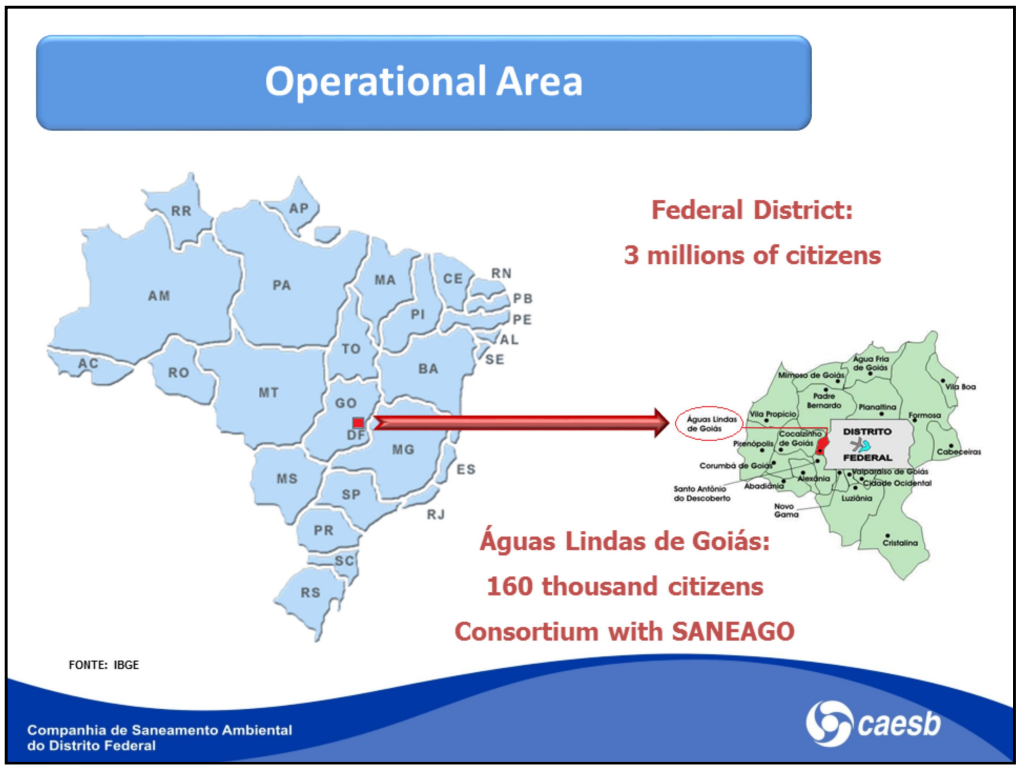
ATLAS CAESB

Corporative GIS

Click here for introductory video

Companhia de Saneamento Ambiental
do Distrito Federal

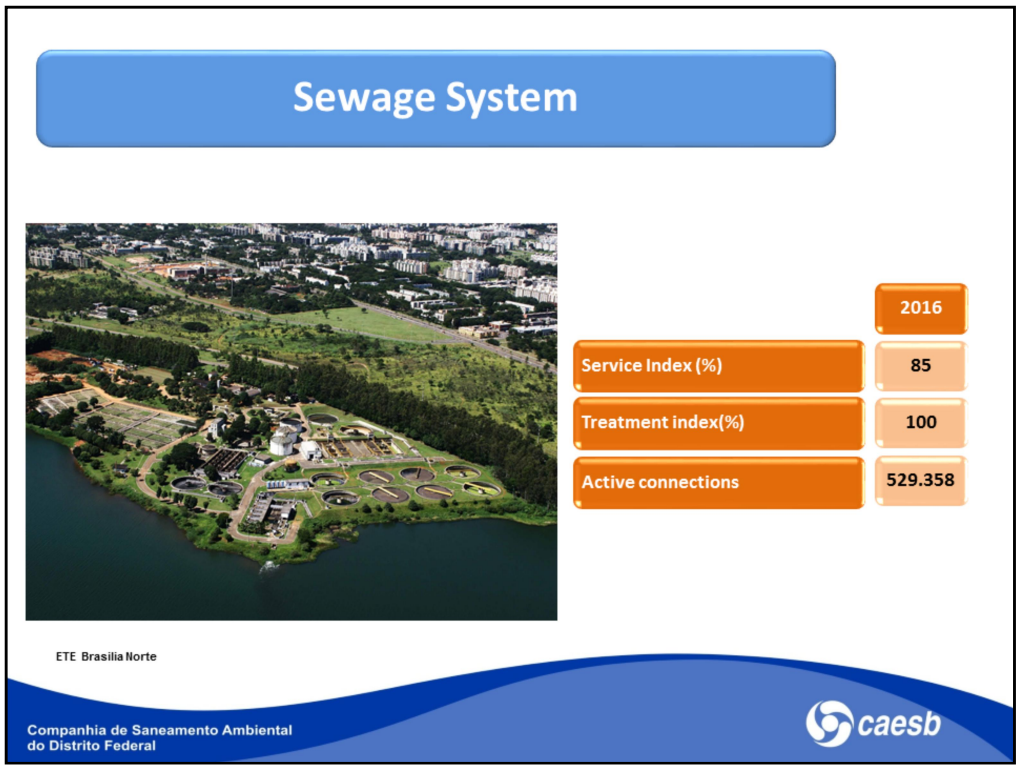
caesb



CAESB is a middle sized water and sewer company that operates in Federal District, the Brazil's capital, attending more that 3 million of people.

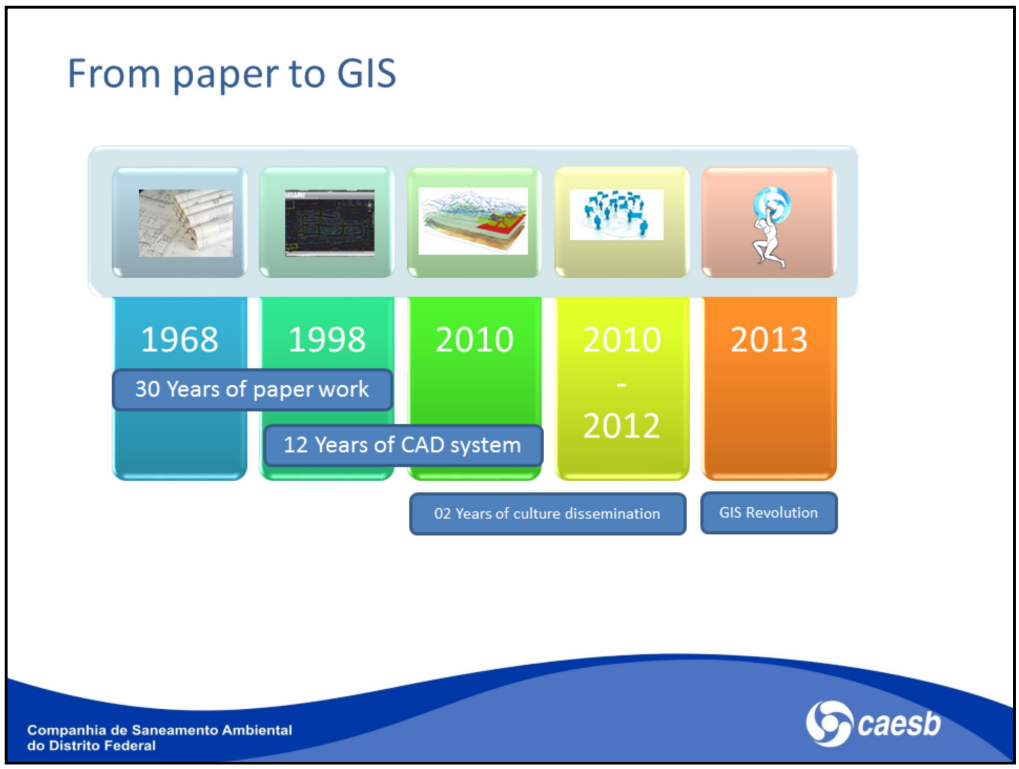
At Aguas Lindas, a small city around the Federal District, CAESB operate in a consortium with SANEAGO, the Goias State water and sewer company.

In December 2016, the CAESB water service index was 99% with more than 600 thousands of water active connections.



And 85% of the sewage service index with more than 500 thousand of sewer active connections

An important index is the sewage treatment index, wich caesb reach 100%, being one of the fews, if not the only, brazil's company with this index



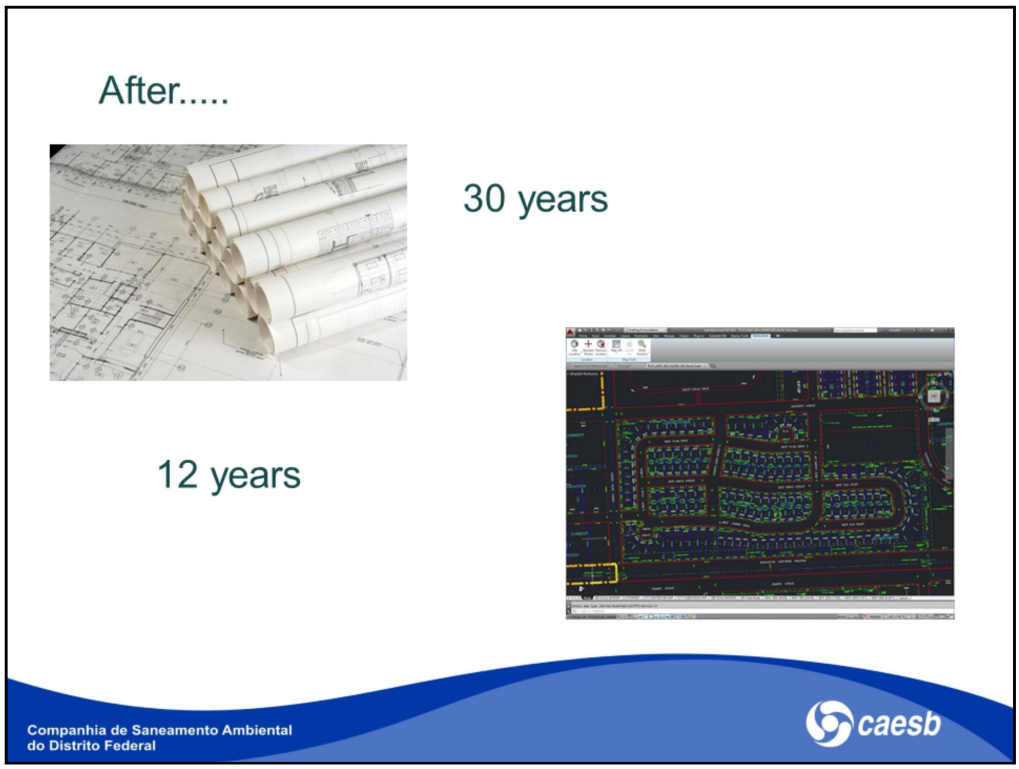
CAESB worked with paper network records for 30 years, since its foundation in 1968 until 1998, where more than 30,000 network paper maps were digitized and redesigned in CAD software

In 2010, the first GIS initiative was born. During 2 years, we did an intense work of GIS culture dissemination. This work aimed teach the future GIS users to thinking spatially

And finally in 2013, the GIS revolution at CAESB was coming by with the atlas project.

The atlas Project was a dare and innovative Project that aimed to implant a corporative GIS that would integrate the data produced in all the company's process and give to it a spatial intelligence that would allow the creation and execution of hydraulic models that would support the operational decision.

At the same time that corporative GIS integrate datas to support the operacional decision, it also supports others activities at CAESB, as the planning of a new water supply or sewer system, the construction, operation and maintenance of this new systems.



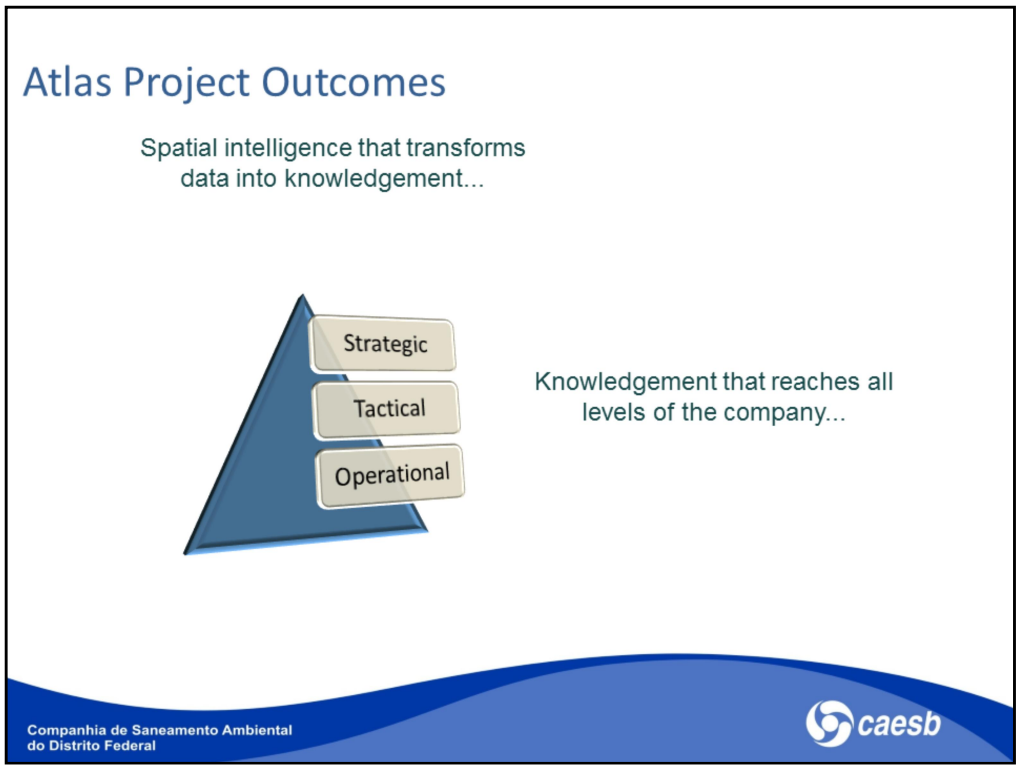
So, That’s why we say that, after 30 years working with papers and 12 years working with cad softwares

The GIS is more than an evolution... GIS is a revolution at CAESB. It is a revolution because deeply changed the way that we do our job.

GIS broke up paradigms and put CAESB at vanguard of GIS technology.

Now, CAESB has a set of modern tools like 3D tools, tools for integrations and sharing os spatial datas, tools for cloud GIS, dashboard and Mobile GIS.

Tools that allows CAESB go far...

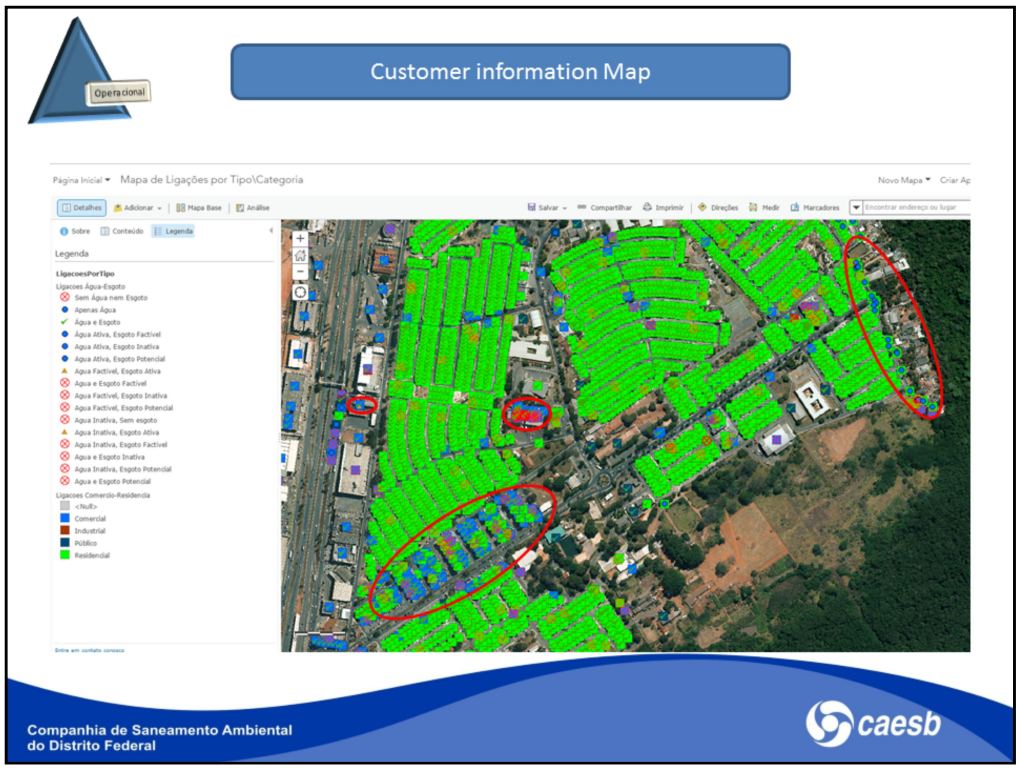


Tools that allows to transform data into knowledgement. Knowledgement that reaches all levels of the company.

At operational level, GIS allows to execute activities with cost reduction and better performance
At the tactical level, GIS supports analysis and decision takes.
At the strategic level, GIS supports the guidelines establishment

At the operational level, we have some maps which can be accessed by internet in any device, such smartphones, tablets or laptops.

It’s a powerfull and usefull tool that allows the field crews to identify where the pipelines are passing through and where the valves are located to do some operation on the network.



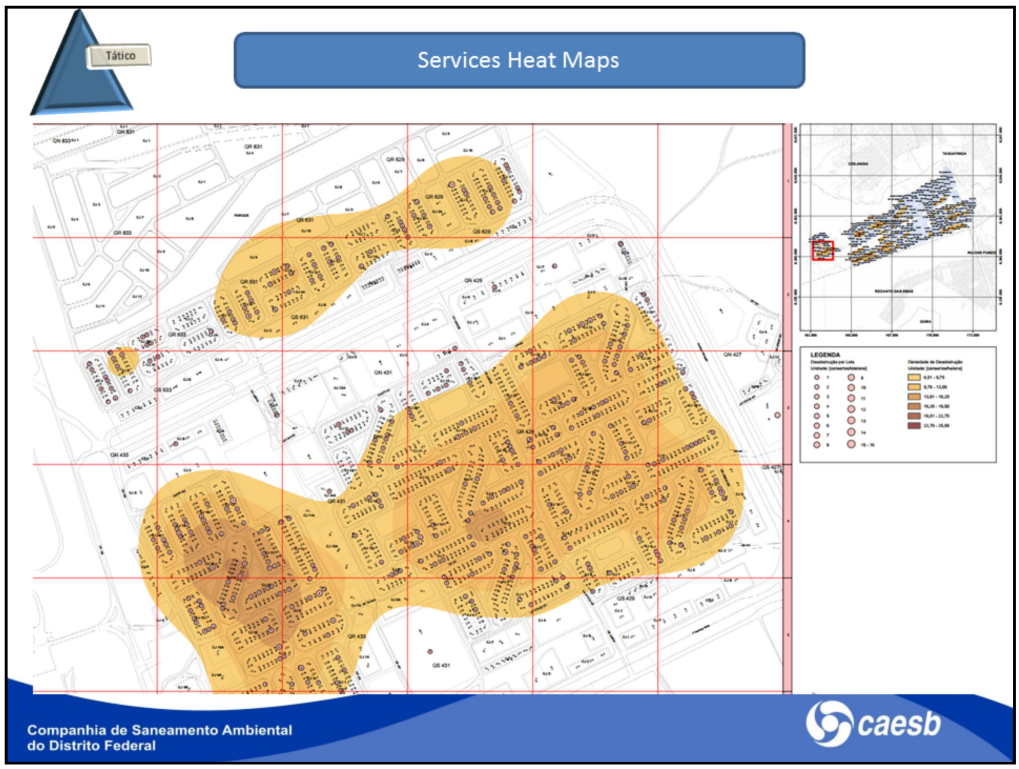
This is another exemple of a map designed for the operational level.

This map helps to improve the precision of the customer information and consequently, increase the incomes.

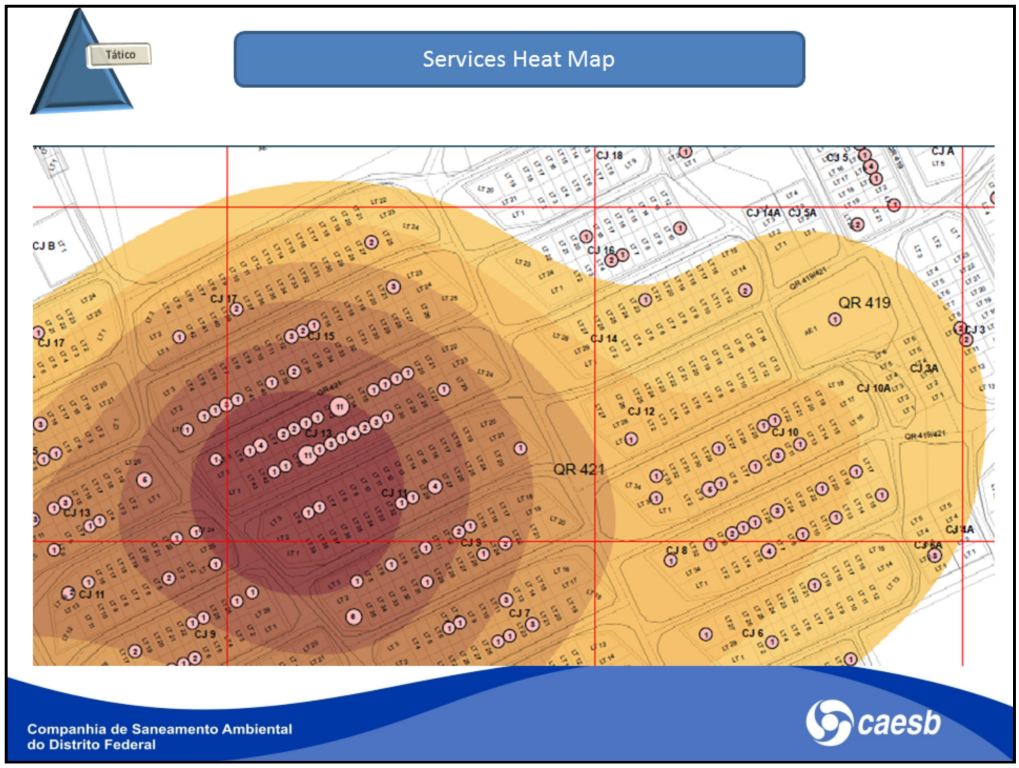
This map helps to increase the incomes because it shows the customers that were registred as residencial consumers but actually they are located in a comercial area, like those few green squares in the middle of a lot of blue squares.

This maps also shows the customers that are paying by water supply but aren’t paying for sewage service, like those green square with a blue dot inside.

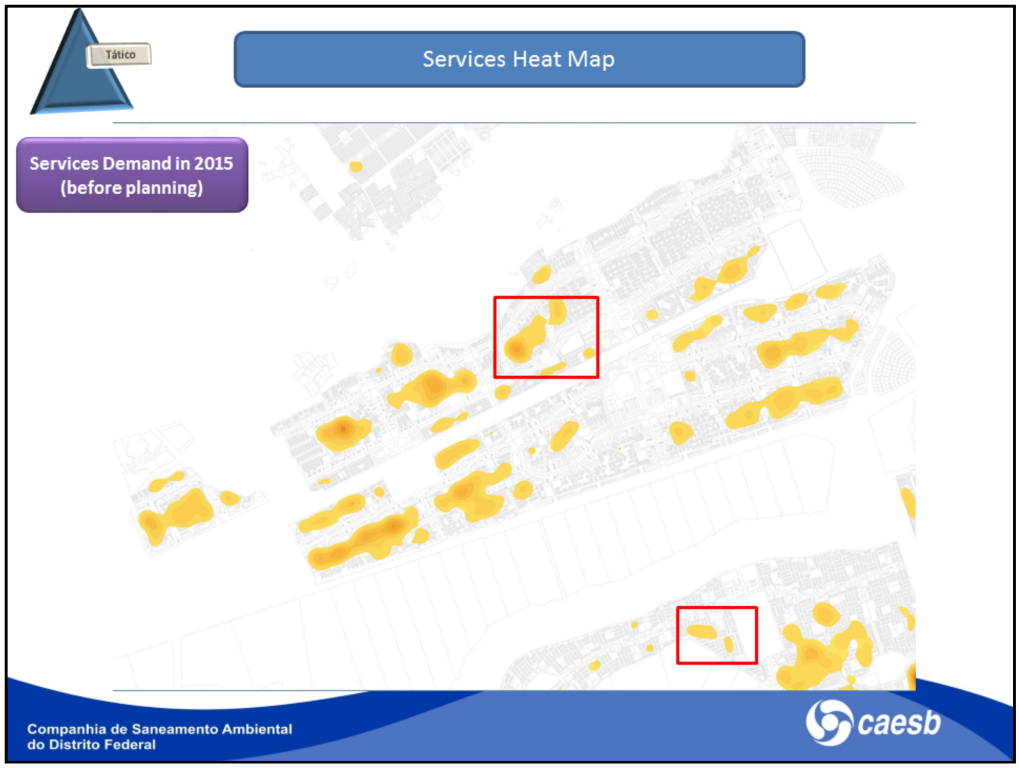
And finally, this map shows possible consumers that aren't paying either water or sewer services, like those red ones.



At the tactical level, an useful use of GIS is to make a heat map that shows the concentration of sewage obstructions services. Knowing where the problems occurs, the maintenance manager can planner in advance the team action



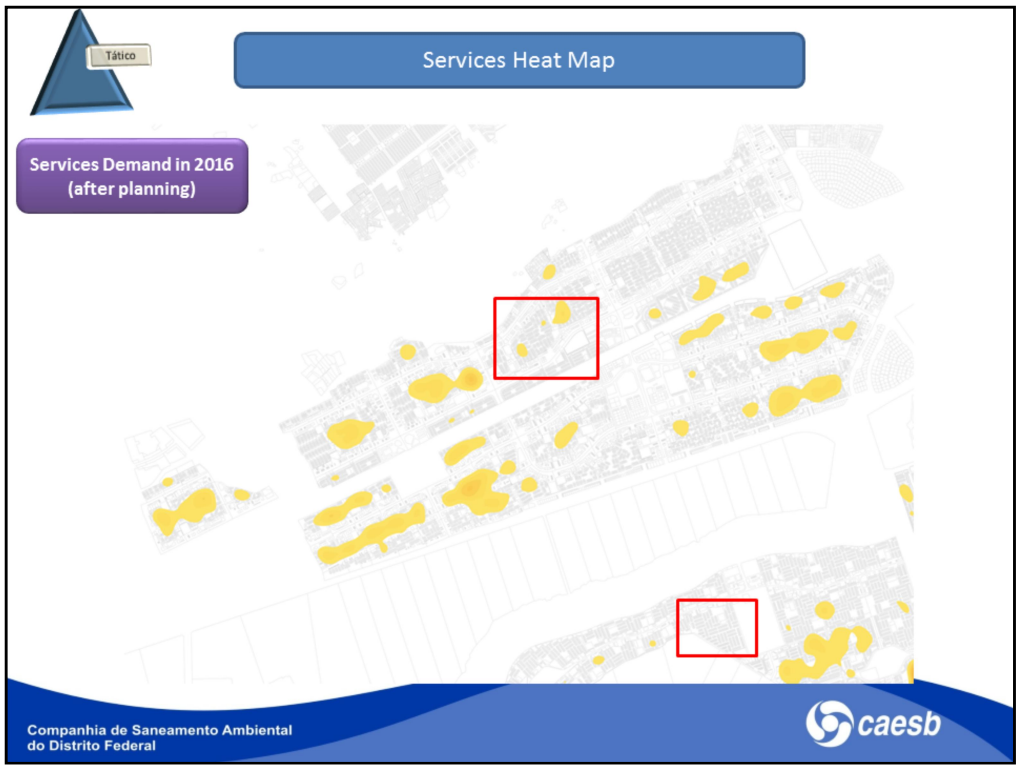
This is a real example. Performing a spatial analysis, the maintenance manager realized that this area had a lot of services requests in the year of 2015. Some houses had requested services 11 times in a year.



And this is the result of the analysis in a neighborhood from the services requested and performed in the year of 2015.

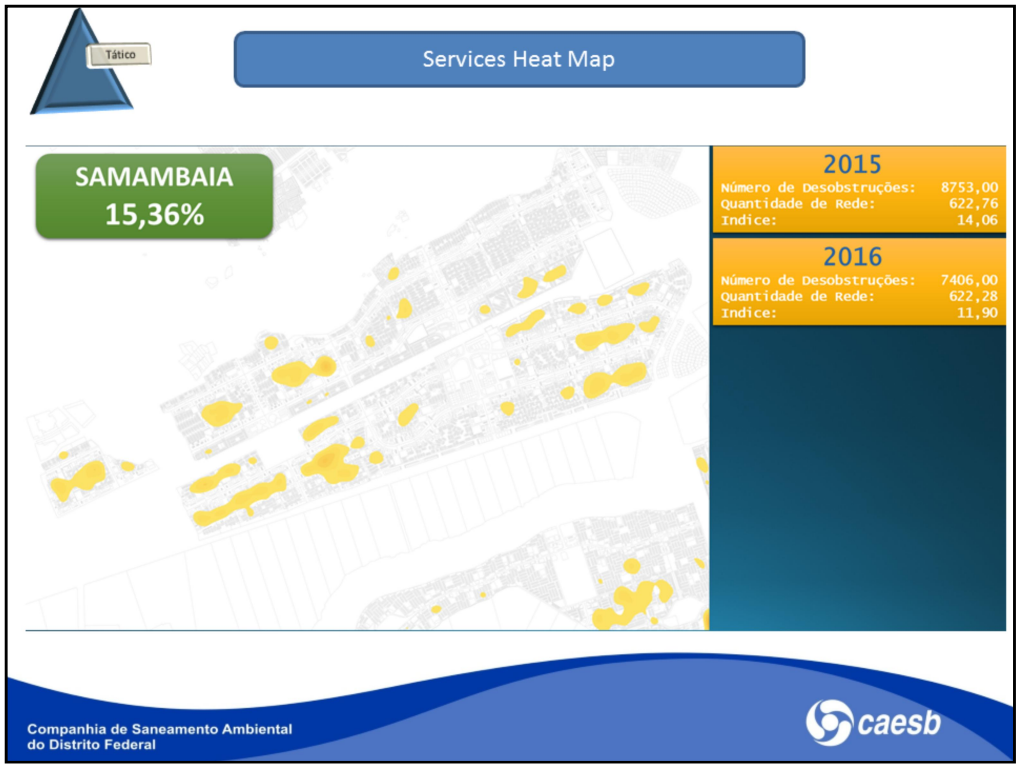
This map supported the maintenance planning for the next year, I mean 2016.

Please give some attention to those highlighted areas. Notice how hot those areas are.



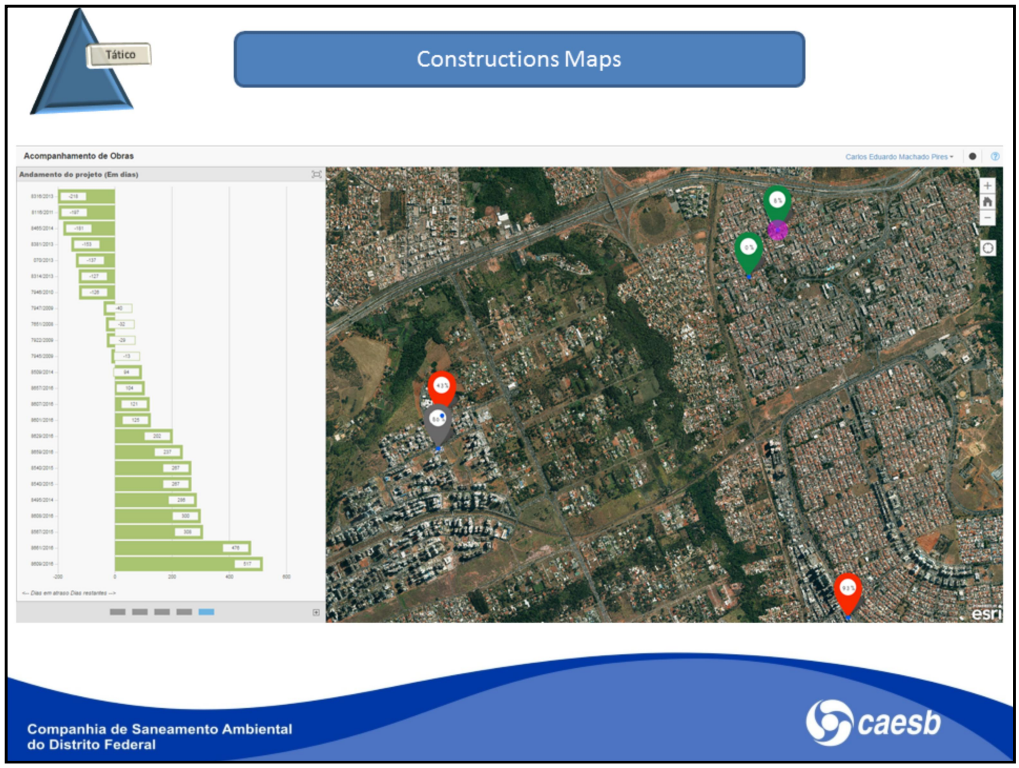
This is the results of services requested in the year 2016, after the maintenence supported by GIS Analysis.

Notice that all hot areas became colder and the highlighted areas almost disappeared.



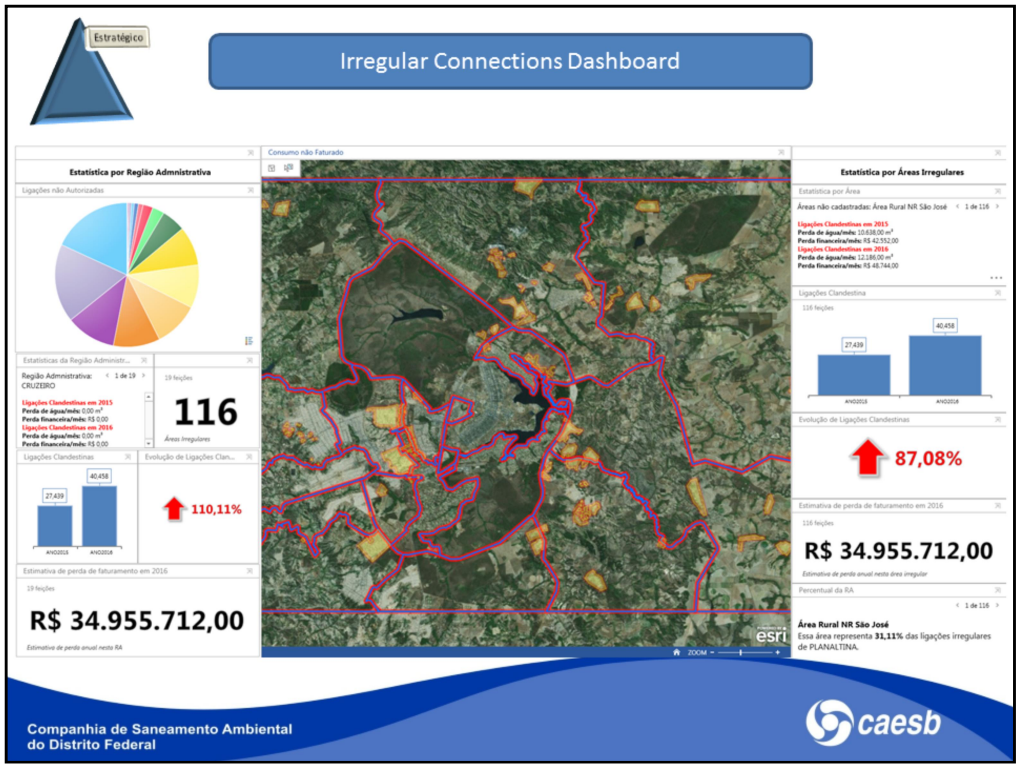
In a numeric terms, it represents a **decreasing of 15% on services demand just in this neighborhood**.

In the whole Federal District, the estimative is that the maintenance cost was reduced in about 1 million of reais in 2016.

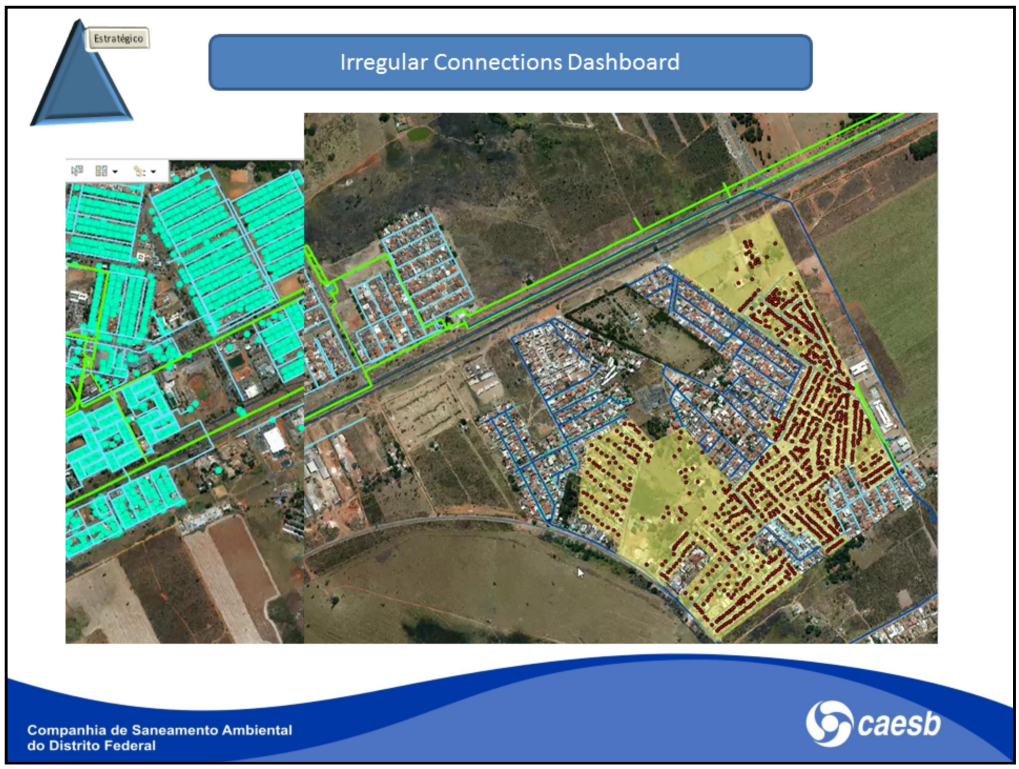


This is another tactical map which was designed to constructions managers.

It allows to see where the constructions are being made and a few other important details, as the financial status, deadline, contractor, responsible team, etc

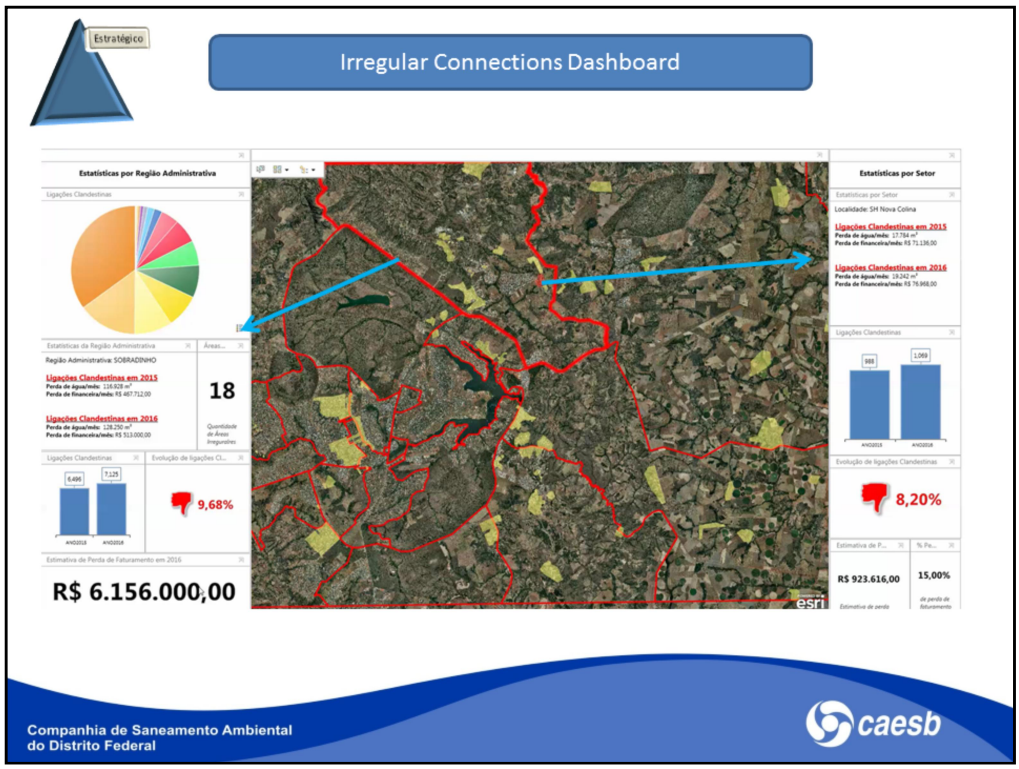


At the strategic level, this dashboard, which was designed to our director board, helps to define priority actions to avoid or combat irregular connections.



By knowing where are the regular connections (these green dots), is possible to estimate where are the irregular connections, like this area with no green dots.

So, we marked the builds as a possible irregular connections and highlight the area that concentrate this possible irregular connections



This work was made in whole DF.

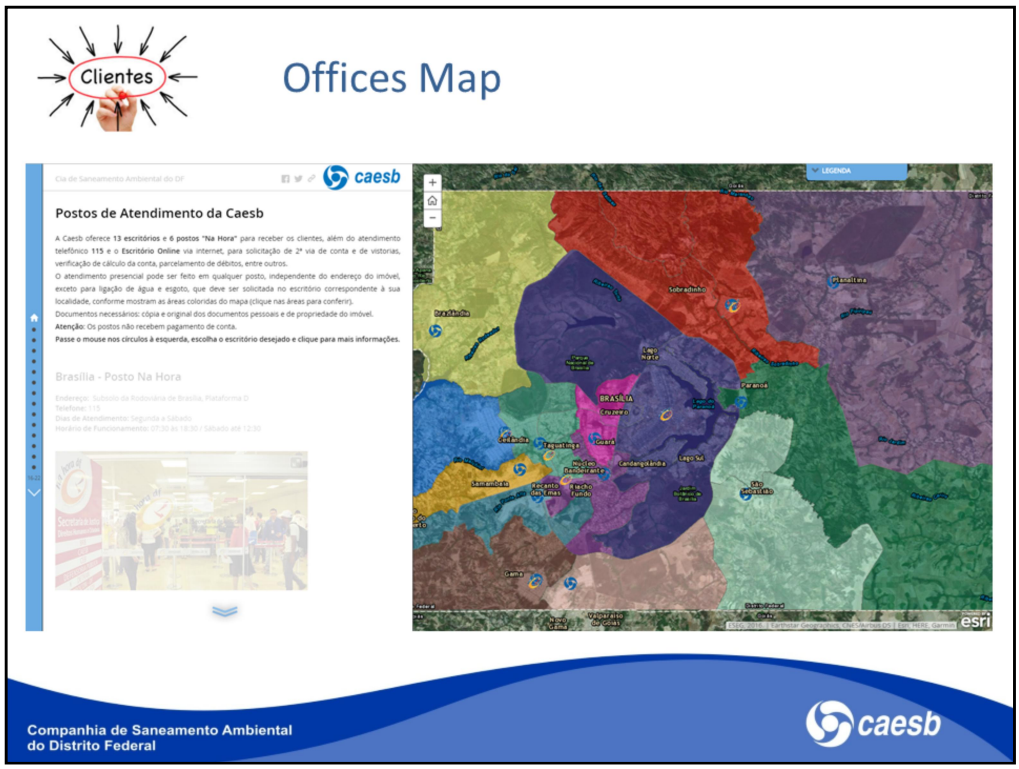
By clicking in a highlighted area, is possible to estimates how much water is being lost and how much the CAESB revenue would increase if those irregular connections becomes regulars.

The same occur by clicking in a Administrative region of Federal District. By clicking in a administrative region, the dashboard shows how many irregular areas there are in that region and calculates the water lost and revenue increase estimative.

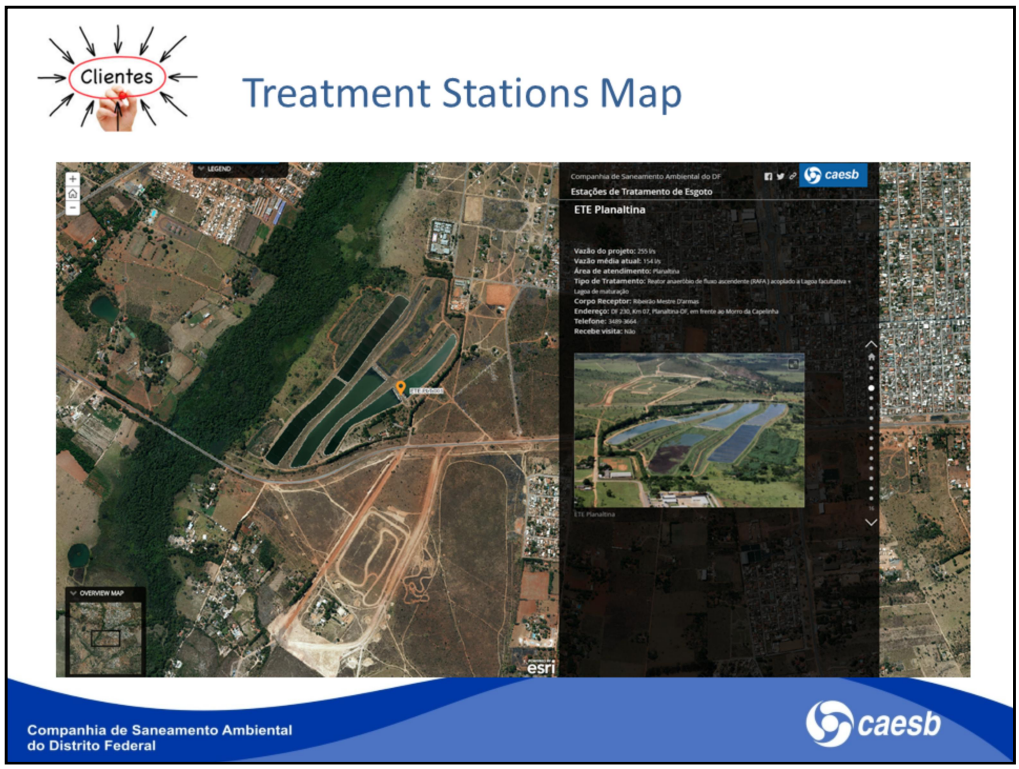
And at last, but not least, actually the most important: the customers himself

All GIS applications that I showed were developed to our internal customers, I mean, to the CAESB departments.

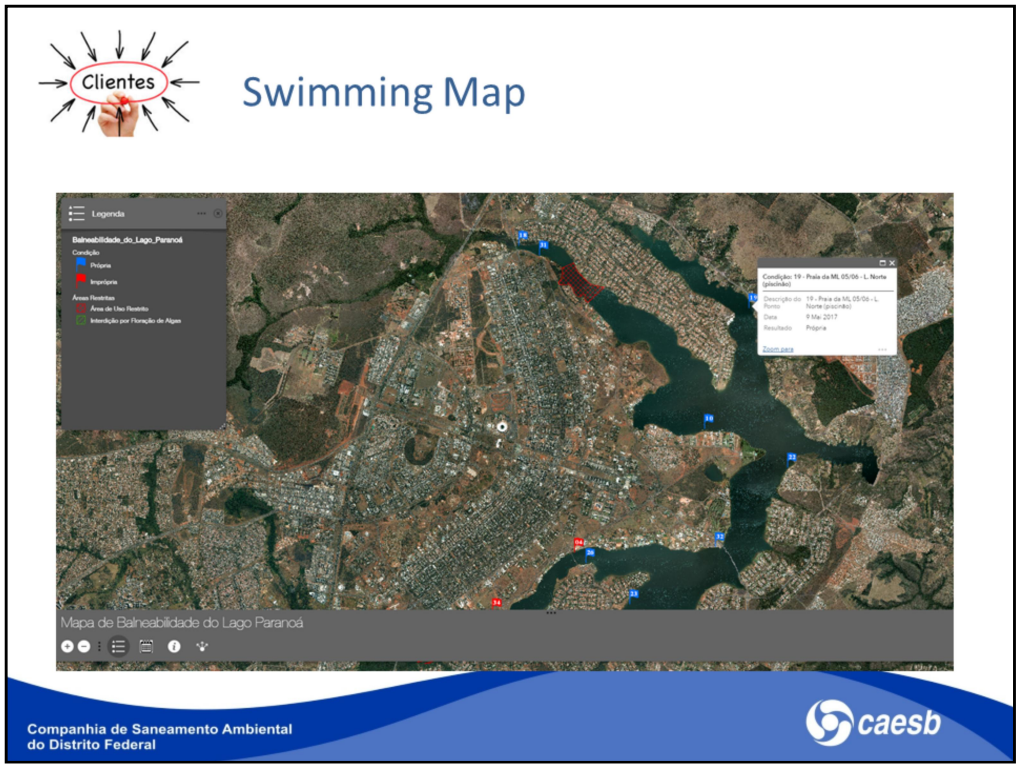
Now, I'll fastly show some few examples of GIS solutions designed especially to our final customers.



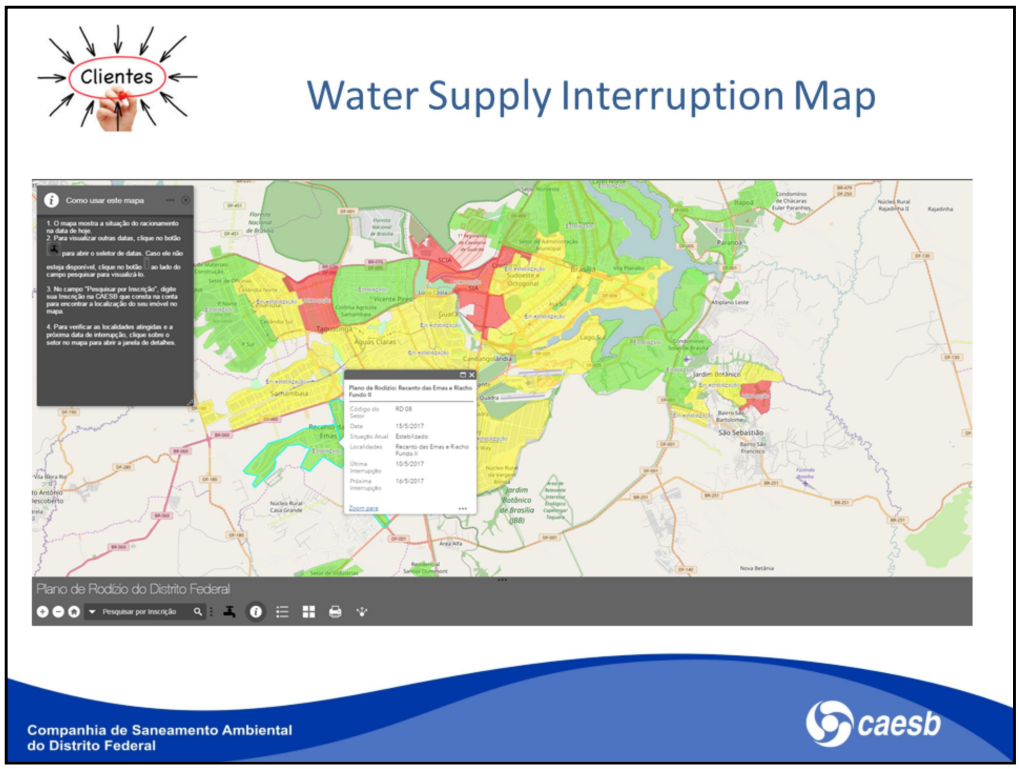
Example one, an interactive map, built with story maps, that shows the CAESB's Office and the coverage area of each office. This map allows to customer identify the nearest office of him



Exemple two: Another interactive map that shows the location and operational information of treatment stations



Exemple three: An interactive maps that shows the safe place in term of quality of the water to swimming or to have others recreational activities at the Paranoa Lake



Example four: A map that shows areas with water supply interruption. By clicking in any area, the customer will see informations about the supply water and localities reached by an eventual interrruption

Our customers can use or access this GIS solutions at their smartphones as well.

They can, also, collaborate with CAESB by informing some eventual water leak, just taking a photo and pointing the leak's location at the map. The maintenance team will receive this report and act as soon as possible to solve it.

The CSC team, also use GIS to easily and fastly identify customer's location when they need some help.


Thank you
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