Regional Sewer Update
Updated Information Shown in Red

Presented by:

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MUNICIPALITY of the COUNTY of KINGS

Discussion Points

- Answers to Frequently Asked Questions
- Pre-Design Report Information
- Partner Items

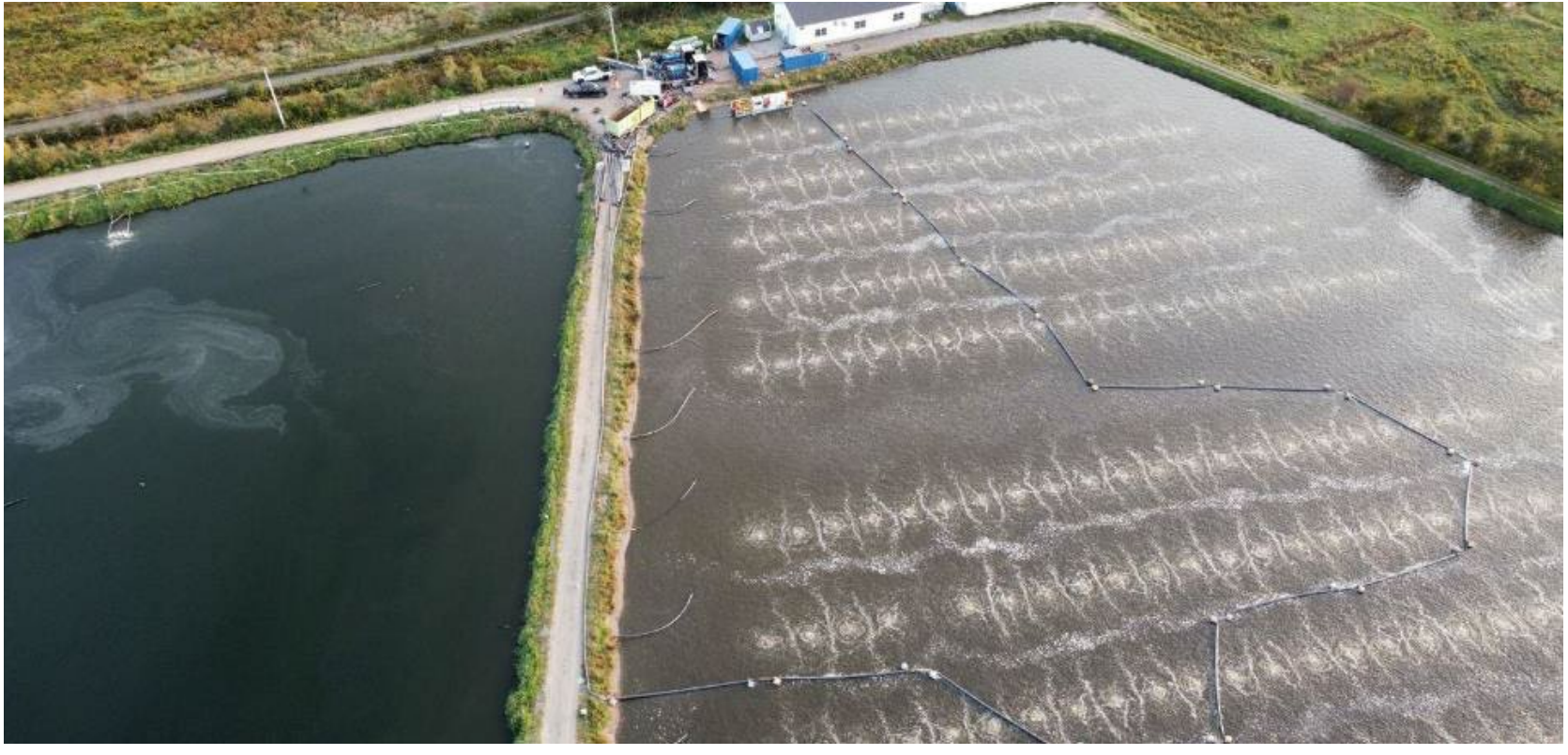
Answers to Frequently Asked Questions

Why are the lagoons smelling?

- Biological plant - bacteria consume waste through 5 treatment lagoons
- Air is added to incoming wastewater through blowers and oxygen diffusers in the lagoons
- In the past, dated and plugged aerators did not supply enough air in the lagoons
- The lack of oxygen is the leading reason for odour (the level of oxygen in lagoons 1 and 2 is not in balance with the strength (load) of the incoming waste)

Old Aerators (now replaced)

New Aeration Diffusers (in operation on right)

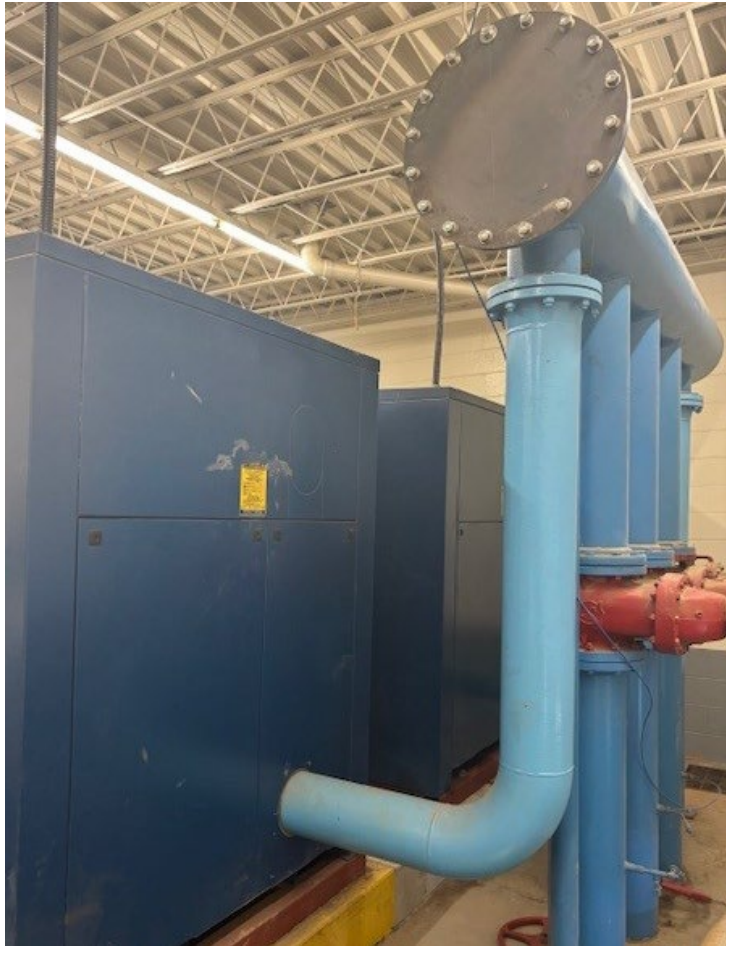


What is being done to eliminate the smell?

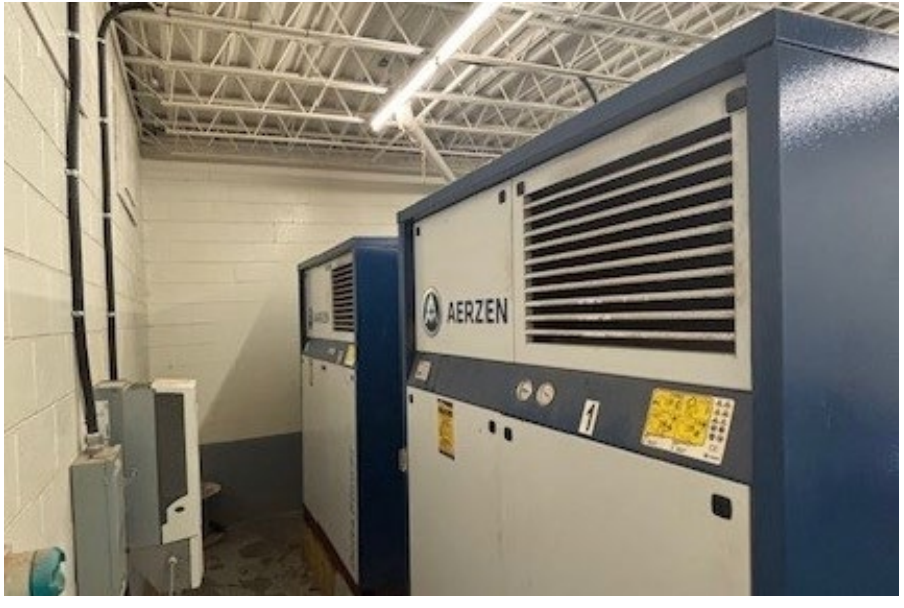
- Air blowers supplying oxygen to Lagoons 1 and 2 have been upgraded and reconfigured
- Air blowers supplying Lagoons 3, 4, and 5 were tuned during the first week of June
- An oxygen-boosting compound is being added
- Mechanical mixers were added to lagoons 1 and 2

New High Efficiency Blower Installation (now in operation output adjusted June 16)

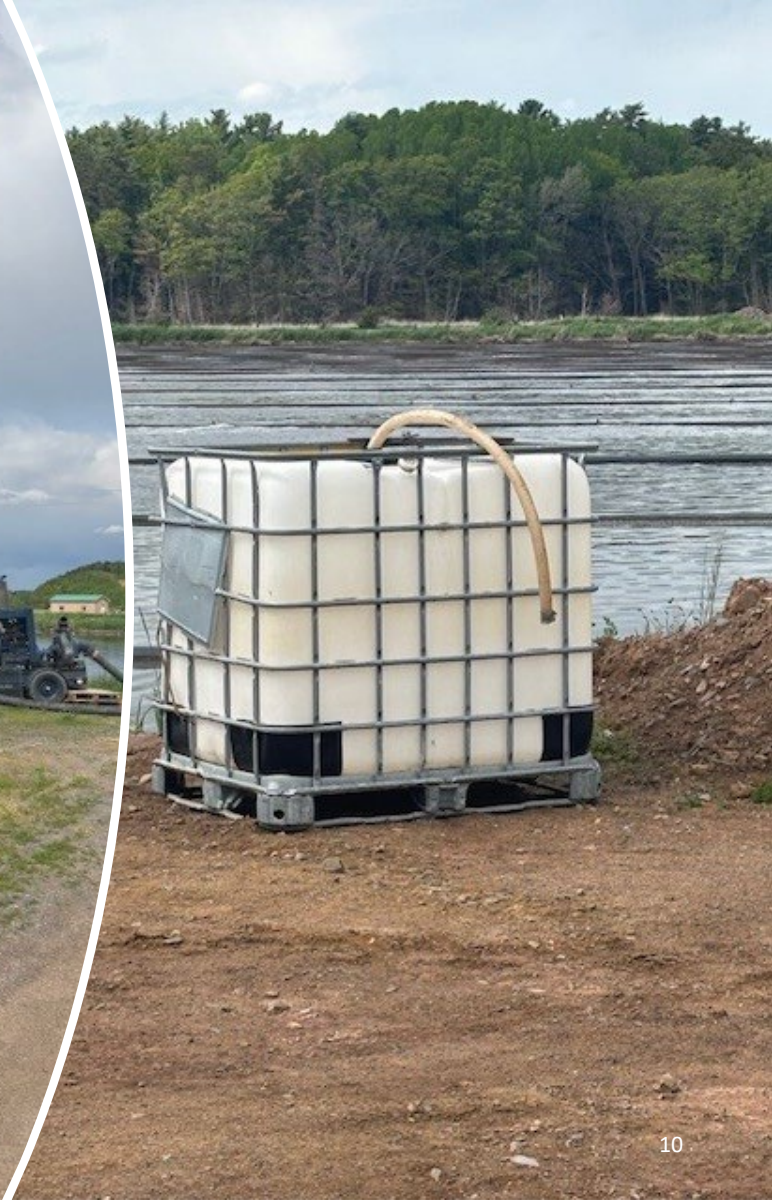
Blowers to Lagoons 3, 4 & 5



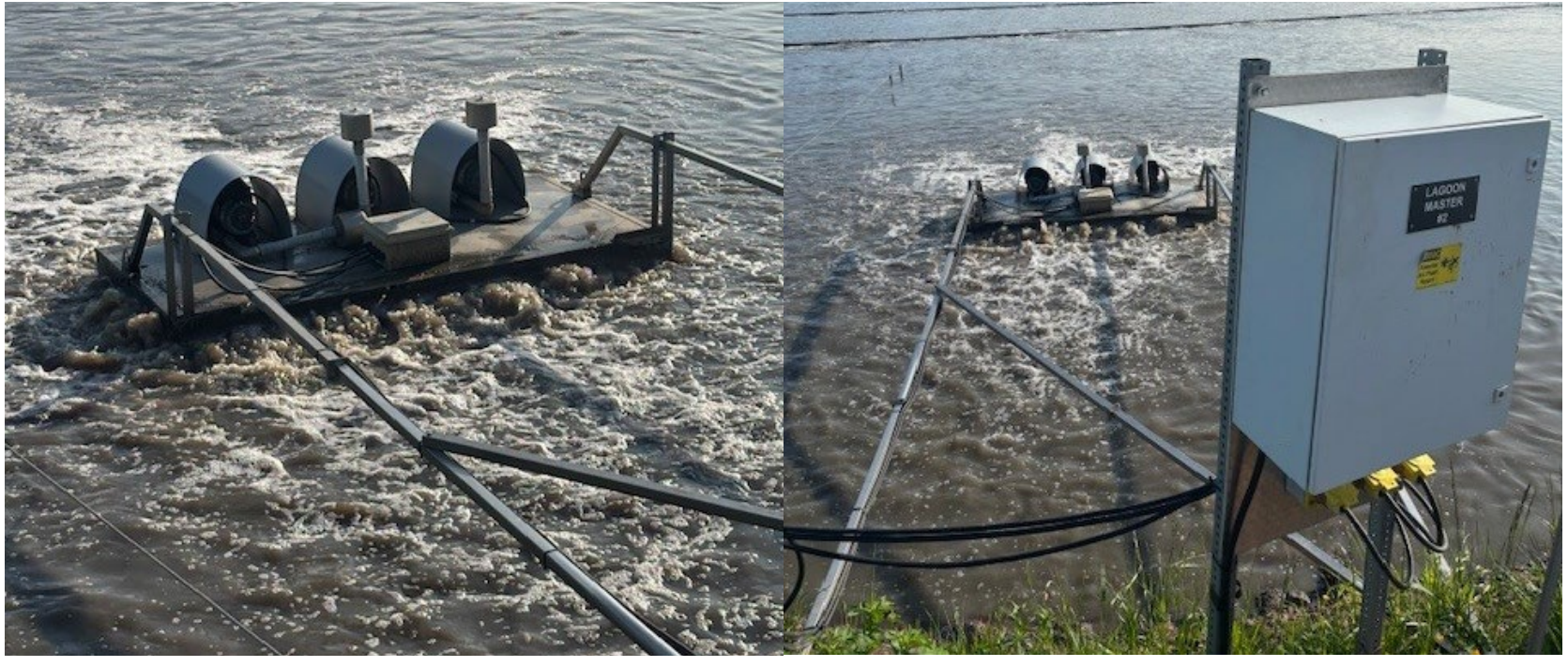
- Now supplying 70% more air to these lagoons
- Now seeing Dissolved Oxygen increases in Lagoons 3, 4, & 5



Equipment being used for dosing of Oxygen Boosting Compound



Mechanical Mixers in Operation



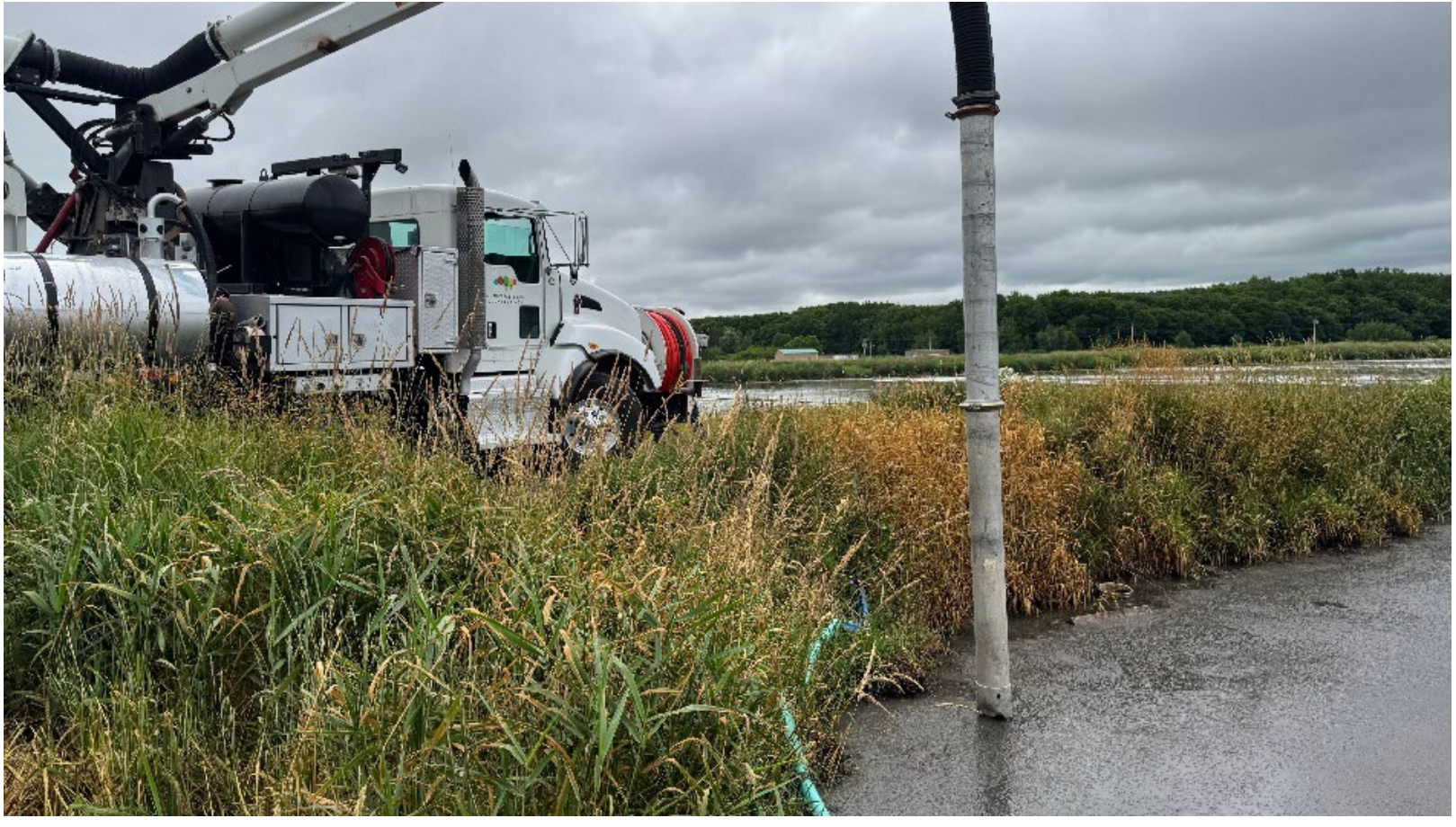
More Recent Advice & Work

- Materials ordered to install additional diffuser string Lagoon 2 (FOB 1 to 2 weeks – staff to install)
- Continued dosing of oxygen boosting supplement
- Engineered design received for 7 additional diffuser strings in Lagoon 1 (FOB 8 weeks but attempting to expedite)

Advice Received and Under Development

- Smaller screen mesh has been received for drum screens (intended to address the amount of solids entering Lagoon 1). Staff started installing the resized screens this week
- Floating “mats” are being removed

Removal Floating Mats



Length of Time for Waste Processing

- The lagoon-based treatment plant retains wastewater for approximately 60 days
  - from the time of inlet through the 5-lagoon treatment system to the point of effluent discharge

Biosolids – 2010 Regulations

- During 2021 and 2024 more than 11,000 metric tonnes was removed from the lagoons (not including geotubes)
- Regional produces a Class B municipal biosolid
- The Municipality has been measuring the buildup of biosolids with sonar technology
- Desludging of lagoon 2 is planned for the fall

Biosolid Removal – Con't

Past Experience

- Land application could not be accommodated due to volume (capacity of licensed windrow operators)
- Too much volume for direct land application (topping) at wastewater plant locations, i.e., not enough area
- Can be used in Second Generation Landfill operations for daily cover or cell closure but cannot be stockpiled

Biosolid Removal – Con't

Past Experience

- Class B materials have stockpile restrictions
- Class A and B materials have storage restrictions some of which relate to drinking water supplies
- Other Nova Scotia municipalities have similar experiences
- Disposal will be revisited prior to 2025 removal

Capital Costs 2019-20 to 2024-25

Fiscal Ye	Aeration/Plant Upgrades	Engineering - Treatment	Forcemain	Engineering - Forcemain	Fencing & Other	Lift Station Upgrades	Sludge Management	Forcemain Estimated Payable	Grand Total
2019/20	$ 775,572	$ 39,533	$ -	$ 18,803	$ 52,577	$ -	$ -	$ -	**$ 886,484**
2020/21	248,940	3,050	144,435	-	-	-	-	-	**396,425**
2021/22	25,512	16,686	-	7,084	18,004	-	1,971,613	-	**2,038,899**
2022/23	573,734	29,465	-	16,575	-	-	47,972	-	**667,746**
2023/24	2,842,881	170,169	-	15,121	12,514	-	2,408,476	-	**5,449,162**
2024/25	64,490	15,571	821,774	147,998	3,135	42,138	221,179	1,767,958	**3,084,242**
Grand Total	**$ 4,531,129**	**$ 274,474**	**$ 966,209**	**$ 205,581**	**$ 86,230**	**$ 42,138**	**$ 4,649,240**	**$ 1,767,958**	**$ 12,522,958**

Sludge Management (weight)	
Year	Metric Tonnes
2019-21	6,943
2022-24	3,996
Total [1]	**10,939**

Sludge Management by Activity	
Desludge/D	$ 3,058,238
Disposal	710,695
Transport	880,306
Grand Total	**$ 4,649,240**

1. Does not include Geotube storage .

Size of the System

- The system services residents, businesses, industry, and institutional users between Greenwich and Coldbrook
- Includes:
  - residential
  - businesses and industry within Kentville Industrial Park
  - retail sector in New Minas
  - Valley Regional Hospital

Annual Budget for Regional Partners

2025/2026 REGIONAL SEWER BUDGET

	Capital[1]	Operating	Total	Percent
Kentville	$ 461,912	$ 639,977	$ 1,101,890	48.0%
New Minas	146,938	343,374	490,312	21.4%
Pepsico	117,394	179,270	296,664	12.9%
Kings	84,256	320,779	405,035	17.7%
	$ 810,500	$ 1,483,400	$ 2,293,900	100.0%

1. $810,550 is the current year portion of the below 2025-26 capital budget

Annual Budget for Regional Partners

2025-26 Capital Spend:		
Sewerlines - Conveyance line replacement	$	400,000
Aeration and desludging		1,600,000
Regional Equipment		310,000
Consulting (I&I and Hydraulic Retention)		90,000
Lift Stations (including wet well wizards/aeration)		1,325,000
Rehabilitation of 4 overflow chambers and UV upgrades		900,000
	$	4,625,000

Funding Sources:		
Capital Reserve	$	410,000
Operations		90,000
Grants		1,532,500
Debenture		2,592,500
	$	4,625,000

Is the system at capacity?

- 50% of design flow present-day
- Engineering consultants note that BOD loading is within design spec if our current monitoring is capturing all the incoming BOD
- The study presently underway (involving the installation of additional composite samplers) will address/confirm system loading

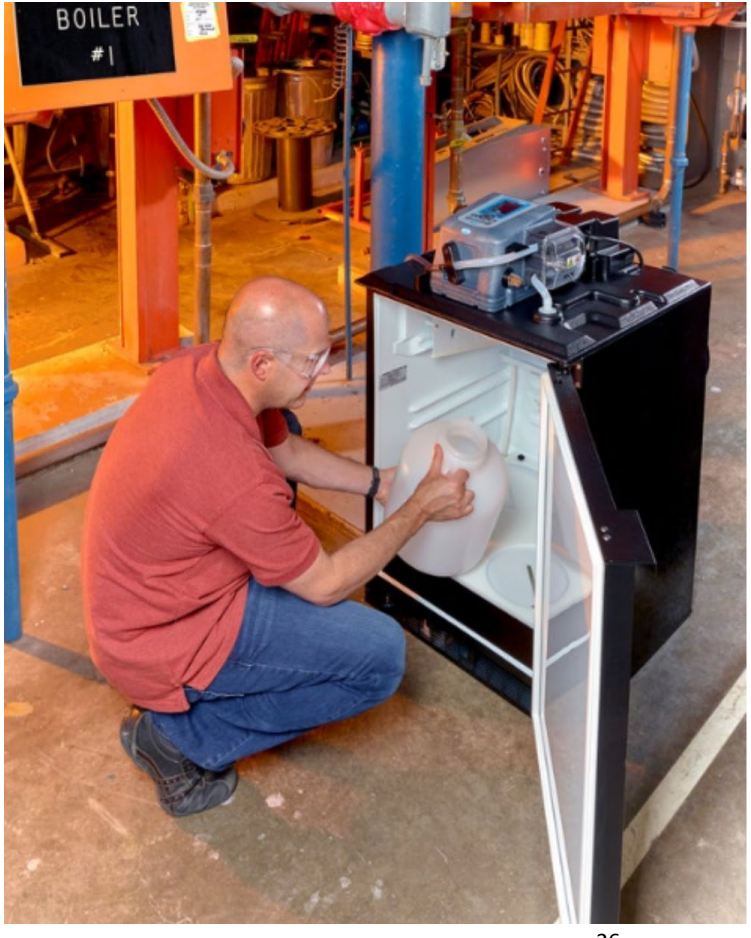
System Pre-Design Report

System Pre-Design Report

- First step in Pre-design study is installation of composite samplers to gather influent data
- Composite samplers were budgeted for 2025-26 and consist of equipment that takes automated grab samples for analysis
- Municipal staff have been working with Kentville staff on installation points

System Pre-Design Report

- Four units have been ordered, one has been delivered
- Installation of this equipment is authorized under the *Municipal Government Act*
- Data collection will be undertaken over an extended period to develop trend information



System Pre-Design Report

- Pre-design report on the entire system (tendered in February 2025)
  - Process upgrades (pre-screening solutions, possible conversion to alternative treatment technologies, post-treatment clarification or filtration, sludge management solutions and overall sewer treatment facility optimization)

System Pre-Design Report – Con't

- Study will encompass the type of incoming waste and projected growth and development in the area
- Influent data and receiving water regulatory requirements are key components of the study, e.g., the installation of composite samplers and inline monitors to ensure accuracy of data
- Progress meetings will be convened with the Technical Sub-Committee
- To be completed by the spring of 2026

Partner Items

Partner Items

- Success in prioritized and joint infrastructure applications (Town, Village, and Municipality - Conveyance Line Replacement)

- Update of Technical Sub-Committee Terms of Reference

Partner Items – Con't

- Upcoming work (Dovetail to Pre-Design Report):
  - System ownership
  - Governance
  - Financing
  - Regulatory Review
    - Mirrored by-laws
    - Enforcement / prosecution services

Questions from Council

www.countyofkings.ca/regionalsewerupdates