



# Water supply

*Introduction to Bodø Municipality's development project*

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# Today's activities

- Brief introduction to Bodø's water treatment plants, by Marvin Johansen.
  - The Health and environment supervisor of Salten's responsibilities for control of water quality, by Aase Vigerust
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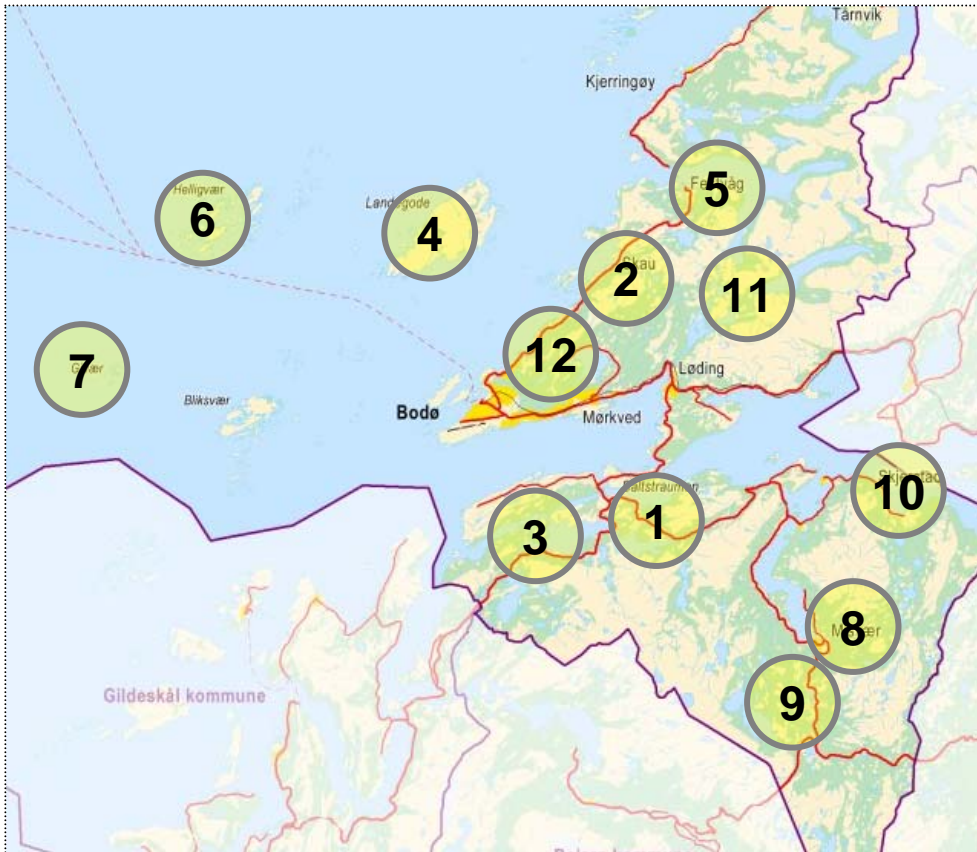


- Guided tour to Bodø's main water supply facility, first to service reservoir in a cavern and then to Heggmoen Water Purification Facility by Svein Ove Moen
- Rafting in Saltstraumen tidal current. The world strongest tidal currents.
- 1 hour Lunch
- Buss back to Bodø, stopping at a sewage plant, Frank Movik will guide us.

**Ending the day with a farewell dinner at Top 13 Radisson Hotel**

# Water treatment plants

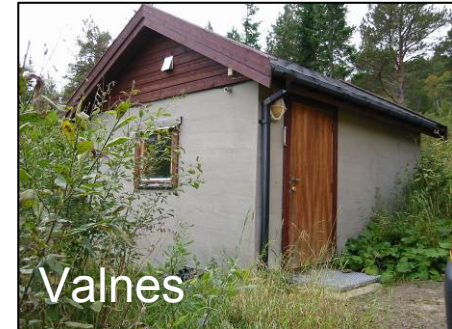
- Bodø has 12 facilities, including two only used in emergencies



Name	source
1. Saltstraumen	Lake
2. Skaug	River
3. Valnes	Ground
4. Landegode	River
5. Festvåg	Lake
6. Helligvær	Ocean
7. Givær	Ocean
8. Misvær	Ground
9. Brekke	River
10. Breivika	Ground
11. Heggmoen	Lake
12. Vågøyvannet	Lake

# The ten smaller water treatment plants

- Saltstraumen water plant
  - Water taken from a nearby lake.
  - Water filtered using a filter with 75 µm pores
  - Sterilized using Ultraviolet (UV) light.
- Valnes water plant
  - Emergency plant in case of failure at Salstraumen
  - Sterilized using Ultraviolet (UV) light.
- Breivika and Misvær water plants
  - Pumps up water from an underground source
  - Sterilized using Ultraviolet (UV) light.
- Landegode water plant
  - Water taken from a river
  - Cleaned using a membrane filter
    - Filter is automatically cleaned
  - Sterilized using Ultraviolet (UV) light.



# The ten smaller water treatment plants

- Skaug water plant
  - Water taken from river
  - Sterilized using Ultraviolet (UV) light.
- Festvåg water plant
  - Water from a nearby lake
  - Sterilized using Ultraviolet (UV) light.
- Helligvær and Givær water plants
  - Pumps up water from the sea
  - Water is cleaned using reverse osmosis
  - Sterilized using Ultraviolet (UV) light.
- Vågøyvannet water plant
  - Emergency water plant in case of failure at Heggmoen
  - Sterilized using Ultraviolet (UV) light and chlorine.

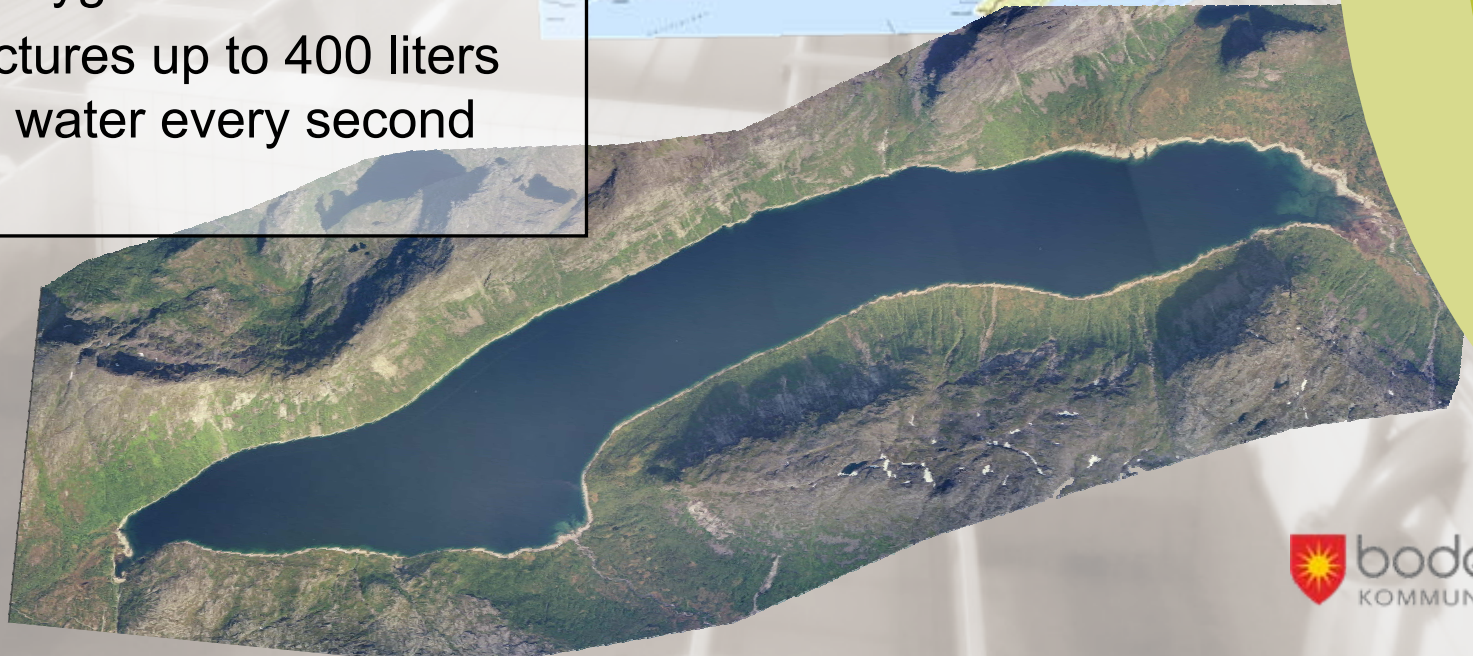
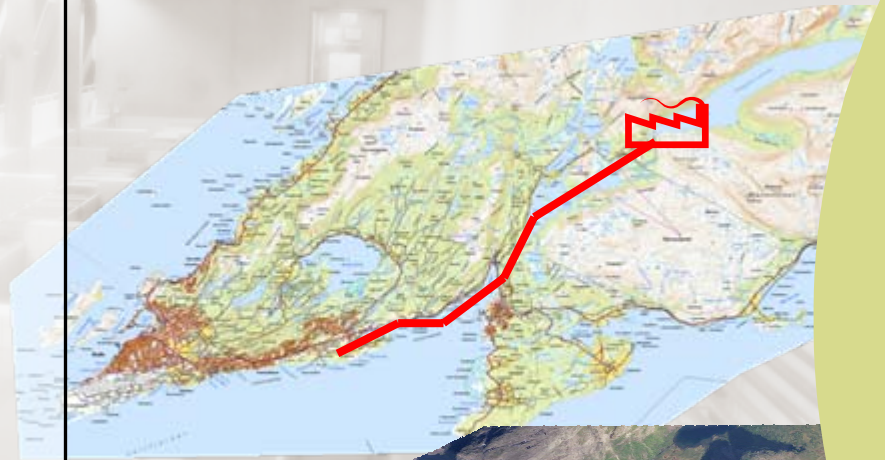


# Heggmoen Water Purification Facility

Bodø's main source of water

## Facts:

- Located 120 Meters above sea level
- Provides 90 % of Bodø's clean water
- Has two hygienic barriers.
- Manufactures up to 400 liters of clean water every second



# Heggmoen Water Purification Facility

Bodø's main source of water

- Water in Heggmoen is acidic (pH 5.5)
- Purification process consists of:
  1. Carbon (CO<sup>2</sup>) infusion, to reduce wear on water pipes (pH 4.5)
  2. Rapid Marble filter, removes small particles, increase calcium content and improves alkalinity (the ability to neutralize acids, pH 8.2)
  3. Ultraviolet lamps sterilize the water
- On average 200-250 liters of clean water is produced every second.
- Budget and financing
  - Total project cost: 450 Million NOK
  - Everyone connected to the water grid pays
    - ~2500 NOK a year for water or 17.38 NOK per m<sup>3</sup> if measured
    - ~2000 NOK a year for waste water or 14.86 NOK per m<sup>3</sup> if measured
  - Loan is paid down over a period of 20 years for the plant, and 40 years for the supply grid



# Kvalvikodden sewage plant

- Waste water is collected in a sump under the building
- Pumps pump the water in the sump up to a set of filter sheets.
- The sheets separates water and dry waste material
- Water is poured into the sea
- Dry material is collected in a container
  - Used as fertiliser



Thank you for your  
time and attention