



# FIG Working Week 2024

19-24 May

Accra, Ghana

Your World, Our World:  
Resilient Environment  
and Sustainable  
Resource Management  
for All

Presented at the FIG Working Week 2024,  
19-24 May 2024 in Accra, Ghana

## Real-Time Mapping of the Waterways Network and Sewers on Italian Territory (n.12502)

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*Consiglio Nazionale Italiano Geometri e Geometri Laureati*





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## Preface

Water is the primary good for excellence, fundamental for human life, the environment and the industries that surround us.





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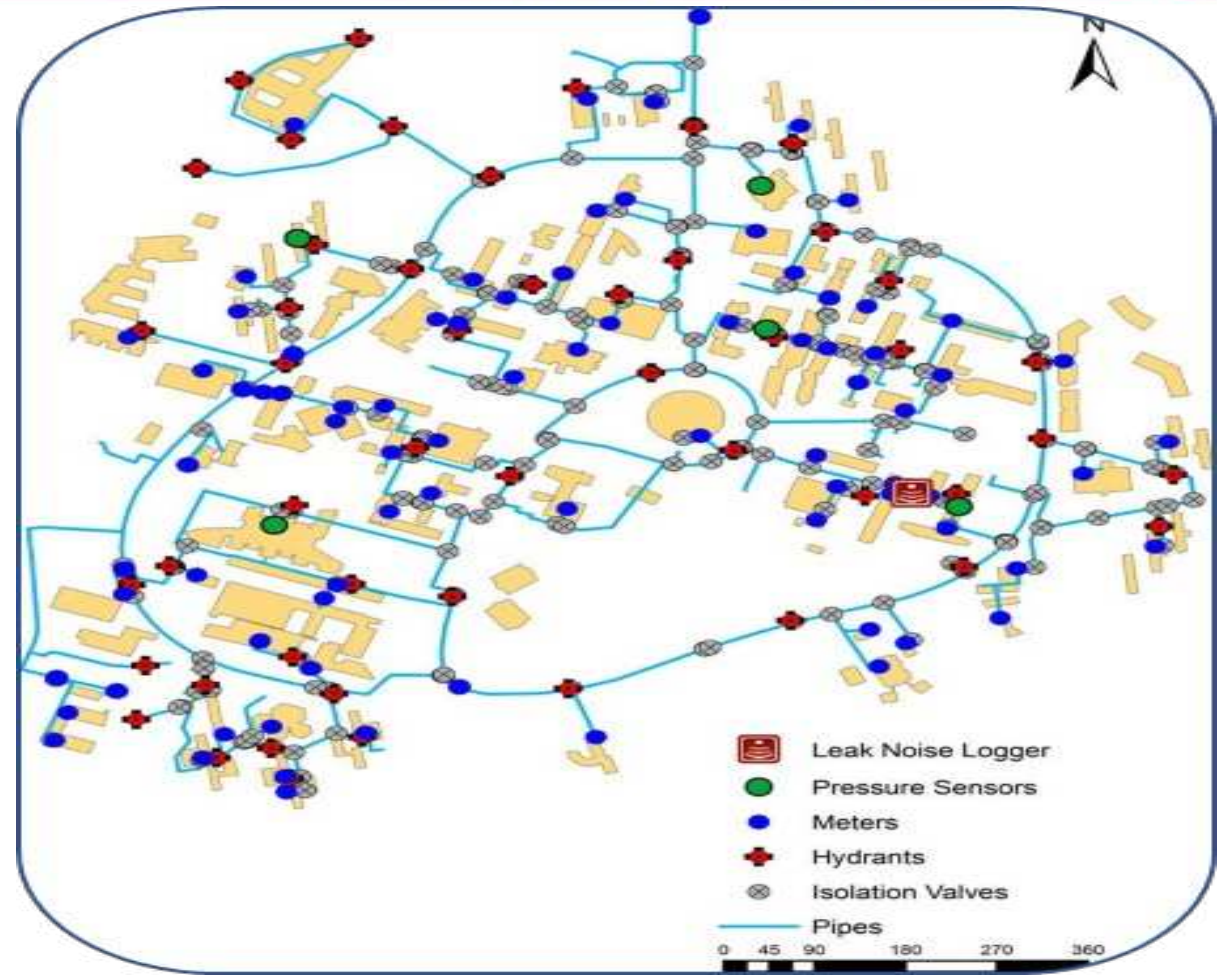
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## Introduction

In the office we create maps using a webGIS based on ESRI's ArcGIS in order to provide the contracting authority with an integrated mapping system that can be updated in real time at any time using ArcGIS and the support collector on tablets.





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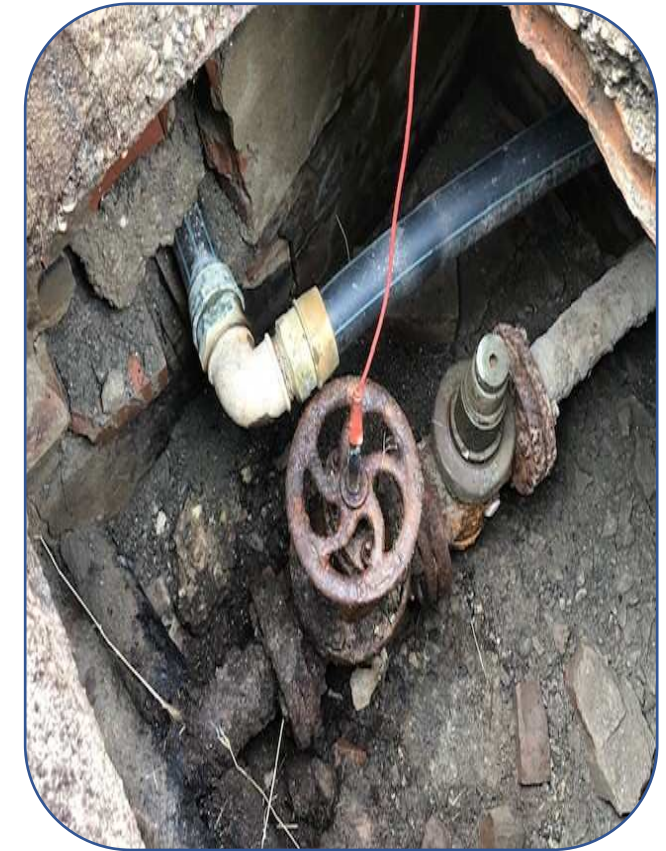
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## Water network survey and census and GIS-based return

In recent years, due to the increasingly significant problems caused by drought and following decrease in the available water resource, and increasing sensitivity has been created by service providers, who govern the integrated water cycle, towards a more accurate and punctual optimization of aqueduct networks. Hence, the idea of creating a cutting-edge company specializing in the field of surveying and mapping of the water network, with the simultaneous return of geometric dimensional and all other characteristics of the network, in order to create a unique and complete database to provide at the contracting client.





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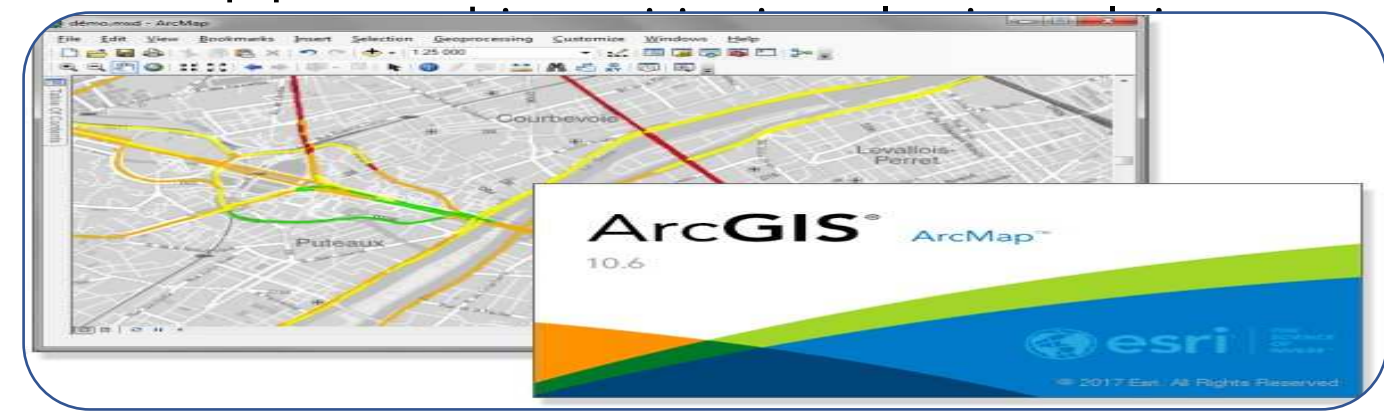
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## Methodologies for conducting surveys

The GIS chosen to elaborate the final data is ESRI ArcGIS, which offers numerous advanced features, such as simultaneous multi-operator detection, real-time monitoring and updating of the progress of the detection operations and subsequent updating, hydraulic modeling of the plug-in for processing flow rate controls and possible network expansion, as well as identification of the critical problems.

Relevant operations are carried out through the use of the latest generation pipe finders, for the identification of the pipe in real time, and GPS instrumentation with RTK correction for



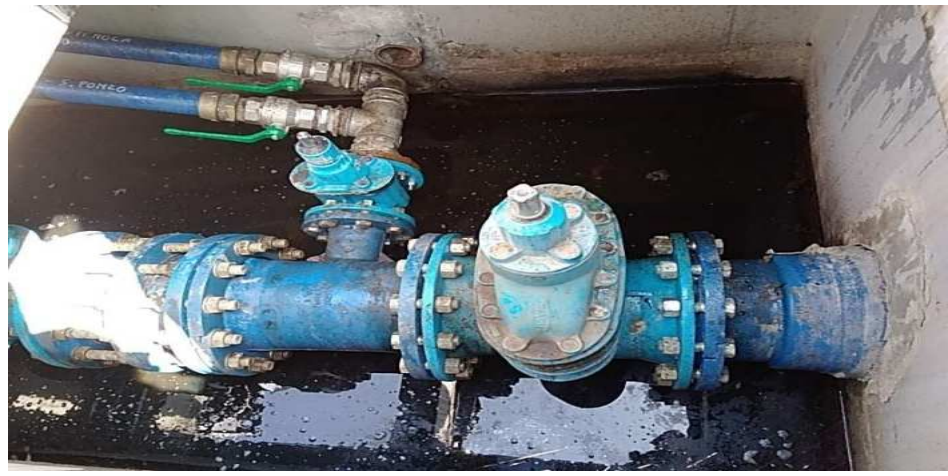
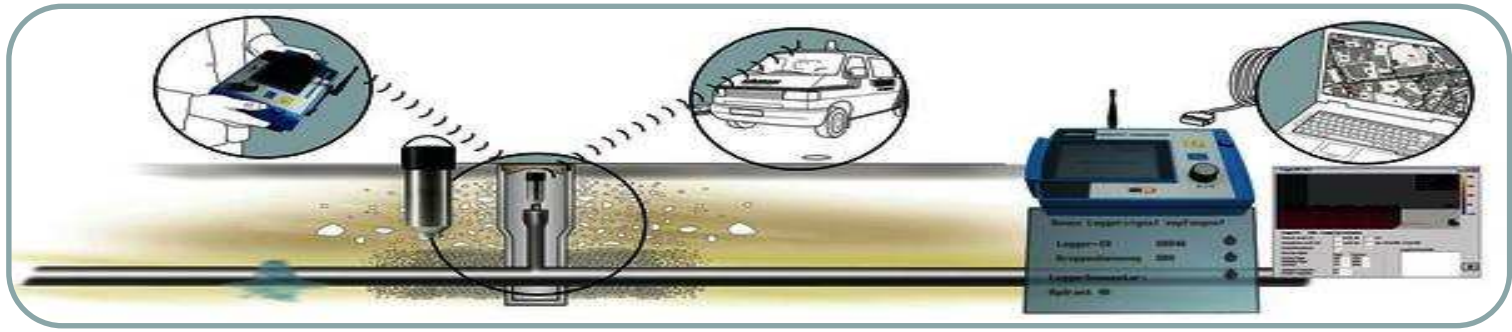


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## Final product and return

During the mapping of course monographs of the well are made with the population of all the information acquired, also communicating promptly to the contracting authority all the anomalies found



as leaks or



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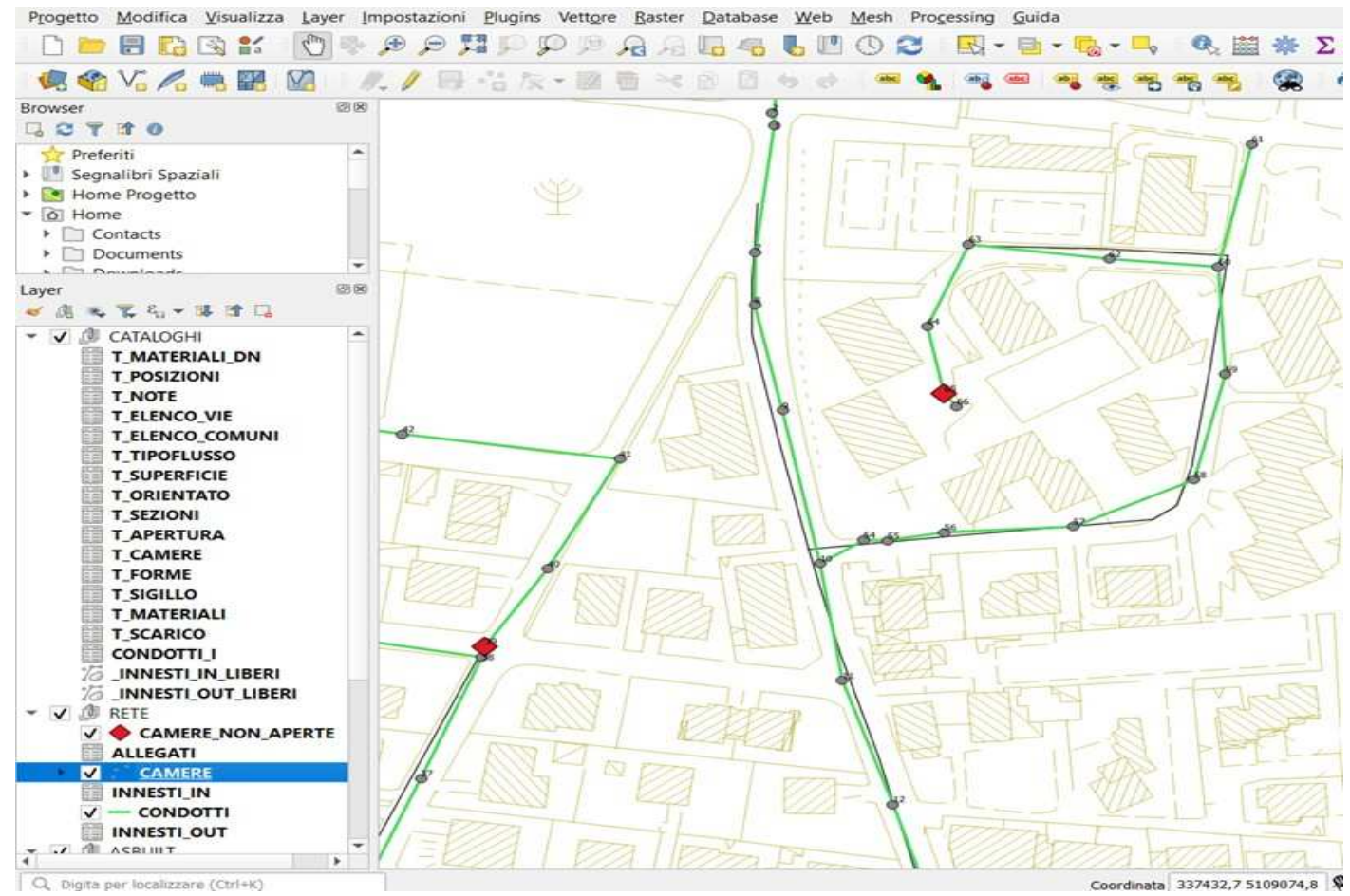


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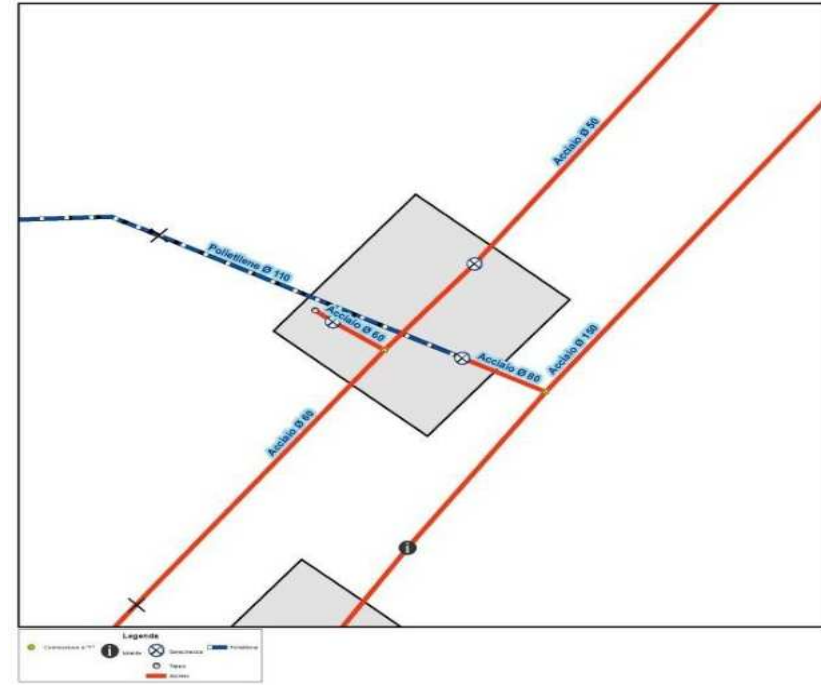
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Monografia Pozzetto Rete Idrica  
Comune di Albizzate Codice Pozzetto: PZ23

Data Rilievo: 01/07/2018 09.14.14  
Via/Piazza: Via San Giuseppe  
Civico più prossimo:  
Tipo di manto: Asfalto  
Coordinata UTM32 Nord Mt: 5063190,3012  
Coordinata UTM32 Est Mt: 484506,0883  
Quota S.l.m. Mt: 330,878967  
Note Camera:  
Note Generali:

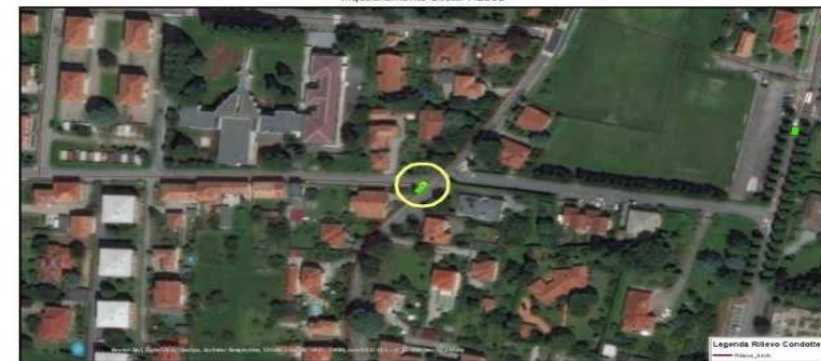
Dati Chiusino di accesso		Dati Camera	
Posizione: In quota		Stato: Buono	
Materiale: Ghisa		Larghezza cm: 125	
Forma: Rettangolo		Lunghezza cm: 137	
Larghezza o Diametro cm: 52		Profondità da p.c. Mt: 1,16	
Lunghezza cm: 72		Presenza Scala Interna: Non presente	
		Pulizia: Presenza di acqua e sedimenti	

Pianta Scala 1:25



Monografia Pozzetto Rete Idrica  
Comune di Albizzate Codice Pozzetto: PZ23

Inquadramento Scala 1:2000



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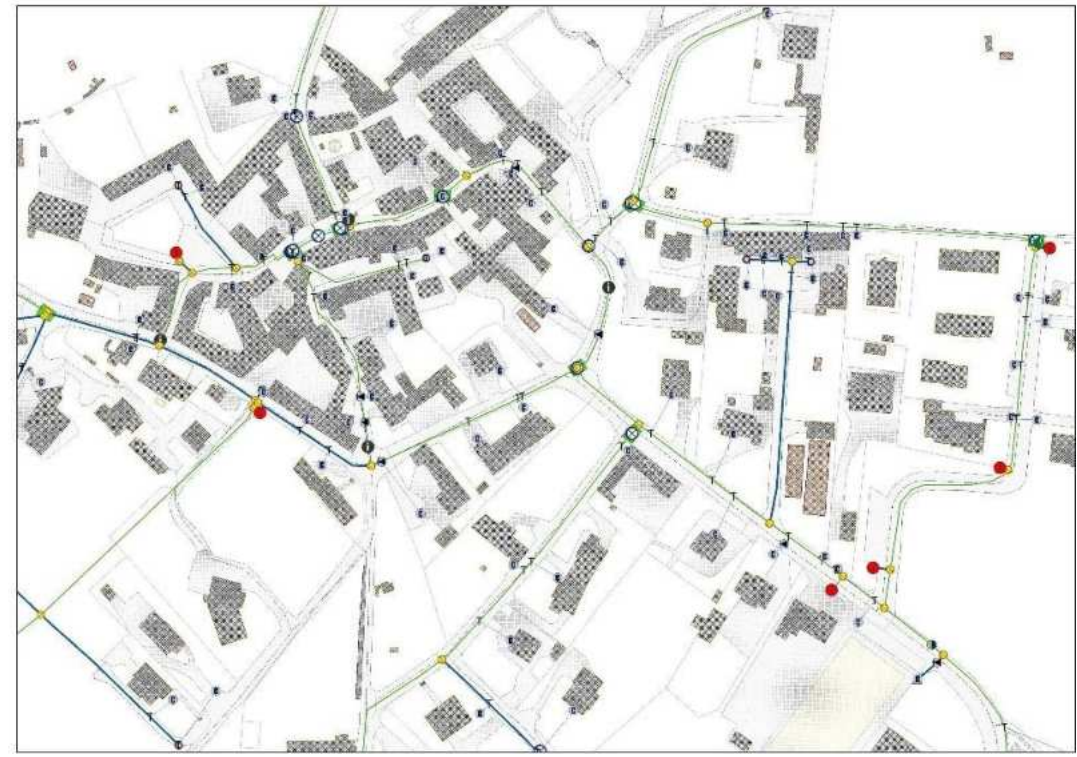
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- Legend**
- Altri veicoli
  - Pressa Adiacenti
  - T TTT Alloggiamento
  - Cimitero
  - Rilievo\_Arcati
  - Altri veicoli
  - ⊗ Sorgente
  - Pozzo
  - Gattone
  - Punto di profilo
  - Installo separatore e lavorazione scoti
  - Pompa
  - Filadelfia
  - Filadelfia a T
  - Riduttore di pressione
  - Guano elettrico
  - Connessione a TTT
  - Neco di transizione tra materiali
  - Curvo
  - Congiunzione con tubo guaina
  - Collegamento con rete acqua normale
  - Connessione a "X" (Cruce Agese)
  - Scarico (scarico in foglio Agese)
  - Flange
  - Connessione rete provinciale
  - Disostruzione
  - Scarico
  - Doccia (tratto tra rilievi/vali purificati)
  - Scarico a coto tris
  - Interconnessione rete comunale
  - Fioriera
  - Bifera
  - Serratura
  - Valvola
  - Tapco
  - Corridoio con strada doganiera
  - Rilievo\_Arcati**
  - Da rilevare
  - Attendibilità**
  - rilevato con strumentazione
  - da storico
  - rilevato infortunamento
  - rilevato visivamente
  - Rilievo\_Camerata
  - Grafo\_Stradale**
  - «all other values»
  - VERIFICATA**
  - S
  - Rilievo\_Arce
  - Area\_Camerata

Stralcio restituzione comune di Crosio della Valle  
Scala 1:1000





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**THANK YOU**

**GRAZIE**

**REFERENCES/CONTACTS**

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## SUSTAINABLE DEVELOPMENT GOALS

International Federation of Surveyors supports the Sustainable Development Goals

# Commission 3

## Commission 3

Serving Society for the Benefit of People and Planet

