



Report to Council

Department: Infrastructure Services

Division: Infrastructure Services

Date: December 21, 2020

Prepared by: Kevin Girard, P.Eng, MBA
Director, Infrastructure Services

Report Number: Infrastructure Services-2020-14

Subject: Proposed Allocation of Remaining UWSS Treatment Capacity

Number of Pages: 9 (including attachments)

Recommendation(s)

That Infrastructure Services – 2020-14 entitled, "Proposed Allocation of Remaining UWSS Treatment Capacity" prepared by Kevin Girard, Director, Infrastructure Services, dated December 21, 2020 be received, and

That Council authorize the Director of Infrastructure Services to draft and send a response letter of non-support for the correspondence received on November 2nd, 2020 from Union Water Supply System regarding the proposed allocation of remaining water treatment capacity.

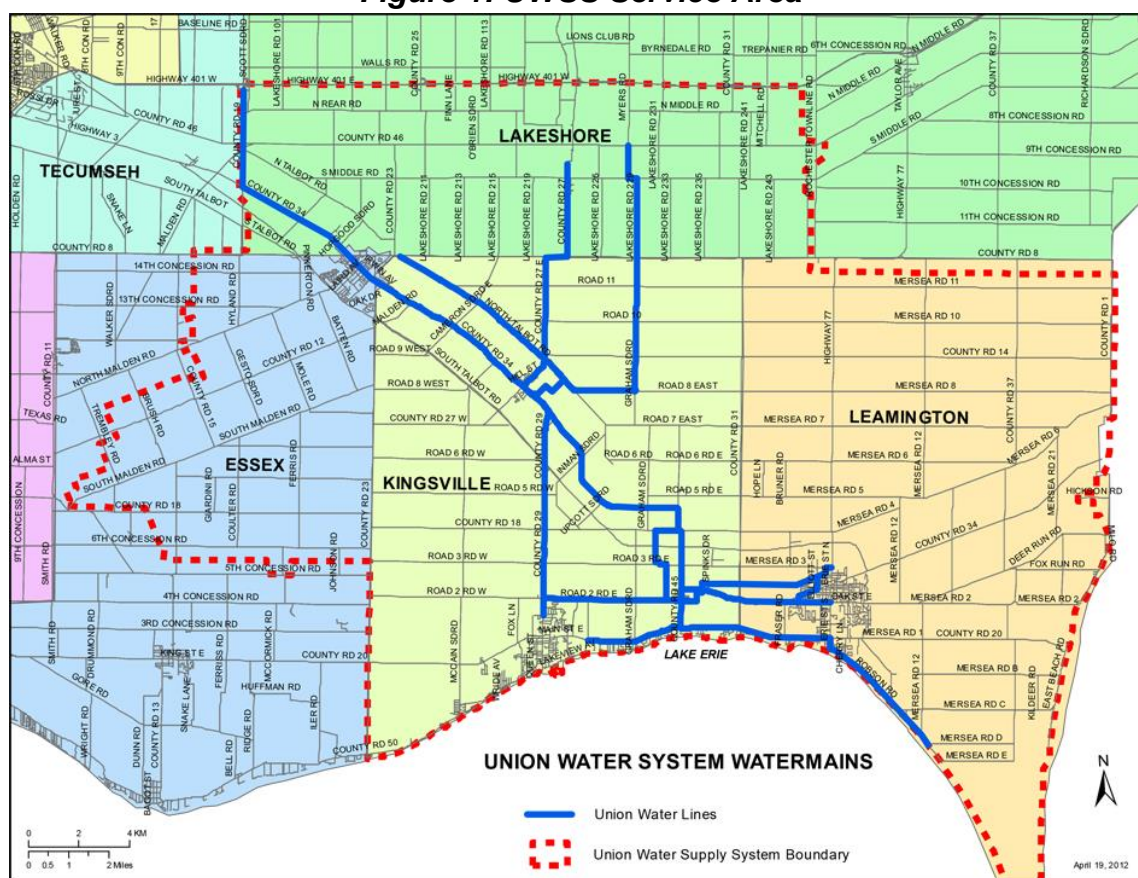
Purpose

To inform Council on the correspondence received on November 2nd, 2020 from the Union Water Supply System (UWSS) regarding the proposed allocation of remaining water treatment plant capacity.

Background and Discussion

The UWSS owns one water treatment plant located in the hamlet of Ruthven in the Town of Kingsville. Raw water is taken from the western basin of Lake Erie through two offshore intakes. The water treatment plant has a rated capacity of 27.4 Million Imperial Gallons per day (MIGD). There is a booster pumping station and in-ground reservoir in the hamlet of Cottam in Kingsville and elevated towers in Leamington, Essex, and Kingsville. The UWSS contracts with The Ontario Clean Water Agency (OCWA) for operation of the plant and its associated facilities. The UWSS service area is shown in Figure 1.

Figure 1: UWSS Service Area



The Union Water Supply System (UWSS) is owned by the Towns of Kingsville, Lakeshore, Leamington, and Essex and is managed by the UWSS Joint Board of Management. The board consists of twelve (12) members from each of the four (4) owner

municipalities. The number of board members for each owner municipality is determined by system interest, which was last calculated in 2017 as shown in Table 1. Town of Essex Council appointed Councilor Chris Vander Doelen as the Town's Joint Board Member for the UWSS.

Table 1: 2017 UWSS Interest Calculations

Municipality	2017 System Interest	Number of Board Members (12 total)
Leamington	50.55%	6
Kingsville	40.33%	4
Essex	5.97%	1
Lakeshore	3.15%	1

On November 2nd, 2020, the Chief Administrative Officers (CAO) of each of the owner municipalities received the appended correspondence regarding capacity at the UWSS water treatment plant and UWSS's proposed allocation of the remaining treatment plant capacity.

The correspondence identifies that UWSS has experienced a significant increase in potable water demand over the last few years. The correspondence also indicates the following:

- Potable water demand for 2020 is projected at 4,112 million imperial gallons (MIG) or 18.71 million cubic metres (m3). This is approximately 30% greater than 2015 annual demand and over 11% greater than 2019 demand.
- Potable water demand increases over the last 4 years are associated with increased residential development in each of the 4 owner municipalities and significant growth in greenhouse development since 2017. The main driver in the potable water demand appears to be greenhouse sector development.
- Peak day water treatment plant production reached 21.4 million imperial gallons per day (MIGD) or 100.1 million litres per day (ML/day) in 2020. This is the highest peak day demand since 2007 and the first time that peak day demand has been over 20 MIGD since 2007.

- During the late June and early July 2020 hot weather period, there were a number of days where daytime afternoon water demand exceeded hourly production capacity of the water treatment plant. When hourly demand is greater than production capacity, this results in depletion of water stored in the water towers and reservoirs thus putting the UWSS potable water supply at risk.
- Capital infrastructure upgrades will be required in the near future to mitigate potable water demand increases should the recent trend continue. These upgrades would likely include a new reservoir at the treatment plant, with an estimated cost of \$20 million.

Further, that the approved maximum treatment capacity of the UWSS' Ruthven Water Treatment Plant is 27.4 MIGD. Based on available data from various sources including municipal partner data and greenhouse data, the majority of UWSS' treated water production (approximately 55%) is used by greenhouse operations. The remaining water use is from residential and commercial/industrial sectors. As of October 15, 2020 there were 2,716 acres of existing greenhouse operations being serviced from the UWSS treatment plant, with an additional 1,067 acres approved (including treated water allocations) but not yet constructed.

In summary, the UWSS has determined that the Ruthven water treatment can likely support an additional 2.0 MIGD in additional water demand for growth. Of this remaining capacity, UWSS is proposing to allocate this remaining capacity based on the 2017 system interest calculations shown in Table 2.

Table 2: Proposed Allocation of Remaining Treatment Capacity

Municipality	2017 System Interest	Proportional Share of Remaining Treatment Plant Capacity (MIGD)
Leamington	50.55%	1.0110
Kingsville	40.33%	0.8066
Essex	5.97%	0.1194
Lakeshore	3.15%	0.0630

Town of Essex Administration is of the opinion that the allocation of treated water from UWSS should not be allocated based on remaining capacity, but rather that the capacity

should be allocated based on the total treatment plant capacity. If the total treatment plant capacity of 27.4 MIGD is considered, the Town of Essex share of the total treatment capacity is approximately 1.636 MIGD, using the 2017 interest calculation of 5.97%. Using estimated daily water demand, the Town of Essex is using approximately 0.491 MIGD of this, which leaves approximately 1.145 MIGD of unused treatment capacity for the Town of Essex, where the proposed allocation suggests that the remaining capacity for the Town of Essex be 0.119 MIGD. Therefore, the Town of Essex will ultimately be limited to residential, commercial, and industrial growth if capacity is not increased with future capital and/or plant expansion. To provide some perspective of this impact, the UWSS proposed allocation of 0.119 MIGD will only allow for an equivalent residential growth of approximately **900 single detached homes** as opposed to approximately **8,300 single detached homes** if treatment capacity of the entire plant were being allocated. This does not include any additional demand that would be created by industrial, commercial, and higher density development which would further reduce the estimated home count.

As indicated by UWSS, the increase in demand on the UWSS treatment plant and subsequent limited treatment plant capacity is due to significant greenhouse growth. With capacity becoming limited at UWSS, future greenhouse growth should not limit any owner municipality's ability to provide residential, commercial, and industrial growth. The first come, first serve method of treatment allocation is not equitable to our region's residents and owners when the average residential home uses approximately 138 Imperial gallons per day and greenhouses are typically permitted to use up to approximately 6,000 imperial gallons per day, per acre.

The attached correspondence is requesting that a response in support be provided to UWSS on the proposed allocation of the remaining treatment plant capacity. It is recommended that Council authorize the Director of Infrastructure Services to draft and send a response letter of non-support for the correspondence received on November 2nd, 2020 from Union Water Supply System regarding the proposed allocation of remaining water treatment capacity. The letter will be drafted using the rationale generally provided within this report.

Financial Impact

There are no direct financial impacts to the Town of Essex as a result of the response to UWSS. However, it should be noted that future capital projects approved and completed by UWSS will have a financial impact. The Town of Essex is responsible to pay a portion of all UWSS capital expenditures proportional to our system interest which is currently 5.97%.

Consultations

Andy Graf, Manager, Environmental Services

Jeffrey Morrison, Director, Corporate Services

Chris Nepszy, Chief Administrative Officer

Link to Strategic Priorities

- ☒ Manage, invest and plan for sustainable municipal infrastructure which meets current and future needs of the municipality and its citizens.
- ☐ Create a safe, friendly and inclusive community which encourages healthy, active living for people of all ages and abilities.
- ☐ Provide a fiscal stewardship and value for tax dollars to ensure long-term financial health to the municipality.
- ☒ Manage responsible and viable growth while preserving and enhancing the unique rural and small town character of the community.
- ☐ Improve the experiences of individuals, as both citizens and customers, in their interactions with the Town of Essex.
- ☐ Improve the Town's capacity to meet the ongoing and future service needs of its citizens while ensuring the corporation is resilient in the face of unanticipated changes or disruptions.

Report Approval Details

Document Title:	Proposed Allocation of Remaining UWSS Treatment Capacity - Infrastructure Services-2020-14.docx
Attachments:	- Letter to CAOs.Proposed Allocation of Remaining UWSS Treatment Capacity.November 2, 2020.pdf
Final Approval Date:	Dec 15, 2020

This report and all of its attachments were approved and signed as outlined below:

A handwritten signature in black ink, appearing to read "Chris Nepszy". The signature is fluid and cursive, with a period at the end.

Chris Nepszy, Chief Administrative Officer - Dec 15, 2020 - 11:18 AM