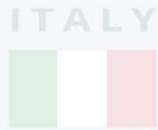


SUNWATER

SUstainable **WATER** supply networks in Mediterranean touristic areas

Interreg V-A Greece-Italy Programme



Δ.E.Y.A.Z.



SUNWATER: challenges and vision

Common Methodology & Tools for Sustainable WDNs



Pilot networks



GREECE



Monte Sant'Angelo

Kerkyra

Igoumenista



nia



Castelnovo della Daunia



Katastari (Zante)

Ke

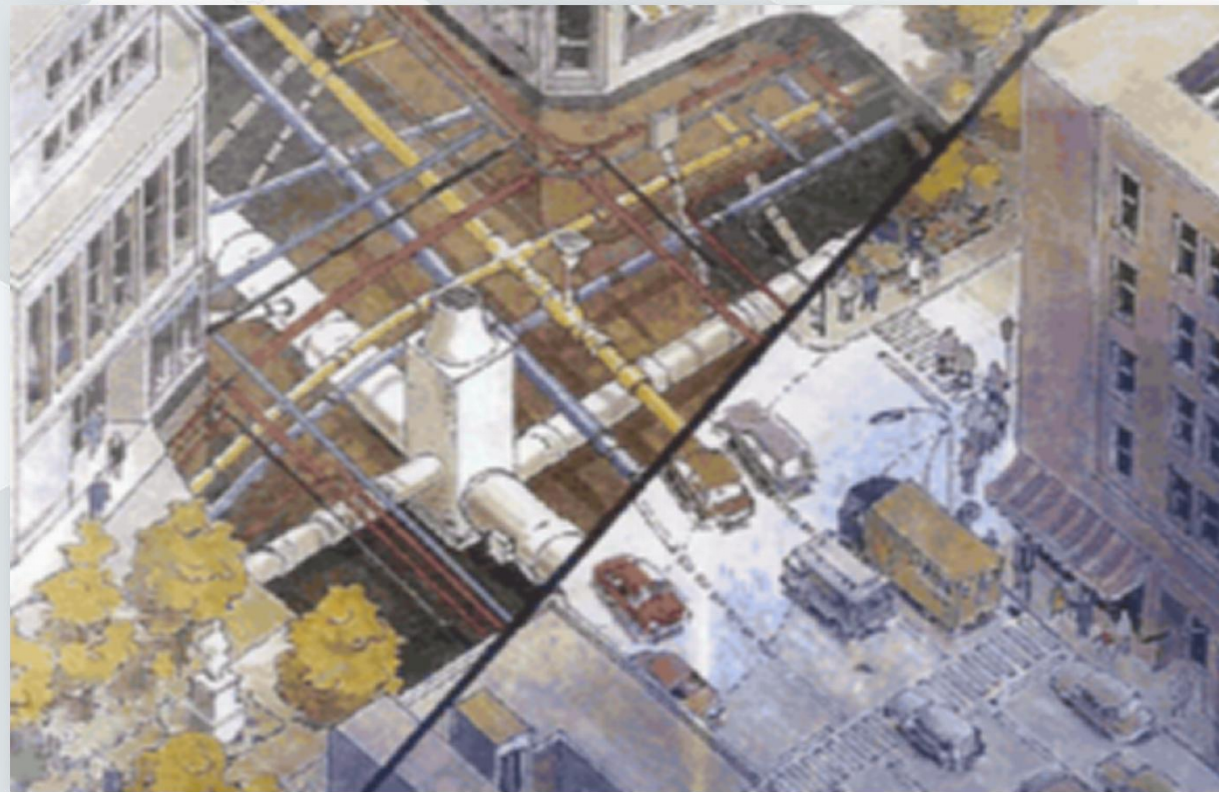
Achaia

leia

SUNWATER: challenges and vision

Common Methodology & Tools for Sustainable WDNs

- ✓ **Assess current status of urban aqueducts**



SUNWATER: challenges and vision

Common Methodology & Tools for Sustainable WDNs

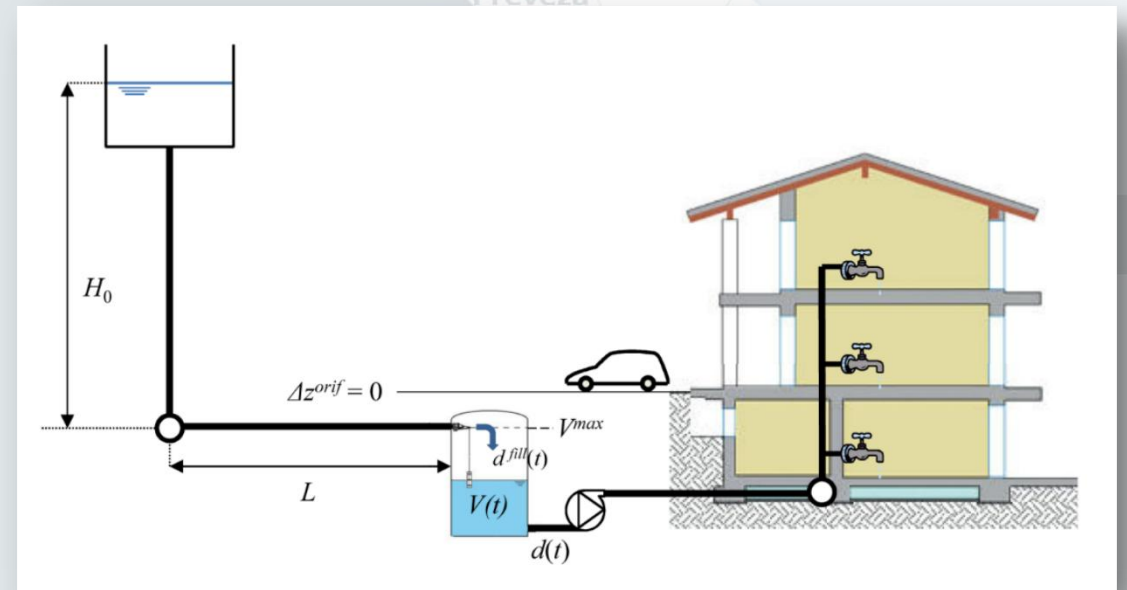
- ✓ Assess current status of urban aqueducts
- ✓ Seasonal networks (touristic areas)



SUNWATER: challenges and vision

Common Methodology & Tools for Sustainable WDNs

- ✓ Assess current status of urban aqueducts
- ✓ Seasonal networks (touristic areas)
- ✓ Private tanks “in-line”



SUNWATER: challenges and vision

Common Methodology & Tools for Sustainable WDNs

- ✓ Assess current status of urban aqueducts
- ✓ Seasonal networks (touristic areas)
- ✓ Private tanks “in-line”
- ✓ Water Losses



SUNWATER: challenges and vision



Sinchronize GIS, private consumption data and hydraulic model

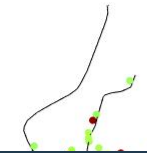


Advanced hydraulic modelling of urban aqueducts

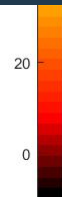
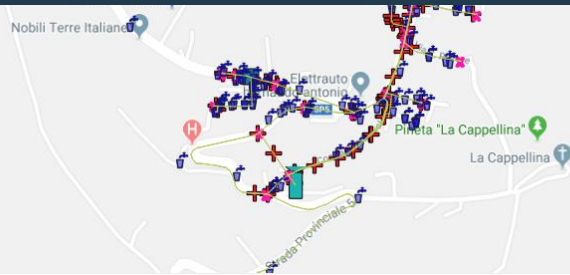
Average Nodal Pressure at Consumers



MODEL DISCONNECTED/CLOSED PIPE



Digital Twin of a Water Distribution Network



Ho

Zakynthos

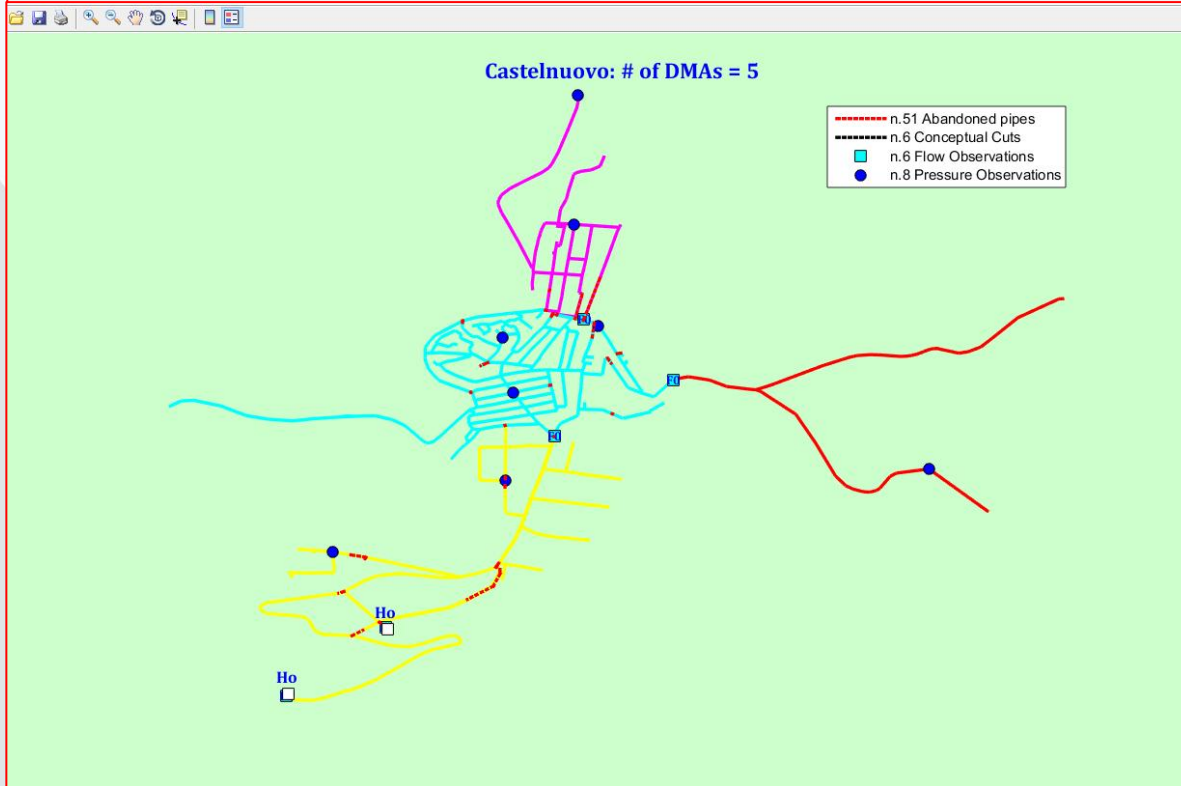
X-Y-Z

SUNWATER: challenges and vision

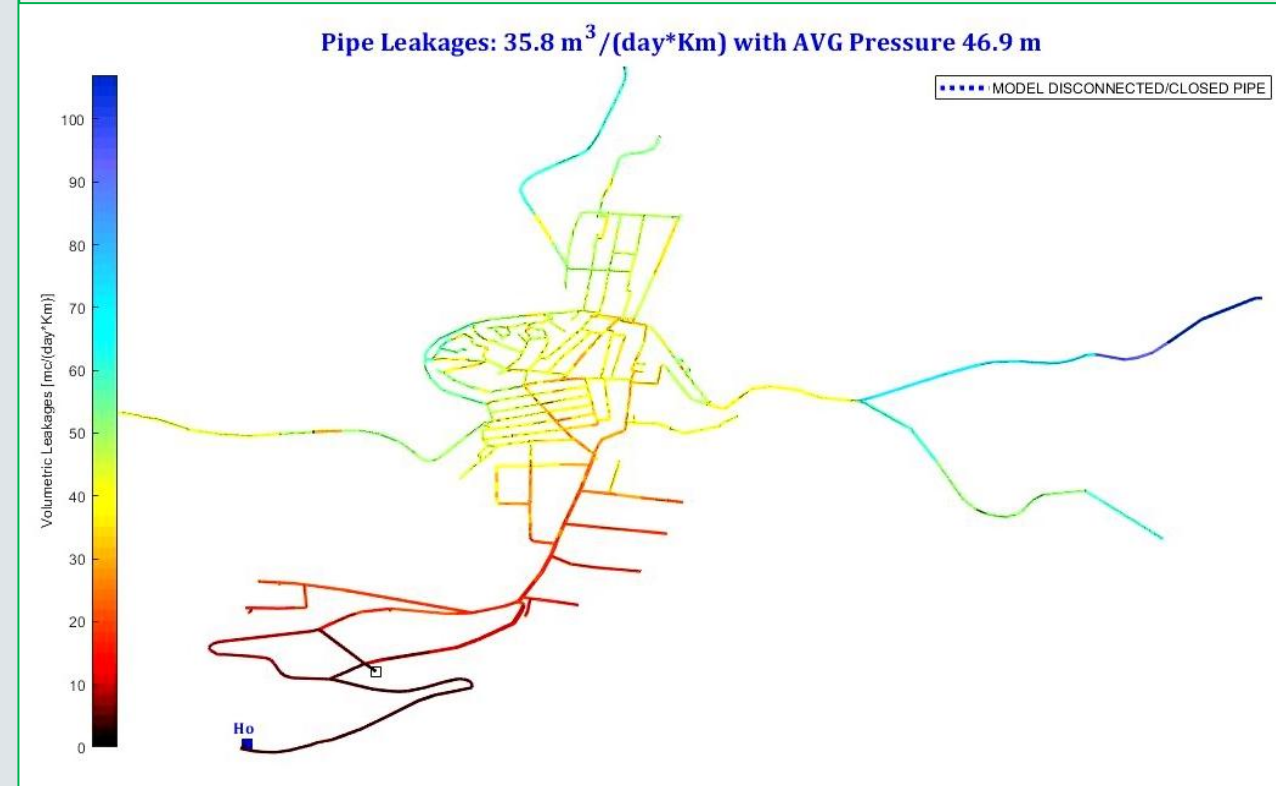


Foggia

Design of District Metered Areas



Pipe replacement planning



Kefallinia

Digital Water Services

Digital Water Services

Digital Water Rehabilitation



Layer

- ✓ Apulian-Two Digital Twin
 - network_name
 - pipes
 - nodes
 - pipes_topology
 - nodes_consumers
 - coords
 - pipes_vertices
 - coords_vertices
 - ✓ tank
 - ✓ reservoir
 - pipes_label
 - nodes_label
- ✓ Apulian-Two Devices
 - ✓ device_closed_gate
 - device_IVS
 - device_flow_meter
- ✓ Apulian-Two Asset Data
 - ✓ asset_data
 - ✓ M1a < 15
 - ✓ 15 < M1a < 25
 - ✓ 25 < M1a < 40
 - ✓ 40 < M1a < 60
 - ✓ M1a > 60
- ✓ Apulian-Two Rehabilitation
 - rehabilitation_data
 - replaced_pipes
 - rehabilitation_results
- ✓ Basemap
 - ✓ Google Maps

Rehabilitation Priors:

<input type="text"/>	total length [km]	<input type="text"/>	leakages reduction [mc/day]
<input type="text"/>	total cost [Kcurrency]	<input type="text"/>	leakages reduction [%]

Rehabilitation Expected:

<input type="text"/>	normal daily volume before replacement [mc]	<input type="text"/>	reduction of daily average net pressure [m]
<input type="text"/>	M1 before replacement [mc/day*Km]	<input type="text"/>	expected leakage reduction [%]
<input type="text"/>	daily average net pressure before replacement [m]	<input type="text"/>	daily average net pressure reduction [%]
<input type="text"/>	daily volume after replacement [mc]	<input type="text"/>	deterioration reduction [%]
<input type="text"/>	M1 after replacement [mc/day*Km]	<input type="text"/>	replaced pipes in Length [%]
<input type="text"/>	daily average net pressure after replacement [m]	<input type="text"/>	replaced pipes in Cost [%]
<input type="text"/>	reduction of daily volume [mc]	<input type="text"/>	efficiency of replacement in Length [-]
<input type="text"/>	reduction of M1 [mc/day*Km]	<input type="text"/>	efficiency of replacement in Cost [-]

Buttons: Run Rehabilitation, Show Digital Twin

Map Labels: Strada Provinciale 5, Via Sire, La Locanda del Convento, Pizza & Sfrutt, Ad Maiora - Ristorante delle Terme, Castello nuovo, Mai di Lu... di Lina Fari..., Centro P... SP6, Cimitero di C..., Cappellina, B&B Bed Haus di Caputo Paolo, MACELLERIA POLZELLA, Clinica Privata "Leonardo De Luca" - Casa di Cura, Ufficio Del Giudice Di Pace, Arredi Nardelli.

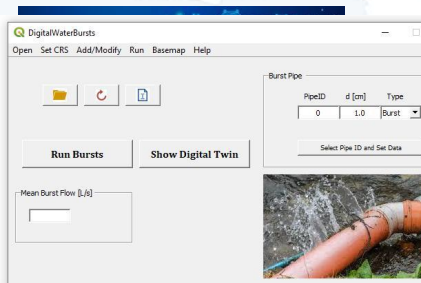
Status Bar: Coordinate 2528852,4604206 | Scala 1:9570 | Lente d'ingrandimento 100% | Rotazione 0.0° | Visualizza | EPSG:3004

Digital Water Services

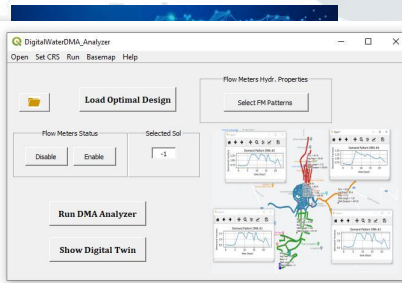


Foggia

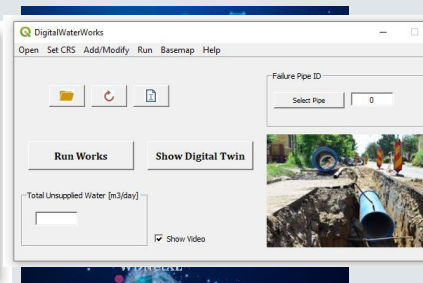
Barletta
Andria
Trani



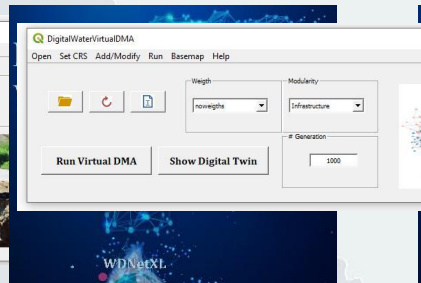
BURSTS ANALYSIS



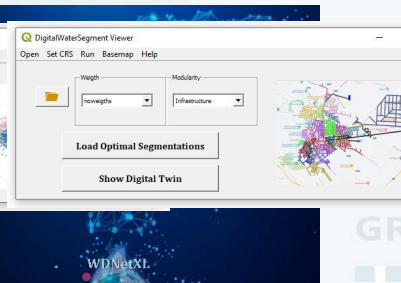
DMA ANALYZER



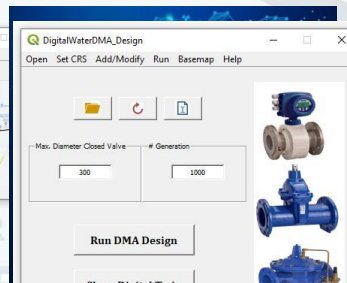
WORKS ANALYSIS



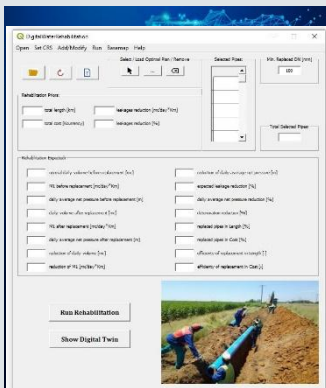
VIRTUAL DMA DESIGN



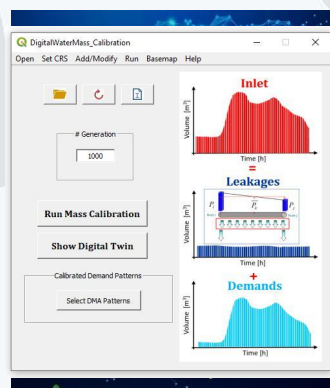
SEGMENT VIEWER



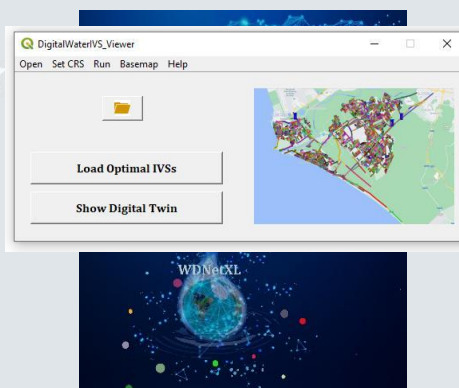
DMA DESIGN



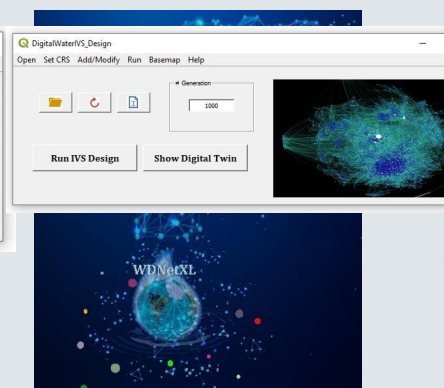
REHABILITATION PLANS



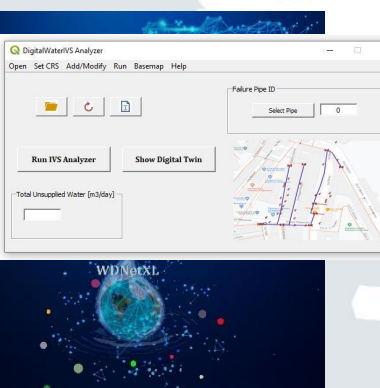
MASS CALIBRATION



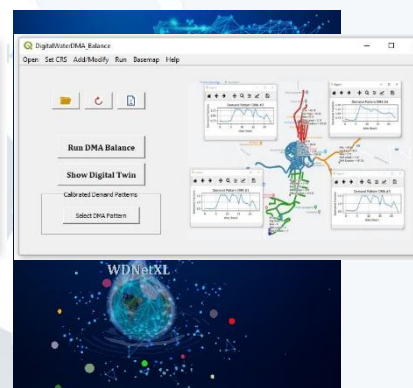
IVS VIEWER



IVS DESIGN



IVS ANALYZER



DMA BALANCE