

# Wastewater Treatment Energy Savings & Operational Update

Operations Committee Update



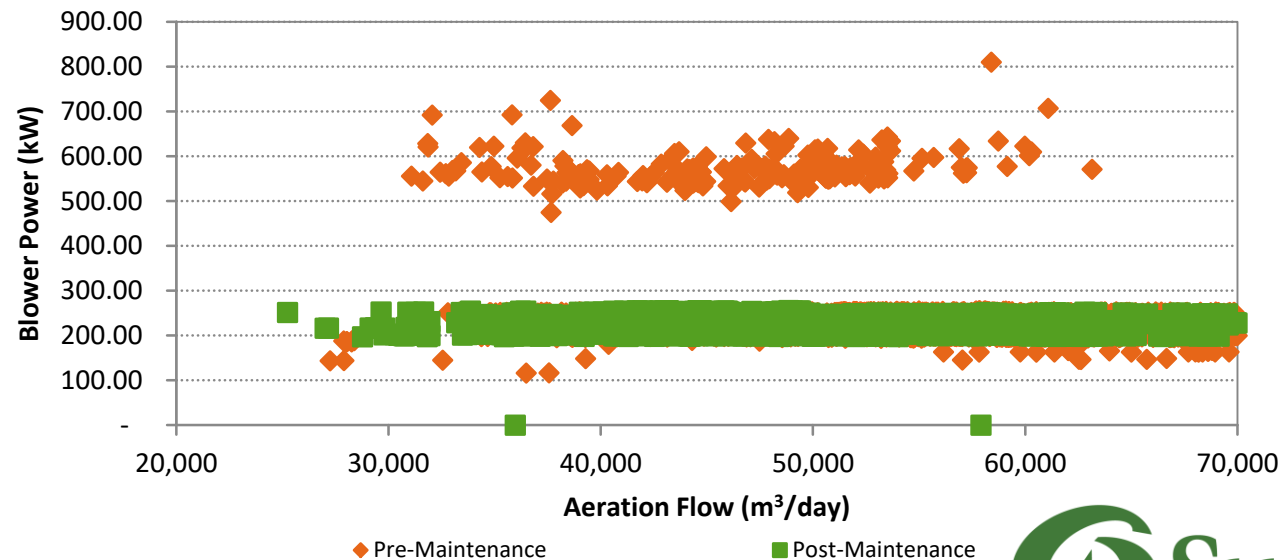
# Sudbury Wastewater Treatment Plant



- ▶ Largest Wastewater Treatment Facility in the City of Greater Sudbury
- ▶ Services approximately 95,000 residents
- ▶ 2019 Flows:
  - ▶ Average: 60,600 m<sup>3</sup>/day
  - ▶ Peak: 247,000 m<sup>3</sup>/day
  - ▶ Total Annual: 22,130,000 m<sup>3</sup>
- ▶ Electricity Costs:
  - ▶ 2019: \$731,600
  - ▶ Average: \$868,000/year (2016 - 2019)
  - ▶ Maximum: \$1,035,000 (2013)
- ▶ Average Chemical Cost: \$475,500/year

# Sudbury Wastewater Treatment Plant Operational Savings

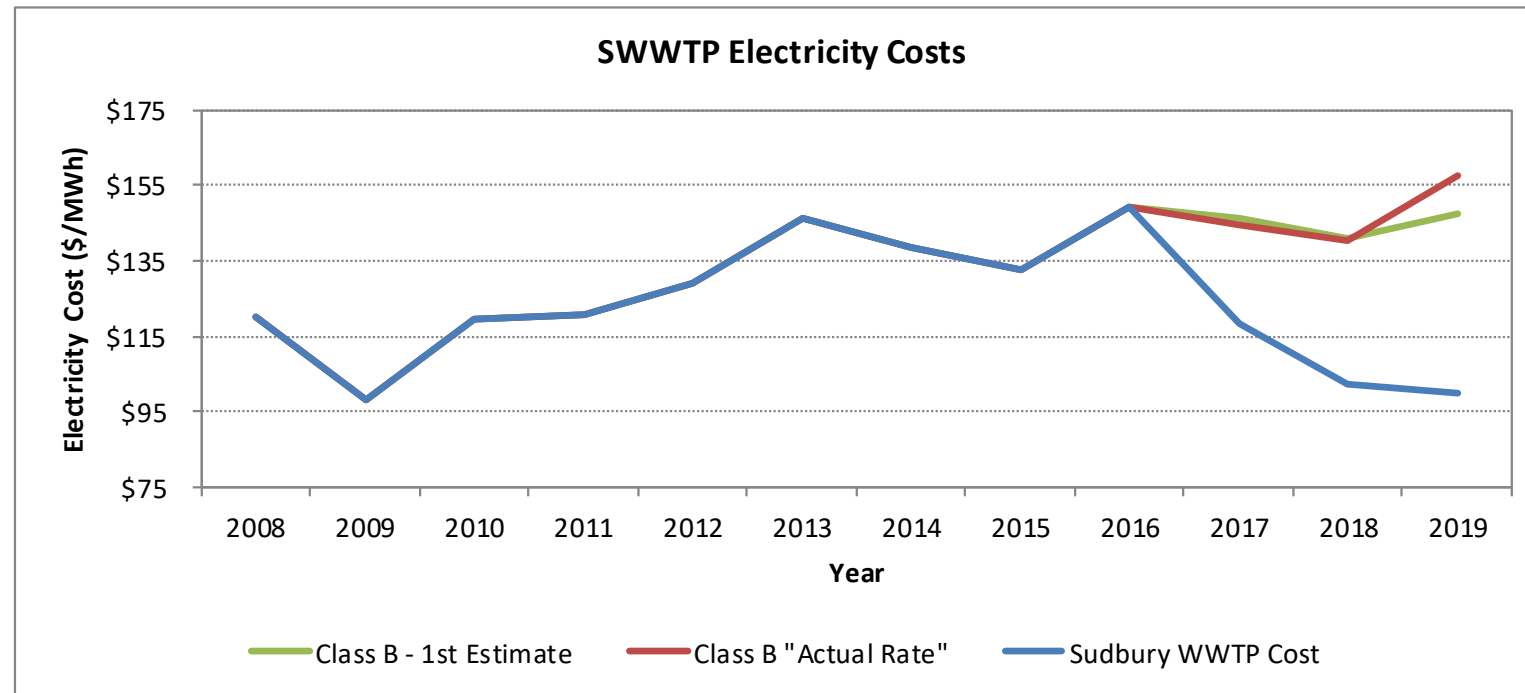
- ▶ Program to clean aeration tanks and repair critical equipment continued from 2018.
- ▶ Estimated \$62,500 annual savings work completed.
  - ▶ Cost of cleanout (2019): \$65,000
  - ▶ Cost of cleanout (2018): \$67,200



# Sudbury Wastewater Treatment Plant Electricity Billing - Cost Avoidance

- ▶ Global adjustment (GA) is the portion of electricity costs that contribute to building infrastructure, maintaining resources and funding conservation programs.
  - ▶ The factor used to calculate GA can be reduced through participation in the Industrial Conservation Initiative (ICI)
- ▶ 2017 cost avoidance: \$211,900
- ▶ 2018 cost avoidance: \$298,700
- ▶ 2019 cost avoidance: \$421,000
  - ▶ Electricity use curtailed for all 5 peaks in 2019; estimated 26% improvement in 2020
  - ▶ Reducing electrical costs allows for re-investment in facilities to complete necessary upgrade and repairs while also stabilizing rates.

# Sudbury Wastewater Treatment Plant Electricity Billing - Cost Avoidance



- Electrical costs for Sudbury WWTP estimated at \$1,150,000 without participation in ICI program

# Walden Wastewater Treatment Plant



- ▶ Aeration tanks cleaned as part of 3 year tender to address all critical process vessels in wastewater treatment facilities.
- ▶ Analysis of electricity bills shows a potential for \$16,000/year in electricity savings.
  - ▶ Average electricity cost: \$121,700 (2017 - 2019)
  - ▶ Cost of cleanout: \$41,860
- ▶ Effluent quality improved through increased aeration efficiency

# Critical Equipment Repairs

- ▶ Wastewater Treatment maintenance and operations employees have responded to a number of critical equipment failures at our facilities over the past year, including:
  - ▶ Azilda WWTP - Fire (March 2019) and clarifier failure (September 2019)
  - ▶ Sudbury WWTP - Clarifier failure (December 2019)
  - ▶ Lively WWTP - Clarifier and baffle issues (July & December 2019)
- ▶ Through the dedication of our personnel these issues were resolved faster, and for a lower cost than engaging contract resources - and with no adverse environmental impacts.
  - ▶ Azilda fire response awarded CAO's Service Award for 2019