

**MUNICIPALITY OF FORTALEZA  
MUNICIPAL DEPARTMENT OF URBAN DEVELOPMENT AND  
ENVIRONMENT  
(SECRETARIA MUNICIPAL DE URBANISMO E MEIO AMBIENTE – SEUMA)**

**FORTALEZA SUSTAINABLE URBAN DEVELOPMENT PROJECT  
(PROJETO FORTALEZA CIDADE SUSTENTÁVEL - FCS)**

**INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT  
LOAN AGREEMENT N° IBRD 8747-BR**

**REFERENCE OF TERMS**

**SELECTION OF SPECIALIZED COMPANY IN CONSTRUCTION  
SUPERVISION FOR FORTALEZA SUSTAINABLE URBAN  
DEVELOPMENT PROJECT (FORTALEZA CIDADE SUSTENTÁVEL – FCS)**

**JANUARY/2020**

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## 1. ANTECEDENT AND CONTEXT

The Municipality of Fortaleza has signed with the International Bank for Reconstruction and Development proposed Loan Agreement N° IBRD 8747-BR, in the amount of US \$ 73 million, to implement the Fortaleza Sustainable Urban Development Project (*Fortaleza Cidade Sustentável – FCS*), executed by the Municipal Department of Urban Development and Environment (*Secretaria Municipal de Urbanismo e Meio Ambiente - SEUMA*).

This is a pioneer initiative in the Municipality, which aims, over a period of six years, to minimize and / or to remedy deficiencies related to urban-environmental problems, notably in sanitation systems (water supply, sanitation, drainage and solid waste), pollution of water resources, degradation and reduction of green areas, population occupation in inadequate / irregular areas, among others.

This document is the Terms of Reference for the **SELECTION OF SPECIALIZED COMPANY IN SUPERVISION OF WORKS FOR THE FORTALEZA SUSTAINABLE URBAN DEVELOPMENT PROJECT** (*Fortaleza Cidade Sustentável – FCS*), and it aims to guide the conduct of the necessary actions to efficiently make the execution of the works, noticed the standards and specifications established by the Municipality of Fortaleza and the International Bank for Reconstruction and Development, Project financing agent.

In addition to initial information on Project design and eligible actions, it details hiring objectives; the scope of the services to be performed by the consulting company; the expected results and products; the time and place of performance of the services; the specification of the key team (profile and time of dedication of the respondent team, as well as their duties) and, finally, the inputs that will be available to the selected consultant.

The execution of the services object of this Terms of Reference shall be performed by a company / institution contracted from a consulting selection process under the coordination of the Municipal Department of Urbanism and Environment Environment (*Secretaria Municipal de Urbanismo e Meio Ambiente - SEUMA*), whose contract will be supervised by Municipal Department of Infrastructure from Fortaleza (*Secretaria Municipal de Infraestrutura de Fortaleza – SEINF*), in partnership with SEUMA to implement the Fortaleza Sustainable City Project.

### 1.1 The Fortaleza Sustainable Urban Development Project

The Fortaleza Sustainable Urban Development Project is originated from the Loan Agreement N. 8747-BR, signed between the Fortaleza Municipal Government and International Bank for Reconstruction and Development – IBRD, now it is being implemented by SEUMA, aiming at: a) To increase the capacity of the municipality of Fortaleza for land use planning and operationalization of urban financing instruments; and b) to improve the urban environment and rehabilitate public spaces through the use of selected areas of the Maritime Strand Basin - VM and *Rachel de Queiroz Park (Parque Raquel de Queiroz – PRDQ)*.

The FCS Project directly benefits 319,774 people (53% of whom are women). This population includes: (i) 159,579 residents from 8 neighborhoods in the immediate vicinity of the PRDQ, where urban and environmental qualification interventions will take place; and (ii) 160,195 residents of the 5 coastal districts of the western sector of the VM Basin, the most frequent beach users (IBGE 2010). Indirectly, the Project interventions will benefit an expanded population, not only in the VM Basin (about 415,000 people), but also in the 14 neighborhoods of PRDQ's extended catchment area (about 290,000 people).

## **1.1.1 Characterization of the Fortaleza Sustainable Urban Development Project - FCS**

The Project's components and subcomponents, as well as its main objectives, are highlighted below.

### **Component 1 - Urban and Environmental Recovery**

*Subcomponent 1.1 - Localized Pollution Reduction in Streams of VM Basin ("City Waters"):* Its main objective is to demonstrate viable alternatives for improving beach bathing through a set of sanitation and water sector interventions in the western sector. VM Basin, through various activities in the sanitation area

*Subcomponent 1.2 - Rachel de Queiroz Park Recovery ("Natural Systems Network"):* Its main objective is to allow the integration between the built and the natural environment, to adjust the improvement of the quality of life of the inhabitants of Fortaleza through the revitalization and expansion. green areas in the municipality, through the establishment of Rachel de Queiroz Park;

### **Component 2 - Strengthening Urban Planning and Financing Capacity**

*Subcomponent 2.1 - Urban and Environmental Planning and Control Instruments:* Its main objective is to increase the efficiency and effectiveness of the Department in the performance of its urban planning and monitoring duties, through the revision of urban legislation and the expansion of Fortaleza Online, the platform systematization of City Hall licenses;

*Subcomponent 2.2 - Urban Business Opportunities:* Its main objective is to increase the capacity of the PMF to carry out urban and social transformation projects in city areas, as well as to create viable alternatives for development finance, with private sector participation.

### **Component 3 - Project Management**

This component is aimed at strengthening the executing department through hiring consultants and training of staff.

## **1.1.2 Description of the project to be supervised**

### **Component 1 - Urban and Environmental Restoration**

#### *Subcomponent Natural Systems Network*

#### a) Execution of Rachel de Queiroz Park - PRDQ

Created and regulated in January 2014 through Municipal Decree No. 13,284, Rachel de Queiroz Park is characterized as a linear park with an estimated total area of 135 hectares, crosses 8 neighborhoods and it is approximately 10 km long, starting at João Lopes Dam, Monte Castelo district following the banks of the Maranguapinho River. Inserted in the northwest of the city, PRDQ is inserted in a densely urbanized area, with few public alternatives of urban leisure and several inadequate interventions in environmentally protected areas.

Aiming at better programming and greater flexibility in the future implementation of PRDQ actions, it was divided into 19 sectors (see image 01). The urban and environmental interventions to be implemented through the Project focus on sectors 1 to 10, starting at the João Lopes reservoir, in the Monte Castelo neighborhood, passing by the leisure center of Sargento Hermínio Avenue, and entering in the Federal University of Ceará (UFC), where the Santo Anastácio dam is located. Interventions generally include: sidewalks, running track, playground, trails, landscaping, street lighting (to be implemented by the PMF), signage, street furniture and water resources and green areas recovery. Interventions in the Park will also involve large social work with the surrounding communities, in coordination with complementary activities in the solid waste area.

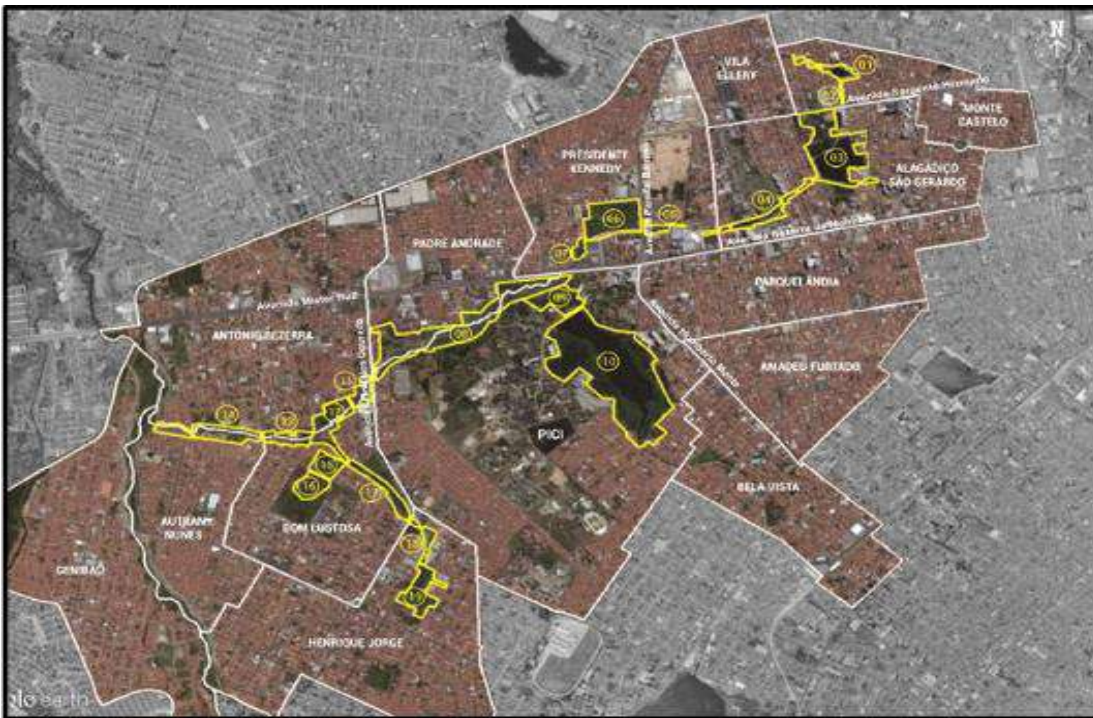


Image 01: Context of Rachel de Queiroz Park in the City area, its sectors and neighborhoods of influence.

### **Sector 01 from Rachel de Queiroz Park:**

Known as João Lopes Square, Sector 1 is located in the Monte Castelo district between Gonçalo de Lagos and Pedro Kubi Street. It is proposed for this stretch the recovery and clearance of existing drainage structures and the expansion of the number of catch basin drains. Among the Park's proposals are some pedestrian crossings elevated to the level of the sidewalks. Within this context, the implementation of such crossings could lead to the obstruction of the surface runoff of rainwater by the gutters, causing rainwater accumulation. To avoid such a problem, we designed catch basin drains like “wolf's mouth” and their respective extensions to a main receiver.

It is proposed the integration of three squares, already used by the population, through the creation of elevated walkways, cycle paths and renovations in areas that need proper treatment.

The street Gonçalo de Lagos is elevated, providing a safe route for nursery students in the park area. An elevated passage makes it possible to go to section Two. Police support (attendance), reading space and bathroom are part of the needs program to be implemented in the area.

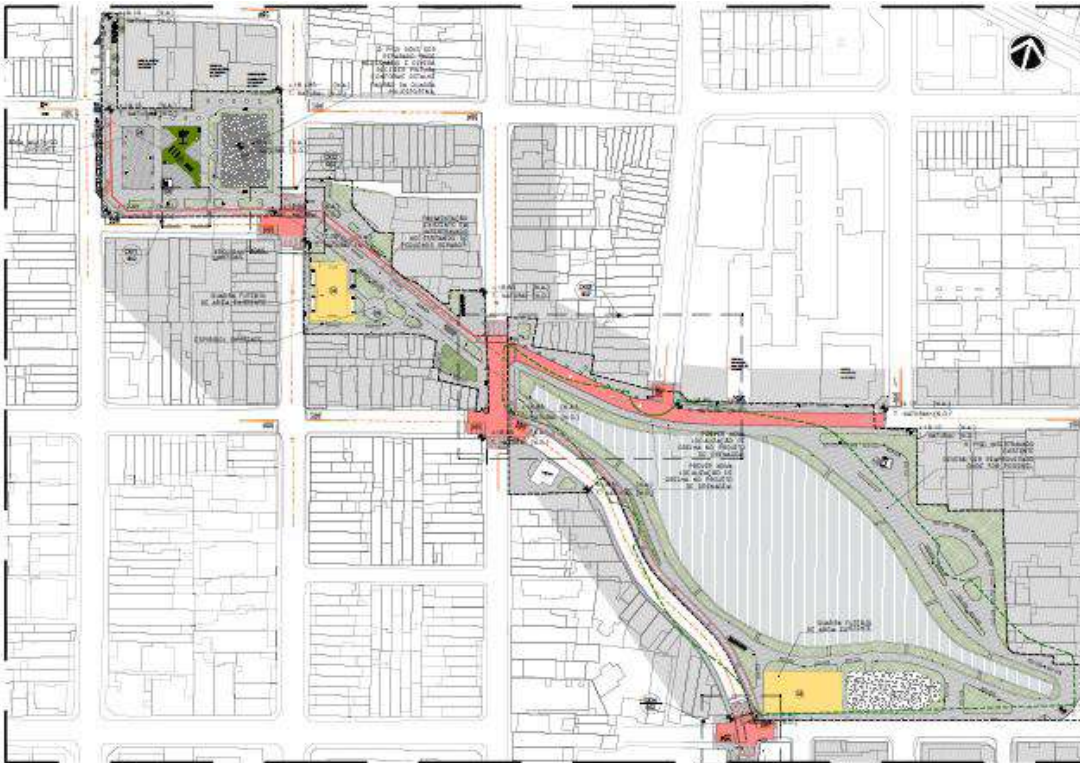


Image 02: Sector 01 from Rachel de Queiroz Park.

### **Sector 02 from Rachel de Queiroz Park:**

This sector comprises Catarina Labouré Street and has the function of connecting sector 1 to 3. The existing gallery on the street has deep stretches, because within its path a basin transposition was characterized. It is in good condition, making it necessary to improve the uptake. Along the way, it is proposed a project of urbanization, landscaping and the creation of a cycle path. The connection to sector 3 occurs at Av. Sergeant Herminio through crosswalk without non-traffic light. A proposal from the Park contemplates the post-work extension of the avenue, considering a projected bike path.





Image 03: Sector 02 from Rachel de Queiroz Park.

**Sector 03 from Rachel de Queiroz Park:**

Known as Sergeant Herminio's Leisure Pole, section 03 went through a process to reverse the siltation and to create better drainage, allowing the storage volume of the lake to be approximately 80,000m<sup>3</sup>. The structures are in good condition, making it necessary to correct the slope of some sections of the gutter and enlargement of catch basin drains.

Sector 3 presents three distinct situations. The first is formed by the Leisure Pole, which will only be contemplated with a proposal of integration through visual communication and signaling, as well as the application of a cycle lane stretch on the side street.

The second situation occurs in Lagoa do Alagadiço (behind the leisure center), where the urbanization and landscaping project executed by DRENURB has already taken place. The park project supports existing landscaping and urbanism and applies some necessary needs.

The last part corresponds to the Mother Queen Church Square, where there is the proposal of a wide reform in the living and contemplation areas. The proposal brings together the creation of green steps, integration through elevated walkways, parking lots, sand courts, playgrounds and cycle paths. The crossing to sector 04 is by way of an elevated passage.



Image 04: Sector 03 from Rachel de Queiroz Park.

**Sector 04 from Rachel de Queiroz Park:**

This section is delimited by preservation areas of the watercourse between Eretides Martins and Olavo Bilac Streets in São Geraldo's borough. The watercourse has its preservation bands in good state, however, it is needed to broaden the uptake in the crossings.

It is proposed small interventions such as pathways, stretching areas, playground, and cycle routes within green areas of the park. The access crossing to the section 5 is done by non-traffic lighted crosswalks.

The crosswalks between the green areas, whenever possible, happen through elevated crossings due to the necessity of accessibility and decrease vehicles speed.

Program: it is proposed police supporting points, reading spaces where it will be encouraged donation and acquisition of books among users.



Image 05: Sector 04 from Rachel de Queiroz Park.

**Sector 05 from Rachel de Queiroz Park:**

Section of Alagadiço Stream composed by three different stretches: the first one, associated with Chalex Motel, between Olavo Bilac and Margarida Maria Streets, open aired, presenting signs of stream flow failure; the second, embedded and covered by the North Shopping, between Margarida Maria and Braz de Francesco Streets, it is under judicial challenge, should receive, timely, enlargement works. The third, open, sidelong Jonas Gomes de Freitas square, remains in natural state with signs of silting.



In the area in front of Motel Chalex, the stream is channeled with aesthetic improvements in an urban perspective. Neighboring to the loading docks of North Shopping, the cyclist traffic would be hampered; therefore, it is proposed a detour of the pathway to Tabelaão Fabião Street. In this part it is proposed an enlargement of the pathway so that it could be shared among pedestrians and cyclists.

In another part of the section it is located the Jonas Gomes de Freitas square, kept by the shopping mall. In this area it is proposed a shared sidewalk and the extension of living areas in an municipal areas to be integrated.

The connection between the Tabelaão Fabião Street and Jonas Gomes de Freitas square will be done by a pedestrian crossing. Between the section 5 and 6 through Parsifal Barroso Avenue connections will be done through traffic light and crosswalks.



Image 06: Sector 05 from Rachel de Queiroz Park.

**Sector 06 from Rachel de Queiroz Park:**

Sector 06 consists of a green area located between Parsifal Barroso Avenue, Frei Odilon, Edgar Falcão and Licurgo Montenegro Streets. It is suggested the construction of collection boxes and its connections at the Joaquim Marques and Mendes Guimarães Streets and also at Edgar Falcão Streets and Projected Street.

Mostly located in a municipal protection area where artificial wetlands will be built.

The connection between sector 06 and 07 will be through an elevated pathway for more security to the users.

In this sector there will be the concentration of sports equipment such as courts, field, playgrounds and spiribol. It is proposed the creation of green platforms and several public squares with equipment for elderly people. Another areas is destined to the creation of a seedling nursery that will help maintain the park's landscaping. Cycle path for leisure, running track and areas for stretching and exercises will work together. Due to the physical barrier that the stream may impose, it is suggested the creation of metallic bridges for better integration between sectors of the park.

Similarly to the section 4, it is proposed supporting police stations located in strategic places for more security to the region. To increase the park's identity and as a tribute to Rachel de Queiroz, it is proposed spaces for reading.

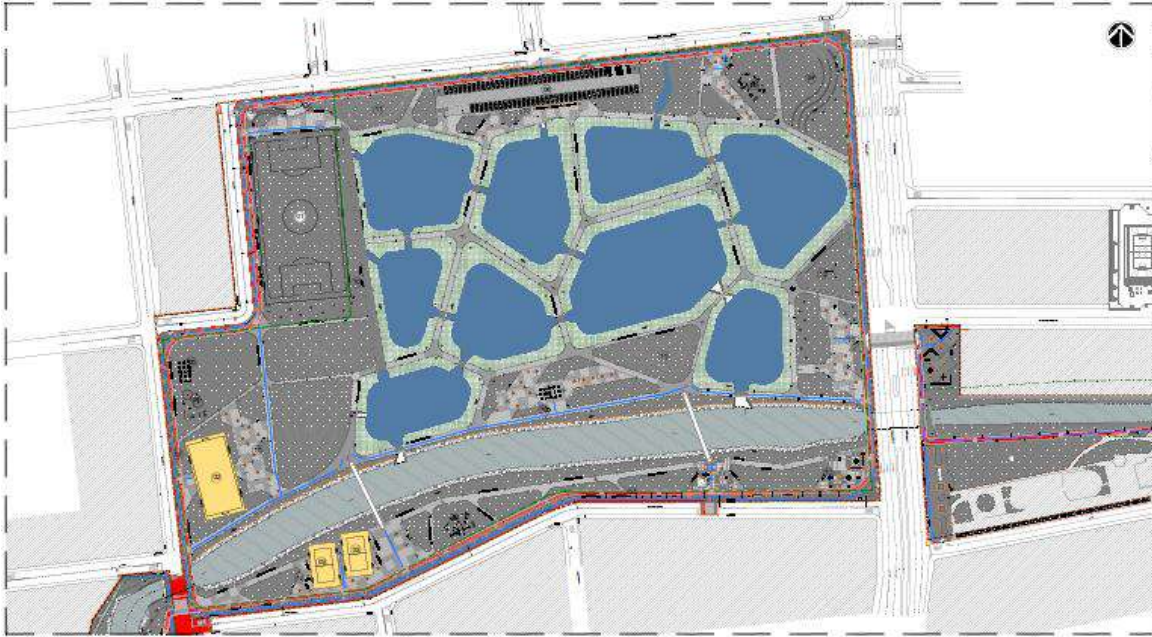


Image 07: Sector 06 from Rachel de Queiroz Park.

**Sector 07 from Rachel de Queiroz Park:**

Located between Mister Hull Avenue, Mexico Street, Frei Odilon Str. And Tenente Marques Str. The section 07 has been under construction works, the catchment should be broadened at the Frei Odilon Str. The effects of the uptake flow in the multiple tubular culvert under the Mr. Hull Avenue should be taken into consideration.

The region does not present any type of urban or landscape treatment. It has a small space where it is proposed the creation of shared pathways, a public space with gymnastic equipment, bike rack and many garden areas.

The crossway through Mr. Hull Avenue until section 08, in the Pici Campus, will be by streetlights to me implemented accordingly to studies done by AMC - Autarquia Municipal de Trânsito e Cidadania (Municipal Authority of Traffic and Citizenship).

Program: Police station (support), reading spaces, bathroom.

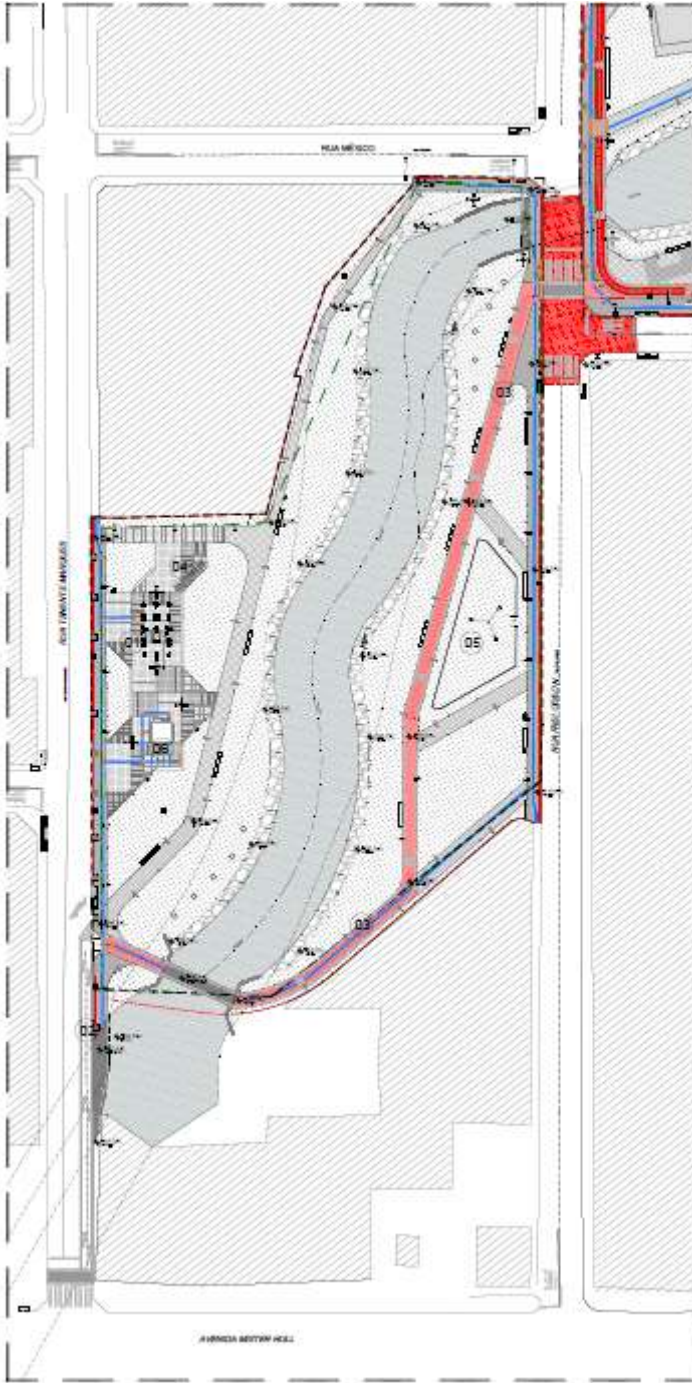


Image 08: Sector 07 from Rachel de Queiroz Park.

**Sector 08 from Rachel de Queiroz Park:**

Section 08 is located in floodplains of Riacho Cachoeirinha near the Federal University of Ceara – UFC. It is necessary the adaptation of launch points of the microdrainage galleries affluent with the canal walls.

In this section there will be implemented several equipments such as: amphitheater with green platforms, parking lots, sand and multisport courts, skatepark, stretching areas, health spaces, playgrounds and cycle paths. All those equipments at the nearest bank of Mr. Hull avenue. At the other riverbank side there is a proximity to the physical limits of the UFC and its research areas with Africanized plants and bees. Therefore, it is not proposed any equipment to avoid the concentration of people which could bring insecurity and impact on the patrimony.

One important equipment is the Environmental Education Cell, a supporting setup to educational programs of the university with the surrounding communities in Pici. In this area it is been also proposed metallic



bridges over the stream to promote the integration between the riverbanks. Police supporting station, reading spaces, environmental education and bathrooms, are also part of the program.

### **Sector 09 from Rachel de Queiroz Park:**

The sector 09 has a short length and recently has been under construction works to construct a channel in coated gabion. The manhole that works as a dam spillway is in good condition.

The regions is characterized as naturally flooded thus it is destined to the creation of ornamental gardens and for living and contemplation areas. In this sector it is located the Prisco Bezerra Grove, an important area for researches and, therefore, segregated from other areas that have open access to the public outside the university.

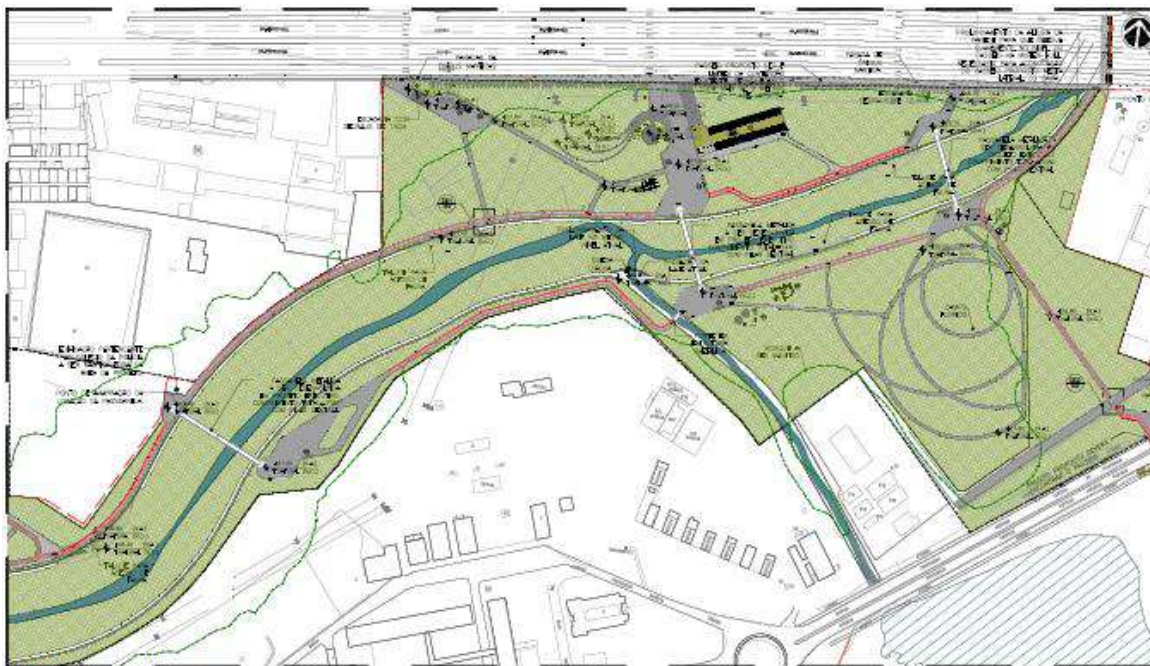


Image 09: Sector 08 nad 09 from Rachel de Queiroz Park.

### **Sector 10 from Rachel de Queiroz Park:**

The sector 10 correspond to the watershed and surroundings of the Santo Anastácio Dike, previously known as Agronomy Dike, located inside the UFC campus in the Pici borough.

This dike is well preserved and had been made an Area with Relevant Ecologic Interest ( ARIE – in Portuguese) what places the area into integral environmental protection.

The channel of the overflow of the Lagoa Parangaba runs into the dike, running through the neighborhoods: Democrito Rocha, Couto Fernandes, Panamericano and Bela Vista, where it is possible to notice the illegal discharge of domestic sewage by large quantities of residences, which contributes to the pollution of the water body. The watershed of the dike also receives the precipitation of the following neighborhoods: Parquelândia, Amadeu Furtado, Bela Vista, Panamericano and Pici, where there are some microdrainage galleries. However, most of the waterflow comes from surface runoff.

The crossing to the sector 10 is located inside the Campus, which will barely receive interventions. Around the Santo Anastacio dike it will be proposed a pathway on its side, where it is the new access to the UFC. The pathway will be connected to the cyclepath within the university.





Image 10: Sector 10 from Rachel de Queiroz Park.

The sectors of the park were divided into 3 different phases of work interventions, based on criterias and possibilities of implementation, such as the expropriation of real estate for the implantation of the Park. Each phase will be executed by different contracts, according to the presented schedule.

## ESTIMATED IMPLEMENTATION SCHEDULE OF RAQUEL DE QUEIROZ PARK

	2020												2021												2022											
	Jan	Fev	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Fev	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Fev	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
<b>RACHEL DE QUEIROZ PARK</b>																																				
Phase 1 of Rachel de Queiroz Park - (sections 1, 2, 5 and 6)																																				
Section 6																																				
Section 1 e 2																																				
Section 5																																				
Phase 2 of Rachel de Queiroz Park - (sections 8A e 9)																																				
Phase 3 of Rachel de Queiroz Park - (sections 3, 4, e 11)																																				
Phase 4 of Rachel de Queiroz Park - (sections 7, 8B e 10)																																				

*Subcomponent – Águas da Cidade (City Waters)*

The subcomponent Águas da Cidade involves social awareness, environmental awareness, engineering projects and works in the Vertente Marítima basin.

The activities of this subcomponent that will be object of supervision are the following:

**a) Home sewage interconnections for low-income population (*Se liga na rede*)**

This action foresees sewage interconnection works (intradomiciliary and building) in 1,873 low standard properties located on the west coast of the Vertente Marítima basin. The works consist in: (i) deactivate the sump – sinkhole system (or any other), (ii) redirect the sewer to the inspection box already existing on the sidewalks of the houses, and (iii) ensure the maintenance of the initial condition of the buildings (restoration of floors, painting and repair of other damage caused by the work).

**b) Dry Weather Drainage Capture -**

It consist in intercepting the effluents at the exits of the rain galleries, already in the beach area, through the installation of pumps or gravity that will redirect this effluent to the sewage system. This intervention is planned in 4 galleries (all of them in the Western coast). Works are planned to contain sewage, pumping, plumbing and all electrical parts. This action will be accompanied by CAGECE's technical team.

**c) Localized Treatment of Selected Water Resources**

Two companies will be hired: i) a consultancy to prepare studies, define the best technology to be implemented and prepare the executive project; and ii) a company for the execution of treatment services, in alignment with the technologies defined in item (i). The interventions are planned in 2 streams, both located in the Midwest Region (Jacarecanga and Seis Companheiros). The objective of this action is to contribute, together with the others, to reduce the pollution level of the Vertente Marítima waterfront.

## ESTIMATED CITY WATER PROJECTS IMPLEMENTATION SCHEDULE

	2020												2021												2022												2023						
	Jan	Fev	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Fev	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Fev	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Fev	Mar	Apr	May	June	July
<b>CITY WATERS</b>																																											
Connect to the Network - <i>Se līga na Rede</i>																																											
Interconnection works for low standard properties (west shore)																																											
Firm for the execution of the capture work in dry weather																																											
Execution of the project for Treatment of Water Resources																																											



The planned works mainly include landscape, urban and architectural interventions in selected areas of Parque Rachel de Queiroz and sanitation interventions (home connections, building connections, rainwater catchment stations and treatment of water resources) in the Vertente Marítima Basin, according to the executive engineering projects, that will be available to the hired consulting. Prevê-se também Obras de drenagem nas sub bacias A3 e A4 da bacia da Vertente Marítima que inicia na a Av. Heráclito Graça seguindo pela Av. Dom Manuel até o mar no Poço da Draga.

For further information about the components, subcomponents and actions of the project see the link below, where the Project reference documents are available.

<https://urbanismoemeioambiente.fortaleza.ce.gov.br/programas/362-programa-fortaleza-cidade-sustentavel>

## 1.2 PROJECT ARRANGEMENTS

The Municipal Department of Urbanism and Environment – *SEUMA* will be the implementer of the Project. The management of the Works Supervision contract will be the responsibility of the Project Management Unit – *UGP*, composed by the Coordinator with the support of the Socio-Environmental Management Center and with the technical support of the focal points of each project.

The inspection of the contract will be the responsibility of the Municipal Department of Infrastructure - *SEINF*. The City Waters's works will be supported and monitored by the Ceará Water and Sewage Company - *CAGECE*. With both institutions, *SEUMA* / *PMF* signed a Cooperation Agreement which lists the duties of each one.

## 2 OBJECTIVES OF CONTRACTING

- a) Supervise and provide technical advice to *SEUMA* regarding works related to subcomponents 1.1 - Natural Systems Network and 1.2 - City Waters of Fortaleza Sustainable Urban Development Project, performing the review, readjustment and compatibility of projects, in order to avoid the lag of technical data.
- b) Perform environmental supervision of works, ensuring compliance with environmental and health and safety requirements, in accordance with licensing conditions, applicable environmental legislation and the Regulatory Standards (NR) of the Ministry of Labor and those determined by the World Bank. - *IBRD*;
- c) Perform the social supervision of the works, including the monitoring and evaluation of security measures of neighboring communities, communication strategy and stakeholder participation

## 3 SCOPE OF SERVICES

The scope of the consultancy services referenced herein comprises the supervision, inspection and technical assistance of the Project's infrastructure works in relation to engineering aspects, the social risks and impacts and the environmental risks and impacts of the projects mentioned in item 1, it could have the possibility of expanding the scope of the work, considering possible works similar to those already described in nature and typology, upon agreement between the parties and prior approval by the World Bank.

### 3.1 Supervision of Engineering Aspects

The Works Supervision service consists of three steps: Planning, Control and Monitoring.

### **3.1.1 Planning**

The planning stage precedes the beginning of the works and comprises the elaboration of the general planning of the projects, programs and projects considering their objectives, actions and targets established on the Project Work Plan, Social Work Plan, Environmental Work Plan, resources needed and sufficient for development and implementation within the defined deadlines, and in accordance with current legislation.

The contractor is also responsible for planning and detailing the schedules of all phases of the programs, projects, and works, in general and specifically, including the necessary integrated actions to be implemented simultaneously, such as removal, demolition, disposal, social work, environmental monitoring, matching of deadlines and integration of actions with concessionary services, such as water and electricity, among others (if necessary).

### **3.1.2 Control**

The control stage consists of monitoring so that the execution of projects and works is done in accordance with the policies of the Fortaleza City Hall and the World Bank, the Program's financing body, with the technical standards, instructions, current and complementary specifications, or particularities that are or will be included in the project by virtue of the adjustments actually approved. Control functions are the following:

- i) Geometric control by sampling of projects and works performed within the scope of the FCS, flat and altimetric dimensions, survey and drawing, at convenient scales, of elements aimed at measuring the services performed. This control includes checking the rental, relocation, leveling, counter-leveling, mooring and other services performed, as well as performing all calculations necessary for the statistical analysis of the results of the controls performed;
- ii) Monitoring and auditing the collection for the tests that are necessary during the execution of projects and works, regarding services and materials, facilities and equipment. Communications will be sent to SEUMA, SEINF and the company responsible for the work, regarding services performed in disagreement with the project and not approved by the consulting company. Under these circumstances, all executive or construction phases dependent on the denied services will be interrupted until the necessary correction is made to suit them for the project.;
- iii) Verification and orientation of all the execution of the project or work, in all its aspects, all in function of the respective compatible executive project;
- iv) Verification of services related to environmental protection, which should be the object of special attention, to ensure compliance with the environmental obligations established in the PCA - Environmental Control Plan. SEUMA and the company responsible for the work will be informed of facts or activities that may compromise environmental preservation or contradict the relevant legislation. Means will be promoted to ensure the environmental recovery of spaces or sites degraded by the contractor's action, even those not provided for in the PCA;
- v) Adoption of work safety measures in accordance with the Consolidation of Labor Laws (CLT) and the occupational health and safety regulations of the Ministry of Labor and Employment (NR's), as well as hiring a work safety professional to plan, implement and coordinate actions to prevent workers' health and safety; including those related to traffic, should also deserve special attention, thus enabling the recommendations contained in the project and their adjustments to be fully met;
- vi) Require that the services of the contractors are performed with the necessary safety and with adequate signaling on the various service fronts of the works, reporting systematically to SEUMA and SEINF regarding the conditions and adequacy of signaling and other safety measures. Make sure that the signs are in accordance with the Brazilian Traffic Code and ABNT Standards, previously approving the

horizontal and vertical signs, duly adapted to the local conditions of each front. Follow the installation of the signs, making sure that it complies with the approved project.

- vii) Recording of the facts considered relevant, in the Occurrence Book or Work Diary;
- viii) Supervise the state of repair and maintenance of contractors' machinery and equipment, as well as the conditions and prerequisites for their operation;
- ix) Verify the safety, occupational health and accident control programs of the contractors, both in relation to workers and the surrounding communities;
- x) Carry out geotechnical studies when necessary, at the CONTRACTING PARTY's discretion;
- xi) Carry out technological control of concrete, Realizar o controle tecnológico de concretos, landfill to release the layers and others needed during the work;
- xii) Monitor levels of noise pollution and particulate matter;
- xiii) Elaboration of monthly reports, partial and final.

### **3.1.3 Follow up**

The monitoring of the works comprises a series of activities to be performed by the consulting company, as follows:

- a) Monitoring the execution of services in relation to the physical and financial schedule;
- b) Advising the inspection team on technical supervision and approval of services;
- c) Analysis of the executed services of the executed quantity worksheets and compatibility with the project specifications and measurement and payment standards;
- d) Monitoring the execution of the services in relation to the technical specifications and projects bid by the CONTRACTING PARTY;
- e) Support to the CONTRACTING PARTY in the preparation of technical documents and opinions for presentation before the various control bodies and intervening entities, whenever requested;
- f) Support to the inspection team, in the follow-up of the Occurrence Book or Work Diary, in which daily notes will be made regarding the progress of services, quality of materials, labor, etc., as well as complaints, warnings and especially technical problems that require solution by parts of the Coordination of each work. A copy of this diary, duly initialed by the inspection and the Contractor, will be held by the CONTRACTING PARTY after the conclusion of works and services.
- g) Verification of the quality of the work, covering the entire execution of geometric and technological controls of the services performed (see item x and xi of the control);
- h) Technical evaluation of all engineering services component of the Project;
- i) Follow up with SEUMA on the implementation of mitigation measures;
- j) Monitoring of road safety conditions and users during works, including traffic diversions;
- k) Detailed analysis of the services, so as to enable the continuous and harmonious development of the works;

- l) Promotion of periodic meetings with the contractor, when the proposals, claims and work plans of this company will be dealt and discussed;
- m) Definition of priorities for the execution of services, so as to meet the interests of SEUMA;
- n) Promotion of changes in the contractor's schedule, adapting it to the established deadlines, requesting additional personnel and equipment, if necessary;
- o) Information on the suitability of the equipment and manpower used to perform the service, regarding the achievement of the contracted deadlines;
- p) Issue a conclusive opinion on any matter involving modification of contracts, partial or total suspension of services, execution of services not provided for in the contracts and price composition of new services, taking into account the respective effects on the costs and contractual terms of the services.
- q) Maintenance of all service related documentation;
- r) Reporting as detailed below.

## 3.2 Supervision of Risks and Social Impacts

### 3.2.1 Support and social Impacts

Considering that the works are within urban and dense areas and that they will have impacts on the life and daily life of the resident population and users of urban spaces, it is extremely important to minimize the impacts on this population. To this end, the social support will have as activities (not exhaustive).

- a) Inform the general public, and especially the families directly affected, about the temporary disturbances that the works may cause in the normal daily life of people;
- b) Clarify the general population about the various projects and related actions that will be carried out by the Project;
- c) Promote community and stakeholder participation and empowerment in establishing a new relationship with the surrounding environment;
- d) Identify complains, suggestions and other demands of the local population affected by the project;
- e) Agreeing the planning of social development activities - communication with neighboring communities, worker and community safety, workers' conduct in relation to communities, engagement with stakeholders, management of registration and response tools, implementation of plans for resettlement action, etc. – associated with the works with the team of the construction companies and SEUMA, approving and revising it, through weekly meetings with those responsible for managing the social impacts of the works of each construction company / lot of works.;
- f) Conduct weekly field visits to ensure the adequacy of the activities performed in relation to the requirements of the business plan;
- g) Evaluate the activities of the social teams of the construction companies and service providers;
- h) Suggest actions and procedures to avoid, minimize, control or mitigate potentially adverse social impacts;
- i) To propose, in case of non-compliance with social impact management requirements, that is, in the situation of configuration of significant non-conformities and not resolved in the context of weekly planning meetings, penalties against the construction company or service provider;



- j) Evaluate, together with SEUMA, in the case of actions that bring significant social impacts or the systematic continuity of significant nonconformities, the need to stop the works in the section considered, in order to enable the adoption, in time, of corrective measures. In this case, the supervision should prepare a summary report, informing of the issues involved and the proposed stoppage;
- k) Periodically evaluate the effectiveness of social impact management programs related to planned physical interventions and propose the necessary adjustments;
- l) Prepare and submit periodic reports of social supervision to SEUMA, with monthly periodicity and a final, conclusive, upon completion of the works.

### 3.3 Supervision and Management of Environmental Risks

The Supervisor, within the scope of the project interventions already listed above, will perform activities related to the environmental risk management of FCS projects, where we can highlight (non-exhaustive):

- a) Follow-up environmental licensing processes if any;
- b) Monitoring risks associated with the provision of habitats for disease vectors or poisonous animals;
- c) Agree the environmental planning of the works with the team of construction companies and SEUMA, approving and revising it, through weekly meetings with the environmental responsible of each construction company / lots;
- d) Implement environmental inspections to verify the adequacy of the activities performed in relation to the environmental requirements established for the environmental works and programs related to them;
- e) Verify compliance with the requirements of the environmental agencies related to the project licensing process;
- f) Inspect the different service fronts in the field, to monitor the execution of the works and their suitability or not to the environmental management programs;
- g) Evaluate the activities of the environmental teams of construction companies and service providers;
- h) Suggest actions and procedures to avoid, minimize, control or mitigate potential impacts;
- i) To propose, in the event of non-compliance with environmental requirements, that is, in the situation of configuration of significant nonconformities (non-compliance with specific environmental legislation) and not resolved in the context of weekly planning meetings, penalties against the construction company or services providers;
- j) In this case, the supervisor shall prepare a summary report, informing of the issues involved and the proposed stoppage. Evaluate, together with SEUMA, in the case of actions that bring significant environmental impacts<sup>1</sup> or the systematic continuity of significant nonconformities, the need to stoppage of the works in the section considered, so as to enable the adoption, in time, of corrective measures. In this case, the supervisor should prepare a summary report, informing of the issues involved and the proposed stoppage;
- k) Periodically evaluate the efficiency of environmental programs related to planned physical interventions and propose the necessary adjustments;

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Article 1 of Resolution No. 001/86 of the National Environment Council (CONAMA): Environmental Impact is "any change in the physical, chemical, biological properties of the environment, caused by any form of matter or energy resulting from human activities that directly or indirectly affect: (i) the health, safety and welfare of the population; (ii) social and economic activities; (iii) biota; (iv) environmental health and aesthetic conditions; (v) the quality of environmental resources "

- l) Prepare and submit periodic reports of environmental supervision to SEUMA, with monthly periodicity and a final, conclusive, upon completion of the works.

### **3.4 Registration of Activities**

The consulting company shall formulate, implement, feed information and maintain, in continuous operation, monitoring and control system, including database and management information system on file, formal and concise record of all events and / or occurrences of the works. , using a standard form, including photographic registration. For each work will be opened a Book of Occurrence that will be part of the register above, the same will occur with the files of results of tests performed, evaluations and measurements performed, as well as all other elements that prove the quality of the services performed (work by overall price). The following records must be kept on file:

- a) a file for community communication and engagement activities (activities carried out, target audience, purpose, date and place, presence with photographs, participants' assessment of the relevance of the event and effectiveness of the methodology employed);
- b) a file for recording work incidents (incident, victim, action taken, response time, result);
- c) a file for recording incidents between workers and the community (type of incident, action taken, outcome); and
- d) a system for recording and responding to contacts made by the community (type of contact: information request, complaint, compliment; theme or subject dealt with according to a typology; response time; solution time per actor involved - if the solution cannot be given by the supervisor / contractor and needs to be scaled; satisfaction that you have made contact with the answer / solution presented).

## **4 RESULTS AND PRODUCT EXPECTED**

### **4.1 Monthly Activity Report (RMA)**

The Monthly Activity Reports shall be prepared and delivered to the FCS Project' UGP, by the 5th (5th) of the month following the reported period, issued in two (2) printed copies and digitally (CD-ROM or DVD), in format / extension “.pdf”, in a scale compatible with A4 format, containing for each of the works:

- a) Description, in summary, of the activities carried out in the month to which it refers, containing as annexes the opinions, studies, technical reports prepared during the period, including working hours of professionals and reimbursable expenses;
- b) Localization map of the benefited areas, with the following information:
  - Services provided for the period;
  - Services performed in the period;
  - Services in progress in the period and;
  - Services scheduled for the following month;
  - Measurements taken during the period.
- c) Status of the progress of the works in the period, comparing with the contract's physical and financial schedule, expressed in spreadsheets, progress curves and Gantt chart with the appropriate interconnections between stages;

- d) Analysis of technological control reports, carried out by the contractors;
- e) Presentation of services to be requested and / or released by public agencies;
- f) Registration of observed occurrences and solutions adopted, among others: clearance of routes for operation, project review, expropriations, stoppage of works, environmental licenses and other occurrences;
- g) Presentation of a general schedule, where expected and actual data are indicated, matching the forecast of execution of the works with the issuance of service notes (NS) for the same area;
- h) Digital photographic archive of the works of the period, with photo number, date, services, type of work (excerpts must be photographed before the beginning, during and at the end of the section); and
- i) Report on social and environmental activities, including photographs of the main actions taken during the period.

The analysis and approval of the monthly reports presented in each period will be performed by the UGP / SEUMA team, within 15 (fifteen) days, which period will be interrupted for the period that the Consultant requests, in order to supply and correct any deficiencies detected. PMU / SEUMA, and its approval is a condition for payments.

#### **4.2 Specific Technical Reports**

Whenever SEUMA requests, the Supervisor shall prepare specific technical reports to other organs of the City Hall, or to disclose the Project's actions inherent to the Consultant's activities, addressing topics such as:

- a) Communication and community engagement activities;
- b) Incidents between workers and community;
- c) Record of contacts made by the community and other stakeholders (requests for information, compliments and complaints); and
- d) Other information related to the object of the services.

#### **4.3 Final Report**

The Final Report shall be submitted in five (05) copies, within 60 (sixty) days after the conclusion of the contract, containing general information regarding the development of the work and activities performed during the execution of the Contract, containing:

- a) Synthesis of each supervised work with the main records;
- b) Summary of the supervision contract, by work;
- c) The consolidated design of the executed works (AS BUILT).

It is mandatory to address all changes made to the original design in detail and accompanied by the drawings.

#### **4.4 Product Delivery Schedule**

The products must be delivered monthly, for a period of 24 (twenty four) months, and their preparation should follow the schedule presented below.



## PRODUCT DELIVERY SCHEDULE

N°	PRODUCT	PRODUCT IMPLEMENTATION / DELIVERY PERIOD																									
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	24	24	25	
1	Monthly report	x																									
2	Monthly report		x																								
3	Monthly report			x																							
4	Monthly report				x																						
5	Monthly report					x																					
6	Monthly report						x																				
7	Monthly report							x																			
8	Monthly report								x																		
9	Monthly report									x																	
10	Monthly report										x																
11	Monthly report											x															
12	Monthly report												x														
13	Monthly report													x													
14	Monthly report														x												
15	Monthly report															x											
16	Monthly report																x										
17	Monthly report																	x									
18	Monthly report																		x								
19	Monthly report																			x							
20	Monthly report																				x						
21	Monthly report																					x					
22	Monthly report																						x				
23	Monthly report																							x			
24	Final report																										x

Period of execution of services	
Product delivery	<b>x</b>

## 5 TERM AND PLACE OF PERFORMANCE OF SERVICES

The services must be performed within 24 (twenty-four) months, and must be started within 20 (twenty) days after the issuance of the Service Order.

The contract may be extended upon justified demand, demonstration of the firm's satisfactory performance and interest between the parties, up to the limit of the closing date of the Fortaleza Sustainable Urban Development Project.

The services must be performed:

a) At the headquarters of the Consultant

Address:

Municipal Department of Urbanism and Environment (*Secretaria do Urbanismo e Meio Ambiente-SEUMA*)

Deputado Paulino Rocha Avenue, 1343 Cajazeiras -  
ZIP Code 60864-310 - Fortaleza-CE

b) In the areas covered by the services, indicated in this Term of Reference;

c) At the headquarters or office of the Consultant.

## 6 PAYMENT OF SERVICES

Payments will be made monthly using a presentation of the Monthly Activity Reports (*RMA*), which will receive all notifications from item 4.1 and go back on the time actually spent by professionals allocated in the execution of services, as well as reimbursable expenses, seeing that in time-based contracts, the Consultant's remuneration is determined based on the time actually spent by the Consultant in performing the Services and based on:

- a) unit rates listed in the Price Proposal for the consultant's staff multiplied by the actual time spent by professionals in carrying out the task, and
- b) reimbursable expenses based on actual expenses and / or unit prices contained in the consultant's price proposal.

## 7 KEY TEAM MEMBERES

### 7.1 Qualificações, experiência e atribuições of kay team

The key team should consist of the following professionals:

KAY TEAM			
POSITION	QUALIFICATION	EXPERIENCE	ATTRIBUTIONS
General coordinator	Graduation in areas related to the object of the contract.	Minimum of ten (10) years' experience in coordination, supervision and supervision of works similar to	Coordinating the team, the elaboration of technical and administrative procedures for supervision and supervision of the works, in accordance with current technical standards;  Analyzing and issuing positioning on the schedule for monitoring the execution of



		the object of contract.	<p>works;</p> <p>Issuing technical opinions and elaborate the products foreseen in the contract;</p> <p>Preparing descriptive and photographic reports with clear and objective observations for decision making, when any nonconformity is identified;</p> <p>Analyzing, discussing and publishing an opinion on any claims of executed works firms that do not refer to works of additives and closing contracts of executive works firms, provisional or definitive acceptance, extension or suspension of contractual term and termination of contract;</p> <p>Analyzing and approving the planning of procurement of materials and equipment in line with the construction schedule;</p> <p>Inspecting at the construction site the materials, hydraulic, electrical and mechanical equipment to be used;</p> <p>Demanding the manpower and the cast of equipment of the contracting firms, compatible with planning and programming;</p> <p>Monitoring and approval of works surveying services;</p> <p>Participating in periodic meetings with executive works firms, analyze and evaluate progress of works, according to scheduled schedule;</p> <p>Preparing photographic and / or video reports, recording the main stages of the works performed during the period, including monthly reports;</p> <p>Coordinating the pre-operational tests of the various facilities;</p> <p>Monitoring the executing firms of the works and validating the elaboration of the as built of the works and equipment;</p> <p>Receiving as executed works, issuing conclusive technical opinion and participating in committees set up for this purpose.</p>
Resident Engineer	Graduation in Civil Engineering.	Minimum of five (5) years' experience in projects and monitoring of works similar to the object of	Monitor the execution of the Project works, ensuring compliance with the technical and administrative procedures for supervising and supervising the works, observing the programmed deadlines, costs and specified quality, based on the work plans of each work;

		contract.	<p>Supervising the compliance of safety, hygiene and occupational health standards adopted by the contractors;</p> <p>Analyzing executive projects of architecture and urbanization, preparing technical advice for referral to contractors, when necessary;</p> <p>Issuing technical opinions and elaborating the products foreseen in the contract;</p> <p>Other services related to the supervision and supervision of works.</p>
Sanitation Specialist	Graduation in Engineering.	Minimum of five (05) years' experience in works in the sanitation area, in projects and monitoring of urban drainage works, sewage system and effluent treatment.	<p>Monitoring the execution of sanitation projects;</p> <p>Performing activities mainly in the areas of sanitation (sewage, wastewater treatment and drainage), public health, control, environmental management and environmental licensing;</p>
Architect and Urbanist Design	Graduation in Architecture and urbanism.	Minimum of five (5) years' experience in urbanization projects, landscaping, construction and renovation of urban equipment, housing and subdivisions of areas related to the object of the contract.	<p>Accompanying an execution of urbanization projects;</p> <p>Preparing technical opinions and supporting the process of urban equipment implementation. Accompanying an execution of urban projects. Issuing technical opinions and elaborating the products foreseen in the contract.</p>
Social Specialist	Graduation in one of the areas of humanities and social sciences or similar.	Minimum of five (05) years' experience with urban social development projects.	<p>Coordinating all social aspects of each work in conjunction with the contractors and the PMU / SEUMA, including those related to resettlement and clearance of building area, as well as assisting, when necessary, the population affected by involuntary resettlement and works;</p> <p>Accompanying the monitored visits to the works.</p>
Environmental Specialist	Graduation	Minimum of five (05) years' experience in environmental studies and projects and with proven experience in environmental	<p>Reviewing and recommending or not the approval of the environmental planning of works;</p> <p>Conducting environmental inspections verifying the degree of adequacy of the activities performed in relation to the environmental requirements established for the environmental works and programs</p>

		<p>supervision of works, especially in the areas of sanitation and / or urban revitalization, and monitoring the application of relevant environmental legislation or related to the object of the contract.</p>	<p>related to it;</p> <p>Verifying compliance with environmental agency requirements regarding licensing process and World Bank recommendations;</p> <p>Supporting UGP's Socio-Environmental Supervision in managing the implementation of the Socio-environmental guidelines defined for the Project and, as such, by monitoring compliance with the requirements set forth in the Project's environmental and social safeguards documents;</p> <p>Participating and promoting the institutional articulation with the environmental agencies and other internal and external institutions that may be involved to comply with the recommendations of social and environmental safeguards, environmental conditions and technical requirements related to the activity;</p> <p>Conducting systematic surveys on the various service fronts of the works to monitor activities, identifying possible non-conformities environmental impacts with forwarding measures and / or solution. Evaluating and revising the environmental planning of the works of responsibility of the contracted companies;</p> <p>Preparing descriptive and photographic reports with clear and objective observations for decision making, when any nonconformity is identified.</p>
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## 7.2 Suggested Support Team

- Occupational Safety Specialist;
- Electrical engineer;
- Archeology Specialist;
- Specialist in Anthropology;
- Sanitation Technicians;
- Building Technicians;
- Environmental technicians to participate in the environmental supervision of works;
- Field Assistants;
- Surveyor;
- Surveying Assistants;
- Administrative technician;
- Specialist in CAD design;
- Digitizer;
- Secretary.

The technical proposal must include the names, area of expertise, qualification, functions, experience and professional curriculum of the entire technical team.

The mobilization of support team professionals will be done gradually, meeting the requests expressed by the UGP and the needs of the Project. All phases of the Supervisor's work will be supervised by the UGP team.

## **8 AVAILABLE INPUT**

It will also be a responsibility of the *FSC's UGP* to make available to the Company's team during the term of the contract:

- a) A space with facilities at *SEUMA* that will support the contractor's administrative work. The Contractor, if necessary, must acquire the furniture, computers and printers and any other equipment for the perfect functioning of the company at *SEUMA*. The costs for the acquisition of equipment and furniture will be reimbursed by the Contractor, and at the end of the contract all purchased goods must be formally donated to *SEUMA*;
- b) The institutional information that may be necessary, notably the Project documents, the products of the consultancies carried out during its preparation phase and the technical and managerial files of the UGP, as appropriate;
- c) Information on the planning, monitoring and control systems of the Fortaleza City Hall;
- d) The necessary conditions for all intra and interinstitutional relationships demanded in the context of the implementation of the Project, in this case ensuring a perfect articulation and integration between the activities of the members of its fixed technical staff and those to be developed by the members of the Company.

## **9 CONSULTANT QUALIFICATIONS**

### **9.1 Technical qualification and experience of the consultant**

The company must present proof of Enrollment or Registration with the Regional Council of Engineering and Agronomy - CREA or Council of Architecture and Urbanism of Brazil - CAU, of the locality of the same. For foreign companies, proof of registration from a similar body in the country of origin will be accepted.

The company's technical qualification will be assessed through the Technical-Operational and Technical-Professional Capacity, in the following ways:

### **9.2 Technical-Operational Capacity**

Proof of suitability of the company for the performance of relevant activity, compatible in characteristics and operational complexity, quantities and terms with the object of this Consulting, which will be made by the presentation of contracts with the same object, in the name of the proposer, signed with legal entity, public or private law, whose most relevant tranche (s) have been:

- a) Management and / or supervision / supervision services of works of projects and programs involving works of urban infrastructure interventions that include landscaping and / or urbanization, basic sanitation (sewage system, rainwater drainage and effluent treatment);
- b) Social and Environmental Supervision Services of projects and / or programs involving works, and urbanization of urban spaces.

### **9.3 Technical-Professional Capacity**

Proof that the company has the required professionals (Key Team), through a Service Provision Agreement entered into in accordance with common civil legislation on the date scheduled for the signature of the contract.

Professionals must be duly recognized by the competent entity, hold a Certificate of Technical Responsibility attesting to the execution of services with technical characteristics similar to those of the object of this Consultancy and whose portion of greatest technical relevance and significant value have been:

- a) Management and / or supervision / supervision services of works of projects and programs involving works of urban infrastructure interventions that include landscaping and / or urbanization, basic sanitation (sewage system, rainwater drainage and effluent treatment).
- b) Social and environmental supervision services of projects and / or programs involving works, and urbanization of urban spaces.

The following will also be considered in the Consultant selection process:

- a) The company's experience in support contracts for the implementation of special public sector projects financed by international organizations, such as IBRD, BID, among others;
- b) Availability, when appropriate, for the maintenance of technicians performing their tasks in an articulated manner, at SEUMA's premises and, as required, at the construction sites;
- c) Knowledge and application of policies, procedures and conduct to which IBRD borrowers are subject, in the context of acquisitions, disbursements, social and environmental safeguards, etc;
- d) Technical team to perform the services that can be mobilized according to the need and progress of the works and other actions of the FCS Project;
- e) Availability for articulation and constant contact with the UGP OF FCS.

Fortaleza, February 11, 2020.

**Jorge André Nunes Verçosa**  
Fortaleza Sustainable Urban Development Project