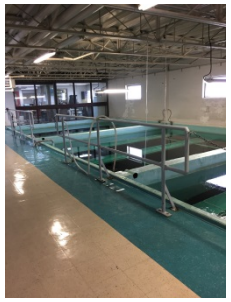





Town of Hawkesbury Water Treatment Plant 20-Year Strategic Plan

Presentation of Strategic Plan

Presented by: Sarah Gore, P.Eng.
Date: October 15, 2018
JLR No. 27560-000.1

Presentation to Council

This presentation of the Strategic Plan will cover:

- Study Objectives
- Study Background
- Brief Timelines and History of Water Treatment System
- Summary of Assessments
- Findings and Approach to Identifying Improvements
- 20-Year Strategic Plan Upgrades
- 20-Year Strategic Plan Proposed Timelines

Study Objectives

The following high level tasks were identified:

- Compile and review operational information to assess treatment performance and capacity issues.
- Undertake a multidiscipline engineering condition assessment.
- Identify potential strategies for WTP infrastructure improvements.
- Document the findings in a Strategic Plan.

Study Background

- Rated maximum day capacity of 27,275 m^3/day
  - There were concerns that the WTP rated capacity may not be achievable in the future.
  - Estimated 2038 flow of 21,558 m^3/d.
- Life-Cycle Upgrades Required
  - Estimated service life of various WTP infrastructure surpassed.
- Key Operational Deficiencies
  - Improvements to overall reliability of the system needed.

Brief Timelines and History of System

Raw Water Pumping Station (RWPS)

- **1917** – Construction of original raw water intake pipe and pumping station.
- **1950's** – Replacement of original intake pipe.
- **1995/1996** – Construction of a new raw water pumping station and raw water line to the WTP over original foundation.

Elevated Storage Tank (EST)

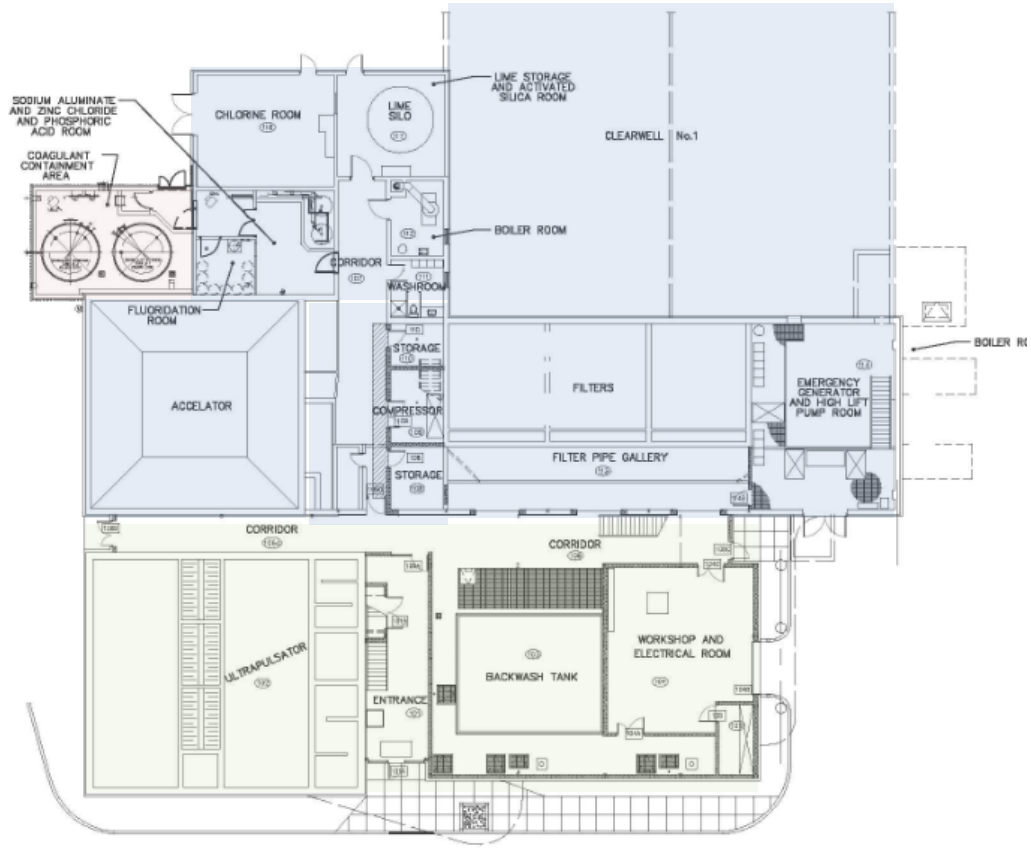
- **1968** - Elevated storage was added to the system.
- **2006** – Standpipe upgrades and installation of safety equipment.

Brief Timelines and History of System

Water Treatment Plant (WTP)

- **1953** – Establishment of the WTP as a conventional treatment process with a clarifier, three filters, a clearwell, and chemical feed systems.
- **1996** – Major WTP upgrade and expansion:
  - Second clarifier, second clearwell, new sludge settling tank, new decanting tank for backwash water, and installation of new high-lift pumping equipment.
- **2002/2003** – Control System, SCADA and Metering Upgrades.
- **2004-2016** – Chemical Storage and Feed System Upgrades.

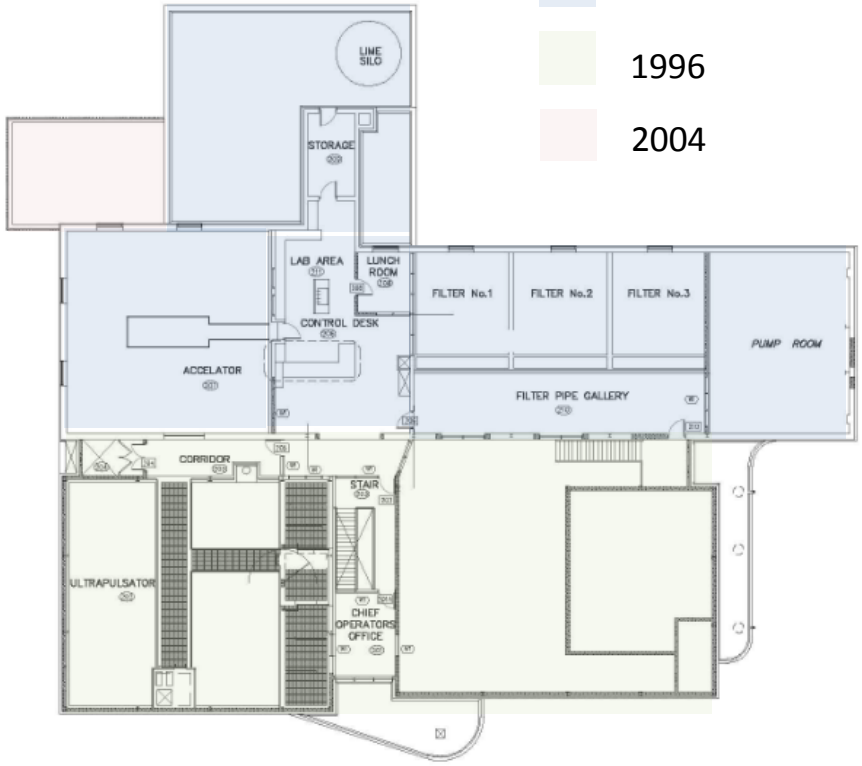
Overview of WTP Layout



Ground Level Floor Plan

Legend - Building Footprint Expansion

- 1953
- 1996
- 2004



Second Level Floor Plan

Summary of Assessments

Desktop Operational and Treatment Capacity Assessment

- Review of historical operating data, as-built drawings and reports
- Process capacity assessment of major components
- Compare WTP component capacity to industry standard guidelines
- Summarize findings in **Process Capacity Assessment Report**

Multidiscipline Conditions Assessment

- Undertake multidiscipline condition assessment of WTP and RWPS
- Inspection of raw water intake and pipe by Service Sous-Marin Sorel
- Inspection of elevated storage tank by MISCO Inc.
- Summarize findings in **Conditions Assessment Report**

Approach to Identifying Improvements

Assessment Findings

- Upgrades required to address unit processes that were not consistent with the current applicable guidelines
- Upgrades required to bring key infrastructure up to desired condition

Approach to Identifying Improvements

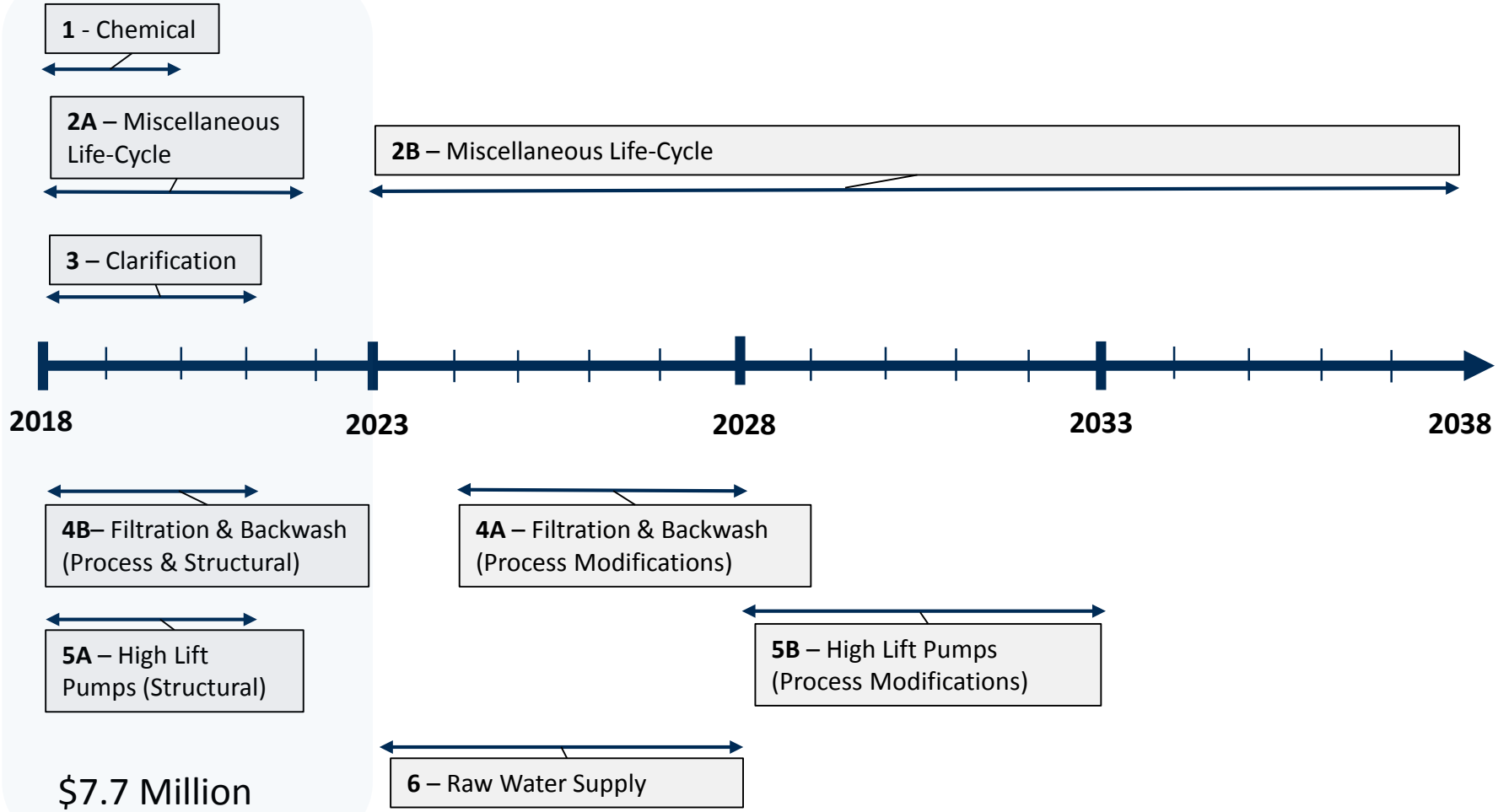
1. Identify immediate needs
2. Review timing for other identified upgrades/renewal
3. Identify interconnected upgrade/renewal opportunities
4. Develop an overall list of “packaged” proposed upgrades to be implemented by the Town within the next 20 years

20-Year Strategic Plan – Upgrades

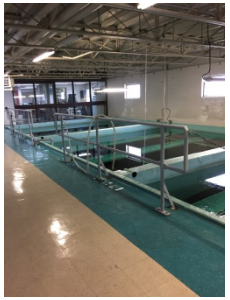
Package No.	Package Upgrades	Proposed Timing		Order of Magnitude Costs
1	Chemical Storage & Feed System Upgrades	2018 – 2020	0-2 years	$800,000
2A	Miscellaneous Life-Cycle Work & Replacement (Short Term)	2018 – 2022	0-4 years	$1,100,000
2B	Miscellaneous Life-Cycle Work & Replacement (Medium/Long Term)	2023 – 2038	5-20 years	$1,400,000
3	Clarifier Upgrades	2018 - 2021	0-3 years	$4,400,000
4A	Filtration & Backwash (Process Modifications)	2024 - 2028	6-10 years	$2,000,000
4B	Filtration & Backwash (Process and Structural)	2018 - 2021	0-3 years	$800,000
5A	High Lift Pumps & Treated Water Storage (Structural)	2018 - 2021	0-3 years	$600,000
5B	High Lift Pumps & Treated Water Storage (Process Modifications)	2028 - 2033	10-15 years	$6,500,000
6	Raw Water Supply Upgrades	2023 - 2028	5-10 years	$250,000

Note: Class D Estimate (-20% to +30%), 2018 dollars, excluding engineering and contingencies

20-Year Strategic Plan – Proposed Timelines








Thank you!
Questions?

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Location Plan