Memorandum

To: Paige Agnew, Commissioner Community Services
From: Jim Miller, Chief Operating Officer
Date: July 23, 2020
Subject: Williamsville Main Street
Utility Infrastructure Management
Assessment of Intensification

We, at Utilities Kingston appreciate the opportunity to provide input into the planning process involving further intensification of the Williamsville area. Our vision at Utilities Kingston focuses on delivering our services for the purpose of building better communities, and we believe working with your group in supporting all types of development will help us achieve that.

As you are aware, the fact that the central part of the City of Kingston is one of the oldest in Canada, resulting in utility system designs that would not be acceptable today creates issues for development and normal day-to-day operations. We have been working diligently to upgrade/replace these systems going back to before amalgamation. Although work continues on all of our services including electricity, natural gas, water, wastewater and fiber optics, the primary service of concern regarding development particularly in this area is wastewater. And this concern is driven by the legacy combined sewer system, and the environmental and regulatory concerns when new load (development) is added to any component of this system.

Focusing on the wastewater system, Utilities Kingston has a number of key projects underway or planned that will assist to facilitate development in the Williamsville area and the overall municipality. These include the completion of the Cataraqui Bay Wastewater Treatment Plant upgrades, the Portsmouth Pumping Station turn around project, upgrades to the Days Road Pumping Station and ongoing separation of the combined system. When all
of these are completed, most concerns for development caused by wastewater servicing capacity will be dealt with.

A key project for the Williamsville area is in the last category of separation of the combined system and is planned for Princess Street above Division Street and scheduled for 2022.

Unfortunately, we cannot just look at this area in isolation of the wastewater system in the old city downtown core, as the addition of customers in one area affects capacity in other areas, such as Queen’s and North Kingstown. That is all factored into our calculations and the planning work we do.

So, turning our attention to the intensification of the Williamsville area as you have requested, we offer the following.

Our assessment of the intensification proposed for the Williamsville area is based upon the following conditions and understanding:

1. Data supplied by the City of Kingston Planning Department to Utilities Kingston, received May 27, 2020.

2. Data received and verified is summarized into the following facts that have been used in the assessment:
   a. The City proposes through intensification policies, an increase of 6,900 people in Williamsville, which based on the Planning Departments conversion factor of 2.3 persons per unit yields 3,000 additional units.
   b. Utilities Kingston acknowledges that 5,020 people (2,183 units) have already been “approved” as an increase to the Williamsville area.

3. Utilities Kingston also acknowledges the receipt of updated data recently received (June 27th) that proposes 3,400 units or 7,820 persons

**Sanitary Sewer**

On October 2, 2018 we confirmed that the known (existing) development projects for Williamsville could be accommodated as specifically listed and that an un-committed capacity allocation of 1,243 people (540 units) would be created as a result of capital construction work involving Alfred and Elm Streets. On September
16, 2019 Planning confirmed the accuracy of these projections, contingent upon completion of the Alfred/Elm work.

The Alfred /Elm work which created the 1,243 person capacity within Williamsville was an interim measure until such time as construction of additional wastewater capacity between Division St and Alfred on Princess Street scheduled for tendering in 2021 and construction in 2022, is completed. Our capacity assessment confirms that these capital wastewater infrastructure upgrades are required to accommodate the additional population proposed by Planning for Williamsville. Utilities Kingston with City Engineering is planning this capital work for the 2021-2022 period. This work will create sufficient capacity to accommodate the planned increase in population within the Williamsville area of between 7,500 to 8,000 persons. The total estimated capital expenditure for wastewater upgrades (only) required to support this level of intensification is estimated to be $2,000,000.

With regards to dwelling units versus population, from an Engineering perspective people create demand and flows, not units. While we understand that the term “dwelling units” may be meaningful to certain groups when discussing development with others, where utility infrastructure is concerned, consistency in the use of persons is critical to understanding the potential impact of intensification as there can be no mistake in the numbers or assumptions behind those numbers as in how many people per dwelling unit. We believe that Planning is better equipped to translate population to dwelling units, based on specific projects and the types of buildings being proposed.

The forgoing comments address at a high level the Williamsville Area. The following comments address specific areas as identified by the Williamsville Study Area map included in your May 27 submission to Utilities Kingston:

a. **Area “A”**: The sanitary sewer was rebuilt in this area in 2014 and was designed and sized based on information provided by Planning for the Williamsville District as it stood prior to 2014. This proposed disbursement of population to Area “A” should not be exceeded by any amount beyond that identified in your May 27th submission. This is a hard cap on the population increase for Area “A” in regards to sanitary sewer services only. Any exceedance would trigger another reconstruction/ replacement of the sanitary sewer. We
understand and acknowledge that your June 27th data actually reduces growth expectations (population) for that area, so that is positive and reduces the concerns for sanitary sewers in AREA “A”

b. Areas “BW”, “BE” and “C”: No particular concerns are identified with respect to sanitary services, subject to normal review comments undertaken at the time of development review.

Water

The review of the water distribution system from the original Williamsville Main Street Study in 2011 indicated sufficient capacity for the estimated incremental loadings. It was noted in 2011 that multi-story developments may require on-site pump systems to provide adequate pressure and flow for domestic use on upper-level units. Similarly, on-site fire protection measures were identified as potentially being required. These requirements are not specific to Williamsville and depending on elevations and building height may be required at any location within our water distribution system. This should not be seen in any way as a servicing limitation from Utilities Kingston’s perspective as there is sufficient pressure and flow on our system to service these developments, it just may necessitate additional expense by the developer depending on building height.

The May 27th data submission has been reviewed and raises no particular concerns relative to provision of potable water for typical design flows associated with domestic loadings. However, as usual, each specific proposal will need to be evaluated on a case-by-case basis, during the planning approvals process.

As a result of recent changes to the Building Code regarding wood frame construction, we offer the following observations for consideration:

- **Area “A”** within Williamsville represents a “higher risk” area where the supply of water may not be sufficient to meet fire flows demands for multi-story wood constructed buildings. Please note this is a general observation/statement and not a definitive answer. Each site, the characteristics of each specific development and the proximity to other buildings create unique circumstances that require specific analysis.
for fire flow demands. We would recommend that guidance to proponents in Area “A” should be offered early in the process that wood frame construction may trigger additional on-site costs to the proponent to satisfy fire flow demands. Conversely, we do not see any issues with respect to traditional concrete/ steel/ brick construction techniques meeting fire flows in Area “A”.

- **Areas “BW”, “BE” and “C”** are “less” at risk than Area “A”. Utilities Kingston initial assessment suggests the water system may able to provide sufficient fire flows but exercising some caution is recommended in that each site and the characteristics of each specific development are unique and still require specific analysis for fire flow demands during the planning approvals process.

However acknowledging the need for better definition on this issue Utilities Kingston Engineering staff are currently carrying out a conceptual water modelling exercises on our water system in this area to determine what water system improvements would be required to address the 6 storey wood frame building matter to eliminate this concern, in order to provide the required fire flows throughout the Williamsville area.

In summary Utilities Kingston can advise that the water distribution system for Williamsville should be sufficient for the projected population increase. Where development projects involve construction techniques employing brick/concrete/steel etc. we do not foresee any capacity issues throughout the Williamsville Planning Area. Where wood frame construction is being proposed the additional capacity demand triggered by that construction technique is a concern that would require review during the planning approvals process. As noted, Area “A” presents higher risks for wood frame projects than Areas “BE”, “BW” and “C”.

**Gas**

The existing natural gas system should be able to handle the ‘Ultimate Development Scenario’ loadings but further review would be required when a Site Plan Application and the associated supporting studies are received, as it would vary with the size of the building and the amount of gas loading required. Utilities Kingston will work with each developer to provide the necessary servicing.
Electric

We acknowledge receipt of the unit projections for the ‘Ultimate Development Scenario’ submitted in May and commit to provide the necessary capacity to service this build out. Due to the detailed regulatory requirements for long term system planning and rate approvals by the provincial Ontario Energy Board, it will be critical to ensure open and ongoing communication and discussions between our two groups to ensure we can have the necessary approvals and infrastructure in place when required. In summary we realize there is a lot of detailed information provided in this correspondence. At a high-level following completion of the noted system improvements we do not see any concern for gas, electric, and sewer servicing for the projected population numbers provided. Our concern remains with current water servicing (fire flows) where wood construction is being utilized and we are working to determine necessary improvements to alleviate these concerns. Should there be questions and/or concerns please contact us as a discussion will likely provide more value then ongoing email discussions.

Utilities Kingston looks forward to working with you and other City of Kingston departments in facilitating this positive change to our City.