

Views on Resiliency: Case of Tampere Water

Petri Jokela

Tampere Water, Finland

petri.jokela@tampere.fi

Ways for Promotion Resiliency of Aging Infrastructure
6th Annual Seminar of the UNESCO Chair in Sustainable Water Services
Tampere University of Technology, Finland, 8 June 2018

Tampere Water

- Celebrates its 120th anniversary, founded in 1898
- Municipal enterprise, fully owned by the City of Tampere. Operates regionally.
- Responsible for water services in Tampere and, by operational contract, in municipality of Pirkkala
- Water supply for 250,000 inhabitants, sanitation services for more than 300,000 inhabitants.
- Turnover 61 M€, number of employees 130

Aspects of resiliency

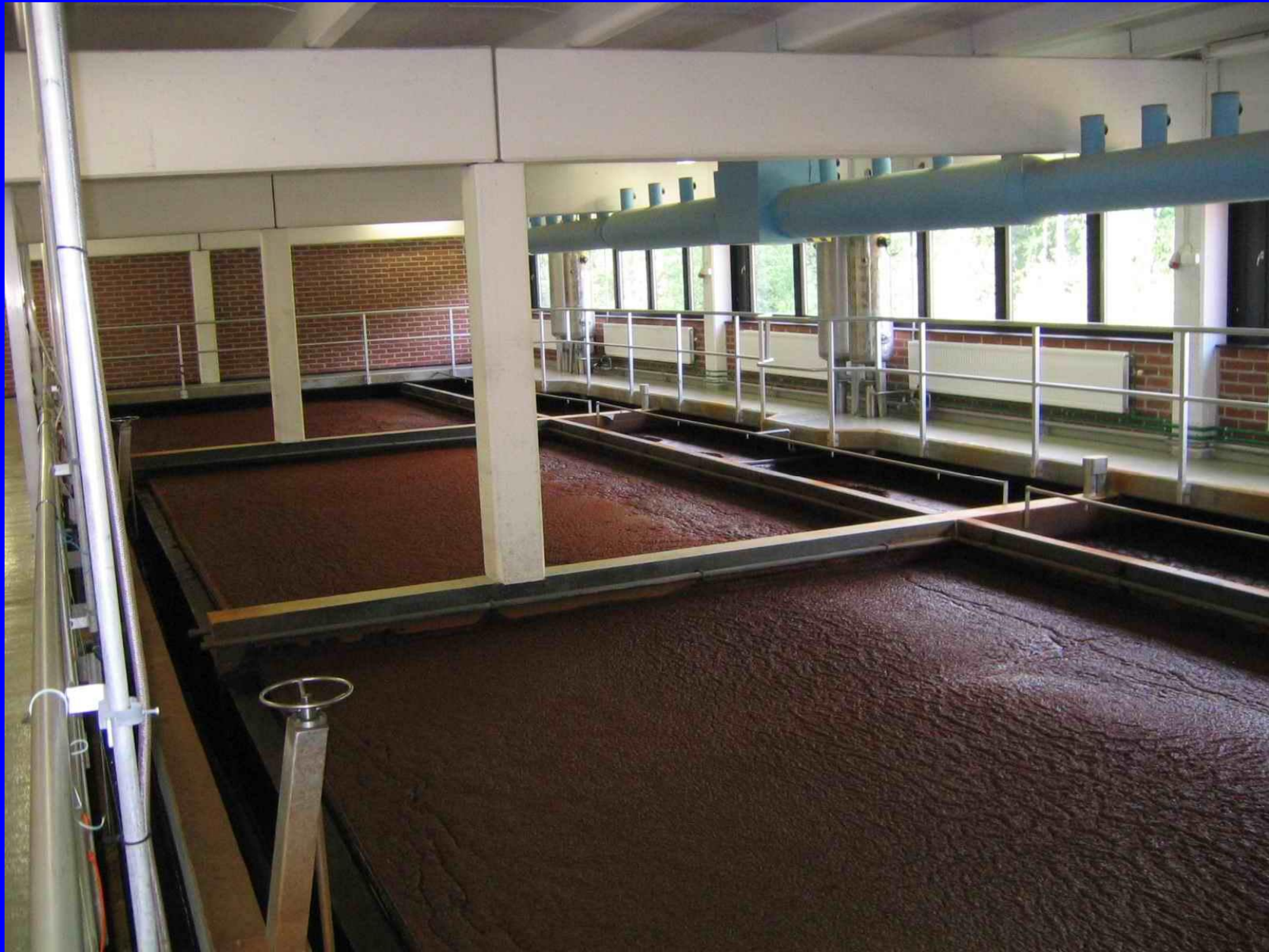
- Reliability
- Infrastructure and operation
- Asset management

Reliability

- "Standard" operation should be reliable
- Reliable and flexible treatment processes
 - DAF (dissolved air flotation)
- Doubling of components
 - parallel pumps
 - parallel pressure sewer lines
- Personnel resources
 - work pairs
 - education



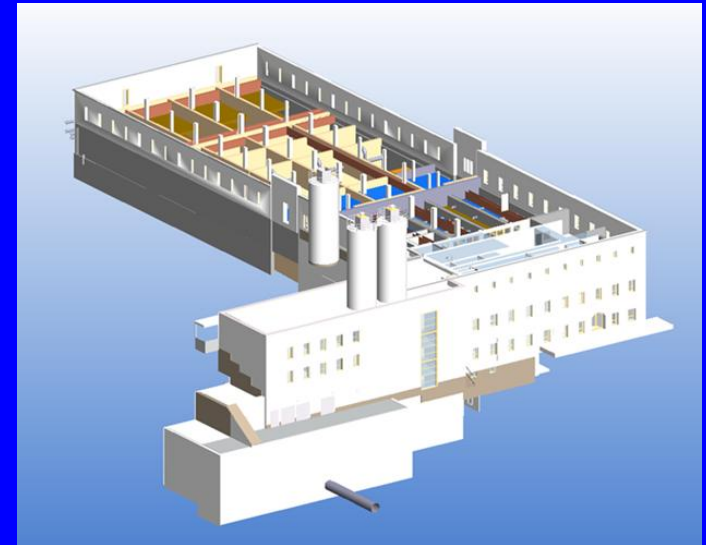
Rusko water treatment plant



Dissolved air flotation

Infrastructure and operation

- Two main WTPs capable of replacing each other
- Two main raw water sources (lakes)
- Multiple water intakes (groundwater)
- Decentralized water source locations
- Emergency power generators
- Storage capacity in water towers
- Multiple distribution network connections
- 24/7 service for emergency situations



Asset management

- Treatment plants, groundwater intakes, water towers
 - large construction time scale, > 100 years
 - numerous renovations made
 - Long term investment schedule in planning stage
 - Start-up with physical condition survey in 2018
 - Approximate value of the real estate 100 M€ (for reconstruction)



Asset management (continued)

- Distribution network renovations started systematically during 1980's
 - Renovation 1 % of the network length/a
=> 7 km of distribution lines, 7 km of sewers
 - Targeted network average age < 100 years, new target may be 95 years
 - What is a good target? How to measure effectiveness?



Asset management (continued)

- Total investments planned for 2019 are 21 M€
- Target set to maintain this annual investment level for the next 10 years
- Roughly 1/3 – 1/2 of the investments for renovations



Regional future

- Regional wastewater treatment
 - Ltd., owned by municipalities
 - Construction started
 - Will be taken in operation in 2024



- Regional water acquisition
 - Ltd., owned by municipalities
 - General plan made
 - Permit process ongoing



- Remark: long-time planning and implementation
 - typical for water sector, delays must be considered regarding resiliency