018.

I. Monitoring the equivalent volume of the Cantareira system.

Chart 1 – Changes in the Equivalent Volume of the Cantareira System from 2013 to 2018



Source: SANASA, Integration Management, Control and Technological Development

Chart 1 illustrates the changes in the equivalent volume of the Cantareira System from 2013 to 2018. It should be noted that this period includes the 2013 and 2014 water crisis, when the use of the System's technical reserve ("Dead Volume" 1 and 2, operating from May 16th, 2014 to October 24th) began operating, as well as the alterations in the registration indices of the equivalent volume. It should also be pointed out that the System only observed an improvement when the Operative Rules for users was imposed, through the ANA/DAEE Joint Resolution No. 50/2015 of January 22nd, 2015.

On May 29th, 2017, ANA/DAEE Joint Resolution No. 926, which defines the operating rules for renewing the Cantareira System grant, was issued. These rules considered the hydrological periods as follows:

- Wet Period – from December 1st of one year to May 31st of the following year;
- Dry period – from June 1st to November 30th of the same year.

For the Wet Period, flow will be controlled at the Valinhos catchment control post on the Atibaia river, in the following manner:

- Ranges 1 and 2 (Normal and Warning) – average flow of fifteen consecutive days at a minimum of 12.0 m³/s;
- Ranges 3 and 4 (Alert and Restriction) – average flow of fifteen consecutive days at a minimum of 11.0 m³/s.

For the Dry Period, in Ranges 1, 2, 3, 4 and 5 (Normal, Warning, Alert, Restriction and Special), the defined instantaneous minimum flows and the average daily minimum flows observed at the Valinhos capture control station will be 10.0 m³/s.

The ranges in the Cantareira System to be followed are shown in **Table 1**.

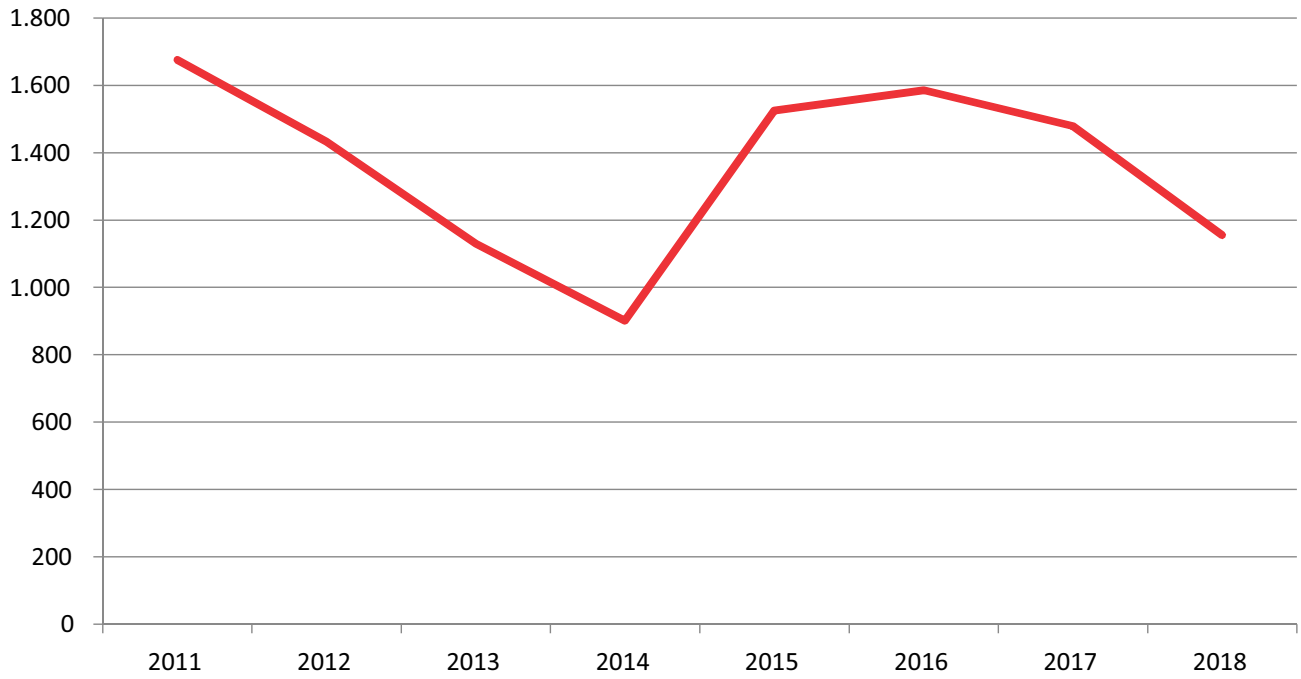
Table 1 – Cantareira System operating ranges established by ANA-DAEE Joint Resolution No. 926 of 5/29/2017 – Renewal of the Cantareira System Grant

Range	FEATURE
1 – Normal	Cumulative useful volume equal to or greater than 60%
2 – Warning	Cumulative useful volume equal to or greater than 40% and less than 60%
3 – Alert	Cumulative useful volume equal to or greater than 30% and less than 40%
4 – Restriction	Cumulative useful volume equal to or greater than 20% and less than 30%
5 – Special	Cumulative useful volume less than 20%

Despite these measures, **Chart 1** shows that the System ended 2018 with an ALERT status, with only 39.46% of volume.

II. Course of annual rain observed in Campinas, from 2011 to 2018.

Chart 2 – Course of rain volume observed in Campinas, from 2011 to 2018



Source: SANASA, Integration Management, Control and Technological Development

Chart 2 illustrates the course of volumes of rain from 2011 to 2018. It is important to note that, despite a considerable increase in the volume of rain in 2015, there has been a decrease of rain in 2017 and 2018.

III. Daily average levels of the Atibaia river at the Campinas catchment point.

Chart 3 – Daily average levels of the Atibaia river at the Campinas catchment point from 2011 to 2018

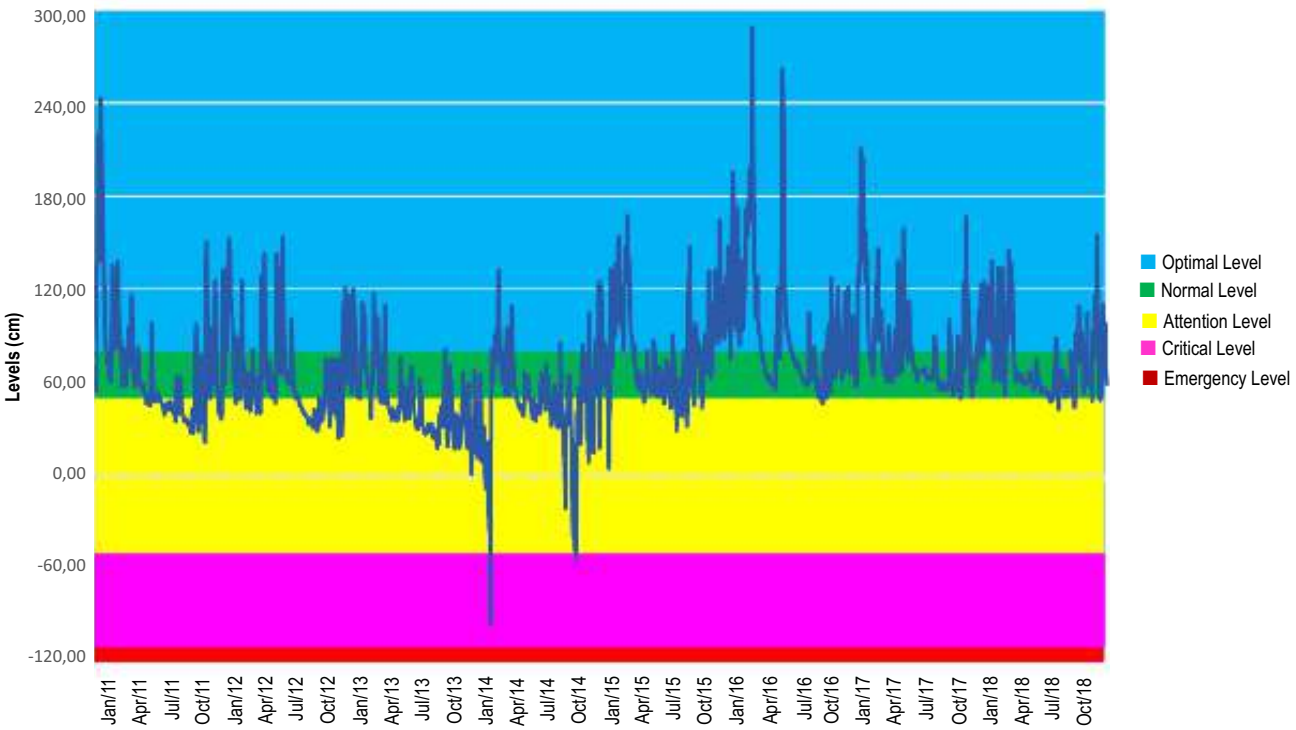
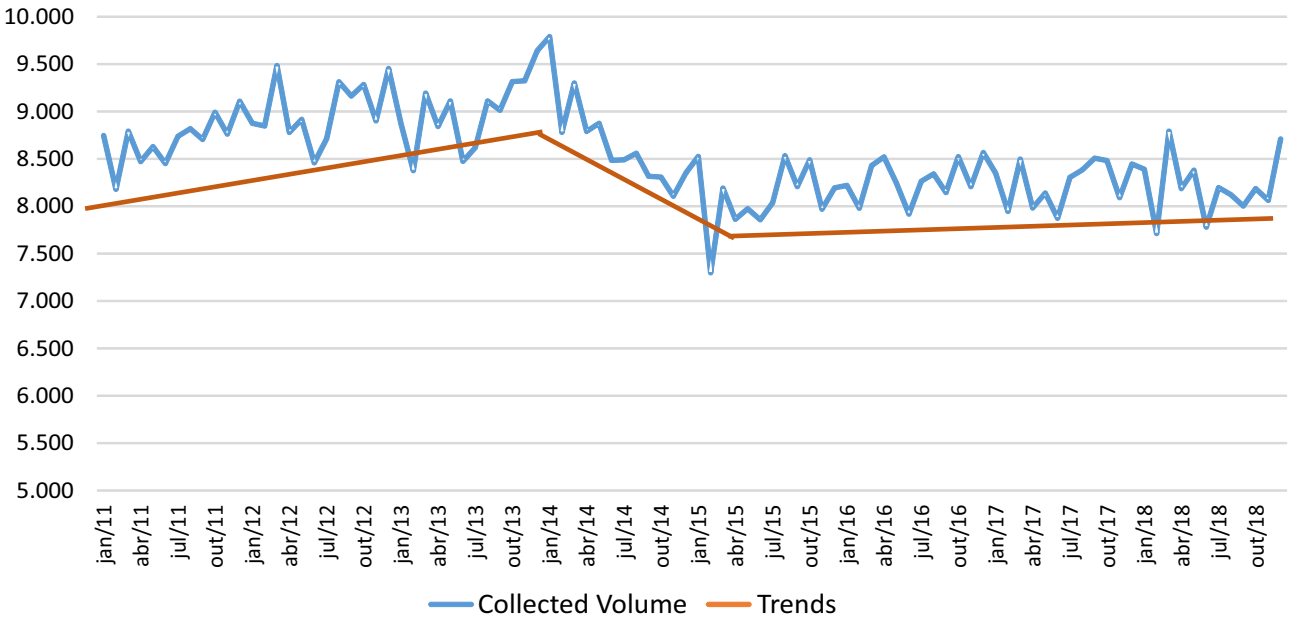


Chart 3 outlines the variation of the Atibaia river level at the catchment point of Campinas. Critical levels were seen in 2014 and early 2015 and, despite the improvement in subsequent years, 2018 had a few occurrences in the WARNING range.

IV. Progression of the volume captured in the Atibaia river for serving the municipality of Campinas.

Chart 4 – Progression of the water volume captured in the Atibaia River for serving the municipality of Campinas from 2011 to 2018 (m³/month × 1,000)



Source: SANASA, Integration Management, Control and Technological Development

Chart 4 illustrates the progression of the volume captured in the Atibaia river from 2011 to 2018. A trend line was drawn to facilitate interpretation, where three distinct periods can be observed. The first, from 2011 to 2013, has a gradual increase in the volume collected in the Atibaia river. The second period, from 2014 up to May 2015, highlighted the severe water crisis, when the volume collected declined drastically. Then, in the third period, a slight growth can be seen as a result of a change in the habits of the population, with a considerable reduction in the volumes consumed.

Water Supply System (103-2)

SDG6.3 – SDG6.4

In compliance with Consolidation Ordinance No. 5 of 2017 – Health Activities and Services – Section II of Chapter V, Art. 129 (Annex XX – Control and Surveillance of Water Quality for Human Consumption and its Standard for Potability – Origin: Ordinance MS/GM 2,914/2011), which establishes the procedures and responsibilities related to the control and surveillance of the quality of water for human consumption and its standard for potability (requirements needed for drinking water), as well as the other current legislations, SANASA controls the quality of distributed water and provides the explanations required to the overall population.

As such, the table below presents the results from an assessment of the parameters of major operational significance. These analyses are conducted on a monthly basis in the quality control laboratories from samples collected in the distribution network.

Treatment plant – ETA 1 and 2 – Rua Abolição No. 2375 – Swift – Campinas																
2018	Number of samples analyzed	Bacteriological Analysis				Physical-Chemical Analysis										Complies with Legislation
		Total Coliforms		Escherichia coli		Apparent Color		Turbidity		Fluorine		pH		Total Residual Chlorine		
		Samples within the standard	Samples outside the standard	Samples within the standard	Samples outside the standard	Samples within the standard	Samples outside the standard	Samples within the standard	Samples outside the standard	Samples within the standard	Samples outside the standard	Samples within the standard	Samples outside the standard	Samples within the standard	Samples outside the standard	
Jan	89	87	2	89	0	89	0	89	0	83	6	89	0	74	15	Yes
Feb	82	82	0	82	0	82	0	82	0	82	0	82	0	68	14	Yes
Mar	93	93	0	93	0	93	0	93	0	93	0	93	0	83	10	Yes
Apr	90	90	0	90	0	88	2	89	1	90	0	90	0	81	9	Yes
May	75	75	0	75	0	75	0	75	0	75	0	75	0	71	4	Yes
Jun	88	88	0	88	0	87	1	88	0	88	0	88	0	86	2	Yes
Jul	91	91	0	91	0	90	1	90	1	91	0	91	0	89	2	Yes
Aug	92	92	0	92	0	92	0	92	0	91	1	92	0	89	3	Yes
Sep	86	84	2	86	0	86	0	86	0	86	0	86	0	79	7	Yes
Oct	93	93	0	93	0	92	1	93	0	92	1	93	0	88	5	Yes
Nov	86	85	1	86	0	86	0	86	0	86	0	86	0	74	12	Yes
Dec	85	83	2	85	0	85	0	85	0	82	3	85	0	71	14	Yes
Total	**1050**	**1043**	**7**	**1050**	**0**	**1045**	**5**	**1048**	**2**	**1039**	**11**	**1050**	**0**	**953**	**97**	**Yes**

Source: SANASA, Integration Management, Control and Technological Development

Treatment plant – ETA 3 and 4 – Rod. Heitor Penteado – km 7 – Sousas / Campinas																
2018	Number of samples analyzed	Bacteriological Analysis				Physical-Chemical Analysis										Complies with Legislation
		Total Coliforms		Escherichia coli		Apparent Color		Turbidity		Fluorine		pH		Total Residual Chlorine		
		Samples within the standard	Samples outside the standard	Samples within the standard	Samples outside the standard	Samples within the standard	Samples outside the standard	Samples within the standard	Samples outside the standard	Samples within the standard	Samples outside the standard	Samples within the standard	Samples outside the standard	Samples within the standard	Samples outside the standard	
Jan	300	294	6	300	0	298	2	298	2	300	0	300	0	278	22	Yes
Feb	275	270	5	275	0	270	5	272	3	274	1	275	0	256	19	Yes
Mar	314	304	10	314	0	308	6	310	4	310	4	314	0	290	24	Yes
Apr	302	297	5	302	0	299	3	301	1	302	0	302	0	286	16	Yes
May	250	245	5	250	0	247	3	247	3	250	0	250	0	242	8	Yes
Jun	298	294	4	298	0	293	5	296	2	297	1	298	0	284	14	Yes
Jul	307	306	1	307	0	303	4	306	1	305	2	307	0	299	8	Yes
Aug	312	307	5	312	0	309	3	310	2	312	0	312	0	302	10	Yes
Sep	292	285	7	292	0	287	5	289	3	292	0	292	0	282	10	Yes
Oct	314	311	3	314	0	311	3	312	2	314	0	314	0	302	12	Yes
Nov	291	289	2	291	0	285	6	288	3	288	3	291	0	273	18	Yes
Dec	286	282	4	286	0	284	2	285	1	280	5	286	0	266	20	Yes
Total	**3541**	**3484**	**57**	**3541**	**0**	**3494**	**47**	**3514**	**27**	**3524**	**16**	**3541**	**0**	**3360**	**181**	**Yes**

Source: SANASA, Integration Management, Control and Technological Development

Treatment plant – ETA Capivari – Rod. Bandeirantes – km 86 – Campinas																
2018	Number of samples analyzed	Bacteriological Analysis				Physical-Chemical Analysis										Complies with Legislation
		Total Coliforms		Escherichia coli		Apparent Color		Turbidity		Fluorine		pH		Total residual chlorine		
		Samples within the standard	Samples outside the standard	Samples within the standard	Samples outside the standard	Samples within the standard	Samples outside the standard	Samples within the standard	Samples outside the standard	Samples within the standard	Samples outside the standard	Samples within the standard	Samples outside the standard	Samples within the standard	Samples outside the standard	
Jan	16	16	0	16	0	16	0	16	0	16	0	16	0	16	0	Yes
Feb	15	15	0	15	0	15	0	15	0	15	0	15	0	11	4	Yes
Mar	17	17	0	17	0	17	0	17	0	16	1	17	0	16	1	Yes
Apr	17	16	1	17	0	17	0	17	0	17	0	17	0	14	3	Yes
May	14	13	1	14	0	14	0	14	0	14	0	14	0	13	1	Yes
Jun	16	15	1	16	0	15	1	15	1	16	0	16	0	14	1	Yes
Jul	17	17	0	17	0	17	0	17	0	17	0	17	0	17	0	Yes
Aug	18	18	0	18	0	18	0	18	0	18	0	18	0	17	1	Yes
Sep	16	16	0	16	0	15	1	15	1	16	0	16	0	14	2	Yes
Oct	17	16	1	17	0	17	0	17	0	17	0	17	0	17	0	Yes
Nov	16	16	0	16	0	16	0	16	0	16	0	16	0	15	1	Yes
Dec	16	16	0	16	0	16	0	16	0	16	0	16	0	13	3	Yes
Total	**195**	**191**	**4**	**195**	**0**	**193**	**2**	**193**	**2**	**194**	**1**	**195**	**0**	**177**	**17**	**Yes**

Source: SANASA, Integration Management, Control and Technological Development

Information on the analysis parameters:

Total Coliforms: Indicate the presence of bacteria in the water and do not necessarily pose any health issues. A p ercentage of 5% of Total Coliforms is acceptable in the analyzed samples, according to Consolidation Ordinance No. 5 – Annex XX.

***Escherichia coli*:** Indicates the presence of sickness-causing organisms in the water and their analysis is conducted when th e presence of Total Coliforms is detected. Its presence is not allowed in water for human consumption, according to Consolidation Ordinance No. 5 – Annex XX.

Apparent Color: Characteristic that measures the degree of coloring in the water. Consolidation Ordinance No. 5 – Annex XX establishes a maximum acceptable limit of 15 HU (Hazen Unit)

Turbidity: Characteristic that measures the degree of transparency in the water. Consolidation Ordinance No. 5 – Annex XX establishes a maximum acceptable limit o f 5 TU (Turbidity Unit)

Fluorine: Added to water to prevent tooth decay. State Resolution SS -250 establishes the concentration range from 0.6 to 0.8 milligrams of Fluoride per Liter.

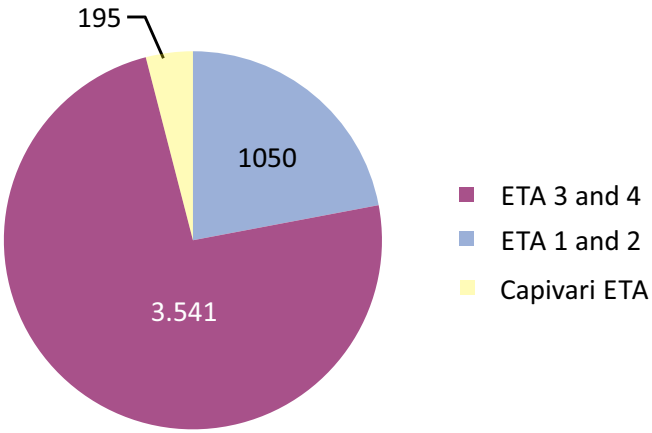
pH: Indicates how acidic (low pH) or alkaline (high pH) the water is. Consolidation Ordinance No. 5 – Annex XX establishes the pH range from 6.0 to 9.5 for human consumption.

Total Residual Chlorine : Indicates the amount of chlorine combined with ammonia (Chloramine) found in the distribution system, added into the process for disinfecting the water. Consolidation Ordinance No. 5 – Annex XX sets a minimum limit of 2 milligrams of combined chlorine per Liter when the Chlorammoniation disinfection process is applied.

Final Assessment of Distributed Water Quality

Charts 5 and 6 below illustrate the performance of the collections done in the distribution network and summarize assessments on the examinations conducted. 4,786 samples of treated water were collected in 2018 from the distribution system, totaling 51,893 potability evaluation tests. Consequently, as a final evaluation, the water treated and distributed by SANASA meets the drinkability standards for human consumption and is considered POTABLE.

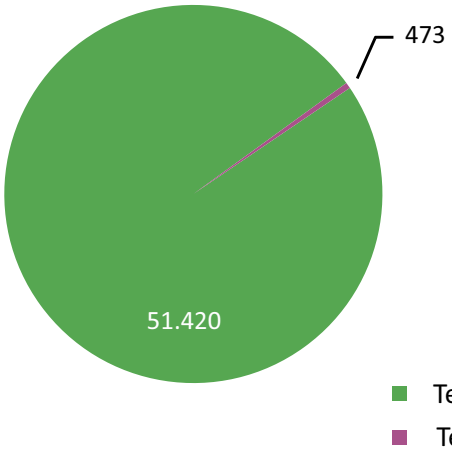
Chart 5: Quantity of Samples Collected in the City of Campinas in 2018



Coverage area for water supply:
4% – Capivari ETA
21% – ETA 1 and 2
75% – ETA 3 and 4.

Source: SANASA, Integration Management, Control and Technological Development

Chart 6: Number of Tests that Meet Portability Standards in 2018



Final Assessment:
Drinking water for consumption

Source: SANASA, Integration Management, Control and Technological Development

Corrective Measures

When any anomaly is detected in the samples collected in the distribution network, SANASA immediately dumps water from the system in order to fully restore the ideal conditions of water quality.

It should be pointed out that all parameters analyzed (79 different ones) are in full compliance with Consolidation Ordinance No. 5 (Annex XX) and State Resolution SS-65 of the Health Department.

Brazilian Water Research Center – BWRC

SDG6.6a – SDG6.6b

SANASA is organizing the creation of the **Brazilian Water Research Center – BWRC**, which will include distinguished researchers from many different countries. This endeavor is done in partnership with the Universidade Estadual de Campinas – UNICAMP (Campinas State University), and has the support of the São Paulo Research Foundation – FAPESP. The work being done on this essential research center concerns all the goals of SDG 6 and will provide considerable contributions to water issues.

The research projects that will be conducted in the BWRC will develop into knowledge, products and public policies. Among its goals are:
a) advancing strategies for water security in order to mitigate climate change and the lack of existing infrastructure;
b) developing innovative and more efficient filtration technologies and advanced treatments for both water and sewage in order to provide superior quality water at a low cost to the Campinas region;
c) improving the water distribution system with a focus on lowering water losses and employing equipment that allows consumption to be monitored in real-time, equalizing pressure in the distribution lines and its relation to losses.
d) promoting innovation and technology transfer.

The BWRC areas of research fall into three main groups:
1- Water Security;
2- Quality of Water and Effluents;
3- Water Distribution, Losses and Remote Monitoring.

LOSS PREVENTION AND CONTROL

SDG6.4

Distribution Network

The water distribution network in the city of Campinas is divided into 26 supply sectors. Table 1 presents the numbers of water connections and meters for Dec/2018 subdivided by categories.

Table 1 – Water Connection and Meters by category

Category	No. of Connections	No. of Meters
Residential	316,892	455,388
Commercial	32,000	47,608
Industrial	441	441
Public	1,307	1,546
Total	**350,640**	**504,983**

Source: SANASA, Loss Control and Systems Management.

The current network totals 4,700.29 km in length, where 375 strategically positioned pressure control units are installed and operating to maintain water pressure within the limits established by the Brazilian Association of Technical Standards – ABNT.

Program to Combat and Control Losses (103-1)

The loss of water in distribution is regarded as one of the major challenges in achieving universal sanitation in Brazil. According to studies by the Instituto Trata Brasil, based on the 2017 National Sanitation Information System – SNIS, the National Loss of Distribution Index – IPD sits at 38.3%.

The Program to Combat and Control Losses received investments of R$235 million between 1994 and 2018, and has been instrumental in ensuring uninterrupted supply of water for the entire population living in the municipality, even during the water crisis of 2014 and 2015. The results are quite heartening and show that the company has been demonstrating continuous improvement over the period in operational efficiency and managing costs for the system. Due to this outstanding performance, SANASA has been able to make investments in the sewage system that had a positive impact on boosting its installed treatment capacity, which jumped from 1.71% in 1994 to 95% in 2018.

Between 1994 and 2018, the Program to Combat and Control Losses aided in reducing the Loss of Distribution Index (IPD) from 37.7% to 20.8% and the Loss of Revenue Index (IPF) from 34.6%. to 12.9%. The future goal is to reach an IPD of 15%, but for this to happen retrofitting projects need to be performed over one thousand kilometers to switch asbestos cement networks with their respective branches, including sectorization and pressure equalization. In order to begin work on these projects, the company is awaiting approval on funds requested from the Federal Government through the submission of Letters of Credit. Reaching the 15% IPD target also entails changing 116,000 velocimetric water meters for volumetric water meters, something that may be made possible with its own funding by opening a bidding process in the next few years.

Table 2: Results achieved from the Program to Combat and Control Losses

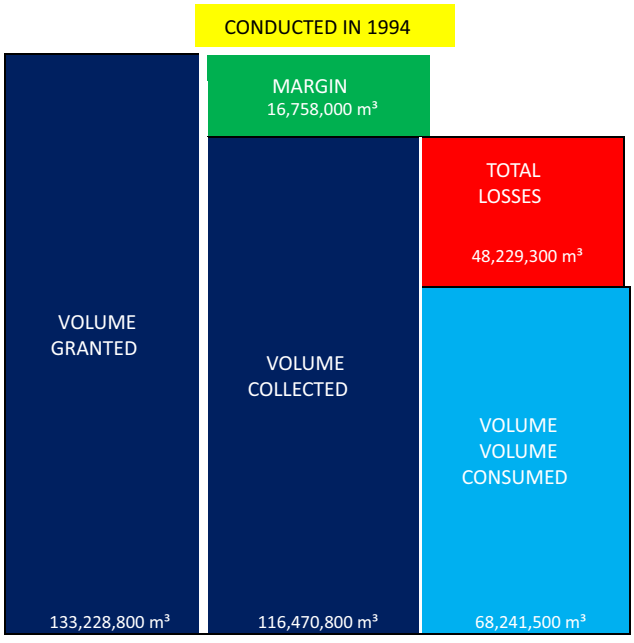
RESULTS	1994 – 2018
Efficiency of the Distribution System	62.3% – 79.1%
Loss of Distribution Index – IPD	37.7% – 20.8%
Loss of Revenue Index – IPF	34.6% – 12.9%
Volume of Water Saved	505 million m³
Money Saved	R$1.2 billion
Money Invested	R$235 million
Resources Saved – Resources Invested	**R$936 million**

Source: SANASA, Control of Losses and Systems Management.

During this period when the Program to Combat and Control Losses was applied, the population of Campinas grew by 34%, from 892,817 residents (IBGE/1994) to 1,194,094 residents (IBGE/2018). Population pressure coupled with local economic development escalated the per capita consumption volume by 10 million m³. However, the annual grant volume did not need to be increased, and it remained steady at 133 million m³. An analysis of the program offers a stark understanding that, had nothing been done to stem the losses in 1994, the IPD would have easily soared from 37.7% to even higher levels. This would have not only jeopardized the supply for Campinas, but for other municipalities in the Piracicaba, Capivari and Jundiaí (PCJ) river basins as well. There are a total of 5,418,000 inhabitants living in these basins, and local production is 7% of the Gross Domestic Product (GDP).

Table 1 illustrates the pattern of volumes of water collected, consumed and lost in 1994. In this table, the IPD is 37.7% and indicates a margin of 16,758,000 m³, 13% of the granted volume.

Table 1:

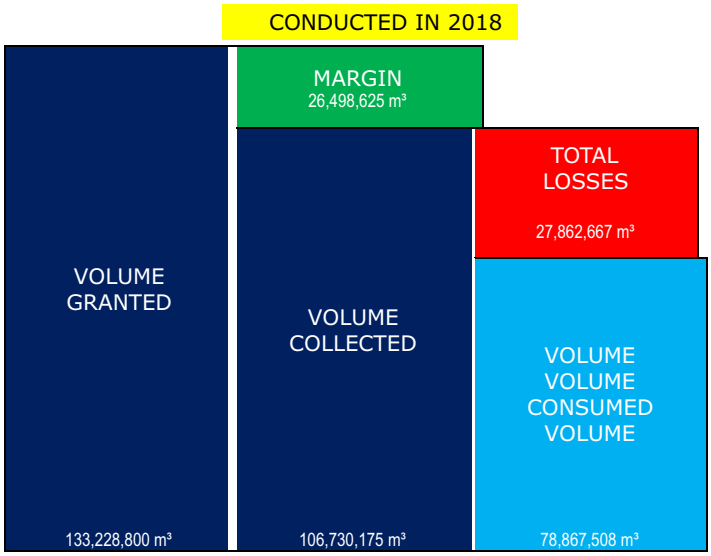


NOTE: Total loss takes water losses into account from abstraction to water meters

Source: SANASA, Control of Losses and Systems Management .

Table 2 illustrates the pattern of volumes of water collected, consumed and lost in 2018. The IPD in this Table is 20.8% and provides a 20% higher margin over the granted volume compared to **Table 1**.

Table 2:



NOTE: Total loss takes water losses into account from abstraction to water meters

Source: SANASA, Control of Losses and Systems Management.

Measures from the Program to Combat and Control Losses (103 -2/103-3)

The success of the Program to Combat and Control Losses is the result of a set of measures divided between Base Actions and Actions to Combat and Reduce Losses, described as follows:

Base Actions
- Technical Registry
- Sectorization
- Macro-measuring
- Information Technology
- Telemetry/ Remote Control – Automation

Actions to Combat and Reduce Losses
- Micro-measuring
- Combating Irregularities in Water Connections
- Maintenance
- Water Leak Detection
- Pressure Control
- Quality of Material, Equipment and Construction
- Infrastructure Refitting
- Water Tightness Testing

The water crisis in 2014 and 2015 provided a major learning experience for both SANASA and the Municipal government. The actions learned during this climatic event eventually became part of the municipality's public policies.

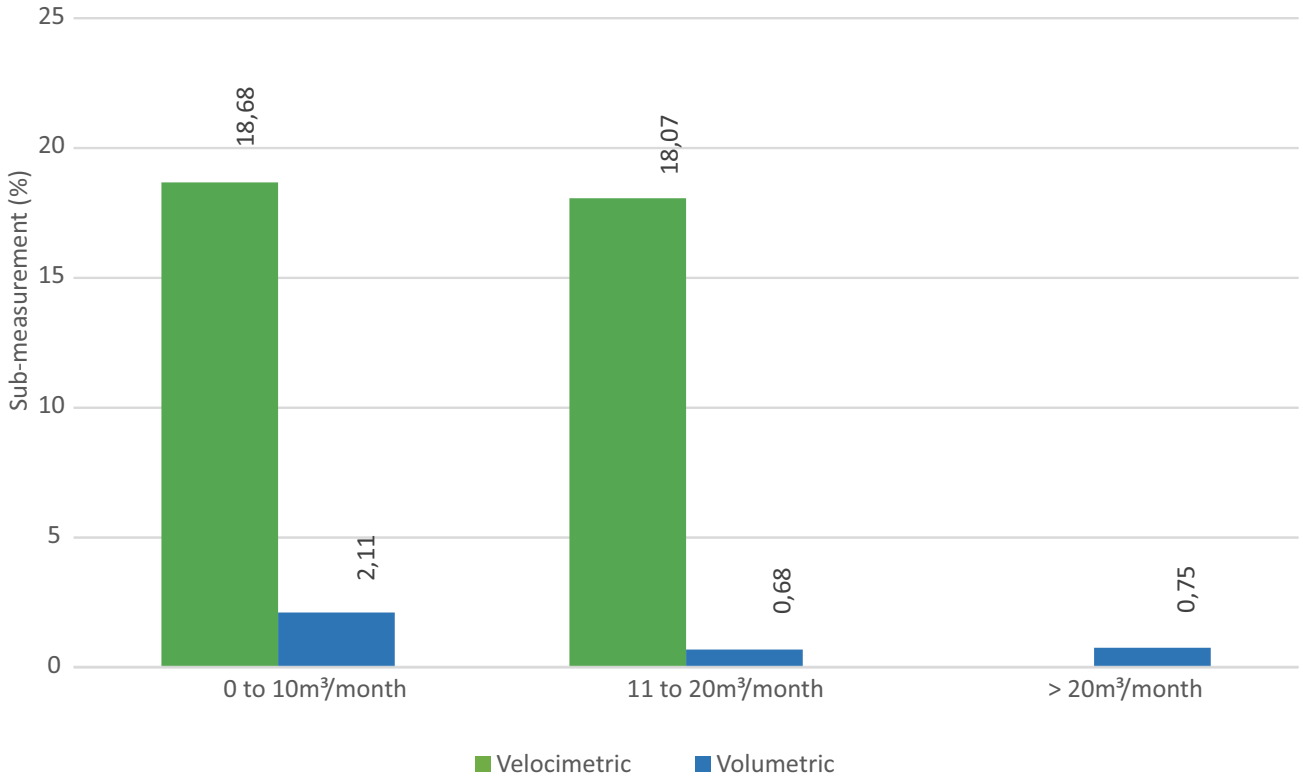
Public Policy to Combat Losses

Combating the submetering of volumes determined by water meters: The submetering of volumes determined by water meters is minimized by the use of large-scale volumetric water meters. They have a number of advantages over traditional velocimetric meters, such as: higher sensitivity to record low flow rates, lower sub-measurement; higher metrological accuracy; error curve maintenance for longer period and longer durability, an estimated service life of up to ten years. SANASA currently has about 190,000 volumetric water meters, approximately 54% of the total installed meters, a situation that directly contributes to the reduction of apparent losses caused by sub-measurement and, consequently, volume recovery. This has a positive impact on the company's revenues.

SANASA uses volumetric meters on a large-scale because over 95% of the company's water connections have water meter housings, which allows the use of a device called a "particle retainer" designed to avoid having the presence of particles in the water compromise the operation of the measuring equipment. Another favorable feature is the existence of suction valves, correctly sized and installed at strategic points in the water distribution network, which minimize the effects of the possible presence of air on the consumption and operation of water meters.

Chart 1 shows the average sub-measurements in each monthly average consumption range for velocimetric and volumetric meters. These were obtained through a study with a consumption survey and laboratory calibration of 180 randomly selected water meters, in accordance with the procedures outlined in ABNT NBR 15538/2014.

Chart 1: Average sub-measurements by average monthly consumption range



NOTE: In the study, no sample of velocimetric meter was selected in the range as of 20 m³/month.

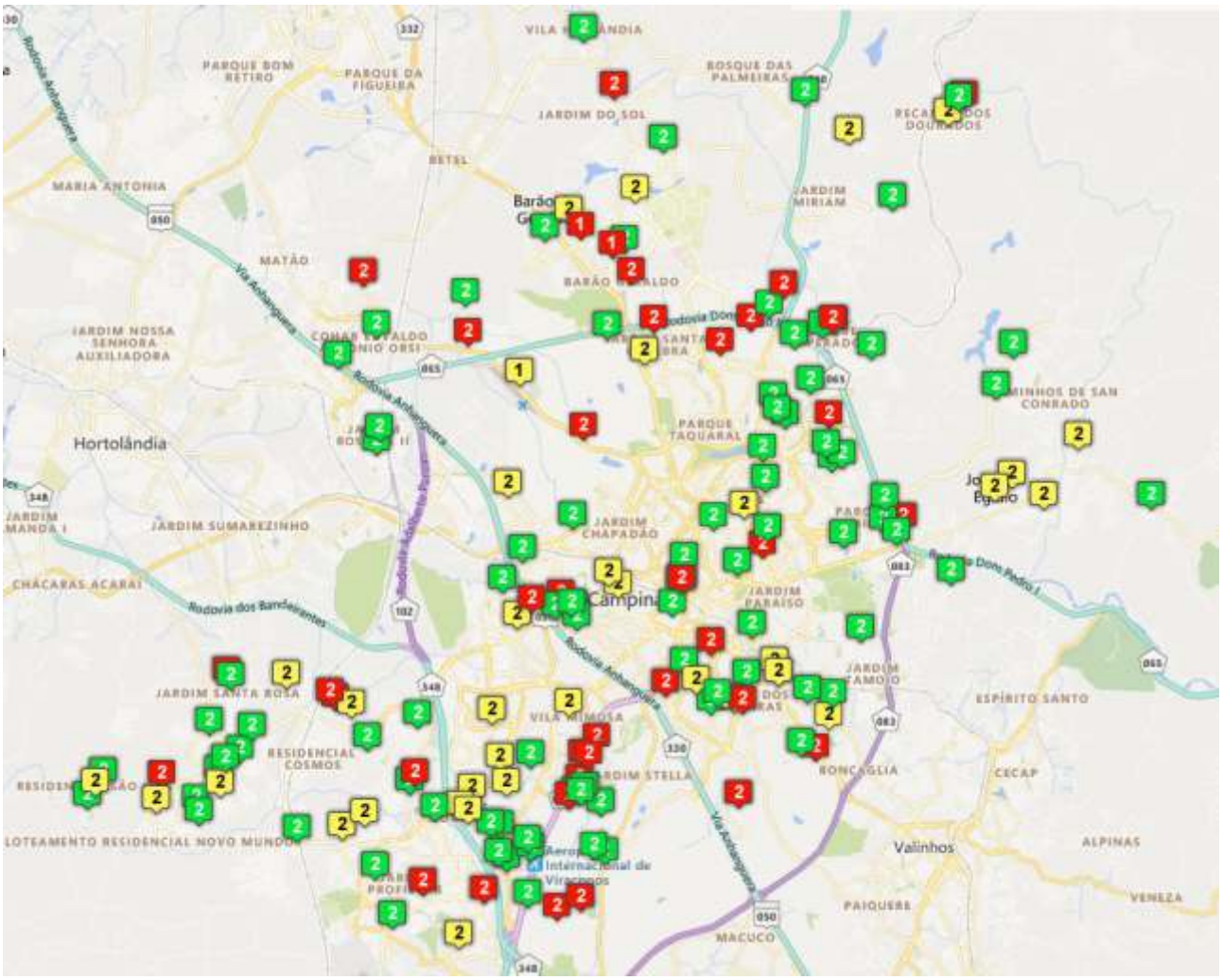
Source: SANASA, Control of Losses and Systems Management.

Control/reduction of pressure in the water distribution networks: the control/reduction of pressure in the water distribution system is found in 334 strategically positioned pressure control units. They are intended to keep the pressure of the distribution networks within the limits established by the standards. Among these 334 pressure reducing structures, 23 are installed with Automatic Pressure Control and Optimization System, with eight being put into operation in 2018, in order to work with minimum pressure in the supply system in the catchment areas, serving the water demands of the population.

SANASA has 410 pressure transmitters installed at critical high or low pressure points and at strategic points for sectorization monitoring, which permanently monitor the pressure at the point and transmit the information via GPRS. With the distribution networks working at lower pressure, there is a reduction in water loss, particularly in a nighttime reduction because it decreases the inherent losses, the amount of bursts and boosts the useful life of the infrastructure.

Telemetry contributes to the speed and effectiveness in decision making with respect to maintenance and improving system operation, as problems are diagnosed quickly and assertively. This also has a positive impact on reducing system operation costs, as well as providing excellence in serving the population. Additionally, most of the time it acts in a way in which the population never even realizes the impacts of supply problems.

Figure 1– Location of transmitters with transmission status



Source: Vectora SYS, an application contracted by the Control of Losses and Systems Management

Locating non-visible leaks is carried out by SANASA's own staff, trained and certified by the Brazilian Association of Non-Destructive Testing and Inspection – ABENDI, using state-of-the-art acoustic equipment such as electronic geophone, leak detection noise loggers and correlator. In the process of managing leak detection, in addition to the work methodology, state-of-the-art equipment and highly skilled and trained teams, among these devices are leak detection noise loggers, which are coupled to the networks and extensions and indicate whether or not any leakage noise is present.

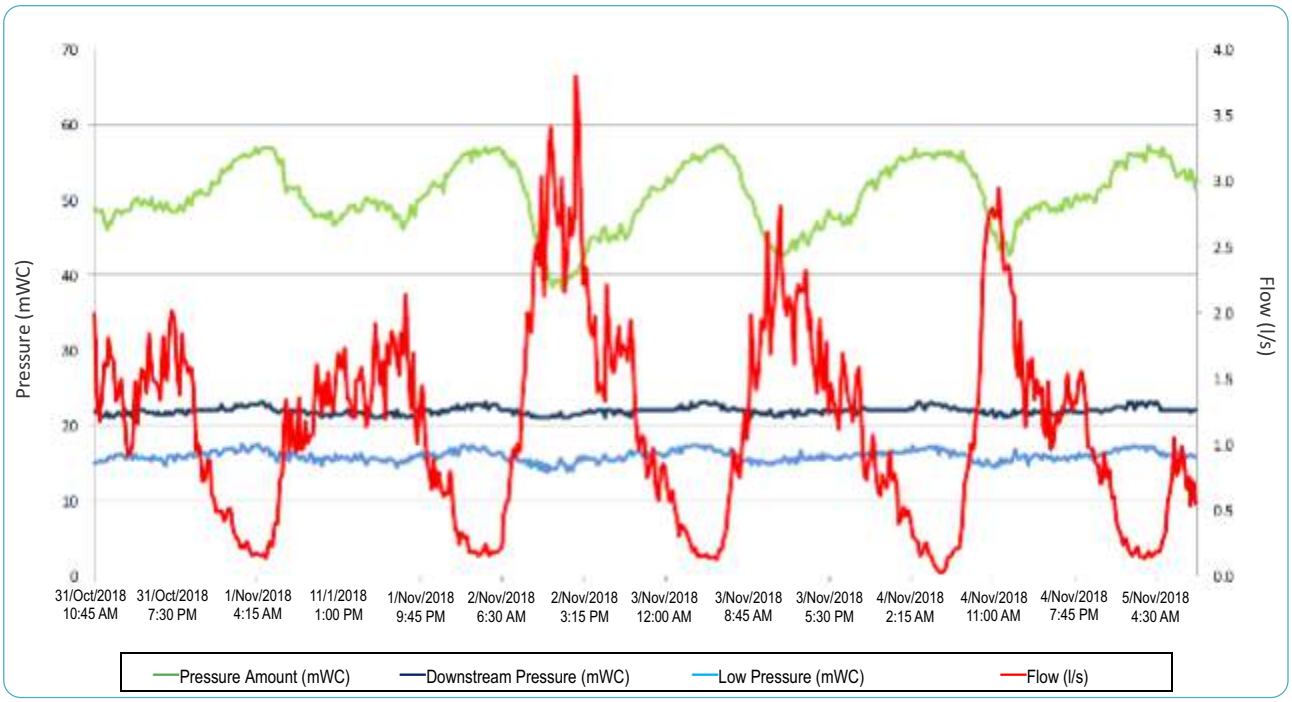
The whole process is monitored until the repair is done so that the efficiency of the process can be confirmed. The results obtained and added into a digital cartographic base of located leaks allow performed services to be tracked, the consultation and data analysis and the incorporation of new procedures and criteria for prioritizing the areas to be investigated. In 2018, leakage detection measures were performed on 912,931 meters of networks and connections and 904 leaks were identified, with an index of 0.99 leaks/km and 6.4 man-hours/leak located.

By monitoring and analyzing the technical indicators and performance of the measurement sectors, the priority is given to areas for detecting non-visible leaks in order to combat real losses. One of the key technical indicators analyzed is the Detection Factor, which divides the minimum flow by the average flow and provides results on possible leaks in the water distribution networks and connections. This data is made available through the Macro-Measurement Sector, Control Structures, Water Tightness Tests and Leak Investigations through the histogram. Below is an example where the sector of analyzed measurement shows a high detection factor.

Figure 2 – Histogram of Pressure and Flow

HISTOGRAM OF PRESSURE AND FLOW [ERP] IN THE FRANCISCO AMARAL RES (UCV 42201)

		Valve Type:	SINGER	38	Install.:	10/5/2005	Controller Type:		Doesn't have.		Flow Data	
Variable Pressure:	23 mWC.	Add. of Valve:	RUA TRÊS								Qmax =	3.80 l/s
		P.C. LOW Pressure:	RUA 4, Nº130								Qmed=	1.13 l/s
		P.C. HIGH Pressure:	VRP ITSELF								Qmin =	0.09 l/s
		Staff: M1			144 H Histogram		Period		31/Oct/2018 to 5/Nov/2018		FP=	0.08
		Temp. (C°)	32/18	28/19	31/19	32/19	25/18	25/17				
		Date	31/Oct	01/Nov	02/Nov	03/Nov	04/Nov	05/Nov				

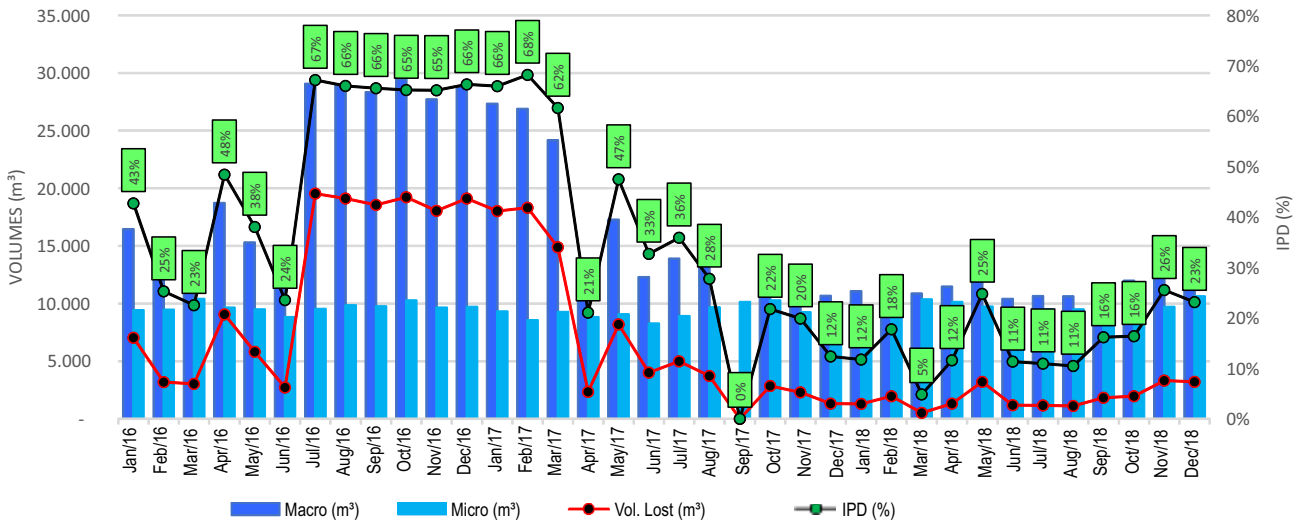


EQUIPMENT. Used: Metrolog [26720 ; 26722] Meinecke [33677] SSE's: 3710436 V_02

Source: SANASA, Control of Losses and Systems Management.

In addition to the Detection Factor, the macro-measured volume and micro-measured volume are also analyzed, resulting in lost volume and an indicator of loss in the distribution. It can be seen that the sector of measurement analyzed showed high losses and that, after the work was done to detect the leak, the loss indicator showed a considerable reduction and remains stable with the location of non-visible ruptures.

Chart 2: Macro-measure and Micro-measure and IPD volumes 2016 to 2018



Source: SANASA, Control of Losses and Systems Management.

Readjustment of water network and connection infrastructure: SANASA invests in the readjustment of its networks, connections and components by prioritizing areas with higher rates of physical water loss that are caused by disruption resulting from material deterioration. The work also provides for the sectorization of the supply, the pressure control/reduction, the standardization of connections and the replacement of telemetry-ready water meters. In 2018, readjustments of the network totaled 28,669 meters and 1,552 extensions in five neighborhoods – and some of these works are still ongoing. SANASA has adopted the Non-Destructive Method (MND), installing welded pipes made of High-Density Polyethylene (PEAD). During the time that work is being performed, the water supply is guaranteed through temporary aerial piping. Some of the key advantages of this methodology include a reduction in physical losses, lower impact on the environment and preservation of urban mobility, due to the fact that it does away with continuous trenching. Integrating the new infrastructure with the supply system is subject to the approval from the water tightness test, conducted by the team itself, and delivery of the technical register.

Figure 3 – Asbestos cement networks in the Campinas municipality

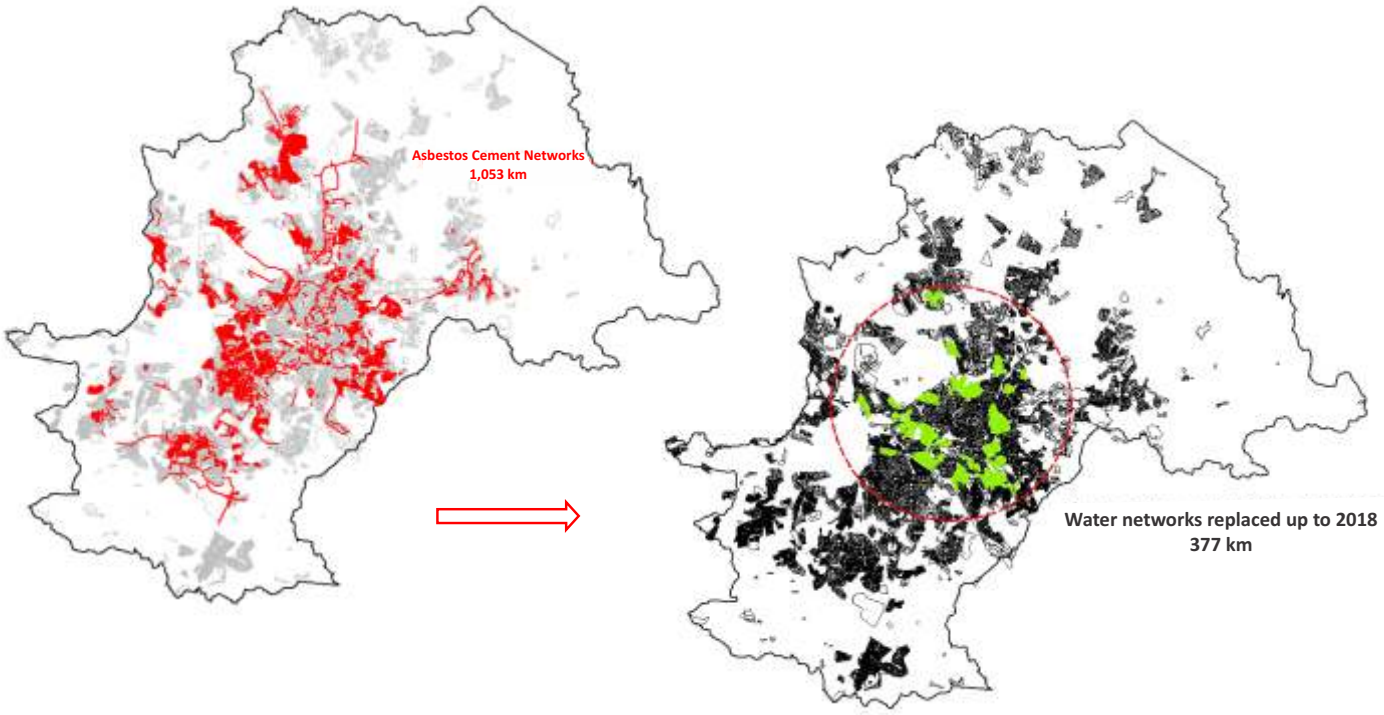
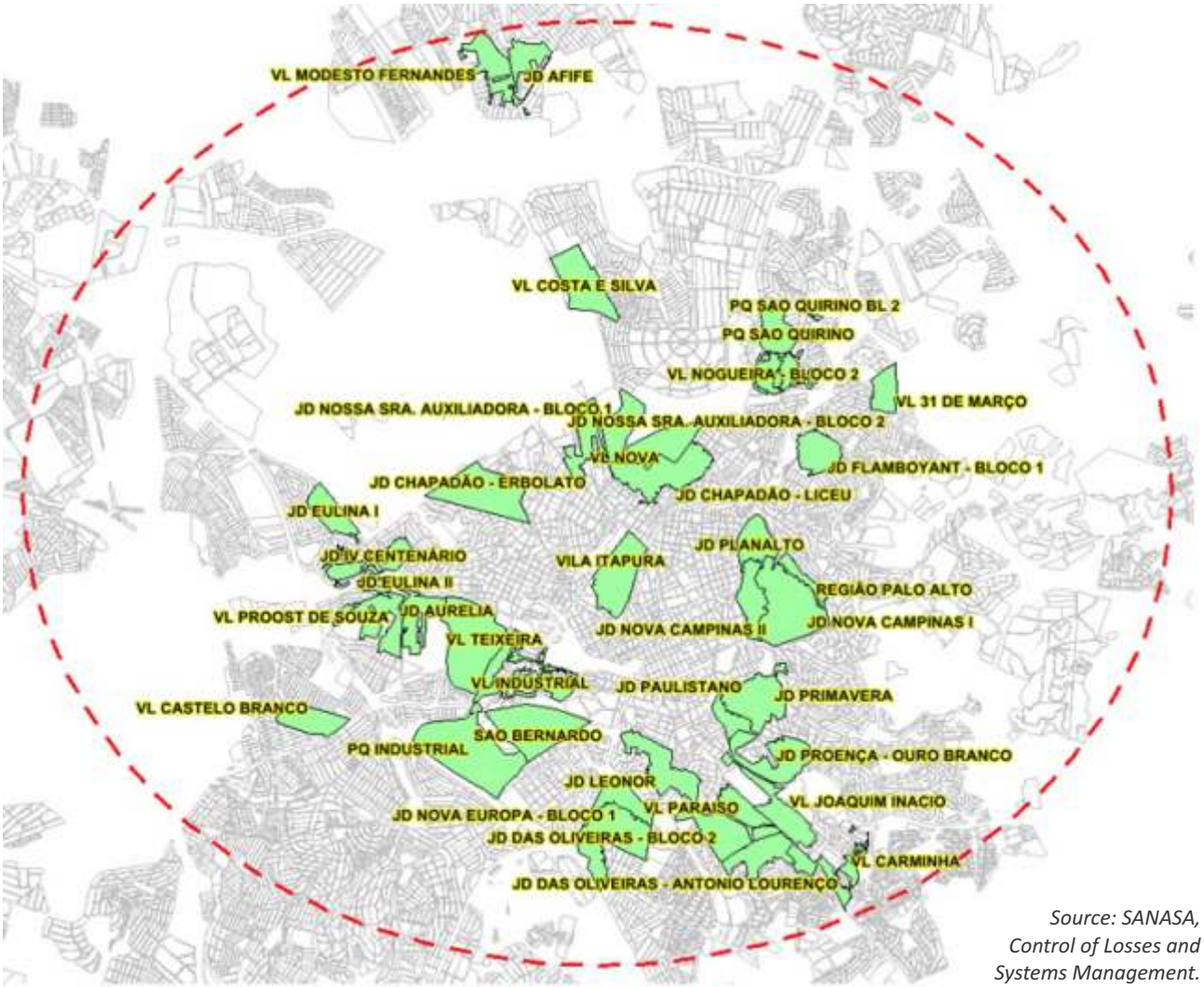


Figura 4 – Bairros com substituição de redes de água no município de Campinas



Source: SANASA, Control of Losses and Systems Management.

Loss Index

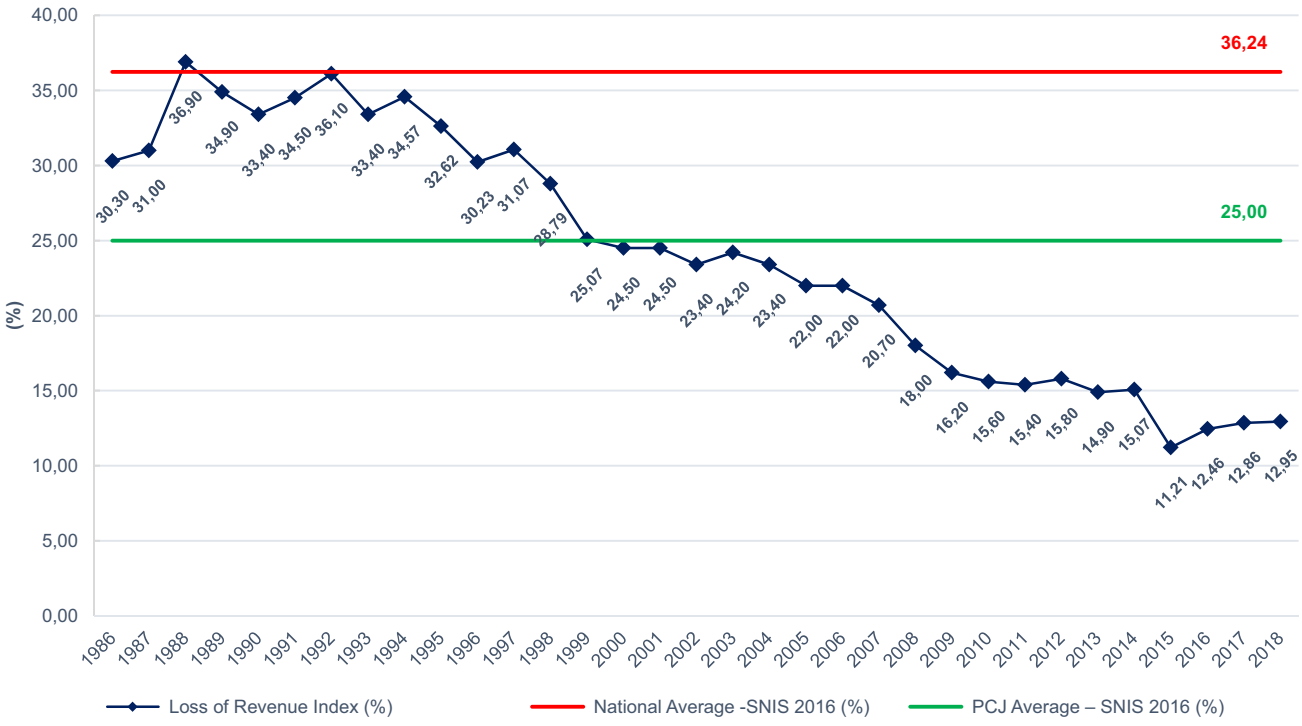
SANASA employs three loss indices, the IPF, IPD and IPL – used so that the company can ascertain and analyze the (actual) physical loss of water, caused chiefly by leaks in the water supply, reservoir and distribution infrastructure; and the non-physical (apparent) loss, primarily caused by under-measuring water meters and fraudulent connections. All these indices are permanently monitored and subject to an audit through the company's Quality Management program.

Loss of Revenue Index – IPF: represents the percentage in the volume of water that has been treated but was not billed or invoiced. The calculated IPF was 12.9% in 2018, the increase was 0.09% compared to 2017, and the drop in amounts since 2015 reflects the water crisis when people were saving more.

Loss of Revenue Index (SNIS)

$$\frac{\text{Water Flow (Produced + Treated – Service) – Volume of Billed Water}}{\text{Water Volume (Produced + Treated – Service)}} \times 100$$

Chart 3: Loss of Revenue Index 1986 to 2018



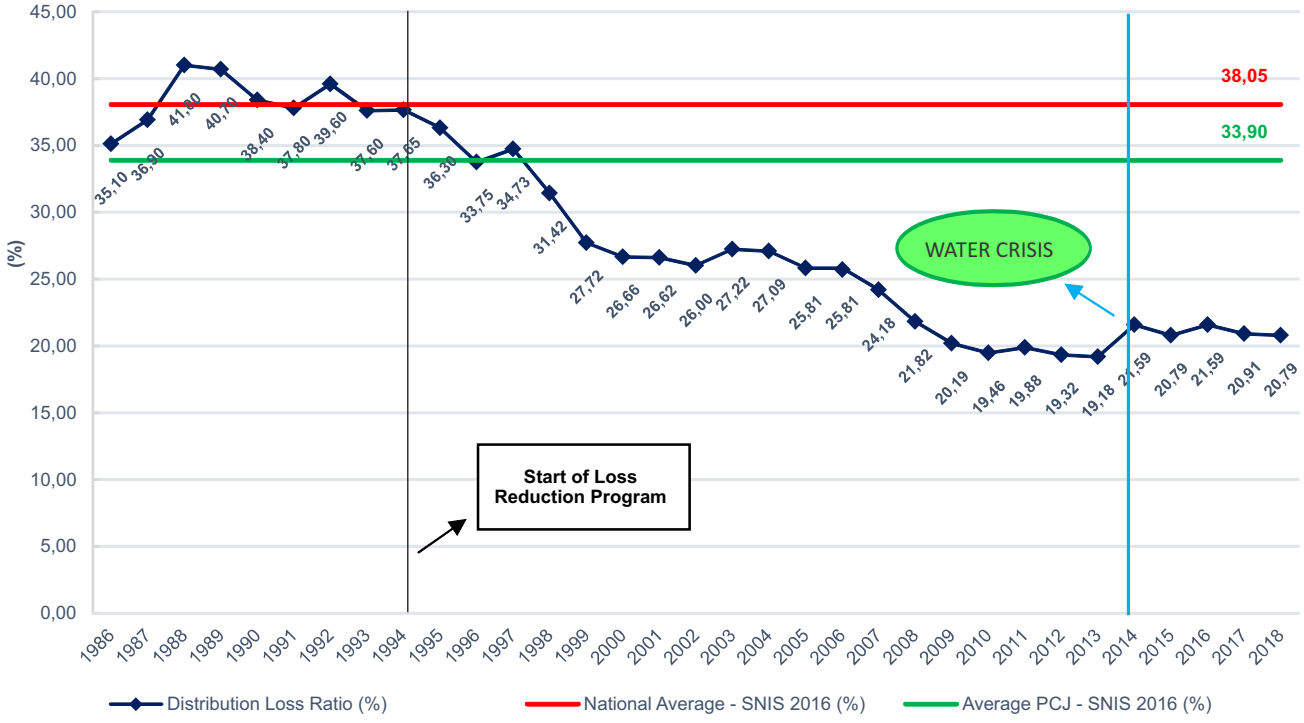
Source: SANASA, Control of Losses and Systems Management.

Loss of Distribution Index – IPD: represents the percentage in the volume of treated water lost in distribution. In 2018, the IPD was 20.8%, a 0.1% drop compared to 2017. Despite this dip, there is still an increase over what was posted in the years prior to the 2014 and 2015 water crisis, confirming a change in the consumption pattern and profile of customers and consumers. At the same time, this has led to a significant increase in apparent losses caused by under-measuring water meter values and fraudulent connections.

Loss of Distribution Index (SNIS)

$$\frac{\text{Water Flow (Produced + Treated – Service) – Volume of Water Consumed}}{\text{Water Volume (Produced + Treated – Service)}} \times 100$$

Chart 4: Distribution Loss Ratio 1986 to 2018



Source: SANASA, Control of Losses and Systems Management.

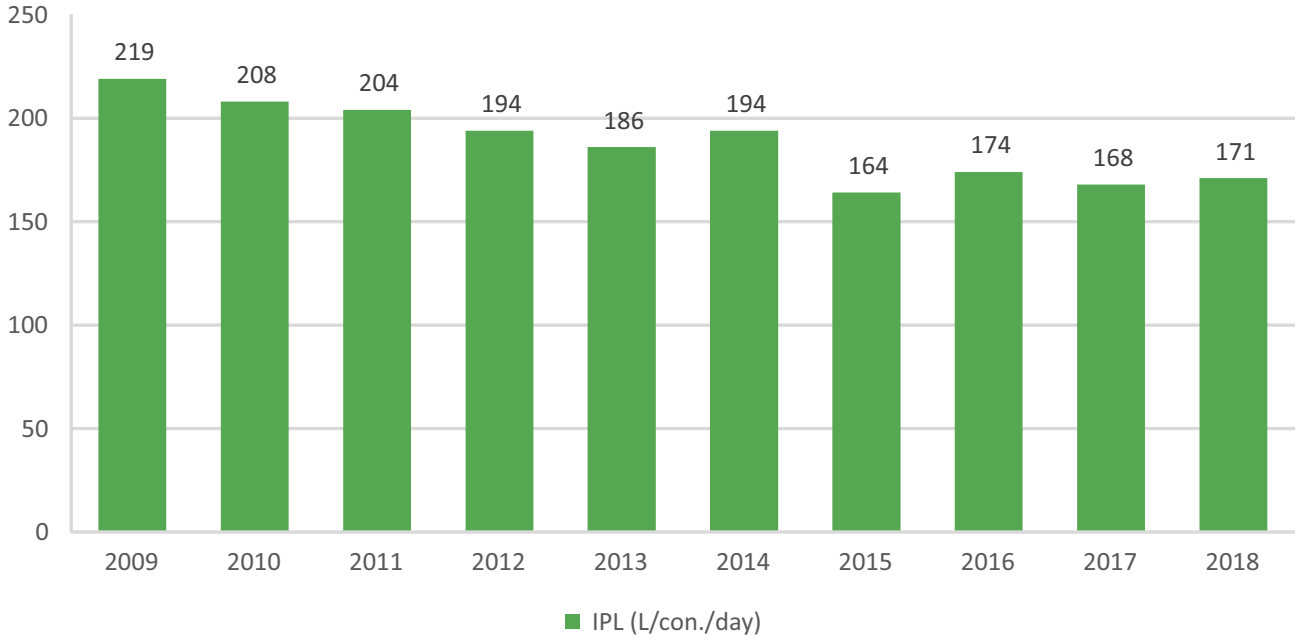
Infrastructure Leakage Index – IPL: represents the volume of treated water lost in distribution by connection. There was an increase in 2018 of 3 liters/connection a day, or 1.8% compared to 2017, registering an index of 171 liters/connections a day. This surge in IPL was caused by a shift in the calculation. As of July 2018, a new method was used: the total number of connections was subtracted from connections of individualized condominiums.

Infrastructure Leakage Index (SNIS)

$$\frac{\text{Water Flow (Produced + Treated – Service) – Volume of Water Consumed}}{\text{Number of Active Water Connections*}} \times \frac{1{,}000{,}000}{365}$$

***The arithmetic mean of the values from the reference year and the prior year is used.**

Chart 5: Infrastructure Leakage Index connection/day 2009 to 2018



Source: SANASA, Control of Losses and Systems Management.

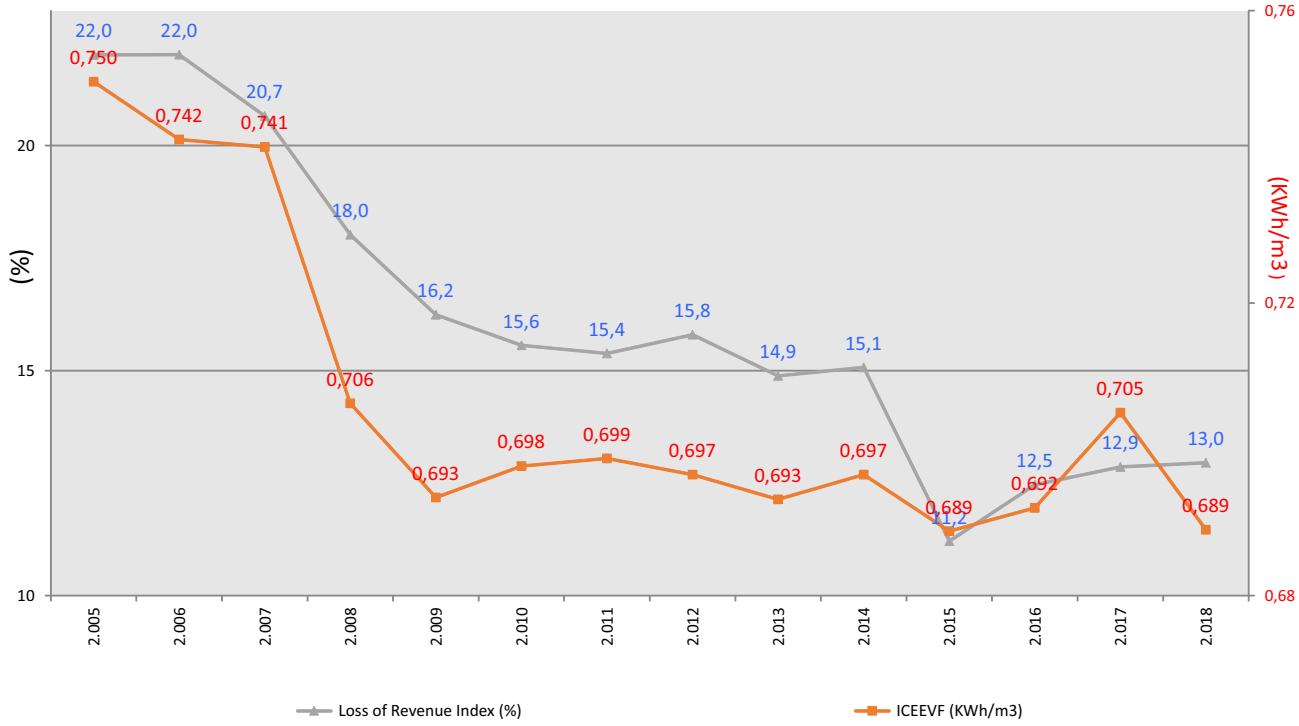
Energy Efficiency Indicator (302/4)

The Consumption of Electric Power in the Water System by Invoiced Volume Index – ICEEVF, unit (kWh/m3), is an indicator that makes it possible to audit the efficiency of the water company in power consumption. The calculation accounts for the energy used in the process of capturing, producing and distributing treated water with the volume of water billed. Both parameters are conflicting, as there is a natural tendency to want to consume less electricity due to input costs and, conversely, increase the volume billed. The reliability of the proposed indicator is in guaranteeing the veracity of the amounts that it composes. Since the power bill is generated by the utility company with its amounts audited by the electric bill, the invoiced volume is audited by the issued water bill.

ICEEVF offers a true idea of the company's power efficiency by relatively showing how much energy is required to deliver each cubic meter of water to the end user. In a way, it forces a systematic analysis of all stages from raw water catchment to the treatment, distribution and billing of treated water. It also aids in understanding all the causes that impact the efficiency of the system, like losses in production, in distribution, in sub-measuring of water meters, in consumptions below the minimum range, in the amounts of volume measured, in changes in the pressure system, in the input/output of supply sectors, etc.

ICEEVF figures do not include power consumption from administrative areas – amounting to around 4% of the total consumed in the supply system – in order to improve the technical analysis.

Chart 6: Indicators of Losses and Energy Efficiency 2005 to 2018



Source: SANASA, Control of Losses and Systems Management.

Chart 6 illustrates the IPF and ICEEVF figures at similar downward trends between 2005 and 2009, but remaining stable between 2010 and 2014. The decreasing trend in the IPF from 2015 was accompanied by the ICEEVF, demonstrating the correlation between the indicators – here reflecting the 2014 and 2015 water crisis. The rise in the number of connections showing a consumption below the minimum range of 10 m^3/month was also a contributing factor to the reduced ICEEVF. When the Program to Combat and Control Losses began in 1994, the IPF was 34.6%. **Table 3** simulates the avoided energy consumption and subsequent annual carbon emissions saved and the number of trees planted per year in order to reset the carbon footprint that would be required if this emission were not avoided, accounting for the difference in the IPF realized per year.

Table 3 – Simulation of avoided energy consumption, CO2 emissions and trees planted per year needed for compensation 2005 to 2018

YEAR	ENERGY SPENDING AVOIDED (kWh/YEAR)	Tons of CO_2 per year	Trees planted per year
2005	14,811,102	2,007	12,676
2006	14,949,057	2,026	12,794
2007	16,452,516	2,229	14,081
2008	18,133,347	2,457	15,519
2009	19,776,865	2,680	16,926
2010	21,152,793	2,866	18,104
2011	21,481,209	2,911	18,385
2012	21,565,306	2,922	18,457
2013	22,608,443	3,063	19,349
2014	21,612,146	2,928	18,497
2015	23,353,551	3,164	19,987
2016	23,211,230	3,145	19,865
2017	23,268,878	3,153	19,915
2018	22,697,863	3,076	19,426

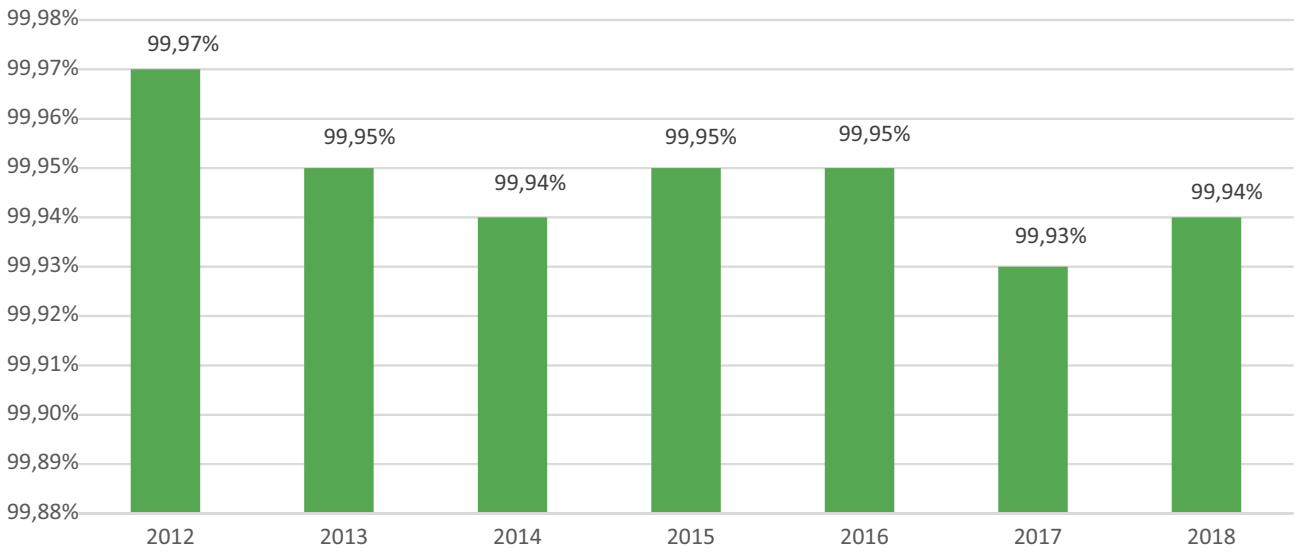
Source: Calculated CO2 emissions and trees planted per year – www.iniciativaverde.org.br

Quality Management System

In addition to the aforementioned indices, the following are also used to monitor the Program to Combat and Control Losses, in accordance with the SNIS methodology and the SANASA Quality Management System.

Index of Water Meter Installations – IH: Percentage of active connections with water meters installed and running.

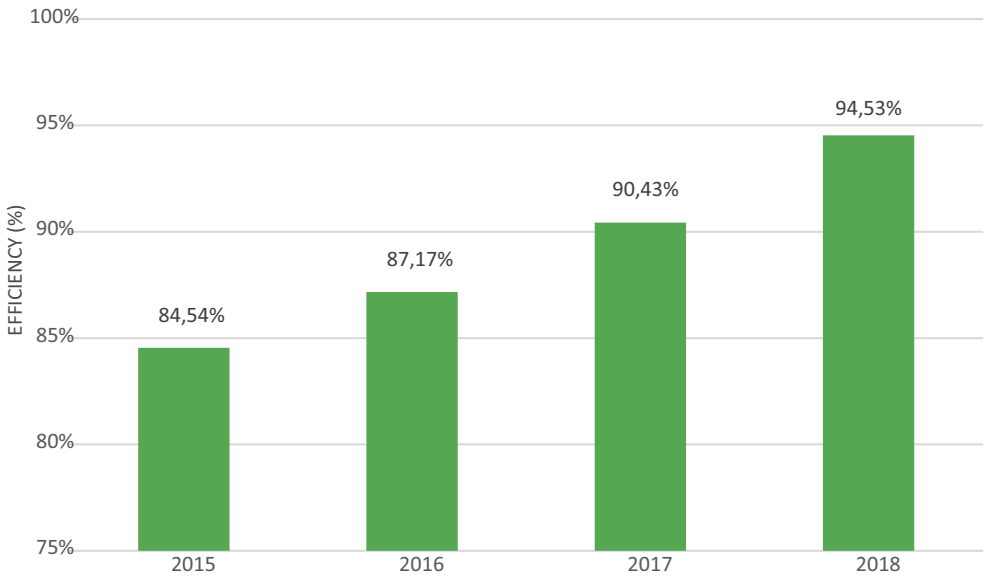
Chart 7: Index of Water Meter Installations 2012 to 2018



Source: SANASA, Control of Losses and Systems Management.

Micro-measurement Efficiency Index – IEM: Micro-measurement efficiency percentage, with criteria from ABNT NBR 15538/2014.

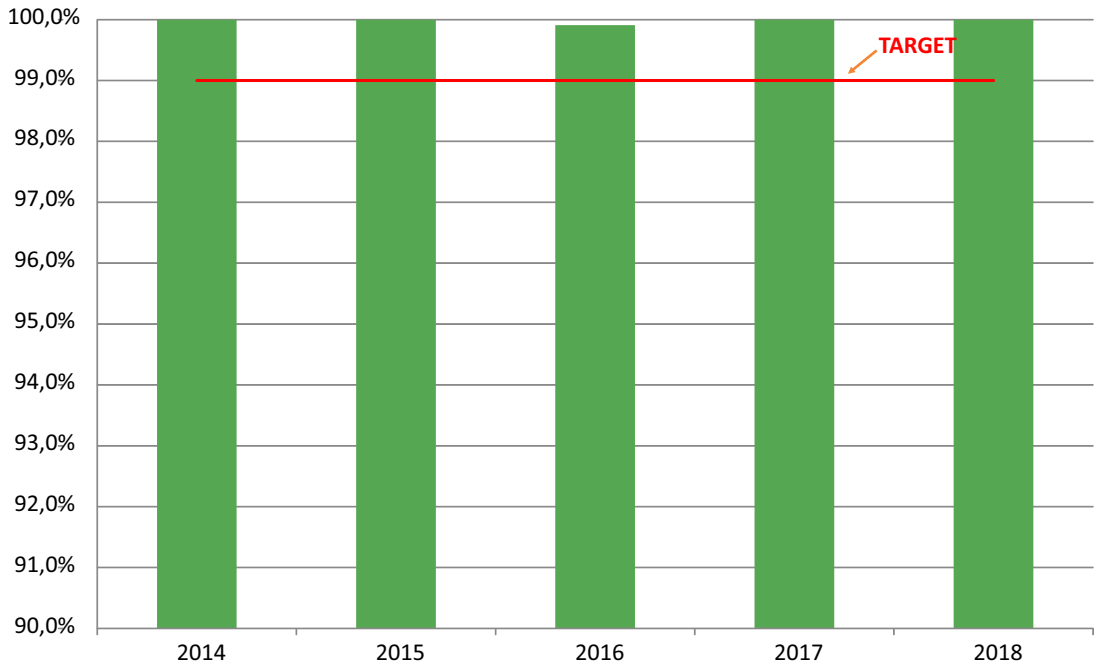
Chart 8: Micro-measurement Efficiency Index 2015 to 2018



As of 2017, the target set is 88%
Source: SANASA, Control of Losses and Systems Management.

Macro-measurement Efficiency Index – IM: Percentage of the volume of water produced, determined through installed and running macrometers.

Chart 9: Macro-measurement Efficiency Index 2014 to 2018

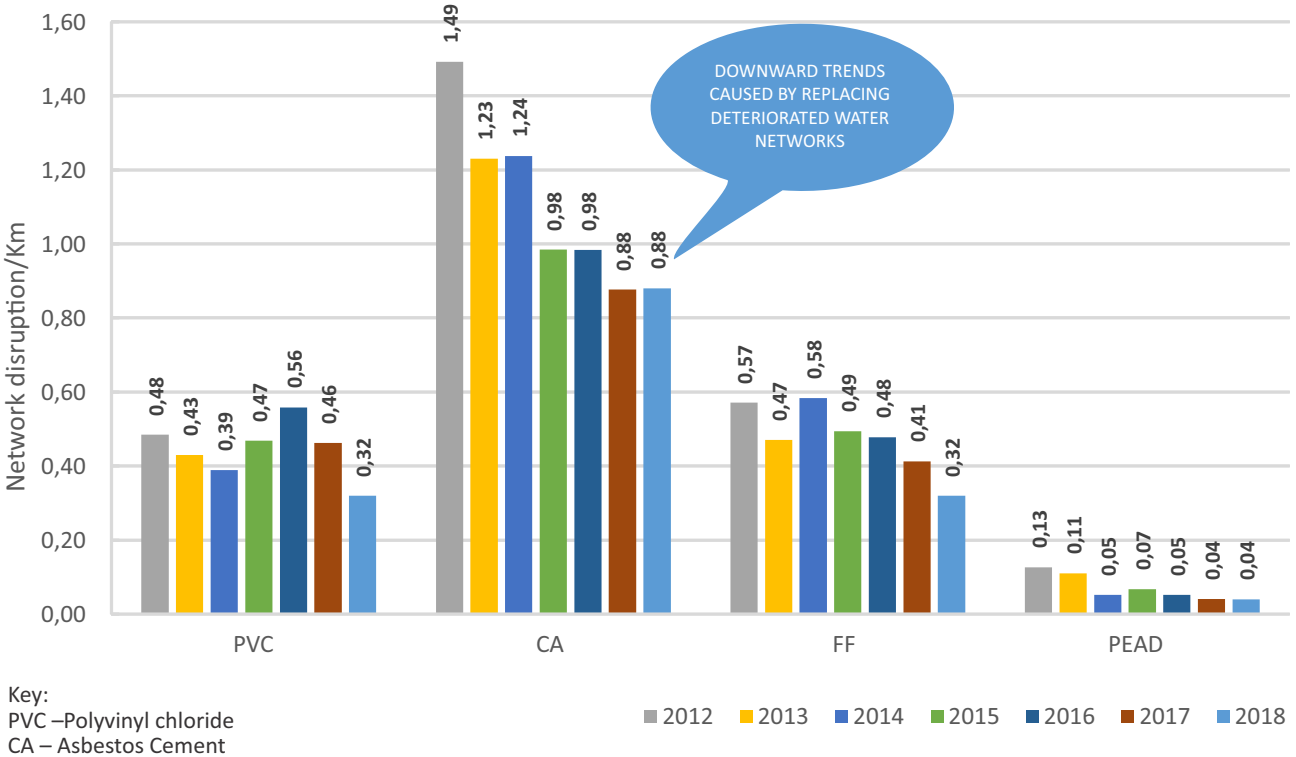


Source: SANASA, Control of Losses and Systems Management.

Corrective Maintenance of Water Index – IMCA: Amount of corrective maintenance by material type and network extension.

Chart 10 confirms that the density of corrective maintenance (leaks) per kilometer in asbestos cement networks (CA) over the last few years has been decreasing, according to the figures presented. This reduction underlines the effectiveness of measures taken to replace the networks and extensions in the priority areas having the highest incidence of water loss due to deteriorated material. The following provides a graphic demonstration of the course of the abovementioned indices.

Chart 10: Comparison of water network maintenance by material 2012 to 2018

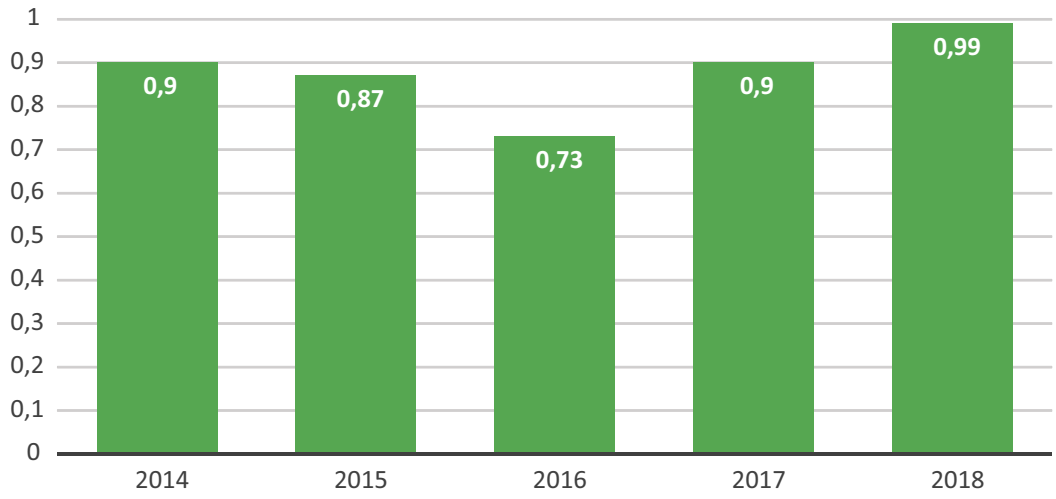


Key:
PVC –Polyvinyl chloride
CA – Asbestos Cement
FF – Cast Iron
PEAD – High-Density Polyethylene

Source: SANASA, Control of Losses and Systems Management.

Index of Non-Visible Leaks found per kilometer: List of non-visible leaks found per kilometer in network and communication pipes for water. Indicates the efficiency of the methodology employed with respect to the performance of the employee/equipment.

Chart 11: Investigating Non-Visible Leaks x Leaks Found 2014 to 2018



Source: SANASA, Control of Losses and Systems Management.

Technological Innovation

SANASA invests in employing new technologies that are capable of contributing to the continuous improvement of measures to combat and control losses, resulting in greater flexibility, safety and process management.

Remote Consumption Measurement System – Telemetering (103-3)

SANASA features an infrastructure for Radio Frequency (RF), with equipment installed in elevated reservoirs. This equipment guarantees that nearly all of Campinas territory is covered. This system is used to remotely monitor the water use in the schools employing the Rational Use Project (Reágua), macrometers and large-scale consumers. Consumption data is transmitted daily to the SANASA Database, optimizing micro- and macro-measurement management.

Another technology applied in Campinas is telemetering in condominiums. It is the development's responsibility to procure and install equipment and maintain a remote metering system, which transmits consumption information to the SANASA Database on a daily basis. This system eliminates the need for on-site readings. For customers, it allows them to track their historical water consumption from their property, as well as being able to submit alerts about leaks in the event of unusual consumption. This solution uses radio frequency signals to communicate with a hub, which transmits them to the SANASA Database via cell phone (GPRS) after the consumption data from all water meters is collected. There are currently approximately 2,400 water consumption points with remote metering in Campinas condominiums, a number that will increase significantly in the coming years because the system has been mandatory since 2015 for new developments. The telemetering technology utilized by SANASA has a mobile network system known as "Drive by". Readings and other information from 2,700 water meters are collected through equipment installed in the company's vehicle, resulting in greater speed, reliability and an efficiency ratio of over 99%.

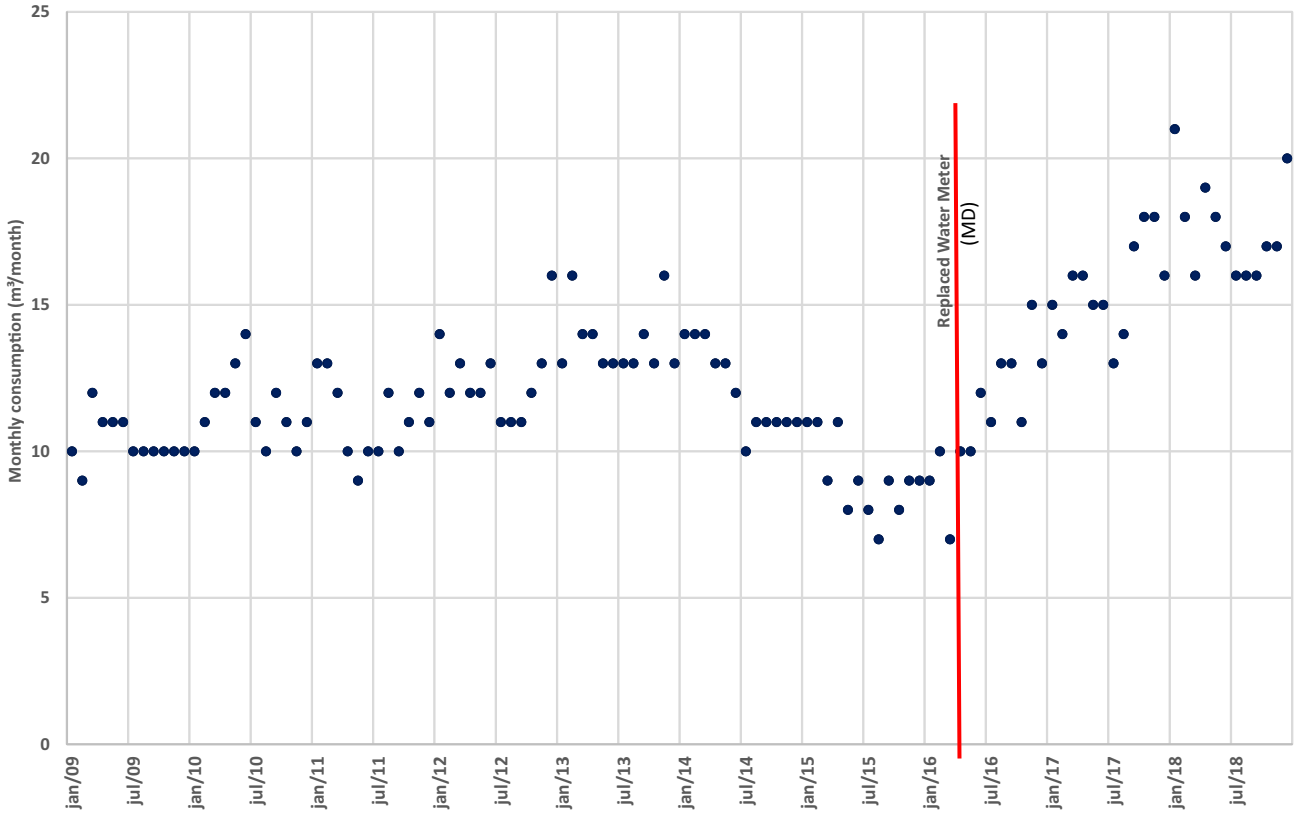
Solutions for remote consumption monitoring are being explored using Internet of Things (ITO) technologies that boast lower implementation and maintenance costs – allowing telemetric activities to expand in the Campinas municipality.

Micro-measure management tool (103-2/103-3)

The SANASA team and one of its service providers developed the Water Meter Analysis System software, an information and statistical technology recognized as a useful tool for meter facility management. The Water Meter Analysis System facilitates Predictive Water Meter Maintenance and contributes directly to reducing the rate of water loss. It is a groundbreaking tool in Brazil, and it uses SANASA's historical database – with consumption information since 1992 – in order to safely identify meters that demonstrate a loss of metrological performance and prioritize predictive measures.

Chart 12 displays an example of consumption of a water connection monitored by SANASA software in which the water meter was replaced by Predictive Maintenance (MD).

Chart 12: Example of monitoring consumption of a water connection 2009 to 2018



Source: SANASA, Control of Losses and Systems Management.

Key:

- Consumption recorded in each month
- A red vertical line indicates the month a meter was replaced

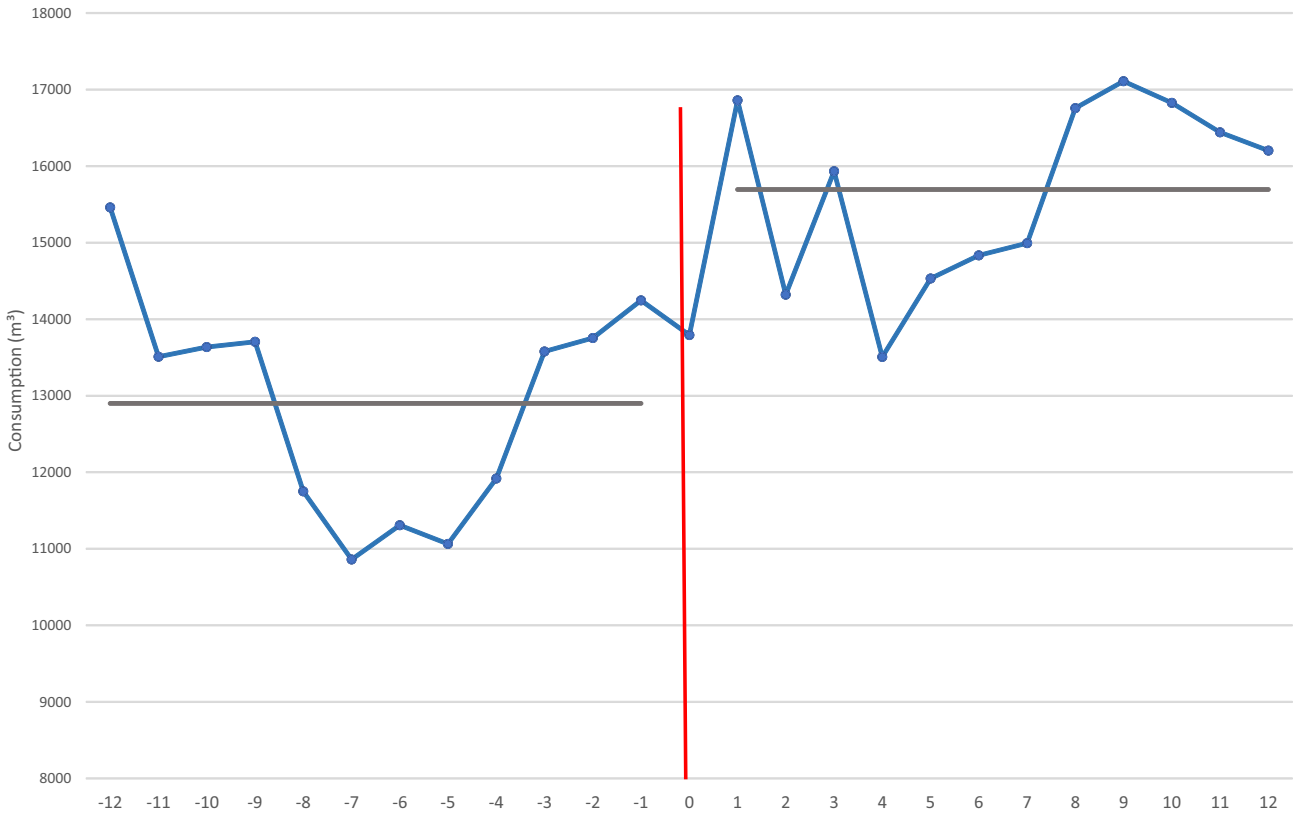
MD: Replaced by the occurrence of Predictive Maintenance

Replacing water meters by using the Water Meter Analysis System showed better results and produced a return on investment in less than one year, proving the efficiency of the scientific method adopted.

Chart 13 illustrates the results of water meter replacements performed by the occurrence of MD in 2017. On the left side, the sum of consumption for the 12 months prior to the changes is indicated, and the sum of consumption for the 12 months after the interventions performed is shown on the right. The maintenance performed in 2018 was not selected because there is not a prior period for comparing consumptions. After the changes, a significant increase in consumption can be seen, resulting in reduced apparent losses, recovery of revenues, improved quality measurement and greater efficiency in meter management.

Since 1998, water meters have been replaced according to the Predictive Maintenance criteria and the Water Meter Analysis System software is an indispensable tool for managing the meters installed.

Chart 13: Results achieved with the replacement of water meters – MD Occurrences in 2017



1,062 customers – an increase of 22% in volume and 21% in billing
Source: SANASA, Control of Losses and Systems Management.

Water Meter Laboratory (103-3)

The Water Meter Laboratory is checked annually by the Institute of Weights and Measurements (IPEM/INMETRO), the agency that certifies water meter calibration tests to conduct water meter measurement services, ensuring that the measurement is credible. The laboratory has four water meter calibration benches to perform tests, in accordance with Inmetro Ordinance No. 295/18 and ABNT Standard 15,538/14. These test benches are capable of servicing meters with a nominal diameter of up to four inches and an accelerated wear (fatigue) bench to simulate usage conditions when the meters are in the field, allowing compliance with the Measurement Performance Index – IDM, established in ABNT NBR Standard 15,538/14.

The Micro-metering and Technology Research Sector also has a Mobile Water Meter Laboratory – including a calibration bench certified by IPEM/INMETRO – to serve customer-requested water meter measurements with either volumetric- or electronic-type meters. This lets SANASA perform the test before the customer and provide technical instructions on the technology employed in the measurement, as well as leak detection procedures, ensuring transparency and quality for the service delivered.

In 2019, the Micro-metering and Technology Research sector will receive a new Mobile Water Meter Laboratory with two units, reducing the time to respond to requests.

In 2018, 355 meters were inspected to provide services to other water companies, which facilitated a collection of approximately R$90,724.00. That year, 420 meters were calibrated to comply with customer requests, and 258 meters for researching measurement technology.

The Water Meter Laboratory participates in the Permanent Hydrometry Program, coordinated by INMETRO. Over the last two years, new procedures and standards have been put in place to comply with the requirements of ISO 17025:2017. Certification is expected from the General Coordination of Certification (CGCRE/INMETRO) in 2019.

Technical Registry of Water Networks in Databases

SANASA keeps a computerized technical registry on water and sewage infrastructure. The registry uses the Geographic Information System platform – SIG MapInfo Professional, including customized tools and its own trained staff. The information is stored in the MS SQL Server (Structured Query Language) database, which includes the indexing of completed projects and field registration survey forms, known as the Notable Intersection Point Registry (CCPN), in digital imaging. The technical register is made available through the MapInfo Proviewer tool and is used in the development of a number of technical, operational, maintenance, planning, environmental, commercial, financial activities, among others.

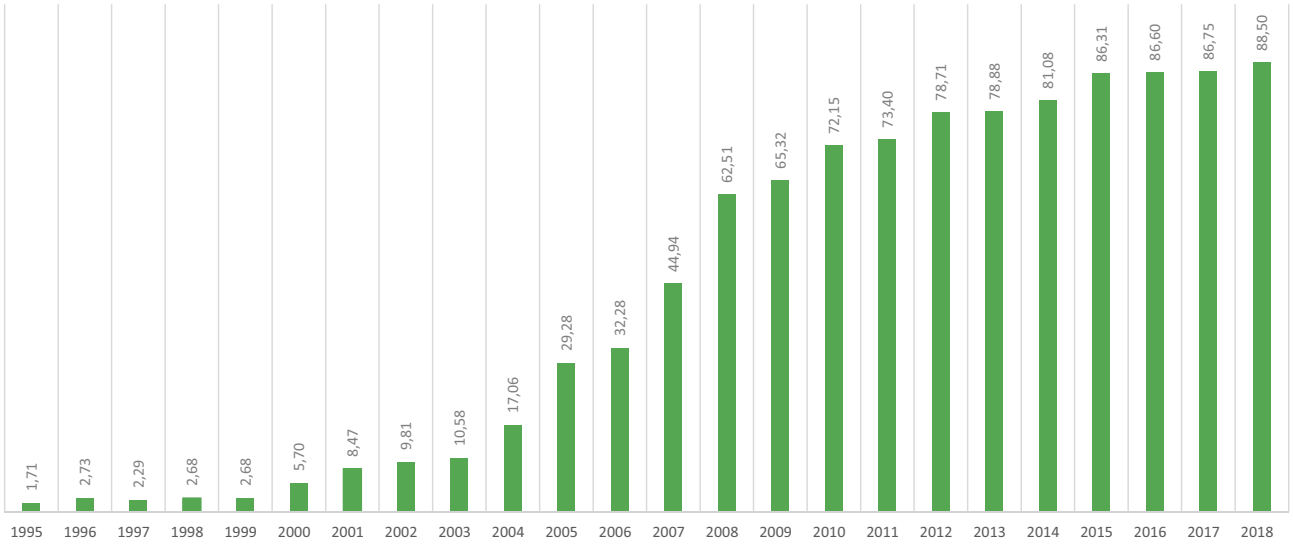
In 2017, the process for improving the technical registration tool began, with a specialized company contracted to develop a customized application of business rules. The water system phase was finalized in 2018, and part of the sewage system began that same year. Registered information is maintained and updated by the SANASA team.

SANITARY SEWAGE SYSTEM (103-1)

SDG6.3

SANASA invested R$955.1 million in the sewage system between 1997 and 2018. From 2013 to 2018, with the execution phase of the 300% Plan already underway, there were investments of R$323.4 million. The goals in the 300% Plan forecast that basic sanitation will be universal in Campinas by 2025. In 2018, the sewage treatment index stood at 88.42%, with service provided to 96.05% of the urban population.

Chart 1. Exponential growth of sewage treatment in Campinas.



Source: SANASA, Sewage System Management.

Treatment system

SANASA applies efforts to boost the level of sewage treatment in the municipality of Campinas to minimize pollution in the Piracicaba, Capivari and Jundiaí river basins, with a direct positive impact on water safety. SANASA's sewage treatment systems operation prevents approximately 1,360,000 Kg of Biochemical Oxygen Demand (BOD) from being discharged into bodies of water each month. For this to happen effectively, the company uses aerobic, anaerobic and physicochemical processes in its sewage treatment plants, providing various combinations that facilitate improvements in the quality of bodies of water.

Quality of effluent treatment (303-3)

The treatment processes applied at Sewage Treatment Plants (ETE) are diversified. A majority of them remove compounds at the secondary level, enough so that all the effluent discharged into the receiving bodies of water complies with prevailing environmental laws. The Capivari II Water Reuse Production Plant (EPAR) was constructed with the latest technology for effluent treatment. It was instituted with a tertiary process capable of removing 99% of the organic load, along with nutrients, bacteria, and others, resulting in light and quality effluent that is above the indices established by the law.

In 2018, SANASA treated 54.7 million m^3 of sewage, with 8 million m^3 of that recycled water. This reused water is discharged into the Capivari River, downstream from the municipality's raw water catchment point, representing 14.6% of the total effluent treated. This disposal is a direct contribution by the company to improving river quality.

EPAR's efficiency is assured through the use of a Membrane Biological Bioreactor (MBR) technology, made up of biological reactors (deoxygenation, anoxic, anaerobic and aerobic), followed by filtering membranes at a porosity of 0.04 µm, whose design eliminates the need for treatment units. These units are traditionally adopted in conventional Sewage Treatment Plant projects, such as primary and secondary decanters, sludge digesters, contact tanks for disinfection of the final effluent, and use a much smaller area of land compared to other alternatives.

Figure 1. Aerial image of the Water Reuse Production Plant – Capivari II EPAR.

Source: SANASA, Sewage System Management.

Capivari II EPAR boasts a treatment capacity of 364 L/s and has been running since 2012. Lab tests on the treated effluent have been highly satisfactory, and comply with almost all of the requirements in the Ministry of Health's Consolidation Ordinance No. 5, focused on Annex XX, which provides former Ordinance 2914/2011, designed to ensure potable water for human consumption. Currently, the water from the EPAR has been used within the limits allowed by prevailing law, but it should be pointed out that the disposal of this type of water aids in minimizing pollution, as a whole, within the receiving bodies of water and in the river basin.

The efficient application of MBR technology has stimulated SANASA to remodel some existing ETE. It is intended to raise the level of tertiary treatment by an additional 50% of treated effluent production by 2021. SANASA has made efforts to apply retrofitting in the Nova América, Capivari I and Piçarrão ETE, in the Capivari basin; San Martin, in the Quilombo Basin; and Anhumas, in the Atibaia basin. Chart 2 displays the average efficiency of ETE and EPAR in terms of BOD removal during 2018.

Innovation

The annual production of sludge resulting from sewage treatment is 32,000 tons, residue that is regarded as having high agronomic value. In 2018, SANASA invested R$5.8 million to procure equipment for installing a sludge composting plant in Campinas. This initiative was made possible through a partnership between the company, the Campinas Agronomic Institute (IAC), CEASA and the Campinas Municipal Government. Activities will begin in 2019 and will be able to turn 250 tons of sludge, pruning and FLV (fruit and vegetables) waste into agricultural fertilizer on a daily basis.

Operational safety

So that sewage treatment plants operate correctly, employees are periodically trained in operational routines and current safety standards. All the plants have registered spaces according to operational risk and follow specific standards. The risks directly associated with sewage activities are generally environmental and are related to sewage overflow and gaseous emissions. To mitigate these risks, SANASA has invested in automation processes, continual monitoring, safety devices, equipment, and preventive and predictive maintenance.

Table 1 exhibits the units in service on December 31st, 2018.

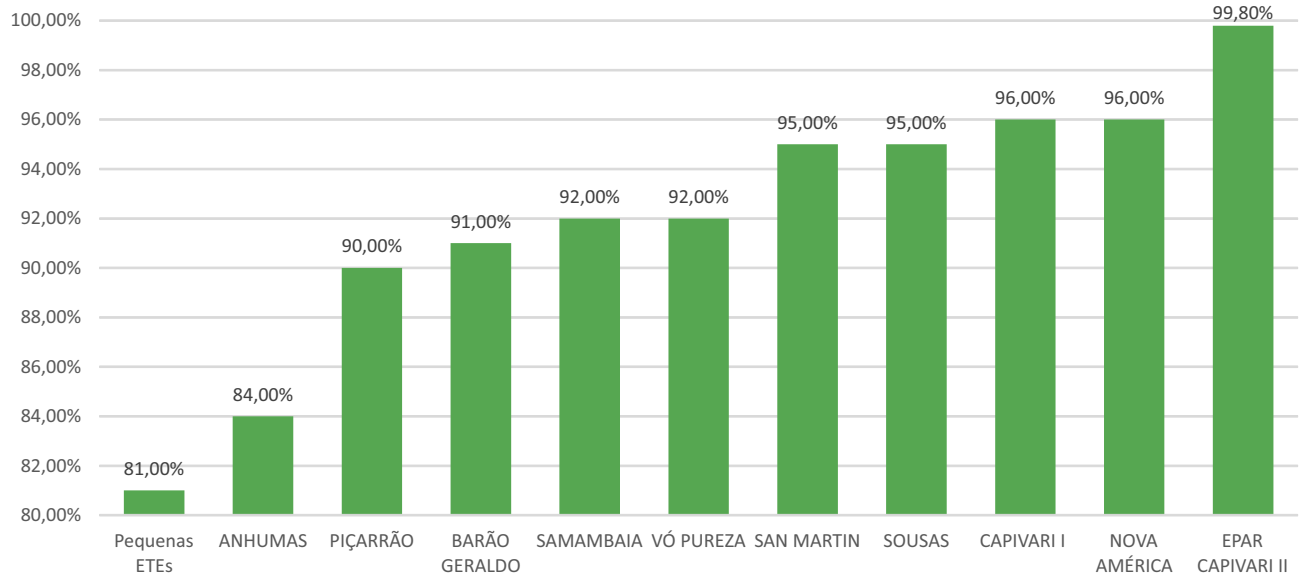
Table 1. Sewage Treatment Plants operated by SANASA

No.	Sewage Treatment Plant	Treatment Design	Inauguration	Average flow treated (l/s)			Installed capacity flow (l/s)
				2016	2017	2018	
1	Ciatec	Aerated Lagoon followed by Facultative Aerated Lagoon and Sedimentation	1994	15	14	13	25
2	Icaraí	Septic Tank followed by Upflow Anaerobic Biological Filter	1996	3	4	4	3
3	Arboreto	Sludge Activated by batch and Disinfection	2000	5	5	6	12
4	Vila Reggio	Septic Tank followed by Upflow Anaerobic Biological Filter	2000	9	11	6	6
5	Samambaia	Complete-Mix Aerated Lagoons followed by Secondary Decanters	2001	59	57	63	151
6	Terras de Barão	Sludge Activated by batch	2003	7	2	2	6
7	Santa Mônica	UASB followed by Activated Sludge and Secondary Decantation and Disinfection	2004	40	44	59	85
8	Piçarrão	UASB followed by Aeration Tank and Secondary Decanters	2005	431	452	436	417
9	Anhumas	UASB followed by Physicochemical treatment followed by Flotation	2007	662	638	633	1200
10	Eldorado	Septic Tank followed by Upflow Anaerobic Biological Filter and Disinfection	2007	4	4	4	6
11	Barão Geraldo	UASB followed by Percolating Biological Filter and Secondary Decanter	2008	103	84	85	240
12	Mirassol	Activated Sludge using Extended Aeration and Disinfection	2009	4	3	4	8
13	Capivari I	UASB followed by an Anoxic Tank, Submerged Aerated Filter, Secondary Decanter and Disinfection	2009	71	87	88	86
14	Capivari II Water Reuse Production Plant (EPAR)	MBR Technology – Biological Reactor with Ultrafiltration Membrane: deoxygenation tank, anaerobic chamber, anoxic chamber, aeration tank and membrane tanks	2011	174	184	254	360
15	Bosque das Palmeiras	Septic Tank followed by Fixed-Bed Anaerobic Biological Filter and Upflow	2012	4	4	2	6
16	São Luis	Compact system, including a UASB Reactor, Submerged Aerated Filter, Secondary Decanter	2012	2	2	3	5
17	Nova Bandeirante	Septic Tank followed by Upflow Anaerobic Biological Filter	2012	3	3	3	7
18	Sousas	UASB followed by Physicochemical treatment, Flotation and Disinfection	2013	26	27	23	99
19	Abaeté	Chemically Assisted Primary Treatment, Submerged Aerated Media Filter, Fixed Media Submerged Aerated Filter and Secondary Decanter	2014	6	7	6	7
20	Nova América	Compact system, composed of a UASB Reactor, Submerged Aerated Filter, Secondary Decanter and Disinfection	2015	7	17	22	70
21	San Martin	Sludge Activated by batch and Disinfection	2015	19	15	14	35
22	Taubaté Mobile ETE	Chemically Assisted Primary Treatment (pac and tannin), Submerged Aerated Media Filter, Fixed Media Submerged Aerated Filter and Secondary Lamellar Decanter	2016	2	2	3	3
23	Parque da Constelações ETE	Activated Sludge with extended aeration combined with physicochemical treatment and Disinfection	2017	-	1	1	3

Analytical monitoring of all the units takes place within a predetermined routine and it is extremely important for quality control and monitoring the efficiency of Sewage Treatment Plants in the removal of pollutants. In addition to complying with prevailing environmental law, SANASA is focused on maintaining and conserving the quality of water bodies.

Chart 2 illustrates the average removal efficiency in terms of Biochemical Oxygen Demand (BOD) documented in 2018.

Chart 2. Average efficiency of ETE in terms of BOD removal.



Source: SANASA, Sewage System Management.

Table 2: Quantitative history of Sewage Pumping Stations (EEE) operated by SANASA

Specification	2016	2017	2018
EEEs under operation	88	95	98

Sewage Pumping Stations under Operation

Nº	Estação Elevatória de Esgoto	Inauguração
1	Tarcília	1973
2	Santana	1974
3	Independência	1979
4	Figueira I	1980
5	Figueira II	1980
6	Santa Isabel	1984
7	Vila Ipê	1985
8	Universitário	1988
9	Valença I	1988
10	Esplanada	1995
11	Indústrias	1995
12	Von Zuben	1995
13	Aparecidinha	1996
14	Valença II	1996
15	Arboreto da Fazenda	2001
16	CDHU – Sul	2001
17	Jambeiro I	2002
18	Jambeiro II	2002
19	Alphaville I	2003
20	Alphaville II	2003
21	Andorinhas	2003
22	Camélias	2003
23	Via Norte	2003
24	Beira Rio	2004
25	Mirian I	2004
26	Gramado	2005
27	Mirian II	2005
28	Bosque de Barão	2006
29	Cerejeiras I	2006
30	Cerejeiras II	2006
31	Novo Cambuí	2006
32	Olímpia	2006
33	Real Parque	2006
34	Amarais	2007
35	Vila Vitória	2008
36	Anhumas	2009
37	Morumbi	2009
38	Uruguai	2009
39	Pirelli	2009
40	Novo Mundo	2009
41	Nova Esperança	2009
42	Alto Taquaral	2010
43	Centro Sousas	2010
44	Chapadão Cadetes	2010
45	Chapadão Pedreira	2010
46	Jatibaia 1	2010
47	Jatibaia 5	2010
48	Santa Genebra	2010
49	Botânico 1	2011

Nº	Estação Elevatória de Esgoto	Inauguração
50	Botânico 2	2011
51	Jardim do Lago	2011
52	Joaquim Egídio	2011
53	Oziel	2011
54	Resedás	2011
55	Santos Dumont	2011
56	Sorirama	2011
57	PUCC	2012
58	Colinas das Nascentes 1	2012
59	Colinas das Nascentes 2	2012
60	Parque Prado	2012
61	EPAR 1 - CAMPINA GRANDE 1	2012
62	EPAR 2 - CAMPINA GRANDE 2	2012
63	EPAR 3 - ITAJAÍ	2012
64	Santa Cândida	2012
65	CDHU - H	2013
66	Sousas	2013
67	Jatibela	2013
68	Moscou	2013
69	Alecrins	2014
70	Azurra	2014
71	Parque Fazendinha 1	2014
72	Parque Fazendinha 2	2014
73	Páteo (Pq) Santa Fé	2014
74	Plátanos	2014
75	San Martin - quilombo	2014
76	Santa Bárbara	2014
77	Swiss Park Geneve	2014
78	EEE 2 Nova América	2015
79	EEE 4 Fernanda	2015
80	EEE 5 Itaguaçu	2015
81	EEE 7São João	2015
82	EEE 8 Campo Belo	2015
83	EPAR 4 - Recanto do Sol	2015
84	Parque das Universidades 1	2015
85	Parque das Universidades 2	2015
86	Santa Ana do Atibaia	2016
87	Parque dos Pomares	2017
88	Cittá Di Salerno	2017
89	Solar Campinas	2017
90	Satélite Iris 1	2017
91	Satélite Iris 2	2017
92	Pedra Alta	2017
93	Entreverdes 2	2017
94	EPAR 5	2018
95	Alphaville 3	2018
96	Colinas das Nações	2018
97	Parque das Cachoeiras	2018
98	Entreverdes 1	2018

System Efficiency (103-2 / 103-3)

In order to conduct an efficient and diagnostic analysis of sewage systems, SANASA combines technical, operational, commercial and financial information geoprocessed in the Geographic Information System (GIS) in the MapInfo software, where the performance indicators are formatted. The limits of each sewage system are drawn using this platform, traced according to the areas planned for sewage service in the basins. Areas contributing to the depletion of each system are also drawn. Their coverage is defined visually by the reach of the sewage collection and sewage networks that are connected to the Sewage Treatment Plants. These areas are used for managing all types of information, including defining consumers served with the sewage treatment service, allowing measures to be performed that improve the efficiency of sewage collection and treatment, including billing for the provision of services.

Collection and disposal

In 2018, the sewage collection and removal system logged 326,693 connections and 462,183 meters with a 4,413-kilometer network of collectors, interceptors and outfalls, as well as 98 Sewage Pumping Stations (EEE) and 22 Sewage Treatment Plants (ETE) and a Water Reuse Production Plant (EPAR).

Table 1: Course of networks, connections and households/meters served by sewage services from 2014 to 2018

Sewage Networks /Connections /Households/Meters	Annual				
	2014	2015	2016	2017	2018
Networks (km)	4,251	4,303	4,355	4,385	4,413
Connections (No.)	289,268	297,602	311,609	317,932	326,693
Households/ Water Meters (No.)	424,105	432,683	446,632	453,932	462,183

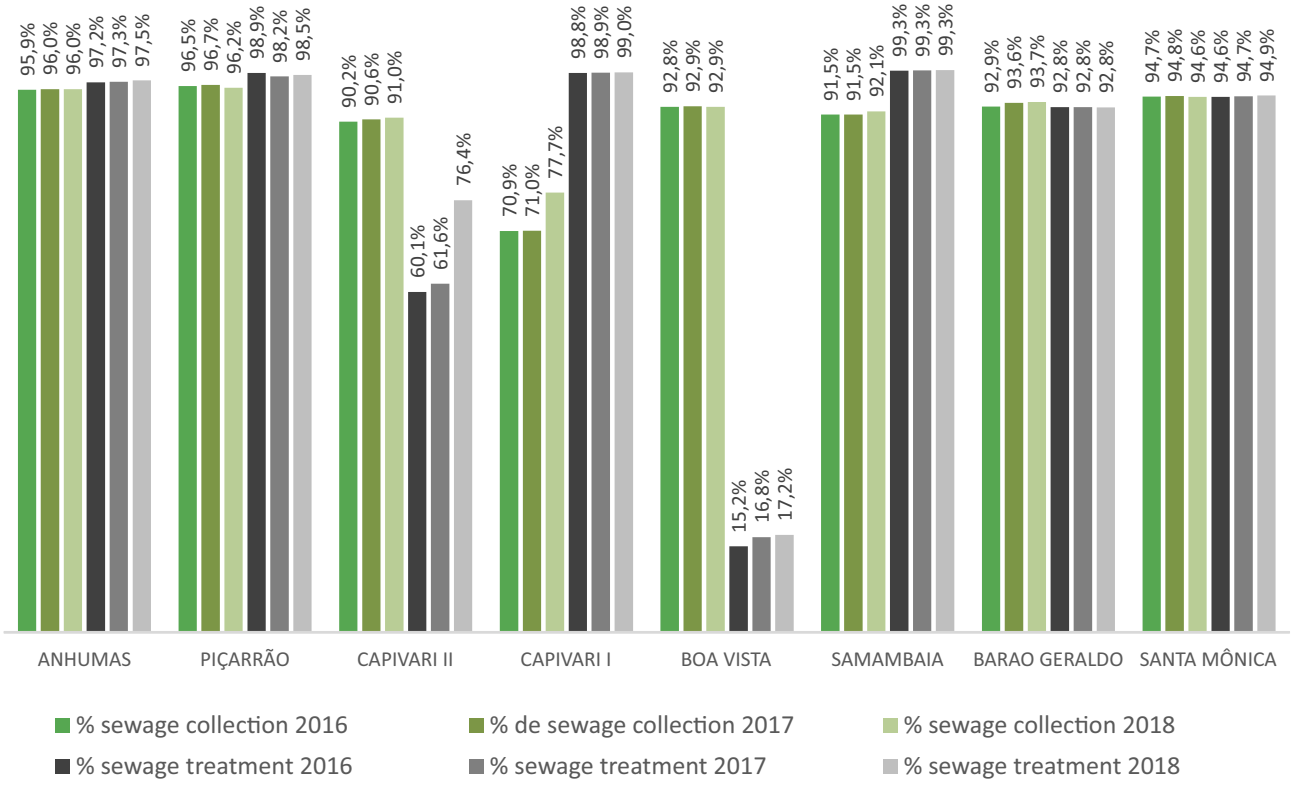
Source SANASA, Sewage System Management.

Indices of sewage services by systems

In 2018, the primary sanitary sewage systems in Campinas exhibited indices of sewage collection, removal and treatment services. The reference is the number of meters/households served for the month of December 2018.

Chart 3 shows the percentage rates of sewage collection and treatment by system. The collection index represents the percentage ratio between the number of "households with sewage connections" and the number of "households with water connection and sewage connection". The treatment index, on the other hand, represents the percentage ratio between "households with sewage connections connected to the ETE" and the number of "households with sewage connections".

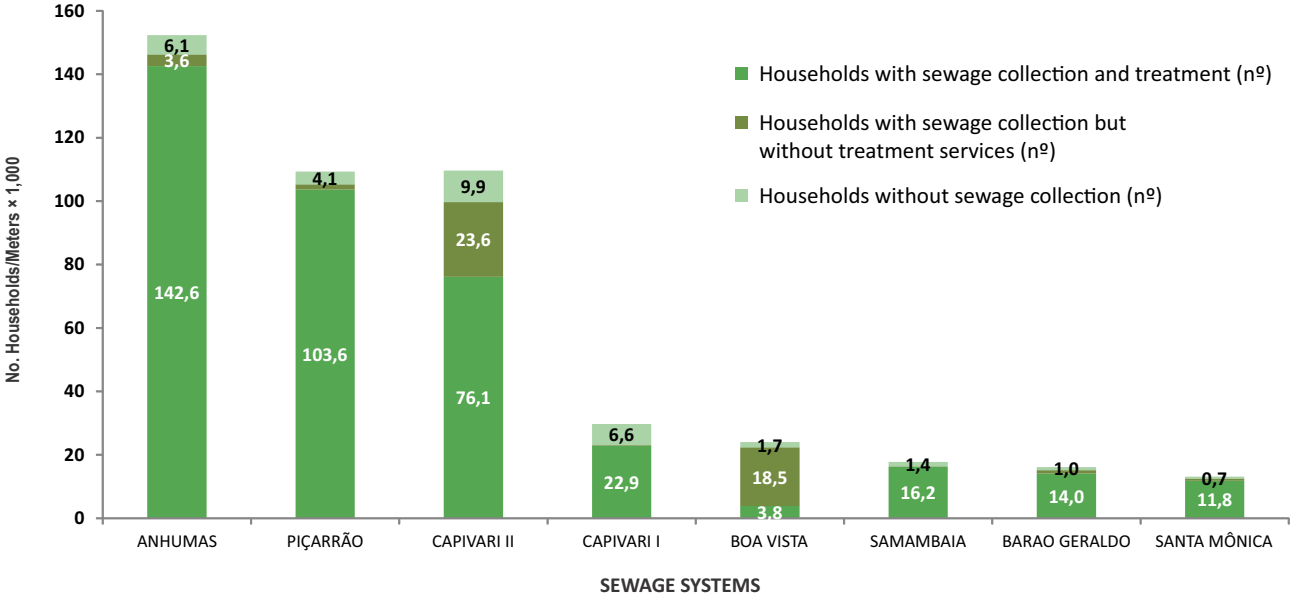
Chart 3: Sewage Collection and Treatment per Household Index



Source: SANASA, Control of Losses and Systems Management.

Chart 4 measures the number of households per systems. "Households with sewage collection and treatment" refer to those consumers who have both of these services. "Households with sewage collection but without treatment services" represent the portion of consumers that merely lack a connection to treatment, and "households without collections" are for consumers who need sewage collection and treatment services. Adding these groups together makes up the total number of current households in the systems.

Chart 4: Provision of Sewage Service per Households



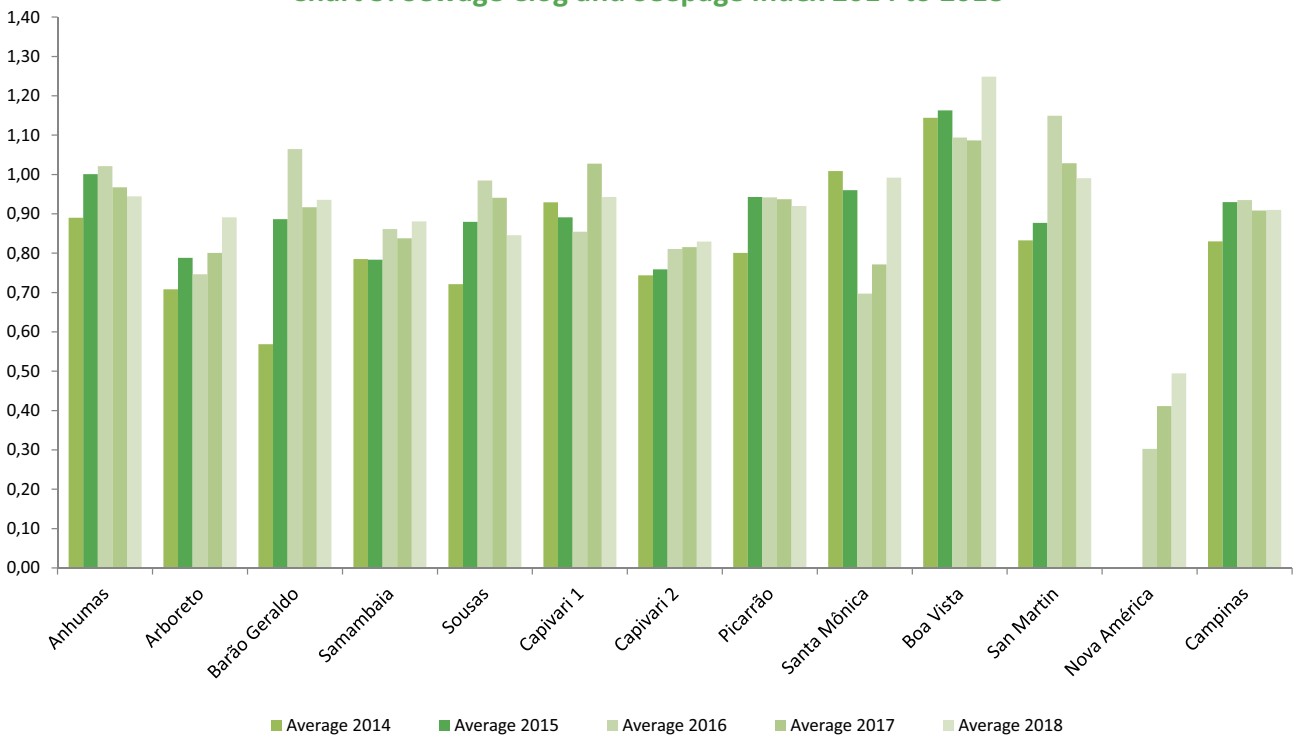
Source: SANASA, Control of Losses and Systems Management.

Sewage Clog and Seepage Rate – IREI

SANASA determines and monitors the Sewage Clog and Seepage Index (IREI), which represents the correlation between the volume of sewage measured at the inlet of the ETE and the volume of water available to consumers from the sewage catchment connected to the ETE. This monitoring identifies patterns that are not consistent with intended standards and helps to diagnose the cause. For example, stormwater seeping into sewage networks, ruptures in outfalls, new consumers entering into the system, sewage from water fraud, etc.

Chart 5 displays the average monthly IREI between 2014 and 2018 for the main systems, noting that the Alphaville System was reverted to the Anhumas System in 2018.

Chart 5: Sewage Clog and Seepage Index 2014 to 2018



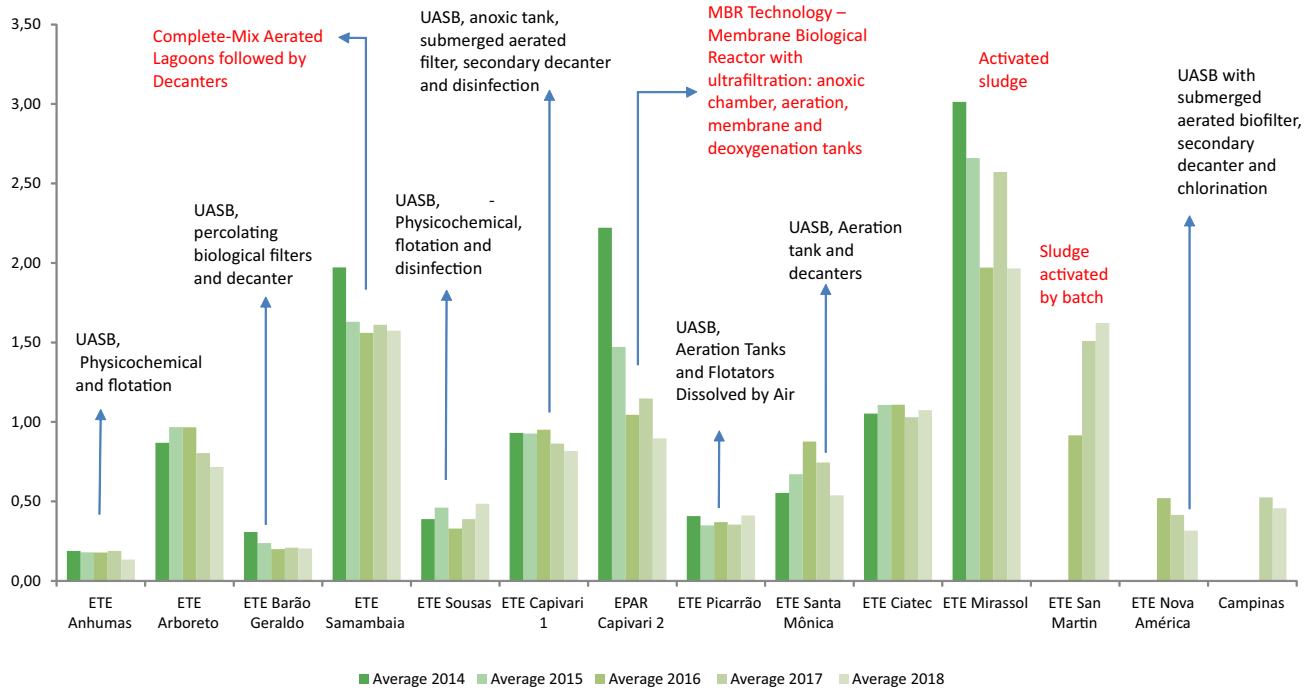
Source: SANASA, Control of Losses and Systems Management.

Energy Consumption Index – ICEE (kWh/m³)

The ICEE refers to the correlation between the consumption of electricity in the ETE and the volume of treated sewage, and is determined and analyzed monthly by the sewage system. An analysis of the ICEE permits the detection of measurement errors for the volume of sewage treated, start-up or suspension of equipment in the ETE, etc.

Chart 6 illustrates the monthly average ICEE indicator from 2014 to 2018 for the main Campinas ETE, and a description of the type of treatment applied.

Chart 6: Energy Consumption Index – kWh/m³ 2014 to 2018



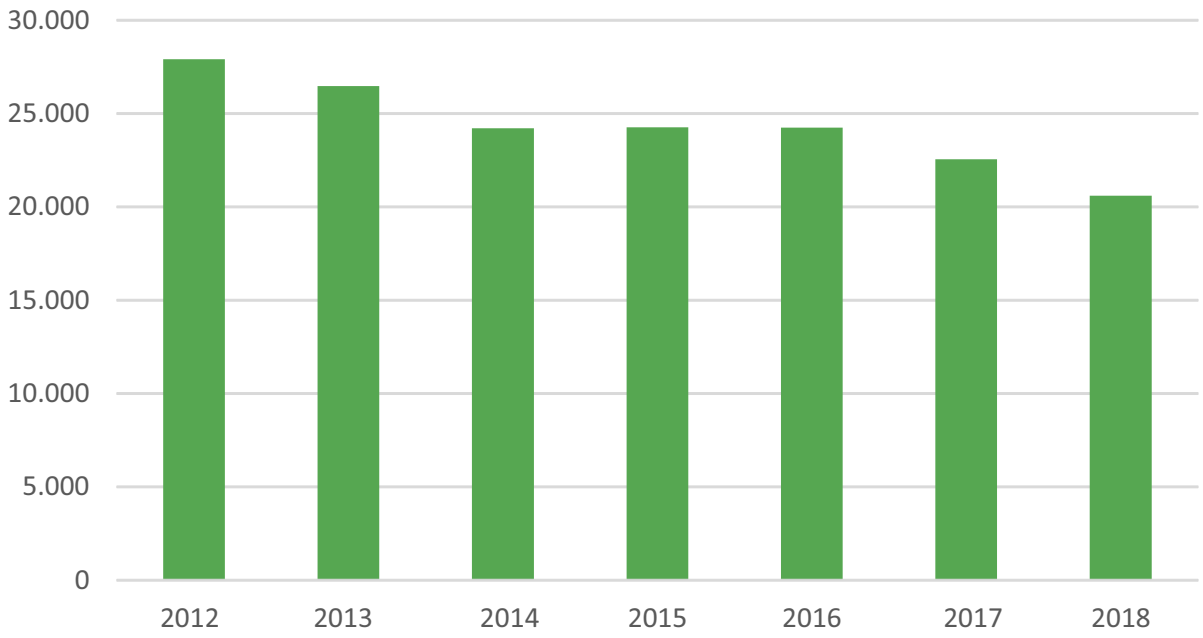
Source: SANASA, Control of Losses and Systems Management.

Through an analysis of **Chart 6**, the ETE exhibits a wide range of ICEE variation according to the treatment approach.

Amount of Sewage Corrective Maintenance

SANASA monitors the amount of corrective maintenance in the sewage systems on a monthly basis and with annual closures. These measures are performed to evaluate the working conditions of the processes and to determine any opportunities for improvements. **Chart 7** demonstrates the annual amount of corrective maintenance in sewage collection systems, performed from 2012 to 2018.

Chart 7: Corrective Maintenance for Sewage in Campinas from 2012 to 2018

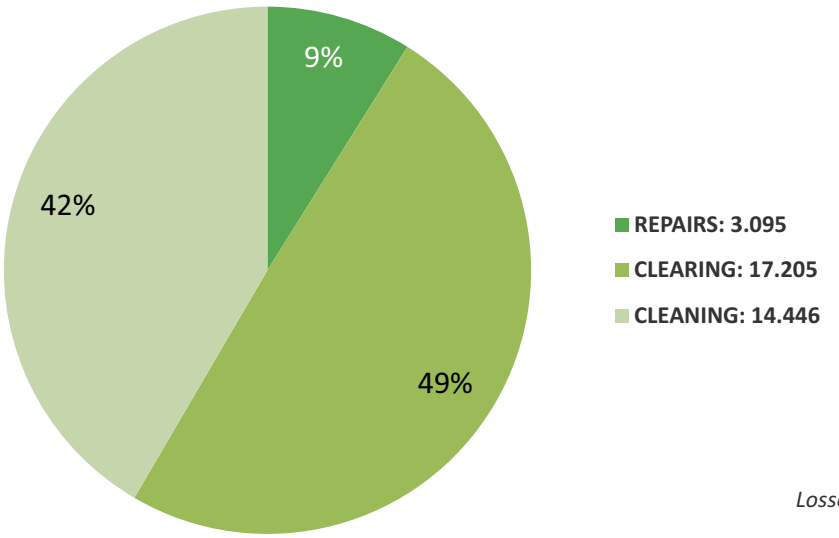


Source: SANASA, Control of Losses and Systems Management.

Chart 7 reveals a downward trend in 2012 and 2013. The indicator stabilizes by 2017, when it decreases again by around 7% to 22,539 maintenance events due to the use of waterjets for cleaning and clearing the collection networks. A downward trend was seen in 2018, and the indicator decreases by about 9%.

Chart 8 expresses the percentage distribution of the types of services performed in corrective sewage maintenance in 2018. Each maintenance event can generate up to six services in the sanitary sewage infrastructure, and 91% of the services performed are clearing and cleaning networks.

Chart 8: Total Services Performed in 2018 – 34,746



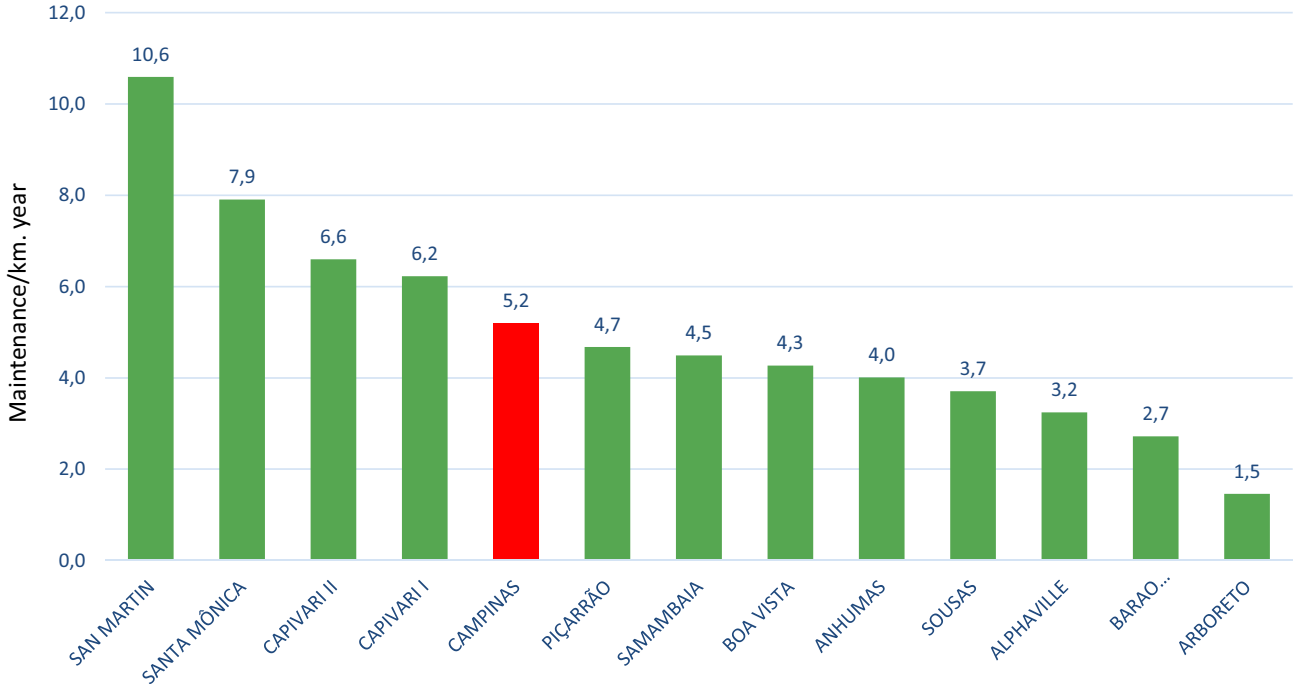
Source: SANASA, Control of Losses and Systems Management.

Sewage Corrective Maintenance Index – IMCE

The IMCE is calculated on an annual basis. The index refers to the ratio of the number of corrective sewage maintenance events performed in the year through a sum of the sewage network extensions, calculated in kilometers. Analyzing and monitoring the IMCE allows the effectiveness and efficiency of corrective maintenance performed in the collection networks to be evaluated, as well as highlighting systems that have a higher incidence of interventions.

Chart 9 shows the IMCE, by sewage systems for 2018, in which the systems with the highest IMCE values can be compared and selected, allowing corrective actions to be earmarked for the selected systems. The red bar in the IMCE is calculated for the sewage system of Campinas.

Chart 9: Corrective maintenance for sewage systems index



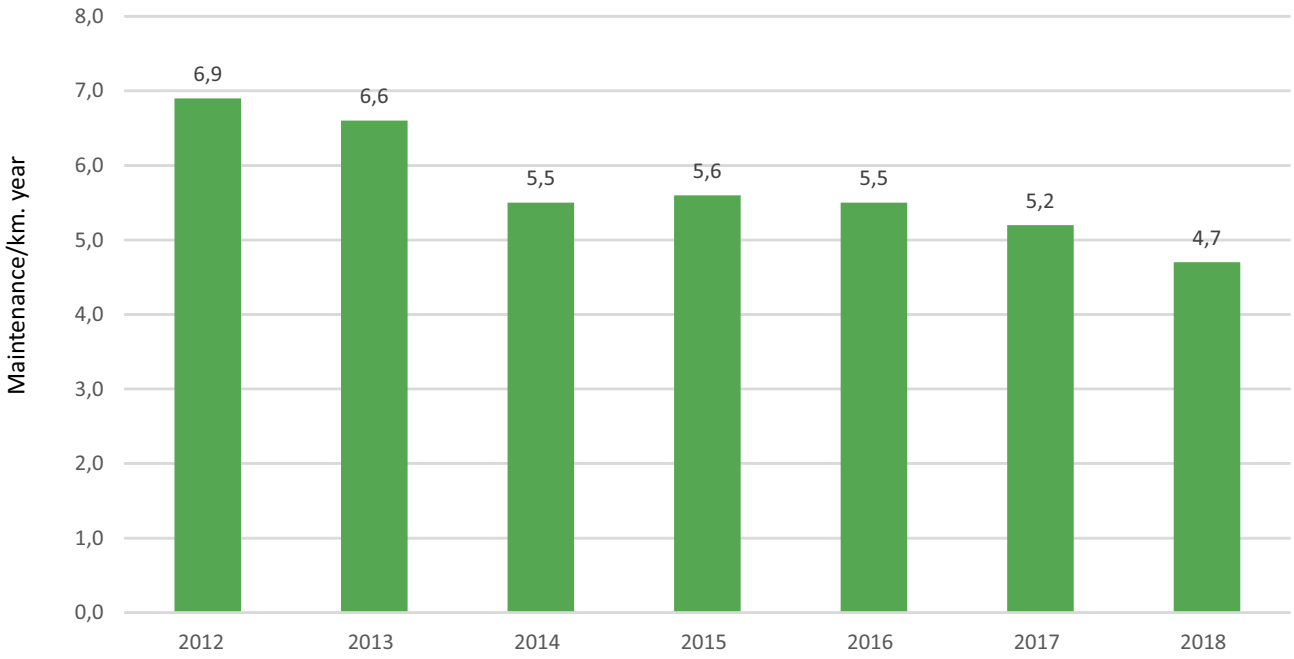
Source: SANASA, Control of Losses and Systems Management.

Chart 9 discloses that the San Martin system has the highest rate of maintenance for the Campinas network extension and the Arboreto system has the lowest index.

The process for analyzing the IMCE permits situations to be pointed out where there is a recurrence of corrective maintenance due to misuse of the collection network by residents. SANASA works with the local community by applying measures that educate on individual and collective interactions in the sewage system, increasing the chances of mitigating the negative impacts and enhancing the positive impact for greater operational efficiency. This activity is conducted through the Sanitation Water Cycle program (CASA), outlined in the **Local Community** chapter.

Chart 10 illustrates the variation of the IMCE in Campinas from 2012 to 2018. The indicator can be seen trending downward over the years because of operational improvements in the collection system.

Chart 10: Corrective maintenance for sewage systems in Campinas 2012 – 2018



Source: SANASA, Control of Losses and Systems Management.

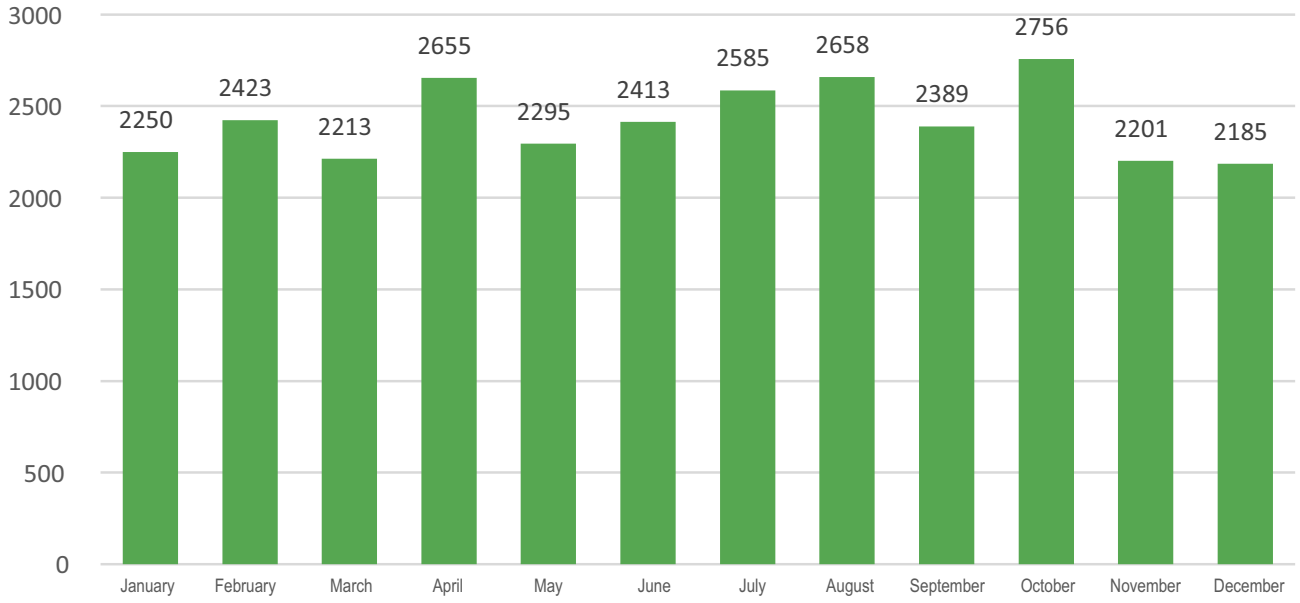
So that the proper functioning of the sewage collectors can be managed at a more detailed level, SANASA performs an analysis of the operational performance of the sewage collection networks through IMCE evaluations by address. Excessive corrective maintenance on certain sections of the network point to frequent operational problems like blockages and leaks. These operational issues can be caused by a number of factors, such as low slope of a section in the network, stormwater in the networks, improper use of collectors, the age of materials, type of material used for the pipes, changes in the estimated hydraulic system. Thus, like the collecting networks, corrective maintenance is georeferenced in the MapInfo platform. Maintenance and network extension are added up by address, with their IMCE calculated through this method. Next, addresses with the highest IMCE are selected to analyze and diagnose recurring operational problems in its network.

SANASA performs technical surveys of installations at residential, commercial, industrial and public buildings to prevent possible defects that cause sewage to backup into the property, as well as water supply issues.

Inspection measures:

- Check the connection of the property in the sewage collection system and if the water network complies with SANASA standards;
- Educating the public about the conscious use of sewage. This measure ensures that the installations on the premises and the use of sewage ducts are preserved in order to prevent sewage from backing up into the property and disrupting the network;
- Inspect the property in order to identify if the water and sewage installation on the premises comply with SANASA standards and current legislation. This measure is performed to guarantee water supply by conducting inspections to ensure that the network is functioning properly. An evaluation is also performed to make sure that the sewage system is operating properly.

Chart 11: Technical inspections conducted at properties



Source: SANASA, Control of Losses and Systems Management.

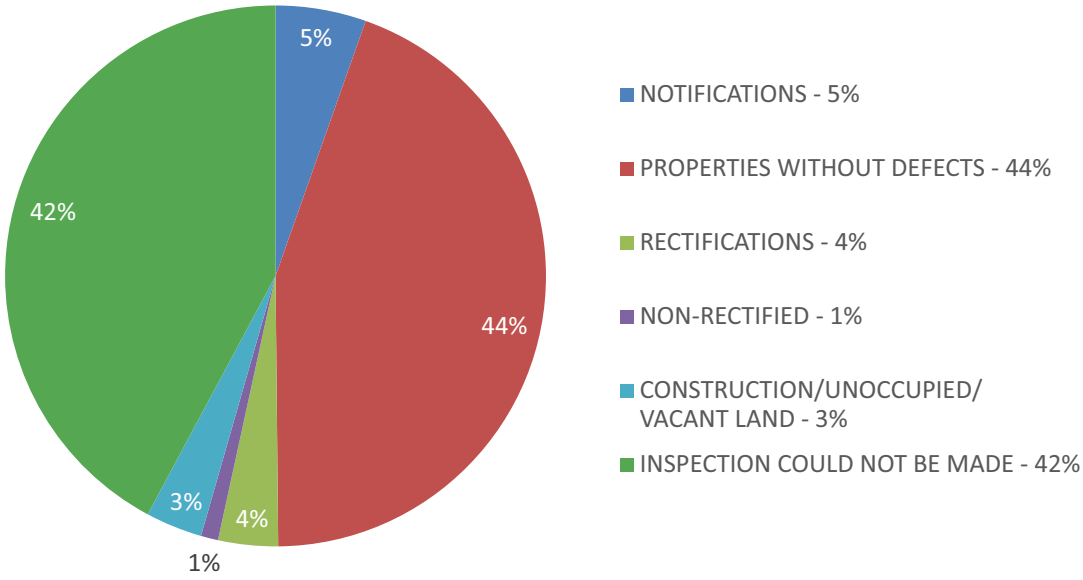
2018 Results

In 2018, 4,307 people were involved in the conscious disposal of sewage through activities devised by the Water Cycle in Sanitation Program (CASA), applied specifically through the Mobile Laboratory.

Clean-up of water bodies

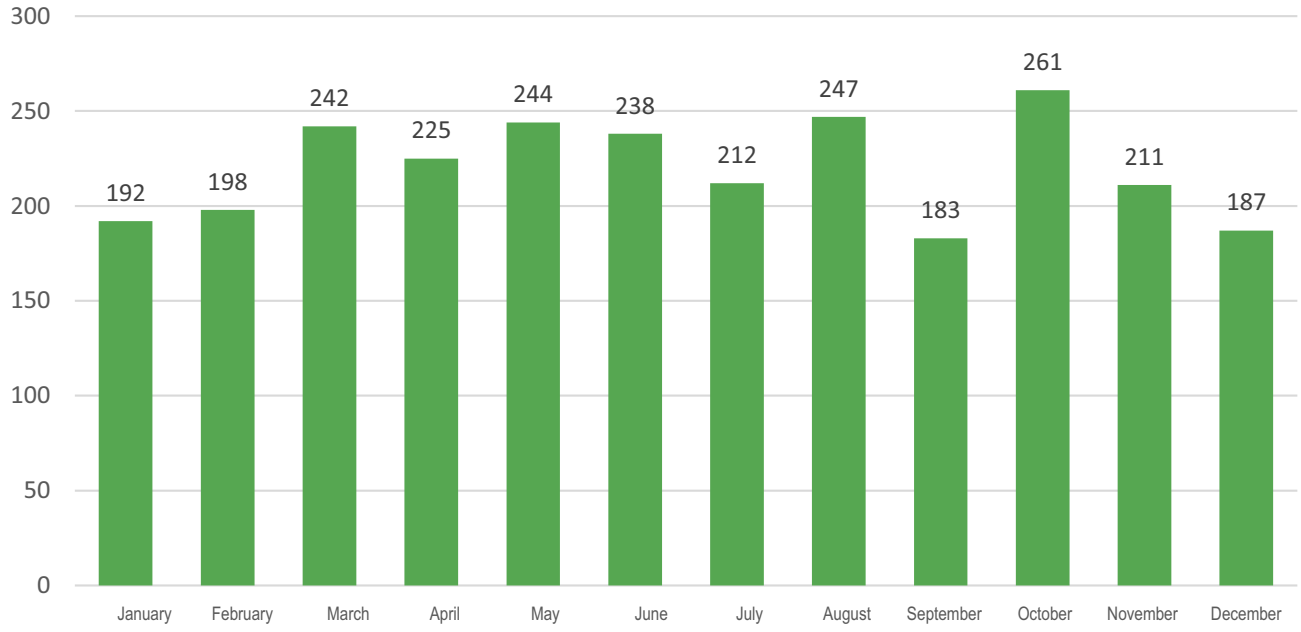
29,834 technical inspections were performed in 2018. Of these, 2,640 were inspections for issuing usage permits/certificates of completion and 27,194 technical inspections for the Clean-up of Bodies of Water program. Results of the program are outlined in **Charts 12** and **13**.

Chart 12: Results from Technical Inspections conducted at properties



Source: SANASA, Control of Losses and Systems Management.

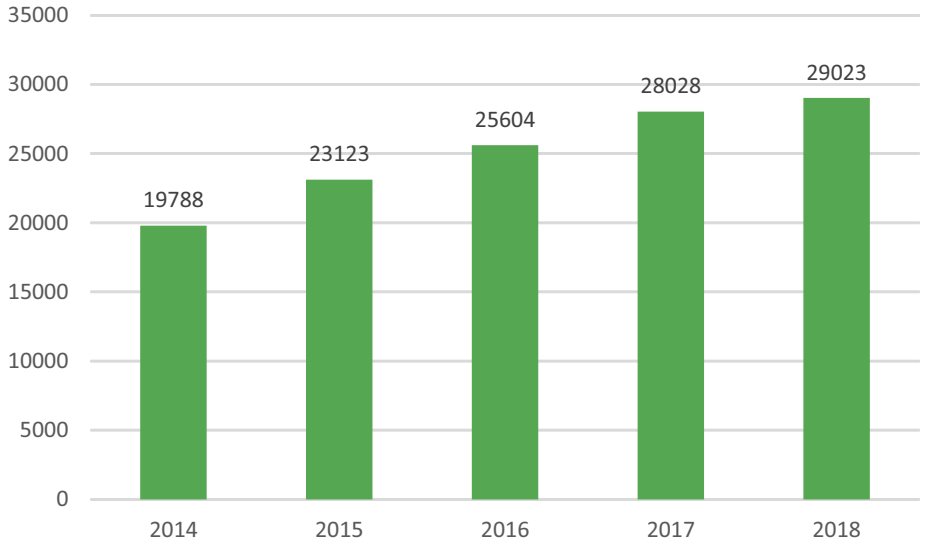
Chart 13: Results from Technical Inspections conducted at properties – Usage permit and certificate of completion for construction



Source: SANASA, Control of Losses and Systems Management.

In 2018, the Clean-up of Bodies of Water program went through a restructuring process, pushing improvements that resulted in an increase in the number of technical inspections, displayed in **Chart 14**.

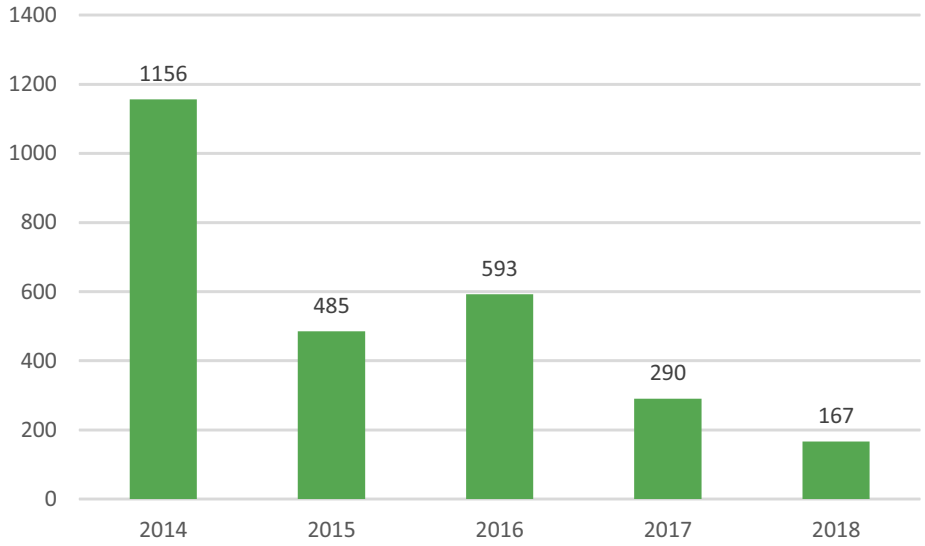
Chart 14: Inspection program to clean-up bodies of water from 2014 to 2018



Source: SANASA, Control of Losses and Systems Management.

Chart 15 represents the number of inspections performed to later the category of the property, based on a survey conducted in SANASA's corporate system in 2014. The decrease in the amounts altered is due to the measure taken by the Supervision and Conscious Use of Networks and Connections sector.

Chart 15: Alterations in the annual category from 2014 to 2018



Source: SANASA, Control of Losses and Systems Management.

Technical inspections were made to 48.2% of existing consumers. For commercial or residential buildings, the inspection takes place in the common area of a building and only in the water meter measuring collective use.

ENVIRONMENTAL MANAGEMENT: LICENSING (102-11)

Environmental Licensing is an instrument from the National Environmental Policy (Law 6,938/1981) and is regulated by Federal Decree No. 99,274 of June 6th, 1990. Licensing is intended for preserving, improving and restoring life-giving environmental quality in order to ensure conditions that favor socio-economic development, national security interests and the protection of the dignity of human life.

SANASA supports Environmental Management in its governance structure. This endeavor is responsible for assessing and managing the environmental impacts of the company's operations and for complying with prevailing environmental laws. The company presented a Risk Management Plan in 2018 to address environmental licensing. Its purpose was to assess the risks of hazardous products used in water treatment in order to comply with the technical requirements requested for renewing operational licenses involving Water Treatment Plants. The plan will follow Cetesb's review and approval steps up to the end of 2019.

Protected Green Areas

This is a set of exclusive protected spaces within the city of Campinas, including ecological macro-corridors, green/ecological hubs, parks, greenways, protected areas, permanent preservation and protection areas, legal reserve areas and areas for remnants of native vegetation. SANASA uses the Protected Green Areas to obtain consent for the spaces where plantings can be made in compliance with the Environmental Recovery Commitment Agreement and/or the Environmental Commitment Agreement.

Terms of the Environmental Commitment Agreement

SANASA's strategy is broadly defined as increasing sanitation services and protecting the environment in an effort to address public health and improve the quality of life for the people in Campinas. This prescribes a commitment by the company in applying the environmental agencies of the State of São Paulo, through Cetesb and the Municipal Department of Ecology, Environment and Sustainable Development of Campinas (SVDS), for environmental licenses and respective authorizations for instituting and operating their facilities. The company has taken all the necessary measures to comply with legal and/or regulatory determinations in order to reduce the environmental impacts of their activities.

Map of Stakeholder for Environmental Licensing

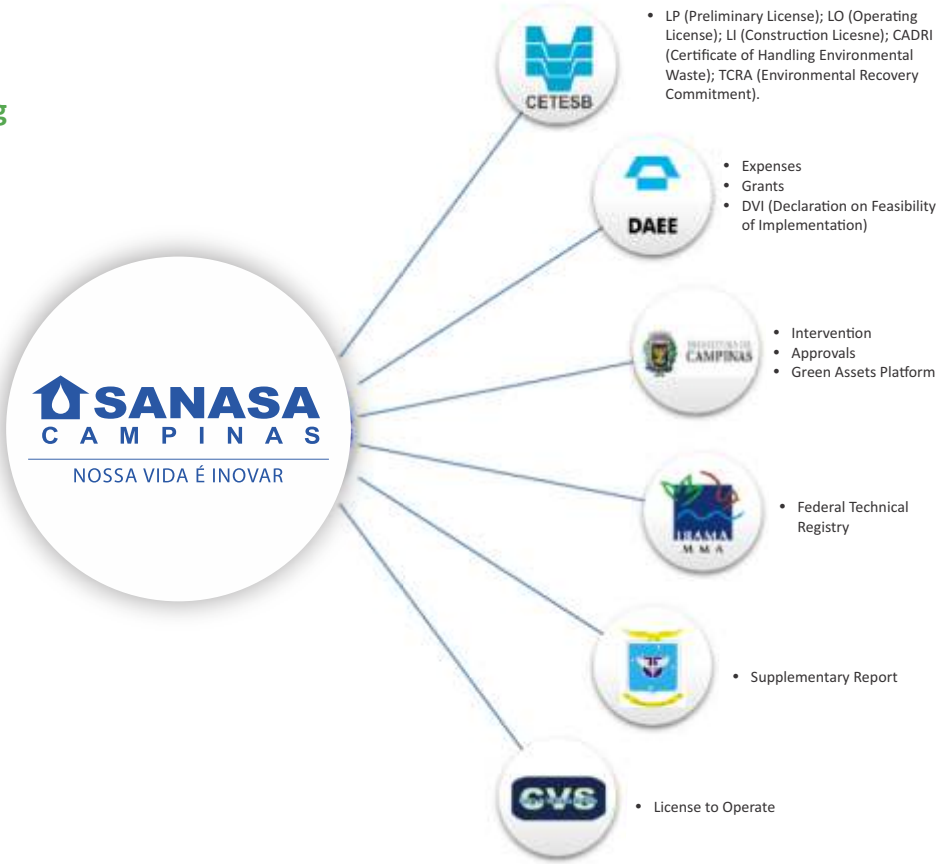


Table 1: 2018 Licenses

Agency	Objective	Quantity
SVDS	Municipal Technical Examination	1
CETESB	Preliminary License	5
	Installation License	3
	Operating License	1
	Preliminary, Installation and Operating License	15
	Renewal of Operating License	11
	Environmental Waste Handling Certificate – CADRI	1
	Authorization for intervention in a permanent protected area	13
	Authorization for native vegetation suppre ssion	4
	Authorization for felling isolated trees	7
	Authorization for Fire Fighting Training	2
DAEE	Project Implementation Feasibility Statement – DVI	1
	Concession of Right to Use (Catchment and Dumping)	
	Concession of Right to Interference (Layin g Pipe and Crossing)	2
	Waiver of Concession (Deforestation, Air protection, Existing aerial crossing, Aerial crossing installed at a bridge or manhole, Underground crossing)	10
	Concession Renewal	16
	Rectification, Withdrawal and Transfer (for all typ es)	02
TOTAL		94

Source: SANASA, Environmental Management.

HUMAN AND INTELLECTUAL CAPITAL

HUMAN AND INTELLECTUAL CAPITAL

SDG5 – Achieve gender equality and empower all women and girls

5.5 – Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life

SDG8 – To promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

8.5 – Achieve full and productive employment and decent work for all women and men by 2030, including for young people and persons with disabilities, and equal pay for work of equal value

8.6 – By 2020, substantially reduce the proportion of youth not in employment, education or training

8.7 – Take immediate and effective measures to eradicate forced labor, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labor, including recruitment and use of child soldiers, and by 2025 end child labor in all its forms.

8.8 – Protect labor rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants and those in precarious employment

People Management (103-1 / 103-2 / 102-8)

SANASA's technical staff is comprised of 2,200 professionals with expertise in a variety of areas, including engineering, environment, health, scientific research and technology, business, management, and operations. 81% of the employees are male, justified by the nature of the business, although there is no gender orientation for operational positions in the selection process. Human resources management policy offers salaries that correspond to the position and duties, but does not discriminate based on gender.

Table 1: Jobs by age and gender

Age group	2018			
	Male	%	Female	%
Up to 30 years old	200	9%	50	2%
Between 31 and 50 years old	950	43%	215	10%
Over 50 years old	631	29%	154	7%
Total by gender	1781		419	
Grand total	**2200**			

Table 2: Employees

Staff	2018	
	Male	Female
Employees	1781	419
Trainees*	28	26
Youth interns/trainees *	36	36
Total by gender	1845	481
Grand Total	**2326**	

** Under fixed -term contract*

Table 3: Diversity (405-1 / 405-2)

BOARD OF DIRECTORS MEMBERS		2018	
GENDER	MALE	7	100%
	FEMALE	0	0%
	TOTAL	**7**	
AGE GROUP	Under 30 years old	0	0%
	30 to 50 years old	2	29%
	Over 50 years old	5	71%

MEMBERS OF THE EXECUTIVE BOARD		2018	
GENDER	MALE	5	100%
	FEMALE	0	0%
	TOTAL	**5**	
AGE GROUP	Under 30 years old	0	0%
	30 to 50 years old	1	20%
	Over 50 years old	4	80%

MANAGERS		2018		2017		2016	
GENDER	MALE	23	74%	21	72%	20	69%
	FEMALE	8	26%	8	28%	9	31%
	TOTAL	31		29		29	
AGE GROUP	Unde r 30 years old	0	0%	0	0%	0	0%
	30 to 50 years old	9	29%	9	31%	9	31%
	Over 50 years old	22	71%	20	69%	20	69%

COORDINATORS		2018		2017		2016	
GENDER	MALE	69	68%	66	67%	61	65%
	FEMALE	33	32%	32	33%	33	35%
	TOTAL	102		98		94	
AGE GROUP	Under 30 years old	0	0%	0	0%	0	0%
	30 to 50 years old	51	50%	54	55%	48	51%
	Over 50 years old	51	50%	44	45%	46	49%

There is no difference in salary between men and women holding the same position, whether it is management, administrative or operational.

Hiring (401-1 / 103-2)

SANASA hires through a public exam. These tests guarantee that there is no discrimination based on color, race, gender or religion. Direct hiring only takes place in the case of advisors to support managers in technical matters. All hirings observe the Consolidation of Labor Laws (CLT) system.

Voluntary departures may be due to retirement or resignation, while dismissals at the company's initiative take place after just causes have been assessed through a specific committee. Only advisors can be dismissed through unilateral decision.

Table 4: New employees 2015 – 2018 (401-1)

YEAR	Total Employees	NEW HIRES				
		Age Group			Gender	
		Less than 30 years old	30 -50	Over 50 years old	Male	Female
2018	87	45	37	5	69	18
2017	30	11	11	8	26	4
2016	16	10	5	1	11	5
2015	64	22	34	8	54	10

Table 5: Employee turnover 2015 – 2018 (401-1)

YEAR	Age Group			Gender	
	Less than 30 years old	30 -50	Over 50 years old	Male	Female
2018	8	17	37	56	6
2017	15	10	78	91	12
2016	20	6	38	55	9
2015	16	15	23	46	8

Career transition (404-2 / 103-2)

SANASA offers its permanent employees an Incentive Retirement Plan, based on the Collective Bargaining Agreement with the union. Career employees are eligible at the time of their retirement, in addition to permanent disability retirement and those who have completed five years of service with the company. The program offers compensation that is equivalent to eight nominal salaries, without any additional benefits to the duty performed at the time of leave. The employee also receives a 40% penalty on the Government Severance Indemnity Fund for Employees (FGTS) balance for severance pay.

Stakeholder involvement in compensation (102-37 / 102-41 / 102-43)

Labor Unions for each area and the Executive Board meet annually to deliberate over the collective agreement. Discussions take place in April and are effective as of May 1st. Social clauses are discussed and revised every two years. The current Collective Agreement is valid from 2018 to 2020. SANASA offers Profit Sharing (PLR) to all its employees. An Addition for Length of Service (ATS) is provided that corresponds to 1% of the salary per year worked in the company. The Collective Bargaining Agreement covers 100% of employees.

Benefits (401 -2/403-4 / 103-2)

The Collective Bargaining Agreement signed between SANASA and the union guarantees its employees social, health and safety benefits in addition to those already provided for by Brazilian law. These benefits are offered to all employees, regardless of weekly hours.

Scholarships
The scholarship program is granted for normal courses at the technical (high school), undergraduate and postgraduate level in accordance with the areas of concern at the company.

Maternity Leave
Maternity leave amounts to 180 days in compliance with Municipal Decree No. 17,707/2010.

Breast Feeding
Breastfeeding employees are entitled to a reduction of two working hours per day during the breastfeeding period. This guarantee extends for the first twelve months of the baby's life.

Maternal Employment Guarantee/Salary
From the date of the child's birth, the mother is

guaranteed her employment and/or compensation equivalent to salary for a period of 210 days.

Paternal Employment Guarantee/Salary
From the date of the child's birth, the father is guaranteed his employment and/or compensation equivalent to salary for a period of 90 days.

Sophisticated Exams
Sophisticated exams that are not covered by medical insurance and are not available in the municipal health network, they are paid for by the company.

Addition of ETE (Sewage Treatment Plant) and Reading Agent
Benefit granted to employees of these areas at the company.

Assistance for people with special needs
Granted to a spouse or each child with special needs.

Dental Clinic
Dental Care is offered at the company's headquarters and extends to employees' dependents.

Subsidies, according to salary range, for:
a. Medication purchases
b. Purchasing school material
c. Speech therapists, psychologists and physiotherapists
d. Eyeglasses (lens and frame)/Contact Lenses

Christmas Basket
Granted as an additional credit card in the Food Voucher card.

Supplement for length of service

Attendance Incentive Award

Profit Sharing

Funeral Allowance

Daycare Allowance

Medical Assistance to Employees and their Dependents

Hospital Stays for Occupational Accidents

Drug Recovery Program

Supplement for Illness Allowance or Accidental Illness Allowance

Training and Development (404-1 / 404-2)

22,438 hours of training were provided for employees from operational and administrative areas in 2018 with an average of 10.20 hours per person. Of this total, the average training hours for women was 2.99 hours and 11.90 hours for men. The reason for this discrepancy is due to the fact that the staff is mostly made up of men working in the company's operational areas.

SANASA encourages its employees' personal and professional development by conferring subsidies to cover expenses arising from regular courses at the high school/technical, undergraduate and postgraduate level, provided that the course is directly related to the activities performed and the employee's area of expertise.

Maternity/Paternity Leave (401-3)

Table 6: Maternity and Paternity Leave 2016 – 2018

Maternity and Paternity Leave	YEAR			GENDER	
	2018	2017	2016	Female	Male
Total number of employees entitled to maternity/paternity leave	2200	2170	2244	420	1780
Total number of employees that took maternity/paternity leave	63	58	51	11	52
Total number of employees who returned to work after taking maternity/paternity leave	63	58	51	11	52
Total number of employees who returned to work after a maternity/paternity leave and continued 12 months after they returned	63	58	51	11	52
Return to work and retention rate of employees on maternity/paternity leave	100	100	100	100	100

Freedom of Association (407)

During the time that a new employee integrates into the company, they are notified on the right to union membership and its benefits. The employee also receives adequate information on the union annuity rate, corresponding to 1.5% deducted from the salary.

Health and Safety on the Job (403 / 103-1)

The nature of SANASA's activities requires special attention to the health and safety of its employees. The complexity of monitoring comes out of the decentralized activity throughout Campinas, characterized in the treatment plants and sewage pumps; water catchment, treatment and distribution; maintenance services; and water and sewage piping networks that run throughout the municipality and handled as a public environment. Control over processes in these locations is subject to climate, vehicle traffic, wild and venomous animals, and is where preventive action becomes significantly limited. Consequently, the company needs to maintain a permanent discipline in the effectiveness and training of its employees in order to ensure everyone's well-being while minimizing the risk of occupational accidents.

SANASA's Occupational Health Service works in conjunction with the Occupational Safety Sector in order to investigate accidents. It is intended to reduce the incidence and severity of accidents, regardless of whether the employee is or is not on leave. SANASA has adopted the NBR14280 guidelines and applied them in this process. This includes identifying the types of damage, the nature of the accident and applying the related indicators, revealed in the following tables.

SANASA's Occupational Health Service follows the guidelines of NR7 through the Occupational Health Medical Control Program. The document is drafted from an analysis of the Environmental Risk Prevention Program provided by the Occupational Safety Area.

Work-related illnesses (403-3 / 103-2)

Risks that exist in work-related activities are generally limited to:

- **Chemicals:** gases (H2S, methane, chlorine and ammonia), dust (cement, coal, lime, wood dust, metal sanding for parts and equipment) and metal fumes (welding);
- **Physical:** noise (hammers, water catchment motors and generators, machinery and equipment), Hand and arm vibrations (pneumatic hammer, sander, asphalt cutter and power screwdriver) and whole body (backhoe loader, hydraulic excavator, wheel loaders, sludge revolver);
- **Biological:** sewers, galleries and tanks, and at the medical clinic.

Table 7: Occupational illnesses 2016 – 2018

	2016		2017		2018	
	Male	Female	Male	Female	Male	Female
Occupational Illness (%)	2.2	00	00	00	00	00

Occupational illnesses found in 2016 occurred in the SANASA Maintenance Operational District – DOMASAS sector due to water and sewage network repairs, water and sewage connections, hydrant installation and overall repairs. Employees from this sector work on the streets and use shovels, picks and hammers, making them susceptible to illnesses coming from orthopedic issues. The personnel management policy has instituted strict controls over vaccines for DOMASA employees and for other employees based on their exposure and work performed at Sewage Treatment Plants.

Table 8: Vaccines administered 2015 – 2018

VACCINES ADMINISTERED PER YEAR	2015	2016	2017	2018
Tetanus shot	148	261	37	155
Typhoid fever	139	199	-	312
Hepatitis A	57	22	-	30
Yellow fever campaign	-	-	547	-
TOTAL PER YEAR	**344**	**482**	**584**	**497**

Accidents and injuries on the job (403-2 / 103-2)

Continuous monitoring of injury rates helps in preventing and even strengthening caution and training. The following table exhibits work accidents in 2016, 2017 and 2018. Note a significant occurrence of accidents involving animals, mostly caused by bites from attacks by domestic or stray dogs. Most of these accidents happen to reading agents. These employees work around homes to measure water consumption by the water meter. The reading agents receive training on procedures and cautions for this activity and are also submitted to mandatory vaccinations.

Accidents and injuries on the job (403-2 / 103-2)

	2016		2017		2018	
	Male	Female	Male	Female	Male	Female
No. of accidents without absences	08	10	03	13	09	10
No. of accidents with absences	70	02	63	00	60	02
No. of Casualties	00	00	01	00	00	00
Frequency Rate (%)	16.93	2.60	14.32	2.82	14.97	2.60
Severity Rate (days)	3069		2673		5010	
No. of lost days	1768		1540		2886	
Total Accidents in the year	90		79		81	

There was one fatality in 2017 due to human error from an unsafe act. Since that time, the company has revised the procedures and has applied efforts toward improving communication and training in workplace safety.

Evaluation and management: Occupational Health (103-3)

- Monitoring is updated daily to track periodic mandatory medical examinations that verify the ability to work and any restrictions. The assessment is sent to the Occupational Safety area to reinforce measures and procedures.
- Tighter control over the dates for periodic examinations;
- Real-time communication with managers to perform the medical examination, reporting when an employee is found to be unfit for work or temporarily restricted;

Evaluation and management: Occupational Safety (103-3)

- Greater accuracy in clearing personnel for training in risky activities after the medical confirmation;
- Managers' involvement in being cautious when working at heights and in confined spaces;
- Monitoring work at heights by the Occupational Safety area;
- Engagement with the CIPA for more active and participative work in accident prevention.

Absenteeism (403-2 / 103-2)

Absenteeism because of illness in 2016, 2017 and 2018 are defined in the table below:

Table 10: Absenteeism 2016 – 2018

Absenteeism because of illness	2016	2017	2018
	Days / %	Days / %	Days / %
Company leave (up to 15 days)	2459 / 0.43	4033 / 0.70	5864 / 1.02
Illness allowance (after 15 days)	13463 / 2.34	11859 / 2.06	10843 / 1.88

Health and safety committees (403-1 / 103-2)

SANASA provides 37 Internal Accident Prevention Commission (CIPA) teams, which represent and act in the coverage of 100% of the company's employees. Training in health and safety on the job is regular and permanent. The annual Prevention of Accidents on the Job Week (SIPAT) is held annually, covering all areas of the business. The company also works on training a fire brigade, who are duly trained to act in emergencies and in eliminating fire hazards, with 316 employees participating in these activities.

SOCIAL AND RELATIONSHIP CAPITAL

SOCIAL AND RELATIONSHIP CAPITAL

SDG6 – Ensure availability and sustainable management of water and sanitation for all.

6.1 – By 2030, achieve universal and equitable access to safe and affordable drinking water for all

6.2 – By 2030, achieve access to adequate and equitable sanitation and hygiene for all, and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

LOCAL COMMUNITY (413)

SANASA in the Community (413-1 / 103-1 / 103-2)
SDG 6.1 – SDG 6.2

SANASA works with the local community in applying commitment activities that can encourage consumers to maintain a more responsible attitude on using the system. Through the SANASA Community program, the company defines a school of thought on sanitation as an individual and collective right, including an essential public service that interacts with other public policies. The company also establishes measures that foster community participation, publicizes best practices for using the services offered, promotes the integration between the company and the community and evokes environmental responsibility.

The socio-environmental activities that are implemented focus on prompting users to understand their role as a modifying agent in the environment while suffering from the direct (but not necessarily immediate) impacts from this modification. These activities are done under the premise of evoking environmental responsibility and stimulating an understanding of transformative agents, protecting the environment, and help participants account for the interactions between human beings and the unquestionable certainty that everyone is part of a common community.

The Social Customer Care Service is the area responsible for the SANASA Community Program. These endeavors are applied using an interdisciplinary team and proprietary methodology to perform its measures, aligned with municipal public policies. But, whenever required, service providers are hired for specific or complementary activities when it is apparent that SANASA does not have a professional on its staff that can perform a specific activity.

These campaigns are made available to the entire municipality. When they are implemented in neighborhoods that receive financed sanitation projects, with funds from the federal government released through Caixa Econômica Federal (Federal Bank)/FGTS, they are tracked and monitored by the financial agent and, in this case, all measures known as a “Social Work Project” (PTS).

These campaigns are mainly carried out in partnership with local leaders and with public and private facilities used by the population from a number of areas (education, health, social assistance), adapted to meet the characteristics of each group. Partnerships are an essential strategy for planning and implementing actions in the territory as a whole and vital for engagement by the local community.

All the activities implemented are evaluated by participants through the proper form that includes a specific field to add written comments. Some of them are also tracked through indicators and goals. This allows the social technical team to adapt strategies and methodologies whenever this need becomes evident.

Projects undertaken in 2018 (413-1 / 103-2)

In 2018, the SANASA Community Program held campaigns in regions of the city where sanitation construction projects were initiated. By the time these projects are completed, the social work measures will receive investments of R$4.2 million.

Works and regions:

- A Sanitary Sewage System Project (SES): launched in August 2015 in the Solar de Campinas, Parque dos Pomares and Satélite Íris II and III neighborhoods, its schedule was extended in 2018 with the inclusion of two new neighborhoods, namely Núcleo Residencial Santo Antônio and part of Jardim São Domingos.
- SANASA Project – A Look Beyond the Accounts: initiated in August 2018 and conducted in parallel with the implementation projects for the water supply system in six locations in the city.
- SANASA – Join this Network: launched in August 2018 and conducted in parallel with the implementation projects for the sewage system in 18 locations around the municipality.

The "SANASA – A Look Beyond the Accounts" and "SANASA – Join this Network" projects have a 44-month schedule and have presented a considerable challenge for the social technical staff. The community served is very diverse, with different social, economic and cultural conditions. They will benefit upper-class neighborhoods all the way to neighborhoods in need.

However, through socio-educational activities and guidance-related approaches, the work done by the social staff will assist everyone, adapting their dynamics according to each group's circumstances. The proposition is to avoid massification so that the perception on the topics addressed is as clear as possible. The concern is over letting the local community know – the beneficiary of the projects along with their surroundings – about the importance of sanitation for promoting health and preventing disease, with emphasis on the advantages of providing services. The goal is to also prevent operational and environmental problems arising from the misuse of sanitation systems, with special attention paid to the damage and disruption that these problems cause to society itself.

Socio-territorial diagnosis (413-1 / 103-2)

Each Social Work Project kicks off with a socio-territorial diagnosis drafted by the technical staff. This diagnosis is crucial for getting local communities involved and for planning measures that impact on those who benefit from sanitation projects, with a focus and institutional responsibility on public investment.

The diagnosis is made by the social staff and seeks to recognize the local situation in order to identify the demands through social, cultural and economic dynamics found in that community. This survey allows measures to be planned that will be implemented with a more appropriate look at each region, increasing the efficiency of the activities and their chances of being successful.

One of the strategies adopted by the social technical staff for the projects enacted in 2018 was to enrich the socio-territorial diagnosis through technical inspections at public and private facilities, particularly civil society organizations, health centers and schools, in order to more appropriately characterize the local population and also to address the most urgent needs. As a result, the existing vulnerabilities in each region visited, as well as the most susceptible groups, could be traced.

Demands and vulnerabilities recognized by the "SANASA – A Look Beyond the Accounts" and "SANASA – Join this Network" projects:

- The population's difficulty in establishing identity and local roots, and relations with the city government, especially in rural neighborhoods. This happens because of the financial isolation and conditions of families, unable to enjoy leisure and cultural options, which may occur due to distance and a lack of family budget;

- Shortfall of public policies available to young people for access to culture, sports and leisure. This vulnerability acts as a facilitator for being

incorporated into the world of drugs;

- Alarming rate of teenage pregnancy, which ultimately influences and changes the course of life for many young people;

- The problems parents face in sustaining the livelihoods of members of their family in more economically vulnerable neighborhoods, impacting the nutritional conditions of children, who often rely solely on the food offered at school.

Obviously, not all of these demands can be taken care of by SANASA, but the social work staff works hard to contribute as much as it can. In this respect, SANASA clearly plays an important social role as a sanitation company. Investing in social and environmental work is a key strategy in bringing the company closer to the community and strengthening this relationship, due to the fact that the company provides quality information and guidance to users of the services, promotes awareness and minimizes potential disputes.

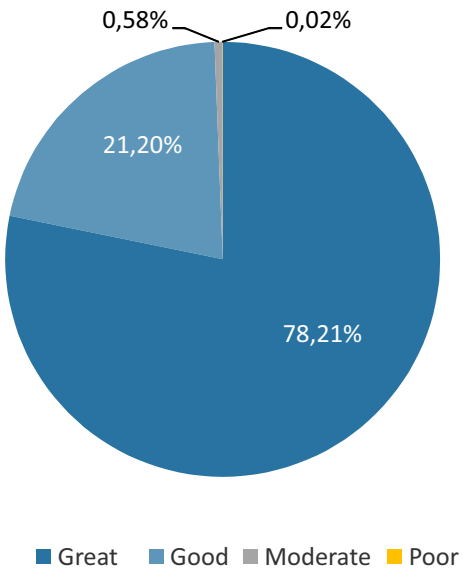
Engagement of the local community (413-1 / 103-2)

SANASA instituted Construction Overseeing Committees composed of resident representatives and seeks to establish a communication channel between the population and the company. The Committees oversee periodic site visits along with SANASA's social technicians and engineering staff. The goal is to track how construction projects are progressing, clear up any queries and review complaints or suggestions. The members of these Committees actively participate in the process and become a strong link between the company and the local community, who are the beneficiaries of the projects and the social and environmental work.

Results of environmental work in 2018 (103-2)

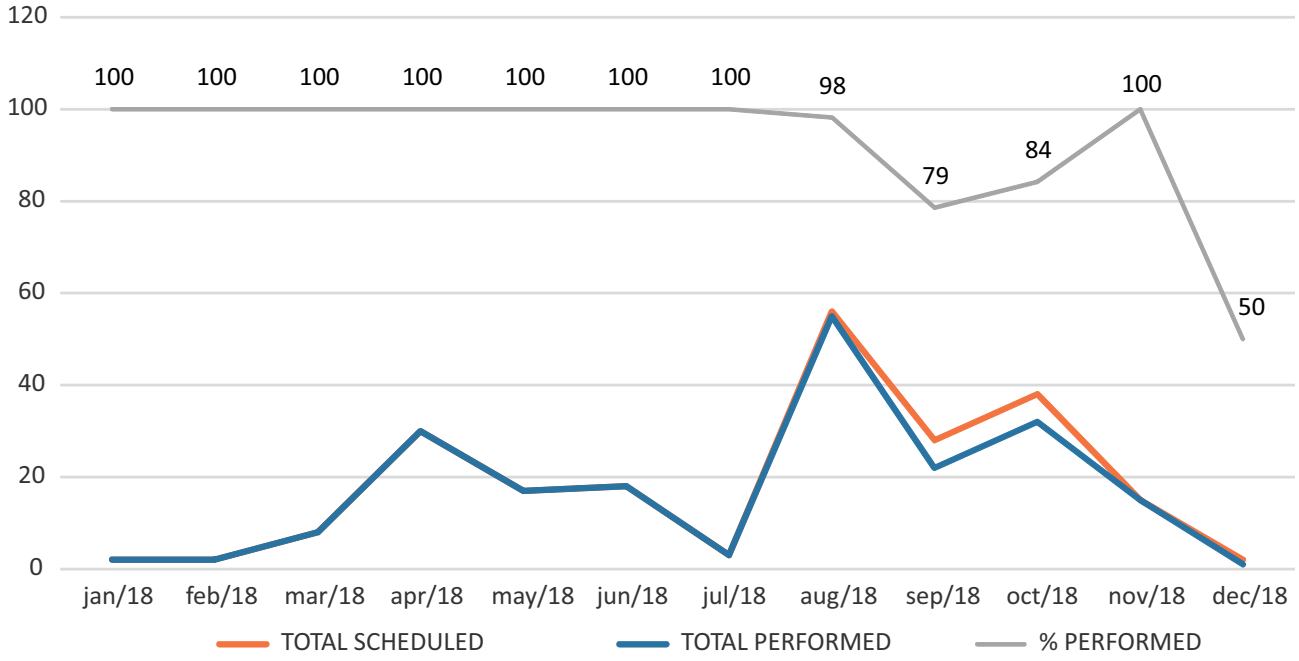
The social and environmental work produced in the SANASA Community Program in 2018 included the direct participation of 6,500 people. These people evaluated the activities according to **Chart 1** below.

Chart 1: Evaluation by the participants



Source: SANASA, Coordination of Social Services

Chart 2: Scheduled activities × performed activities



Source: SANASA, Coordination of Social Services

Sustainable Action Program – PAS (103-1 / 203-2 / 413-1)

SDG 6.1 – SDG 6.2

The Sustainable Action Program (PAS) is a strategy that the company has adopted since 2008. Its purpose is to promote positive impacts concerning the control over safe and potable wastewater, the correct disposal of sewage, and the quality of the supply. PAS activities take place in Campinas, primarily in urbanized and non-urbanized residential centers, where the program has been successful. Measures with local communities have also been expanded in pursuit of advances and improvements in supply, control over losses and community involvement.

Seeking to reach the maximum quality in public health and economic and social development, SANASA offers fair and equal treatment to low-income groups. In this way, everyone receives the result of the best investments in supply and sanitation in their homes, without discriminating against any location within the municipality or biased to any class or social categories.

PAS has become a valuable business plan in the social, health and education spheres. The program's implementation has made it possible to monitor reductions in losses of drinking water and to facilitate the settlement of outstanding debts that culminated in decreased default. It also encourages citizens to reflect on socio-cultural values, leading to sustainable conscious consumption.

The Importance of Engaging with the Local Community (413-1 / 103-2)

Measures are planned according to the needs of the local communities. These areas are located in the outskirts of the city, prone to being ignored, according to the priorities of the Municipal Department of Housing. The PAS attends mostly to families that have marked social vulnerability and may exhibit a unique conduct, particularly related to consumption and the environment. This population boasts a complex culture and habits that originate from different regions in the country. The program management focuses constant attention on the special needs of each family, working with methodologies that result in equal and just care to all beneficiaries.

PAS Service (103-2)

The PAS team performs assessments of needs for specific service from each area served in the municipality through social services, a call center and field visits by specialized agents engaged with that community. This activity prioritizes the structuring of a peaceful and reliable educational relationship with the consumer in order to strengthen engagement with the entire community. Whenever required, the company's decentralized operational services work at technical resolutions involving intentional execution and maintenance by the respective sector.

Monthly consumption reports are also used as a warning. They generally point to priorities for care, as in the case of consumptions that are registered above 26 m³ by families for collective connections, with maximum interconnections of 20 households.

In 2018, SANASA continued the program targeted towards reducing the number of households connected collectively, facilitating greater control of consumption until the area is fully urbanized. Individualization usually takes place within three months to be fully implemented and is done through the purchase of new plumbing, settling outstanding debts and, according to the neighborhood, preventing possible disagreements and disputes.

One of the program's desired outcomes is conscious consumption. Consumption over 30 m³ per individual connection is considered alarming and triggers immediate action by the sectors involved in order to avoid further losses. Individualizing partially urbanized housing units also provides families with educational steps to have better control over their bill and to watch for potential leaks when technical measures are taken.

The PAS utilizes monthly inspections for monitoring. This can also be used to detect if there is any non-compliance and/or illegal connection, which may have a negative impact on contaminating the supply network.

The staff involved in the program receive technical and psychological preparation to deal with any possible adversities from this work. The teams are trained to maintain good relations and contact with the residents so they can establish a bond of trust and harmony between local leaders and SANASA. Through proprietary methodology adopted by the sector, technicians are trained to use wisdom in confronting situations where there is resistance, illegal connections or possible water theft, interference with equipment or facilities and obstructions of water meters.

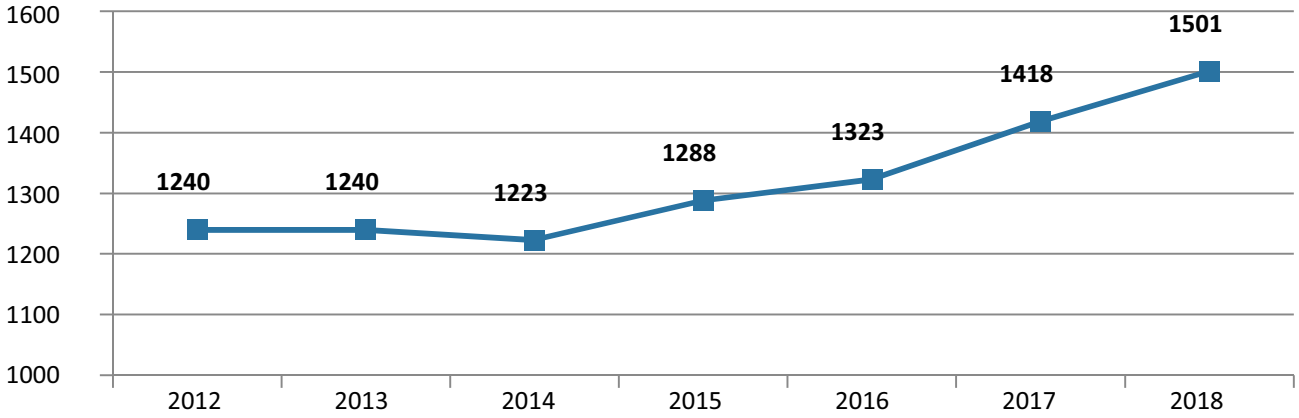
The staff and leadership's mission is to foster participation by the entire community in making residents aware of the environmental, social and economic importance of water. The activities that the company promotes act as a way to publicize the appropriate practices regarding the use of services provided to the population. The initiative seeks to integrate the user into the company's growth through behaviors that promote safety and reliability, and contribute to their inclusion in society with dignity and respect.

Results of PAS (413-1 / 103-2)

Collective connection

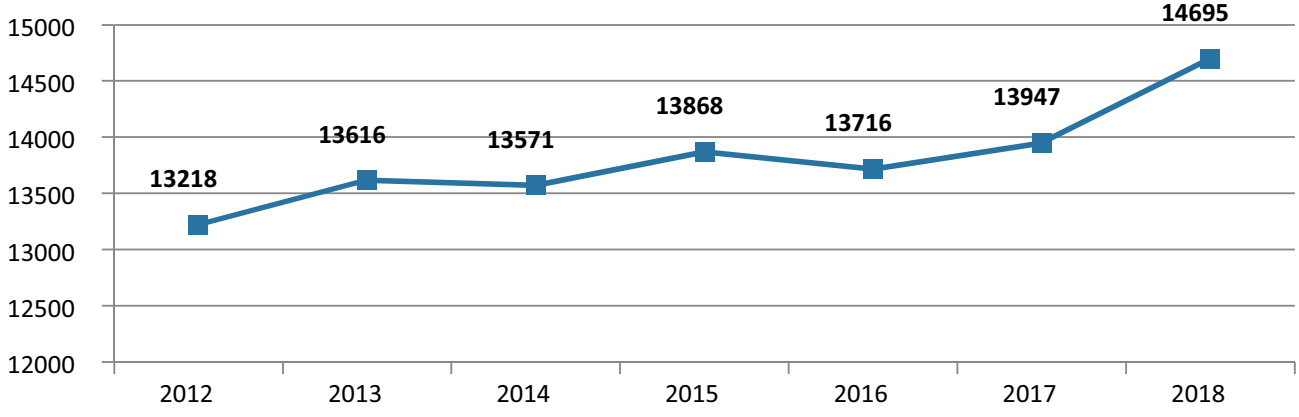
SANASA progressed on its endeavors to increase the number of divisions for groups of collective connections that have an excess number of families. When there is a lower number of households by connection, control over consumption and late payments becomes more feasible. Dividing the connections for use by up to fifteen households results in better supply quality and considerably reduces water waste.

Chart 3: Collective Connections from 2012 to 2018



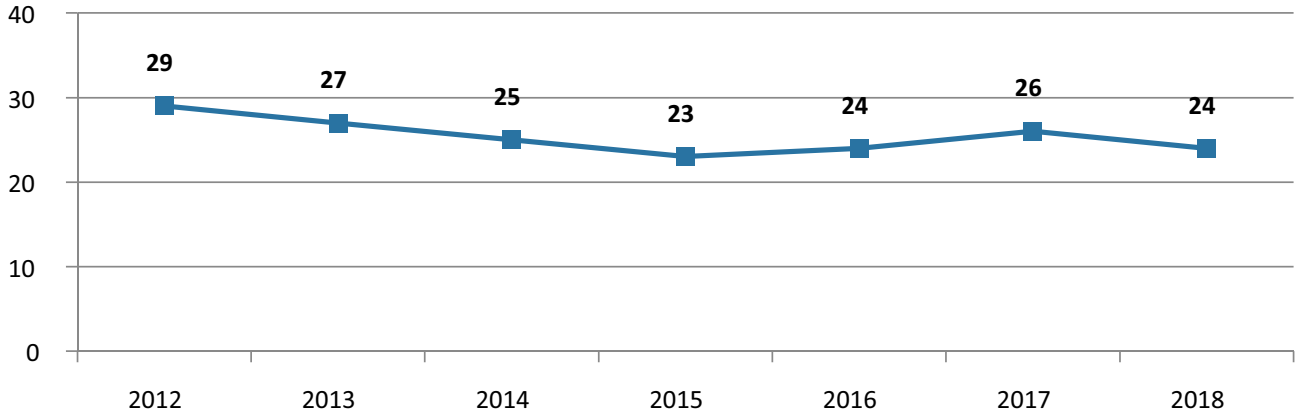
Source: SANASA, Management of Community Relations

Chart 4: Families benefited by a collective connection from 2012 to 2018



Source: SANASA, Management of Community Relations

Chart 5: Average Consumption/Family for collective connections from 2012 to 2018

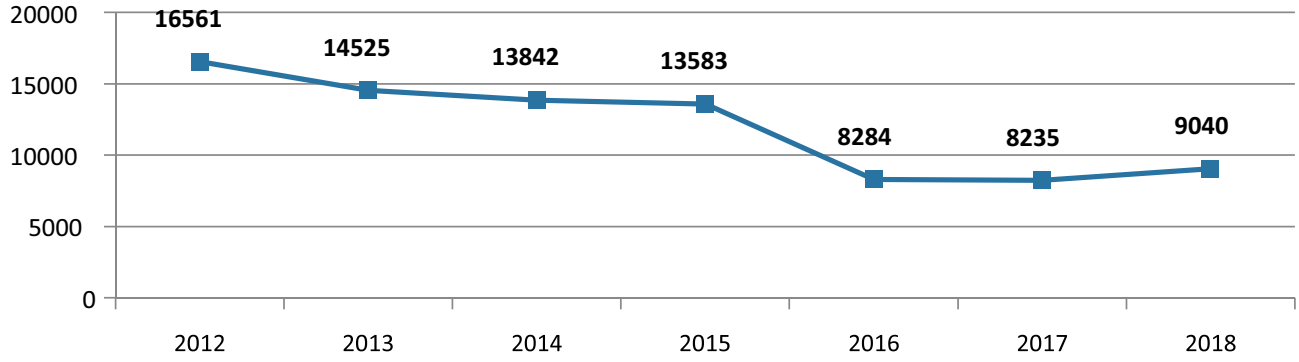


Source: SANASA, Management of Community Relations

Consolidated residential (413-1 / 103-2)

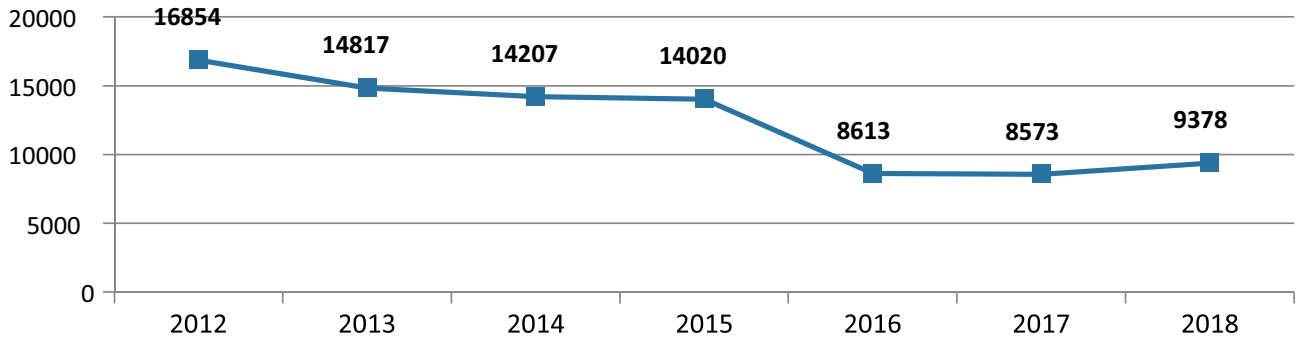
These are individualized collective connections with a supply network available at the front of properties. 850 connections were individualized in 2018 because they were conducive to SANASA's supply network, but located in partially urbanized residential centers. The goal for 2020 is to reach 3,000 individual connections.

Chart 6: Individual Connections from 2012 to 2018



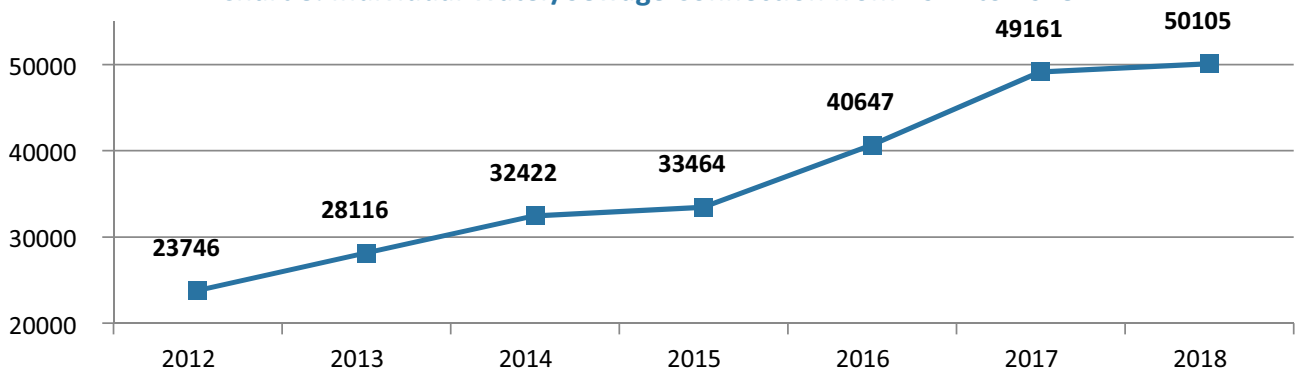
Source: SANASA, Management of Community Relations

Chart 7: Families benefited by an individual connection from 2012 to 2018



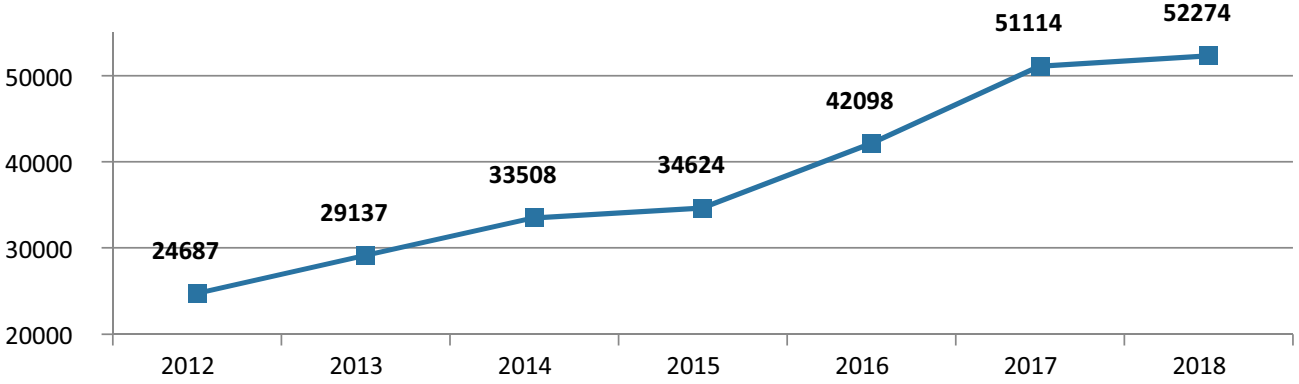
Source: SANASA, Management of Community Relations

Chart 8: Individual Water/Sewage Connection from 2012 to 2018



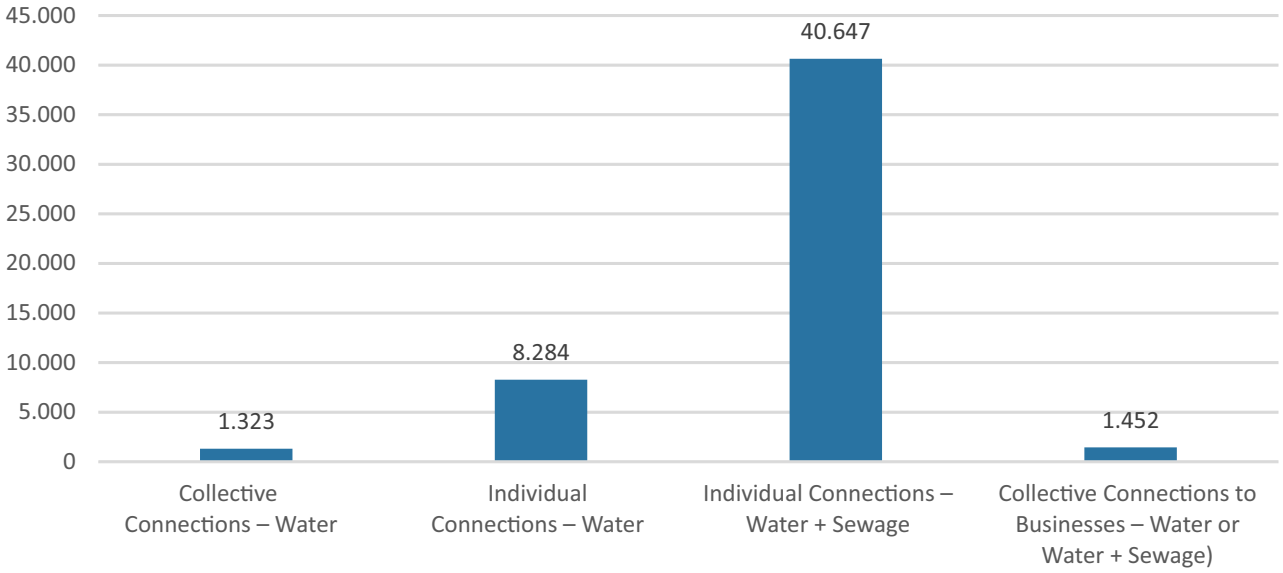
Source: SANASA, Management of Community Relations

Chart 9: Households benefited by an individual Water/Sewage connection from 2012 to 2018



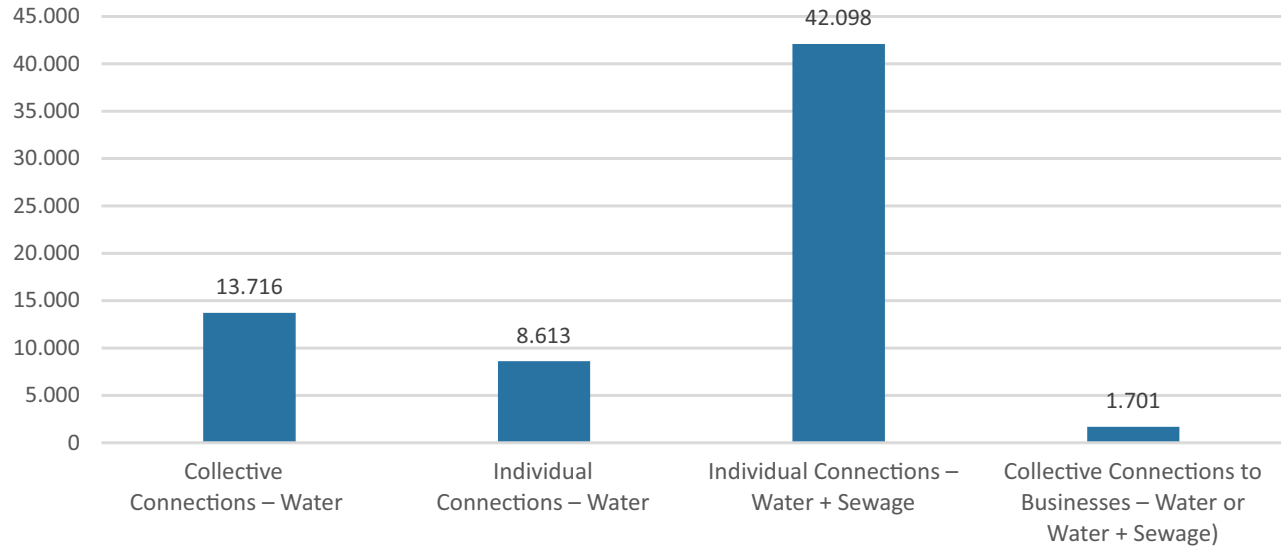
Source: SANASA, Management of Community Relations

Chart 10: Water connection by category



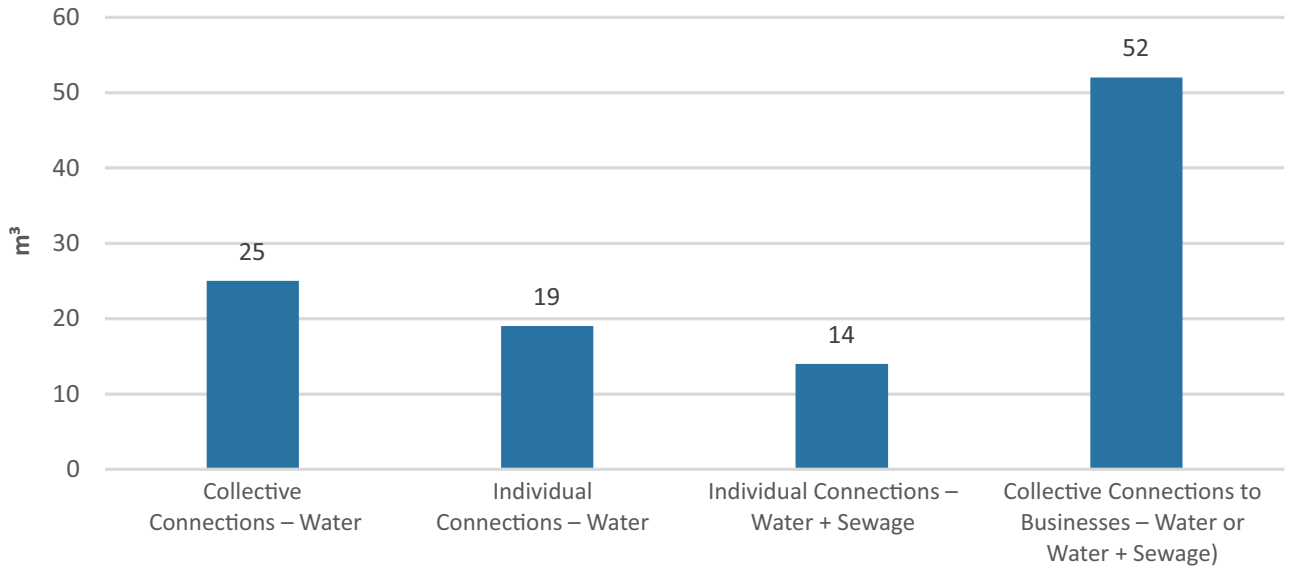
Source: SANASA, Management of Community Relations

Chart 11: Households by category



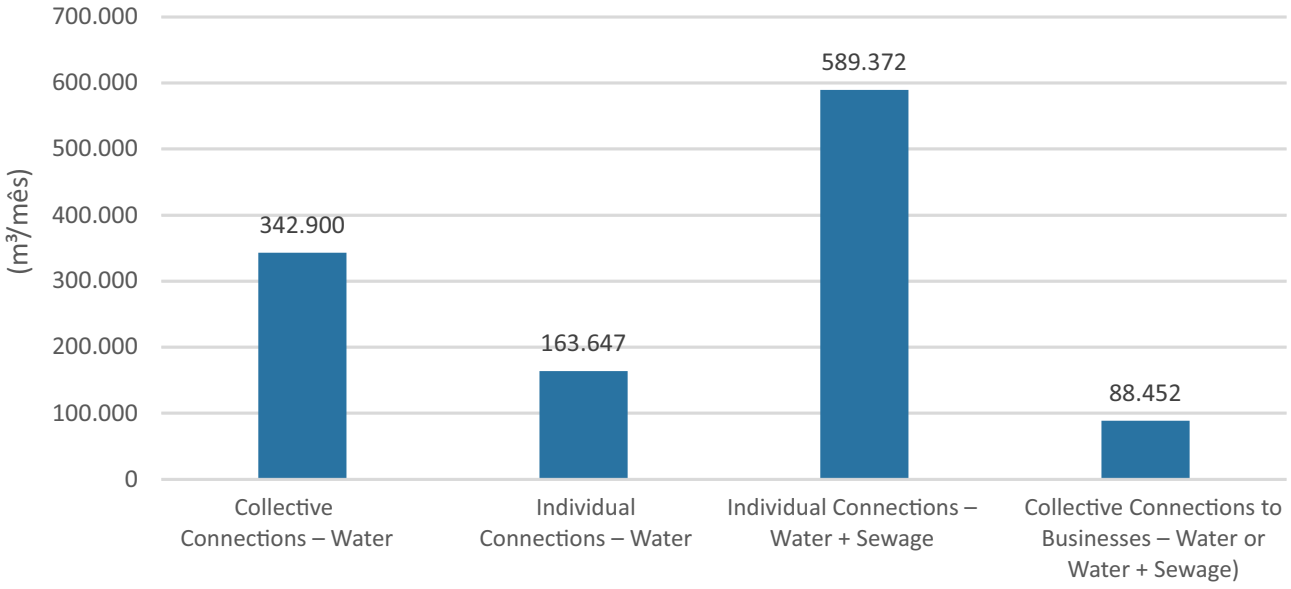
Source: SANASA, Management of Community Relations

Chart 12: Average consumption by category



Source: SANASA, Management of Community Relations

Chart 13: Presumed loss by category



Source: SANASA, Management of Community Relations

Water Cycle in Sanitation – CASA (103-1 / 103-2 / 303 / 413-1)
SDG 6.1 – SDG 6.2

SANASA understands that any impacts coming out of its activities also involve behavioral aspects by the population served in the municipality. This is especially evident in maintaining the quality of distributed water, the proper functioning of the infrastructure of networks and connections, as well as public health issues.

The Water Cycle Sanitation program (CASA) promotes engagement through activities that encourage community discussions. The activities are designed to convey awareness and information about the catchment, treatment, storage, distribution and consumption of potable water systems, and removal, collection and treatment of sewage and its return (in a state of quality) to the receiving body.

Within the crux of conscious water usage, the thematic approach is not only limited to practices that encourage reduced consumption, but also combines issues involving sanitation and public health, considering water availability in quantity and quality. The intention is to provoke a critical view on situations in which drinking water at consumption points may be indiscriminately wasted, have their quality compromised, or even where waterborne diseases may occur.

The sewage system can also be affected by misuse or inadequate building facilities. Misuse can cause water to be exposed to waste from the collection network, in addition to contaminating bodies of water because of unjustified runoff into the urban drainage system. This type of situation could result in damage to public health, including cases in which daily work performed for the catchment, storage and reuse of water are carried out without proper care.

Traveling Exhibition

Mobile Laboratories for Conscious Water Usage and Conscious Disposal of Sewage are inclusive activities assisted by a traveling exhibit that extends throughout the entire municipality.

The Mobile Laboratory for Conscious Water Usage illustrates the receipt of drinkable water at consumption points. It also allows information to be publicized on conservation devices and comparing volumes of water used in relation to what is normal. The Mobile Laboratory for the Conscious Disposal of Sewage also publicizes information on equipment and facilities in accordance with technical standards and promotes a simulation of impacts on a property caused by misuse or inadequate facilities.

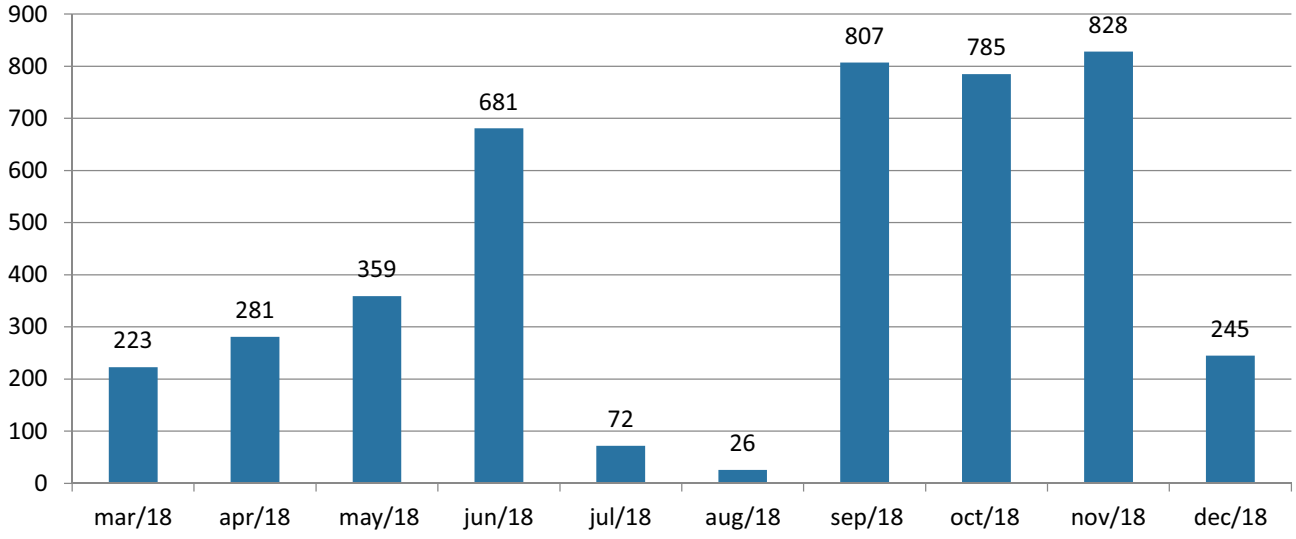
The traveling exhibitions saw 4,307 people from the local community participating in 2018, which served an indirect audience of 17,228 people. This year, the program intensified its practices in territories that had the highest Sewage Corrective Maintenance Rates (IMCE). IMCE monitors locations that are in constant need of corrective maintenance, as explained in the Sanitary Sewage chapter.

Mobile laboratory exhibitions are usually held in locations that have a defined audience. Plans for 2019 include having the activity expanded to public places and will cater to anyone who may be passing by.

Assessment of the program (103-3)

Public and private school systems, covering elementary education to universities, including vocational schools, represent a significant number of participants in 2018. The variation displayed in **Chart 14** is due to the school vacation period.

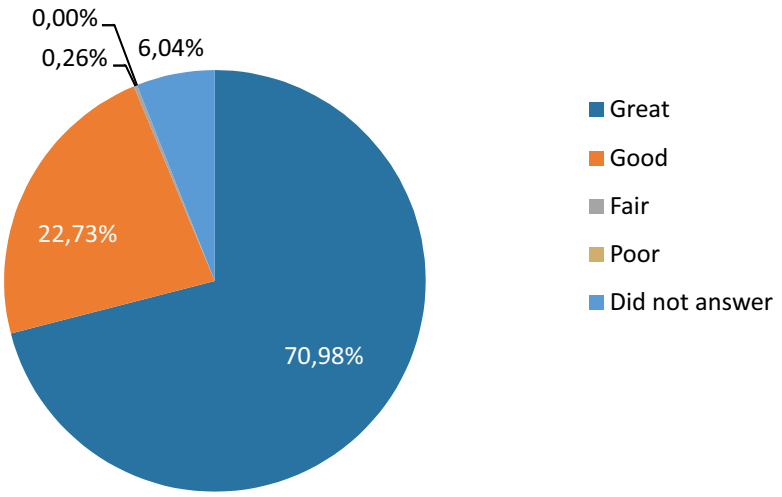
Chart 14: Participants in the CASA Program



Source: SANASA, Management of Community Relations

All activities are assessed by participants according to **Charts 15 and 16**. These evaluations are used as a tool to make continuous improvements in the program.

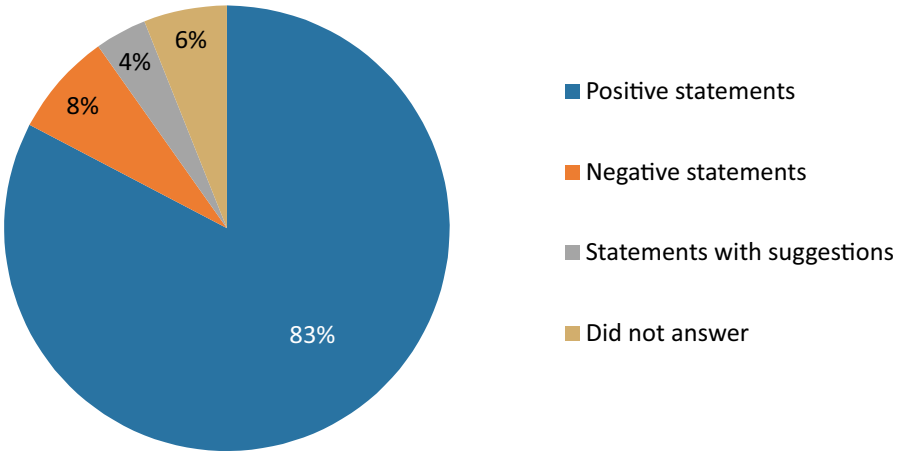
Chart 15 – Level of satisfaction for participants – CASA Program Activities



Source: SANASA, Management of Community Relations

Satisfaction of Participants - CASA Program	
Great	3,790
Good	345
Fair	172
Poor	0
Did not answer	260
Total	**4,307**

Chart 16 – Contribution of Participants – CASA Program

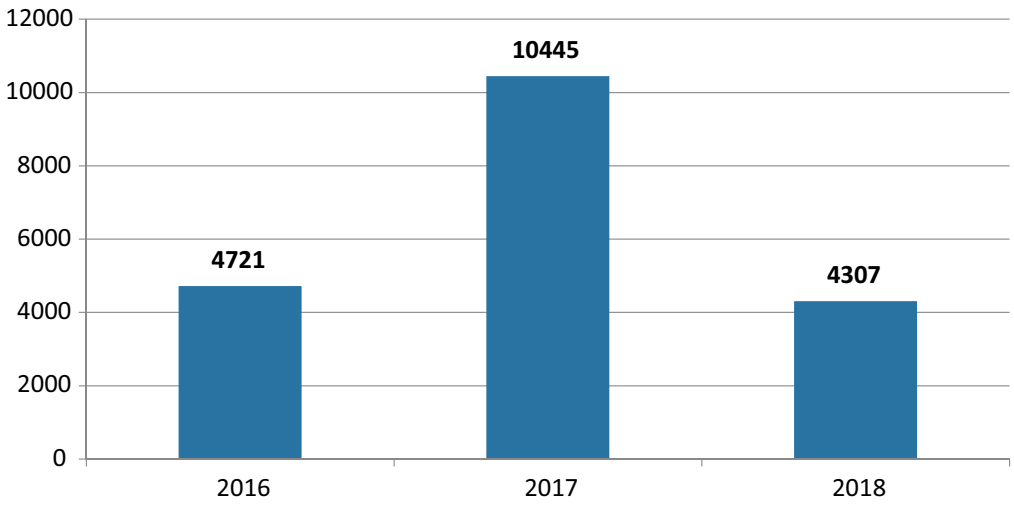


Source: SANASA, Management of Community Relations

Contribution of Participants – CASA Program	
Liked	3,561
Disliked	324
I suggest you …	162
Did not answer	260
Total	**4,307**

Chart 17 reveals that there was a variation in the number of participants due to the time in which the CASA program was assembled, which began in the second half of 2016 and fully launched in 2017, the year in which the activities with the laboratories were intensified. Some pauses had to be made in 2018 for adjustments and equipment maintenance, hence the drop in the number of participants.

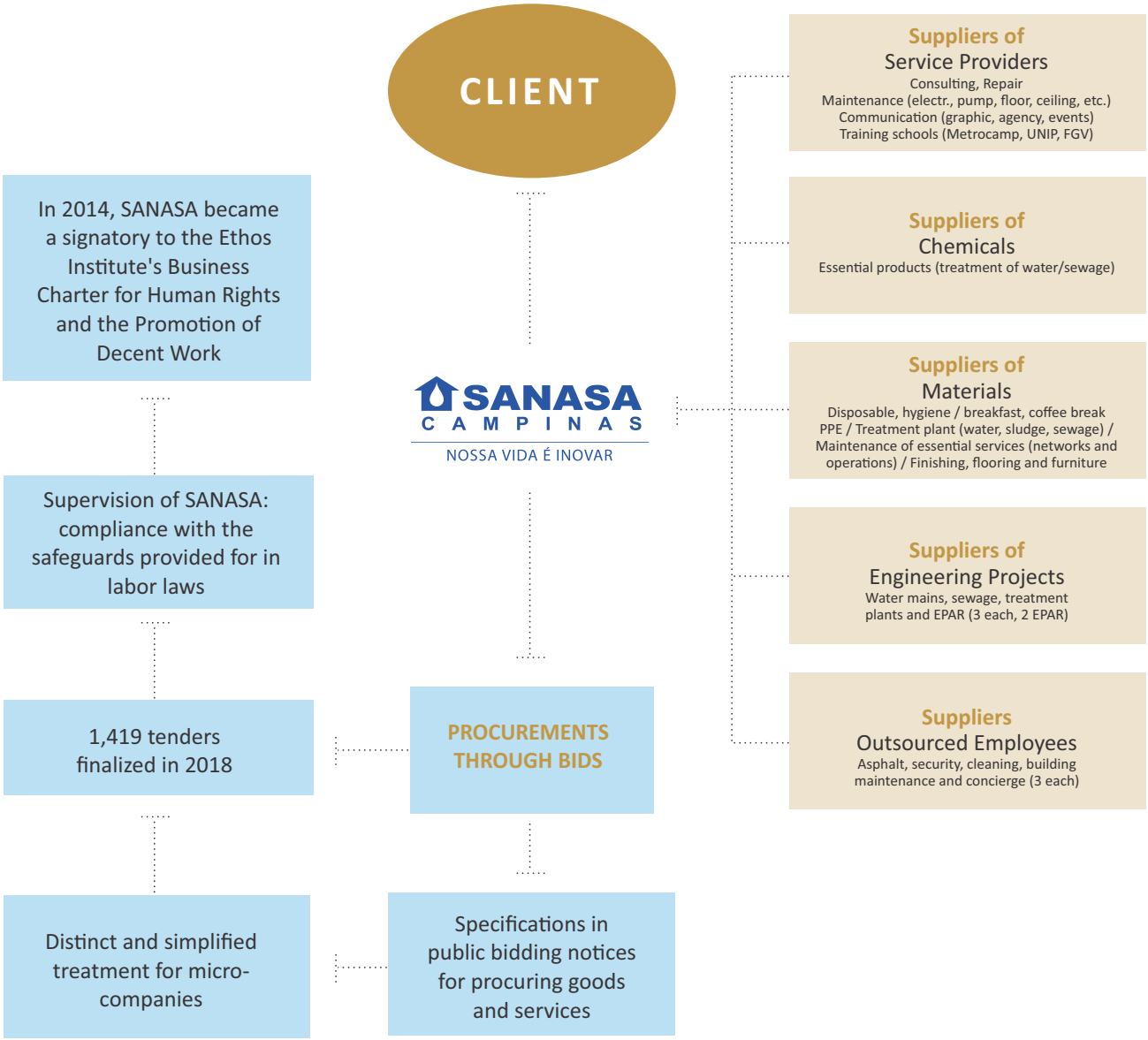
Chart 17 – Participants of the CASA Program 2016 to 2018



Source: SANASA, Management of Community Relations

SUPPLIER MANAGEMENT

Supply Chain (102-09)



Number of bidding processes in 2018: **Total 1,419**
Number of ME/EPP contracts
RMC Region: 354
National Level: 255

RMC:
Provision of service: 48%
Chemical Products: 0
Materials: 46%
Construction: 2%
Outsourced Employees: 4%

Contracting Micro (ME) and Small Companies (EPP) on a National Level
Provision of service: 22%
Chemical Products: 3%
Materials: 72%
Construction: 0%
Outsourced Employees: 3%

Purchasing Practice (103-2 / 103-3)

The Law on State-Owned Enterprises (Law 13,303/2016) became effective in 2016 and its premise is to stabilize the market and provide a return in confidence with respect to public and mixed-capital companies. This law ensures that public institutions practice transparency.

The requirements of the Law on State-Owned Enterprises are aligned with SANASA's vision of business integrity. The company's Executive Board acted quickly in creating a working group to draft and institute the Internal Regulation of Bids and Contracts* at the time this law went into effect. As a result, adjustments were made in the Corporate Governance system and it now includes new mechanisms, including auditing, risk management/internal control and a channel for receiving complaints concerning practices of corruption, fraud, illegal acts and wrongdoing that damage the company's assets and reputation. Violations were also included in the SANASA Code of Conduct and Integrity.

As a mixed-capital company, SANASA is subject to legislation that defines rules for procurements through bidding processes, with conduct guided by the principle of legality, and the criteria for contracting bids include legally proven technical certification through a prior completion of bidding procedures governed by the State-Owned Enterprises Law. Compliance with the constitutional principle of equality is thereby ensured, along with selecting the most beneficial proposal for the administration. This implies that suppliers are offered the same conditions for participation and competition, regardless of where they are located in Brazil, thus enabling them to be competitive at a national level.

The selection and procurement procedures also provide for the distinct and favored treatment to micro and small companies, resulting from Complementary Law No. 147/2014, which prescribes a special system with the goal of fostering the local and regional economy.

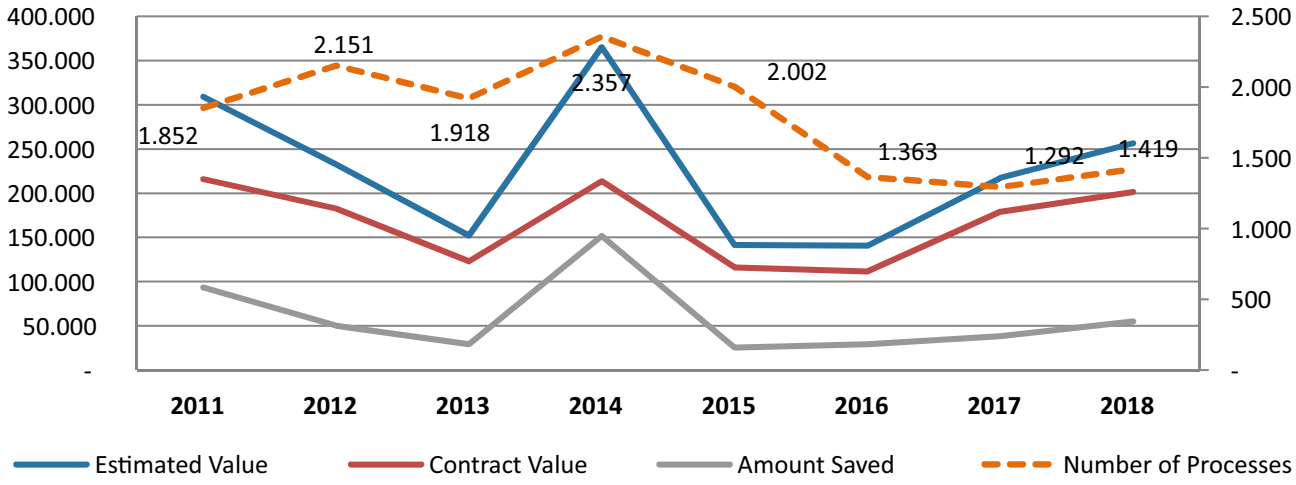
* See the Internal Rules of Tenders and Contracts in: http://www.sanasa.com.br/document/notícias/2501.pdf

Supplier Registry

SANASA's Suppliers Registry has a total of 20,856 registered companies. The registry is used as a management tool that allows the qualification phase of bidding procedures to be expedited through the prior registration of concerned suppliers. The supplier registry ensures that there is a prior analysis of documents for qualification. This takes place through an automatic alert via e-mail about the publication of bidding by an interested supplier, allowing these documents to be exempted from submittal in accordance with the public bidding notice.

2018 saw the conclusion of work geared towards the precepts of the Law on State-Owned Enterprises with the publication of the Internal Rules of Tenders and Contracts in the Official Gazette of the Municipality of Campinas on July 10th, 2018. This new legal provision establishes strict corporate governance rules involving transparency, compliance, internal control and risk management.

Chart 1: 2011 to 2018 Contracts (R$thousands of reais)



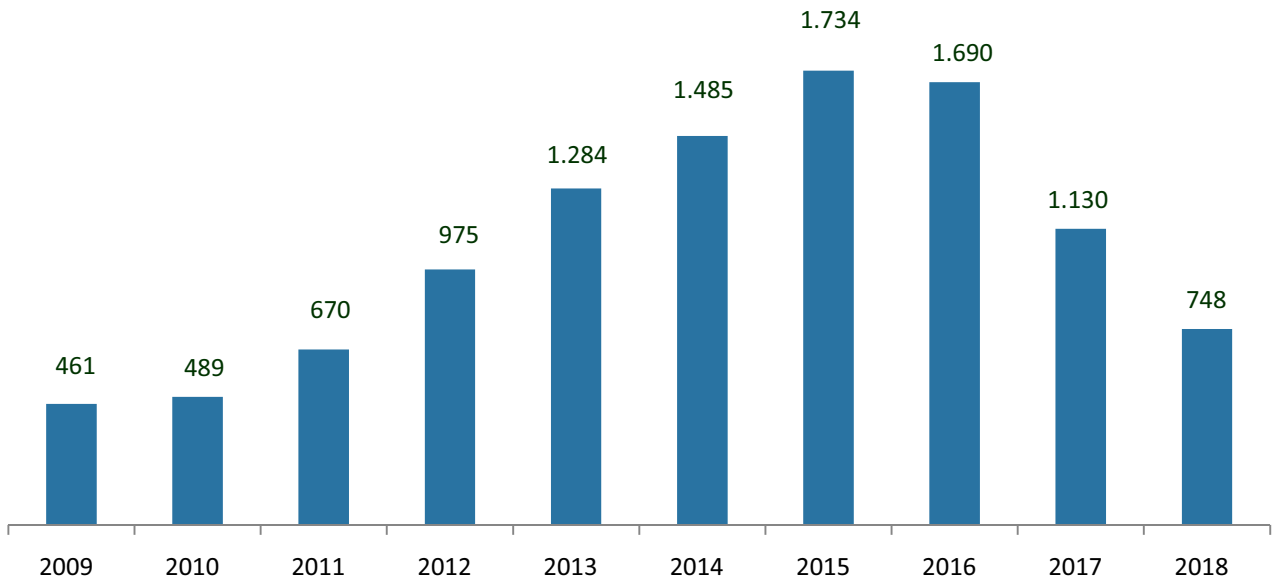
The data gathered is from bidding processes completed up to February 4th, 2019.
Source: SANASA, Bidding and Procurement Management

Table 1: Summary of Contracts 2011 to 2018 (R$thousands of reais)

Method	Number of Processes	Estimated Value	Contract Value	Amount Saved
	Processes	Estimated	Contracted	Saved
2011	1,852	309,068	215,895	93,173
2012	2,151	232,381	182,330	50,051
2013	1,918	151,939	122,830	29,108
2014	2,357	365,139	213,322	151,817
2015	2,002	141,521	115,942	25,578
2016	1,363	140,652	111,545	29,106
2017	1,292	217,316	178,818	38,497
2018	1,419	256,343	201,305	55,038

The data gathered is from bidding processes completed up to February 4th, 2019.
Source: SANASA, Bidding and Procurement Management

Chart 2: New Suppliers per year from 2009 to 2018



Source: SANASA, Bidding and Procurement Management

Procurement Methods

As a result of the Law on State-Owned Enterprises, SANASA began operating its procurement process through open, closed or mixed bids. For the procurement of common goods and services, the practice of a Bidding or Auction system has been determined to be the preferred method.

Waiver of Bid: If a competition can be held that justifies a procurement in a way in which the law permits a waiver, it is considered competitive and it is up to the manager to waive the procedure.
Direct Contracting or Single Source Procurement: When a bid tender is not required. It takes place when a competition is unfeasible due to the nature of the object to be acquired, the person to be hired, or specialized services through an exclusive supplier and sourcing an established artist, as long as it is validly substantiated.
Auction: The competition is done in a public session through proposals and bids intended to classify and qualify the bidder with the lowest price proposal, specific for the acquisition of common goods and services.
Bidding: Engineering Services and Projects, according to specific public bidding notice for each type of contract.

Reduction of Expenses and Maximizing Revenues

SANASA follows a financial management policy that attempts to reduce expenses, which includes re-evaluating bidding processes and contract addenda in order to provide greater efficiency in procuring and sourcing, without reducing the quality of public services offered to the population. According to **Table 2**, the results had become more pronounced in 2017 and 2018.

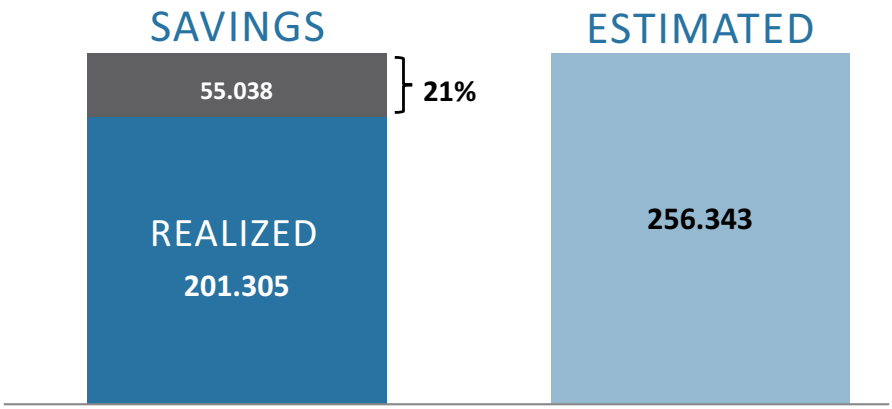
Table 2: Expenses with Local Suppliers 2012 to 2018

2012 to 2013 => INCREASE OF 18.92%
2013 to 2014 => INCREASE OF 76.13%
2014 to 2015 => REDUCTION OF 82.96%
2015 to 2016 => INCREASE OF 33.34%
2016 to 2017 => INCREASE OF 40.01%
2017 to 2018 => REDUCTION OF 46.51%
*2012 to 2018 => REDUCTION OF 64.35%

The data gathered is from bidding processes completed up to February 4th, 2019.
Source: SANASA, Bidding and Procurement Management

In the 2018 financial year, 1,419 bids were made, moving R$201.3 million, 12% higher compared to the amount contracted in 2017. In that financial year, R$55 million was saved, pertaining to 313 processes contracted through electronic bidding, which totaled R$117.9 million. These procurements were classified by 14 processes via Direct Procurement or Non-requirement, and represented R$3.6 million; 637 processes through a Waiver of Bid for a total amount of R$3.7 million; nine processes through Bidding, totaling R$75.8 million; 446 per Express Procurement for a total amount of R$356,000.

Chart 3: Realized × Estimated (R$thousands of reais)



The data gathered is from bidding processes completed up to February 4th, 2019.
Source: SANASA, Bidding and Procurement Management

Table 3: Completed Processes (R $ thousands)

Method	Number of Processes	Estimated Value	Contract Value	Amount Saved	%
CD	14	3,522	3,599	-36	-1
DL	637	3,994	3,670	323	8
CP	4	19,435	16,985	2,449	13
PE	313	155,205	117,899	37,305	24
LIC	5	73,829	58,833	14,996	21
EXP	446	356	356	0	0
Total	1,419	256,343	201,305	55,038	21

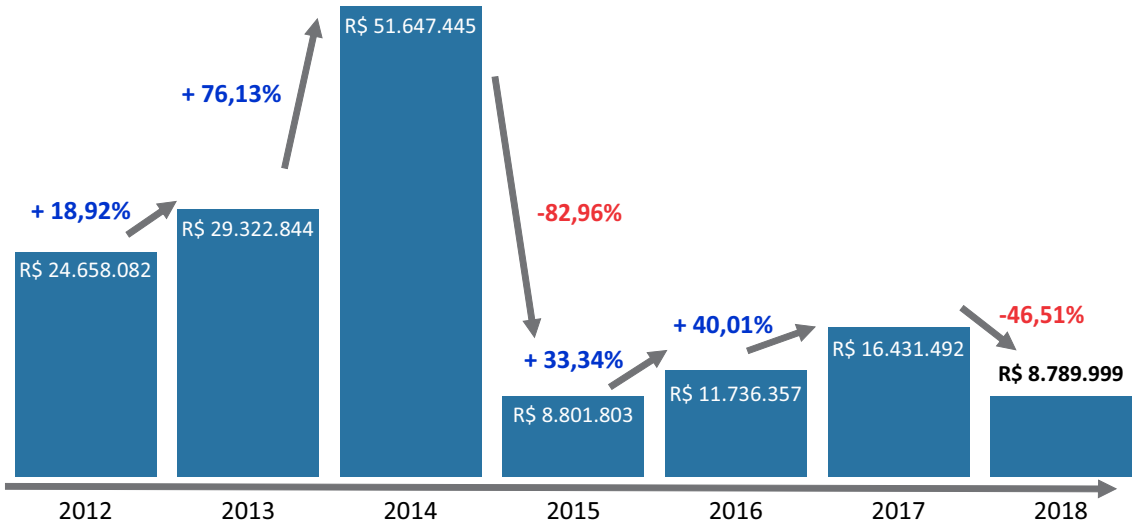
Source SANASA, Bidding and Procurement Management

LEGEND:
CD = Direct Purchase DL = Bidding Waiver CP = Public Competitive Bidding
PE = Electronic Bidding Ex = Express LIC = Bidding
The data gathered is from bidding processes completed by February 4th, 2019.

Local Suppliers (204-1)

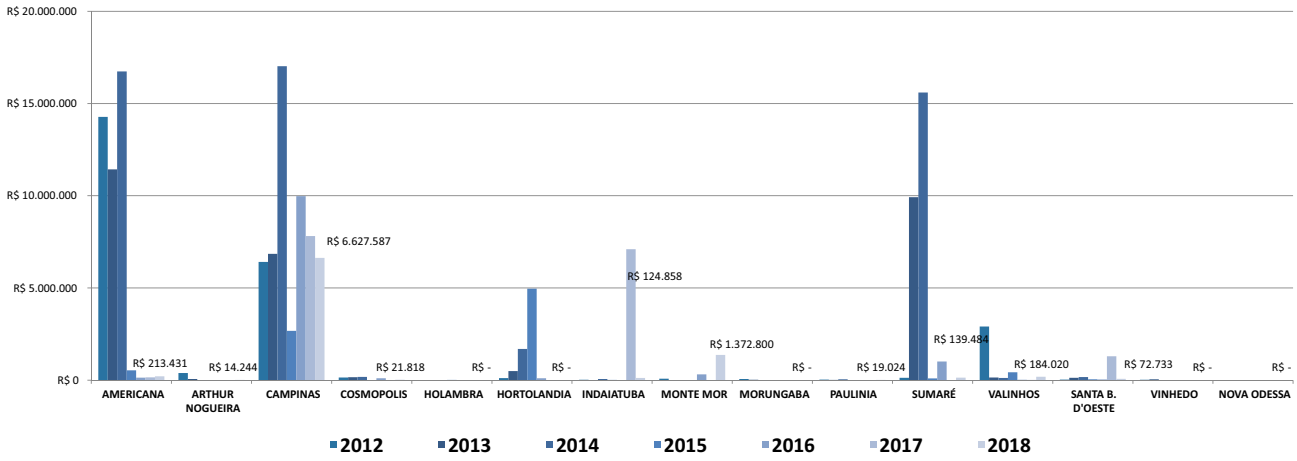
SANASA is one of the largest contractors in the Campinas metropolitan region, especially among micro and small companies. This is a result of Complementary Law No. 147/2014. The Law prescribes a special system that seeks to stimulate the local and regional economy, as well as social policy and market development, which encourages these companies to participate in the bidding processes. In 2018, the company contracted R$8.8 million from micro and small companies, representing 4% of total expenses from bidding during the period. There was a 46% drop compared to 2017 due to the addition of existing contracts and bids for construction projects by medium and large companies.

Chart 4: Expenses with Local Suppliers 2012 to 2018



The data gathered is from bidding processes completed up to February 4th, 2019.
Source: SANASA, Bidding and Procurement Management

Chart 5: Spending on Suppliers in Important Operational Units 2012 to 2018



The data gathered is from bidding processes completed up to February 4th, 2019.
Source: SANASA, Bidding and Procurement Management

Table 4: Spending on Local Suppliers in Important Operational Units 2012 to 2018

Cities	2012	2013	2014	2015	2016	2017	2018
AMERICANA	14.279	11.432	16.742	533.783	142	154	213
ARTHUR NOGUEIRA	390	67	0	0	0	0	14
CAMPINAS	6.410	6.848	17.024	2.678.159	9.982	7.819	6.628
COSMOPOLIS	147	164	175	7.427	108	10	22
HOLAMBRA	0	0	0	14.960	0	0	0
HORTOLANDIA	117	498	1.697	4.965.523	108	7	0
INDAIATUBA	26	12	64	19.247	2	7.104.090	125
MONTE MOR	85	2	0	0	314	0	1.373
MORUNGABA	68	24	0	0	0	0	
PAULINIA	31	18	484	2.830	0	4	19
SUMARÉ	132	9.922	15.600	94.086	1.015	12	139
VALINHOS	2.911	150	123	433.135	25	17	184
SANTA B. D'OESTE	35	128	174	52.588	39	1.300	73
VINHEDO	28	52	0	0	0	4	0
NOVA ODESSA	0	5	0	67	1	1	0
TOTAL	**24.658**	**29.323**	**51.647**	**8.801.803**	**11.736.357**	**16.431**	**8.790**

The data gathered is from bidding processes completed up to February 4th, 2019.
Source: SANASA, Bidding and Procurement Management

Supplier Qualification (103-1 / 103-2)

The Law on State-Owned Enterprises (Law 13,303/2016) addresses purchasing practices by state-owned companies through the economic preservation of the company. It was instituted to ensure the best price without compromising the quality of products or services procured. However, the procuring company often has no guarantee of receiving the proper, quality products, leading to rework and even legal battles.

Dedicated to guaranteeing the quality of purchased materials while ensuring transparency and fairness in the process, SANASA has begun engaging with its potential suppliers through qualifying materials and equipment. The process is open to those interested in participating in the bidding process, and they may submit their products to a qualification routine. The qualified companies will be entered into the database of authorized suppliers.

The procedures provide for environmental aspects, engagement with the local community, technical assurances and certifications, production control and qualified service staff. Technical inspections are also scheduled to the supplier.

CUSTOMERS AND CONSUMERS

New Businesses: Universal Sanitation (103-1)

Within its business goals, SANASA has made commitments to work towards on-going improvements in sewage treatment. The company seeks to boost the quality of waste removal and, as such, bring about a positive impact on the Piracicaba, Capivari and Jundiaí (PCJ) river basins – essential in contributing to water security.

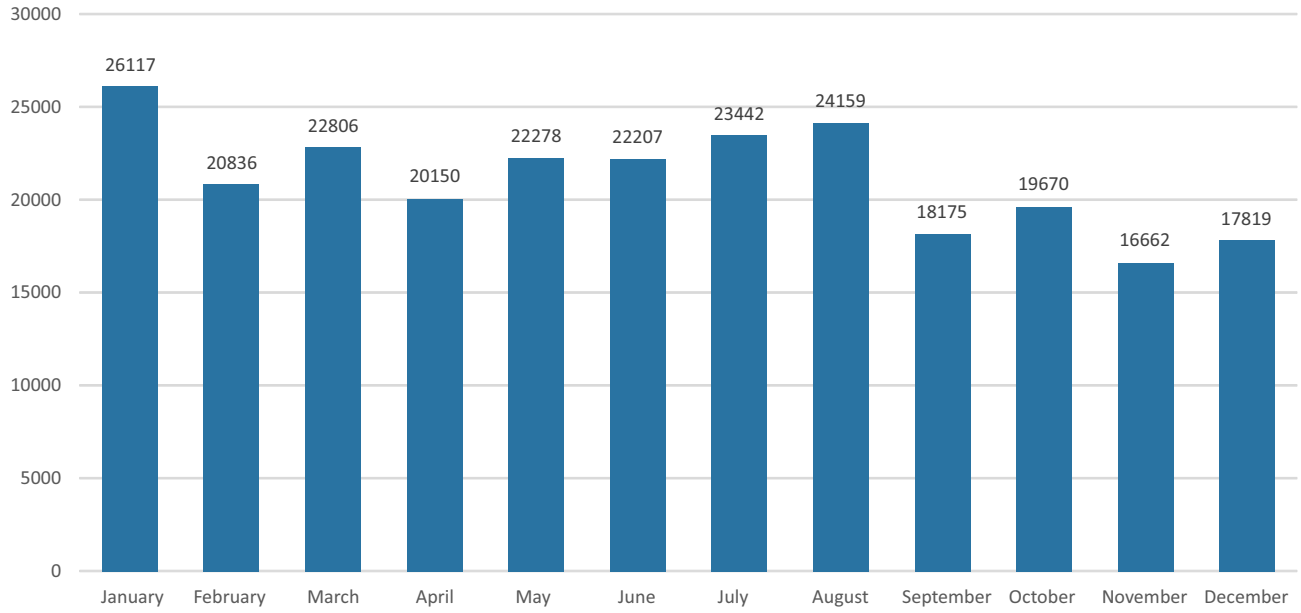
SANASA struck a deal in 2018 with the Municipality of Valinhos to take over the sewage treatment at the Capuava ETE, upstream from the Atibaia river, a water source that represents 92.31% of the water supply to the Campinas municipality. Under the project, the Capuava ETE will also treat sewage from the Samambaia ETE, located on the Campinas and Valinhos borders.

Operation of the Capuava ETE is part of a program for new business and includes an investment of R$140 million for implementing a retrofit and filter membranes. The sophisticated technology employed in the project will increase the level of treatment from secondary to tertiary and turn Capuava into a Water Reuse Production Plant.

Relations with Customers (103-2)

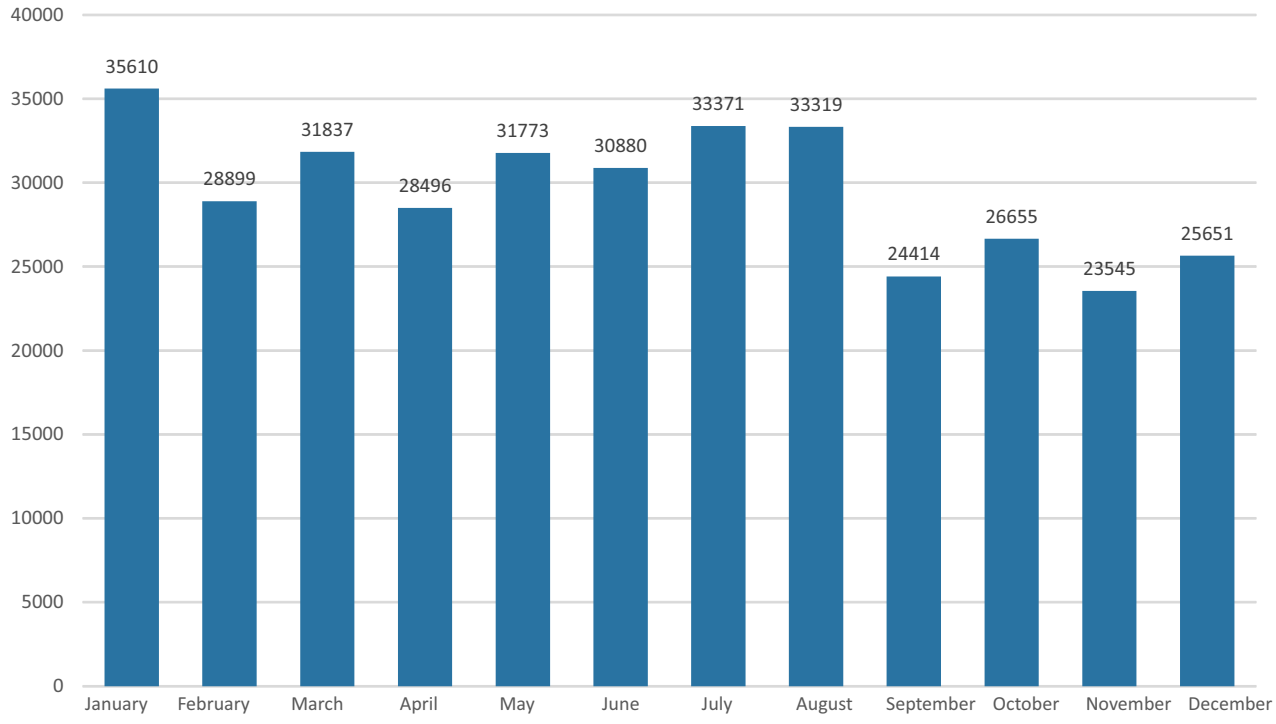
SANASA features a permanent channel for customers and consumers that includes personal assistance or phone, including access to service online. Personally provided service posted a monthly average of 21,193 inquiries, an average of almost 30,000 services and requests for water and sewage connections, registrations of benefits, consumption analysis and technical projects, etc., as illustrated in **Charts 1 and 2**.

Chart 1: Customer Service – In-Person Agencies



Source: SANASA, Customer Service Coordinator

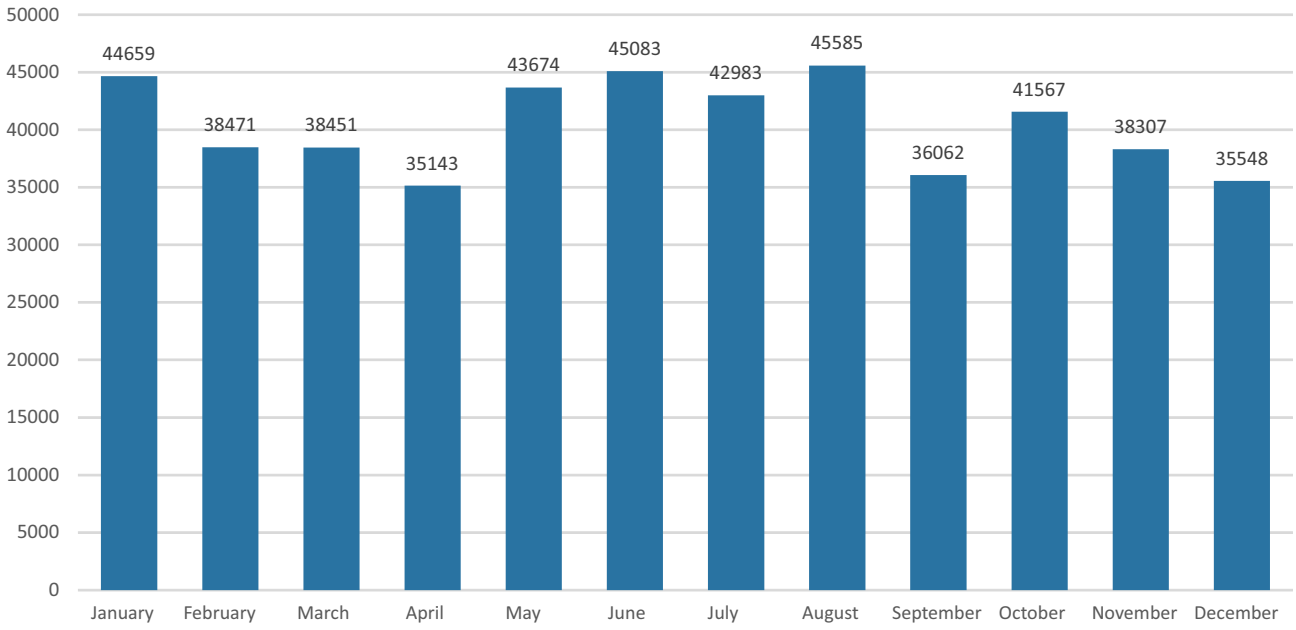
Chart 2: Requests Generated through Face-to-Face Service



Source: SANASA, Customer Service Coordinator

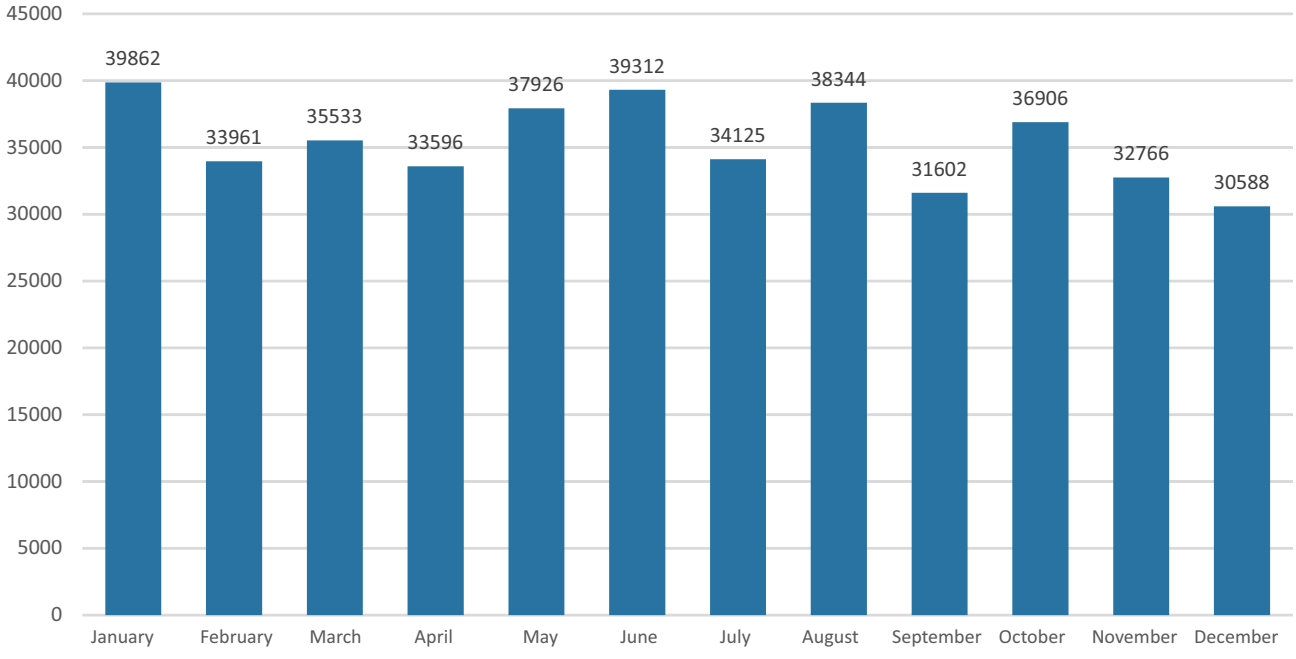
The Call Center operates 24 hours a day, seven days a week, through the phone number 0800 772 1195. In 2018, there was a monthly average of 40,461 calls logged, requiring around 35,377 service requests that concerned matters such as general repairs, water shortages and reconnections, along with guidelines on consumption, invoices and documentation, as **Charts 3 and 4** demonstrate.

Chart 3: Customer Service – Call Center (0800)



Source: SANASA, Telephone Service Coordinator

Chart 4: Requests Generated through the Call Center (0800)



Source: SANASA, Telephone Service Coordinator

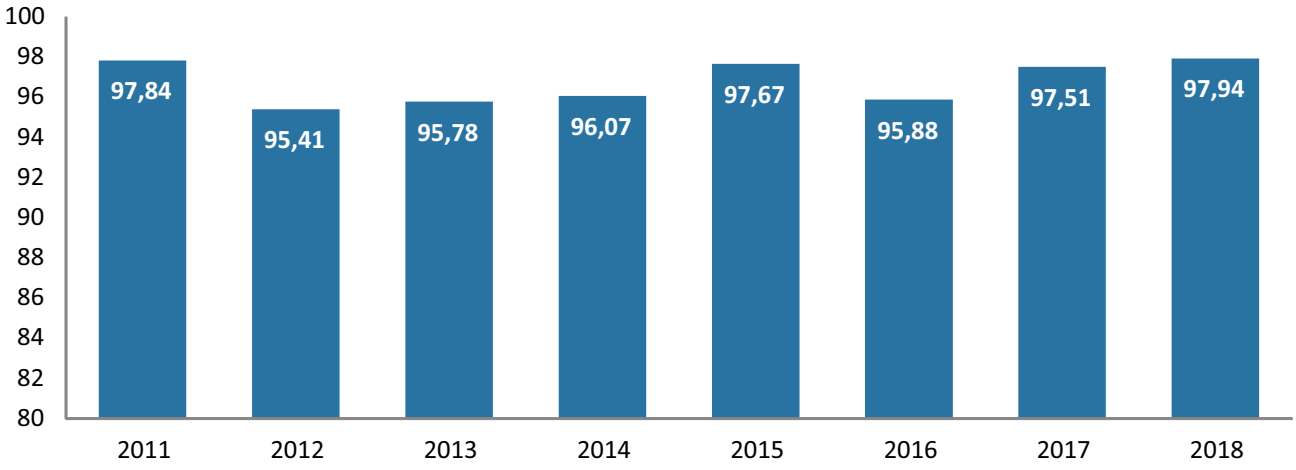
Customer Satisfaction (103-1 / 103-2)

Dedicated to the local community, SANASA strives for excellence in providing quality, secure and assiduous services. The company's business goals call for a 96% customer satisfaction rate. Monitoring is done through the Customer Satisfaction Index (ISC), which generates monthly reports on the company's ability to respond to customer demands. The ISC posted a 97.94% rate in 2018, slightly higher than the 2017 mark of 97.51%, and almost 2% above the business goal.

The ISC is calculated by surveying clients who have requested water repairs, sewage repairs, miscellaneous repairs, water and sewage services, and other solicitations. SANASA takes proactive measures. Surveys are conducted through the Protocol and Attendance Coordination, which contacts customers and asks them to respond to a standardized questionnaire, giving scores ranging from zero to ten, and filling in fields with suggestions, compliments or complaints – particularly when the scores fall to four or less. The questionnaire contains five questions that weigh the customer's perception of the support received at the service agency or call center in relation to how long it took to satisfy the request, how they would categorize the completion of this support, and how they would assess the performance of the employee responsible for doing the job.

The sample space for applying the questionnaire is defined as at least 1% of the total services performed in the previous month, pertaining to those pre-established referral groups. Results from the survey are monitored on a monthly basis by the Quality Management and Technical Relations Management Team, which analyzes responses to the questionnaire and compiles the data to generate the ISC performance rating. When responses are unsatisfactory or the performance indicator does not reach the target, the relevant management and coordination areas are notified through an electronic report so that they make effect corrective measures, and the timelines and effectiveness of these actions are also monitored and logged. These measures are conducted to ensure continuous improvement and to make sure that the deficiencies pointed out by customers in the survey are not repeated.

Chart 5: Client Satisfaction Survey (%)
Response from 5-10 – 2011 to 2018



Source: SANASA, Coordinator of Technical Affairs

The Customer Satisfaction Survey allows SANASA to review customers' thoughts and opinions on the company, helping to identify opportunities for improvements in various processes. The findings obtained over the last several years reveal that a good satisfaction rating demonstrates the company's concern to remain committed to quality and customer satisfaction, providing a competitive edge and further improving its positioning in the market.

Managing the Customer Satisfaction Survey also involves the on-going pursuit of measures that make it possible to respond to customer complaints or dissatisfaction. This tool integrates all the areas and their procedures in addressing customer concerns. Through the information obtained from the Call Center, the Quality Management area administers the responses by both parties, arriving at a conclusion about which complaint does or does not proceed. An analysis is then conducted on whether the service was performed in accordance with company norms. In other words, if the service complied with timelines and the service was performed in a satisfactory manner. If the customer has a reasonable complaint, feedback is provided via email, allowing the area responsible to address any concerns.

Customer Management (103-1 / 103-2)

SANASA's customer management policy focuses on the inclusion of consumers in the system (quality, safety and attendance of the service provided) and billing to comply with the business' cash flow goals. The company strives to make improvements in the performance of internal processes and in standardizing the business. Actions are taken to settle outstanding issues, whether in relation to contracts or in the portfolios of overdue accounts, which is vital to ensuring that customers in need receive discounts.

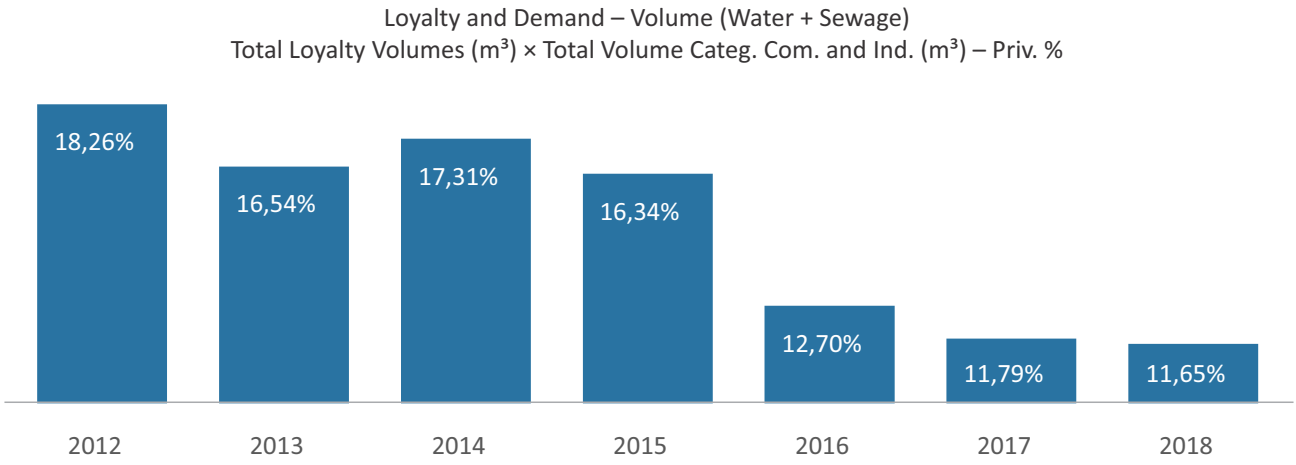
Special Customers (103-1 / 103-2)

SANASA employs a customer management policy for the business and industrial categories that is aligned with the economic and social development of the municipality, stimulating economic activity with a secure and quality supply of water. The strategy involves strengthening engagement through loyalty, which ensures that bills are paid on time.

The Customer Loyalty program is available to customers in the business and industrial brackets with measured consumption of over 120 m^3/month – applying a 20% discount on any surplus as long as timely payments are maintained. The program accounts for 11.65% of consumption volume (in cubic meters) and 19.84% of the company's revenues.

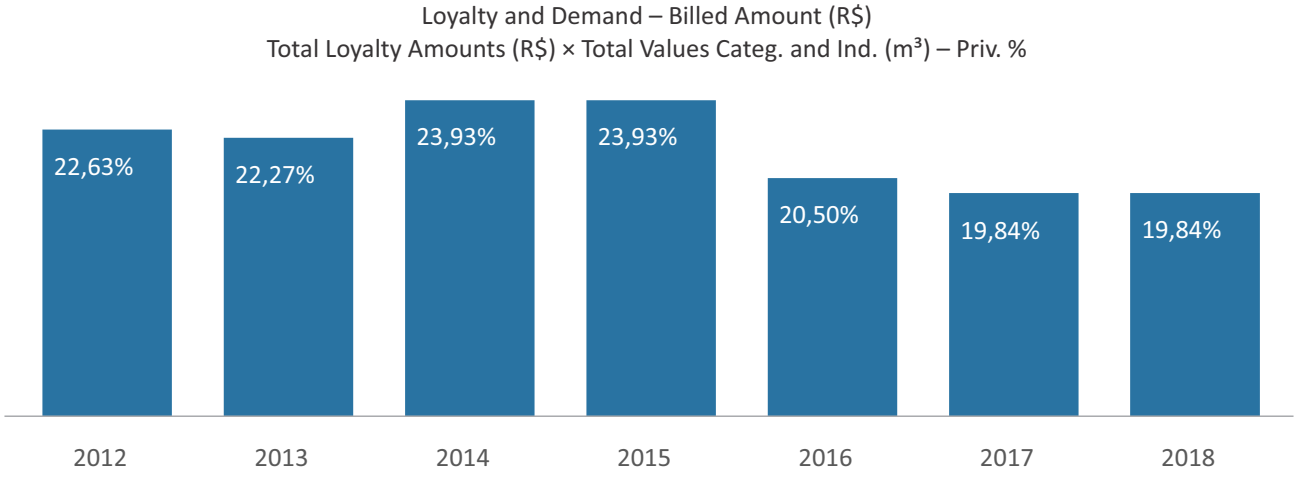
SANASA also has a category for Minimum Demand Customers, which are units that have a high volume in cubic meters and distinct prices according to consumption.

Chart 6: % Consumption for Customer Loyalty and Minimum Demand Customers 2012 to 2018



Source: SANASA, Management Accounting Coordination and RFI0050.

Chart 7: % of amount billed for Loyalty and Minimum Demand Customers 2012 to 2018



Source: SANASA, Management Accounting Coordination and RFI0050.

Chart 8: Loyalty and Demand – Number of Contracts 2012 to 2018

Source: SANASA, Management Accounting Coordination and RFI0050.

Table 1: Largest Customers in Values (R $ in thousands of reais)

CORPORATE NAME	VOLUME (m³)	AMOUNT (BRL $)
	BILLED	BIL LED
PREFEITURA MUNICIPAL DE CAMPINAS	50,427	2,252
UNIVERSIDADE EST DE CAMPINAS	41,633	1,657
AER BR VIRACOPOS SA EM REC JUD	29,901	610
SOC CAMP EDUC INSTR PUCCAMP	13,280	438
BRK AMBIENTAL SUMARE S/A	167,250	378
TELEFONICA BRASIL S/A	6,351	354
CIA BRA SILEIRA DE DISTRIBUICAO	5,721	312
FUNCAMP CONJ HABITACIONAL	14,154	240
FUNDACAO CASA	3,598	235
ASS COND SHOP PQ DAS BANDEIRAS	8,331	222
CPFL COMP PAULISTA FORCA E LUZ	4,655	219
HOT EIS ROYAL PALM PLAZA LTDA	16,233	218
ADM E COM C LOG VIRACOPOS LTDA	4, 742	197
PENITENCIARIA FEMININA DE CPS	2,810	187
FUNDACAO CPQD	7,115	181
CARREFOUR COM E IND LTDA	3,253	176
HOSPITAL MUN DR MARIO GATTI	2,742	176
SAMSUNG ELET DA AMAZONIA LTDA	6,369	175
MINIST DA DEFESA BA ADM GU CAS	3,112	165
MEDLEY IND FARMACEUTICA LTDA	2,602	162
BILLING FOR TOP 20 CUSTOMERS	**394,279**	**8,555**

Hospital Category (103-1 / 103-2)

SANASA has established its entire policy of engagement with the local community based on the premise of the Human Rights to Water and Basic Sanitation, which aligns with the public health policy in Campinas. According to Brazilian law, hospital care cannot be interrupted, even if bills are late or have not been paid. SANASA watches over the balance of revenues. In order to promote a measure for tracking consumption and, at the same time, reinforcing relationships with hospitals, the company includes a Hospital Group category. The program offers a 50% discount on the bill for hospitals that are part of the municipal network and are committed to providing laboratory care for the Brazilian Unified Health System (SUS). The methodology for the program does not consider the pricing category, but sets the following conditions:

- Not holding or using any other benefit granted by SANASA, with the exception of establishments where there is water volume measurement at points that do not generate sanitary sewage;
- Not using alternative sources of water for human consumption;
- Be registered with a single meter;
- Be SUS accredited or prove to be a continuous provider of social care for charity purposes by conducting examinations to care for patients from the Dr. Mário Gatti Municipal Hospital.

The program helps in minimizing the suppressed demand for laboratory medical exams, namely,

accumulated due to the increased request for exams and a difficulty in finding low prices for the procedure by the hospitals in Campinas. Hence, with a discount on the water bill, hospitals are required to supplement laboratory needs.

Partner hospitals:

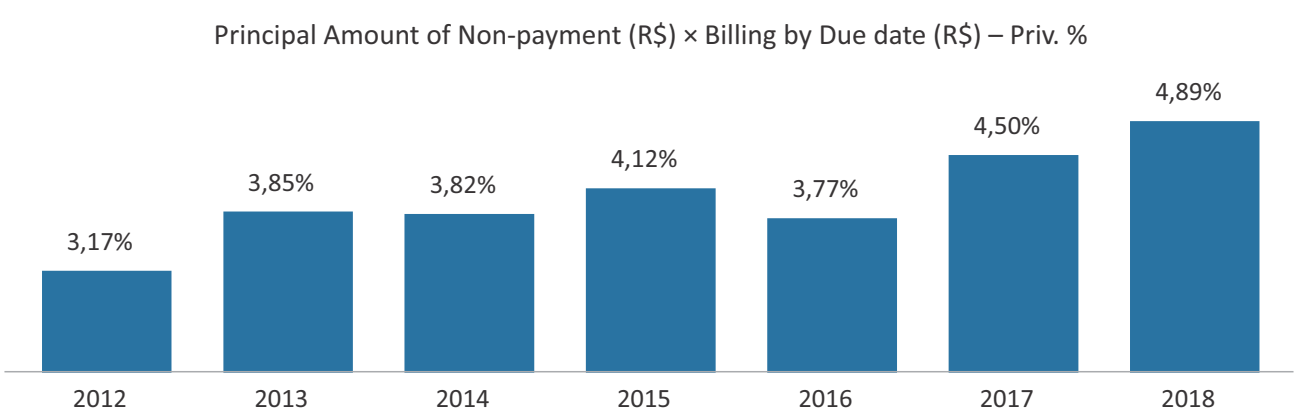
- Dr. Mário Gatti Municipal Hospital
- Dr. Cândido Ferreira Health Services
- Madre Theodora Hospital
- Sociedade Campineira de Educação e Instrução PUC Campinas, Celso Pierro Hospital
- Campinas Medical Center Foundation
- Campinas Maternity
- Vera Cruz Hospital
- Real Sociedade Portuguesa de Beneficência.

Management of Credits (103-1 / 103-2)

Consumption Delinquencies

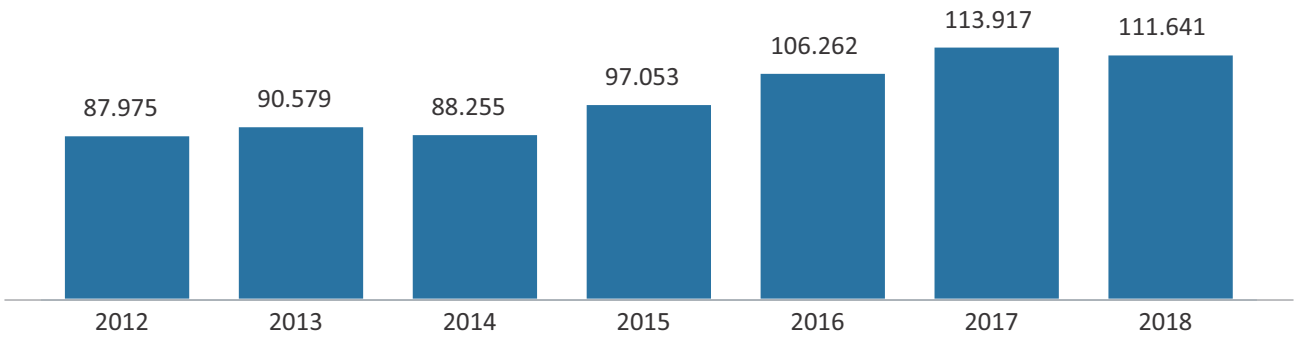
In 2018, delinquencies accounted for 4.89% of total overdue bill, versus 4.50% in 2017. Although the percentage on financial figures rose, the rate of the number of delinquent bills dropped by 2% in the same period. This points to an increase in resolved/negotiated cases, although the average value of bills has increased. At first blush, we can state that fewer debtors have a higher debt. However, this variance is minor and could be linked to some type of seasonal behavior, although this view will only be possible over a longer series of time.

Chart 9: Annual Delinquencies 2012 to 2018



Source: Data on Overdue bills extracted through the Internet from the Billing Portal

Chart 10: Amount of Non-Payments Based on Overdue Bills 2012 to 2018



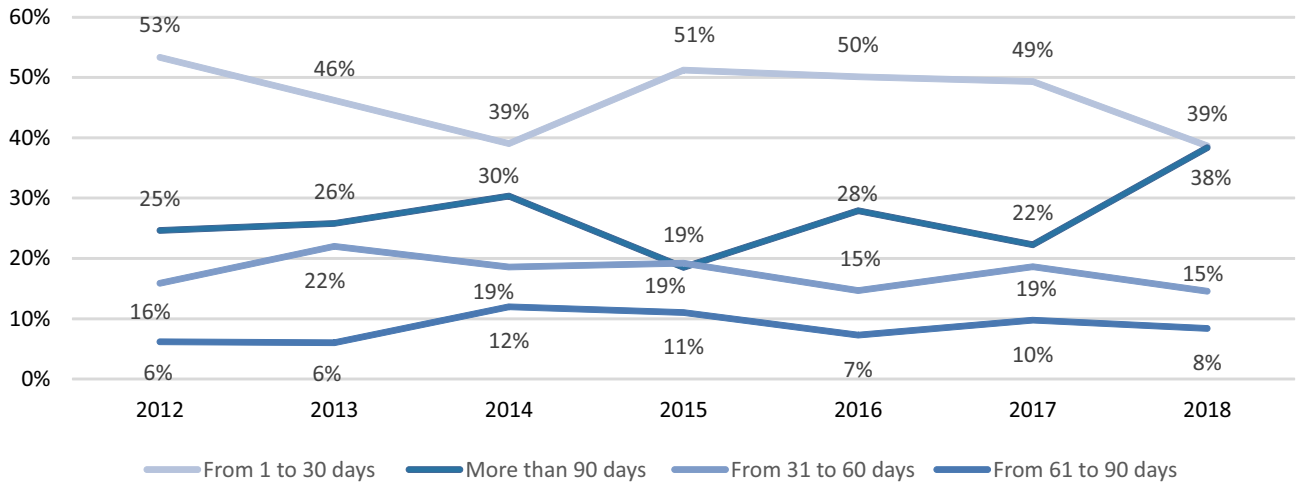
Source: Data on Overdue bills extracted through the Internet from the Billing Portal

Delinquencies per Overdue Period

The following demonstration shows the higher rates recorded in 2018, regarding the late payment period, centered around one and 30 days (39%) and debts over 90 days (38%). The first action to combat delinquencies is a cut in the supply of water, usually resulting in the recovery of about 95% of these bills. For delinquent customers who are over 90 days late in paying debts, the company resort to an amicable out-of-court collection by initiating an administrative protocol.

Chart 11: Delinquencies per Late Payment 2012 to 2018

Share (%) in Relation to Total Debt within a Period of Days

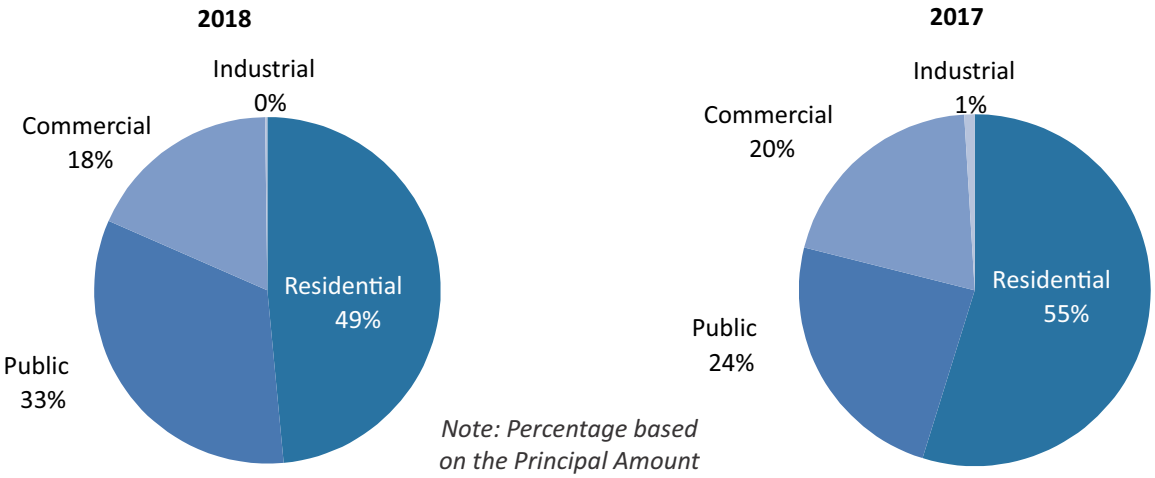


Source: Data on Overdue bills extracted through the Internet from the Billing Portal

Delinquencies by Category

The public sector has a high rate of delinquencies and, through shared management with the responsible agency, the company works with specific measures through distinct and timely treatment. These debts are settled via agreements between the parties as a matter of priority during the current financial year so that the rates stay within a safe margin.

Chart 12: Delinquencies by Category 2017 and 2018



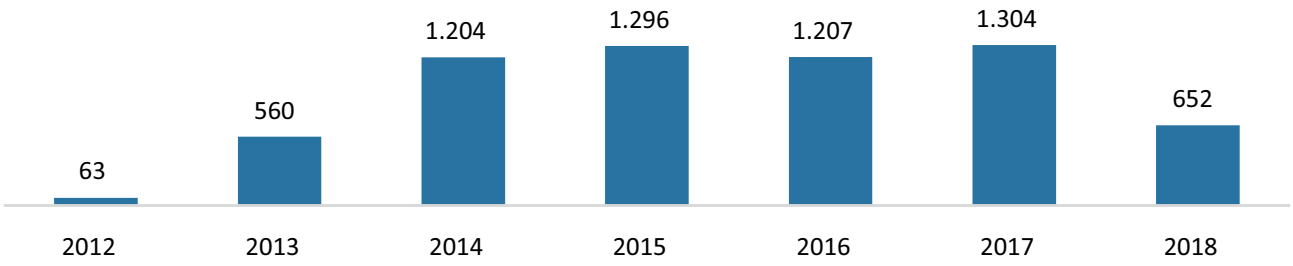
Note: Percentage based on the Principal Amount

Source: Data on Overdue bills extracted through the Internet from the Billing Portal

Extrajudicial Collection (103-1 / 103-2)

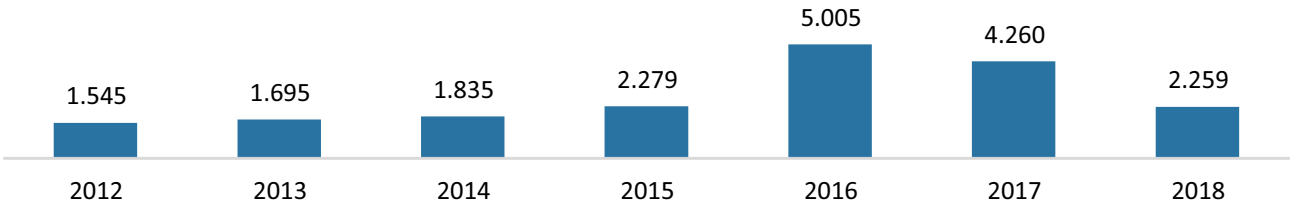
SANASA attempts to negotiate debts in order to maintain delinquencies and ensure billing. However, when all possibilities have been exhausted, consumers that owe money on their bill more than 30 days after the water supply has been cut will automatically enter into a phase in which their registration is canceled in the system, suspending the billing cycle. After six months of this phase, if there is no debt settlement, the customer code is re-selected by the system, and then starts a phase entitled provisional deletion of the connection, when the connection with the water meter is removed. This is when the company proceeds with the extrajudicial collection procedure by opening an administrative protocol, favoring a method from the highest debt to the smallest taking into account all categories: residential, public, commercial and industrial. The customer then receives a notification, through acknowledgment of receipt, to let them know about the existence of debts with a 15-day deadline to settle them. If the extrajudicial and amicable collection is unsuccessful, the protocol is sent to the legal department to initiate a judicial collection process.

Chart 13: Collection Protocols 2012 to 2018



Source: SANASA, Credit Management Coordination

Chart 14: Collection Protocols 2012 to 2018 (R$thousands of reais)



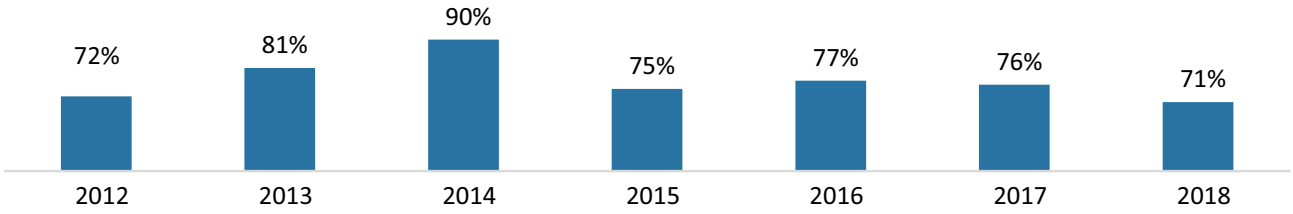
Source: SANASA, Credit Management Coordination

Debt Installment Payment and Collection Agency (103-2)

The delinquent customer may negotiate their debt by debiting and signing a Certificate of Indebtedness, with payment installments that are not lower than the minimum prevailing rate. The collection action is levied on installments overdue for more than 30 days, when they are sent to a collection agency and charged through an Acknowledgment of Receipt (AR). The unpaid installments within the legal deadline are subject to a complaint, and the accumulation of three unpaid installments, whether or not a complaint is filed, lead to a judicial execution process. Control over payment and clearing is done through the company's computerized system.

Chart 15: Installments Sent to a Collection Agency 2012 to 2018

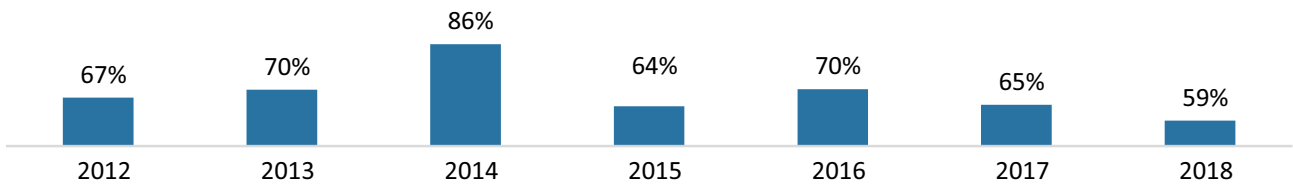
Quantity Pay × Amount Sent (Priv. In %)



Source: SANASA, Internal CICS P2 system

Chart 16: Amounts of Installments Sent to a Collection Agency 2012 to 2018

Quantity Pay × Amount Sent (Priv. In %)



Source: SANASA, Internal CICS P2 system

Alternative Sources (103-1 / 103-2)

SANASA has a monopoly over water supply and sewage services in the municipality of Campinas. The attention of the service provided to the local population and the stimulation of business in the region accounts for the premise of public health, augmenting the company's efforts in providing quality and efficient services. One of the key measures for this control is supervision over alternative sources of supply, such as cisterns, springs, artesian wells and even supply trucks. Backed by municipal legislation (Law No. 9724/1998 and Law No. 12,711/2006), which regulates the regularization and registration of alternative sources of water for the collection of wastewater discharged into the public network, the company works in the identification, inspection, guidance, technical inspection and installation of water meters in supply truck reservoirs and wells. However, overseeing water quality and well drilling is the responsibility of the Sanitary Surveillance and the Department of Water and Electric Energy (DAEE). As such, SANASA communicates with these agencies whenever it identifies an alternative source. SANASA currently has 472 registered artesian wells.

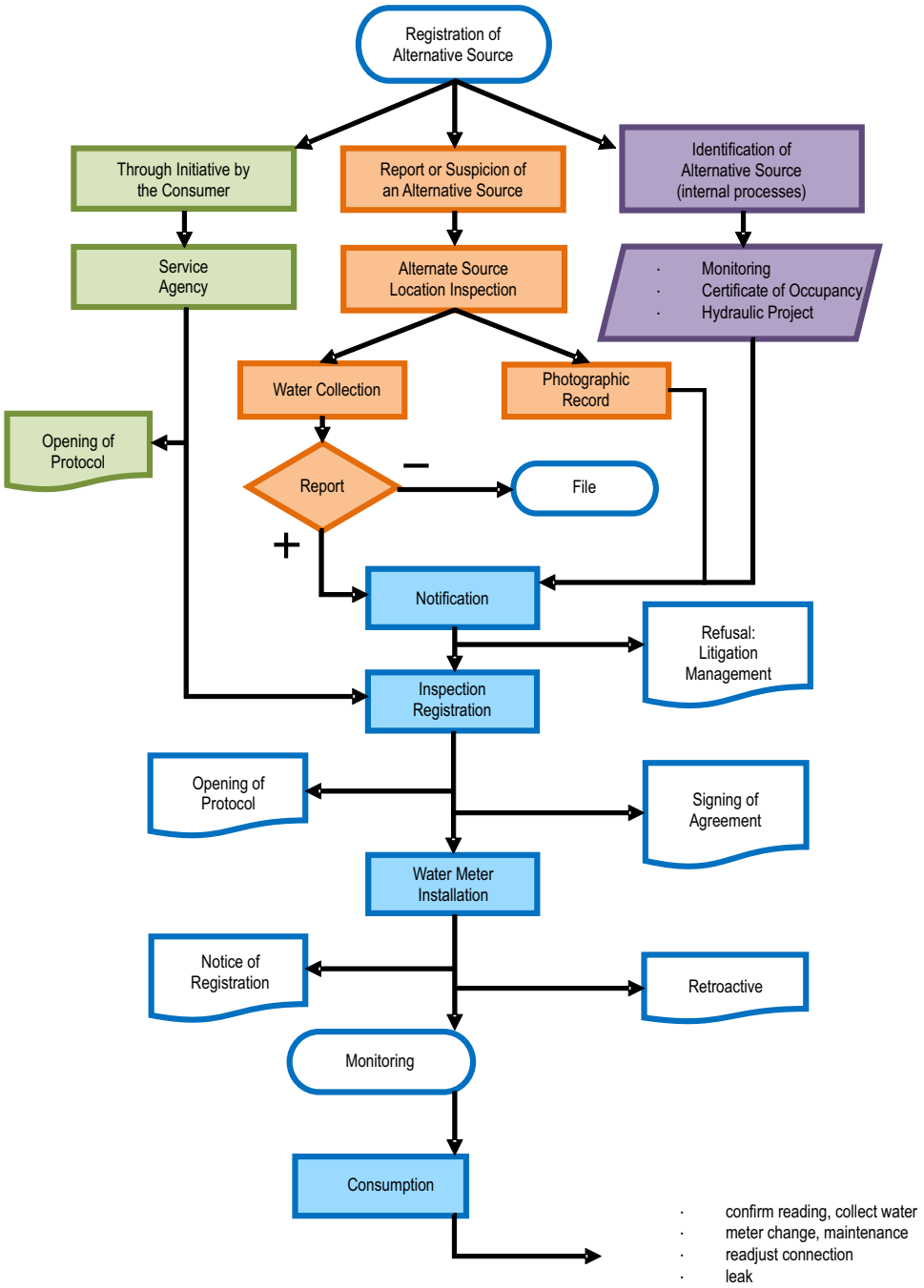
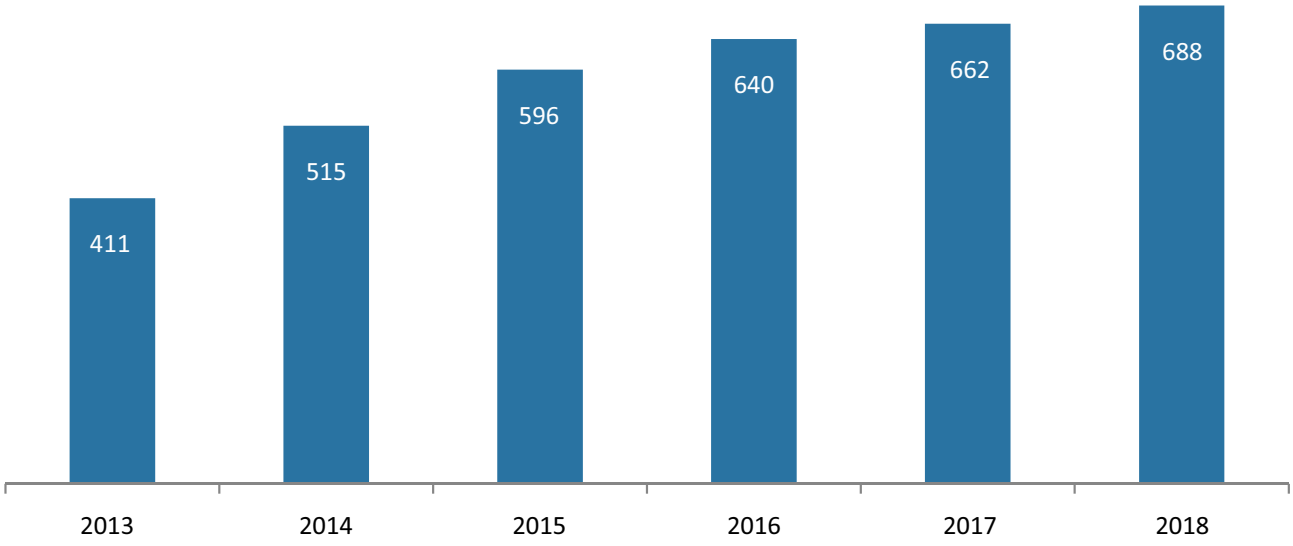


Chart 17: Registered Sources Evolution 2013 to 2018

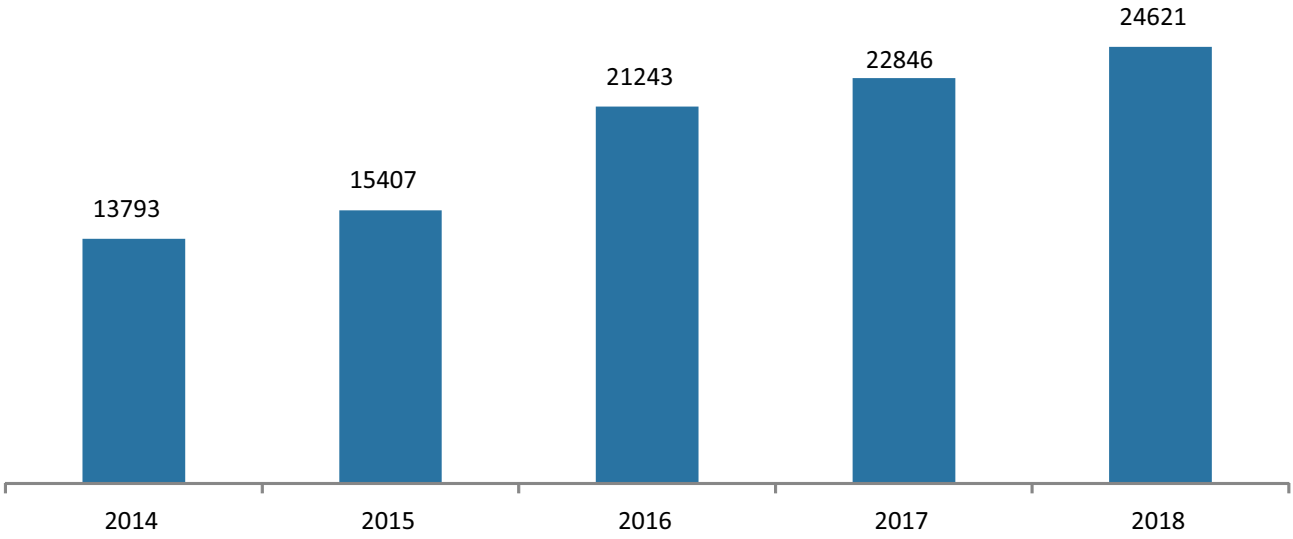


Note: The chart above also accounts for regularized and defunct sources during the period.

Source: SANASA, Supply of Alternative Sources Coordination

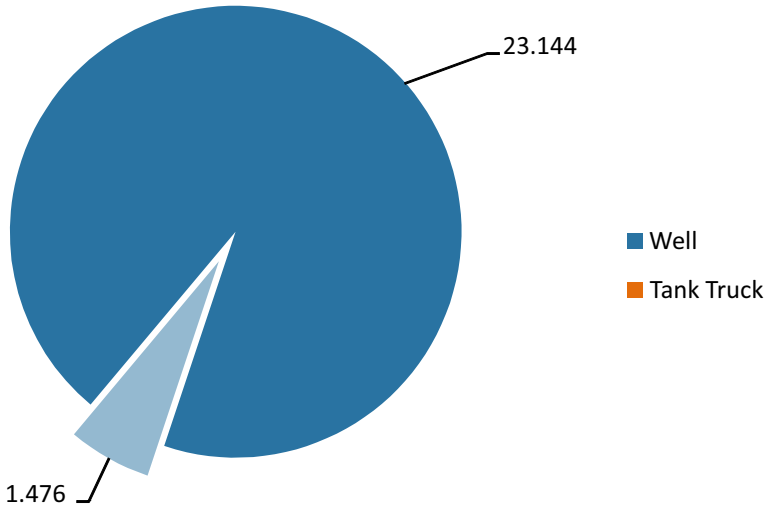
During the water crisis between 2014 and 2015, sanitation companies saw a drop in revenues, partly due to a downturn in water consumption – encouraged by the government – and partly due to the use of alternative sources of supply. SANASA instituted a strategy of strengthening the supervision and collection of effluent treated by alternative sources, preserving the environment and minimizing the fall in revenue.

Chart 18: Billing of Registered Sources 2014 to 2018 (R$thousands of reais)



Source: SANASA, Supply of Alternative Sources Coordination

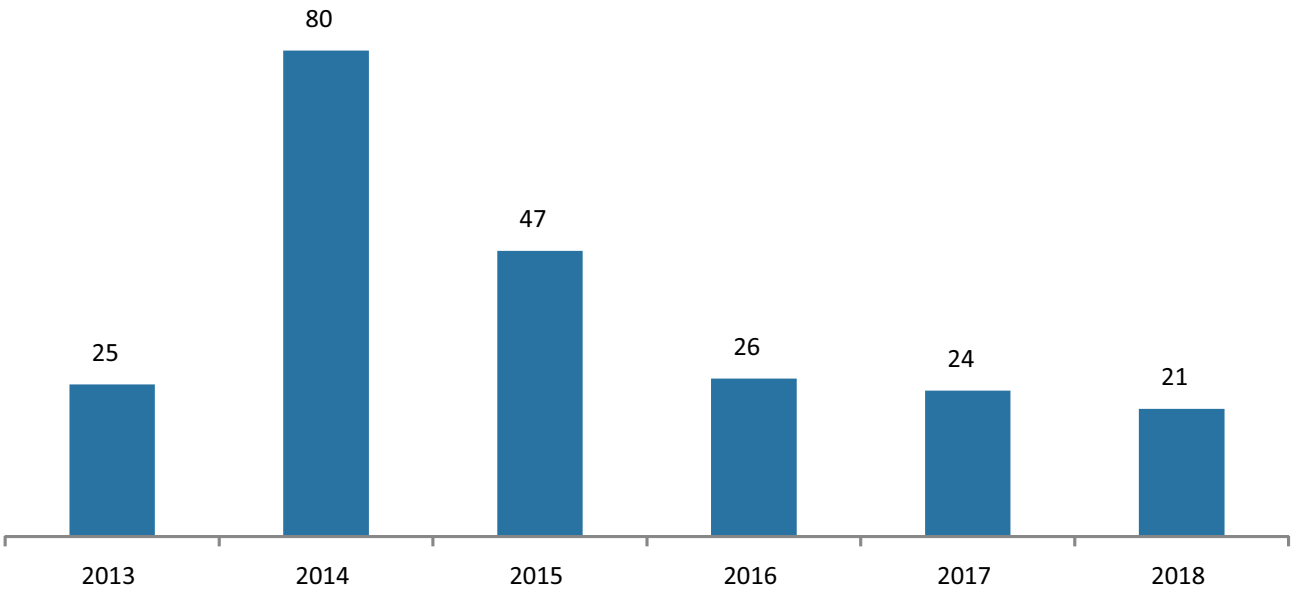
Chart 19: Well and Tank Truck Billing 2018 (R$thousands of reais)



Source: SANASA, Supply of Alternative Sources Coordination

The following chart points to the registration of supply trucks, with a growth between 2014 and 2015, the period of the water crisis.

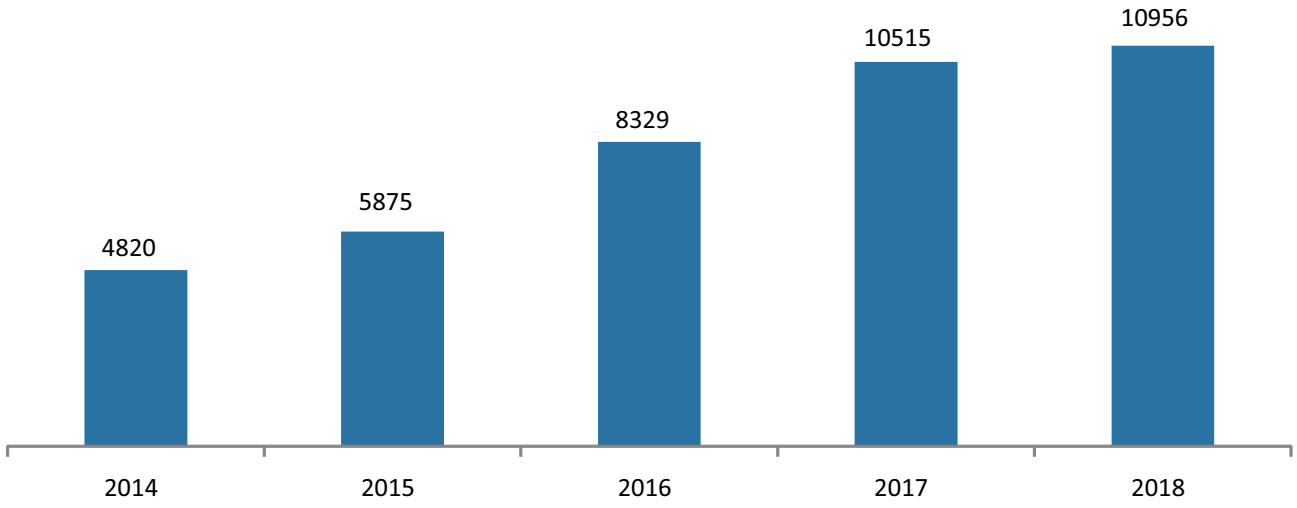
Chart 20: Tank Truck Registrations 2013 to 2018



Source: SANASA, Supply of Alternative Sources Coordination

For consumers with meters for sewage flow, SANASA has implemented a revision of technical and commercial standards. The standard establishes the suitability between water consumption and effluent discharge by assessing their water balances, creating reports that help in making decisions regarding disputes over consumption versus billing.

Chart 21: Flowmeter Billing 2014 to 2018 (R$thousands of reais)

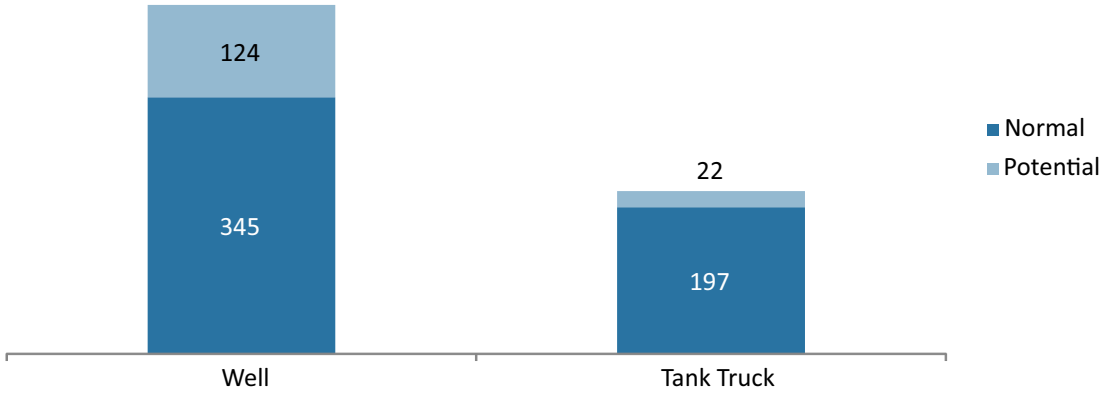


Source: SANASA, Supply of Alternative Sources Coordination

A specific consumption analysis was also established that recognizes potential large consumers with activities that demand water for their activities. Analysis performed on these consumers took into account the consumption history to find inconsistencies regarding the volume of water consumed, the average annual consumption, the size of the constructed area, type of business activity and the number of people with access to the property.

SANASA also has records on would-be (potential) users who use alternative sources and do not generate effluents. Regularization tasks are conducted for these users, with the installation of a water meter, without issuing a bill, as long as this condition of use can be attested to.

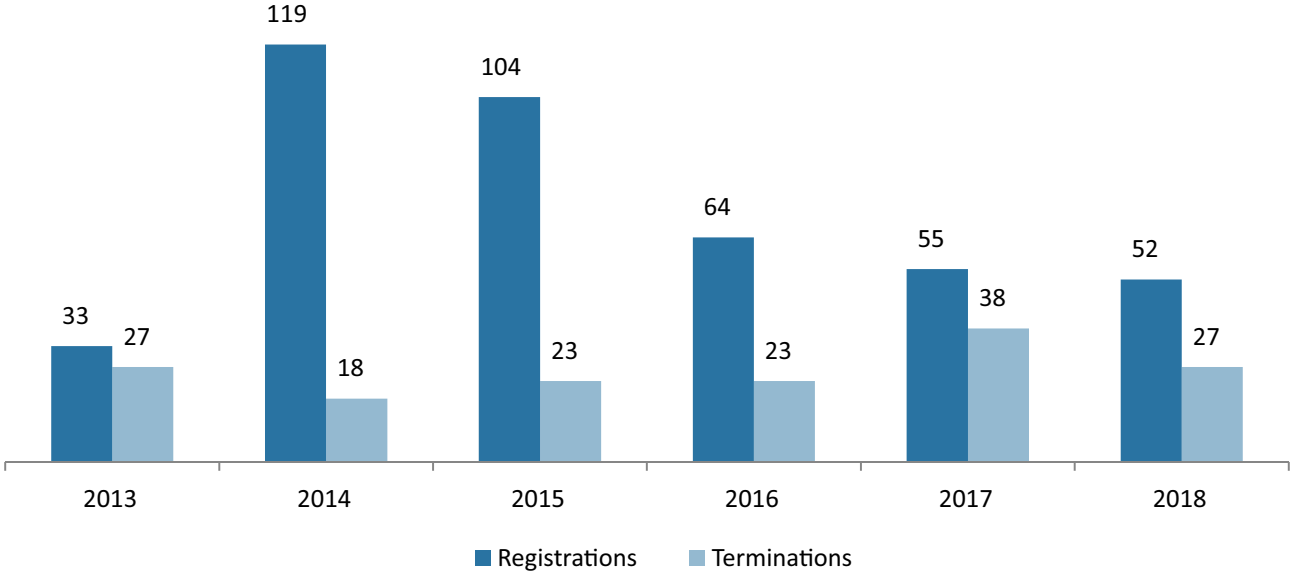
Chart 22: Would-be (Potential) Users



Source: SANASA, Supply of Alternative Sources Coordination

The work performed on efforts to integrate consumers who use alternative sources into the system has generated results, which contribute to revenues, preserving networks and the environment.

Chart 23: Registrations and Terminations



Source: SANASA, Supply of Alternative Sources Coordination

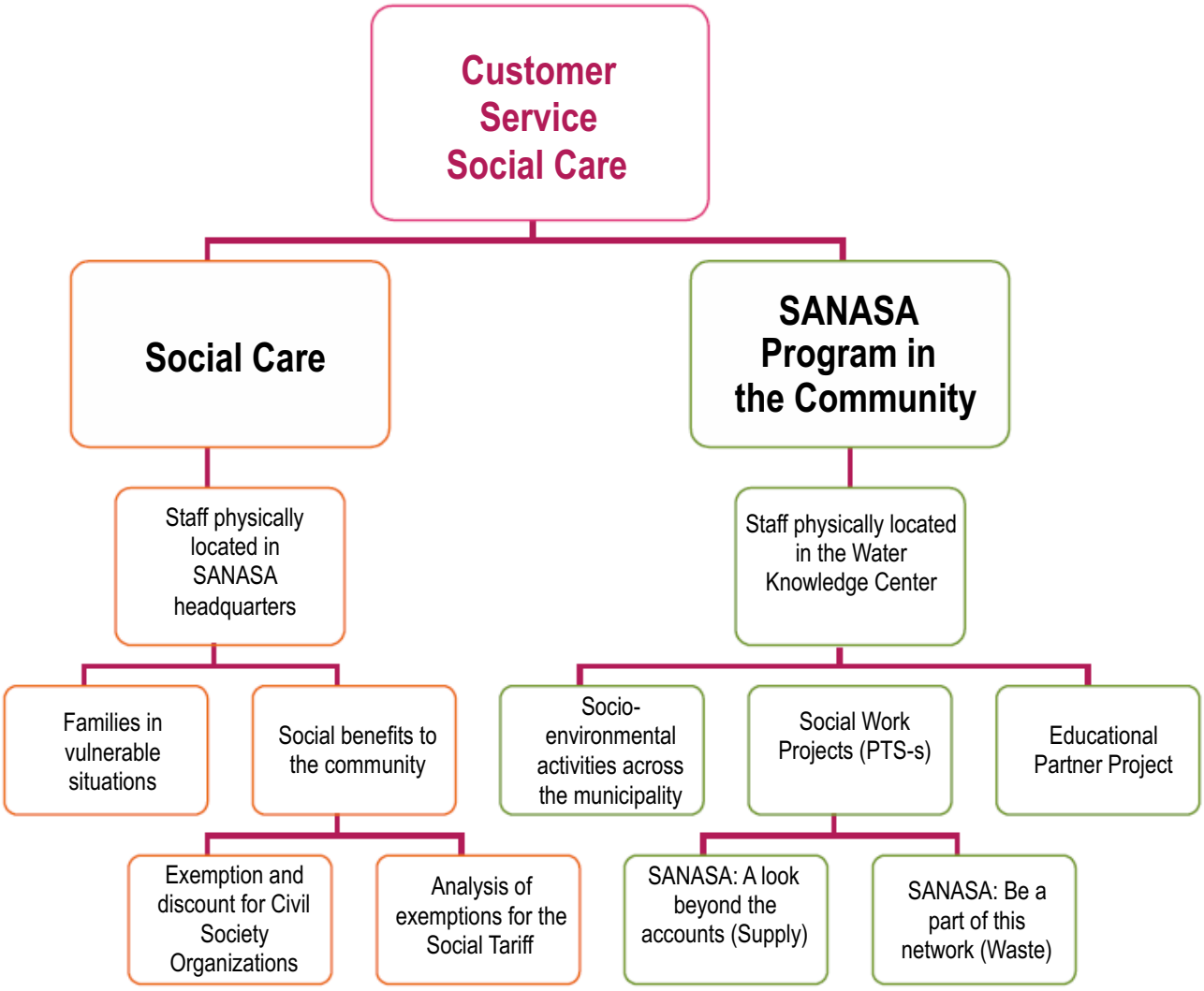
Social Customer Service (103-1 / 413)

The situation in Brazil portrays a social contrast that is deeply steeped in inequality, an aspect also seen in Campinas, where a portion of its population lives under conditions that can be characterized as transient or permanent social vulnerability. Basic sanitation service is a municipal public policy of social inclusion and public health. This policy plans for improving living conditions and economic development through extending this benefit to all residents, with guarantees of quality, equality and attendance to services. It's a tangible issue for the company considering that, according to the National Policy of Social Assistance, vulnerability can be defined as the condition in which individuals suffer from poverty, deprivation (lack of income, poor or no access to public services, etc.) and/or weakening of affective – relational bonds and social belonging (age, ethnic, gender or disability discrimination and others). Table 1 quantifies the municipality's vulnerable population by age group, according to the 2010 IBGE Census.

Table 1 – Population found in vulnerable situations in Campinas by age – 2010

Age (in years)	Total vulnerable population	% in relation to the total population of Campinas by age group
0 – 3	14,264	27.8
4 – 5	7,231	28.2
6 – 14	37,409	28.5
15 – 24	41,550	21.2
25 – 59	104,112	17.7
> 60	15,933	12
TOTAL	220,499	20.4

Source: Adapted from the Socio-territorial Diagnosis of Campinas – 2017 edition, by the FEAC Foundation.



Social issues and Delinquencies (103-2)

The Customer Service Social Care works with families in vulnerable situations and/or who are living in vulnerable territories and having difficulty keeping up with bill payments or who are already without access to sanitation services because of this situation. And the social conditions that generate vulnerabilities are various. Below are presented the main conditions in the services provided by SANASA's social workers.

Health

The effects of an illness, especially a chronic illness that has no short-term cure, do not just affect the patient but all family members as well, altering the family routine. The need for permanent patient care can lead to expenses resulting from medicines, special meals, specific personal hygiene-related articles, transportation, constructions to adapt living space, purchase of specific furniture, equipment and medical insurance. Many illnesses can lead to temporary or permanent disabling and the patient may be forced to rely on aid through social benefits. The caregiver very often needs to quit their job and forgo income when spending increases.

Unemployment

One important factor that provokes unemployment is a lack of professional qualifications and job insecurity, leading to the exclusion of families from the formal market and even low compensation. This causes more and more families to be included in income transfer programs. For families, unemployment brings about economic and family vulnerability, unleashing social instability and contributes to intensifying violence, misery, drug use, loss of self-esteem, malnutrition, serious illnesses, mental stress, a rise in crime and depression. Unemployment is a reality for many families assisted by Social Services.

Family Disputes

Social workers face adverse situations every day in providing services, often due to a lack of organization and responsibility of family members to actively participate in resolving problems. Family instability primarily stems from family members whose roles are not well defined, and it can lead to situations marked by factors that are relevant to social care, such as:

- Lack of commitment to negotiate debts: characterized by a breakdown in the pace of the family, creating an environment where agreements are breached and resulting in a violation of individual and collective rights and duties;
- Conflicts lead to broken family bonds, creating an environment where overcoming disagreements becomes difficult and the best way out is to sever ties. But the responsibilities assumed are forgotten;
- Lack of financial planning: with no more pre-established roles, there is a need for continual negotiations within the family because there is no effective accountability by those who will bear the expenses;
- Lack of mutual help: family conflicts are quite complex, especially accounting for the fact that these disputes involve emotions and hidden feelings, like sorrow, pain, revenge, and more. Most of the time, these conflicts are the result of disappointments and frustrations that arise from the realization that the expectations created around the relationship cannot be met. Conflict has always been part of social and family life because the family is dynamic and is composed of complex webs of relationships between its members. Disputes are constantly present in these webs. A family's background is marked by periods of growth, stagnation, gatherings, disagreements and reconciliation.

Households Led by Women

The growth in households headed by women is significant. The relationship between female leadership and poverty emphasizes the situation of women in low-paid jobs and their attachment to informal activities. By the same token, it is women in Brazilian society who generally take on domestic duties and childcare, placing these women directly within the context of economic and social vulnerability.

Elderly Heads of Households

The aging population has stirred a type of revolution in Brazilian families. The increasing share of elderly people as heads of households is linked to their participation in family income. These aspects emerge not only due to retirement and pension earnings, but out of income from work as well. These elderly people are not a burden on their respective families. On the contrary, they contribute to the expenses or are the sole providers of income in these families.

Situations in which the elderly are the breadwinners often result in the adult children returning to their parents' home when their marriages end or they lose their job. Often times, the elder's retirement or pension earnings end up being shared among family members living under the same roof, which can lead to issues with insolvency for the elder when attempting to apply for credit to settle family related debts.

Substance Dependence

An increase in the continual abuse of psychoactive substances interferes directly with a person's relations with society and the family in particular, and this often has an impact on finances. Under the context of temporary or permanent disorder within these families, severe situations and financial imbalances lead to risk factors, including: violence, intense family disputes, vulnerabilities in social and emotional bonds – all unleashing fragility and household debt. Bearing this in mind, there is a need to focus additional attention on families that are fragile and unprotected. Besides being at risk, they end up not getting enough financial support for a family member who requires help to obtain quality treatment and monitoring. As attempts are made to care for and improve the living condition of this family member, debts and loans are produced.

Prisoners, Ex-convicts and Adolescents in conflict with the Law

Social Care addresses cases of families with estranged members and/or individuals under legal supervision. These families face hardships in ensuring the survival of their members, at the same time suffering from their emotional and social plights, often due to societal prejudice. They also end up amassing debt in an attempt to help their loved one in the defense process.

Social Care (413-1 / 103-2)

Social Assistance works with people who need support to gain access to the services and benefits offered by SANASA, promoting social inclusion and encouraging creditworthiness. The work includes supervisory visits, socio-economic analyzes and guidance on family budgeting and the proper and conscious use of water.

All services and procedures are registered in the Social Service Unit. These records are used as a tool to prepare a background on the families they attend to and to ensure that Social Work continues. The discounts and exemptions granted for consumption, water/sewage networks and connections, as well as for other services provided by the company, are measured on a monthly basis.

Social Care Goals

- To provide access to sanitation by offering alternative ways to settle debts;
- To raise awareness about the services provided and how best to use them;
- To encourage the appropriate and responsible use of water to prevent waste;
- To provide advice on preparing a family budget;
- To encourage timely payments;
- To offer an opportunity of social inclusion.

Home Visits

Home visits are a professional tool used by social workers in order to leverage awareness on the everyday conditions of consumers in their family environment and life in the community.

Monitoring of Social Care

The monitoring of social care is a procedure defined by internal standards. Daily queries are made to access information and corporate system data; to assess social and family backgrounds (records, services, reports and visits) and telephone contact with the consumer.

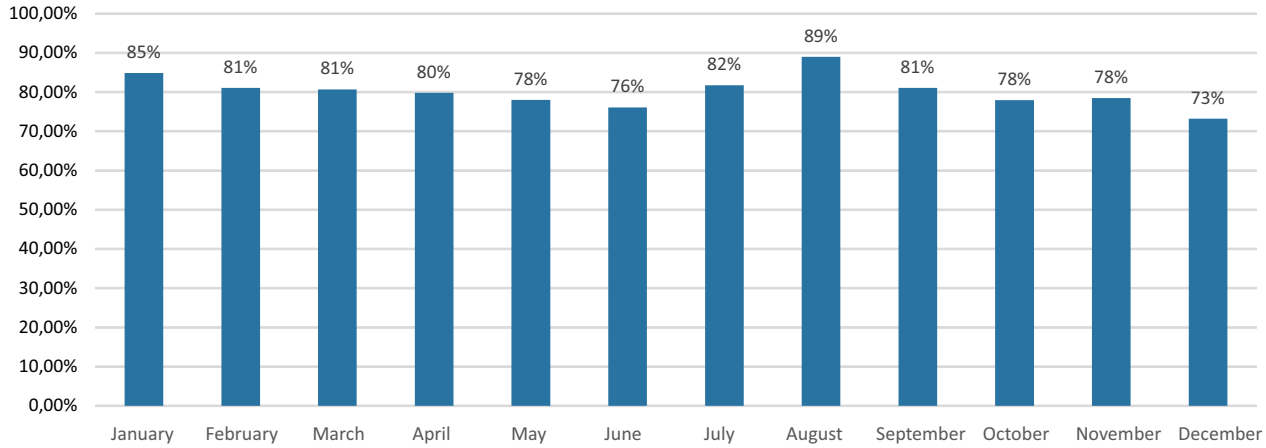
Goals for Monitoring Social Care

- To track compliance with return dates for interviews;
- To empower the consumer and their family in taking responsibility for the commitment made to SANASA and ensure that they remain in the program;
- In cases of non-compliance and/or absence at interviews, to determine the reasons.

This type of monitoring generally incentivizes consumers to include water bill payments in their family budget, fostering a habit of conscious consumption geared towards compliance and facilitating social inclusion.

Chart 24 outlines the Consumer Attendance Rate on scheduled return visits with social workers, averaging 80.15% in 2018. The data shows that most consumers served by Social Services comply with the scheduled returns.

Chart 24: Consumer Social Attendance Rate



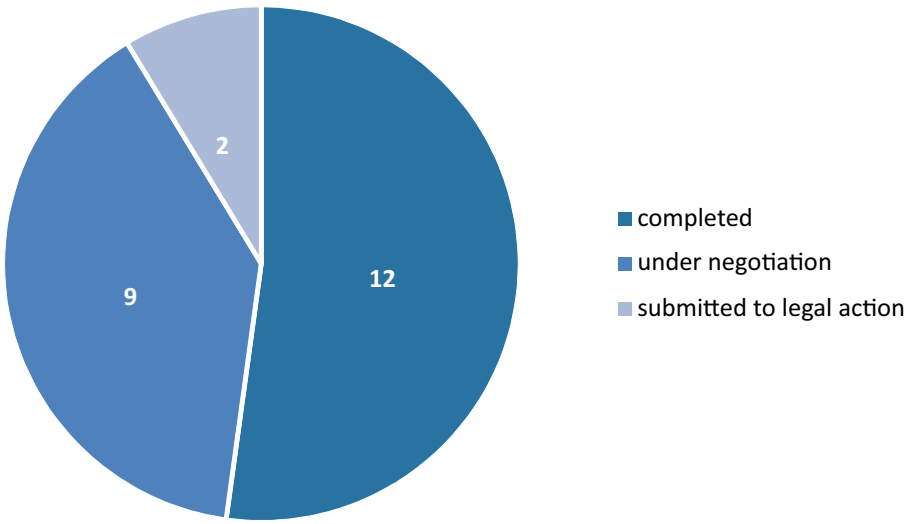
Source: SANASA, Customer Service Social Care Coordinator

Extrajudicial and Judicial Proceedings (103-2)

Legal and out-of-court procedures submitted by Social Services arise from old debts that have already passed through the Customer Service and Collection departments in an attempt to negotiate a payment, but not being able to come to any kind of settlement.

Chart 25 illustrates the data from extrajudicial proceedings that were submitted to Social Services in 2018. Extrajudicial or out-of-court proceedings are those where no official legal action has been filed against the consumer, and are still within the process of attempting an internal resolution at SANASA.

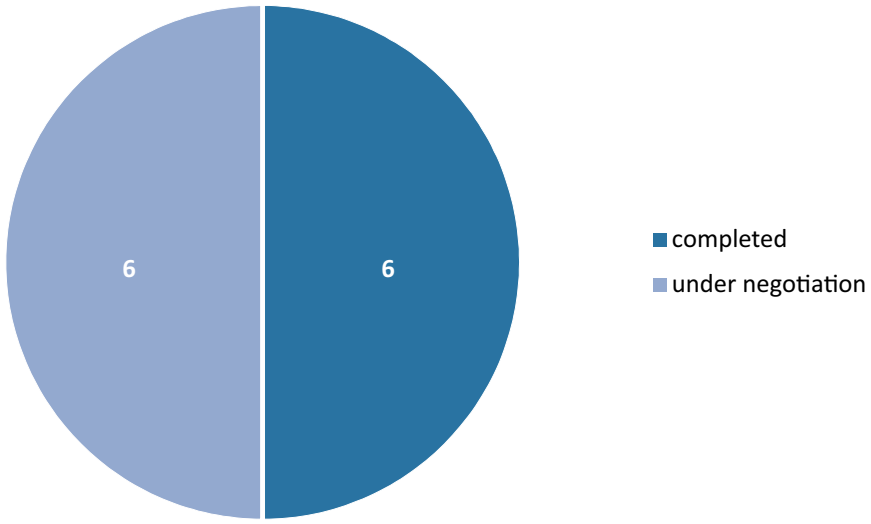
Chart 25: Extrajudicial Procedures



Source: SANASA, Customer Service Social Care Coordinator

Judicial procedures (lawsuits, legal actions) are those in which SANASA has filed a civil action to collect monies owed. After the consumer is notified or there is a hearing in court, cases involving vulnerability are referred for service and supervision by Social Services.

Chart 26: Legal Proceedings



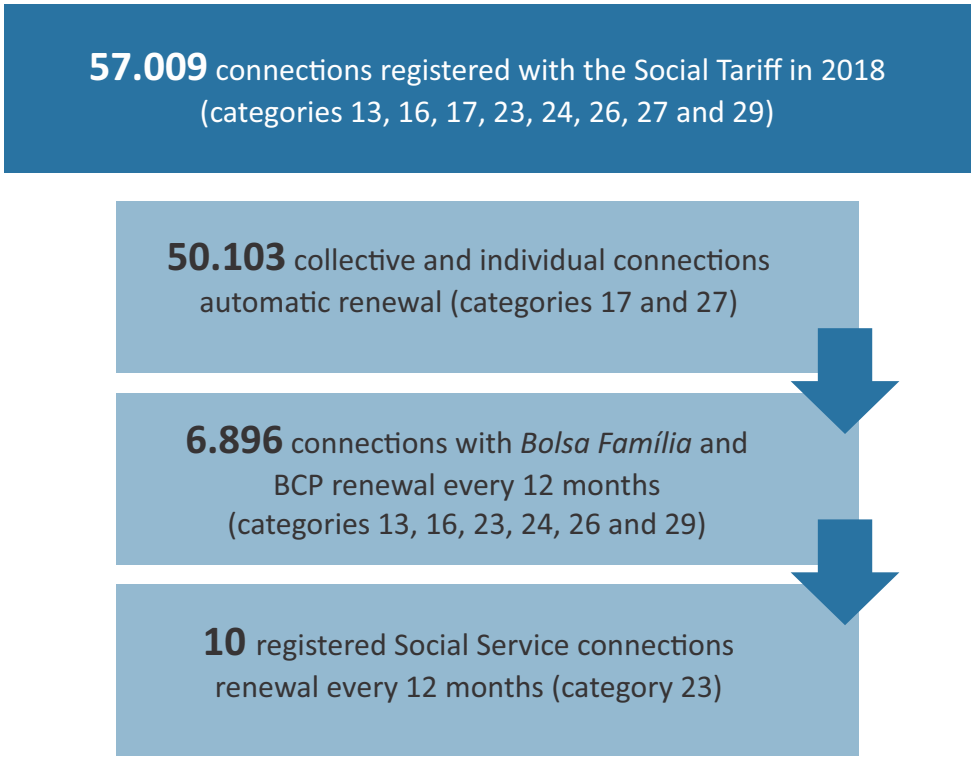
Source: SANASA, Customer Service Social Care Coordinator

Social Tariff (203-2 / 413-1)

SANASA holds a Social Tariff policy for vulnerable families, with a monthly discount on bills with consumption of up to 30 m3. Access to the benefit is extended to families living in residential centers that are supplied by individual water connection, families that receive assistance from the federal government's Bolsa Família Program, and people with disabilities who receive the Continuous Cash Benefit Program (BPC from INSS).

Registration and renewal of the Social Tariff are automatic for connections to residential centers. In other cases, the registration must be done by the consumer directly with the customer service agencies every 12 months.

Cases including debts and those that do not meet the aforementioned conditions are analyzed by the Customer Service Social Care for possible categorization.



Civil Society Organizations – CSOs (413-1 / 103-2)

Campinas enacted Law 7577/1993, which benefits Civil Society Organizations that offer free services to the population. The benefit guarantees a waiver on water and sewage fees up to the maximum consumption limit corresponding to 60 m³ (sixty cubic meters) per month. If this consumption is exceeded, the unit receives a 50% discount on the excess amount. Using an internal standard, SANASA establishes the criteria and procedures for the transparent, fair and effective tracking of this monetary benefit. In 2018, the waiver/rebate granted amounted to R$2.9 million.

REPORTING PRACTICE

REPORTING PRACTICE

Definitions (102-32 / 102-46 / 102-50 / 102-51 / 102-54 / 102-56)

This is SANASA's eighth GRI (Global Reporting Initiative) covering material issues related to January 1st to December 31st, 2018. The report is prepared in accordance with the GRI Core Standards. This document has gone through external verification in accordance with **AccountAbility AA1000**. SANASA adopts the GRI practice on an annual basis, with the previous one published in 2018 for the January 1st to December 31st, 2017 financial year. The GRI application process falls under the responsibility of the Chairmanship and its coordination is done through the Sustainability Management Advisory, which includes the involvement of all business areas. Content is approved by board members and the final validation is submitted to the Board of Directors, subsequently published on the company's website.

Integrated Report

SANASA adopted the annual GRI Sustainability Reporting practice in 2012. Since that time, the company has been building on a continual learning process, reflecting on business impacts and value creation for the local community. In 2014, the company initiated studies on Integrated Reporting. Not long after the GRI Standards were submitted in 2016, an in-depth analysis of the report was undertaken to understand how SANASA generates value through sanitation service and how the company's business capital is incorporated. This learning process led the company to a broader and more assertive perception of the business and played an integral role in preparing the Integrated Report under the 2018 GRI Standards. Considering this is an on-going process, there is an understanding that the company moves on from this stage to a better contextual analysis of its capital and can then reflect on the business model.

Map of Stakeholders (102-40 / 102-42 / 102-43)

The Map of Stakeholders is the inclusion principles understood by three levels of relationships:

- Internal Primary Stakeholders: direct impact on decision making, represented by Shareholders, Directors, Managers, Employees;
- External Primary Stakeholders: indirect impact with high influence on decision making;
- Secondary stakeholders: indirect impact on decision-making.

Sanasa Map of Stakeholders

Internal primary stakeholders
External primary stakeholders
External secondary stakeholders

Consultation for Stakeholders (102-21 / 102-44)

SANASA conducts consultations with its stakeholders in a broad and democratic manner. The company is committed to listening to and understanding the shared desire of the community living in Campinas in order to reach the goal of making sanitation universal in a fair and equitable manner. Mechanisms for engagement provide the breadth needed for all stakeholders to be addressed.

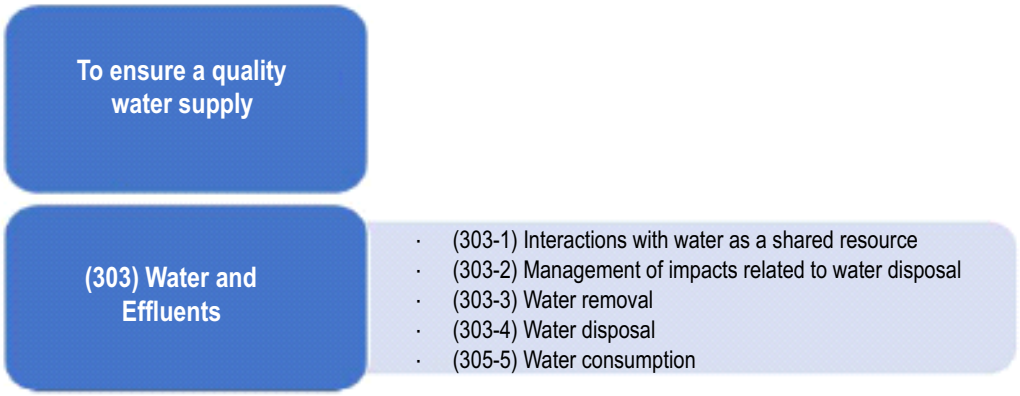
Stakeholder consultations are based on the preparation of the Citizens Budget, conducted annually by the Campinas Municipal Government, which reflects residents' expectations about their needs and demands. Referrals related to the water supply and sanitary sewage service are sent to SANASA and become part of the 300% Plan, which plans to reach universalization by 2025. The goals established by the company in the 300% Plan are reported to the Municipal Government for incorporation into the Municipal Plan of Basic Sanitation for the Municipality of Campinas (2013-2033) and can be tracked by city residents through the Transparency Portal and accountability through the Integrated Reporting and Financial Statements of the business.

Definition of Content, Limits of the Topics (102-46)

Prioritization of the material topics from this report considers the validity of the Business Plan and Long Term Strategy. This document accounts for water security scenarios and the company's goals and objectives to ensure the efficiency and effectiveness of the sanitation system in the municipality. The Business Plan is reassessed every year with the company's managers and is submitted for approval by the Board of Directors.

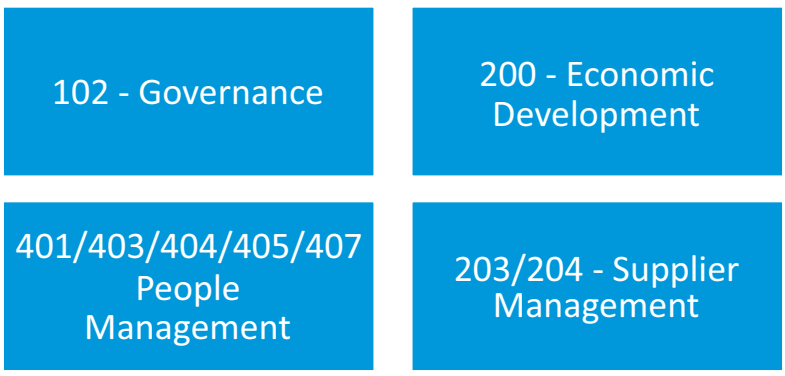
Material Issues (102-47)

The material issues are reflected in the amplitude of universal sanitation in the city of Campinas and the business goals.



Material Issues (102-47)

Continuous (or permanent) issues are those that SANASA maintains in all its reports and that contribute to transparency, integrity and management efficiency.



Sustainable Development Goals – SDG

The commitment to the 2030 Agenda through fulfilling the SDGs has contributed directly to creating value through the material issues that SANASA outlines within this Integrated Report.

In its core business, the company recognizes SDG6, which is reflected in its business practices and contributes to fulfilling SDG3, SDG4, SDG5, SDG16 and SDG17. SANASA outlined its efforts to universalize sanitation in its business strategy goals and investments back in 2013. The initiative was titled "The 300% Plan" – 100% water supply, 100% removal and 100% sewage treatment in the municipality of Campinas. In the 2018 fiscal year, the supply of safe and potable water covered 99.81% of the population, collection and removal reached 96.05% and the installed sewage treatment capacity was 95%.

Between 1997 and 2018, investments in construction projects to expand the sanitation service came to R$1.4 billion, a positive impact on the lives of 1,194,094 residents in the city (IBGE/2018). During this period, infant mortality rates dropped from 15.97/1,000 (IBGE/1997) to 8.88/1,000 (IBGE/2017). Hospitalizations for waterborne illnesses in Campinas posted a rate of 1.78/10,000 (Instituto Trata Brasil/2017), with a rate of 0.03/1,000 for diarrhea (IBGE/2016). One of the most significant sources of data is the Human Development Index (HDI), which was 0.705 in 2000 and 0.805 in 2010.

VALUE CREATION OF SANITATION SERVICE FOR THE MUNICIPALITY OF CAMPINAS

Population: 1,194,094 inhabitants (IBGE/2018)
Water Supply = 99.81% population
Sewer Service = 96.05% population
Infant Mortality Rate = 8.88/1000 (IBGE/2017)
Hospitalization for diarrhea = 0.3/1000 (IBGE/2016)
School Enrollment Rate – ages 6 to 14 = 96% of the population (IBGE/2010)
HDI = 0.805 (UNDP/2010)
GDP per capita = R$49,876.62 (IBGE/2016)

United Nations Global Compact CEO Water Mandate: Water Stewardship

SDG6.4 – By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

The company's vision is to perform its duties with excellence aligned with technological innovation and management efficiency. SANASA is a signatory of the **United Nations Global Compact CEO Water Mandate** and has been actively engaged in the good governance of water. In 1994, company officials defined the reduction of losses as a business strategy and implemented the Program to Combat and Control Losses. The program received investments of R$235 million between 1994 and 2018, and facilitated a savings of R$1.2 billion. The preservation of this resource is a result of there being no need to perform repair work on the network during the period, as a result, there was financial sustainability to support investments in the sewage system. At the same time, the Program to Combat and Control Losses performed superbly in the Loss of Distribution Index (IPD) and Loss of Revenue Index (IPF) – between 1994 and 2018, the record is IPD 37.7% and IPF 34.6% reduced to IPD 20.8% and IPF 12.9%.

The generation of environmental value guaranteed that the population of Campinas was supplied with water, without resorting to rationing, during the water crisis of 2014 and 2015. Over the twenty-four years of this program, 505 million cubic meters of water were conserved, generating a positive impact on the Piracicaba, Capivari and Jundiaí (PCJ) river basins. Since 1997, Campinas has maintained the same grant volume – 133 million cubic meters – and, thanks to the efficiency of the system, operates with a consumption clearance of 26,490 million cubic meters.

INITIATIVES AND INVOLVEMENTS

INITIATIVES AND INVOLVEMENTS

External Initiatives (102-12)

In its sustainability policy, SANASA has defined commitments to relevant domestic and international organizations. Aspects like, for example, adding value to the brand and strengthening integrity and transparency, were all considered when choosing these organizations.

2012

- **10 Global Compact Principles of the United Nations – United Nations Global Compact**
- **Ethos Institute of Social Responsibility**

2013

- **Business Charter for the Promotion of a Green and Inclusive Economy**
- Leader Summit 2013/UNGC-New York

2014

- **The CEO Water Mandate/UNGC**
- **Business Charter for Human Rights and the Promotion of Decent Work – Ethos Institute**

Membership in associations (102-13)
Organizations in which SANASA holds a seat on the governance board

International

- **Steering Committee CEO WATER MANDATE / UNGC**
  Participates as a member representing Latin America
- **Global Reporting Initiative – GRI**
  One of the employees of SANASA occupies a seat on the Latin America and the Caribbean GRI Stakeholder Council

Domestic

- **Brazilian Committee of the UN Global Compact – CBPG**
  Participates as a committee member
- **Less Loss, More Water Movement – Global Compact Brazil Network**
  Participates in the shared leadership
- **National Council of Water Resources, Ministry of Environment – CNRH**
  Participates as a board member
- **Water Resources Guidance Board of the Ministry of Environment – COFEHIDRO**
  Participates as a board member
- **Board of Trustees for the Guarantee Fund for Length of Service – FGTS/Caixa Econômica Federal**
  Participates as a board member
- **National Association of Municipal Sanitation Companies – ASSEMAE**
  Occupies the National Vice Presidency, the São Paulo Regional Presidency and the Fiscal Board

Regional

- **Piracicaba, Capivari and Jundiaí (PCJ) Consortium**
  Occupies the Vice Presidency of Hydrological Monitoring Systems
- **Piracicaba, Capivari and Jundiaí (PCJ) River Basin Committee**
  Occupies the Vice Presidency and has members in all Technical Councils
- **PCJ Agencies**
  Occupies the Chairmanship of the Board of Directors
- **State Water Resources Council – CRH, State Department of Water Resources**
  Participates with members in all Technical Councils
- **State Sanitation Council – CONESAN, State Sanitation and Water Resources Department**
  Participates as a Board member

Municipal Government of Campinas

- **Municipal Environmental Council – COMDEMA**
  Participates as a Board member
- **Council Manager of the Campinas Environmental Protection Area – CONGEAPA**
  Participates as a Board member
- **ARES PCJ Regulation and Social Control Board**
  Participates as a Board member

ASSURANCE

SUSTAINABILITY REPORT ASSURANCE STATEMENT

To Members of Senior Management and other stakeholders of SANASA – Water Supply and Sanitation Company S.A.

Introduction
Green Domus Sustainable Development (Green Domus) has been hired by SANASA (Sociedade de Abastecimento de Água e Saneamento S/A) to provide assurance on its 2018 Sustainability Report.

SANASA was tasked with preparing and submitting information on its sustainability performance in its 2018 Sustainability Report, along with providing the required evidence for assurance procedures, while Green Domus pursued independent assurance in a systematic way that was documented and based on the evidence required and submitted by SANASA.

Assurance Guidelines
The assurance process was conducted based on the AA1000 Assurance Standard 2008; AA1000 AccountAbility Principles Standard 2008 and the GRI Standards of the Global Reporting Initiative (GRI).

Level and Type of Assurance
Assurance conducted by Green Domus was moderate and type 1, as defined by the AA1000 Assurance Standard 2008. As such, adherence to the Principles of Inclusion, Materiality and Responsiveness were verified, along with how the organization communicates this performance in the sustainability report, the presentation of the information requested in the essential "according to" option defined by the GRI and following the criteria for content definition and quality assurance of the report.

Limits of Assurance
Assurance was limited to assessing the information made available in SANASA's 2018 Sustainability Report and other evidence that supported its content.

Methodology
Assurance began through a preliminary assessment of the information outlined in SANASA's 2018 Sustainability Report and in the documents that supported its preparation. Telephone interviews were conducted to speak with the stakeholders involved and to gather evidence on the reported information.

Using the Assurance Protocol, we requested adjustments to the information disclosed in the report and suggested improvements to suit the assurance rules applied. The assurance procedures were only completed after the final notes had been made.

Independence and Impartiality
For the purposes of this assurance, Green Domus states it has no relationship with SANASA that prevents it from issuing this Assurance Statement in an independent and impartial manner. It also emphasizes that all professionals involved in this assurance process are aware and certified in the Green Domus Quality Management System, whose content includes the policies and procedures that confers the company with an impersonal operating standard and the mitigation of possible technical risks in the development of its activities.

Comments and Recommendations
Without interfering in the positive conclusion of this assurance, Green Domus makes the following recommendations for improving and adopting best practices for SANASA reporting:

- Respond to all disclosures on the "agree" option chosen or use the reasons for omissions accepted by GRI standards to

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justify information that has been left out.

- Deepen the management of quantitative data from the reported indicators in an effort to increase the organization's responsiveness to the material issues.

Conclusions

In the opinion of Green Domus Sustainable Development, SANASA's 2018 Sustainability Report, which relates its strategies, policies and actions with its sustainability performance, is a proper representation of the company.

Based on the procedures described in this assurance report, Green Domus can state they have not received any information that leads it to believe that the information contained in SANASA's 2018 Sustainability Report has not been compiled in all relevant aspects, in accordance with the 2016 GRI Standards for the Essential "according to" option, the 2008 AA1000 AccountAbility Principles Standard, and the organizational guidelines that served as its basis for preparation.

São Paulo, July 1st, 2019.

Higor José V. Valle
Project Manager

Marina Dall'Anese
Head Auditor

Nino Sergio Bottini
Independent Reviewer

ANNEXES

QUALITY MANAGEMENT AND TECHNICAL AFFAIRS

A sanitation company simultaneously combines characteristics of a public and private company. The company provides a service involving the supply of an industrialized product (treated water) in households and collection of another product (sewage), also for processing in an industrial plant for 24 hours, with public health and environmental management, points that are directly linked to public administration and are in the interests of civil society.

At SANASA, the Quality Management System manages the internal and external documents. These documents depict the work routines of the company's sectors and the performance indicators that are linked to the processes and the National Sanitation Information System (SNIS). Since 2004, the System has been audited annually by the Brazilian Association of Technical Standards – ABNT, to maintain its quality management certification in accordance with NBR ISO 9001 standards.

Earning certifications and accreditations is part of SANASA's Strategic Guidelines and represents the pursuit for continuous improvement in processes and activities. The implementation of management systems provides considerable gains for business prosperity and reflects advances in the company's in-house work routines. This is due to the standardization of activities and the establishment of controls and monitoring tools for processes and operations that underpin decision making and ensure that quality products and services and environmental protection are being attended to, as well as reflecting externally, increasing reliability and promoting the company's institutional image.

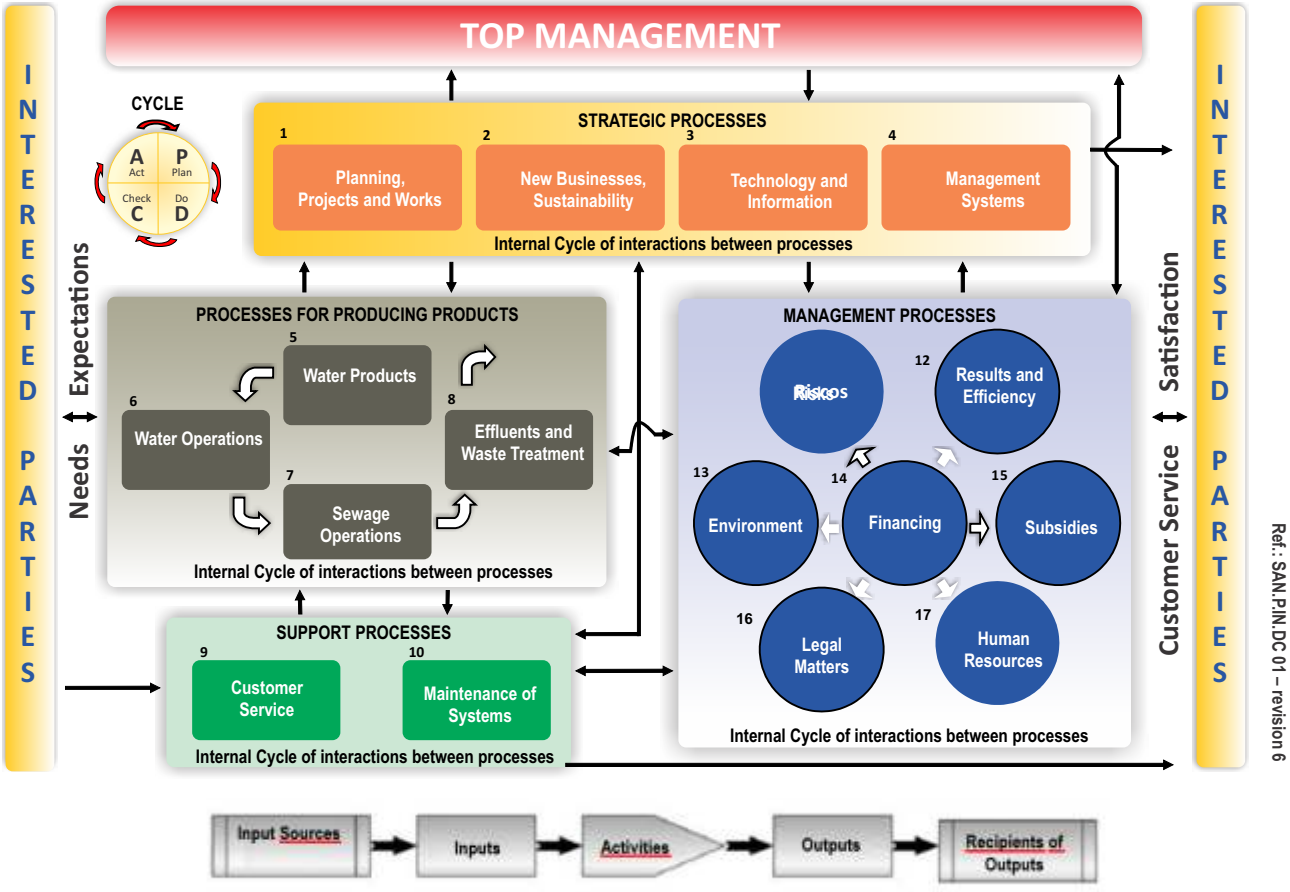
It is a significant and on-going challenge to earn and maintain a Quality Certification, and also seek to innovate and improve activities in a mixed-capital company, with industrial processes, business service agencies, administrative and financial structures and various operating and maintenance apparatuses, divided and winding through all public areas. To improve the system, each SANASA employee must adopt quality management values to control their daily actions and duties.

From 2004 to 2018, the Quality Management and Technical Relations Management Department administered training courses on internal auditors and recycling, involving theoretical and practical activities and internal training for publicizing the Quality Policy and Management System tools. The training has been one of the points of success and continuous improvement in the company's processes.

The Quality Policy and Goals were revised in 2017 to conform to the 2015 version of the NBR ISO 9001 Standard. Its scope includes the Production and Operation of Water, Operation and Treatment of Effluents and Waste from the Municipality of Campinas. The goal is to fulfill the needs and expectations of stakeholders while observing: business management, the development of socially responsible actions and technological innovations, focused on improvement processes and Sustainability.

SANASA Management Systems are based on the map of processes, revised in 2017, as shown in **Figure 1** below:

Figure 1: Process Map of Management Systems



Source: SANASA, Quality Management and Technical Affairs

In an effort to keep its products under compliance, SANASA conducts a series of inspections and lab analyzes throughout its water production processes (including water catchment and treatment), water operations (including reservoir, distribution and connection), sewage operations (which includes connection, collection and disposal) and effluent and waste treatment (which includes sewage treatment and final disposal of waste), in addition to an annual critical analysis of the Management System. In 2018, seven internal and one external audits were performed to maintain and upgrade the 2015 version of the ABNT NBR ISO 9001 standard, resulting in the 13th consecutive year without any non-compliances – maintaining certification and marking a milestone in the SANASA Quality Management program.

Internal and external audits are measurements, but any investment made will only be justified if used within the routine. This is not a mere repetition of attributions, but their evolution over time.

Scheduling for the internal audit includes at least one activity from each process throughout its execution so that all processes have an opportunity to be audited during the year.

Since 2009, a tool has been used on the intranet (web environment), developed by the company's IT department, which allows the facts identified during the daily activities (spontaneous reports) and during the audits (internal and external) to be reported.

746 reports were registered in-house in 2018, resulting in:

- 449 compliances;
- 98 non-compliances;
- 21 observations;
- 54 opportunities for improvement;
- 81 improvements performed.

Note: Of the 746 reports, 35 were canceled for various reasons, such as being not applicable or duplicate, and 8 were generated to test the system.

Externally, five observations and four opportunities for improvement were recorded by ABNT's Auditors in 2018. Table 1 below shows the results of external audits since 2004:

Table 1: External Audits 2004 to 2018

YEAR		Non-compliances	Observations	Opportunities for Improvement	Auditing
2004	2nd half	15	7	3	Certification*
2005	1st half	3	4	4	Maintenance
2005	2nd half	1	3	0	Maintenance
2006	2nd half	0	3	1	Maintenance
2007	2nd half	0	3	1	Renewal
2008	2nd half	0	3	0	Maintenance
2009	2nd half	0	3	1	Maintenance
2010	2nd half	0	1	2	Renewal
2011	2nd half	0	3	3	Maintenance
2012	2nd half	0	2	0	Maintenance
2013	2nd half	0	1	3	Renewal
2014	2nd half	0	3	0	Maintenance
2015	2nd half	0	4	2	Maintenance
2016	2nd half	0	6	1	Renewal
2017	2nd half	0	3	0	Migration Version
2018	2nd half	0	5	4	Renewal
TOTAL		**19**	**54**	**25**	

Source: SANASA, Quality Management and Technical Affairs

In an effort to expand the company's Management Systems and remain in compliance with the applicable legislation, the implementation of the ABNT NBR ISO/IEC 17025 standard was continued. The standard establishes general requirements for the jurisdiction of testing and calibration laboratories for water meters, water quality control and analysis and control of treated effluents.

SANASA was one of the sanitation companies in Brazil selected to participate in the Acertar Project. The project is part of the Inter-Water Program of City Departments and its purpose is to develop a tool for Providers and Regulatory Agencies to certify data and indicators from the National Sanitation Information System (SNIS). Step 3 of the Acertar Project was developed in 2017, and SANASA was visited by auditors from Deloitte, who were there to validate the preliminary SNIS Information Certification Guides.

For the Technical Relations area, SANASA's participation in the following segments is worth highlighting:

NATIONAL ASSOCIATION OF MUNICIPAL SANITATION COMPANIES – ASSEMAE

A trade association representing companies, municipalities and the departments of water/sewage and sanitation services controlled by the municipalities.

As an associated company, SANASA has a stake in this entity through representation on the PCJ Committees, and the company occupies a number of positions within the organization. It holds the 3rd Vice Presidency, the São Paulo Regional Presidency and a position in the Fiscal Council, all with voting rights on resolutions and decisions.

It actively takes part in the annual national assemblies of ASSEMAE, presenting Technical Papers and participating in discussions on topics related to Sanitation.

SANASA sponsored and actively participated in the organization of the 48th National Assembly of ASSEMAE, recognized as one of the largest basic sanitation events, which took place from May 27th to 30th, 2018 in Fortaleza/CE. Under the theme "Financing alternatives for public sanitation", the event once again spotlighted the strength of the municipalities in the sanitation sector, based on the intense scheduling of panels, round tables, presentations of technical works, exhibition of innovative solutions and a technology fair with approximately 64 booths and attended by approximately 2,000 people.

The Assembly took place in conjunction with the 22nd Municipal Experiences in Sanitation Exhibition, which was attended by SANASA with the following Round Tables, Debate Panels and Technical Papers:

Panel:

- Financing Alternatives for Public Sanitation Speaker (Focus): Partnership model established between Sanasa and the DAEV of Valinhos to expand sewage treatment in the PCJ River basin

Round Tables:

- Energy Efficiency/Control of Water Loss
- National Watershed Committee Forum Experience
- The Role of Regulating the Improvement of Sanitation Service Management
- SANASA's Experience in the Global Compact and in SDG 6
- SANASA's Experience in Treating Effluent in Reuse

Technical Work:

- Determination of Hormones in Raw and Treated Waters via EFS-CL-EM/EM: Degradation Efficiencies with Ozonation and Chlorammoniation
- Use of Energy Efficiency and Loss Indicators as an Audit Tool in Sanitation Company Management
- Trihalomethane Monitoring in Water Supply via Purge and Trap / CG / ECD:

Quantification of a Sewage Treatment Output and Distribution Network

- CASA Knowledge Technical Meeting – Sharing Knowledge, Experiences, Lessons and Solutions
- The Importance of Implementing and Deploying Monitoring and Evaluation Systematics for Social Projects with Sanitation Company Partnerships
- Environmental Education Program for the Rational Use of Water: Possible Path to Collaborative Community Engagement in Sanitation
- Determination of the Capacity for Emerging Contaminant Removal in the Reusable Water Plant Employing an MBR Treatment System
- Evaluation of Nitrogen Removal in Sewage Treatment Plant: Capivari II EPAR
- Performance Evaluation of CEPT Process at the SANASA ETE
- Constructing a Corporate Portal for a Quality Management System in a Sanitation Company
- Case Study – Contributions of Technical Oversight from the Regulatory Agency to improve the management of a municipal sanitation company.
- Relevant Points for Migrating the Quality Management System in the Sanitation Sector – ABNT NBR ISO 9001 – 2008 to 2015 Version
- Tracking and Dealing with Customer Complaints

REGIONAL COUNCIL OF ENGINEERING, ARCHITECTURE AND AGRONOMY OF THE STATE OF SÃO PAULO (CREA)

TECHNICAL GROUP FOR OVERSEEING SANITATION

This group worked on analyzing the registration with CREA and appointing the Technical Managers for the Basic Sanitation Services in municipalities throughout the State of São Paulo with populations of over 50,000 people. It will continue the survey of municipalities with populations of under 50,000 inhabitants in 2019.

PIRACICABA, CAPIVARI AND JUNDIAÍ RIVER BASIN COMMITTEES

One of the most organized in the country, the Piracicaba, Capivari and Jundiaí River Basins Committee (CBH-PCJ), created through São Paulo State Law No. 7,663/1991, was enacted on November 18th, 1993 as the first river basin committee in the State of São Paulo. Based on the European watershed management model, the CBH-PCJ seeks to manage water resources related to water quality and quantity in one of the state's most critical regions, dealing with sensitive issues such as the Cantareira System.

Because it's a decentralized extension of the state government, its importance lies in making it possible for various stakeholders in society to take action and combining different views in the management of water resources.

There are currently three Committees that work together and meet to make decisions regarding the PCJ basin: The São Paulo Committee, the Minas Gerais Committee (a small portion of Minas Gerais is also part of the basin) and the Federal Committee, since these are water resources that exceed boundaries between states.

Discussions take place within the Technical Chambers – TCs, which are organized to address specific topics of interest to the Committees, formulating and deliberating on the region's water resources policy. The committees are public with participation open to all, but the right to vote is restricted to Municipalities, Universities, Class Associations, Unions, Industries, Sanitation Companies, NGOs and Counterparts. SANASA has members and alternates in all Technical Chambers, in addition to participating in the coordination of some of them. The PCJ Committees have 12 Technical Chambers. They are:

· **Technical Chamber of Groundwater (CT-AS)**
Created by Resolution CBH-PCJ 094/00 of May 9th, 2000 as a Groundwater Technical Group and amended by the Joint Resolution of PCJ Committees 005/03 of May 22nd, 2003 for the Technical Chamber of Groundwater. Completion of assignments by the Joint Resolution of the PCJ Committees 008/04, of June 1st, 2004. Regulated by the Joint Resolution of the PCJ Committees 010/04 of May 22nd, 2004. Regulated by the Resolution of the PCJ Committees 039/09 of August 28th, 2009. Regulated by the Resolution of the PCJ Committees 115/11 of June 28th, 2011. Amended by Resolution of PCJ Committees No. 243/15 of December 4th, 2015.

· **Technical Chamber of Environmental Education (CT-EA)**
Created by the Joint Resolution of the PCJ Committees 002/03 of May 22nd, 2003. Regulated by the Joint Resolution of the PCJ Committees 010/04 of May 22nd, 2004. Regulated by the Resolution of the PCJ Committees 039/09 of August 28th, 2009. Regulated by the Resolution of the PCJ Committees 115/11 of June 28th, 2011. Amended by Resolution of PCJ Committees No. 243/15 of December 4th, 2015.

· **Technical Chamber for Integrating and Publicizing Research and Technology (CT-ID)**
Created by Resolution CBH-PCJ 033/96 of March 15th, 1996 as an Integrating and Publicizing Research and Technology Technical Group and amended by the Joint Resolution of PCJ Committees 005/03 of May 22nd, 2003 for the Technical Chamber for Integrating and Publicizing Research and Technology. Regulated by the Joint Resolution of the PCJ Committees 010/04 of May 22nd, 2004. Regulated by the Resolution of the PCJ Committees 039/09 of August 28th, 2009. Regulated by the Resolution of the PCJ Committees 115/11 of June 28th, 2011. Amended by Resolution of PCJ Committees No. 243/15 of December 4th, 2015.

· **Technical Chamber for the Use and Conservation of Water in Industry (CT-Industry)**
Created by Resolution of PCJ Committees No. 001/08 of June 27th, 2008. Regulated by the Resolution of the PCJ Committees 039/09 of August 28th, 2009. Regulated by the Resolution of the PCJ Committees 115/11 of June 28th, 2011. Amended by Resolution of PCJ Committees No. 243/15 of December 4th, 2015.

· **Technical Chamber of Hydrological Monitoring (CT-MH)**
Created by Resolution CBH-PCJ 019/94 of December 21st, 1994 as a Hydrological Monitoring Technical Group and amended by the Joint Resolution of PCJ Committees 005/03 of May 22nd, 2003 for the Technical Chamber of Hydrological Monitoring. Completion of assignments by the Joint Resolution of the PCJ Committees 007/04, of June 1st, 2004. Regulated by the Joint Resolution of the PCJ Committees 010/04 of May 22nd, 2004. Regulated by the Resolution of the PCJ Committees 039/09 of August 28th, 2009. Regulated by the Resolution of the PCJ Committees 115/11 of June 28th, 2011. Amended by Resolution of PCJ Committees No. 243/15 of December 4th, 2015.

· **Technical Chamber on Grants and Licenses (CT-OL)**
Created by Resolution CBH-PCJ 010/94 of April 15th, 1994, and amended by Joint Resolution of PCJ Committees 005/03 of May 22nd, 2003. Regulated by the Joint Resolution of the PCJ Committees 010/04 of May 22nd, 2004. Regulated by the Resolution of the PCJ Committees 039/09 of August 28th, 2009. Regulated by the Resolution of the PCJ Committees 115/11 of June 28th, 2011. Amended by Resolution of PCJ Committees No. 243/15 of December 4th, 2015.

· **Technical Chamber of the River Basin Plan (CT-PB)**
Created by the Joint Resolution of the PCJ Committees 003/03 of May 22nd, 2003. Completion of assignments by the Joint Resolution of the PCJ Committees 008/04, of June 1st, 2004. Regulated by the Joint Resolution of the PCJ Committees 010/04 of May 22nd, 2004. Regulated by the Resolution of the PCJ Committees 039/09 of August 28th, 2009. Completion of assignments by the Resolution of the PCJ Committees 108/11 of March 31st, 2011. Regulated by the Resolution of the PCJ Committees 115/11 of June 28th, 2011. Amended by Resolution of PCJ Committees No. 243/15 of December 4th, 2015.

· **Technical Chamber of Planning (CT-PL)**
Created through Resolution CBH-PCJ 009/94 of April 15th, 1994, as Technical Chamber of Institutional Affairs, amended by Resolution CBH-PCJ 026/95 of November 10th, 1995 for the Technical Planning Group (GT-PL) and again amended by Joint Resolution of PCJ Committees 004/03 of May 22nd, 2003, for the Technical Chamber of Planning. Completion of assignments by the Joint Resolution of the PCJ Committees 007/04 of June 1st, 2004, and the Joint Resolution of the PCJ Committees 008/04 of June 1st, 2004. Amended by the Joint Resolution of the PCJ Committees 009/04 of June 1st, 2004. Regulated by the Joint Resolution of the PCJ Committees 010/04 of May 22nd, 2004. Amended by the Joint Resolution of the PCJ Committees 041/06 of May 5th, 2006. Regulated by the Resolution of the PCJ Committees 039/09 of August 28th, 2009. Regulated by the Resolution of the PCJ Committees 073/10 of March 19th, 2010. Amended by Resolution of PCJ Committees No. 243/15 of December 4th, 2015.

· **Technical Chamber of Conservation and Protection of Natural Resources (CT-RN)**
Created by Resolution CBH-PCJ 011/94 of April 15th, 1994, and amended by Joint Resolution of PCJ Committees 005/03 of May 22nd, 2003. Regulated by the Joint Resolution of the PCJ Committees 010/04 of May 22nd, 2004. Regulated by the Resolution of the PCJ Committees 039/09 of August 28th, 2018. Regulated by the Resolution of the PCJ Committees 115/11 of June 28th, 2011. Amended by Resolution of PCJ Committees No. 243/15 of December 4th, 2015.

· **Technical Chamber for the Rural Use and Conservation of Water (CT-Rural)**
Created by the Joint Resolution of the PCJ Committees 022/05 of March 31st, 2005. Regulated by the Resolution of the PCJ Committees 039/09 of August 28th, 2009. Regulated by the Resolution of the PCJ Committees 115/11 of June 28th, 2011. Amended by Resolution of PCJ Committees No. 243/15 of December 4th, 2015.

· **Technical Chamber of Sanitation (CT-SA)**
Created by Resolution CBH-PCJ 056/98 of August 21st, 1998, and amended by Joint Resolution of PCJ Committees 005/03 of May 22nd, 2003. Regulated by the Joint Resolution of the PCJ Committees 010/04 of May 22nd, 2004. Regulated by the Resolution of the PCJ Committees 039/09 of August 28th, 2009. Regulated by the Resolution of the PCJ Committees 115/11 of June 28th, 2011. Amended by Resolution of PCJ Committees No. 243/15 of December 4th, 2015.

· **Technical Chamber of Environmental Health (CT-SAM)**
The current Technical Chamber has been active since 1995 as the Algae Subgroup from the then Technical Group and the current Technical Chamber for Hydrological Monitoring. Created by Resolution CBH-PCJ 116/02 of March 28th, 2002 as an Environmental Health Technical Group and amended by the Joint Resolution of PCJ Committees 005/03 of May 22nd, 2003 for the Technical Chamber of Environment Health. Regulated by the Joint Resolution of the PCJ Committees 010/04 of May 22nd, 2004. Regulated by the Resolution of the PCJ Committees 039/09 of August 28th, 2009. Regulated by the Resolution of the PCJ Committees 115/11 of June 28th, 2011. Amended by Resolution of PCJ Committees No. 243/15 of December 4th, 2015.

STATE WATER RESOURCES COUNCIL – CRH

Created by Decree No. 27,576 of November 11th, 1987 and adapted by Decree No. 57,113 of July 7th, 2011, the State Water Resources Council (CRH) includes 33 counselors, 11 from each segment (State, municipality, civil society). The CRH includes the holders, or their representatives, of the designated State Departments and the Municipal Mayor representing each group of river basins, including the group of Sorocaba/Middle Tietê and Piracicaba, Capivari and Jundiaí river basins.

CRH's structure also includes representatives from civil society entities, which represent various segments related to water resources at the state level.

Special mention should be made of the "users of water resources for public supply" segment, which includes SANASA and, in association with ASSEMAE, appoints members to the Board of Directors of the State Water Resources Fund (COFEHIDRO) and the Technical Chambers of Legal and Institutional Affairs; Environmental Education, Training, Social Mobilization and Information on Water Resources.

Other entities are also invited to join the CRH. They are able to speak on issues but do not have voting rights. The CRH is responsible for:

- Discussing and approving bills on the State Water Resources Plan, as well as those to be included in bills associated with a multi-annual plan, budget guidelines, and the annual state budget;
- Approving the report on the "Situation of Water Resources in the State of São Paulo";
- Performing regulatory and deliberative roles related to the formulation, implementation and monitoring of the State Water Resources Policy;
- Establishing criteria and norms related to assessments, among the beneficiaries, on the costs for construction projects related to the multiple uses of water resources or that are of common or collective interest;
- Establishing guidelines for forming annual and multiannual fundraising programs from the State Water Resources Fund (FEHIDRO);
- Categorizing the bodies of water into classes of predominant use that are based on proposals from the River Basin Committees (CBH), making them compatible in relation to the interbank repercussions and arbitrating any conflicts arising from them;
- Resolving disputes between the Watershed Committees;
- Creating, terminating and reorganizing the River Basin Committees or Subcommittees, respecting regional specifications and observing the provisions of article 24 of Law No. 7,663 of December 30th, 1991;
- Establishing the conditional limits for applying amounts to charge for the use of water resources;
- Endorsing proposals by the Committees, four-year investment programs and amounts to charge, and others.

NATIONAL WATER RESOURCES COUNCIL (CNRH)

The CNRH is an agency that is linked to the Ministry of Environment, the highest level in the hierarchy of the National Water Resources Management System. Its committee implements the rules for measuring various water users. As such, it's one of the highest authorities for instituting water resources management in the country. Its coordination promotes transparent dialogue in the decision-making process in the field of water resources legislation. Through the PCJ Consortium, SANASA is a full member represented by its Technical Director, Marco Antônio dos Santos. He is also a member of the Technical Chamber for Fees – CTCOB, through Technical Consultant Paulo Roberto Szeligowski Tinel.

STATE COUNCIL OF SANITATION (CONESAN)

Instituted by Supplementary Law No. 1,025 of December 7th, 2007 and regulated by Decree No. 54,644 of August 5th, 2009, CONESAN is the State's advisory and decision-making agency at a strategic level that is responsible for defining and implementing basic sanitation policy in the state of São Paulo.

This Board is made up of 33 voting members and is represented by Departments of State and officials from direct and indirect management agencies and entities, Mayors and members of Civil Society. The other six seats, which are able to speak but do not hold voting rights, are held by representatives from the State Public Prosecutor's Office, the Public Defender's Office, public universities in São Paulo and the São Paulo State Sanitation and Energy Regulatory Agency (Arsesp).

CONESAN's structure also includes representatives of civil society entities, which represent various segments related to sanitation at the state level. One of the main components is the "associative entities of public sanitation operators" segment, which includes SANASA and that, in association with ASSEMAE, appoints members to be part of CONESAN.

CONESAN is responsible for:

- Discussing and approving proposals for the Multi-Annual Sanitation Plan and the State Sanitation Executive Plan and its amendments, submitting them to the Governor;
- Discussing and presenting subsidies for drafting general fee guidelines for the regulation of state-owned basic sanitation services, submitting them to the governor;
- Being aware of the report on the state of environmental health in the State, prepared by the Department of Sanitation and Resources and Water, proposing the corrective measures that they may deem necessary;
- Monitoring the application of FESAN financial resources;
- Preparing a three-way list to nominate municipal representatives on the Arsesp Basic Sanitation Guidance Council. Another aspect that should be brought up is the creation of the Technical Chambers to discuss relevant matters that represent challenges in the sector and that deserve to be dealt with jointly between municipalities and representatives from civil society, seeking to modernize the management of sanitation services in the state.

ARES PCJ REGULATORY AGENCY

Since the National Policy on Basic Sanitation (Federal Law No. 11,445 of January 5th, 2007) was instituted, the municipalities are responsible for the planning, regulation and supervision of basic sanitation services. A regional entity could then be created to regulate and supervise public sanitation services in the municipalities in the Piracicaba, Capivari and Jundiaí river basins.

In 2011, the Sanitation Services Regulatory Agency was created as a public consortium. It featured decision-making independence and administrative, budgetary and financial autonomy. Its activity area includes the municipalities of the PCJ basins and their surroundings, seeking to regulate and inspect public sanitation services in the associated municipalities, including Campinas.

Since 2013, SANASA has been supervised by ARES PCJ, and in 2018 the inspection cycle was completed when it reached 100% of the surveyed operating units, based on the Macro-Assessment (2016 reference).

Table 2 below exhibits a summary of the Non-Compliances found in the Water Supply and Sanitary Sewage Systems (in relation to deadlines) as established by Resolution ARES-PCJ No. 48 of February 28th, 2014, resulting from the inspections performed in the Municipality of Campinas.

Table 2: State of Non-Compliances Found

STATE OF NON -COMPLIANCES FOUND		
NON-COMPLIANCES	**QUANTITY**	**%**
Resolved	27	90%
Within the Deadline	3	10%
Overdue	0	0%
TOTAL	30	100%

Source: SANASA, Quality Management and Technical Affairs.

It should be pointed out that overdue non-compliances are subject to the sanctions provided for in Resolution ARES PCJ No. 71 of December 11th, 2014.

MUNICIPAL ENVIRONMENTAL COUNCIL – COMDEMA

Established by Municipal Law No. 10,841 of May 24th, 2001 and Decree 13,874 of March 4th, 2002, COMDEMA seeks to promote discussions, analysis and propositions on the guidelines of the environmental public policies of Campinas.

Various topics related to municipal environmental management are discussed at COMDEMA, including: waste management, water resources management, urban afforestation, land use and occupation, noise pollution, visual pollution and basic sanitation. It is currently composed of representatives from the Business Segment, Technical-Professional Segment, Workers Union Segment and the Government Segment, and SANASA is represented by a full member and alternates. All COMDEMA meetings are open, with all citizens having the right to speak. Regular Plenary meetings are held on a monthly basis.

APA MANAGEMENT COUNCIL – CONGEAPA

Management Council of the Environmental Protection Area of Campinas (CONGEAPA), created by Law No. 10,850 of June 7th, 2001, possesses advisory, decision-making and supervisory aspects and is intended to promote the autonomous and organized participation of the community in the process of defining the local development policy and monitoring its implementation, as established in articles 95 and 98 of Complementary Law No. 15 of December 27th, 2006, which regulates the Master Plan of Campinas.

It is currently composed of representatives from the First Sector and includes participation by representatives from the Municipal Executive Branch and municipal, state and federal public agencies. There is also participation by the Second Sector, represented by organizations that speak for the resident population, the traditional population and the property owners within the Conservation Unit, and the Third Sector, represented by civil society organizations, the technical and/or scientific community, environmental NGOs, primarily working in the Conservation Unit.

SANASA is included in the First Sector and is represented by a full member and alternates.

REGULATION AND SOCIAL CONTROL COUNCIL

The Regulation and Social Control Council for the Municipality was created by Decree No. 17,775 of November 22nd, 2012 to act as an advisory mechanism within the Regulatory Agency of Sanitation Services for the Piracicaba, Capivari and Jundiaí River Basins (ARES-PCJ).

The Council is made up of representatives and alternates appointed by the Mayor of the municipality, in compliance with Article 46 of the ARESPCJ Bylaws and Article 3 of ARES-PCJ Resolution No. 1 of November 21st, 2011.

The technical units and civil society organizations that appoint a representative on the Council must be duly created and legalized, with at least five years of registration and, among their statutory objectives, be working in the field of basic sanitation.

The members of the Council serve a two-year term, with only one renewal permitted for the subsequent term, pursuant to Resolution No. 1 of November 21st, 2011. SANASA is represented by one full and an alternate member.

TECHNICAL COMMITTEE FOR REVIEWING THE CAMPINAS MASTER PLAN

The Master Plan is a set of principles and rules that lend guidance to and drive the organization and physical, territorial and environmental occupation of the municipality, with the intention of making the city accessible and fair to all its inhabitants.

It can be understood as a defining element of the strategic and global objectives and guidelines of the city's urban and rural development. It should be shaped as a solicitation and coordination instrument for decision-making processes, serving as the main reference for defining and rolling out legal, administrative and political mechanisms that involve long-, medium- and short-term actions. The plan seeks to make the city more balanced under physical-territorial, environmental, economic and social aspects.

Through the Department of Urban Planning and Development, the Campinas Municipal Government completed the New Strategic Master Plan for the Municipality of Campinas in 2018, which also had representatives from different Municipal Departments and SANASA for full and alternate members.

MONITORING GROUP FOR THE MUNICIPAL SANITATION PLAN

Municipal Basic Sanitation Plan is a key instrument for obtaining funding from the Federal budget or finances administered by a federal government agency or entity that are earmarked for basic sanitation services.

The Monitoring Group is responsible for the collection, compilation and formatting of data and information related to the annual report on activities and revisions to the Municipal Basic Sanitation Plan.

It is made up of two representatives, a full member and alternate, from the following administration agencies: The Mayor's Chief of Staff, Municipal Department of Green, Environmental and Sustainable Development, Municipal Department of Infrastructure, Municipal Department of Planning and Urban Development, Municipal Department of Public Services, Municipal Department of Labor and Income, Informática de Municípios Associados S/A (IMA) and SANASA.

MUNICIPAL TECHNICAL GROUP OF THE VERDEAZUL MUNICIPAL PROGRAM

The VerdeAzul Municipal Program from the State Department of the Environment is an initiative that seeks to provide efficiency in environmental management by decentralizing and enhancing societal bases, stimulating and empowering municipalities in the development and implementation of a strategic environmental agenda.

The Technical Group is tasked with gathering information, proposing actions, detailing the Target Plan and drafting supporting documents that together form the Action Plan. The Group is coordinated by the Municipal Department of Green, Environmental and Sustainable Development, and includes representatives of various Municipal Departments and SANASA by a

GOVERNMENT TARGET INDICATORS TECHNICAL GROUP – IMG

In order to monitor the targets stipulated and disclosed in the Government Program, the Government Target Indicators System (IMG) was developed by the Informática de Municípios Associados (IMA) in 2013, operating on an intranet platform for access by public employees and technicians responsible for each action in each Sector.

All Municipal Public Administration agencies have pledged to keep the programs, actions and activities up to date that are under their responsibility, conforming to the schedule set by the Mayor's Office. SANASA is represented by one full and two alternate members.

Bibliographic references

- Information from the ARES PCJ – Regulatory Agency is available at: http://www.arespc.com.br
- Information from the ASSEMAE – National Association of Municipal Sanitation Companies is available at: http://www.assemae.org.br
- BRAZILIAN ASSOCIATION OF TECHNICAL STANDARDS (ABNT) 2015. NBR ISO 9001 – Quality Management System – Requirements

ENVIRONMENTAL LEGISLATION

Environmental Legislation for Obtaining Licenses

The regulatory procedure for environmental licensing began through CONAMA Resolution No. 001/1986, which sets general guidelines in place for drafting the Environmental Impact Study and the respective Environmental Impact Report (EIA/RIMA) in the environmental licensing procedure, along with defining the criteria for its application.

The Federal Constitution of October 5th, 1988 took on the relevance of environmental concerns in Brazil. Chapter VI, Art. 225, was dedicated to environmental issues, and it defines the rights and duties of the Federal Government and the community in the conservation of the environment and shared use. An assessment of environmental impacts was ratified by the Federal Constitution in Paragraph 1, Item IV of Article 225. The government therefore requires a "prior environmental impact study" to be conducted in order to begin construction projects or an activity that could potentially result in significant environmental damage.

Article 225 of the Federal Constitution states that the Government and community are responsible for defending and preserving the ecological balance of the environment for present and future generations.

CONAMA Resolution 237/1997, considering the common jurisdictions in environmental matters provided for in the Federal Constitution, established an environmental licensing system in which the licensing authorities are allocated to different federative entities due to the location of the business venture, the scope of direct impacts or because of the material.

Environmental Licensing is conferred through an administrative procedure whereby the relevant environmental agency licenses the location, construction, expansion and operation of business ventures and activities that use environmental resources and can be considered actively or potentially polluting, or those that, in any form, may cause environmental damage – with the legal and regulatory provisions and the technical standards applicable to the case taken into account. A preventive evaluation process was designed for the Environmental Licensing process that consists of examining the environmental aspects of the projects in their distinct phases: conception/planning, installation (construction) and operation. It involves a systematic process of environmental evaluations, performed in three stages: Preliminary License, Construction License and Operating License.

In an effort to improve the Environmental Licensing System, CONAMA approved Resolution No. 237 in December of 1997. This Resolution asserted the principles of decentralization contained in the National Environmental Policy and the Federal Constitution of 1988. It also regulated activities by members of the National Environmental System – SISNAMA in conducting environmental licensing, such as establishing procedures and criteria, making the use of licensing an effective environmental management tool.

Stakeholders involved in Environmental Management at Federal, State and Municipal levels

Federal Environmental Licensing:

1. Brazilian Institute of Environment and Renewable Natural Resources – IBAMA

Created through Law No. 7,735 of February 22nd, 1989, IBAMA is a federal agency connected to the Ministry of Environment (MMA). It is the executive agency responsible for implementing the National Environmental Policy (PNMA), instituted through Law No. 6,938 of August 31st, 1981, and it devises various activities for the preservation and conservation of natural assets, such as:

I. exercising the power of environmental police;

II. executing actions involving national environmental policies referring to federal responsibilities, related to environmental licensing, environmental quality control, authorizing the use of natural resources and the supervision, monitoring and controlling the environment, observing the guidelines issued by the Ministry of the Environment; and

III. conducting supplementary activities within the Federal Government's jurisdiction in accordance with prevailing environmental legislation.

SANASA is linked to IBAMA through the Federal Technical Registry of Potentially Polluting Activities and/or Users of Environmental Resources (CTF/APP), regulated by Normative Instruction No. 6 of March 15th, 2013 (text compiled with the amendments to Normative Instruction No. 11, of April 13th, 2018 and Normative Instruction No. 17, of June 29th, 2018) and Normative Instruction No. 12, of April 13th, 2018, which institutes the Legislative Framework for individuals and corporations in the Federal Technical Registry of Potentially Polluting Activities and Users of Environmental Resources.

It is defined in the CTF/APP by the intersection of the degree of polluting potential with the economic scale of the business venture. SANASA collects a quarterly Environmental Control and Inspection Fee (TCFA), a type of tax for the control and inspection for activities that are potentially polluting and for those using natural resources, established in art. 17-B of Federal Law No. 6,938/1981 – The National Environmental Policy, in the wording of Federal Law No. 10,165/2000. It was regulated by IBAMA through Normative Instruction No. 17 of 2011, republished in the Federal Official Gazette (DOU) of April 20th, 2012.

The Compliance Certificate is the license in which IBAMA confirms that the data from the registered person is in compliance with the obligations arising from the Registry that include activities under the control and supervision of Ibama. It is stipulated in Normative Instruction No. 6 of 2013.

2. Aeronautics Command – COMAER

The Military Command of Armed Forces is administered by the Aeronautics Command – COMAER. The forces fall under three General Commands, three departments and several other agencies related to the operation and administration of Brazilian civil and military aviation, along with aerospace research and development.

Law No. 12,725/2012 led COMAER to broaden the scope of the expert's report from the Aeronautical Accident Investigation and Prevention Center (CENIPA) to any business venture or activity that attracts or has the potential to attract fauna within the Airport Security Area (ASA) from any Brazilian airfield.

COMAER issues aeronautical advice that allows the use of all special restrictions on activities that are included in Law No. 12,725/2012 and which may contribute to interfering with fauna in Brazil. To this end, the procedural flow was included in the environmental licensing processes (initial, construction and operation).

One of the goals of COMAER is the Basic Risk to Wildlife Management Plan. In summary, the goals are:

- To establish protocols, parameters and duties pertaining to the issuance of CENIPA's expert opinion for a project or activity, to be constructed or that is already running, at the ASA of a Brazilian airfield;
- To institute a data management structure for sighting near collisions or collisions with fauna in Brazil, considering that the latter type of event is an air-related occurrence classified as an incident, serious incident or aircraft accident; and
- To establish the management of fauna risk process at COMAER military airfields, complemented by the Fauna Risk Management Manual.

CENIPA is a branch of the Aeronautics Command responsible for investigative activities for civil aviation aircraft accidents and the Brazilian Air Force. Investigations are based on Annex 13 in the

International Civil Aviation Convention of the International Civil Aviation Organization (ICAO), a global benchmark entity, which regulates the laws on international civil aviation.

As CENIPA's expert opinion is an instrument for the prevention of accidents involving aircraft related to business ventures/activities in the ASA of Brazilian airfields, it applies to:
a) Municipal authority;
b) Municipal environmental authority;
c) State environmental authority;
d) Federal environmental authority; and
e) Stakeholders running businesses or activities that can or potentially can attract wildlife within the ASA of a Brazilian airfield.

Pursuant to item 2.1 of Ordinance No. 741/GC3 of May 23rd, 2018, which approves the reissue of the "PCA 3-3 Basic Fauna Risk Management Plan" at Brazilian PCA airfields, "Any enterprise or activity that can attract or potentially attract fauna at the ASA of a Brazilian airfield must get a technical opinion from the CENIPA upon obtaining or renewing its licenses".

Water Treatment Plants (ETA) and Sewage Treatment Plants (ETE) are activities that are considered as having a moderately attractive potential to fauna.

State Environmental Licensing

1. Environmental Company of the State of São Paulo – CETESB

Environmental licensing in the State of São Paulo became mandatory for industrial activities after the enactment of State Regulation of Law No. 997 of May 31st, 1976, approved by State Decree No. 8,468 of September 8th, 1976, which establishes the prevention and control of environmental pollution.

State Decree No. 47,397 of December 4th, 2002 provides new wording to Title V and Annex 5 and adds parts to Annexes 9 and 10 to the Regulation of Law No. 997 of May 31st, 1976, approved by Decree No. 8,468 of September 8th, 1976 and Article 57 considered the public or private autonomous systems of storage, removal, treatment, final disposal and reuse of liquid effluents, except in single family homes; collective sanitary sewage systems: elevators; treatment plants; submarine and underwater outfalls; and water treatment plants as sources of pollution and, therefore, are subject to licensing as sanitation systems under sub-paragraphs b, c and d of item IV.

State Decree No. 47,400 of December 4th, 2002 regulates the provisions found in State Law No. 9,509 of March 20th, 1997 regarding environmental licensing by establishing expiration dates for each type of environmental licensing and conditions for its renewal, timelines for assessing the requirements and environmental licensing, institute a mandatory procedure for notifying about a suspension or shutdown of activity, and collecting a fee referring to the price of the assessment.

Cetesb is the State-run Government agency responsible for controlling, supervising, monitoring and licensing activities that generate pollutants and has been primarily concerned with preserving and recovering water, air and soil quality since the 1970s. Law 13,542 was enacted in 2009, creating the "*Nova Cetesb*" (New Cetesb). The São Paulo environmental agency was bestowed with new duties, mainly for environmental licensing procedures in the state. It became solely responsible for the state environmental licensing that had previously been done in four different areas: State Department for Protecting Natural Resources (DEPRN), Department of Metropolitan Soil Use (DUSM), Department for Assessing Environmental Impacts (DAIA) and Cetesb. It thus retained its role as a supervisory and licensing agency for activities that could be considered potentially polluting, and added licensing for activities that involve removing vegetation and interventions in areas deemed to be permanent preservation and environmentally protected.

Cetesb is responsible for issuing environmental licenses including a preliminary license, construction license, operating license, renewal of operating license, authorization to intervene in permanent preservation area, vegetation suppression and isolated tree felling, technical opinion, Certificate of Handling Waste that is of Environmental Interest (CADRI).

Obtaining environmental licenses, aligned to compliance with technical requirements, is the basis for environmental compliance. The environmental control of pollution included in the licenses refers to aspects related to air, soil, water, noise and vibrations.

Authorization for an intervention in permanent preservation areas, native vegetation suppression and/or isolated tree felling is issued after the signing of the Environmental Recovery Commitment Agreement (TCRA) as a way to compensate for environmental damage or harm caused by the intervention or construction.

Environmental permits are instituted in Decree No. 99,274/1990, which regulates Law 6,938/1981, and is detailed in CONAMA Resolution No. 237/1997:

- Preliminary License – LP: granted in the preliminary phase of planning for the business venture or activity and approves its location and design, attesting to the environmental viability and establishing the basic requirements and conditions that need to be fulfilled in the next phases of its implementation.

As such, the LP is granted if the environmental viability of the project is certified after the environmental impacts generated by it are examined, as well as assessments on programs for the reduction and mitigation of negative impacts and maximization of positive impacts. The LP does not act as an authorization to commence construction intended for implementing the business venture.

- Construction License – LI: authorizes construction/setting up of a business venture or activity in accordance with the specifications contained in the approved plans, programs and projects, including environmental control measures and other conditions that constitute a determining motive.
- Operating License – LO: authorizes the operations of the activity or business venture after verifying effective fulfillment with the provisions in the previous licenses and with the environmental control measures and conditions determined for the operation.
- Certificate of Handling Waste that is of Environmental Interest (CADRI): Instrument that approves sending pertinent wastes to places for reprocessing, storage, treatment or final disposal that are licensed or authorized by Cetesb.
- Environmental Recovery Commitment Agreement (TCRA): Official document that institutes the measures that need to be fulfilled geared towards environmental recovery and/or the restoration of native vegetation, as well as setting deadlines for these measures to be implemented.

Self-Monitoring Reports

- In compliance with Articles 6 (item XV and 79) of Decree No. 8,468 of September 8th, 1976, which approves the Regulation of Law No. 997 of May 31st, 1976, which sets forth provisions for the Prevention and Control of Environmental Pollution. When applying for an operational license of sewage treatment plants, submittal of a complete plan of net waste is mandatory.
- Self-monitoring reports of sewage treatment plants are technical requirements in Operational Licenses issued by Cetesb. These reports are intended acts as proof of efficient sewage treatment, as well as to comply with Art. 18 of Decree No. 8468/1976, CONAMA No. 357/2005 and CONAMA No. 430/2011.
- Self-monitoring reports are submitted every six months to Cetesb.
- In 2018, 32 monitoring reports from the Sewage Treatment Plants were submitted.

2. Department of Water and Power (DAEE)

The Department of Water and Power (DAEE) is the managing body of Hydro Resources for the State of São Paulo. It institutes the São Paulo State Water Resources Policy, coordinating the Integrated Water Resources Management System, pursuant to Law 7,663/1991, by adopting watersheds as a physical-territorial planning and management unit.

Decree No. 23,933 of September 18th, 1985 amends the DAEE Regulation. In its Article 1, item VIII, it decrees the granting of concessions, permits and authorizations for the use or diversion of waters under state authority, pursuant to the Water Code (Federal Decree No. 24,643, of July 10th, 1934) and subsequent legislation. It is responsible for awarding concessions for Rights of Use, Right of Interference Grants, Grant Waivers (Registration), and the Declaration on Feasibility of Implementation (DVI).

SMA/SERHS Joint Resolution No. 1 of February 23rd, 2005 regulates the Procedure for Integrated Environmental Licensing for Water Resources Grants.

DAEE Ordinance No. 1,630 of May 30th, 2017, amended on March 21st, 2018, provides for technical and administrative procedures to obtain a statement and granting right of use and interference in water resources under the authority of the State of São

Paulo. In its Article 1, "it approves the technical and administrative procedures that need to be followed in order to obtain rights of use and interference in water resources under the State of São Paulo's domain or its waiver, as well as a statement on the implementation of business ventures that require uses and interference with these water resources, and to obtain licenses for digging wells".

It defines the grant as an administrative act, which can be through an authorization, concession or license and has a fixed-term, through which the DAEE grants usage or interference in water resources after a formal application is submitted under the terms and conditions expressed in the specific Ordinance, and accounting for the technical and legal aspects provided for in the regulation.

Decree No. 63,262 of March 9th, 2018, which approves the new Regulations in Articles 9 to 13 of Law No. 7,663 of December 30th, 1991- establishing guidelines for the State Water Resources Policy and the Integrated Water Resources Management System, in its annex:

Article 1 – Grant is the act by which DAEE manifests itself on:
I. Implementing construction projects or services that alter the regime, quantity and quality of surface or underground water resources;
II. Implementing projects for the extraction of groundwater;
III. Diverting surface or underground water from its course or deposit;
IV. Releasing effluents into water bodies.

3. National Water Resources Council, State Water Resources Council, State Department of the Environment, Surveillance System – SEVISA

For the use of reused water coming from the Capivari II EPAR – Water Reuse Production Plant, SANASA complies with the following regulations:

- Resolution No. 54 of November 28th, 2005 (of the National Water Resources Council) which establishes methods, guidelines and general criteria for reusing non-potable water, and other measures;
- Deliberation No. 156 of December 11th, 2013 of the State Water Resources Council (CRH), which establishes guidelines for the direct reuse of non-potable water from Sewage Treatment Plants (ETE) from public systems for urban purposes, and other measures;
- DPO Technical Instruction No. 13 of May 30th, 2017, instituted in order to regulate CRH Resolution No. 156 of December 11th, 2013 and to suggest DAEE requirements for obtaining the DVI of business ventures and for granting the right to use water resources by the producer of the non-potable direct reused water from the ETE.
- The Joint Resolution SES/SMA/SSSRH – 01 of June 28th, 2017 which "Disciplines the non-potable direct reuse of water for urban purposes, coming from Stations and Treatment of Sanitary Sewage and provides related measures".

Water supply systems for human consumption, including catchment, adduction, ETA, reservoir (storage) and distribution, as well as ETE and EPAR urban sewage collection and treatment systems, must be registered and obtain an Operational License in the State Health Surveillance Agency (SEVISA) of the State Health Department, as determined by CVS Ordinance No. 1, of January 2nd, 2018.

Environmental Licensing in Campinas
Municipal Department of Green, Environmental and Sustainable Development – SVDS

The environmental licensing of business ventures and activities that have a local environmental impact was delegated to the municipalities with the publication of the State Environmental Council Resolution – Consema 33/2009, of September 22nd, 2009.

In the case of Campinas, it initiated the process of striking agreements with the Government of the State of São Paulo through the State Environmental Department and with Cetesb when Municipal Law No. 13,508 of December 22nd, 2008 was published.

In 2014, Municipal Decree No. 18,306 of March 25th, 2014 was enacted, which oversees licensing and environmental control procedures for local construction projects and activities by the SVDS of Campinas and deals with Complementary Law No. 49 of December 20th, 2013.

Decree No. 18,306 of March 25th, 2014 listed the business ventures and activities that depended on prior licensing by SVDS. Consema Deliberation No. 33/2009 was however revoked in 2014 with the publication of Consema Normative Resolution No. 01/2014 of April 23rd, 2014, thus changing the

typology of licensable sanitation ventures in the SVDS.

As such, Municipal Decree No. 18,705 of April 17th, 2015 became effective in 2015, which replaced Municipal Decree No. 18,306/2014. The construction projects and activities are listed in this Decree that will depend on prior licensing in the SVDS, and those that fit into the SANASA's activities are included in Annex II – Sanitation and Annex III – Green Areas.

The following license processes for the hydraulic construction of sanitation (Annex II) is now licensed in the SVDS:

- Water mains;
- Stream pipelines in urban areas;
- Silt removal from streams and lakes in urban areas;
- Drainage construction for adjusting and channeling streams;
- Flood control reservoirs;
- Dams with a flooded area of less than 20 hectares;
- Combined sewers.

The SVDS issues environmental licenses comprised of a preliminary license, construction license and operating license, renewal of operating license, authorization for native vegetation suppression, Municipal Technical Examination and a Waiver of License Certificate in cases where the business venture is not subject to environmental licensing.

Obtaining environmental licenses, aligned to compliance with technical requirements, is the basis for environmental compliance.

Authorization for an intervention in permanent preservation areas, native vegetation suppression and/or isolated tree felling is issued after the signing of the Environmental Commitment Agreement (TCA) as a way to compensate for environmental damage or harm caused by the intervention or construction.

BASIC SANITATION × POVERTY		
RELATION TO SDGs		
SDG6 – Ensure availability and sustainable management of water and sanitation for all	CONTRIBUTES	SDG 1. End poverty in all its forms everywhere
6.1 By 2030, achieve unive rsal and equitable access to safe and affordable drinking water for all	Access to safe drinking water and sanitation ensure public health, infrastructure, education, leisure, culture, sport and economic development. It is essential in tackling and eradicating poverty.	1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinances.
6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all, and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations		1.5 By 2030, build the resilience of the poor and those in vulnerable situations, and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters

BASIC SANITATION × HUNGER		
RELATION TO SDGs		
SDG6 – Ensure availability and sustainable management of water and sanitation for all	CONTRIBUTES	Objective 2. End hunger, achieve food security and improve nutrition, and promote sustainable agriculture
6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	Promotes a positive impact through sewage disposal operations. The company cooperates fulfilling SDG2.4 through guarantees for improving discharged effluent and water balance.	2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters, and that progressively improve land and soil quality

BASIC SANITATION × HEALTH AND WELL-BEING		
RELATION TO SDGs		
SDG6 – Ensure availability and sustainable management of water and sanitation for all	RESULTS	Objective 3. To ensure a healthy life and promote well-being for all, at all ages
6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all	Basic sanitation is health and well-being and promotes a positive impact on the community. In its first two goals, one of the results for SDG6 is the fulfillment of goals 1 and 2 of SDG3.	3.1 By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births
6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all, and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations		3.2 By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births

SANITATION: SDG6

<table>
<tr><td colspan="3">BASIC SANITATION × EDUCATION</td></tr>
<tr><td colspan="3">RELATION TO SDGs</td></tr>
<tr><td>SDG6 – Ensure availability and sustainable management of water and sanitation for all</td><td>CONTRIBUTES</td><td>Objective 4. To ensure inclusive and equitable quality education, and promote lifelong learning opportunities for all</td></tr>
<tr><td>6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all</td><td rowspan="2">SDG6 in goals 1 and 2 promotes a positive impact on public health and well-being, enhancing conditions for learning and education, and thereby cooperating with goals 1 and 2 of SDG4</td><td>4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes</td></tr>
<tr><td rowspan="6">6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all, and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations</td><td>4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education</td></tr>
<tr><td>SDG6 in goals 1 an d 2 promotes a positive impact on public health and well-being, enhancing conditions for learning and education, and thereby cooperating with goal 3 of SDG4</td><td>4.3 By 2030, ensure equal access for all women and men to affordable quality technical, vocational and tertiary education, including university</td></tr>
<tr><td>SDG6 in goals 1 and 2 promotes a positive impact on public health and well-being, enhancing conditions for learning and education, and thereby cooperating with goal 4 of SDG4</td><td>4.4 By 2030, substantially increas e the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship</td></tr>
<tr><td>SDG6 in goals 1 and 2 promotes a positive impact on public health and well-being, enhancing conditions for learning and education, and thereby cooperating with goal 5 of SDG4</td><td>4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples, and children in vulnerable situations</td></tr>
<tr><td>SDG6 in goals 1 and 2 promotes a positive impact on public health and well-being, enhancing conditions for learning and education, and thereby cooperating with goal 6 of SDG4</td><td>4.6 By 2030, ensur e that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy</td></tr>
</table>

BASIC SANITATION × GENDER EQUALITY		
RELATION TO SDGs		
SDG6 – Ensure availability and sustainable management of water and sanitation for all	CONTRIBUTES	Objective 5. Achieve gender equality and empower all women and girls
6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all	SDG6 in goals 1 and 2 promotes a positive impact on urban infrastructure and social well-being by raising the living and housing conditions for women.	5.1 End all forms of discrimination against women and girls everywhere
6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all, and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations	SDG6 in goals 1 and 2 promotes a positive impact on urban infrastructure and social well-being by raising the living and housing conditions for women.	5.2 Eliminate all forms of violence against all women and girls in public and private spheres, including trafficking and sexual and other types of exploitation

BASIC SANITATION × DECENT WORK AND ECONOMIC DEVELOPMENT		
RELATION TO SDGs		
SDG6 – Ensure availability and sustainable management of water and sanitation for all	CONTRIBUTES	SDG 8. To promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all	SDG6 in goals 1 and 2 promotes a positive impact on urban infrastructure, attracting economic development and resulting in job creation. As such, this SDG fulfills with the achievement of goal 3 of SDG8	8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services
6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all, and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations	SDG6 in goals 1 and 2 cooperates with goal 5 of SDG8	8.5 – Achieve full and productive employment and decent work for all women and men by 2030, including for young people and persons with disabilities, and equal pay for work of equal value
	SDG6 in goals 1 and 2 cooperates with goal 6 of SDG8	8.6 – By 2020, substantially reduce the proportion of youth not in employment, education or training

<table>
<tr><td colspan="3">BASIC SANITATION × REDUCING INEQUALITIES</td></tr>
<tr><td colspan="3">RELATION TO SDGs</td></tr>
<tr><td>SDG6 – Ensure availability and sustainable management of water and sanitation for all</td><td>CONTRIBUTES</td><td>Objective 10. Reduce inequality within and between countries</td></tr>
<tr><td>6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all</td><td rowspan="2">In goals 1 and 2, SDG6 promotes a positive community impact by contributing to fulfilling goal 1 of SDG10</td><td rowspan="2">10.1 By 2030, progressively achieve and sustain income growth of the bottom 40% of the population at a rate higher than the national average</td></tr>
<tr><td rowspan="3">6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all, and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations</td></tr>
<tr><td>In goals 1 and 2, SDG6 promotes a positive community impact by contributing to fulfilling goal 2 of SDG10</td><td>10.2 By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status</td></tr>
<tr><td>In goals 1 and 2, SDG6 promotes a positive community impact by contributing to fulfilling goal 3 of SDG10</td><td>10.3 Ensure equal opportunity and reduce inequalities of outcomes, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard</td></tr>
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<table>
<tr><td colspan="3">SANITATION × RESILIENT CITIES</td></tr>
<tr><td colspan="3">RELATION TO
SDGs</td></tr>
<tr><td>SDG6 – Ensure availability and sustainable management of water and sanitation for all</td><td>RESULTS</td><td>Objective 11. Making cities and human settlements inclusive, safe, resilient and sustainable</td></tr>
<tr><td>6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all</td><td rowspan="2">Basic sanitation results in the promotion of secure housing. SDG11.1 can be contributed to through programs to assist people living in slums and the practice of social tariffs</td><td rowspan="2">11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums</td></tr>
<tr><td rowspan="2">6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all, and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations</td></tr>
<tr><td>The universalization of sanitation promotes social inclusion by increasing the abilities of residents to cope with risky areas and minimizing social and environmental impacts, which contributes to SDG11.3</td><td>11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries</td></tr>
<tr><td rowspan="2">6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes</td><td>The goal 6 for SDG6 results in resilient cities with a reduced risk of catastrophes caused by floods and other accidents, as described in goal 5 of SDG11</td><td>11.5 By 203 0, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations</td></tr>
<tr><td>The universalization of sanitation promotes a positive impact on the environment and shared public spaces</td><td>11.7 By 2030, provide universal access to publicA80:C87, safe, inclusive, accessible and green spaces, in particular for women and children, older persons and persons with disabilities</td></tr>
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<table>
<tr><td colspan="3">SANITATION × PEACE, JUSTICE AND EFFECTIVE INSTITUTIONS</td></tr>
<tr><td colspan="3">RELATION TO SDGs</td></tr>
<tr><td>SDG6 – Ensure availability and sustainable management of water and sanitation for all</td><td>CONTRIBUTES</td><td>Objective 16. To promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels</td></tr>
<tr><td>6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all</td><td rowspan="2">Safe and drinkable water and the trust of the population</td><td>16.1 Significantly reduce all forms of violence and related death rates everywhere</td></tr>
<tr><td>6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all, and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations</td><td>16.2 End abuse, exploitation, trafficking and all forms of violence and torture against children</td></tr>
<tr><td colspan="3">SDG16.3</td></tr>
<tr><td>Corporate Governance</td><td colspan="2">Objective 16. To promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels</td></tr>
<tr><td rowspan="3">Compliance</td><td colspan="2">16.3 Promote the Rule of Law at the national and international levels and ensure equal access to justice for all</td></tr>
<tr><td colspan="2">16.5 Substantially reduce corruption and bribery in all their forms</td></tr>
<tr><td colspan="2">16.6 Develop effective, accountable and transparent institutions at all levels</td></tr>
<tr><td></td><td colspan="2">16.7 Ensure responsive, inclusive, participatory and representative decision-making at all levels</td></tr>
<tr><td rowspan="2">Freedom of Information Law</td><td colspan="2">16.10 Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements</td></tr>
<tr><td colspan="2">16.b Promote and enforce non-discriminatory laws and policies for sustainable development</td></tr>
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<tr><td colspan="3">SANITATION × PARTNERSHIP</td></tr>
<tr><td colspan="3">RELATION TO SDGs</td></tr>
<tr><td>SDG6 – Ensure availability and sustainable management of water and sanitation for all</td><td>PROGRAMS</td><td>Objective 17. To strengthen the means of implementation and revitalize the global partnership for sustainable development</td></tr>
<tr><td rowspan="2">6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity</td><td>Less Loss, More Water Movement– UNITED NATIONS GLOBAL COMPACT</td><td rowspan="2">17.16 Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries</td></tr>
<tr><td>Participation of Technical Chambers of PCJ</td></tr>
</table>

GLOBAL COMPACT	SANASA ACTIONS
HUMAN RIGHTS PRINCIPLES	
1. RESPECT AND PROTECT HUMAN RIGHTS	Universalization of Basic Sanitation
	SANASA in the Community
	PAS
	All service provider contracts contain human rights clauses. This purpose has been defined as of the public bidding notice.
2. PREVENT VIOLATIONS OF HUMAN RIGHTS	All service provider contracts contain human rights clauses. This purpose has been defined as of the public bidding notice.
	For contracting all suppliers, SANASA consults with the official agencies – INSS and Caixa Econômica Federal, with the purpose of verifying proof of regularity related to social security and the FGTS – Guarantee Fund for Length of Service The obligations of the bidding company are clear as of the public bidding notice: the requirements for labor, social security, tax and insurance laws must be observed, and all taxes must be paid for any work.
PRINCIPLES OF LABOR RIGHTS	
3. FREEDOM OF ASSOCIATION AND THE RIGHT TO COLLECTIVE BARGAINING AT WORK	All SANASA employees are free to join a union. Collective bargaining agreements entered into with the union benefits all employees.
4. ABOLISH FORCED OR COMPULSORY LABOR	To ensure the integrity of outsourced workers and prevent degrading work, all construction-related contracts have clauses that require employees to be certified in training on how to properly use PPE, training in working in electrical areas, confined space, and at a height, and the presence of a legally certified professional responsible for electrical work and/or occupational safety. SANASA hires all its employees in accordance with the Consolidation of Labor Laws (CLT).
5. ERADICATE CHILD LABOUR	The contracts also prescribe for a prohibition on child labor, as they require each employee from the contractor to have an employment contract with the requisite Identification Cards.
6. ELIMINATE DISCRIMINATION AT THE WORKPLACE	In SANASA, women have salaries equal to those of men when performing the same duties. They also have equal opportunity.
PRINCIPLES OF ENVIRONMENTAL PROTECTION	
7. ADOPT A PREVENTIVE APPROACH TO ENVIRONMENTAL CHALLENGES	Water Security Plan
	Universalization of Basic Sanitation
	Environmental education: SANASA in the Community and CASA
	Program to Combat and Control Losses
8. PROMOTE ENVIRONMENTAL RESPONSIBILITY	PAS
	Water Security Plan
	Universalization of Basic Sanitation
	Sewage Treatment System
9. ENCOURAGE THE DEVELOPMENT AND DIFFUSION OF ENVIRONMENTALLY FRIENDLY TECHNOLOGIES	EPAR and Retrofit in the ETEs
ANTI-CORRUPTION PRINCIPLE	
10. COMBAT CORRUPTION IN ALL ITS FORMS, INCLUDING EXTORTION AND BRIBERY	Monitoring Corporate Risk/Compliance Program

CEO WATER MANDATE		
SUBJECT	**SUB-TOPIC**	**CHAPTER**
1. DIRECT OPERATIONS		
WATER	WATER RESOURCES	NATURAL AND MANUFACTURED CAPITAL
WATER	SUPPLY OF WATER	
WATER	WATER SECURITY PLAN	
WATER	CONTROL OF LOSSES	
WATER/SEWER	300% PLAN	
WATER/SEWER	PRODUCTION OF REUSABLE WATER	
SEWAGE	SEWAGE TREATMENT SYSTEM	
2. SUPPLIER CHAIN AND DIRECT OPERATION BASIN MANAGEMENT		
WATER	WATER RESOURCES	NATURAL AND MANUFACTURED CAPITAL
3. COLLECTIVE ACTION		
WATER	MOVEMENT FOR REDUCING WATER LOSSES IN DISTRIBUTION	INITIATIVES AND INVOLVEMENTS
WATER	CASA PROGRAM	SOCIAL AND RELATIONSHIP CAPITAL
WATER/SEWER	UNIVERSALIZATION OF BASIC SANITATION	NATURAL AND MANUFACTURED CAPITAL
4. PUBLIC POLICIES		
WATER	CONTROL OF LOSSES	NATURAL AND MANUFACTURED CAPITAL
WATER/SEWER	UNIVERSALIZATION OF BASIC SANITATION	
5. COMMUNITY RELATIONS		
WATER	LESS LOSS, MORE WATER MOVEMENT	INVOLVEMENT IN ASSOCIATIONS AND INITIATIVES
WATER	PAS	SOCIAL CAPITAL RELATIONSHIP
WATER/SEWER	PAS	
COMMUNITY	SANASA IN THE COMMUNITY	
6. TRANSPARENCY		
INTEGRATED REPORT		

WATER STEWARDSHIP
PROGRAM TO COMBAT AND CONTROL LOSSES

SUMMARY OF GRI CONTENT (102 -55)					
STANDARD GRI	**DISCLOSURE**	**CHAPTER**	**ADDITIONS**	**RELATION TO SDGs**	**PAGE**
GRI 102: General Disclosures Organization Profile	102-1: Name of organization	Organizational Profile	SOCIEDADE DE ABASTECIMENTO DE ÁGUA E SANEAMENTO S.A		5
	102-2: Activities, brands, products and services	Organizational Profile; Corporate Governance SANASA in Numbers; Our Capitals: Natural Capital	Company created to plan, execute, supervise and operate public sanitation services in the municipality of Campinas and its Metropolitan Region		5; 7; 23
	102-3: Headquarters address	Organizational Profile	Avenida Saudade, 500 – Ponte Preta, Campinas, SP		5
	102-4: L ocations of operations	Organizational Profile	Campinas, SP		5
	102-5: Ownership and legal form	Organizational Profile	Mixed Company		5
	102-6: Markets served		Municipality of Campinas		-
	102-7: Organization size	Organizational Profile; Corporate Governance: SANASA in numbers; Our Capitals: Manufactured Capital; Our Capitals: Financial Capital	Large		5; 7; 23
	102-8: Information about employees and other workers	Our Capitals: Human Capital; Human and Intellectual Capital	2,200 employees (not including contractors)	SDG 5.5, SDG 8.5, SDG 8.6, SDG 8.7, SDG 8.8	23; 85
	102-9: Supplier chain	Social and Relationship Capital: Supplier Management			95
	102-10: Significant changes in the organization and its supply chain		None		-
	102-11: Precautionary principle or approach	Natural and Manufactured Capital: Environmental Management Licensing			37
	102-12: External initiatives	Initiatives and Investments			144
	102-13: Membership in associations	Corporate Governance; Initiatives and Investments		SDG 16	7; 144
GRI 102: General Disclosures Strategy	102-14: Statement by the organization's most senior decision-maker	Message from the Chairman of the Board of Directors and Message from the CEO			3; 4
	102-15: Key impacts, risks and opportunities	Corporate Governance		SDG 16	7
GRI 102: General Disclosures Ethics and Integrity	102-16: Values, principles and standards of behavior	Corporate Governance		SDG 16	7
	102-17: Advisory mechanisms and ethical concerns	Corporate Governance		SDG 16	7

SUMMARY OF GRI CONTENT (102-55)					
STANDARD GRI	**DISCLOSURE**	**CHAPTER**	**ADDITIONS**	**RELATION TO SDGs**	**PAGE**
GRI 102: General Governance Disclosures	102-18: Governance structure	Corporate Governance		SDG 16	7
	102-19: Delegation of authority	Corporate Governance		SDG 16	7
	102-20: Executiv e responsibility for economic, environmental and social issues	Corporate Governance		SDG 16	7
	102-21: Stakeholder consultation on economic, environmental and social issues	Reporting Practice			137
	102-22: Composition of the highest governance body and its committees	Corporate Governance		SDG 16	7
	102-23: Chairman of the highest governance body	Corporate Governance		SDG 16	7
	102-24: Nomination and selection of the highest governance body	Corporate Governance		SDG 16	7
	102-25: Conflicts of interest	Corporate Governance		SDG 16	7
	102-26: Role of the highest governance body in defining purposes, values and strategy	Corporate Governance		SDG 16	7
	102-27: Measures to improve awareness of the highest governance body	Corporate Governance		SDG 16	7
	102-28: Assessment of the performance of the highest governance body		No answer		-
	102-29: Identification and management of economic, environmental and social impacts	Corporate Governance		SDG 16	7
	102-30: Effectiveness of risk management processes	Corporate Governance		SDG 16	7
	102-31: Analysis of economic, environmental and social topics	Corporate Governance		SDG 16	7
	102-32: Role of the highest governance body in the suitability report	Reporting Practice			137
	102-33: Communication of critical concerns	Corporate Governance		SDG 16	7
	102-34: Nature and total number of critical concerns	Corporate Governance		SDG 16	7
	102-35: Compensation policies	Corporate Governance		SDG 16	7
	102-36: Procedure for determining compensation		No answer		-
	102-37: Stakeholder involvement in compensation	Human and Intellectual Capital		SDG 5.5, SDG 8.5, SDG 8.6, SDG 8.7, SDG 8.8	85
	102-38: Ratio of annual compensation		No answer		-

SUMMARY OF GRI CONTENT (102-55)					
STANDARD GRI	**DISCLOSURE**	**CHAPTER**	**ADDITIONS**	**RELATION TO SDGs**	**PAGE**
GRI 102: General Disclosures, Stakeholder Engagement	102-40: List of stakeholders	Reporting Practice			137
	102-41: Collective bargaining agreements	Human and Intellectual Capital		SDG 5.5, SDG 8.5, SDG 8.6, SDG 8.7, SDG 8.8	85
	102-42: Basis for identifying and selecting stakeholders for involvement	Reporting Practice			137
	102-43: Approach to stakeholder involvement	Human Capital and Intellectual Reporting Practice		SDG 5.5, SDG 8.5, SDG 8.6, SDG 8.7, SDG 8.8	85
	102-44: Key topics and concerns raised	Reporting Practice			137
GRI 102: General Disclosures, Reporting Practices	102-45: Entities included in the consolidated financial statements		No answer		-
	102-46: Definition of the report contents and topic limits	Reporting Practice			137
	102-47: List of material issues	Reporting Practice			137
	102-48: Restatement of information		None		-
	102-49: Changes in scope and limits		None		-
	102-50: Reporting period	Reporting Practice			137
	102-51: Data from the last report	Reporting Practice			137
	102-52: Reporting cycle	Reporting Practice			137
	102-53: Contact point for questions regarding the report		sustentabilidade@sanasa.com.br		-
	102-54: Statement of preparation for a report of compliance with GRI Standards	Reporting Practice			137
	102-56: External verification	Statement of Assurance			146

SUMMARY OF GRI CONTENT (102-55)					
STANDARD GRI	**DISCLOSURE**	**CHAPTER**	**ADDITIONS**	**RELATION TO SDGs**	**PAGE**
GRI 103: Management Type	103-1: Explanation of the material issue and its limit	Natural and Manufactured Capital: Water;			37; 85; 95
	103-2: Type of management and its components	Natural and Manufactured Capital: Water; Natural and Manufactured Capital: Combat Losses; Natural and Manufactured Capital: Sanitary Sewage System; Human and Intellectual Capital; Social and Relationship Capital: Customers and Consumers; Social and Relationship Capital: Local Community; Social and Relationship Capital: Supplie r Management			37; 85; 95
	03-3: Management review	Natural and Manufactured Capital: Water; Natural and Manufactured Capital: Combat Losses; Natural and Manufactured Capital: Sanitary Sewage System; Human and Intellectual Capital; Social and Relationship Capital: Local Community Social and Relationship Capital: Supplier Management			37; 85; 95
GRI 201: Economic Performance	201-1: Direct economic value generated and distributed	Financial Capital			31
	201-2: Financial implications and other risks and opportunities arising from climate change		No answer		-
	201-3: Obligations of the defined benefit plan and other retirement plans		No answer		-
	201-4: Financial assistance received from government	Financial Capital			31
GRI 202: Market Presence	202-1: Share of lowest paid salary by gender compared to local salary		No answer		-
	202-2: Proportion of senior management hired from the local community		Not applicable		-
GRI 203: Indirect Economic Impacts	203-1: Investments in infrastructure and services offered	Financial Capital			31
	203-2: Significant indirect economic impacts	Our Capitals: Intellectual Capital Social and Relationship Capital: Local Community		SDG 5.5, SDG 8.5, SDG 8.6, SDG 8.7, SDG 8.8	23; 95

SUMMARY OF GRI CONTENT (102-55)					
STANDARD GRI	**DISCLOSURE**	**CHAPTER**	**ADDITIONS**	**RELATION TO SDGs**	**PAGE**
GRI: 204: Procurement Practice	204-1: Percentage of spending with local suppliers	Social and Relationship Capital: Management of	The current integrated system of the company does not allow detailing		95
GRI 205: Anti - Corruption	205-1: Operations evaluated for risks related to corruption	Corporate Governance		SDG 16	7
	205-2: Communication and training in anti-corruption policies and procedures	Corporate Governance		SDG 16	7
	205-3: Confirmed cases of corruption and actions		None		-
GRI 206: Unfair Competitio	206-1: Lawsuits for unfair competition, antitrust and monopoly practices		Not applicable		-
GRI 301: Materials	301-1: Materials used by weight or volume		No answer		-
	301-2: Materials from recycling		Not applicable		-
	301-3: Recycled packaging products and their materials		No answer		-
GRI 302: Energy	302-1: Energy consumption within the organization		No answer		-
	302-2: Energy consumption outside the organization		No answer		-
	302-3: Energy intensity		No answer		-
	302-4: Reduction of energy consumption	Natural and Manufactured Capital: Combat Losses		SDG 6.4	37
	302-5: Reduction in energy requirements for products and services		No answer		-
GRI 303: Water	303-1: Water consumption by source	Organizational Profile			5
	303-2: Water sources significantly affected by water capture	Natural and Manufactured Capital: Water		SDG 6.1, SDG 6.2, SDG 6.3, SDG 6.4, SDG 6.5, SDG 6.6, SDG 6a, SDG 6b	37
	303-3: Recycled and reused water	Natural and Manufactured Capital: Sanitary Sewage System		SDG 6.3	37
GRI 304: Biodiversity	304-1: Proprietary operating units, leased, managed within or adjacent to protected areas and areas of high biodiversity value located outside protected areas		No answer		-
	304-2: Significant impacts of activities, products and services on Biodiversity		No answer		-
	304-3: Protected or restored habitats		No answer		-
	304-4: Species included in the IUCN Red List and national conservation lists with habitats in areas affected by the organization operations		No answer		-

SUMMARY OF GRI CONTENT (102-55)					
STANDARD GRI	**DISCLOSURE**	**CHAPTER**	**ADDITIONS**	**RELATION TO SDGs**	**PAGE**
GRI 305: Emissions	305-1: Direct emissions of greenhouse gases (GHG)		No answer		-
	305-2: Indirect emissions of greenhouse gases (GHG)		Not applicable		-
	305-3: Other indirect emissions of greenhouse gases (GHG)		No answer		-
	305-4: Intensity of greenhouse gas emissions		No answer		-
	305-5: Reduction of greenhouse gas emissions (GHG)		No answer		-
	305-6: Emissions of substances that deplete the ozone layer (ODS)		No answer		-
	305-7: NOx, SOx and other significant atmospheric emissions		No answer		-
GRI 306: Effluents and Waste	306-1: Total water disposal by quality and destination		No answer		-
	306-2: Waste by type and disposal method		No answer		-
	306-3: Significant leaks		No answer		-
	306-4: Transportation of hazardous waste		No answer		-
	306-5: Water bodies affected by discharges and water drainage		No answer		-
GRI 307: Environmental	307-1: Non-Compliance with environmental laws and regulations		No answer		-
GRI 308: Supplier Environmental Assessment	308-1: New suppliers selected based on environmental criteria		No answer		-
	308-2: Negative environmental impacts in the supply chain and measures taken		No answer		-
GRI 401: Employment	401-1: New hires and employee turnover	Our Capital: Human Capital; Human and Intellectual Capital		SDG 5.5, SDG 8.5, SDG 8.6, SDG 8.7, SDG 8.8	23; 85
	401-2: Benefits for full - time employees that are not provided to temporary or part-time employees	Human and Intellectual Capital		SDG 5.5, SDG 8.5, SDG 8.6, SDG 8.7, SDG 8.8	85
	401-3: Maternity and paternity leave	Human and Intellectual Capital		SDG 5.5, SDG 8.5, SDG 8.6, SDG 8.7, SDG 8.8	85
GRI 402: Labor Relations	402-1: Minimum notice period for operational changes		No answer		-

SUMMARY OF GRI CONTENT (102-55)					
STANDARD GRI	**DISCLOSURE**	**CHAPTER**	**ADDITIONS**	**RELATION TO SDGs**	**PAGE**
GRI 403: Health and Safety at Work	403-1: Employee representation on committees	Human and Intellectual Capital		SDG 5.5, SDG 8.5, SDG 8.6, SDG 8.7, SDG 8.8	85
	403-2: Costs and types of injury, occupational illnesses, days lost, absenteeism and work-related fatalities	Human and Intellectual Capital		SD G 5.5, SDG 8.5, SDG 8.6, SDG 8.7, SDG 8.8	85
	403-3: Employees with high incidence or high risk of illnesses related to their occupation	Human and Intellectual Capital		SDG 5.5, SDG 8.5, SDG 8.6, SDG 8.7, SDG 8.8	85
	403-4: Health and safety topics covered by the	Human and Intellectual Capital		SDG 5.5, SDG 8.5, SDG 8.6, SDG 8.7, SDG 8.8	85
GRI 404: Training and Education	404-1: Average hours of training per year and per employee	Human and Intellectual Capital		SDG 5.5, SDG 8.5, SDG 8.6, SDG 8.7, SDG 8.8	85
	404-2: Programs to develop the skills of employees and assistance in career transition	Human and Intellectual Capital		SDG 5.5, SDG 8.5, SDG 8.6, SDG 8.7, SDG 8.8	85
	404-3: Percentage of employees receiving regular performance reviews and career development		No answer		-
GRI 405: Diversity and Equal Opportunities	405-1: Diversity in governance bodies and employees	Human and Intellectual Capital		SDG 5.5, SDG 8.5, SDG 8.6, SDG 8.7, SDG 8.8	85
	405-2: Mathematical ratio of basic salary and compensaton for women in relation to men	Our Capitals: Human Capital; Human and Intellectual Capital		SDG 5.5, SDG 8.5, SDG 8.6, SDG 8.7, SDG 8.8	23; 85
GRI 406: Non-Discrimination	406-1 – Cases of discrimination and corrective measures applied		None		-
GRI 407: Freedom of Association & Collective	407-1: Operations and suppliers where the right to join a union and collective bargaining may be at risk	Human and Intellectual Capital		SDG 5.5, SDG 8.5, SDG 8.6, SDG 8.7, SDG 8.8	85
GRI 408: Child Labor	408-1: Operations and suppliers with significant risk of child labor		None		-
GRI 409: Forced Labor or Slave -Like Labor	409-1: Operations and suppliers with significant risk for forced or mandatory labor		None		-
GRI 410: Security Practices	410-1: Security personnel trained in policies or procedures		No answer		-
GRI 411: Indigenous and Traditional People's Rights	411-1: Cases where the rights of indigenous or traditional peoples are violated		Not applicable		-

SUMMARY OF GRI CONTENT (102-55)					
STANDARD GRI	**DISCLOSURE**	**CHAPTER**	**ADDITIONS**	**RELATION TO SDGs**	**PAGE**
GRI 412: Human Rights Assessment	412-1: Operations subject to analysis or		No answer		-
	412-2: Training employees in human rights policies or procedures		No answer		-
	412-3: Agreements and contracts of a significant investment that include human rights clauses or have undergone human rights assessments		No answer		-
GRI 413: Local Communities	413-1: Operations with the involvement of	Social and Relationship Capital: Community		SDG 6.1 , SDG 6.2	95
	413-2: Operations with significant real and potential negative impacts on local communities		None		-
GRI 414: Supplier Social Assessment	414-1: New suppliers selected based on environmental criteria		No answer		-
	414-2: Negative environmental impacts in the supply chain and measures taken		None		-
GRI 415: Public Policies	415-1: Political contributions		Not applicable		-
GRI 416: Health and Safety of Customers	416-1: Assessment of health and safety impacts from product and service categories	Natural and Manufactured Capital: Water		SDG 6.3 , SDG 6.6	37
	416-2: Cases of non-compliance relating to impacts on health and		Not applicable		-
GRI 417: Marketing and Labeling	417-1: Requisites for information and labeling of products and services		No answer		-
	417-2: Cases of non-compliance with information and labeling of products and services		No answer		-
	417-3: Cases of non-compliance related to marketing communications		Not applicable		-
GRI 418: Privacy of the Client	418-1: Proof of handling complaints regarding breaches of privacy and		None		-

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Acknowledgments
Glaucia Terreo – Global Reporting Initiative/GRI Brazil Regional Hub
Carlo Pereira – Executive Secretary of the United Nations Global Compact

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