



# PREFEITURA DE ITANHAÉM

ESTÂNCIA BALNEÁRIA | ESTADO DE SÃO PAULO

## ANEXO 15 - REGISTRATION OF THE STREET LIGHTING NETWORK



# PREFEITURA DE ITANHAÉM

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## SUMMARY

<b>1</b>	<b>INTRODUCTION .....</b>	<b>3</b>
<b>2</b>	<b>REFERENTIAL QUANTITATIVE OF STREET LIGHTING POINTS .....</b>	<b>3</b>
<b>3</b>	<b>GUIDELINES FOR REALIZATION OF THE BASE REGISTRATION BY THE CONCESSIONAIRE .....</b>	<b>3</b>



# PREFEITURA DE ITANHAÉM

ESTÂNCIA BALNEÁRIA | ESTADO DE SÃO PAULO

## 1 INTRODUCTION

The purpose of this ANNEX is to present the guidelines that must be followed by the CONCESSIONAIRE for the preparation of the BASE REGISTRATION and updating the REGISTRATION throughout the CONCESSION TERM.

## 2 REFERENTIAL QUANTITATIVE OF STREET LIGHTING POINTS

The REFERENTIAL QUANTITATIVE OF LIGHTING POINTS presents the following quantitative for each GROUP OF STREET LIGHTING POINTS:

- GROUP 1.1: STREET LIGHTING POINTS on REMOTE MANAGEMENT SYSTEM: 5.435 (five thousand four hundred and thirty five);
- GRUPO 1.2: STREET LIGHTING POINTS on other roads, squares, parks, etc.: 22.343 (twenty-two thousand three hundred and forty-three).

## 3 GUIDELINES FOR REALIZATION OF THE BASE REGISTRATION BY THE CONCESSIONAIRE

The BASE REGISTRATION shall be prepared by carrying out a physical inventory and based on the guidelines expressed in this ANNEX and within the period established in the CONTRACT.

The BASE REGISTRATION, after approval by the INDEPENDENT VERIFIER and the GRANTOR, according to the guidelines established in ANNEX 5 (TECHNICAL SPECIFICATIONS), shall be an integral part of the CONTRACT.

The CONCESSIONAIRE shall assume full responsibility for the preparation, conservation and updating of the REGISTRATION during the CONCESSION TERM, and must carry out its integration with the other operating systems that shall integrate the



# PREFEITURA DE ITANHAÉM

ESTÂNCIA BALNEÁRIA | ESTADO DE SÃO PAULO

OPERATIONAL CONTROL CENTER (CCO), so that the GRANTOR and the CONCESSIONAIRE have access, in real time, to the same REGISTRATION.

The REGISTRATION, permanently updated, should ensure an efficient and integrated management and shall serve as basic information for the elaboration of MODERNIZATION AND EFFICIENCY projects, ACCENT LIGHTING, implementation of the REMOTE MANAGEMENT SYSTEM and COMPLEMENTARY SERVICES. In addition, it should support the calculation of the amounts presented in the electricity consumption invoices and the preparation of consumption simulations for inspection by the GRANTOR of the POWER SUPPLY CONTRACT.

The SERVICES related to the REGISTRATION include the collection, registration, maintenance, correction and updating of data related to the identification, characteristics, quantification and geographic positioning of all STREET LIGHTING POINTS, control board, transformers and other components that make up the MUNICIPAL STREET LIGHTING NETWORK, with the respective locations and physical, technical and operating characteristics.

The management of the REGISTRATION shall allow, to the GRANTOR and the INDEPENDENT VERIFIER, the online and full monitoring of information about the MUNICIPAL STREET LIGHTING NETWORK, ensuring, at least:

- The provision of a wide range of options for consultations and reports, including the issuance of maps at various scales, ensuring the full monitoring of the MUNICIPAL STREET LIGHTING NETWORK and evolving activities;
- The direct import and export of data to/from commercial applications of CAD, GIS, databases and to produce documents in MS-Office format, CSV and other formats compatible with those used by the GRANTOR.



# PREFEITURA DE ITANHAÉM

ESTÂNCIA BALNEÁRIA | ESTADO DE SÃO PAULO

The CONCESSIONAIRE must submit monthly, or when requested, the REGISTRATION to the DISTRIBUTOR COMPANY, the IDENPENDENTE VERIFIER and the GRANTOR.

The CONCESSIONAIRE should also develop Standardized Operating Procedures (POP's) and technical instructions for the SERVICES described in this ANNEX.

The CONCESSIONAIRE shall enter in the REGISTRATION, at least, the following data for each STREET LIGHTING POINT:

## I. Location characterization:

- Type of public street (street, avenue, square, park, bike path);
- Address the STREET LIGHTING POINT and, in case of point in unidentified location, shall be registered the address closest to the point;
- Neighborhood;
- Regional of the MUNICIPALITY (Urban or rural area);
- Zip code;
- NUMBER OF THE STREET LIGHTING POINT;
- Georeferenced position (latitude, longitude);
- Photographic record of the STREET LIGHTING POINT;
- Characterization of the STREET LIGHTING POINT in conventional, TERMINAL STREET LIGHTING POINT or ISOLATED STREET LIGHTING POINT, as defined in the contract;
- Indication if it is a INITIAL STREET LIGHTING POINT WITH LED (yes or no);
- Transformer code, even if it is an asset of the DISTRIBUTOR COMPANY, to which the STREET LIGHTING POINT is connected.



# PREFEITURA DE ITANHAÉM

ESTÂNCIA BALNEÁRIA | ESTADO DE SÃO PAULO

## II. Characterization of the path:

- Road class (Fast Traffic, Arterial, Collector or Local);
- Vehicle track LIGHTING CLASS (V1, V2, V3, V4 or V5);
- Pedestrian road LIGHTING CLASS (P1, P2, P3 or P4);
- Width of the vehicle track where the STREET LIGHTING POINT is located;
- Number of vehicle track bearing tracks;
- Width of the pedestrian road(s) where the STREET LIGHTING POINT is located;
- Indication of afforestation with potential obstruction of the distribution of the luminous flux of the STREET LIGHTING POINT.

## III. Lamp and LUMINAIRE:

- Main purpose of lighting (road, pedestrian, bike path, squares, parks, walkway, SPECIAL LIGHTING, trenches and tunnels);
- Lamp technology;
- Color Temperature (TCC) of the lamp, only for MODERNIZED STREET LIGHTING POINTS, INITIAL STREET LIGHTING POINTS WITH LED and STREET LIGHTING POINTS in special lighting locations, as annex 16 (Guidelines for SPECIAL LIGHTING);
- Manufacturer and model of the luminaire, only for modernized STREET LIGHTING POINTS and INITIAL STREET LIGHTING POINTS WITH LED;
- Date of installation of the lamp, only for MODERNIZED STREET LIGHTING POINTS;



# PREFEITURA DE ITANHAÉM

ESTÂNCIA BALNEÁRIA | ESTADO DE SÃO PAULO

- Efficiency of the lamp and LUMINAIRE [ $\text{lm/W}$ ], only for MODERNIZED STREET LIGHTING POINTS And FOR THE INITIAL STREET LIGHTING POINTS WITH LED;
- Type of LUMINAIRE (road pattern, decorative, projector, embedded in the ground, beacon or other types);
- Lamp power [ $\text{W}$ ];
- Total power loss of auxiliary equipment [ $\text{W}$ ] (if applicable);
- Total power of the STREET LIGHTING POINT [ $\text{W}$ ];
- Level of obstruction of the light flux of the STREET LIGHTING POINT by TREES (minimum, partial or total);
- Angular adjustment of the inclination of the LUMINAIRES in relation to the illuminated surface;
- LUMINAIRE life span.

#### IV. Pole and Bracket:

- For STREET LIGHTING POINTS installed on vehicle roads: Pole distribution structure (unilateral, bilateral frontal, bilateral alternate, central construction site);
- Type of pole with information regarding the nature of its composition (concrete, steel, fiber or wood), and for the exclusive poles should include, when there is, date of installation, in addition to indication of the manufacturer;
- Horizontal projection of the LUMINAIRE [ $\text{m}$ ];
- LUMINAIRE height [ $\text{m}$ ];
- Useful height of the pole [ $\text{m}$ ];
- Number of STREET LIGHTING POINTS on the pole;



# PREFEITURA DE ITANHAÉM

ESTÂNCIA BALNEÁRIA | ESTADO DE SÃO PAULO

- Model of luminaire support device (single bracket, double support, triple bracket);
- Exclusivity or not of the pole for STREET LIGHTING, indicating, in cases of non-exclusivity, the owner of the pole;
- Distance between pole and curb;
- Distance between the STREET LIGHTING POINT and the adjacent STREET LIGHTING POINTS on the same road;
- Registration and identification, if any, of third-party assets currently installed on the pole (e.g. antennas, routers, meters, sensors, etc.), when exclusive to STREET LIGHTING, or, in case of non-exclusive poles, when it somehow impacts the MUNICIPAL STREET LIGHTING NETWORK.

## v. Control and Power:

- Type of control (group or individual);
- Type of control and control device (remote management or relay);
- If group control, group code;
- Type of power supply network (overhead or underground);
- Number of the DISTRIBUTOR COMPANY meter (for street lighting circuits with energy measurement);
- Georeferenced position (latitude, longitude) of the gauge (if any);
- Owner of the electricity grid;
- Form of consumption measurement (estimated or measured);
- Manufacturer and model of the telecommunications point telecommunications device (if any);
- Date of installation of the telecommunications point telecommunications telecommunications device (if any);





# PREFEITURA DE ITANHAÉM

ESTÂNCIA BALNEÁRIA | ESTADO DE SÃO PAULO

- Georeferenced position (latitude, longitude), manufacturer, model and date of installation, of the concentrators of the REMOTE MANAGEMENT SYSTEM, if any;
- Manufacturer and model of the handover (if any), only for MODERNIZED STREET LIGHTING POINTS.
- Date of installation of the photoelectronic service (if any), only for modernized STREET LIGHTING POINTS and INITIAL STREET LIGHTING POINTS WITH LED.

## vi. Exclusive transformers of the street lighting network:

- Transformer power;
- Assembly or installation (pedestal or sheltered) and date of installation of the transformer, if any.

The REGISTRATION shall present all the above-mentioned information for all STREET LIGHTING POINTS, except for those for which it is necessary and it is not possible to identify, in local inspection, constructive data, manufacturing, efficiency and date of installation of the STREET LIGHTING POINT.

The CONCESSIONAIRE must implement until the end of PHASE II (two) OF THE CONCESSION power label and physical identification plate with numerical code of the STREET LIGHTING POINT, and can be applied both on the bracket of the STREET LIGHTING POINT, in order to ensure the easy visualization of the numbering by anyone who is located at ground level.

The CONCESSIONAIRE shall present models of the nameplate and power label of the STREET LIGHTING POINTS to the GRANTOR for approval, and may use the same standard existing in the MUNICIPAL STREET LIGHTING NETWORK, provided that in



# PREFEITURA DE ITANHAÉM

ESTÂNCIA BALNEÁRIA | ESTADO DE SÃO PAULO

common agreement between the PARTIES. The deployment of nameplates and power labels should comply with the following guidelines:

- i. Installation of aluminum or stainless-steel plate with appropriate dimensions to ensure easy visualization of the numbering by anyone who is located at ground level;
- ii. Adoption of a single standard for nameplate and the form of fixation in the STREET LIGHTING POINTS;
- iii. Fixing the labels should ensure minimal identification of power for maintenance purposes;
- iv. The identification plates for ACCENT LIGHTING should not compromise the physical and aesthetic structure, aiming at not decharacterizing the cultural good.

Tools can be developed for integration and communication of data between the information technology systems of the CONCESSIONAIRE and the GRANTOR and between the information technology systems of the CONCESSIONAIRE and the DISTRIBUTION COMPANY, in order to allow updates of registration data to transit in an agile and safe way.

Regardless of the implementation of the integration of systems between the PARTIES, the CONCESSIONAIRE is not exempt ed to submit an update report of the REGISTRATION within the period established in the CONTRACT, which may be issued by the integrated system.

The update of the REGISTRATION, during the CONCESSION TERM, shall be the responsibility of the CONCESSIONAIRE and must be carried out for the elements already registered and that have their characteristics changed for any services performed, as well as the complete registration of each new item installed in the MUNICIPAL STREET



# PREFEITURA DE ITANHAÉM

ESTÂNCIA BALNEÁRIA | ESTADO DE SÃO PAULO

LIGHTING NETWORK, including when there is expansion of the MUNICIPAL STREET LIGHTING NETWORK by third parties or by the CONCESSIONAIRE.

Updates from the SERVICES of expansion, maintenance and operation, MODERNIZATION AND EFFICIENCY must be recorded in the REGISTRATION in order to have a history of changes, the SERVICES performed and materials applied in each STREET LIGHTING POINT.