Interreg Baltic Sea Region

Co-funded by the European Union

SUSTAINABLE WATERS WaterMan

Overview of the pilot status

Recycling water from a public indoor swimming pool

Braniewo Municipality

Gdańsk University of Technology

30 April 2025

WP- 2 PILOTING

WaterMan pilot actions in Braniewo (Poland)

- 2.2 Pilot measure / recirculation of retained water: **Urban raingarden at public swimming pool**
- 2.3 Pilot measure / reuse of treated water: **Reuse of public swimming pool water**
- 2.4 Local model strategy: **Municipal water re-use strategy**

Responsible Project Partner:

Braniewo Municipality (PP 5)

Gdansk University of Technology (PP7),
Faculty of Civil and Environmental Engineering

[Source: geoportal.gov.pl]

Location:

Łąkowa 1 Street, **Braniewo**, Poland

[Source:mos.braniewo.pl]

Municipal Sports Center „Zatoka”

Recreation & Rehabilitation Complex „Healthy Braniewo”

Infrastructure:

- **Indoor pool complex:**
  - sport swimming pool
  - leisure pool with wading pool
  - SPA bath

- **Wellness facilities:**
  - sauna rooms (x2)
  - gym
  - massage parlour
  - rest zone
  - tanning beds

Reuse of pool waters – technical data

Indoor pool complex:

- **Water purification technology:**

coagulation ⇨ filtration ⇨ chlorination (NaOCl)

- **3 separate water treatment circuits**
  - sport swimming pool
  - leisure pool with wading pool
  - SPA bath

FOR REUSE:
➢ **rinse water from filters**

[Source:mos.braniewo.pl]

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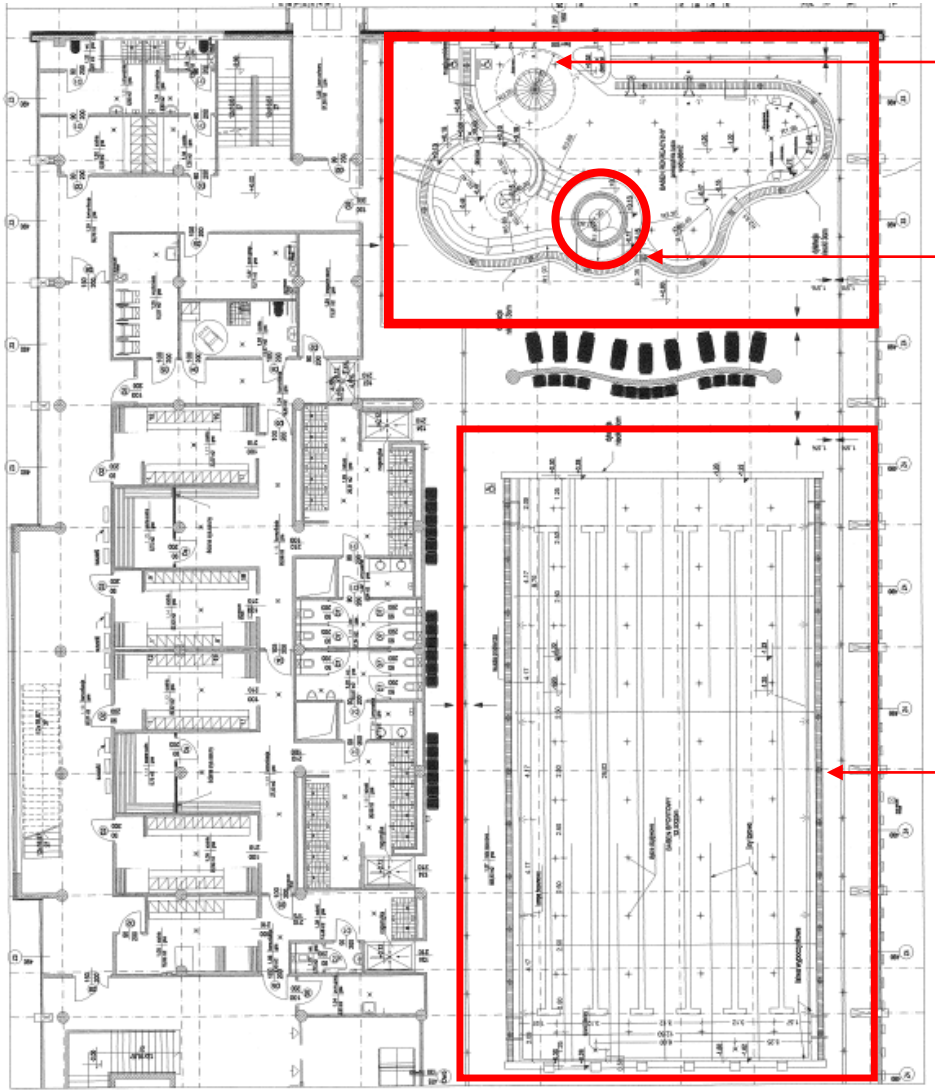
2.3 Pilot measure / reuse of treated water: Reuse of public swimming pool water

Technical data: characteristics of pools



Leisure pool: V= 100 m^3
A = 86 m^2
T_{max} = 30°C

SPA bath: V= 10.0 m^3
A = 2.5 m^2
T_{max} = 34°C

Sport swimming pool:
(L:25 x W:12.5 x D:1.2-1.8m)
V= 469 m^3
A = 312.5 m^2
T_{max} = 28°C

[Source:mos.braniewo.pl]

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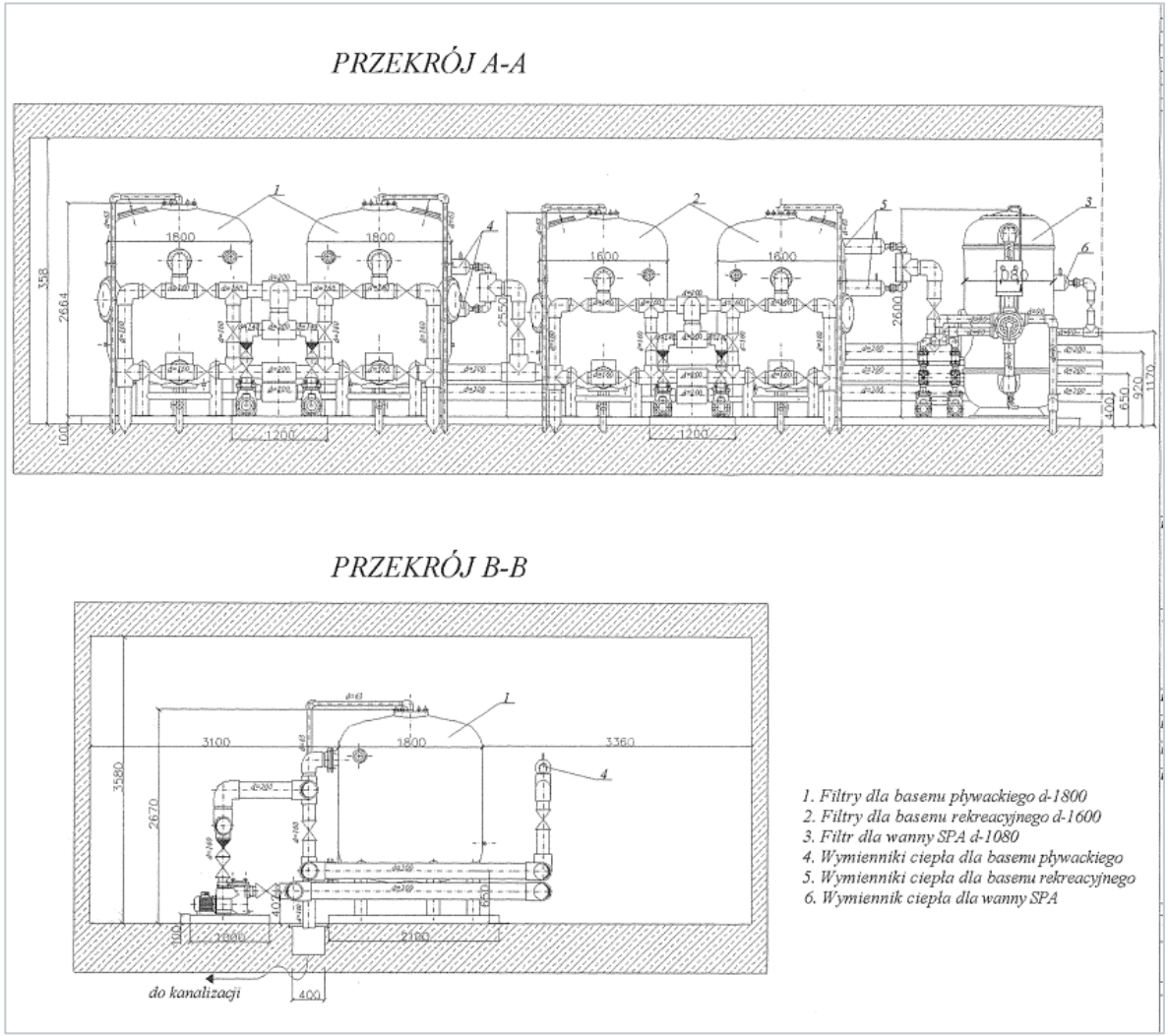
2.3 Pilot measure / reuse of treated water: Reuse of public swimming pool water

Technical data (indoor pool complex): water filters and heat exchangers



Water filters:

1. Sport swimming pool filter
2. Leisure pool filter
3. SPA bath filter

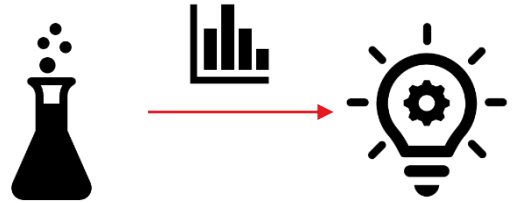
Heat exchangers for:

4. sport swimming pool
5. leisure pool
6. SPA bath

Development of water reuse technology

Suggested unit processes:

- dechloration
- removal of oxidation by-products
- odor removal



Adaptation of technology after laboratory tests: to be performed

According to legal requirements:

- ✓ *Regulation (EU) 2020/741 of the European Parliament and of the Council of 25 May 2020 on minimum requirements for water reuse*
- ✓ *Regulation of the Minister of Health of 9 November 2015 on the requirements that should be met by swimming pool wate [Journal of Laws of the Republic of Poland 2015, Item 2016]*

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2.3 Pilot measure / reuse of treated water:
Reuse of public swimming pool water

30 m³/d

water supply
from the municipal network


[Source:Braniewo Municipal Waterworks Ltd.]

Before implementation of the WaterMan pilot solution:

wastewater
from showers and toilets

pool water ***overflow***

filter rinsing ***wastewater***

15 m³/d | 4÷5 m³/d | 10÷11 m³/d


[Source:Braniewo Municipal Waterworks Ltd.]

discharge into the sewage system (100%):
30 m³/d

1. ***Wastewater*** *from showers and toilets and pool water* ***overflow*** *are combined within the Basin and discharged through a* ***common sewage system -*** *directing the pool water overflow to the pilot requires reconstruction of the sewage system in the swimming pool building*

2. ***Filter rinsing wastewater*** *is discharged from the swimming pool building by a* ***separate sanitary collector*** *- it can be easily directed to the pilot*

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water supply from the municipal network

After implementation of the WaterMan pilot solution:

wastewater *from showers and toilets*

pool water ***overflow***

filter rinsing ***wastewater***

15 m³/d

4÷5 m³/d

4÷6 m³/d

4÷5 m³/d

discharge into the sewage system

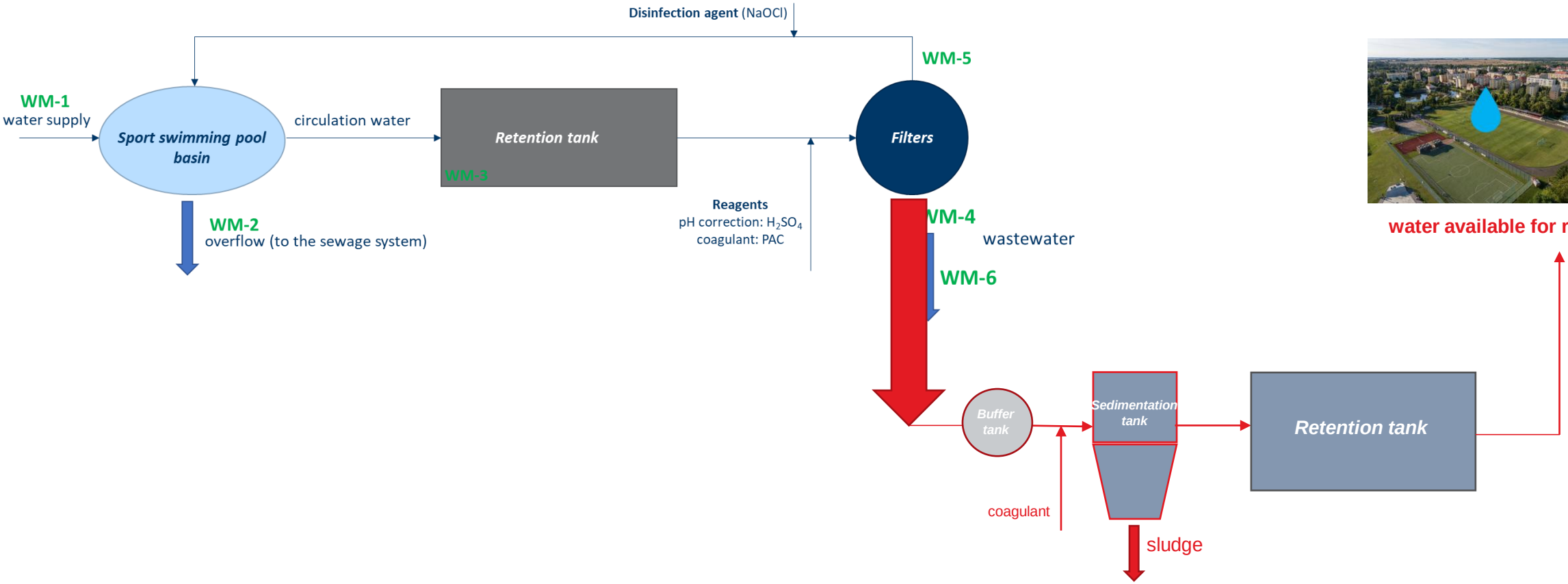
Reuse of treated wastewater:

- *flushing the sewer system in Braniewo: ap. 3 m³/d (all year round)*
- *watering urban greenery (vegetation period)*
- *watering of plants by residents (vegetation period)*
- *…… (in the process of arrangements)*

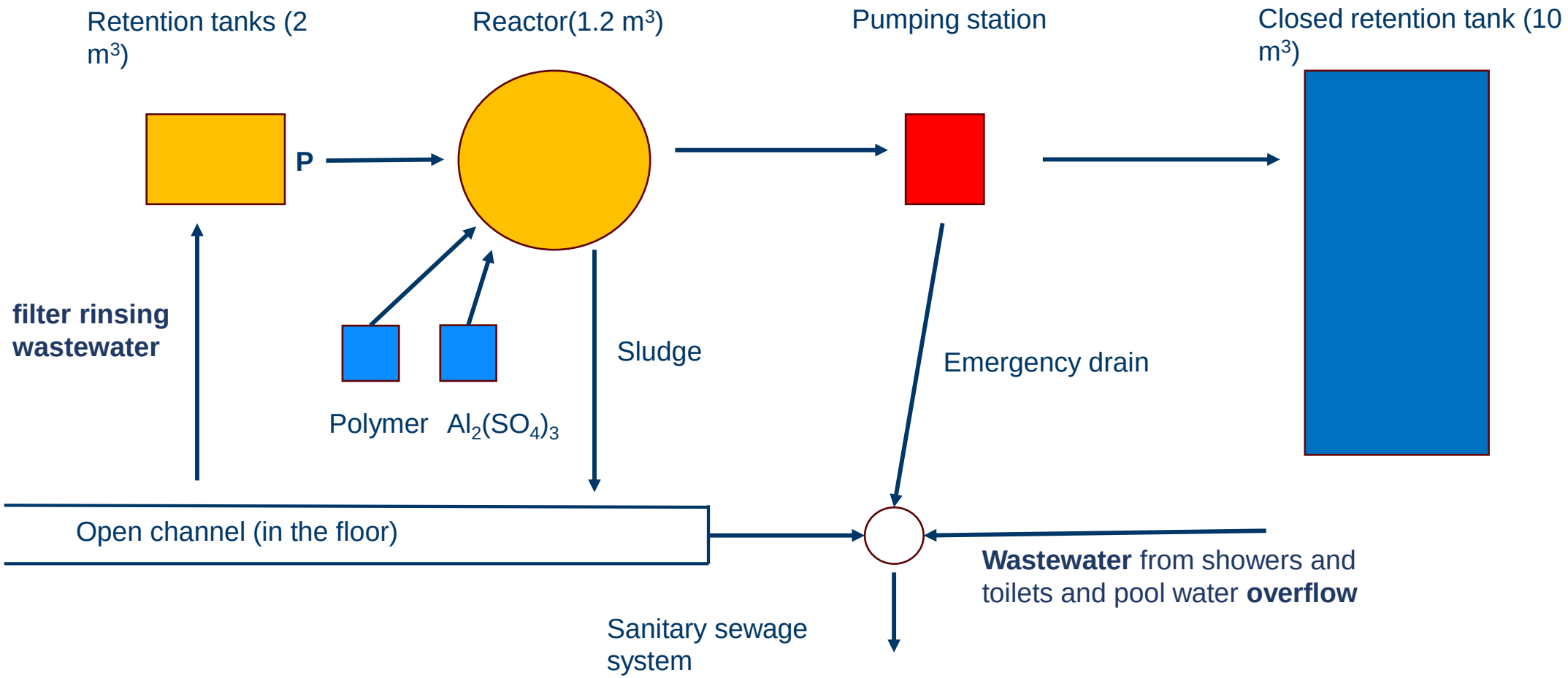
- ✓ 40-50% **reduction** in filter rinsing wastewater
- ✓ 15% **reduction** in sewage discharge
- ✓ 15% **savings** on tap water

2.3 Pilot measure / reuse of treated water:
Reuse of public swimming pool water

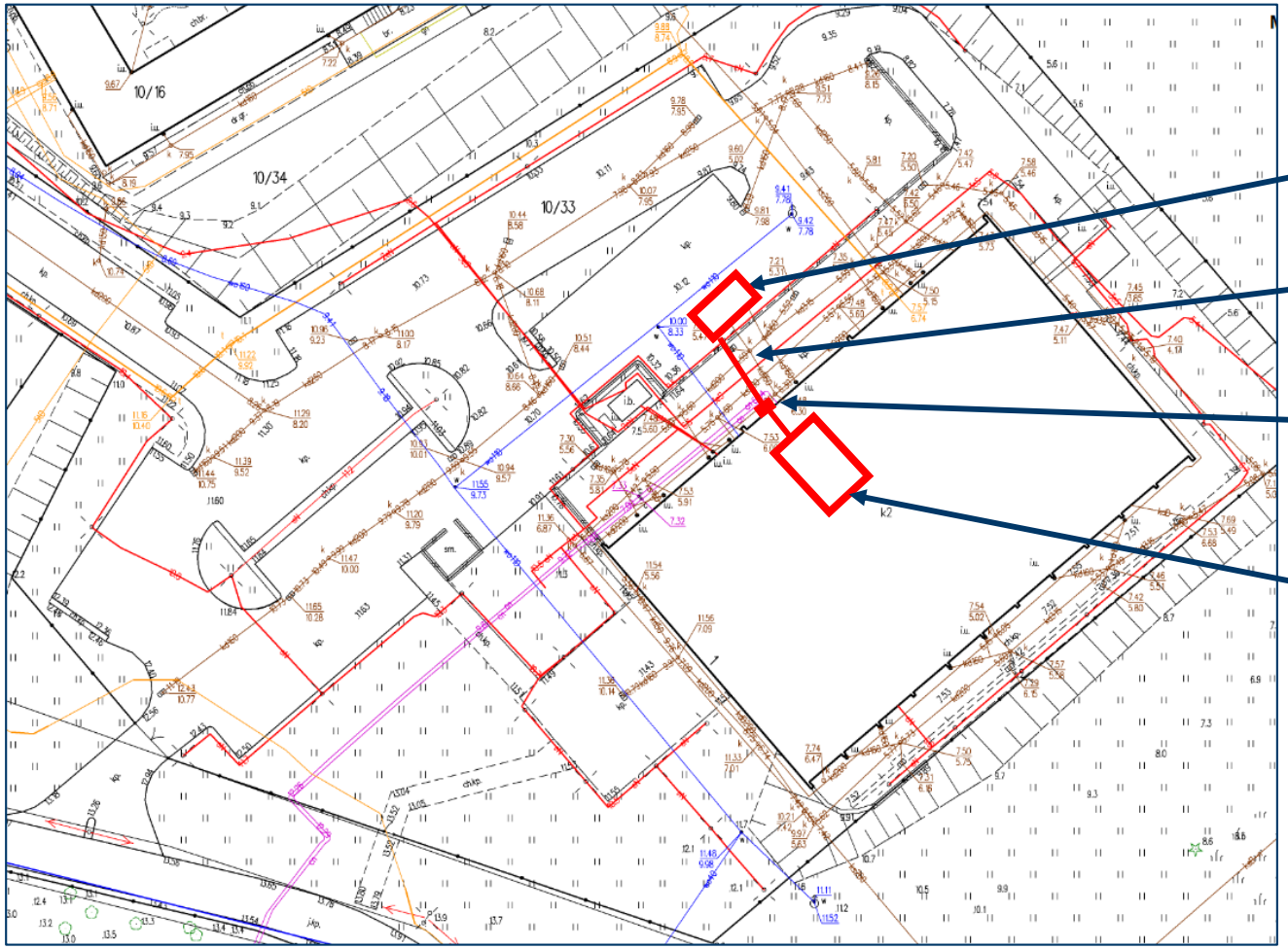
Development of water reuse technology– water reuse scheme



Swimming pool water reuse technology – **Proposed wastewater treatment system**



Swimming pool water reuse technology – **pilot location**



[source: geoportal.gov.pl]

Closed retention tank (in the parking)

New section of sanitary sewage system

Pumping station

Pilot instalation (in the filter room)

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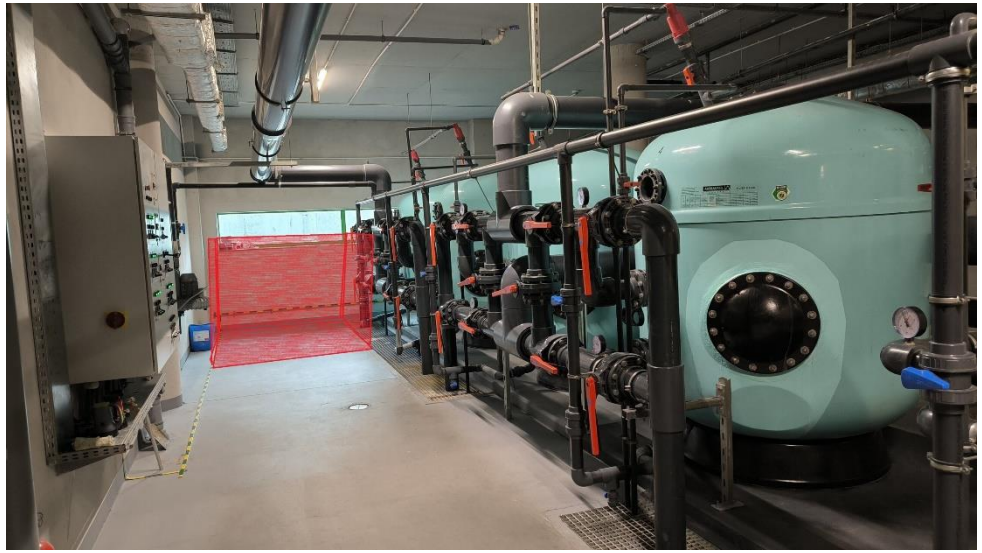
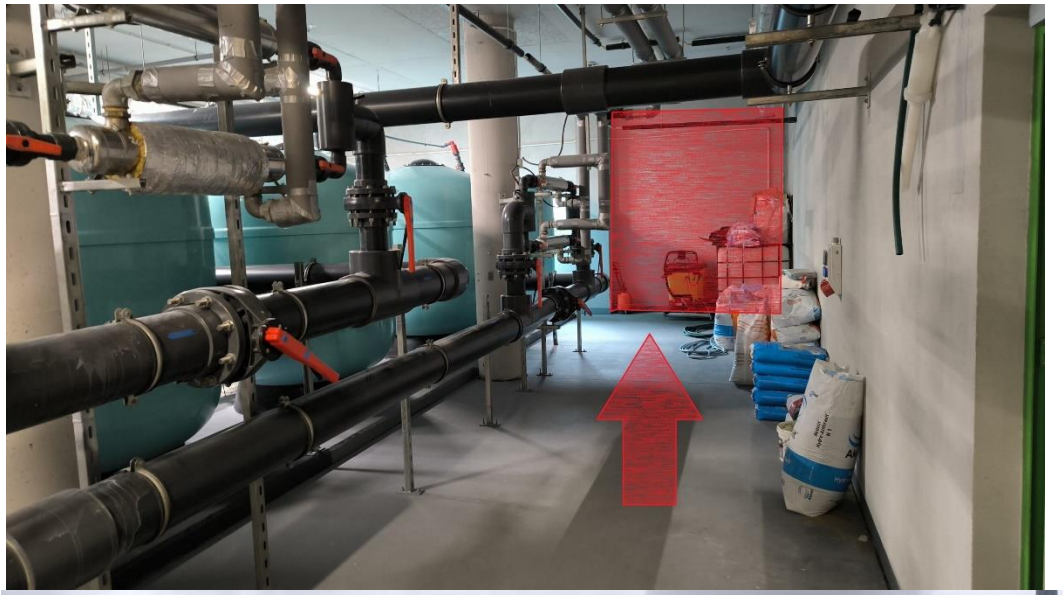
2.3 Pilot measure / reuse of treated water:
Reuse of public swimming pool water





institutional recipients

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Anticipated user groups of users of recycled water, c.a 10m3 in the tank

INSTITUTIONAL RECIPIENTS

a) Municipal Waterworks: flushing of the sanitary network;
b) Municipal Services Department: for street sweepers, street sprinkling during heat waves, and watering shrub and perennial flower beds;
c) Military Equipment Wash Station;
d) Municipal Waste company (company responsible for waste collection and transport): washing of tanks, containers, and operational equipment;
e) Municipal Sports Center: watering of park green areas (May - August); (of football stadion – after the warranty period expires (since 2027)
f) Concrete Plant: production of liquid concrete and concrete products;

INDIVIDUAL RECIPIENTS

g) Allotment Gardeners."

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Methods for evaluating water usage

a) Water consumption meter reading; "A flow meter on the tank and readings, e.g., once a week, showing how many cubic meters were taken for private use by external recipients. Readings are taken from valves and pump operating time

b) Water usage log;

c) Contractor register (assessment of demand trends and volumes)."

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Methods to engage them in the pilot program and motivate them to use recycled water:

a) Active participation of potential contractors in promoting the effects and benefits of the WaterMan program;
b) Municipal Waterworks, Municipal Services Department, and the Municipal Sports Center are municipal units mandatorily involved in the project and municipal activities;
c) Allotment Gardeners – meetings, active informational outreach, and use of social media."

d) school trips during the construction phase. Pool activities combined with facility tours.
e) Teacher training on climate change, limited water resources, and the water reuse system at the pool, so they can explain it to children, along with developing educational materials such as leaflets, information on the city and pool websites, describing the system, how to use it, and that it is free of charge.
f) To be combined with an educational trail

Work with recipients/ local stakeholders – consumers of treated water

Direct:

- Family allotments and allotment holders (ROD)
- Municipal waterworks
- Municipal Utilities Company
- Municipal Sports Centre ‘Zatoka’

In future:

- Military
- Private companies (Car washes)
- Local religious associations/churches - for the purpose of watering church greens

Other related

- legal bodies and politicians (local), municipal council
- environmental protection departments and the department of investments, municipal affairs and the environment, municipal economy enterprises

How to do it? Establish a local reference group (consisting of e.g. water stakeholders, policy makers, experts, exemplary water users and citizens) to oversee the development process, Integration into existing water economy and specialisation networks such as the Elblag Water Economy and Specialisation Network

Our good practice from “Green up” project

Actions related to work with youth:

1. Diagnostic meetings in the city
2. Methodological meetings in schools
3. Local study visit
4. Interactive workshops (Sphere Lab)
5. Public hearings

EFFECT: Involvement of a number of schools, local authorities, schoolchildren, teachers, local communities

School youth

practice-oriented and participatory activities - resulting in project ideas generated by young people, including those in the field of water management

Interreg Baltic Sea Region

Co-funded by the European Union

Access the „BSR Water Recycling Toolbox" here.
https://www.eurobalt.org/waterrecyclingtoolbox/

SUSTAINABLE WATERS
WaterMan

The „BSR Water Recycling Toolbox" was elaborated as part of the project "WaterMan - Promoting water reuse in the Baltic Sea Region through capacity building at local level", The project is co-financed by the European Union (European Regional Development Fund) and implemented within the Interreg Baltic Sea Region Programme. More information:

eurobalt.org/WaterRecyclingToolbox
interreg-baltic.eu/project/waterman

WaterMan promotes a region-specific approach to water recycling, which intends to use the alternation of too much and too little water that has become typical in the Baltic Sea Region to make the local water supply more resilient, and supports municipalities & water companies in adapting their strategies.