



englishman river  
WATER SERVICE



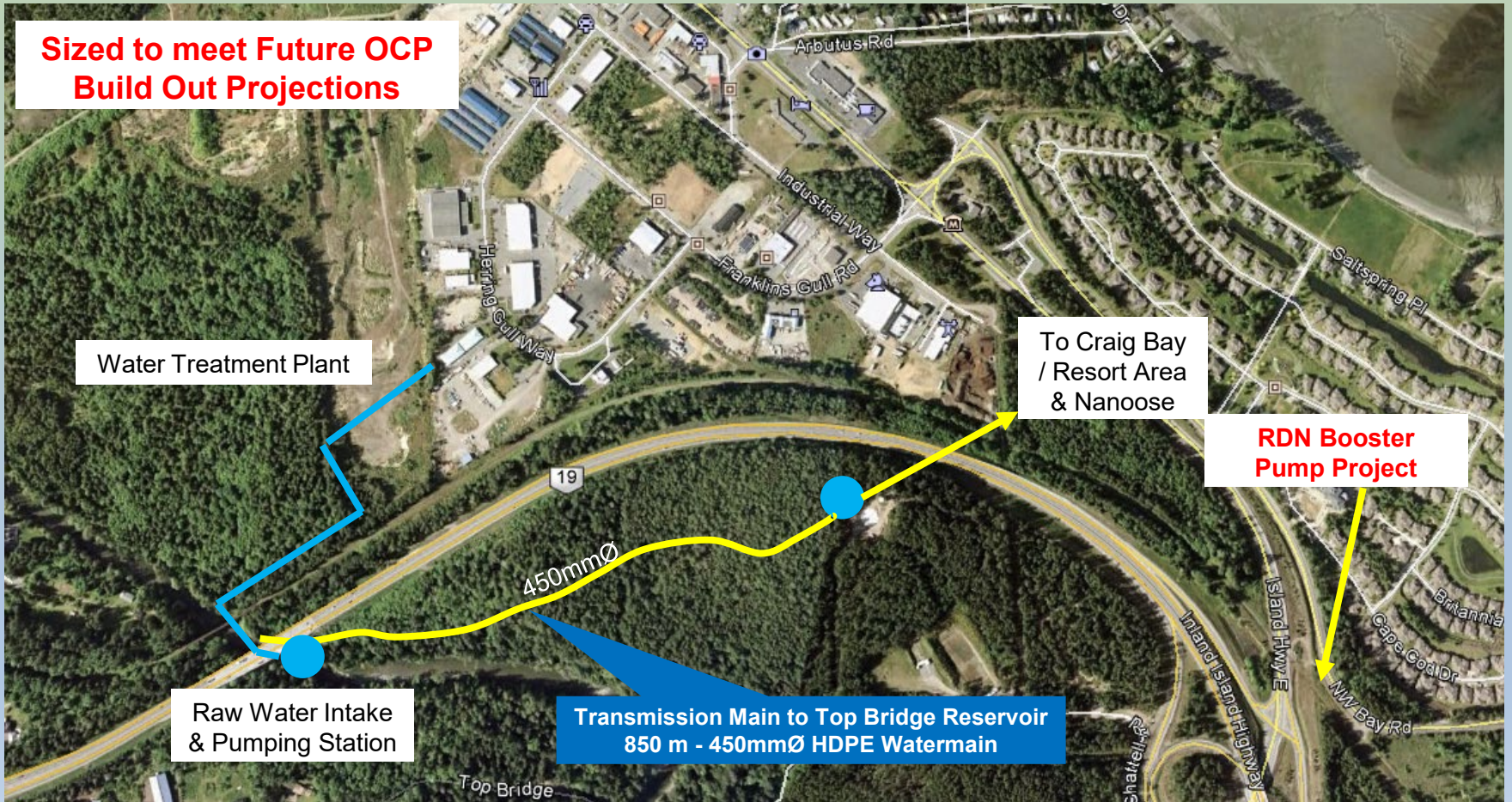
**Englishman River Water Service  
Water Treatment Plant  
Operations Update  
January 9, 2023**



- Prior to the water treatment plant construction, the City of Parksville had a river intake below the hydrometric gauge to draw for water supply.
- In 2011, the City of Parksville and Regional District of Nanaimo entered into a joint venture agreement known as the Englishman River Water Service (ERWS) to construct, operate, and maintain the water treatment plant, intake works, and transmission mains.
- The ERWS board and committee oversee the management of the facilities with the City of Parksville as the operator.
- The ERWS Water Treatment Plant was commissioned in late 2019.
- The system has a current capacity of 16 MLD and can be upgraded in stages to 24 MLD and 48 MLD.
- Since commissioning, approximately 70%-75% of the total water is drawn from the river source.



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## Key Components

- River intake structure
- Raw water pump station
- Raw water transmission line
- Water treatment plant



River Intake & Raw Water Pump Station



ERWS Water Treatment Plant

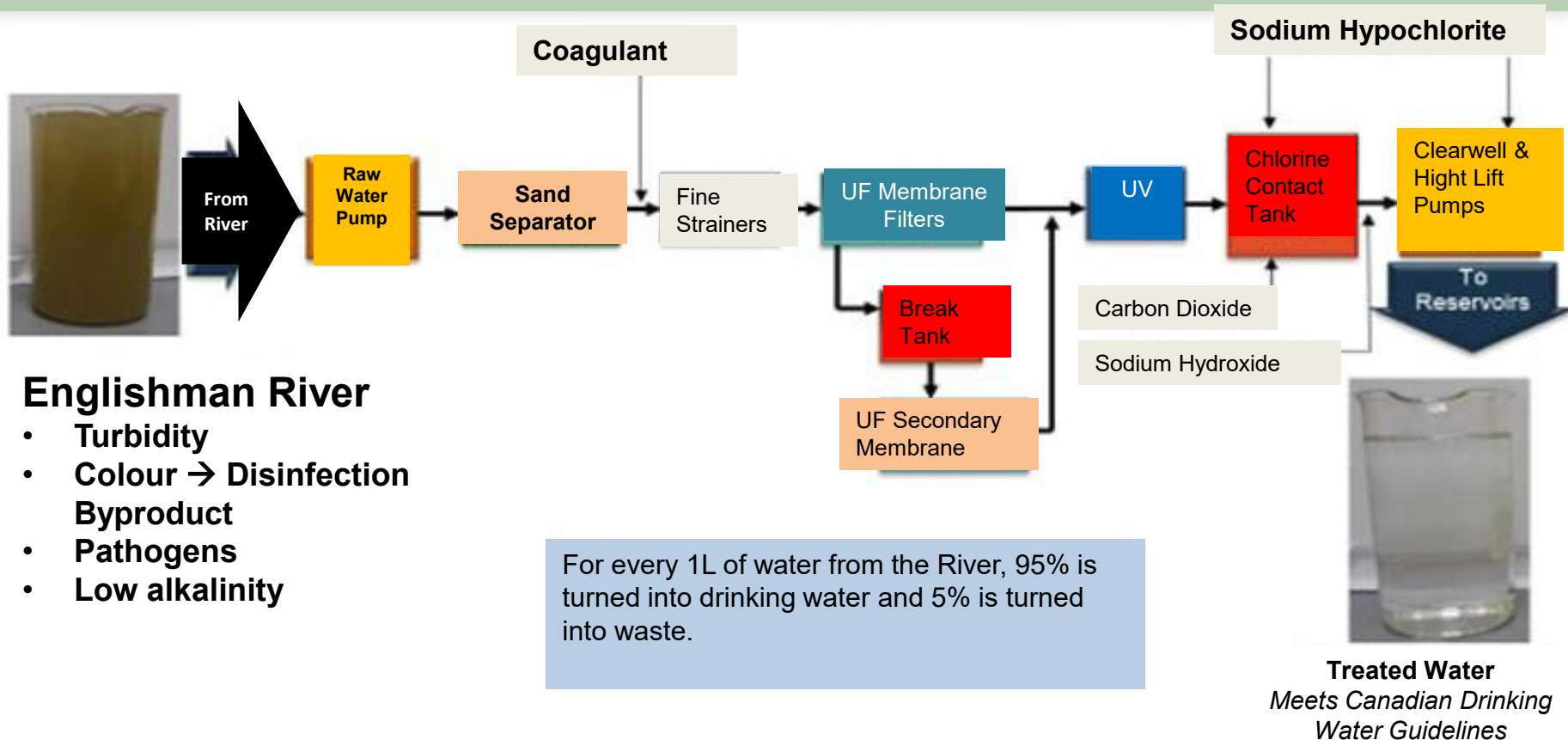


Ultrafiltration Membranes



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# Treatment Process





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# 2022 Updates

*“Operation, Maintenance and Optimization”*

# Routine Operation and Maintenance

- Complete deep cleaning of the strainers and fine tuning the autoflush system to reduce the frequency of blinding the strainers off and in turn, reduce the need for deep cleans.
- Sulfuric acid system rebuild with the appropriate alloy 20 to replace the 316 stainless steel as per warranty.
- Daily checks on process systems to ensure proper function.
- In-house laboratory analysis for parameters of concern.
- Process adjustments to accommodate changing conditions.



# Routine Operation and Maintenance (cont'd)

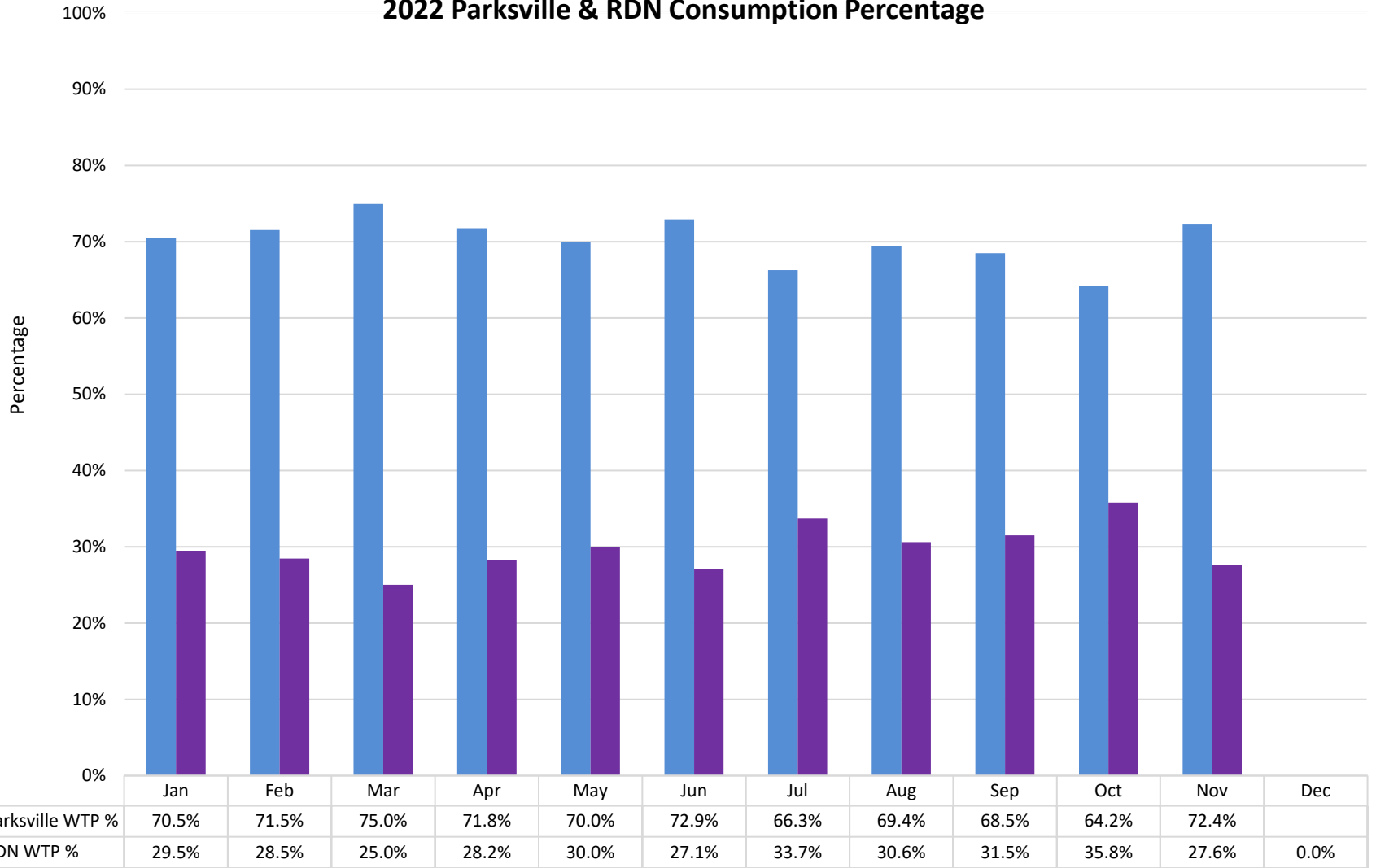
- Chemical receiving procedures improved for site conditions.
- Seal water pump system for protection of raw water pumps.
- Improved flow control to allow for running at lower flow rates during winter.
- Routine inspection, maintenance, and calibration of instrumentation by our certified Operators with annual servicing performed by contracted service technicians.
- Systems optimization and planning for future upgrades to allow for improved reliability during all experienced and anticipated changes in raw water quality and quantity.
- Plant operations tour to local school groups.





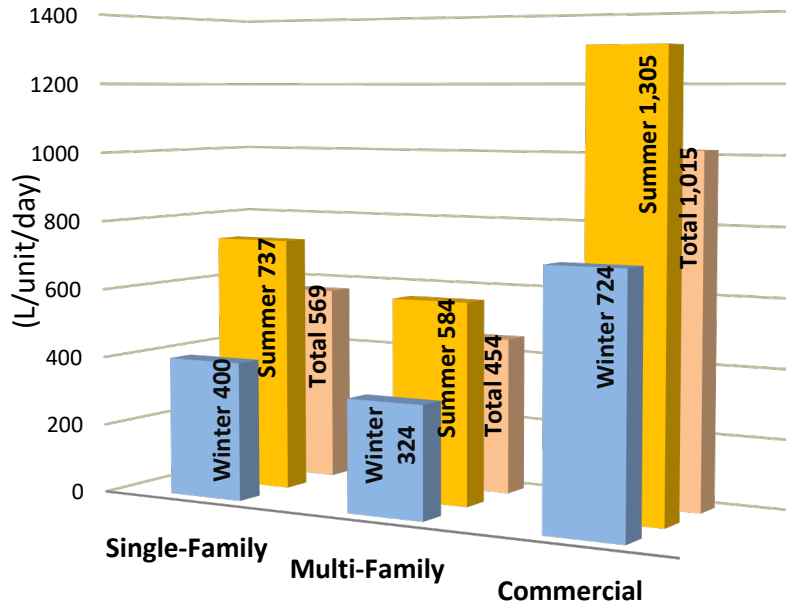
# Water Consumption

## 2022 Parksville & RDN Consumption Percentage

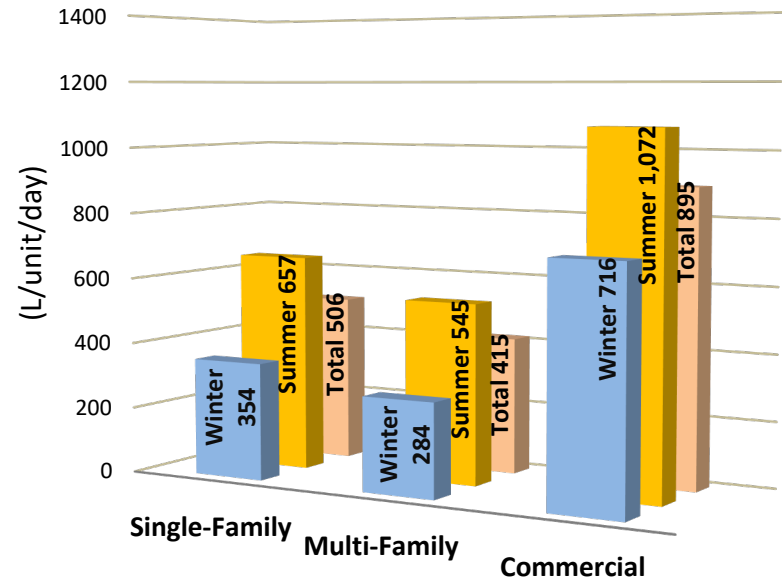


# Water Consumption Per Unit Parksville (including wells)

### 2021 Average Water Consumption Per Unit

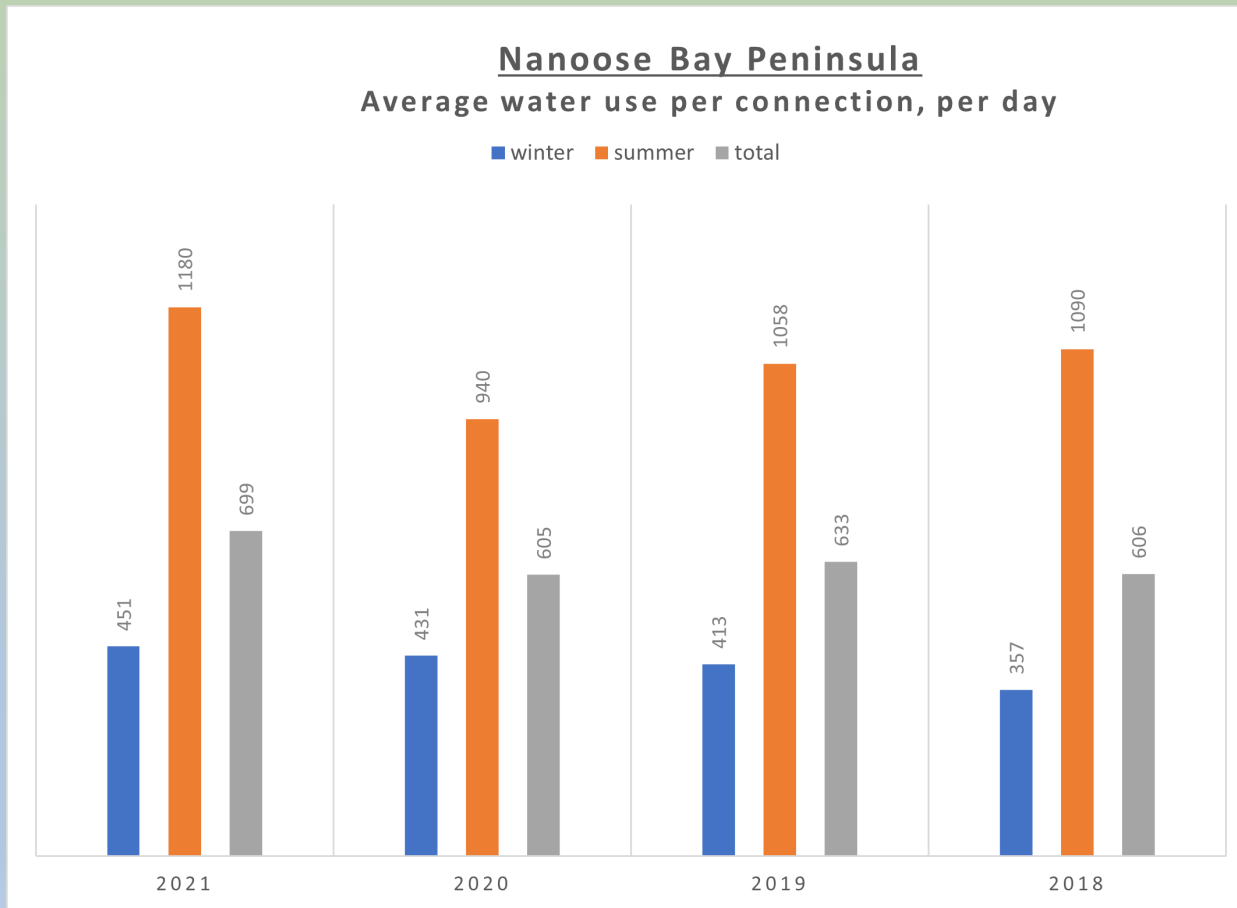


### 2020 Average Water Consumption Per Unit



# Water Consumption Per Unit

## RDN – Nanoose Bay (including well)



Note: includes commercial and industrial



# 2022 Projects

# SCADA Monitoring and Programming Services

Overall optimization was carried out to improve the system efficiency and effectiveness.

## Professional Technical Consultants

Expert consultants hired to review and provide recommendations:

- motor controls
- redundancy measures
- network security
- reservoir optimization
- plant optimization

## Critical Spare Parts

Reduce downtime and build system redundancy



Allen Bradley Motor Control Centre



Spare Parts Inventory

## Intake Structure, Safety Fencing

The work awarded and completed by Mid Island Fencing in November 2022.



Chain Link Fence Installation at the Intake

## Railway Crossing and SRW

The final design was completed in September 2022. The construction work was tendered and received multiple bids from contractors. Additional funding is required to award the project.

The applications for the Springwood Transmission Main statutory right of way (SRW) have been submitted to Island Corridor Foundation.

# Geobag Construction

- Geobag project is now in operation. It was constructed to manage and treat the waste flow from the water treatment plant.
- The retained solids in the tube and can be disposed of at the RDN's landfill as required.
- System optimization is in progress to reduce the volume of polymer/chemical used.



Pre and Post  
Geobag



# Ongoing Projects



# Preventative Maintenance Program

- Status: in progress

An electrical service contractor was retained through the RFP process for three years.

Various service contractors were retained to complete a comprehensive service of the equipment.



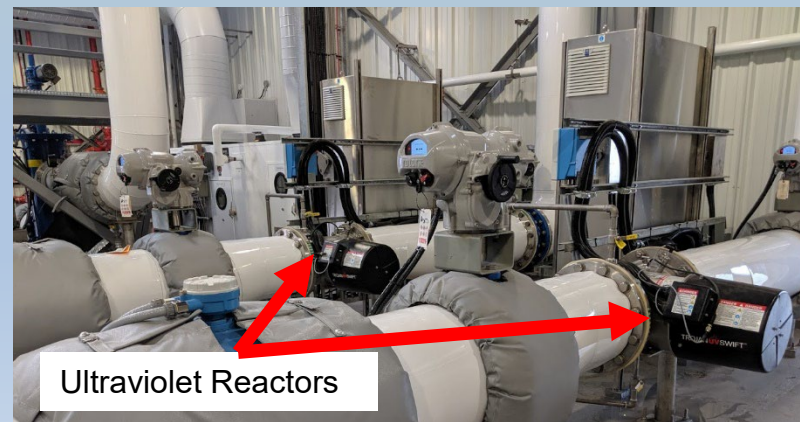
Vertical Surge Tank



Power Lockout for Genset  
ATS Service



Generator Automatic Transfer Switch



Ultraviolet Reactors

# Water Supply Resiliency Plan

- Status: RFP – in progress
  - Insure there is resiliency and redundancy with the water treatment plant
    - Bypass system
    - Old river intake system
    - VIHA requirements
  - Evaluate the RDN available capacity to respond to emergency, if needed
  - Assess and update parameters and approaches used in the 2010 Water Supply Study including demand projections, climate change, and supply sources
  - Review all current sources for production and storage efficiencies
  - Review options to build upon current resources
    - Reservoirs
    - WTP 24 MLD and 48 MLD
  - Review alternate options outside of current resources for supply and storage
  - Plan for drought and emergencies

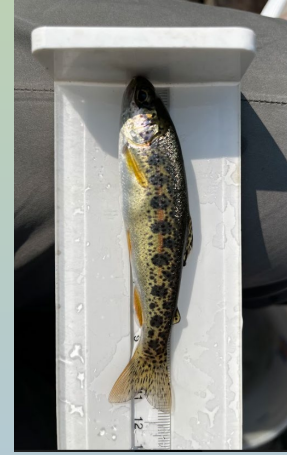
# Five-Year Fish Monitoring Program

- Budget revision 2022 \$40,120; 2023 \$89,700; 2024 \$89,600; 2025 \$81,200; 2026 \$81,700; 2027: 20,000
- Status: in progress

## 2022 Fish Monitoring Program

Turbidity meters were purchased and installed upstream and downstream of the intake.

The survey and monitoring work in the river were completed in August and September by biologists. The report is to be submitted the following year (March 2023) to DFO.



# Questions