ONTARIO SOCIETY OF PROFESSIONAL ENGINEERS

December 6, 2023

Hon. Paul Calandra
Minister of Municipal Affairs and Housing
777 Bay Street, 17th floor
Toronto, Ontario
M7A 2J3

Subject: The benefits of Decentralized Wastewater Treatment (DWWT) systems

Dear Hon. Paul Calandra,

OSPE is the advocacy body and voice of the engineering profession in Ontario. Ontario currently has over 85,000 professional engineers, 250,000 engineering graduates, 6,600 engineering post-graduate students, and 37,000 engineering undergraduate students. Through OSPE's non-partisan, evidence-based approach to advocacy, we are recognized as a trusted advisor to government and regularly asked to provide input on policy, planning, and budget decisions.

As the Ministry prepares to build 1.5 million new homes across Ontario, OSPE wishes to highlight the advantages of transitioning from the conventional Centralized Wastewater Treatment (CWWT) model to the more sustainable and resilient alternative, Decentralized Wastewater Treatment (DWWT) systems.

For the past century, CWWT facilities have played a crucial role in delivering professional and effective sanitation services, particularly in developed economies. However, as Ontario increasingly recognizes the need for greater sustainability, infrastructure security, and resilience, it is essential to reevaluate wastewater management strategies.

The inherent weaknesses of CWWT, such as the extensive infrastructure requirements, the need to treat a complex stream of wastewater from multiple sources, and vulnerability to disruptions, make a strong case for considering the benefits of DWWT. By situating treatment equipment close to points of wastewater generation, DWWT systems offer a range of advantages that address current challenges in wastewater management.

Here, we outline some of the main advantages of DWWT systems:

Advantages of DWWT:

1. **Reduced Vulnerability:** Unlike CWWT facilities, which pose a single point of vulnerability, DWWT systems limit the impact of disruptions to a relatively small group of clients and can even mitigate them completely through shared-service mechanisms.

2. **Resilience:** The resilience demonstrated by distributed systems, exemplified during events like Superstorm Sandy in 2012, showcases the effectiveness of DWWT in swiftly restoring operations after natural disasters.

3. **Immediate Water Reuse:** DWWT allows for the treatment of grey and black water at the point of generation, facilitating immediate reuse for non-potable applications within or around the community. This significantly reduces the overall water footprint.

4. **Faster and Lower-Cost Development:** Community development can progress faster and at a lower capital outlay with DWWT. Construction of smaller, local facilities can occur quickly, and expansion can be modular, matching the pace of development.

In addition, there are numerous issues associated with the predominant use of CWWT systems we wish to draw your attention to:

Weaknesses of CWWT:

5. **Extensive Infrastructure Requirements:** CWWT facilities require an extensive network of large sewer lines, which is costly to install and maintain.

6. **Complex Stream of Raw Sewage:** The centralized approach results in a complex stream of raw sewage from various sources, making resource recovery challenging.

7. **Population Growth and Financial Burden:** Designing CWWT facilities for a 25+ year horizon may lead to overestimating or underestimating population growth, placing a financial burden on the community.

8. **Single Point of Vulnerability:** CWWT facilities pose a single point of vulnerability, and disruptions due to extreme weather events, power outages, or other factors could affect a large part of the community.

9. **Inertia and Resistance to Change:** Due to their size and embedded cost, CWWT facilities may face inertia in adopting newer and more advanced treatment technologies.

Given the benefits of DWWT systems and drawbacks of CWWT systems, OSPE believes DWWT represents a crucial step forward in overcoming barriers to wastewater management, offering a sustainable solution to issues of water scarcity, infrastructure security, and the need to provide access to safe and effective sanitation for communities.

We believe advancements in technologies, processes, and products have made these systems not only practical but also essential for the future well-being of communities in Ontario.

Thank you for your time and consideration of this matter. We extend an open invitation to engage in further discussions with the Ministry. Should this be a possibility, please reach out to Paola Cetares, pcetares@ospe.on.ca or Stefanie Black, sblack@ospe.on.ca.

Sincerely,

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