Municipal Class Environmental Assessment Study – Tavistock Wastewater Treatment Plant Capacity Expansion

PUBLIC CONSULTATION CENTER (PCC) #1

VIRTUAL PCC #1 – DECEMBER 10, 2025
4:00 PM – 6:00 PM

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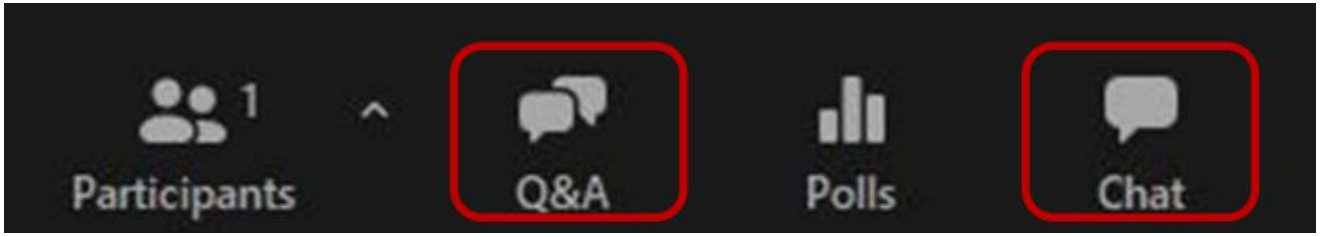
DURING THE PRESENTATION

- This meeting is being recorded.
- When joining the meeting, your microphone and video will be turned off. Use the Chat button to let us know about any technical difficulties.
- Use the Q&A button to put forward a question to the presenters. Questions will be answered after the presentation.



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OUTLINE

Presentation by Project Teams.

Question and Answer Period

Presentation and Question and Answer Summary will be available following the meeting.

To assist in the ongoing Class Environmental Assessment Study, please provide any comments by December 19. 2025.

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PURPOSE OF THIS MEETING

Introduce you to the study.

Provide an overview of the study process.

Identify the reason for this study.

Summarize the alternative solutions considered and the preferred solution.

Next steps.

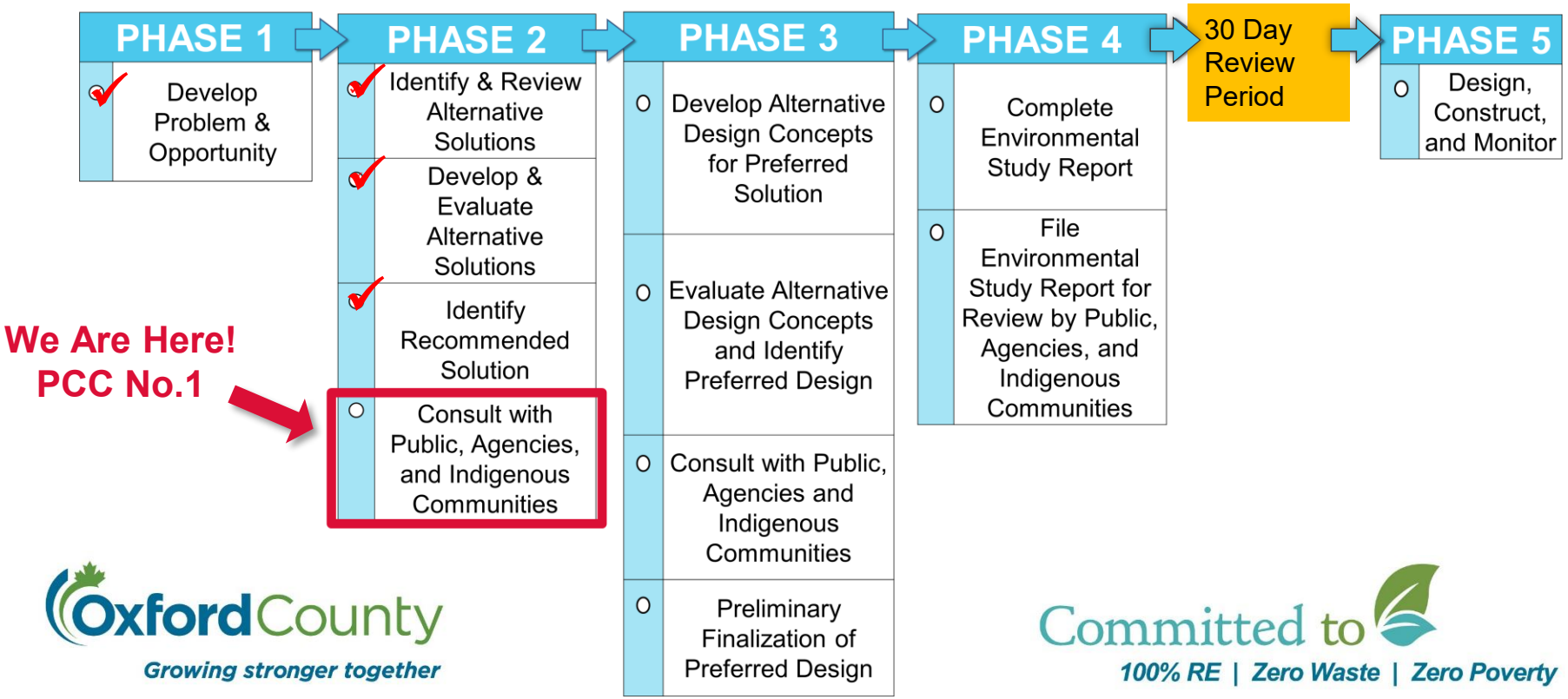
We want to hear from you!

- Do you have any observations that you would like to share?
- Do you have any questions regarding the study?
- Do you have any questions regarding the Class EA Study process?

CLASS ENVIRONMENTAL ASSESSMENT PROCESS

- The **Class Environmental Assessment (Class EA)** planning process is followed by municipalities in Ontario when planning for new infrastructure. This process allows for public, technical agency, and Indigenous community consultation and input.

- This study is being completed as a Schedule C Class EA with a 25-year vision for the Tavistock Wastewater System.



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INPUT INTO CLASS EA PROCESS

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PROBLEM / OPPORTUNITY STATEMENT

- To identify the preferred approach that is cost-effective, environmentally sound and sustainable to increase wastewater treatment capacity at the Tavistock WWTP to service the existing sewage flows as well as future growth to 2046 in the Village of Tavistock.

STUDY AREA AND BACKGROUND

- Tavistock has a current residential population of approximately 3,940 (2025).
- The Tavistock Wastewater Treatment Plant (WWTP) lagoons was originally constructed in the 1960s, expanded in 1989 and 2011 and upgraded in 2021.
- Tavistock WWTP has an Average Day Flow (ADF) of 2,022 m^3/day (69% of capacity)

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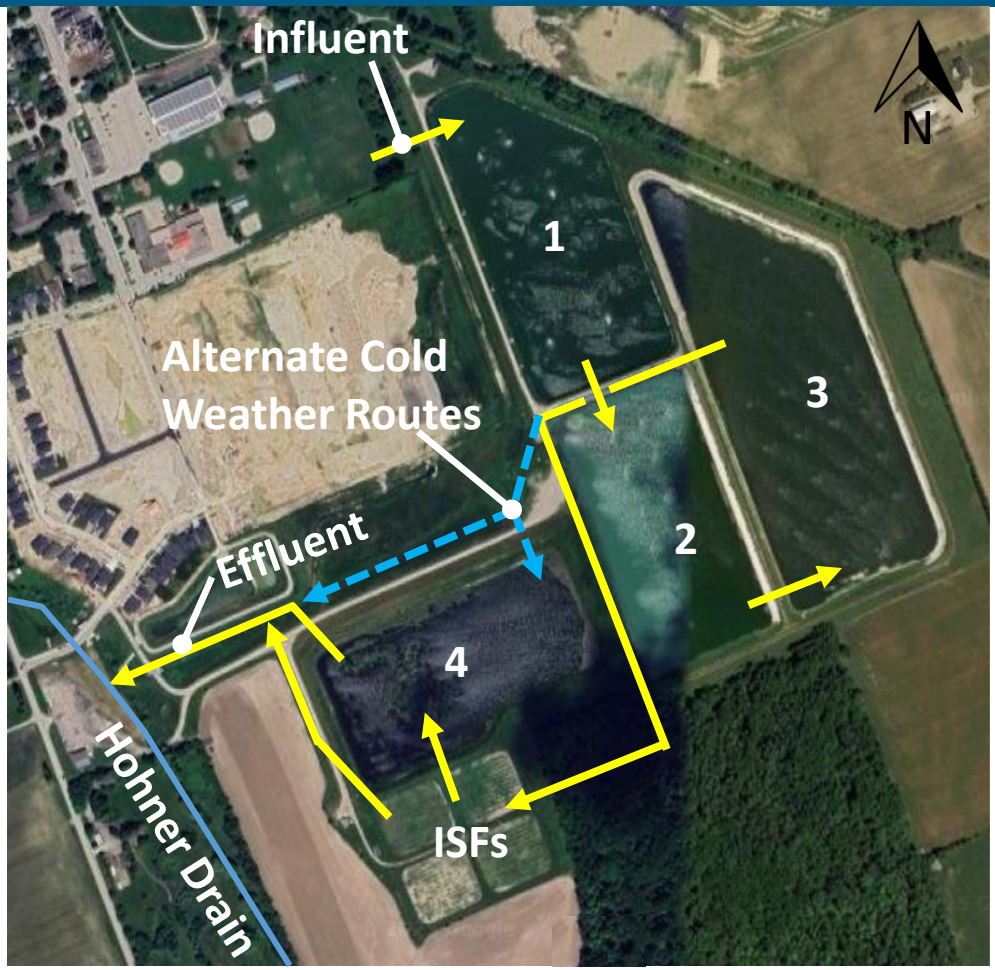
HOW DOES THE TAVISTOCK WWTP WORK?

- Influent wastewater is aerated in Cells 1 and 2.
  - Removal of solids and organics.
  - Chemical removal of phosphorus.
- Wastewater is stored in Cell 3 before filtration in the Intermittent sand filters (ISF).
  - ISF provides suspended solids and nitrogen removal.
- Treated effluent is released to the Hohner Drain.
  - Effluent can also be stored in Cell 4.



WHERE DOES THE EFFLUENT GO?

- Effluent is discharged to the Hohner Drain which flows into the Thames River
- The WWTP is required to meet effluent quality and quantity limits set out in the Facilities Environmental Compliance Approval (ECA), as shown in the table below.
  - The WWTP is to use best efforts to meet quality objectives listed in the ECA
- The WWTP consistently produces high quality effluent meeting its ECA limits

Final Effluent Parameter	Current ECA Limit	Current ECA Objective
$cBOD_5$	15.0 mg/L	10.0 mg/L
Total Suspended Solids	15.0 mg/L	10.0 mg/L
Total Phosphorus	0.50 mg/L (May - November), 0.80 mg/L (December - April)	0.30 mg/L (May - November), 0.50 mg/L (December - April)
Total Ammonia Nitrogen	7.0 mg/L (January) 10.0 mg/L (February) 8.5 mg/L (March) 8.0 mg/L (April) 1.0 mg/L (May-November) 3.0 mg/L (December)	6.0 mg/L (January) 9.0 mg/L (February) 7.5 mg/L (March) 7.0 mg/L (April) 0.8 mg/L (May-November) 1.5 mg/L (December)
pH	6.0 - 9.5 inclusive	6.5 - 9.0 inclusive

POPULATION GROWTH AND FLOW PROJECTIONS

- The residential population of Tavistock is estimated to grow by 1,500 by the year 2046 (2024 Master Plan).
  - This will drive commercial/Industrial/Institutional growth.
  - Growth projections were used to estimate resulting wastewater flows.
  - Projections estimate influent flows will reach 3,905 m^3/d by 2046.
    - 33% more than the WWTP's current capacity (2,935 m^3/d).

2046 Design Values	Units	Value	Peaking Factor
Average Daily Flow	m^3/d	3,905	-
Max Month Flow	m^3/d	5,310	1.36
Peak Daily Flow	m^3/d	10,465	2.68
Peak Instantaneous Flow	m^3/d	19,008	4.87

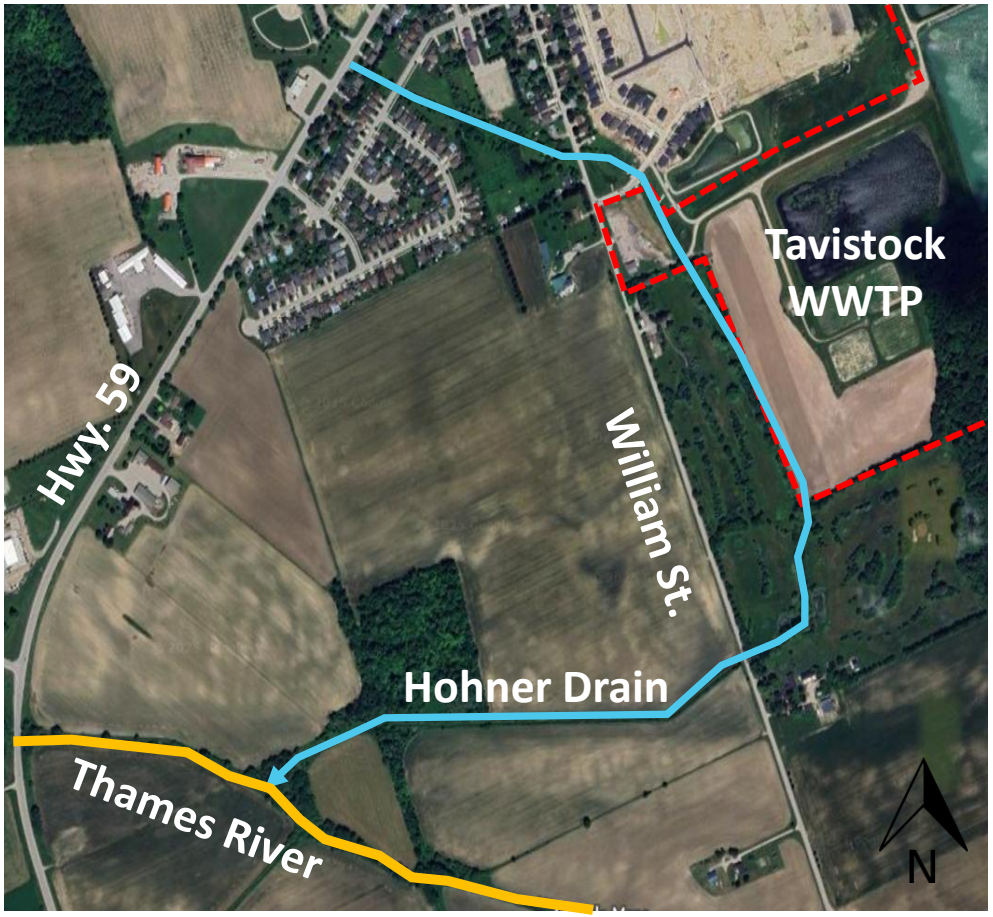
WWTP CAPACITY ASSESSMENT

- The existing WWTP capacity is insufficient to meet the anticipated ADF in 2046.
  - Current max month loadings are a strain on the existing aeration system which will need to upgraded.
- To meet the projected future flows, nearly all processes reviewed will require some level of upgrade.

Existing Unit Process	Suitable for Current Rated Capacity: 2,935 m^3/d	Suitable for Projected Rated Capacity: 3,905 m^3/d
Aeration	Based on average loading: YES Based on max month loading: NO	NO
Nitrification	YES	NO
Chemical TP Removal	Dosing Pump Capacity: YES Storage Tank Capacity: YES	Dosing Pump Capacity: NO Storage Tank Capacity: NO
Effluent Storage	YES	YES (depending on future effluent discharge limits)

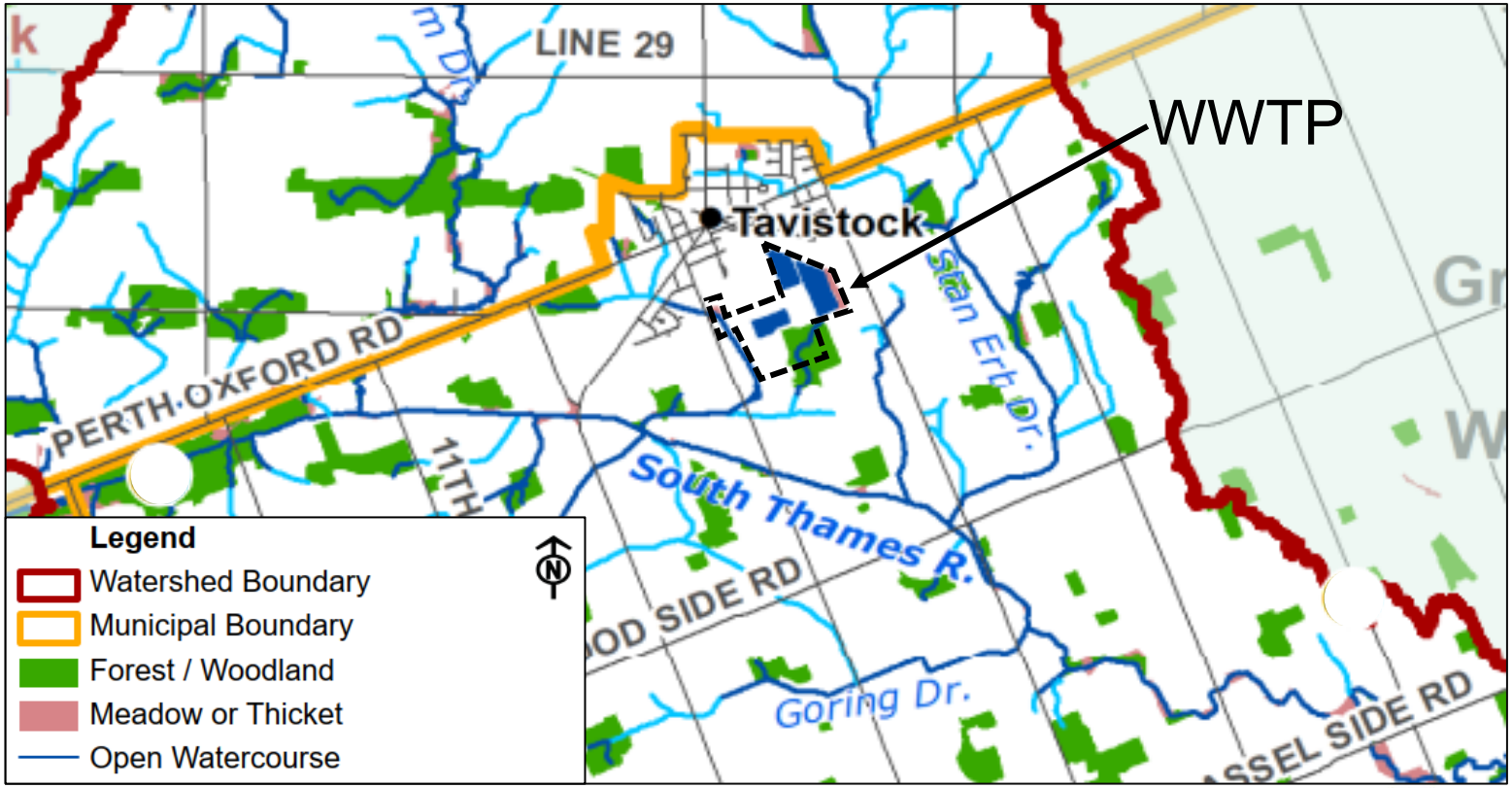
FIELD INVESTIGATIONS

- Field investigations are completed to review the natural, cultural, social and economic resources so impacts can be minimized:
  - Thames River Assimilative Capacity Study.
  - Species at Risk (SAR) Study.
  - Stage 1 Archaeological Study (ongoing).
  - Cultural Heritage Study (ongoing).
  - Hydraulic Capacity Assessment of Hohner Drain.



NATURAL ENVIRONMENT

- The WWTP is located in the headwaters of the Upper Thames River Watershed.



NATURAL ENVIRONMENT - TERRESTRIAL

- The WWTP lies within North Woodstock watershed (UTRCA).
- Lagoons support migrant shorebirds (e.g., Semipalmated Sandpiper, Plover).
- Mature forest & swamp host diverse plant and wildlife.
- Two Species at Risk (ESA 2007):
  - Eastern Wood-Pewee.
  - Butternut.


Cell 4


Butternut

NATURAL ENVIRONMENT - AQUATIC

- Hohner Drain (Municipal, Class E) is a permanent watercourse with spring timing restrictions for in-water work.
- Potential presence of Northern Sunfish (Species of Special Concern).
- Confirmed fish species: Fathead Minnow, Creek Chub, Blacknose Dace, Brook Stickleback.
- Iron staining suggests groundwater input.

Hohner Drain at WWTP Outfall

Hohner Drain

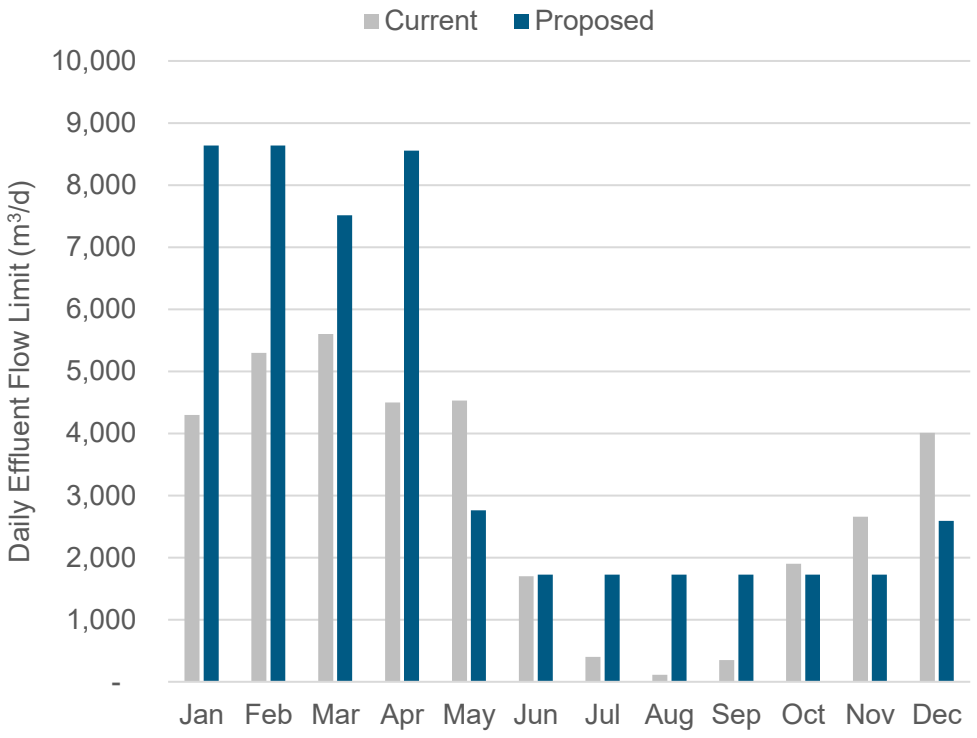
RECEIVER ASSIMILATIVE CAPACITY STUDY

- An Assimilative Capacity Study (ACS) of the Thames River was completed to determine its ability to receive additional effluent.
- A mix of historical water quality data and 2023/2024 Thames River water samples were used.
- Effluent quantity and quality limits/objective were proposed.
- Proposed limits (to be approved by the MECP) lead to a reduction in the permitted loading to the Thames despite an overall increase in the effluent volume:

	Permitted Effluent Loadings (kg/yr)			
Parameter	**cBOD**	**TSS**	**TAN**	**TP**
Proposed Limits	14,659	14,659	3,625	733
Current Limits	16,068	16,068	5,702	750

PROPOSED EFFLUENT DISCHARGE FLOWRATES

- The WWTP currently has a daily discharge limit which varies by month.
- Discharge strategy reduces the flows to the Thames when River flows are lower.
- Proposed discharge limits (to be approved by the MECP) were iterated to meet the receiver water quality objectives and minimize storage requirements.
- Most months will result in an increased flow to the receiver.



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PRELIMINARY LIST OF TREATMENT ALTERNATIVES

1. Do Nothing
2. Limit Growth
3. Reduce wastewater flows through water efficiency and extraneous flow reduction

Alternatives 1 and 2 do not meet the Problem & Opportunity Statement, thus will not be considered further.

Alternative 3 cannot provide enough additional capacity to support future growth but will continue to be implemented by the County as a part of any servicing solution.

4. Upgrade to a partial mechanical system on the existing site
5. Decommission the plant and construct a mechanical plant on the existing site

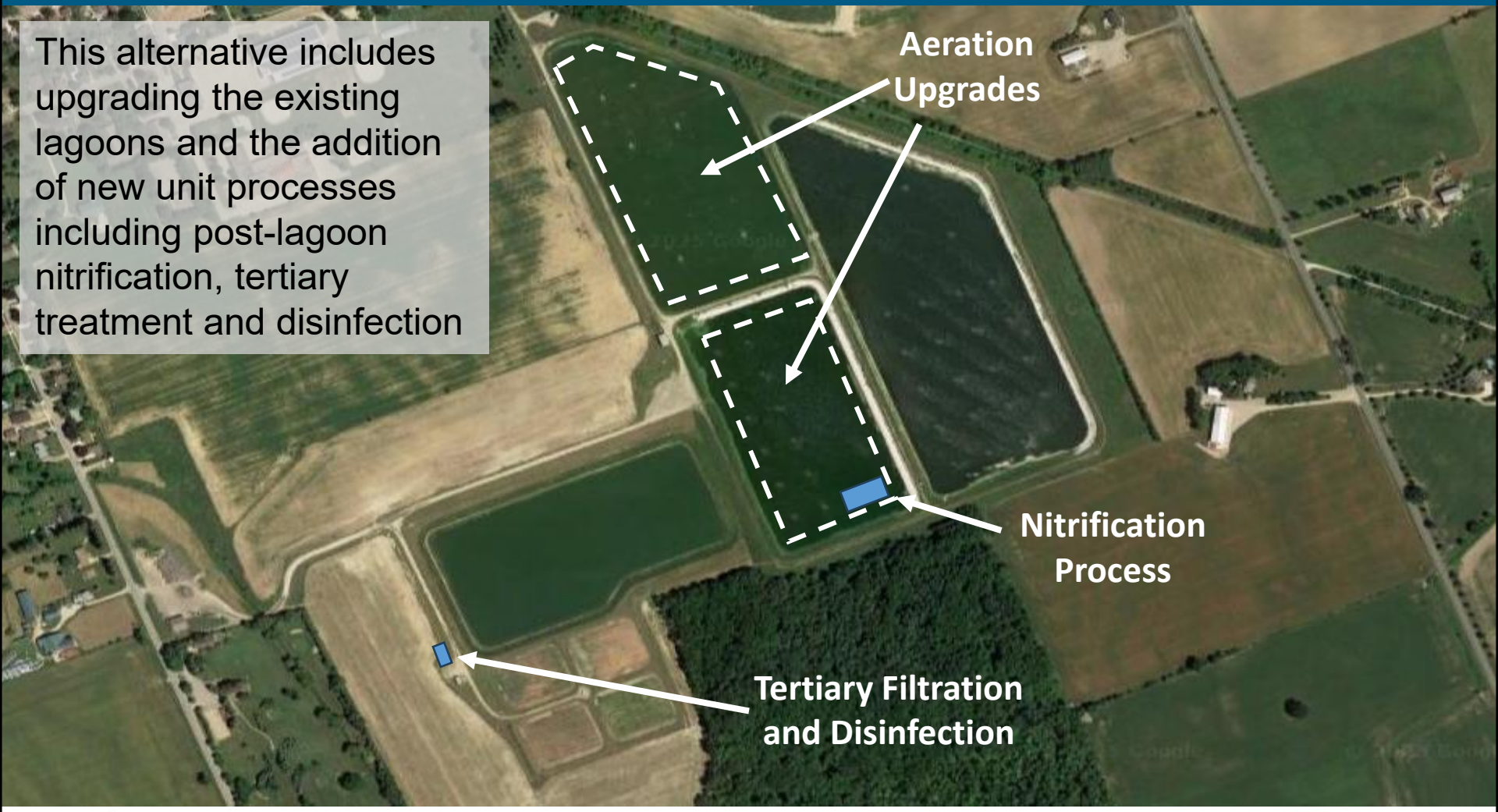
Alternatives 4 and 5 are feasible solutions and will be reviewed and evaluated in detail to identify a preferred solution.

6. Decommission the plant and construct on a new site

Alternative 6 will have significant financial and environmental costs (construction at new site and decommission at current) as well as expected greater impact to the existing community (social) by extended project duration, construction etc.

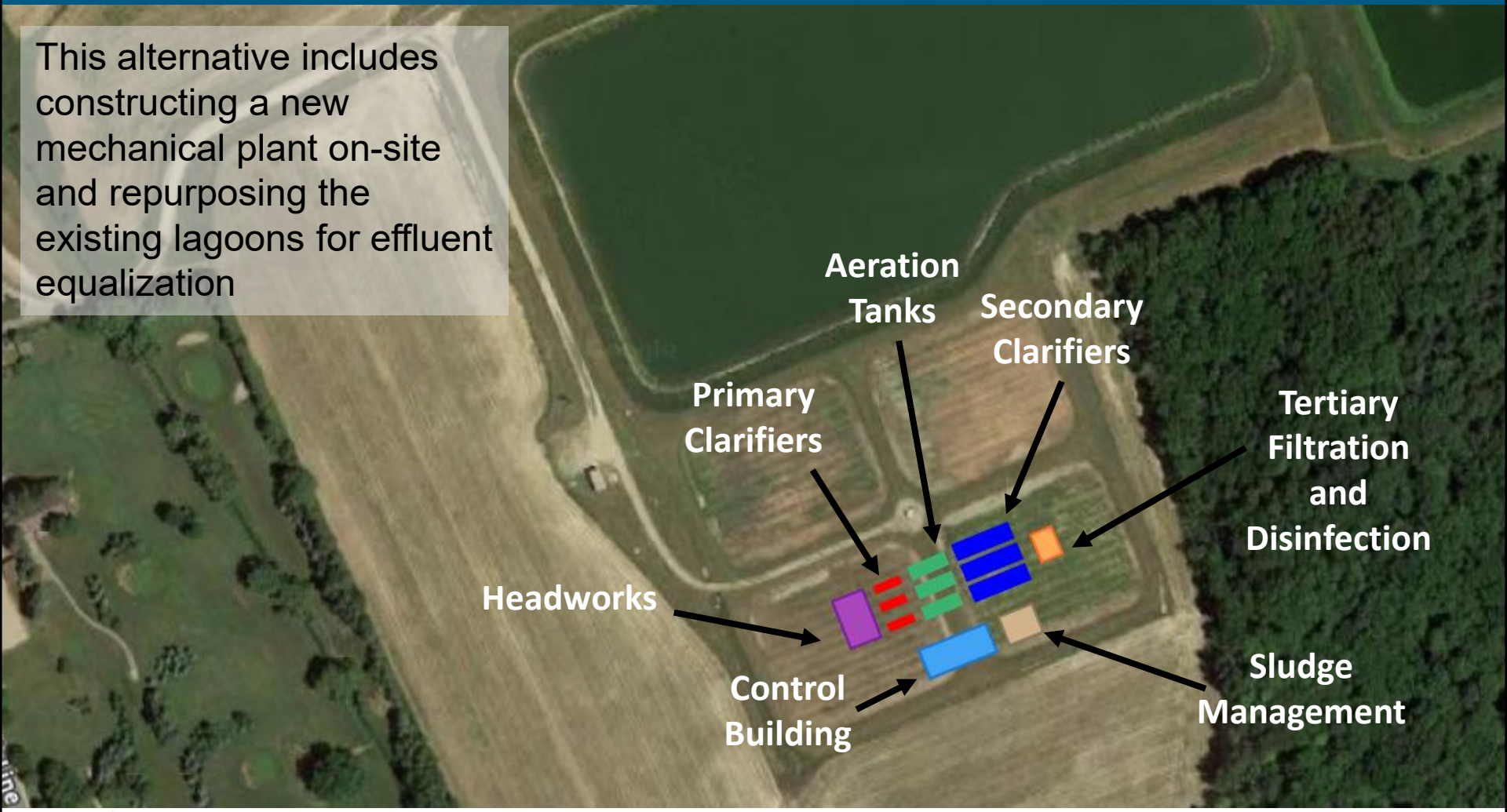
ALTERNATIVE 4 – PARTIAL MECHANICAL UPGRADE

This alternative includes upgrading the existing lagoons and the addition of new unit processes including post-lagoon nitrification, tertiary treatment and disinfection



ALTERNATIVE 5 – CONSTRUCT A NEW MECHANICAL WWTP

This alternative includes constructing a new mechanical plant on-site and repurposing the existing lagoons for effluent equalization



EVALUATION OF ALTERNATIVE SOLUTIONS

- Alternate solutions were reviewed based upon the following criteria:

Criteria	Considerations (Sub-Citeria)
Technical	• Constructability & construction impacts to existing system. • Implementation phasing. • Compatibility with existing infrastructure. • Optimization of existing infrastructure. • Operations and maintenance requirements. • Ability to meet service levels required (including ability to meet discharge limits). • Resiliency and adaptability to future needs.
Financial	• Life cycle costs (capital cost, operation & maintenance cost). • Funding Opportunities.

Environmental	• Impacts to regulated areas (e.g., regulated limits of conservation authority).
	• Ecological impacts:
	  • Potential to Affect Species at Risk (SAR) and/or Significant Wildlife Habitat.
	  • Impacts to terrestrial and/or aquatic environments.
	• Climate Change Resiliency.

Social	• Ability to accommodate flows to planning horizon.
	• Impacts to local residents and businesses:
	  • Aesthetic impacts.
	  • Odour/noise/dust impacts.
	• Regulatory and approval requirements (including ability to meet discharge limits).
	• Impacts to archaeological and cultural heritage resources.
	• Impacts to indigenous communities.

EVALUATION OF ALTERNATIVES 4 AND 5

- Evaluation was completed using a decision matrix
  - Weighting and scoring for each evaluation criteria and sub-criteria was first determined
  - Each item was then scored and the total sum determined the overall preferred alternative

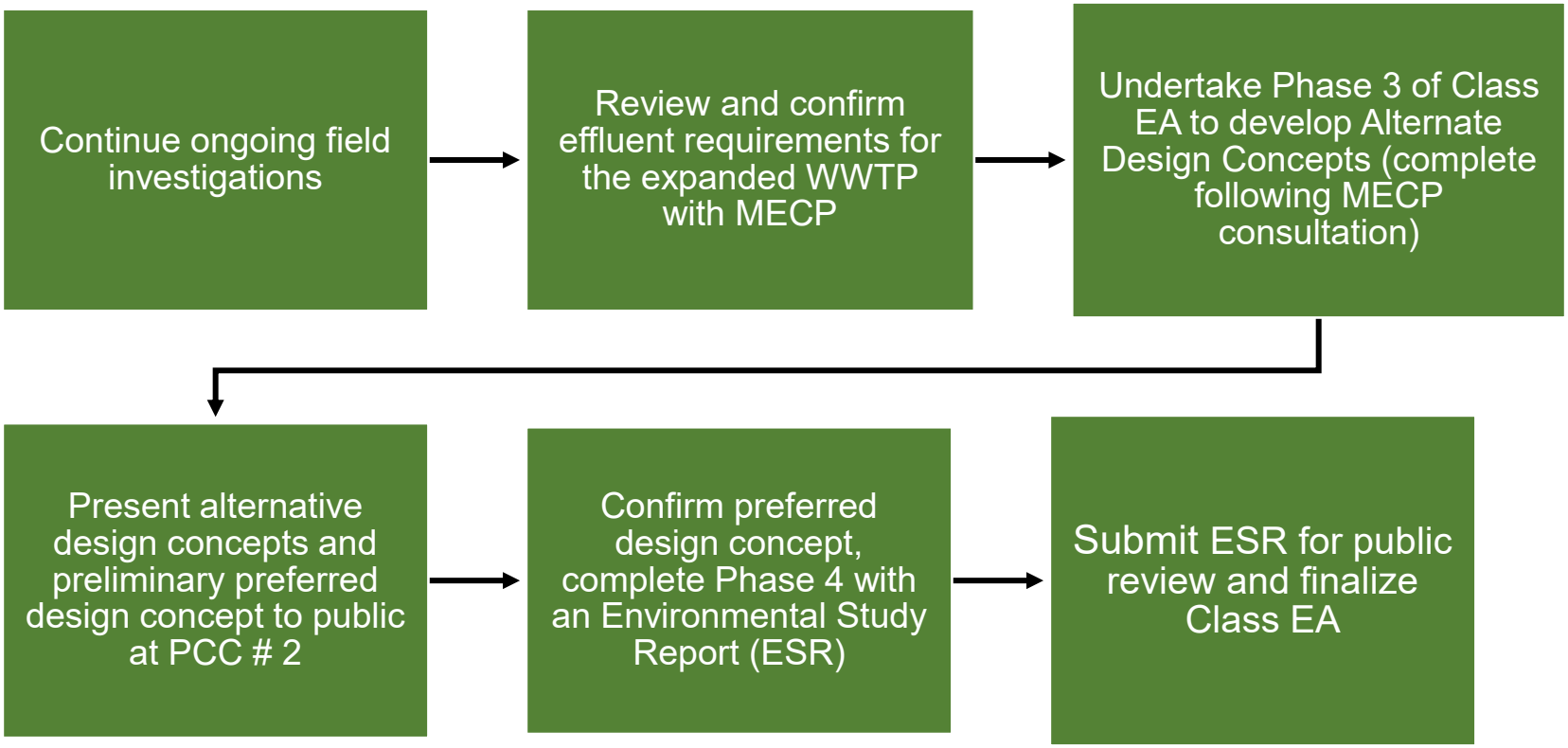
Criteria	Total Points Available	Alternative 4 – Partial Mechanical Upgrade	Alternative 5 – Construct a new Mechanical WWTP
Technical	25.0	20.1	15.0
Financial	25.0	14.0	8.0
Environmental	25.0	19.0	17.0
Social & Cultural	25.0	17.2	18.1
Total	**100.0**	**70.3**	**58.1**

PREFERRED ALTERNATIVE

Based upon the evaluation completed by the County and RVA:

- Alternative 4 (Partial Mechanical Upgrade) has been deemed most cost effective, environmentally sound, and sustainable approach to servicing the Tavistock WWTP and meeting the wastewater servicing needs of the community to 2046

NEXT STEPS


Continue ongoing field investigations
Review and confirm effluent requirements for the expanded WWTP with MECP
Undertake Phase 3 of Class EA to develop Alternate Design Concepts (complete following MECP consultation)
Present alternative design concepts and preliminary preferred design concept to public at PCC # 2
Confirm preferred design concept, complete Phase 4 with an Environmental Study Report (ESR)
Submit ESR for public review and finalize Class EA

QUESTIONS

Thank you for attending!

We would appreciate feedback from PCC #1 by December 19, 2025

https://speakup.oxfordcounty.ca/tavistock-wastewater-treatment-plant

- Submit your comments via email or phone
- Leave a comment or question for the study team on Speak Up, Oxford

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DISCUSSION