

Strategic Planning of Stormwater Sewer in Tallinn

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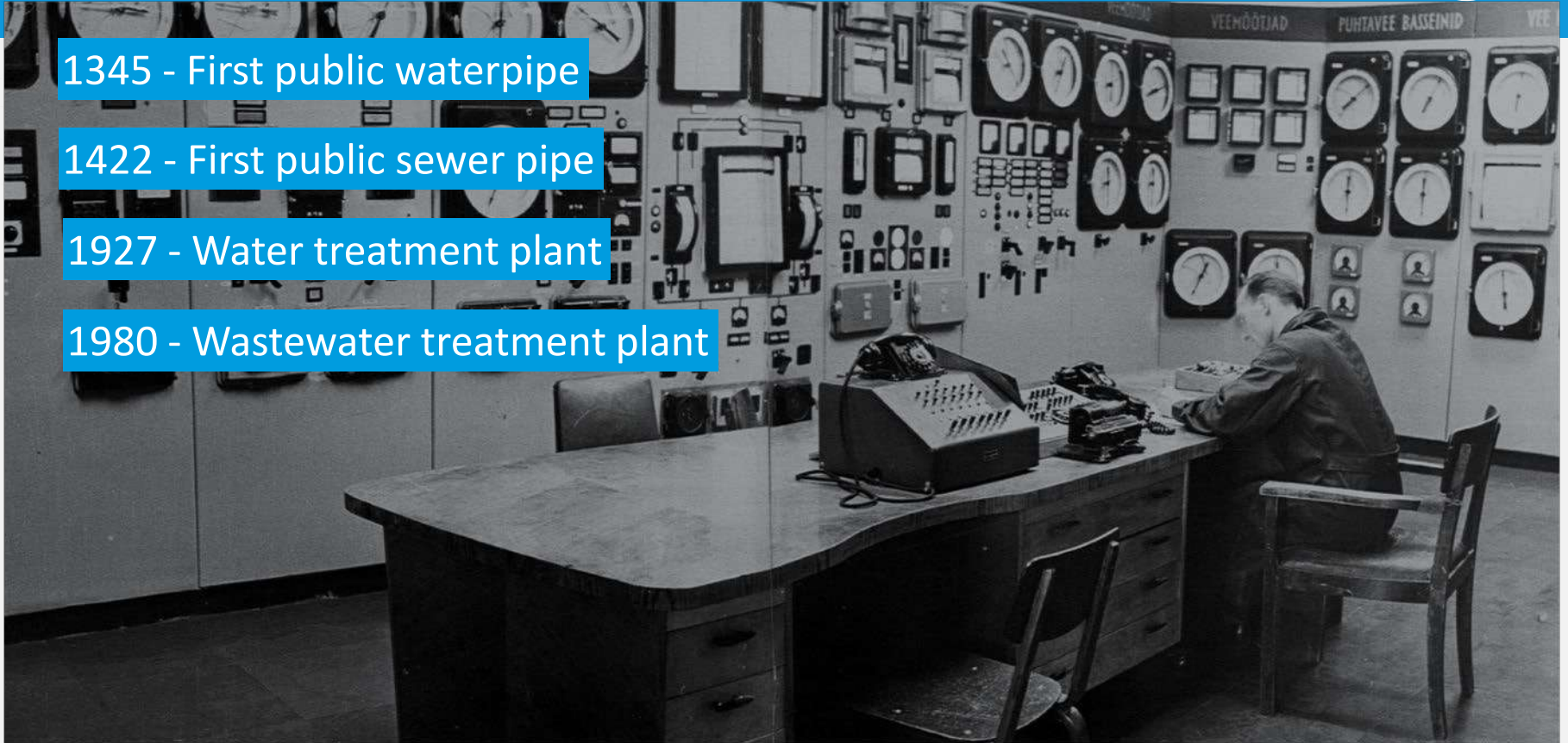

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puhta veega
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1345 - First public waterpipe

1422 - First public sewer pipe

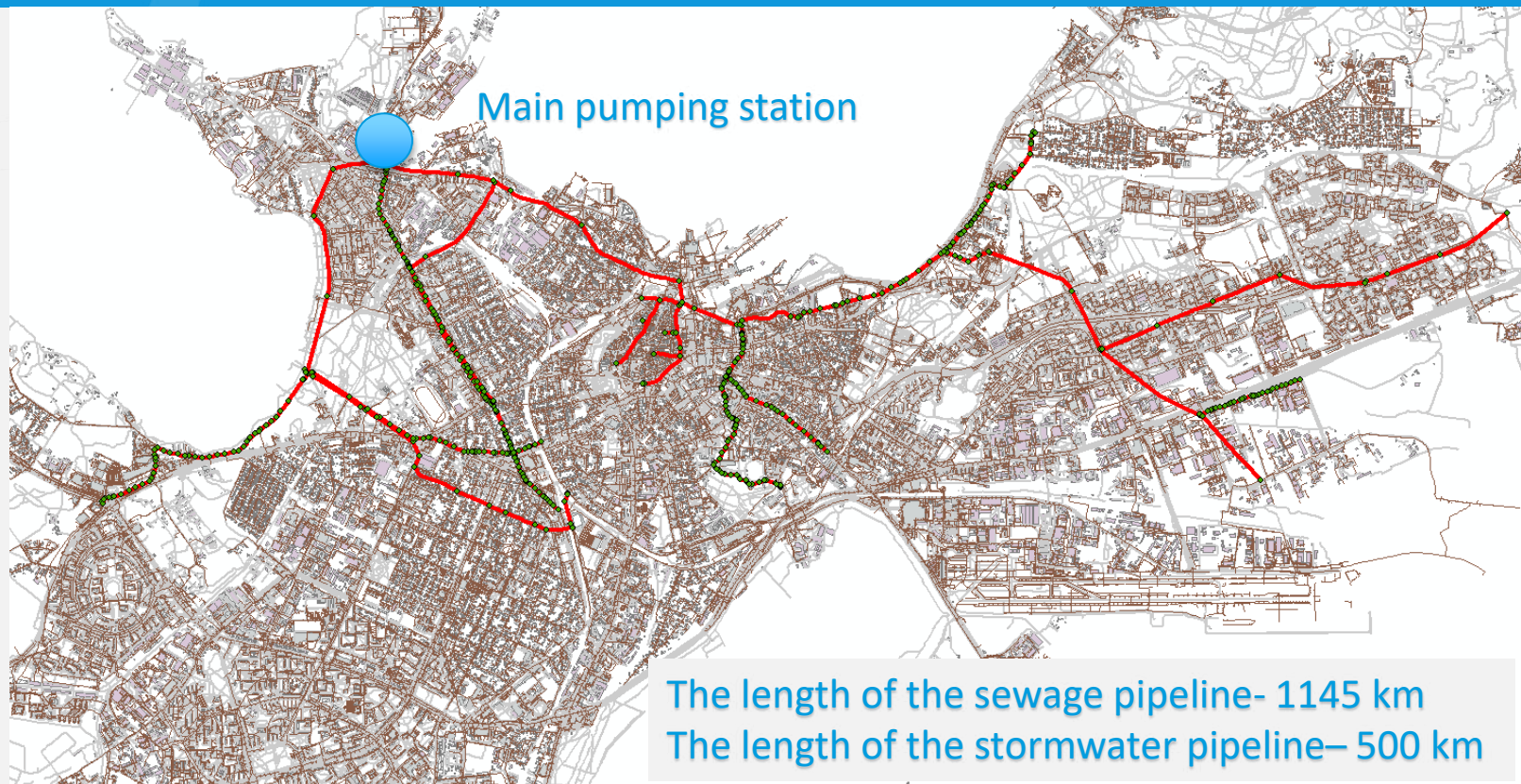
1927 - Water treatment plant

1980 - Wastewater treatment plant



Construction of sewer and stormwater collectors before 1980 – Moscow Olympics





Stormwater outflow to the sea



Before storm



After storm

Stormwater outflow to the sea



Before storm



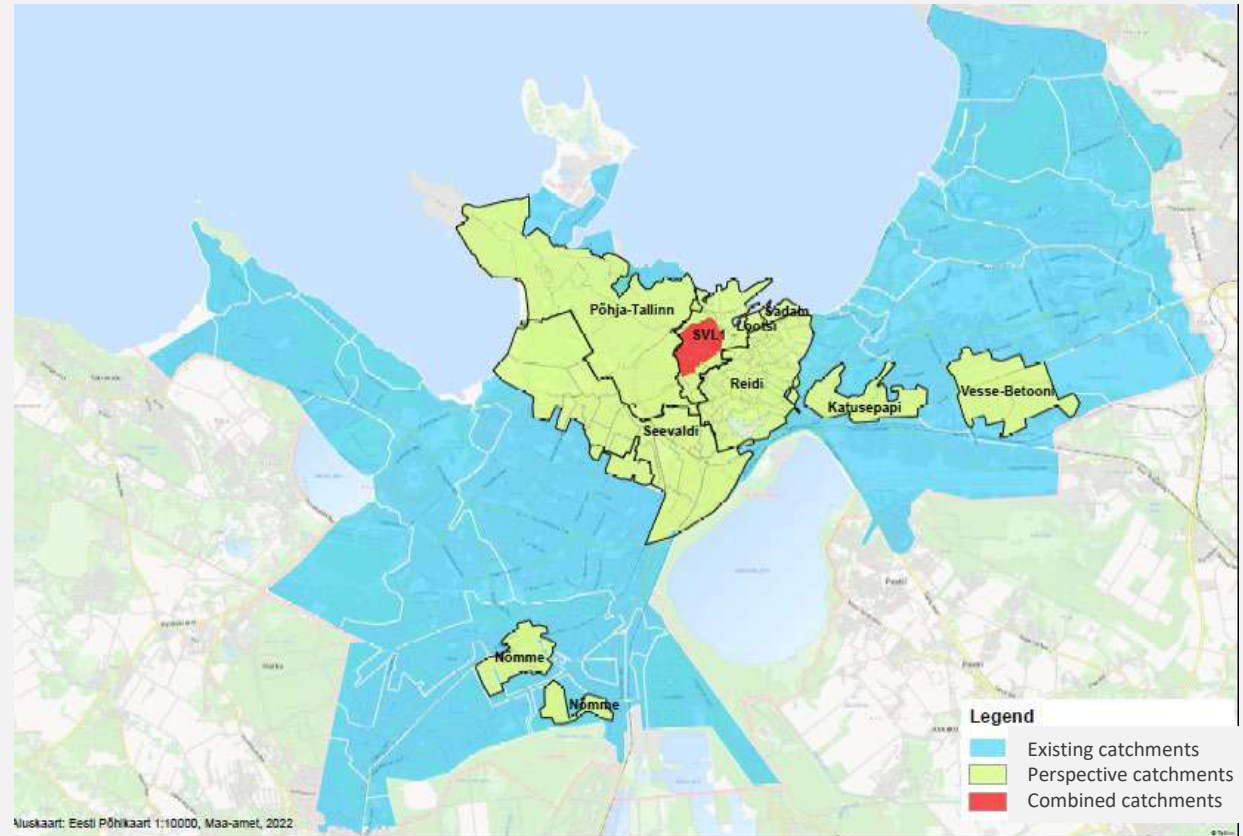
After storm

Stormwater outflow to the sea



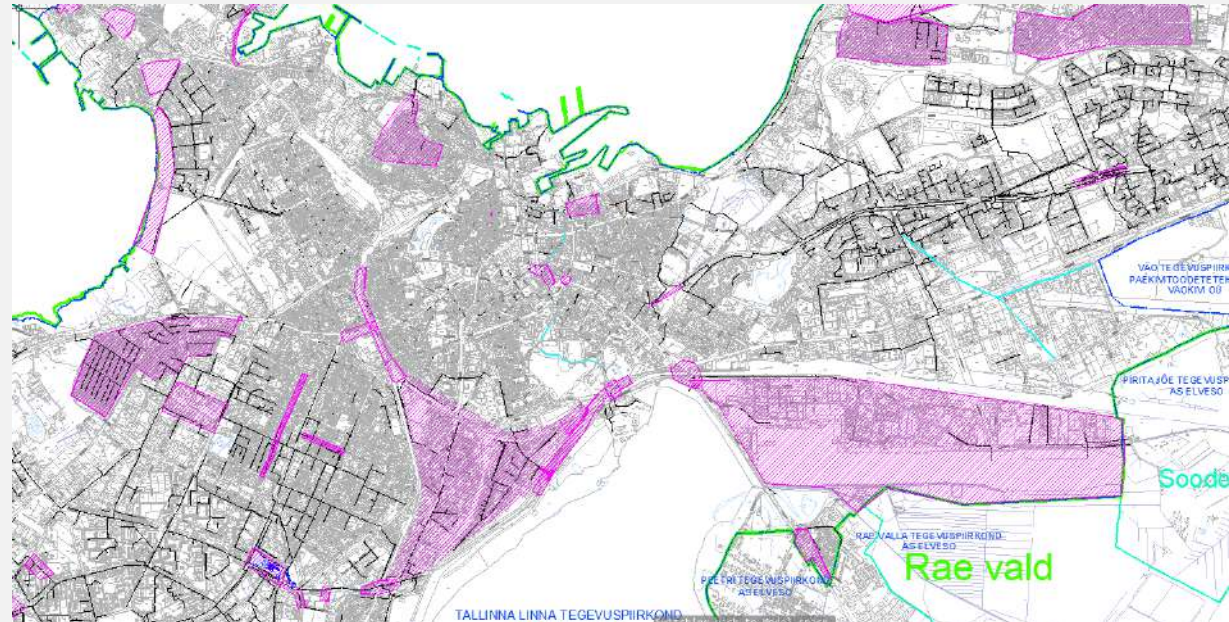
Stormwater catchments and perspective

- ~20% of the rainwater is directed directly to the sea and ~80% to the wastewater treatment plant
- Tallinn city public water supply and sewer development plan for the years 2023-2034



Preparation of stormwater schemes

- Schemes for areas that are transferred from a combined to separate system
 - Schemes for areas that have already have stormwater sewer
 - Existing schemes are out of date because the rains are more intense end need to be updated
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- In what order scheme be ordered
 - Currently 41 major flooding places mapped
 - Some areas are partially separate sewer and are directed into combined sewer



Preparation of stormwater schemes for areas

Decisions are made when modelling schemes:

- Either move to separate sewer or leave partially combined sewer?
- Use pipe, trench or other solutions?
- Can existing combined sewer pipes be used as stormwater pipes?
- Is combined sewer diameter reduction need?
- Where can expansion tanks be installed?
- To what extent and where can natural solutions be used?



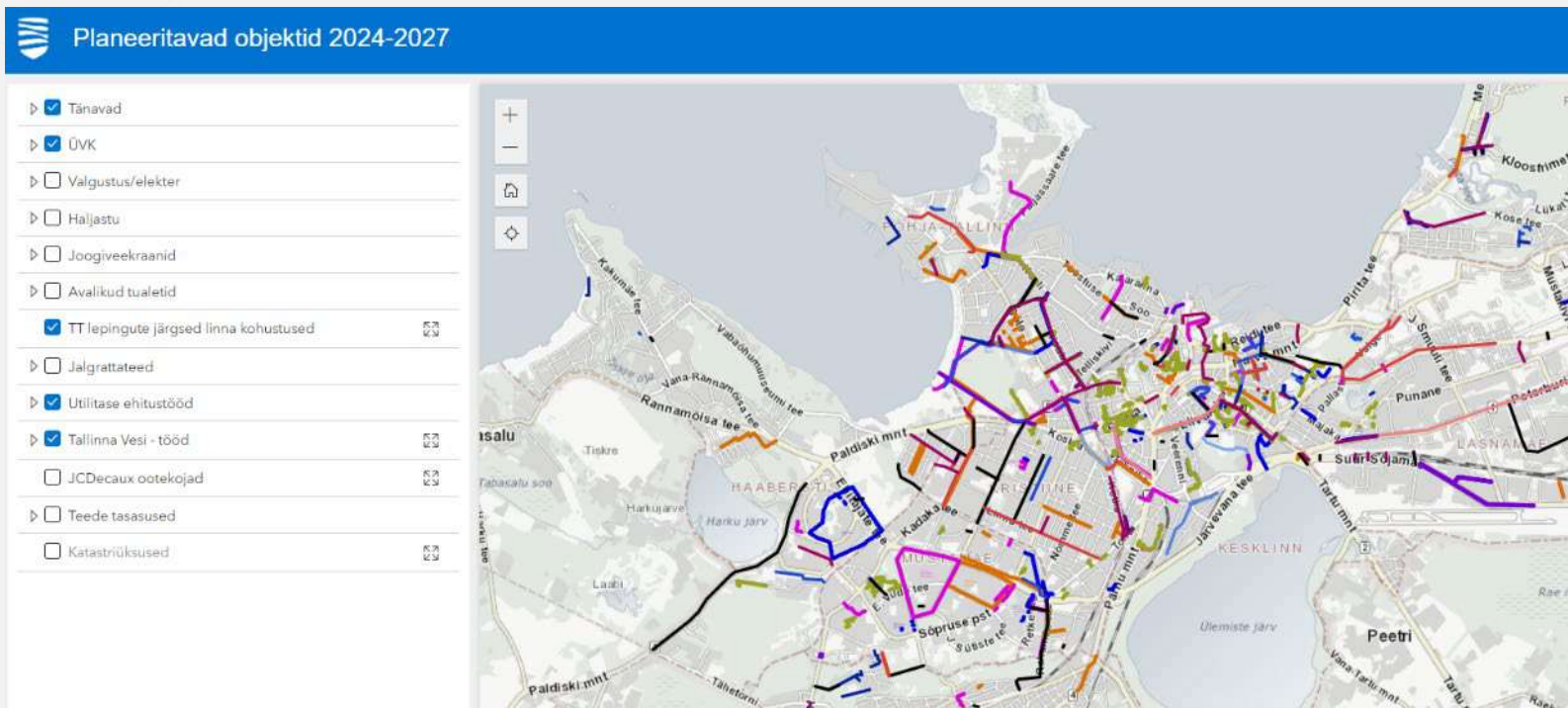


- 12 rain meters with online alarms
- Can be used for stormwater modelling
- Updated stormwater calculation in standards
- Rain patterns constructed

More detailed planning when schemes are ready *Tallinna Vesi*



- Creating a unified strategy and setting goals
- Visual planning (sustain functionality of urban space and start from stormwater pre-flows)



More greenery on streets



Main goals

- Ordering and updating stormwater schemes
- Cooperation with the city, building solutions close to nature in the urban space
- Construction of 10-15 km of stormwater every year
- Starting construction from pre-flows
- Connect partially separate sewer areas to stormwater pre-flows
- Maximally carry out works together with the construction of city roads
- Flooding area reduction -25% by 2028 and -50% by 2034
- Collection and use of rainwater on properties (communication)– max 10 l/s to street stormwater pipeline if needed
- Reconstruction of the existing storm water pipeline



Thanks so much for listening

Tallinna Vesi



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