vivapolis
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KEY FIGURES

- Lines: 1,800 km
- 100 member municipalities
- Population: 83 865 (INSEE 2007)
- 41,283 subscribers
- 157 reservoirs, 100 production facilities
- 7,734,494 m³ of water consumed in 2009

CASE STUDY ON A COMPREHENSIVE APPROACH FOR ASSET MANAGEMENT

WITHIN A LARGE-SCALE RURAL SETTING

altereo
éveilleurs d'intelligences environnementales®

FROM THE CONSOLIDATION OF EXPERTISE TO AN IMPROVED PROGRAMMING OF PIPELINE RENEWAL USING THE EXPERT SYSTEM SIROCO®

One feature of the mission included the organization of human asset during the difficult phase of information acquisition.

The Association provided an apprentice under the supervision of G2C Ingénierie team. This full-time, on-site resource significantly facilitated what would otherwise have been a considerable amount of work, and the results, in terms of improved access to information, were obtained rapidly. This arrangement allowed the SIVOM to maximize collection efforts whilst controlling costs and offering a technical know-how as well as support from subject matter experts.

Another feature of this mission was regular presentations to the general assembly of the Association. The objective of these procedures was to raise awareness among officials regarding asset management and the on-going studies. This also allowed for securing a budget for renewal in the upcoming years and a guarantee of concrete follow-up on the studies for an improved renewal program.

INNOVATIONS

▶ **The initial necessity was to examine the network database (Layout, materials, diameters, installation dates) from all angles using GIS.** Information was collected from the SIVOM maps, the GIS of the delegate, work archive and from conversations with the hundreds of member municipalities of the Association.
For the duration of this mission, the Association appointed a dedicated individual for this task who was a licensed user of GIS Cart@jour and supervised by G2C Ingénierie.
All necessary data for the application of the SIROCO® methodology were simultaneously consolidated: soil typology, road traffic levels, the quantity of hydraulic pipelines, unit costs, etc.

▶ **During a second phase, after acquiring the maximum amount of information possible, the consolidated data was analyzed using the SIROCO® methodology.**
SIROCO® sequentially allowed for gathering data on:

- forecasting breakage in the pipelines,
- the potential impacts of these breakages on multiple parameters of network performance,
- the simulation of anticipated benefits from various renewal strategies,
- the determination of an optimal techno-economic effort for renewal,
- prioritizing the pipelines needing renewal, and
- the establishment of operational work sites.

STAKEHOLDERS

▶ **Project owner:**
SIVOM (Multi-purpose intermunicipal association) of the Issoire region and the municipalities of the sud Clermentoise suburb.

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MINISTÈRE DE L'ENVIRONNEMENT, DE L'ÉNERGIE ET DE LA MER
MINISTÈRE DU LOGEMENT ET DE L'HABITAT DURABLE

IMPLEMENTATION

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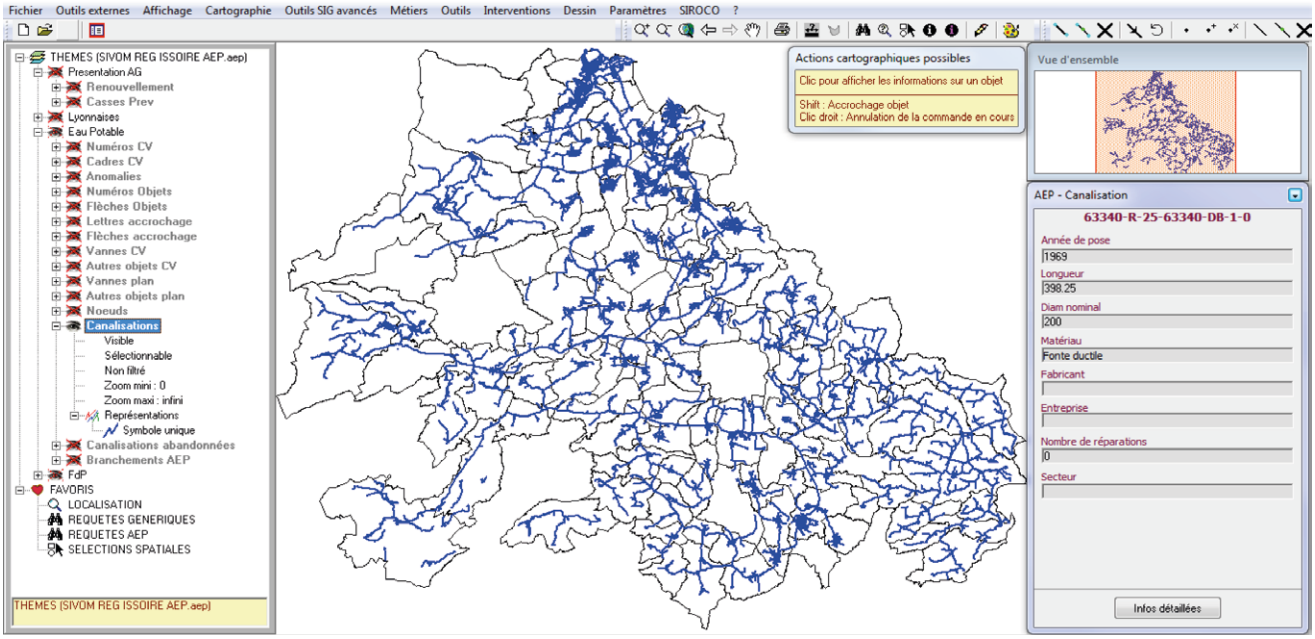
RESULTS

/// Robust knowledge of the available assets in full compliace with the requirements of the decree of 27 janvier 2012 on the knowledge of all assets related to drinking water and reduction of leakages.

/// A high-performance model for renewal programming.

/// A public work program with a duration of 11 years, improved with the objective of responding to local needs and technical priorities.

Priority criteria included in the SIROCO® analysis are hydraulic criticality, water loss, traffic disturbance and repair costs.



FINANCIAL DIMENSIONS OF THE PROJECT

→ **Project total: 30,000 € excluding taxes**

/// The provisional investment program, established for the 11 upcoming years represents 10% of the total lines. The idea is an update every 2-3 years with the help of new data. The improved program includes the establishment of 1.25% of the lines in the first 2 years, then an average of 0.83% of the lines in the following years for a total investment of up to 2.7 million euros.

Note: a 'classic' strategy based on pipeline age, frequent breakage and theoretic service life (an initial scenario studied during the study) would have caused the renewal costs to be the double of that mentioned above. The economy-performance link of the target program is thus very visible.