BEST PRACTICES IN WATER MANAGEMENT IN ITALY AND SWEDEN

CASE OF STUDY: ITALY THE EXPERIENCE OF EMILIAMBIENTE

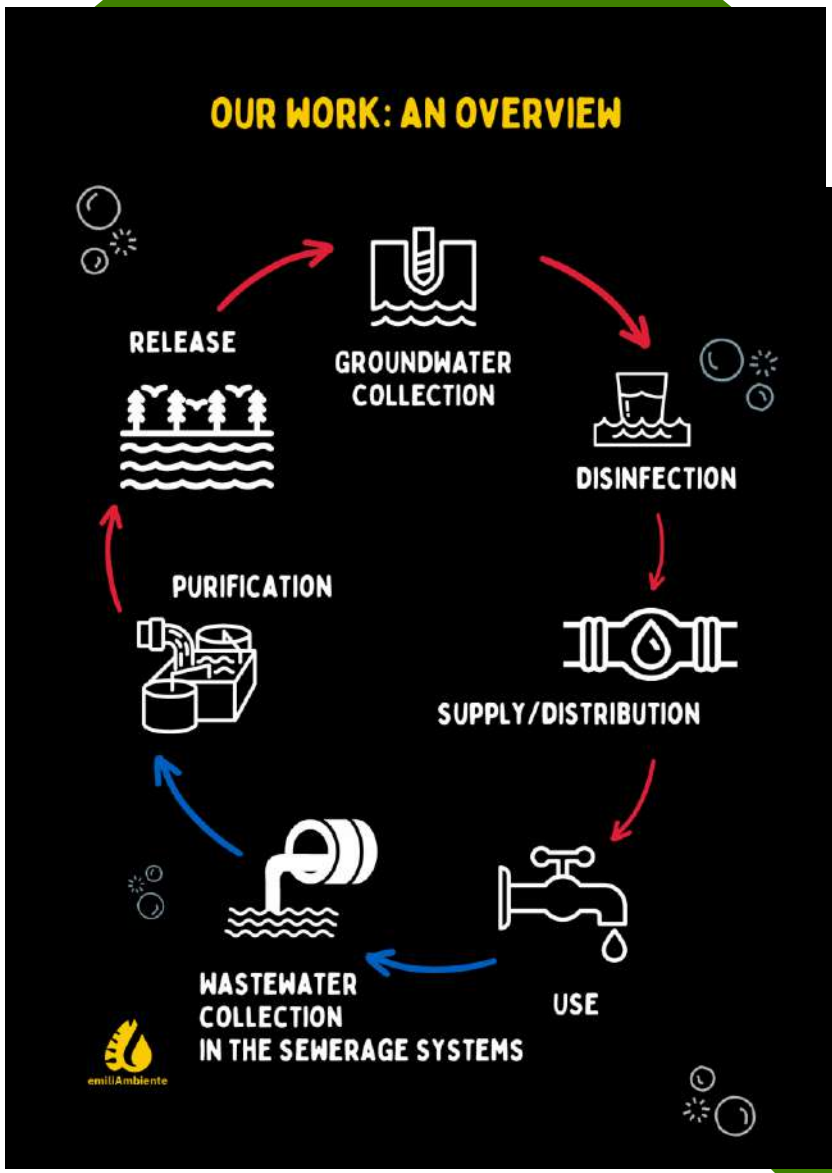
CREATION OF THE DIGITAL TWIN OF THE WATERWORKS AND SEWERAGE SYSTEMS

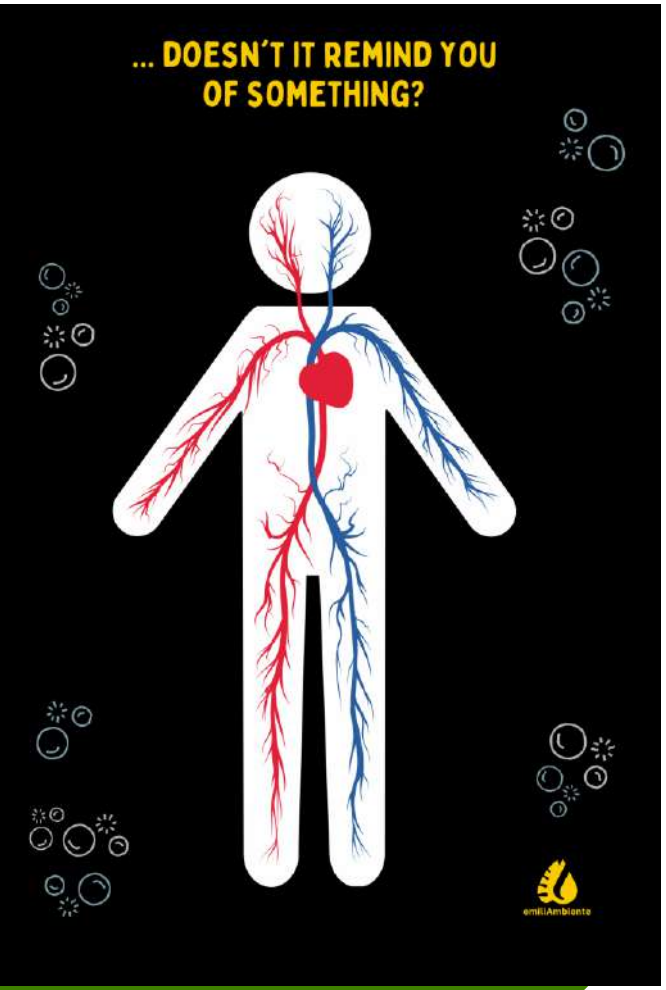
INSPIRATION LAB: 23 May 2024 - LULEA

ABOUT US…
…..WHAT WE DO?

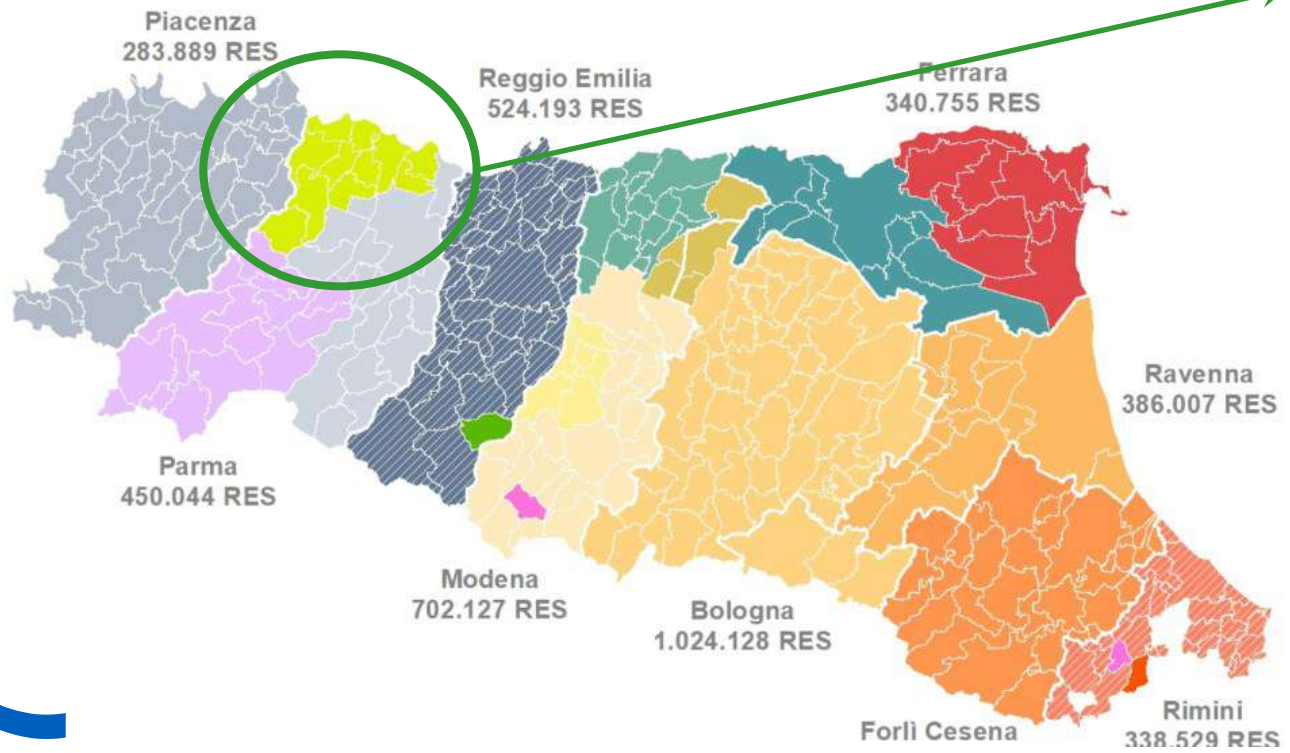
The Integrated Water Service is the set of services connected with the **useful use of water resources for humans, that is:**

1) Groundwater collection;
2) Disinfection/purification;
3) Transport (supply/distribution) to communal and household taps;
4) Wastewater collection in the sewerage systems;
5) Purification and release of wastewater without causing any damage to the ecosystem.





ABOUT US…
…..WHERE DO WE DO OUR JOB?



EmiliAmbiente manages the Integrated Water Service for **11 Municipalities of the Province of Parma**, in the Emilia Romagna region, for a total resident population of **101,719 inhabitants**:

- **BUSSETO**
- **COLORNO**
- **FIDENZA**
- **FONTANELLATO**
- **POLESINE ZIBELLO**
- **ROCCABIANCA**
- **SALSOMAGGIORE TERME**
- **SAN SECONDO PARMENSE**
- **SISSA TRECASALI**
- **SORAGNA**
- **TORRILE**

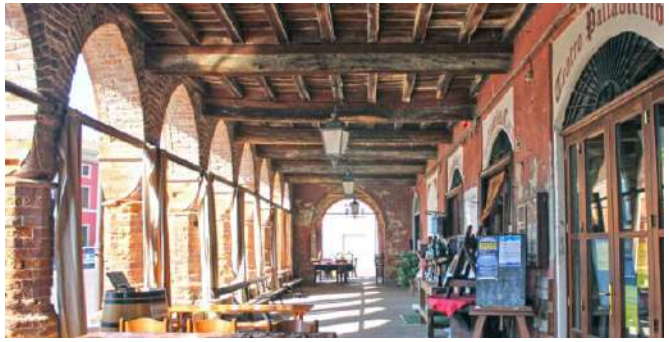
EmiliAmbiente is a joint stock company (SpA), which is owned by 15 municipalities in the Parma area. Since its shareholders are Public Bodies – having a power of direction and control - it is defined as a "publicly owned company".

Busseto

Colorno

Fidenza

Fontanellato



Polesine Zibello

Roccabianca

Sissa Trecasali

Salsomaggiore Terme

San Secondo Parmense

Soragna

Torrile

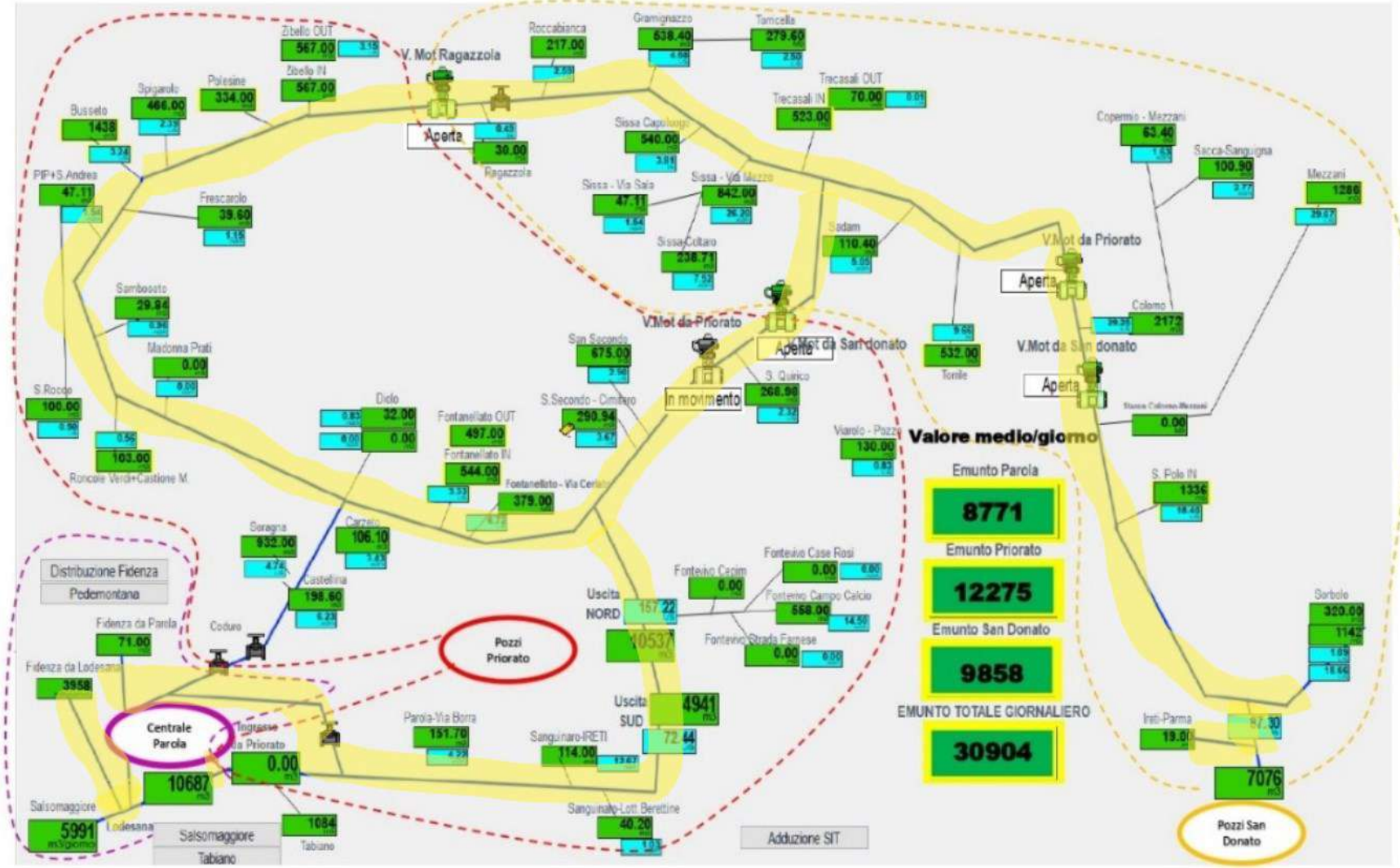
WATERWORKS: EMILIAMBIENTE'S WELLS

RIFERIMENTO: COMMITTENTE EMILIAMBIENTE S.p.A.	SONDAGGIO: POZZO 3 BADESSE
LOCALITA': CENTRALE DI PAROLA	QUOTA:
IMPRESA ESECUTRICE:	DATA:
COORDINATE:	REDATTORE:
PERFORAZIONE:	SCALA: 1:50 orizzontale, 1:500 verticale

Metri	PROF (m)	DESCRIZIONE	L.R. (m)	L.P. (m)	DATI TECNICI
	1.50	Terreno vegetale			
	7.50	Argilla giallastra compatta			
	10.50	Ghiaia con lenti di argilla			
	15.50	Argilla giallastra			
	22.50	Ghiaia con argilla e ciottoli	43.50	36.30	Cementazione
	26.00	Ghiaia sciolta con ciottoli			
	28.00	Ghiaia con ciottoli e argilla			
	32.50	Argilla giallastra			
	41.40	Argilla grigia compatta			
	42.70	Ghiaia con argilla e ciottoli			
	45.30	Ghiaia e ciottoli	4.50		
	48.00	Ghiaia conglomerata			
	49.00	Argilla giallastra	2.50		
	49.70	Ghiaia legata			
	51.80	Ghiaia conglomerata	4.00		
	55.30	Ghiaia sciolta con qualche piccolo strato di conglomerato			
	56.80	Argilla giallastra	3.50		
	62.00	Ghiaia sciolta con sabbia e piccoli strati di conglomerato	4.00		
	63.50	Argilla giallastra			
	68.40	Argilla molto dura	9.00	66.50	Ghiaietto
	70.00	Ghiaia legata			
	71.50	Ghiaia sciolta con conglomerato			
	72.20	Ghiaia con argilla			
	74.00	Ghiaia sciolta con ciottoli	5.50		
	75.00	Ghiaia e argilla			
	76.50	Ghiaia			
	78.50	Argilla giallastra			
	82.50	Argilla grigia compatta	9.00		
	84.50	Ghiaia molto legata con argilla e ciottoli			
	94.50	Ghiaia sciolta	7.50		
	95.50	Argilla giallastra			
	103.50		10.50		

800 mm
400 mm
43.50
50.50
58.00
71.00
85.50
103.50

WATERWORKS: THE SUPPLY NETWORK

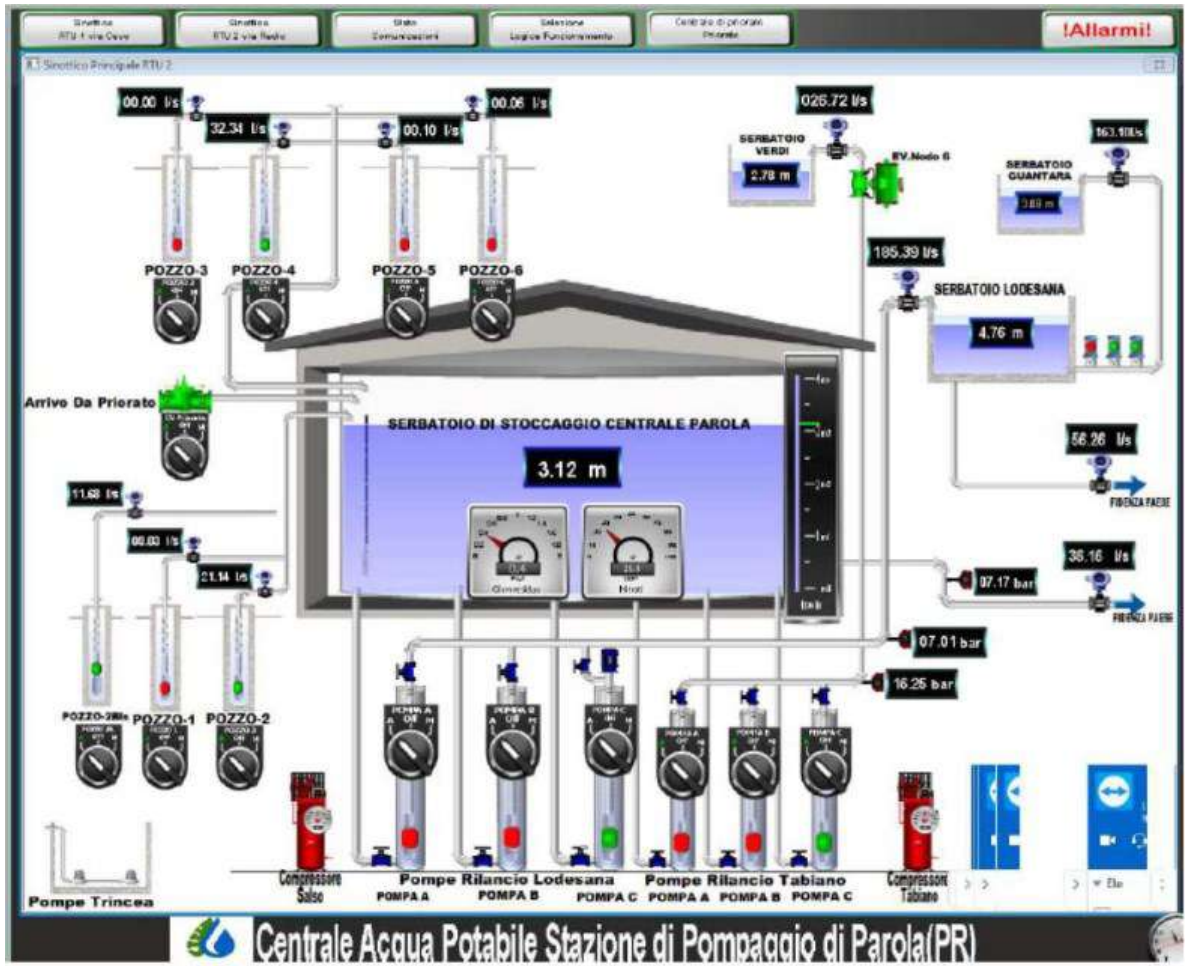


190, 7 KM OF SUPPLY NETWORK

3 WATER COLLECTION STATIONS

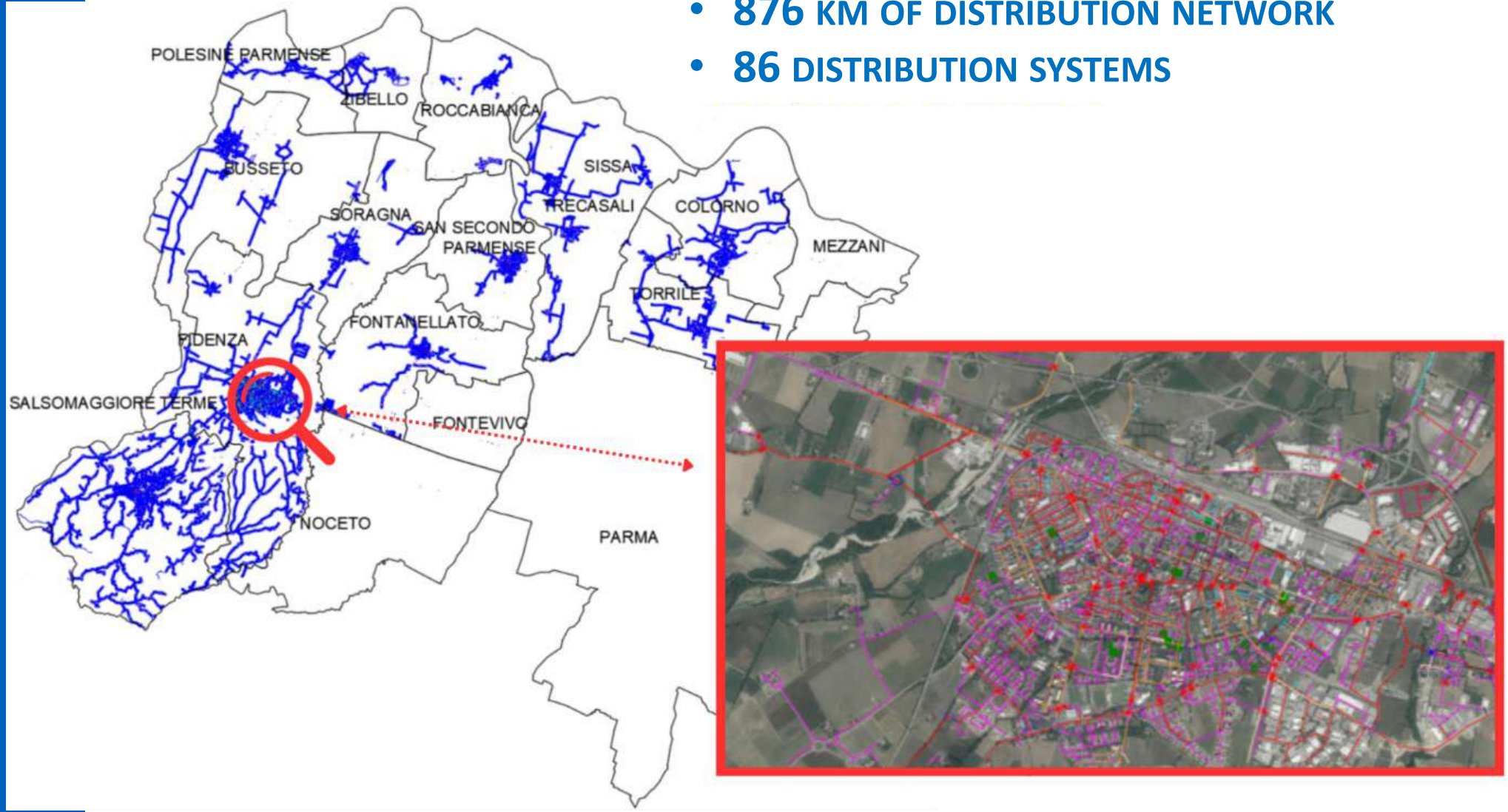
19 WATER COLLECTION WELLS

WATERWORKS: PAROLA'S COLLECTION STATION

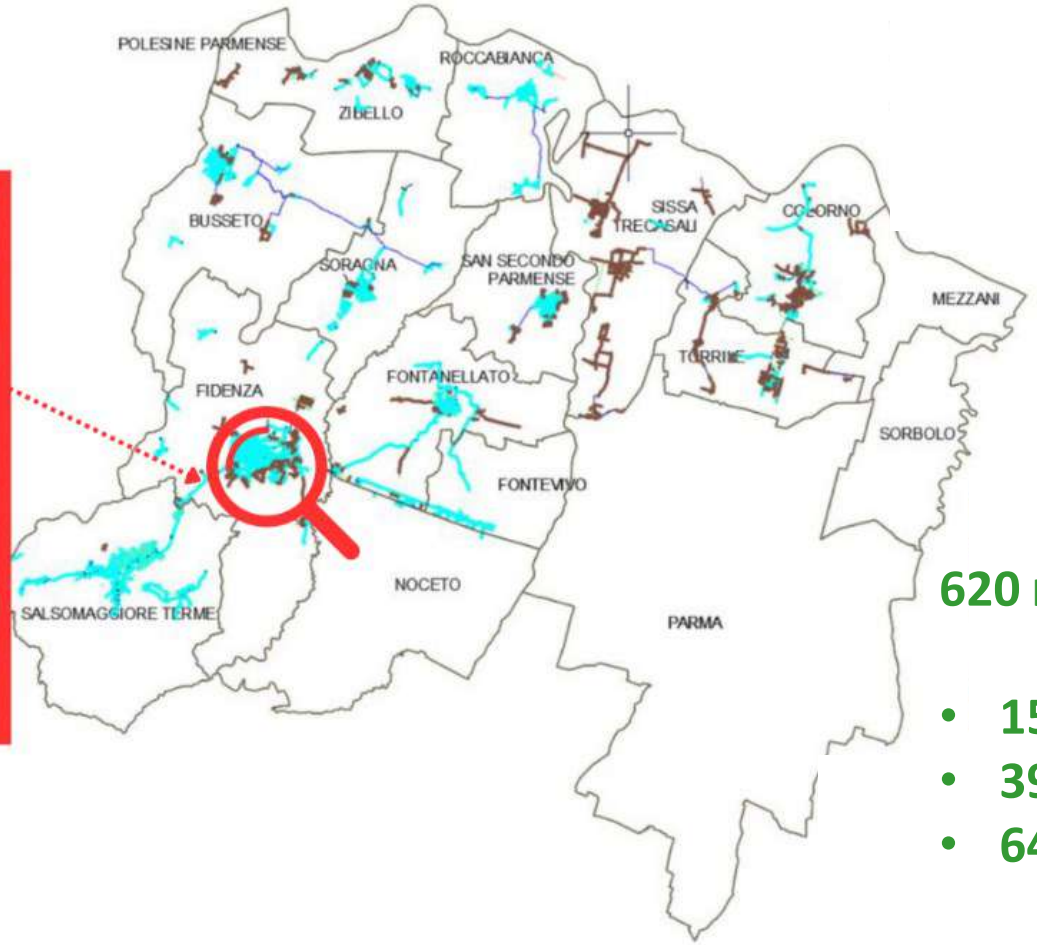


WATERWORKS: THE DISTRIBUTION NETWORK

- 876 KM OF DISTRIBUTION NETWORK
- 86 DISTRIBUTION SYSTEMS



SEWERAGE SYSTEMS



620 KM:

- **156,2 KM BLACKWATER**
- **399,6 KM WASTEWATER**
- **64,2 KM GREYWATER**

- **32 PURIFICATION PLANTS**
- **88 SEWERAGE LIFT**

SEWERAGE SYSTEMS

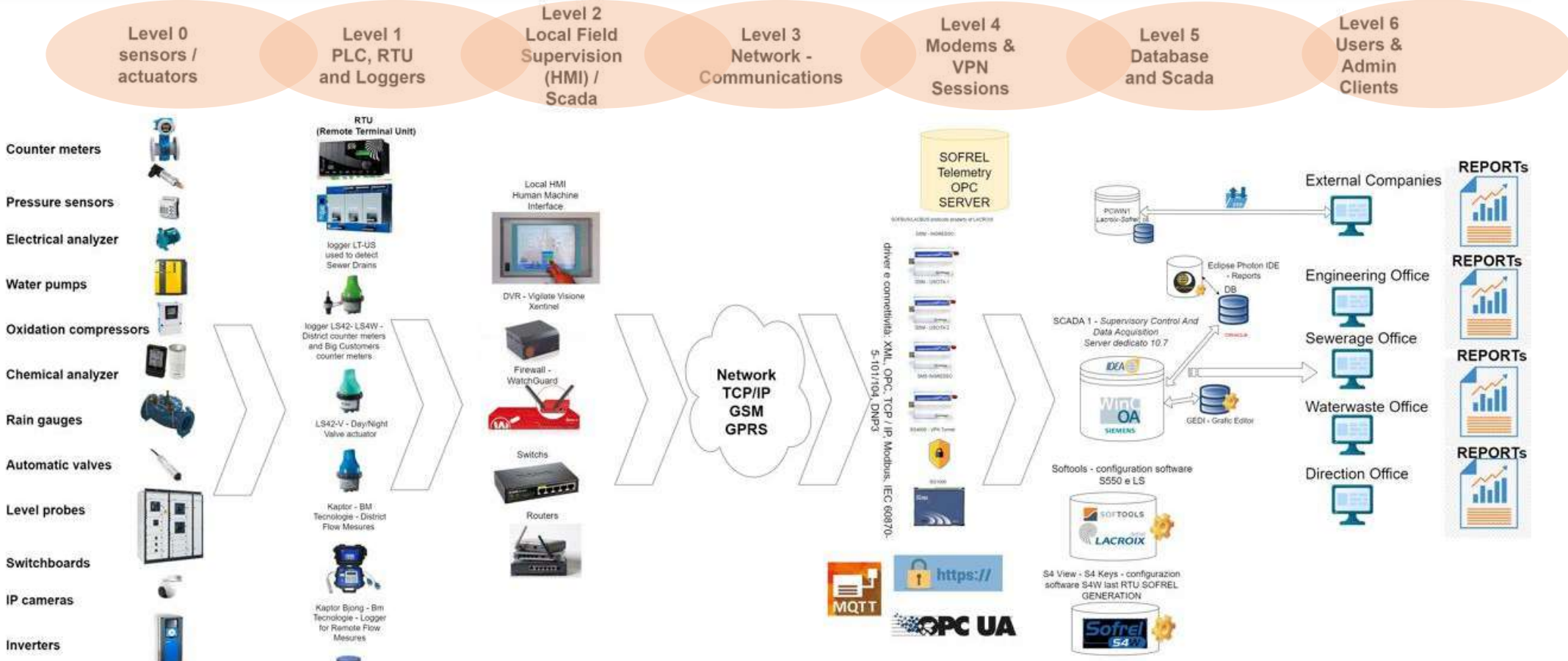
OUR FIDENZA'S PURIFICATION PLANT
(DESIGNED FOR 60.000 EQUIVALENT INHABITANTS)

REMOTE CONTROL SYSTEM

In today's rapidly evolving technological scenary, digitalization of integrated water system networks has become imperative for efficient management and preservation of this precious resource.

Digitalization of water network is the guideline that Emiliambiente has set itself as one of its primary objectives.

Central tool in this transformation is the SCADA (Supervisory Control and Data Acquisition) which plays a crucial role in monitoring, controlling, and optimizing water distribution processes.



Measures of Physical Parameters

Historicize data, Automation programs & Allarm management

Field visualization, video soring, Routing firewall IT Security

Comunication Receivers

Comunication Drivers

Telemetry definitions

Backup data

Trend visualization

Synoptics Displays

Processing and sending Reports to all different Offices

Benefits of Network Digitalisation

Increase Monitoring and Control

Water utility operators collecting and analyzing these datas, can identify anomalies, suggest immediate corrective actions to

Minimizes water loss & ensures uninterrupted supply to consumers.

Improve Efficiency

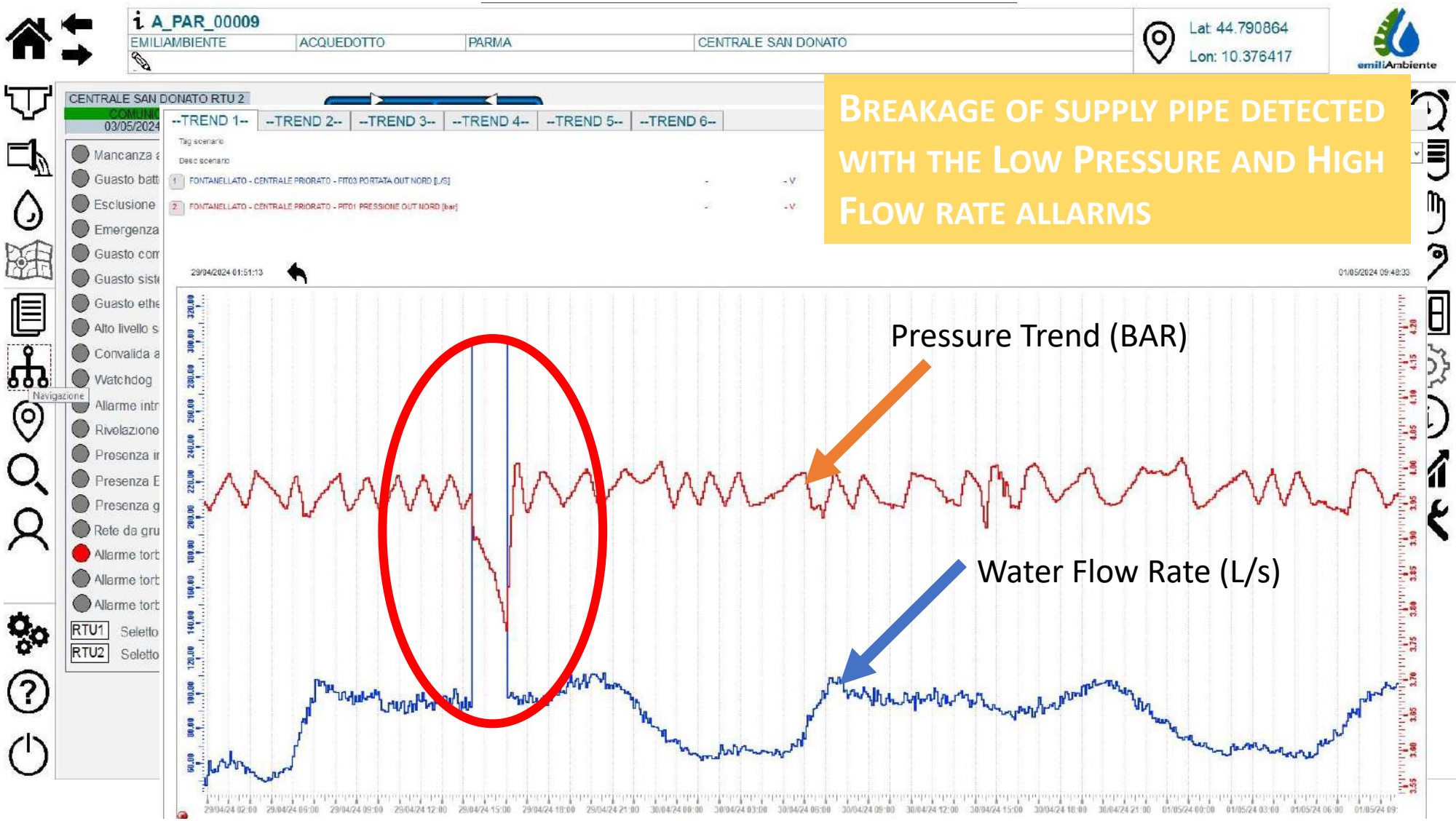
Automation of routine tasks, such as valve adjustments and pump operations, not only saves time and labor but also optimizes energy consumption and reduces operational costs. Predictive maintenance algorithms integrated into SCADA system help prevent equipment failures.

Smart Water Management and Data-Driven Decision Making

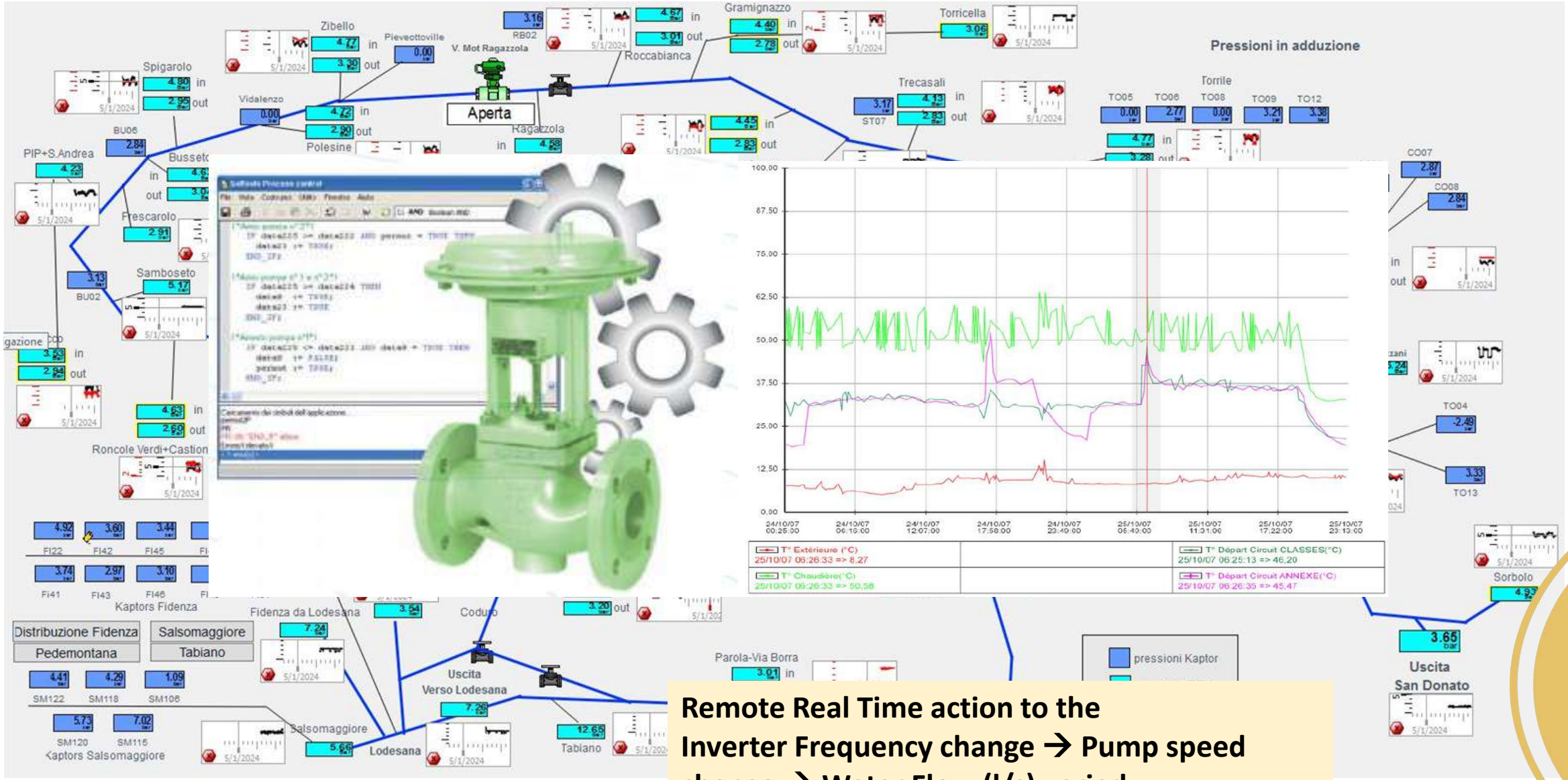
The abundance of data generated empowers water utility managers to make right decisions regarding network optimization and resource allocation. Advanced analytics tools can identify usage patterns, predict demand fluctuations , and optimize water distribution strategies to meet evolving consumer needs efficiently.

Moreover, historical data analysis facilitates long-term planning and infrastructure development, ensuring the sustainability of water supply systems.

Increase Monitoring and Control (example)



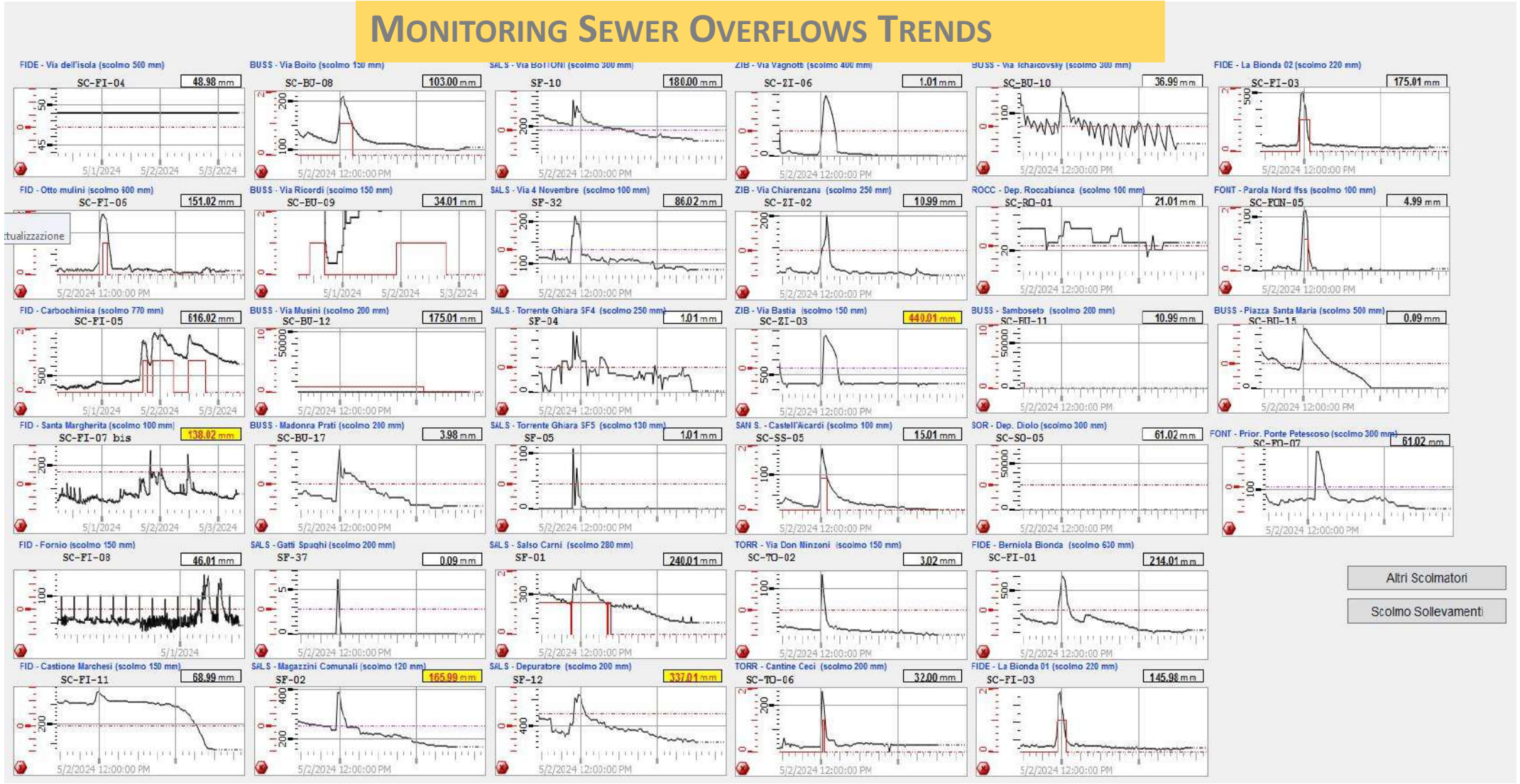
Improve Efficiency (example)



Remote Real Time action to the Inverter Frequency change → Pump speed change → Water Flow (l/s) varied

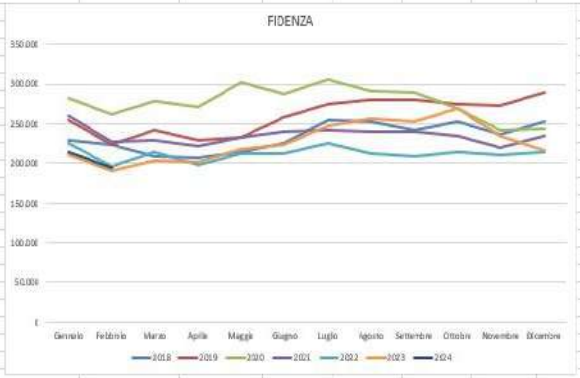
DATA-DRIVEN SMART WATER DECISION MANAGEMENT (EXAMPLE 1)

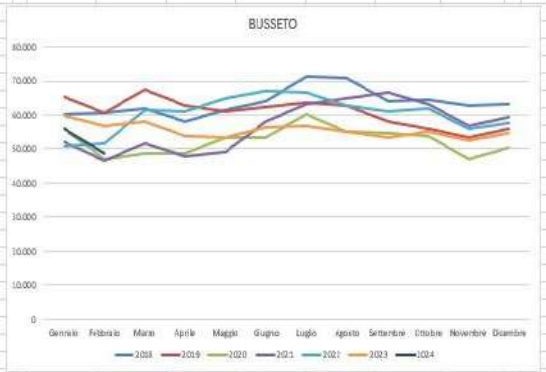
MONITORING SEWER OVERFLOWS TRENDS

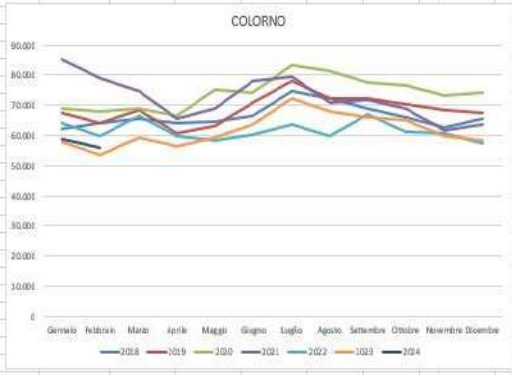


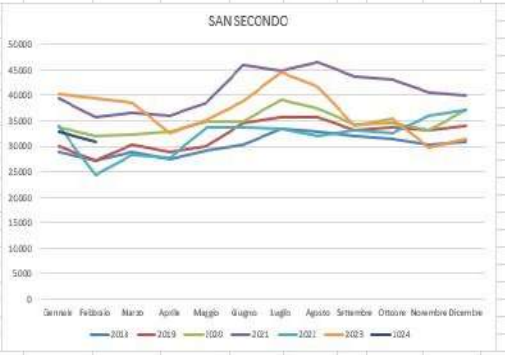
DATA-DRIVEN SMART WATER DECISION MANAGEMENT (EXAMPLE 2)

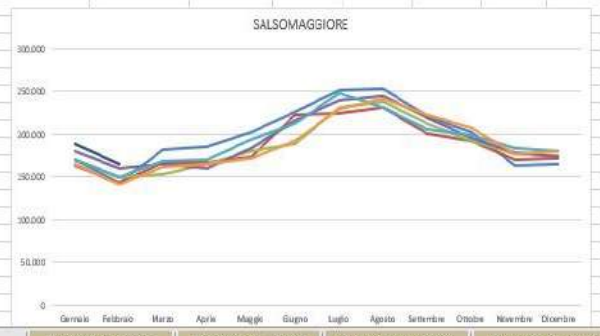
	FIDENZA (m3)							SALSOMAGGIORE (m3)							BUSSETO (m3)							FONTANELLATO (m3)						
DATA	2018	2019	2020	2021	2022	2023	2024	2018	2019	2020	2021	2022	2023	2024	2018	2019	2020	2021	2022	2023	2024	2018	2019	2020	2021	2022	2023	2024
Gennaio	229.689	253.959	282.357	260.152	225.206	210.818	214.924	170.208	163.277	169.442	180.515	169.338	164.821	188.115	60.292	65.307	55.861	52.166	50.701	59.957	56.131	27.720	28.398	31.251	33.270	32.459	34.762	29.496
Febbraio	223.220	223.220	261.844	226.220	195.797	189.651	194.761	142.286	142.286	149.368	159.602	149.872	141.953	164.673	60.601	60.601	46.908	46.475	51.658	56.664	48.603	24.518	24.518	30.684	31.810	29.444	26.314	27.383
Marzo	209.358	241.163	277.413	228.821	214.271	204.123		181.184	166.725	153.910	165.386	168.442	161.749		61.787	67.598	48.808	51.700	61.328	58.106		29.970	32.283	33.916	32.389	32.575	28.615	
Aprile	207.636	227.993	270.673	221.892	198.510	200.792		185.076	166.855	164.235	160.704	170.052	165.822		58.262	62.732	48.710	48.020	60.978	53.825		29.492	27.773	33.143	29.418	32.294	27.974	
Maggio	215.086	232.332	301.789	233.183	213.043	218.614		202.285	173.593	180.969	183.789	193.608	172.537		61.411	61.150	53.558	49.167	65.076	53.488		30.895	29.131	34.935	31.038	35.973	28.125	
Giugno	224.369	257.198	287.785	238.990	212.068	223.212		225.272	222.068	189.092	215.366	212.989	191.444		63.844	62.167	53.558	58.026	66.929	56.178		34.037	35.957	33.688	34.905	36.160	30.105	
Luglio	254.903	274.429	304.758	242.129	225.825	246.852		251.889	224.785	231.267	240.230	248.679	228.821		71.466	63.509	60.315	63.083	66.790	56.719		32.727	36.354	40.977	37.999	42.449	34.898	
Agosto	252.961	279.779	291.325	240.137	212.274	256.206		253.708	230.357	238.237	245.439	230.509	242.877		70.781	62.640	55.085	64.694	62.730	55.259		34.084	32.499	38.176	42.743	39.184	37.676	
Settembre	240.810	279.942	289.817	239.558	207.853	253.013		221.713	200.530	213.167	219.148	205.117	222.521		63.941	58.257	54.854	66.727	60.958	53.193		31.624	30.828	34.690	39.839	35.139	33.169	
Ottobre	252.231	273.992	268.879	233.663	213.469	268.973		201.459	191.437	191.411	196.126	198.962	206.744		64.581	56.048	53.825	63.061	61.859	55.238		29.234	30.091	34.801	36.797	36.585	32.976	
Novembre	235.478	271.948	241.370	219.284	210.200	233.986		162.839	170.176	176.089	178.225	183.642	177.465		62.720	53.313	47.096	56.688	55.958	52.470		26.601	29.539	32.674	32.551	35.154	31.006	
Dicembre	252.870	290.011	242.677	234.845	213.796	216.378		164.396	171.801	175.540	172.713	180.261	180.726		63.232	56.076	50.471	59.353	57.695	54.783		26.594	30.916	33.608	33.570	35.004	30.457	
TOTALE Parziale (m3)	452.903	477.179	544.201	486.372	421.003	400.469	409.685	0	312.494	305.563	318.810	340.217	319.210	306.775	352.788	0	120.893	125.908	102.769	98.621	102.359	116.621	104.734	0	52.239	52.917	61.935	65.081	61.903	61.076	57.479	0
			DIFFERENZA		9.216 m3					DIFFERENZA		46.014 m3					DIFFERENZA		-11.887 m3					DIFFERENZA		-3.598 m3			
			DIFFERENZA		2,3%					DIFFERENZA		15,0%					DIFFERENZA		-10,2%					DIFFERENZA		-5,9%			

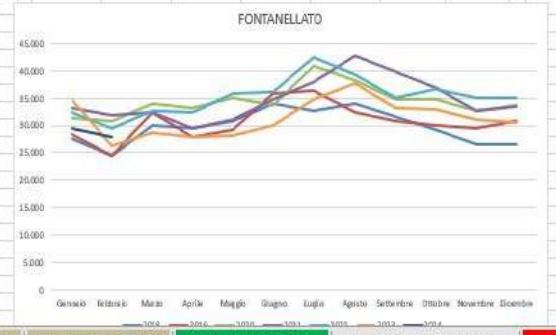


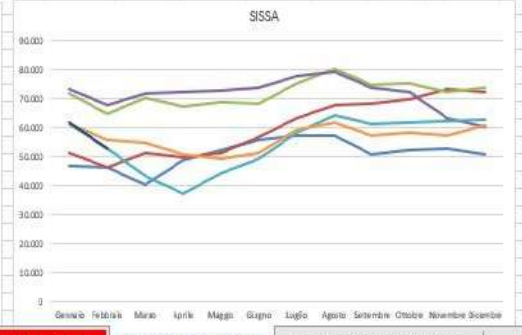


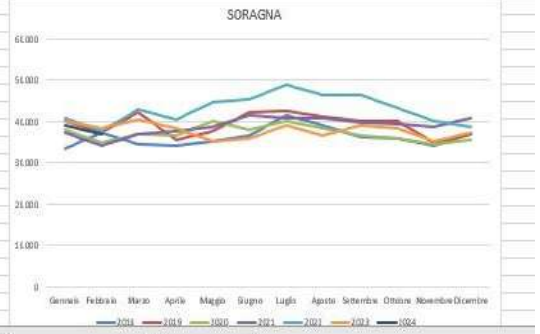












Emunto G. 2023 | Emunto G. 2022 | Emunto G. 2021 | Emunto G. 2020 | Emunto G. 2019 | Trend_Giornalieri | Perdite in Adduzione | ANALISI RAMI | Grafici_Mensili (2) | Analisi e Considerazioni

So to conclude…….

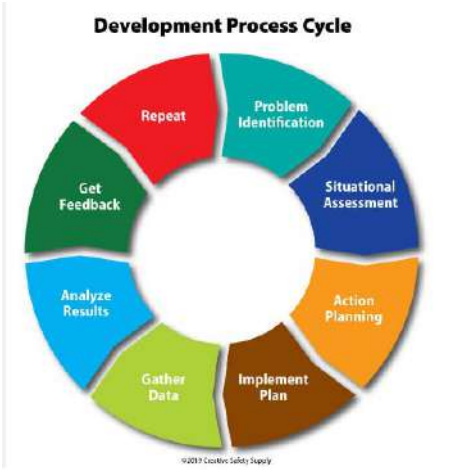
As we continue to confront the challenges of urbanization, climate change, and resource scarcity, investments in digital infrastructure will be essential to meet the growing demand for safe, reliable, and sustainable water resources.

THE PROJECT: CREATION OF THE DIGITAL TWIN OF THE WATERWORKS AND SEWERAGE SYSTEMS

2 OBJECTIVES:

EQUIP OURSELVES WITH AN INNOVATIVE TOOL TO SUPPORT:

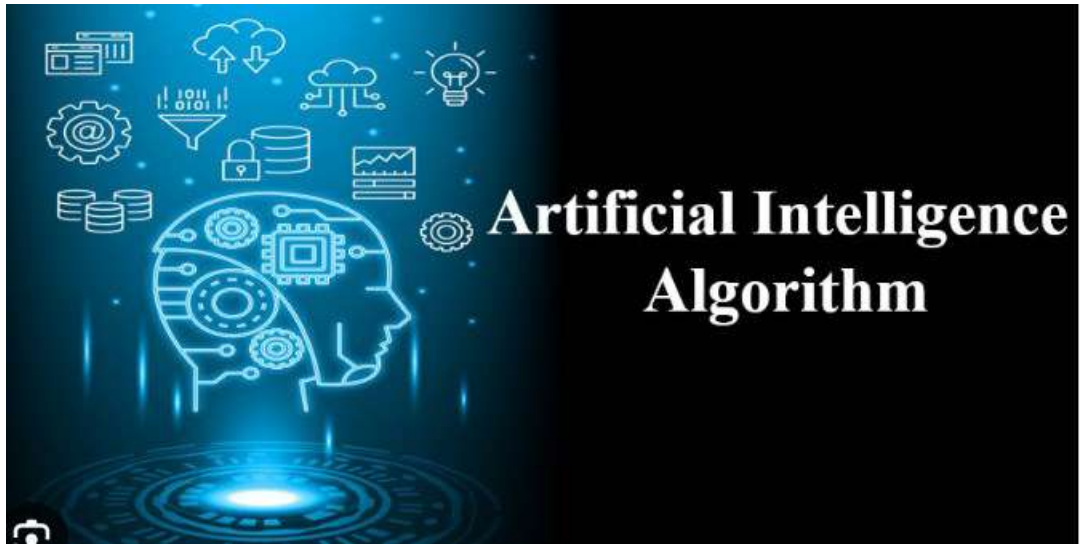
1. THE ORDINARY MANAGEMENT OF THE INTEGRATED WATER SERVICE: FOR EXAMPLE, SIMULATING OUTAGES OR SECTIONING OF THE NETWORKS FOLLOWING MAINTENANCE INTERVENTIONS, OR ANALYZING THE BEHAVIOUR OF THE NETWORK FOLLOWING ADDITIONAL COLLECTIONS/WITHDRAWALS (NEW RESIDENTIAL ALLOTMENTS OR NEW FIRE PREVENTION REQUESTS);



2. THE DEFINITION OF THE PLAN OF INTERVENTIONS NECESSARY FOR THE ELIMINATION OF STRUCTURAL CRITICALITIES, THE FURTHER DEVELOPMENT OF THE EXISTING INFRASTRUCTURE AND ITS MAINTENANCE (OPERATIONAL INVESTMENT PLAN).

THE PROJECT: CREATION OF THE DIGITAL TWIN OF THE WATERWORKS AND SEWERAGE SYSTEMS

FURTHERMORE...A LOOK AT THE FUTURE:



THE CREATION OF THE DIGITAL TWIN IS ALSO THE FIRST STEP TOWARDS PREDICTIVE MANAGEMENT OF THE EVOLUTION OF THE SYSTEM THROUGH THE APPLICATION OF ARTIFICIAL INTELLIGENCE ALGORITHMS. THE ULTIMATE OBJECTIVE IS TO OBTAIN A DASHBOARD OF INDICATORS OF THE TECHNICAL-ADMINISTRATIVE MANAGEMENT OF THE COMPANY ACCESSIBLE IN REAL TIME AND COMPLIANT WITH THE REQUESTS OF THE INDUSTRY AUTHORITY IN TERMS OF TECHNICAL AND COMMERCIAL QUALITY.

THE TWO PROJECTS: THE MAIN FEATURES

WATERWORKS

The project for **the hydraulic modelling of the WATERWORKS, district division of the network, analysis and research of water losses** was developed in 4 distinct steps, carried out from 2020 to 2023:

1. Hydraulic modeling;
2. Division into districts;
3. Search for leaks;
4. Development of a water plan for the waterworks.

Economic investment: approximately 1 million euros.

SEWERAGE

The project for the **development of the SEWERAGE PLAN using hydraulic modeling** developed in 3 steps, again in the period 2020-2023:

1. Topographic survey of the sewerage network;
2. Hydraulic modelling of the sewerage network for different Rainfall recurrence intervals/return period;
3. Development of a sewerage plan.

Economic investment: approximately 430 thousand euros.

HUMAN RESOURCES: BOTH PROJECTS WERE ENTRUSTED TO CONTRACTING COMPANIES - SET UP IN ATI (TEMPORARY ASSOCIATION OF COMPANIES)- UNDER THE DIRECTION OF THE COMPANY'S ENGINEERING DEPARTMENT, WHICH OVERSAW THE DESIGN.

PROJECT 1: HYDRAULIC MODELLING OF THE WATERWORKS SYSTEM

THE PROJECT WAS DEVELOPED INTO 4 DISTINCT STEPS:

1. HYDRAULIC MODELING;
2. SUBDIVISION INTO DISTRICTS;
3. LEAKS SEARCH;
4. WATERWORKS PLAN.

In details….

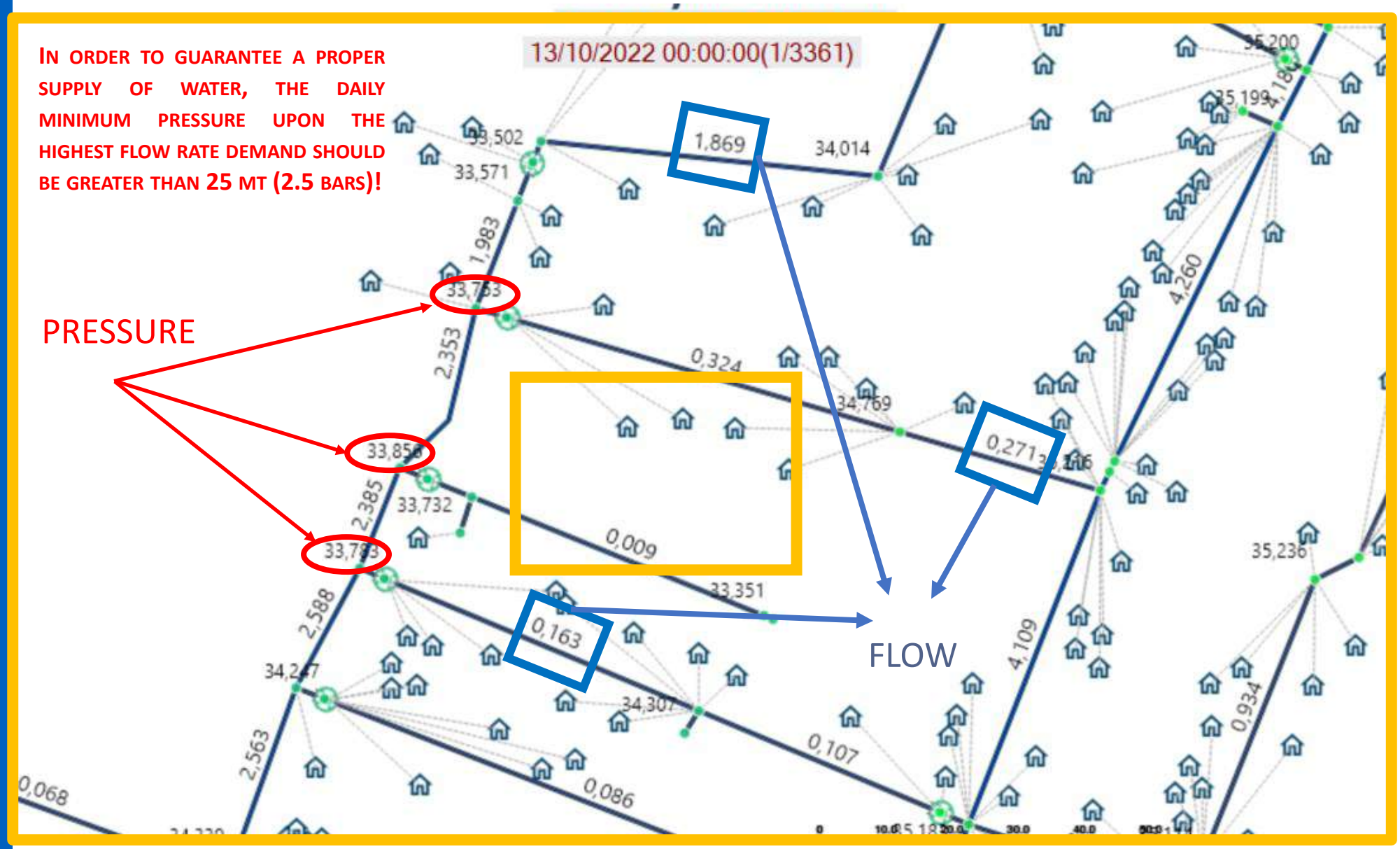
- Data collection (through the SIT – Territorial Information System-, remote monitoring and inspections);
- Construction of the preliminary model;
- Integration of missing networks and survey points;
- Installation of temporary tools for the implementation of a monitoring campaign;
- Calibration of the model on the data collected by the monitoring campaign;
- Simulation and verification of scenario correspondence with DHI's Mike+ software.

…. WE ARE GOING TO SHOW YOU THE RESULT!

PROJECT 1: HYDRAULIC MODELLING OF THE WATERWORKS SYSTEM

THE PROJECT WAS DEVELOPED INTO 4 DISTINCT STEPS:

IN ORDER TO GUARANTEE A PROPER SUPPLY OF WATER, THE DAILY MINIMUM PRESSURE UPON THE HIGHEST FLOW RATE DEMAND SHOULD BE GREATER THAN 25 MT (2.5 BARS)!



PROJECT 1: HYDRAULIC MODELLING OF THE WATERWORKS SYSTEM

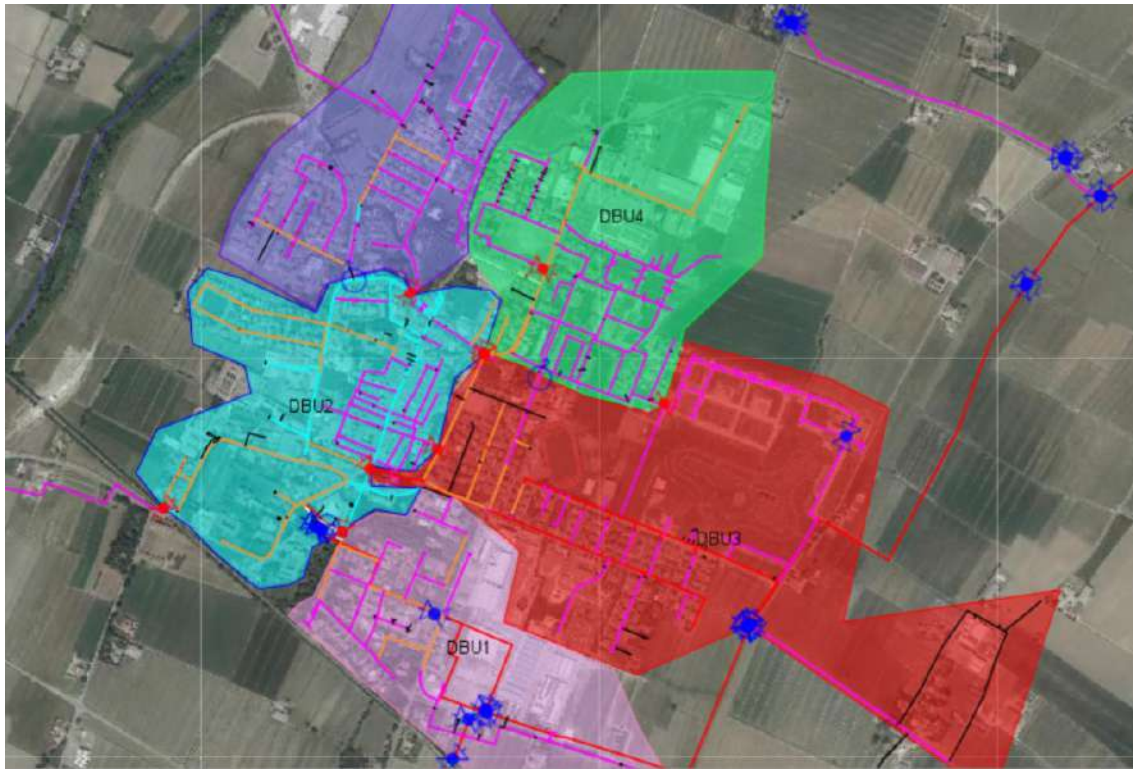
THE PROJECT WAS DEVELOPED INTO 4 DISTINCT STEPS:

FROM MODELLING…

1. HYDRAULIC MODELING;
2. SUBDIVISION INTO DISTRICTS;
3. LEAKS SEARCH;
4. WATERWORKS PLAN.

STEP 2: CREATION OF THE DISTRICTS

Subdivision of the network into districts, also called DMA (District Meter Area).
The ultimate objective is the rapid identification of problem areas, with the definition of intervention limits and the creation of water balances. Following the definition of the districts, the location of the users and the related consumption, the theoretical loss values attributable to each DMA were calculated and the objectives to be achieved for each area were defined.



PROJECT 1: HYDRAULIC MODELLING OF THE WATERWORKS SYSTEM

THE PROJECT WAS DEVELOPED INTO 4 DISTINCT STEPS:

FROM CREATION OF THE DISTRICTS….

1. HYDRAULIC MODELING;
2. SUBDIVISION INTO DISTRICTS;
3. LEAKS SEARCH;
4. WATERWORKS PLAN.

STEP 3: LEAKS SEARCH

Following the identification of the troublesome districts we performed field activities with instrumentation capable of locating the leaks with non-destructive methodologies (no excavation), using electro-acoustic equipment (such as geophone, recuperator, etc…).

PROJECT 1: HYDRAULIC MODELLING OF THE WATERWORKS SYSTEM

THE PROJECT WAS DEVELOPED INTO 4 DISTINCT STEPS:

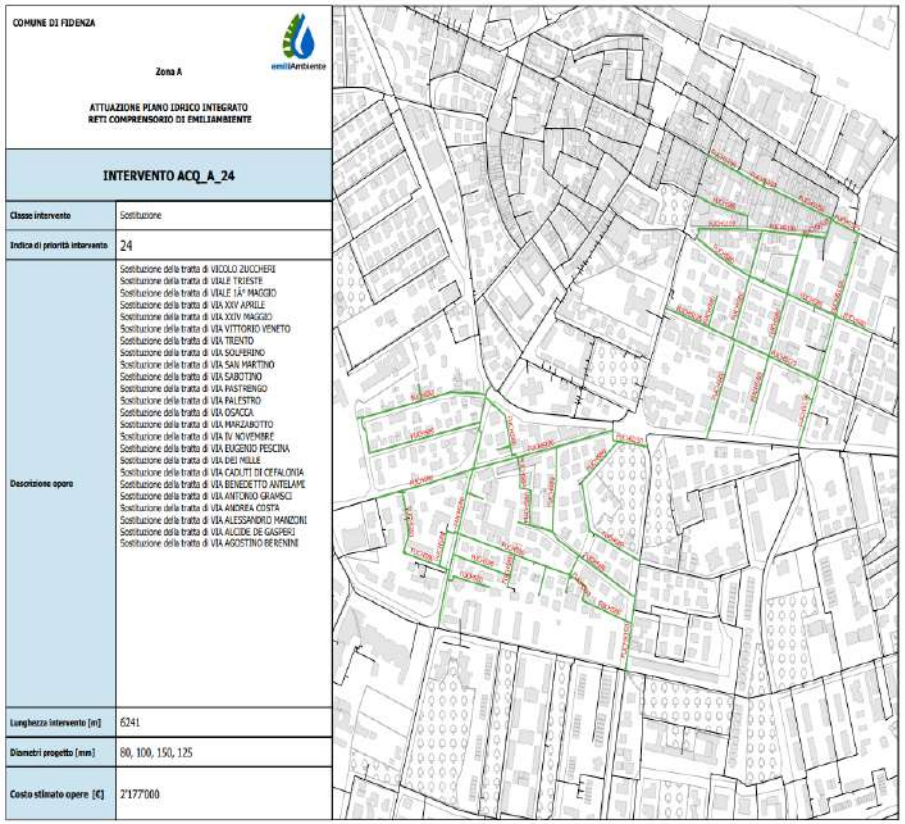
FROM LEAK SEARCH….

1. HYDRAULIC MODELING;
2. SUBDIVISION INTO DISTRICTS;
3. LEAKS SEARCH;
4. WATERWORKS PLAN.

STEP 4: DRAFTING OF THE WATERWORKS PLAN

In this phase, we identified the necessary interventions for each municipality in order to solve the detected hydraulic and environmental criticalities and to make the of the collection, supply and distribution system increasingly energy efficient (replacement of the oldest pipe sections, energy efficiency measures, maintenance/ replacement of hydraulic tools and parts).

We then assigned a priority factor to each intervention using the Multi-Criteria Analysis (MCA) for water pipes to support decision-making.

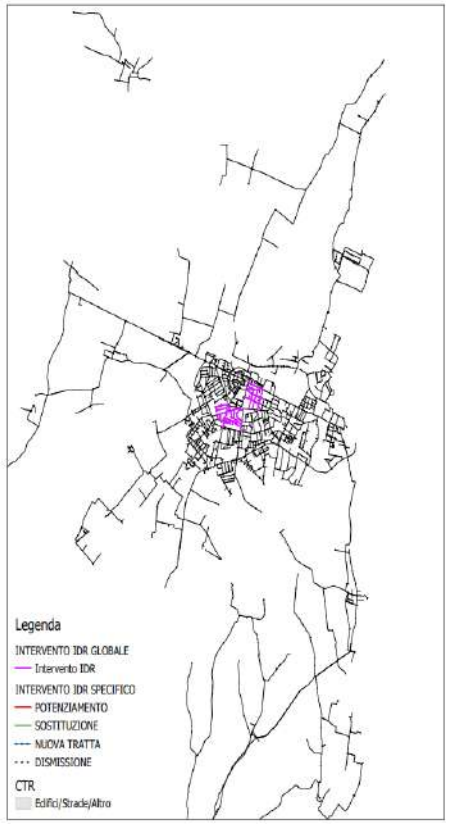

COMUNE DI FIDENZA

Zona A

ATTUAZIONE PIANO IDRICO INTEGRATO
RETI COMPRENSORIO DI EMILIAMBIENTE

INTERVENTO ACQ_A_24

Classe intervento	Sostituzione
Indice di priorità intervento	24
Descrizione opera	Sostituzione della tratta di VICOLO ZUCCHERI Sostituzione della tratta di VIALE TRIESTE Sostituzione della tratta di VIALE 1A° MAGGIO Sostituzione della tratta di VIA XXV APRILE Sostituzione della tratta di VIA XXIV MAGGIO Sostituzione della tratta di VIA VITTORIO VENETO Sostituzione della tratta di VIA TRENTO Sostituzione della tratta di VIA SOLFERINO Sostituzione della tratta di VIA SAN MARTINO Sostituzione della tratta di VIA SABOTINO Sostituzione della tratta di VIA PASTRENGO Sostituzione della tratta di VIA PALESTRO Sostituzione della tratta di VIA OSACCA Sostituzione della tratta di VIA MARZABOTTO Sostituzione della tratta di VIA IV NOVEMBRE Sostituzione della tratta di VIA EUGENIO PESCINA Sostituzione della tratta di VIA DEI MILLE Sostituzione della tratta di VIA CADUTI DI CEFALONIA Sostituzione della tratta di VIA BENEDETTO ANTELAMI Sostituzione della tratta di VIA ANTONIO GRAMSCI Sostituzione della tratta di VIA ANDREA COSTA Sostituzione della tratta di VIA ALESSANDRO MANZONI Sostituzione della tratta di VIA ALCIDE DE GASPERI Sostituzione della tratta di VIA AGOSTINO BERENINI
Lunghezza intervento [m]	6241
Diametri progetto [mm]	80, 100, 150, 125
Costo stimato opere [€]	2'177'000



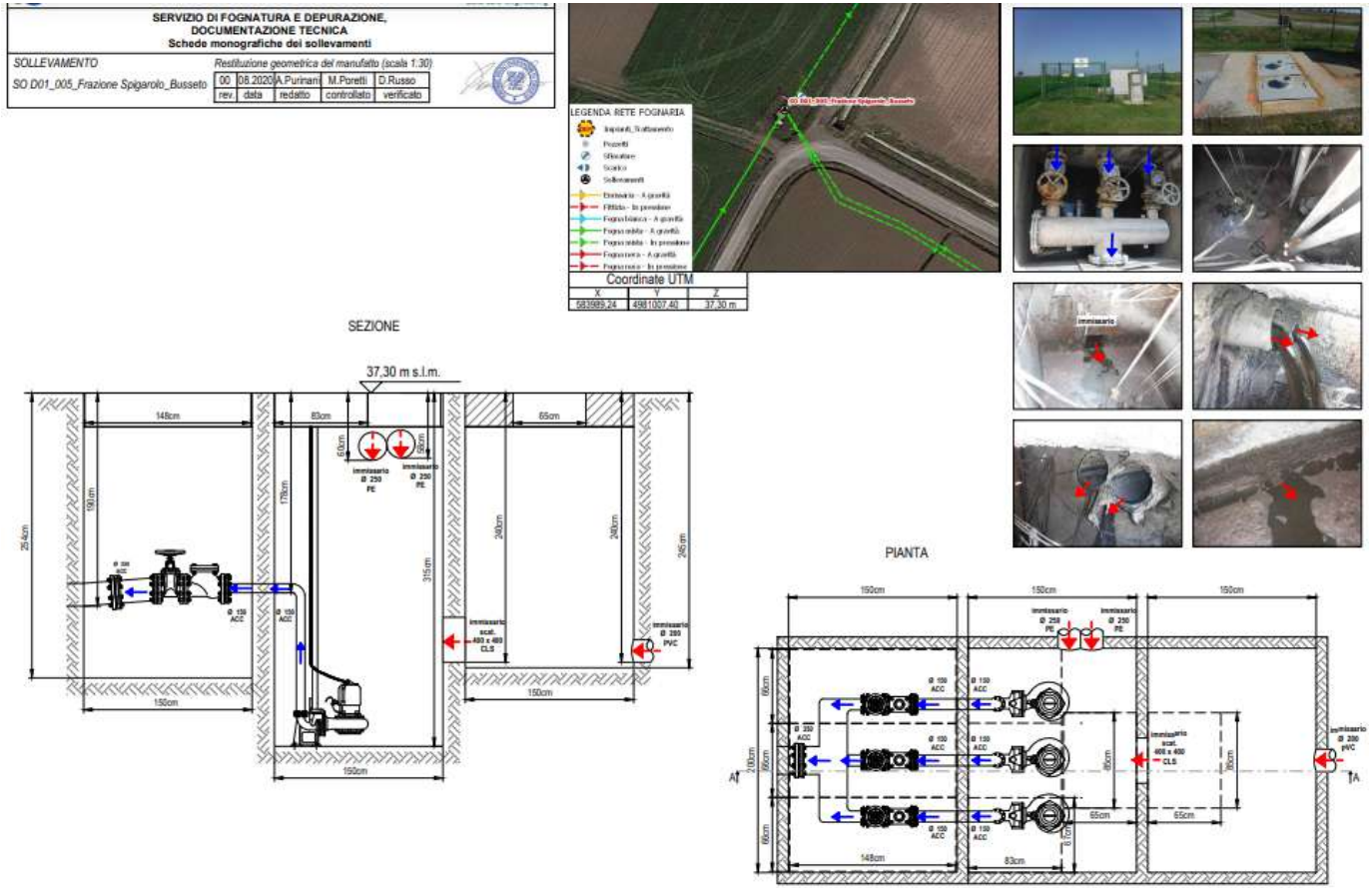
PROJECT 2: DEVELOPMENT OF THE SEWERAGE PLAN THROUGH HYDRAULIC MODELLING

THE PROJECT WAS DEVELOPED INTO 3 DISTINCT STEPS:

1. TOPOGRAPHIC SURVEY OF THE SEWERAGE NETWORK;
2. HYDRAULIC MODELLING OF THE SEWERAGE NETWORK FOR DIFFERENT RAINFALL RETURN PERIOD;
3. DEVELOPMENT OF A SEWERAGE PLAN.

Step 1: TOPOGRAPHIC SURVEY OF THE SEWERAGE NETWORK

- Topographic survey of the network (blackwater and wastewater);
- Survey of particular artefacts (culvert, etc.);
- Return of surveys in Shape format (also included in the Emiliambiente S.I.T.).



PROJECT 2: DEVELOPMENT OF THE SEWERAGE PLAN THROUGH HYDRAULIC MODELLING

THE PROJECT WAS DEVELOPED INTO 3 DISTINCT STEPS:

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2. HYDRAULIC MODELLING OF THE SEWERAGE NETWORK FOR DIFFERENT RAINFALL RETURN PERIOD;
3. DEVELOPMENT OF A SEWERAGE PLAN.

FROM TOPOGRAPHIC SURVEY…

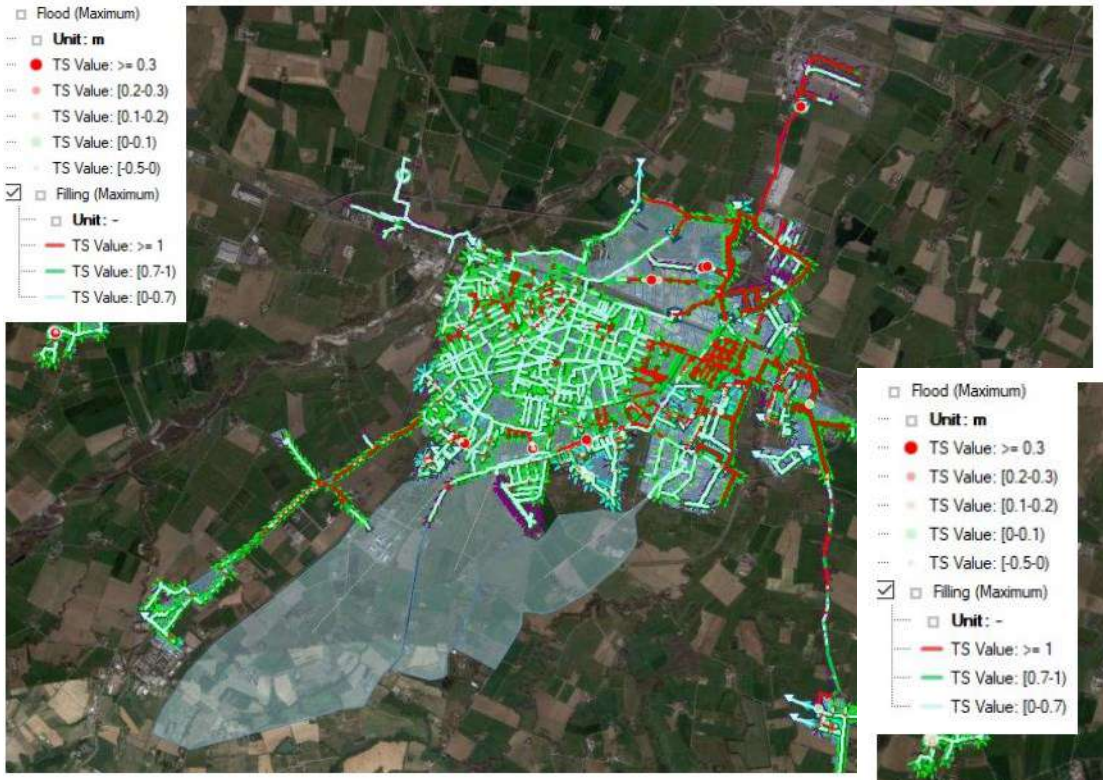
Step 2: Hydraulic modelling of the sewerage network for different rainfall return period;

- Construction of the preliminary model;
- Integration of missing networks and survey points;
- Installation of temporary tools for the implementation of a monitoring campaign;
- Calibration of the model on the data collected by the monitoring campaign;
- Simulation and verification of scenario correspondence with DHI's Mike+ software;
- Hydraulic modelling and model calibration for every Municipality.

…….WE ARE GOING TO SHOW YOU THE RESULT!

PROJECT 2: DEVELOPMENT OF THE SEWERAGE PLAN THROUGH HYDRAULIC MODELLING

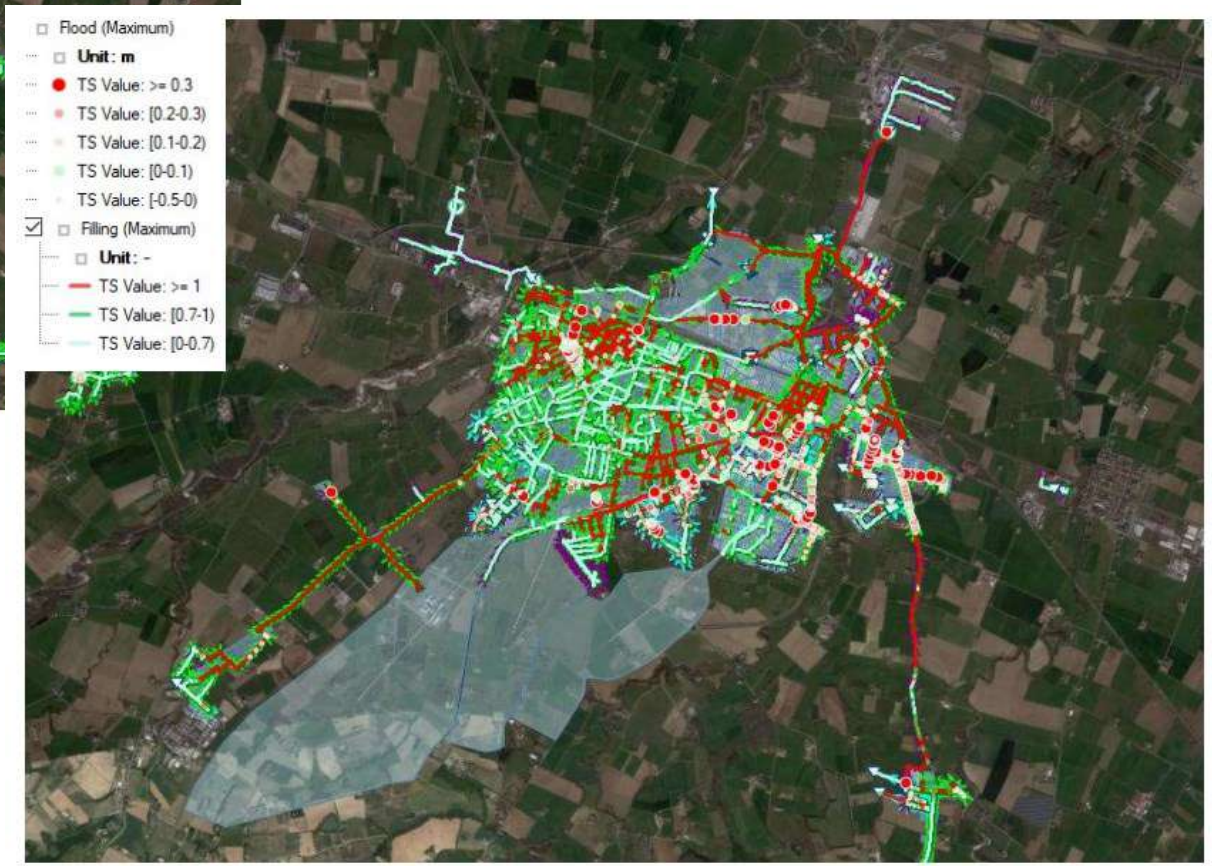
THE PROJECT WAS DEVELOPED INTO 3 DISTINCT STEPS:



RAINFALL RETURN PERIOD = 2 YEARS

SOME CRITICALITIES HAVE BEEN DETECTED ALREADY AFTER A RETURN PERIOD OF 2 YEARS IN THE ESTERN PART OF THE CITY, PROBLEMS THAT INCREASED FOR A RETURN PERIOD OF 10 YEARS IN OTHER PARTS OF THE CITY.

RAINFALL RETURN PERIOD =10 YEARS



PROJECT 2: DEVELOPMENT OF THE SEWERAGE PLAN THROUGH HYDRAULIC MODELLING

THE PROJECT WAS DEVELOPED INTO 3 DISTINCT STEPS:

FROM MODELLING…

1. TOPOGRAPHIC SURVEY OF THE SEWERAGE NETWORK;
2. HYDRAULIC MODELLING OF THE SEWERAGE NETWORK FOR DIFFERENT RAINFALL RETURN PERIOD;
3. DEVELOPMENT OF A SEWERAGE PLAN.

emiliAmbiente

STEP 3:
DEVELOPMEMT OF THE SEWERAGE PLAN AND IDENTIFICATION OF THE RELEVANT REMEDIAL INTERVENTIONS.

COMUNE DI SAN SECONDO PARMENSE
ATTUAZIONE PIANO FOGNARIO
RETI COMPRENSORIO DI EMILIAMBIENTE SPA
SCHEDA INTERVENTO

INTERVENTO SSP-08	
Descrizione sintetica	Potenziamento di un tratto di condotta lungo Via Verdi
Tipologia intervento	Eliminazione criticità idraulica
Indice di priorità intervento	8°
Aree interessate	Via Verdi
Descrizione opere	Potenziamento tratto di rete in Via Verdi - scatolare 100x200 CA
Obiettivi dell'intervento	Miglioramento delle criticità idrauliche nella zona in esame
Vincoli realizzativi	L'intervento può essere realizzato indipendentemente da altri
Lunghezza tratto [m]	510
Volume invaso [m³]	-
Costo stimato opere	€ 1'519'000.00

INTERVENTO SSP-08 - Planimetria di progetto.

THE RESULTS TO DATE:

1. USE OF MODELS IN ORDINARY MANAGEMENT: GREATER EFFICIENCY IN MANAGEMENT, DESIGN AND RESOLUTION OF CRITICAL ISSUES.

2. DEFINITION OF A PRIORITY INTERVENTION PLAN: BASED ON THE OUTCOMES OF THE TWO PROJECTS, PERMANENT TECHNICAL TABLES WERE CREATED DURING 2023 INVOLVING THE ADMINISTRATIONS OF ALL THE MUNICIPALITIES SERVED, WITH THE AIM OF DEVELOPING A JOINT STRATEGY FOR THE PLANNING OF STRUCTURAL INVESTMENTS AND THE SEARCH FOR THE NECESSARY FUNDING. THE TWO PROJECTS ALSO PROVIDED FUNDAMENTAL SUPPORT FOR THE DRAFTING OF THE 2024-2029 OPERATIONAL INVESTMENT PLAN.

…..AND FOR THE FUTURE:

THE COMPANY IS CONSIDERING A COLLABORATION WITH SCIENTIFIC PARTNERS WITH WHOM TO DEVELOP PREDICTIVE MANAGEMENT OF THE EVOLUTION OF THE SYSTEM THROUGH THE APPLICATION OF ARTIFICIAL INTELLIGENCE ALGORITHMS BASED UPON DIGITAL TWINS OF THE NETWORKS.

EXEMPLE:

- Model: tells us how the system should be (e.g. district X must consume 300 m3);
- Remote control system: it tells us in real time how the system actually is (e.g. district X actually consumes 500 m3);
- The software: connects the two systems, identifies any possible deviations and send out alerts.

THANK YOU FOR YOUR ATTENTION FROM ALL THE EMILIAMBIENTE'S STAFF!