Village of Lytton

# Waste Water Treatment Plant Capacity Study

## Report to the Committee of the Whole

May 5, 2026

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# WWTP Improvement Feasibility Study

Village of Lytton

## Feasibility Study Completed by TRUE Consulting:

- Considerations:
  - Population projections
  - Current Treatment Capacity
  - Future Capacity Requirements
  - Existing Treatment and Alternate Treatment Technologies
  - Recommendations for plant improvements
  - Costing of Improvements

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Key Plant Deficiencies that need addressing:

- Lack of stand-by power
- Confined entry space  (e.g. UV chamber)
- Additional UV reactor (duplex setup)
- Lack of influent fine screening
- Electrical panel lock out
- SCADA remote access for monitoring
- Blower room ventilation
- Capacity for growth

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## Recommendations For Plant Improvements:

### Treatment Comparison Options

| | Capital Cost | Operating Cost | Functionality |
|---|---|---|---|
| **Existing SBR Expansion** | $$ | $$ | Good |
| **Lagoon Bypass** | $$ | $ | Poor |
| **New Membrane Bioreactor Process** | $$$ | $$$ | Excellent |
| **New Moving Bed Bioreactor Process** | $$$ | $$ | Good |

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Key Findings of Study:

- Existing SBR technology is appropriate
- Capacity may be increased by adding similar reactors (basins) to the existing 2 basins
- 3rd basin needed now (regulatory)
- Current flows are low so existing basins treating adequately
- 4th basin may be needed in 20 years
- Some urgent requirements (back-up power/SCADA) can be completed immediately
- Grant allocation for work is sufficient for design of urgent requirements and addition of 3rd basin (staff currently reviewing)

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- Initial Upgrading:
  - Electrical panel lock out
  - SCADA remote access for monitoring
  - Back-up power
- Future Upgrading
  - Addition of 1 or 2 basins for capacity improvements
  - UV reactor upgrading to duplex arrangement
  - Blower room ventilation
  - Pre-screening

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## Forecast Population and Wastewater Projections:

| *Year* | *Population* | *Per Capita (l/p/d)* | *Total Residential ($m^3$/d)* | *Commerical and Institutional ($m^3$/d)* | *Forestry Camp ($m^3$/d)* | *Total Daily Flow ($m^3$/d)* | *Basins Required* |
|---|---|---|---|---|---|---|---|
| *2026* | *160* | *350* | *56* | *3* | *45* | *104* | *3* |
| *2021* | *305* | *350* | *107* | *10.7* | *45* | *163* | *3* |
| *2031* | *305* | *350* | *107* | *10.7* | *45* | *163* | *3* |
| *2046* | *428* | *350* | *150* | *14.3* | *45* | *209* | *3 or 4* |
| *2066* | *567* | *350* | *198* | *21.3* | *45* | *264* | *4* |

Notes:

1. Functional Capacity 95$m^3$/day to 130 $m^3$/day per basin estimated by TRUE Consulting.
2. Province requires 75% of design capacity with one basin out of service.
3. Population and flow estimates TRUE Consulting.
4. Existing permitted capacity 350 $m^3$/day.
5. Required Provincial capacity with one basin out of service is 263$m^3$/day.
6. No infiltration factored into flows.

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# Discussion/Questions?