

March 29, 2016

To: His Worship the Mayor  
and Members of City Council

Re: Sewer Service Bylaw No. 5601 - Repeal

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**RECOMMENDATION OF THE PUBLIC WORKS AND INFRASTRUCTURE  
COMMITTEE – MARCH 10, 2016**

1. That City Council repeal the existing *The Sewer Service Bylaw, No. 5601* (Sewer Bylaw) and replace it with a new sewer service bylaw.
2. That City Council approve and authorize a new sewer service bylaw that contains the following:
  - a. new formatting that improves readability of the bylaw;
  - b. changes as identified in Appendix A of this report, which include:
    - updated requirements for businesses related to the discharge of fats, oils, greases (FOG), grit and dental amalgam,
    - updated allowable limits for chemical parameters discharged into the wastewater collection system, and,
    - updated provisions relating to surcharges levied against persons for treatment of high-strength wastewater; and,
  - c. existing provisions in the Sewer Bylaw as identified in Appendix B to this report.
3. That the City Solicitor be directed to prepare a new sewer bylaw to include provisions identified in recommendation 2 to this report and the provisions relating to the new wastewater receiving station, as identified in report “*Revised Hauled Wastewater Program*” and the provisions relating to weeping tile, as identified in report “*Sewer Service Bylaw Change – Weeping Tile Discharge – Removal from Sanitary Sewer System*”.

*PUBLIC WORKS AND INFRASTRUCTURE COMMITTEE – MARCH 10, 2016*

Mr. Bill Gray and Mr. Bob Beekman, representing Canadian Linen and Uniform Service, addressed the Committee.

The Committee adopted a resolution to concur in the recommendations contained in the report. Recommendation #4 does not require City Council approval.

Councillors: Sharron Bryce (Chairperson), John Findura and Bob Hawkins were present during consideration of this report by the Public Works and Infrastructure Committee.

The Public Works & Infrastructure Committee, at its meeting held on March 10, 2016, considered the following report from the Administration:

### RECOMMENDATION

1. That City Council repeal the existing *The Sewer Service Bylaw, No. 5601* (Sewer Bylaw) and replace it with a new sewer service bylaw.
2. That City Council approve and authorize a new sewer service bylaw that contains the following:
  - a. new formatting that improves readability of the bylaw;
  - b. changes as identified in Appendix A of this report, which include:
    - updated requirements for businesses related to the discharge of fats, oils, greases (FOG), grit and dental amalgam,
    - updated allowable limits for chemical parameters discharged into the wastewater collection system, and,
    - updated provisions relating to surcharges levied against persons for treatment of high-strength wastewater; and,
  - c. existing provisions in the Sewer Bylaw as identified in Appendix B to this report.
3. That the City Solicitor be directed to prepare a new sewer bylaw to include provisions identified in recommendation 2 to this report and the provisions relating to the new wastewater receiving station, as identified in report "*Revised Hauled Wastewater Program*" and the provisions relating to weeping tile, as identified in report "*Sewer Service Bylaw Change – Weeping Tile Discharge – Removal from Sanitary Sewer System*".
4. That this report be forwarded to the March 29, 2016 meeting of City Council for approval.

### CONCLUSION

The Sewer Bylaw governs a person's behaviour in relation to the sanitary sewer service, storm sewer service and the related provisions relating to billing for such services and enforcement for violations of the bylaw. City Council passed the Sewer Bylaw in 1975 and it came into force on January 1, 1976. It has been modified over time, mainly relating to the provisions on the rates for sanitary sewer and storm sewer service.

The Sewer Bylaw is outdated and does not adequately protect the wastewater collection system, the wastewater treatment plant (WWTP), or the environment from the effects of potentially harmful substances that can be present in wastewater or stormwater. Additionally, the current layout of the Sewer Bylaw is difficult to follow for both the public and the Administration. To attempt to amend the Sewer Bylaw to make such numerous formatting changes would be more difficult and confusing than simply repealing the Sewer Bylaw and writing a new one.

The new sewer bylaw will also contain a number of new provisions, as follows:

- clarify requirements of industry and business, to ensure they meet the requirements of the new bylaw by updating the format and updating certain parts to reflect current practice, as identified in Appendix A;
- update the requirements for businesses to control the release of substances harmful to the operation of the wastewater collection system. The proposed changes are included in Appendix A. The substances of concern include:
  - FOG produced by restaurants and other food preparation institutions,
  - oil and grease and grit from mechanic shops and car washes, and
  - dental amalgam;
- updated list of substances that are prohibited from being released into the sanitary sewer or the storm sewer in any concentration, as identified in Appendix C;
- updated list of chemical parameters with updated allowable release concentrations, as identified in Appendix D; and,
- updated surcharges to accurately reflect the cost of treating high-strength wastewater, as identified in Appendix E.

The recommended amendments to the Sewer Bylaw will provide tools to support improved management of the sewer systems. Without these tools, there are increased risks, including:

- continued and likely increased blockage of the collection system resulting in increased maintenance costs, reduced sewer capacity and the increased likelihood of sewer backups;
- inability to limit potentially harmful substances from entering the collection system, the WWTP or the environment;
- adverse impacts to the WWTP by having harmful material in the influent wastewater; and,
- causing the WWTP to prematurely reach maximum capacity as a result of high strength wastewater.

## BACKGROUND

The Sewer Bylaw has been in place since 1976 and has been updated 34 times since it was developed. Numerous small changes have resulted in a fractured document that is difficult to follow and does not consistently reflect current practices. The current Sewer Bylaw does not adequately address concerns and challenges that have developed related to the discharge of harmful substances into the sanitary sewer.

The reasons for controlling harmful discharges can be broken into two main categories:

- protecting the collection system; and,
- protecting the WWTP and the environment.

### **Protection of the Collection System**

The collection system includes all infrastructure required to carry sewage from an establishment to the WWTP, or storm sewer to the Wascana Creek. The collection system includes both the sanitary and storm sewer systems and the main components of these systems include:

- local collection pipe;
- larger mains;
- lift stations; and,
- the force mains from McCarthy Boulevard Pumping Station (MBPS) to the WWTP.

The collection system is owned, operated and maintained by the City. It is regulated provincially by the Water Security Agency.

The biggest risk to the collection system is potential blockages and material build up that can impact the capacity of the system. Ways to manage or mitigate this include regular cleaning and controlling what is introduced into the collection systems. FOG and grit are the primary concerns currently faced. Blockage of a sewer can cause severe public health and environmental issues. In 2015 there were 207 emergency responses to blocked sanitary sewer mains, 80% of which were due to the accumulation of FOG in City wastewater mains.

### **Protecting the WWTP and the environment**

The WWTP is the facility located at the end of the MBPS force mains, west of the city of Regina. The WWTP is currently undergoing a major renovation and rebuild, and construction is expected to be complete in late 2016. The WWTP is being constructed and will be operated under a P3 model. The City maintains ownership of the WWTP but EPCOR Water Prairies Inc. (EPCOR) will operate and maintain the WWTP for 30 years.

Commercial, industrial and institutional activities have the potential to release a wide variety of potentially hazardous chemicals into the wastewater collection system. As the owner of the collection and treatment systems, the City has a regulatory requirement to reasonably control the release of hazardous substances into the wastewater collection system. The City needs to update the Sewer Bylaw to amend the parameters and allowable concentrations to meet new regulatory requirements, which are reflected in the Project Agreement between the City and EPCOR.

The Sewer Bylaw contains an outdated surcharge calculation for recovering costs related to treating high strength industrial commercial institutional (ICI) effluent. Changes to modernize the treatment methods at the WWTP through the WWTP Upgrade Project, and the resulting increased wastewater treatment costs, are not addressed by the current formula. The new surcharge structure will provide incentive for ICI customers to adapt their processes or introduce pre-treatment in order to reduce their surcharge costs. A phased implementation for surcharges will provide an opportunity for ICI customers to plan for these changes and incorporate them over time.

## **DISCUSSION**

### **Protecting the Collection System**

To better protect the wastewater collection system, the City requires a clear straight forward sewer bylaw that allows focused education, inspection and enforcement of pre-treatment devices,

such as grease traps, and oil and grit separators. Clear expectations and consequences will provide incentive for wastewater haulers and their clients to update their practices to meet the new requirements. In preparation for the proposed changes, a series of open houses have been held for the general public and for wastewater haulers that typically service these pre-treatment devices. Educational material is currently in development for distribution to operators of such treatment devices.

The first step in improving protection of the collection system will be to increase public education. Education will take the form of distributing information through the mail, at trade shows and during initial inspections. The information will focus on easy and economical ways of removing these wastes from the wastewater stream, and the benefits to the overall collection system of doing so. Once the City has provided the information to the businesses regarding best management practices, the City will begin routine and random inspections. The final step will involve prosecuting those who fail to comply with the new sewer bylaw. The new bylaw will contain the maximum fines permitted under *The Cities Act*, to reflect the seriousness of contamination to both the storm sewer and sanitary sewer system.

### **Protecting the WWTP and the Environment**

Substances will be controlled in three ways depending on their potential impact to the WWTP and the environment:

1. Prohibited Substances – Some substances, such as radioactive waste, are prohibited through our Permit to Operate a Wastewater Treatment Facility. Discharge of such substances would be addressed with fines and potentially disconnection from the system.
2. Restricted Substances – These are substances, such as phenols, that pose a threat at high concentrations and therefore levels must be controlled. The limits proposed fall below acceptable thresholds.
3. Surchargeable Parameters – These are parameters, such as level of Biological Oxygen Demand (BOD) that can be treated by the upgraded WWTP; however, as the concentration increases, system capacity is consumed and costs increase.

### Prohibited & Restricted Substances

The proposed changes to the chemical parameters, as outlined in Appendices C and D, are required to ensure the City meets provincial and federal wastewater regulations. The proposal is for the changes to take effect on January 1, 2018, to give the industry time to adjust to the revised discharge criteria and to implement pre-treatment if required. The proposed changes are in line with best practices related to eliminating contaminants from the waste stream as opposed to increasing treatment. This approach is consistent with the approach of the model sewer bylaw developed by the Canadian Council of the Ministers of the Environment. The model sewer bylaw follows national performance standards agreed to and signed by environment ministers across the country.

### Surchargeable Parameters

The City currently charges a surcharge to commercial and industrial emitters that release high strength wastewater to the City's wastewater collection system. This surcharge is intended to compensate the City for the additional costs of processing this high strength wastewater. The cost for treating high strength wastewater has been calculated and converted into a surcharge formula. The current surcharge formula has not been updated since 1995 and no longer reflects the actual additional costs for treating high strength wastewater; and therefore, the City needs to

significantly increase its surcharge to cover additional treatment costs. Appendix E shows the proposed list of surchargeable parameters.

The Administration researched surcharges for Regina, Saskatoon and Calgary for an average load of hauled wastewater. Appendix F to this report shows the comparison of surcharge rates among these cities. Compared to these cities, the amount the City currently charges for high strength wastewater is low. Calculations show that the cost of treating high strength wastewater is at least 10 times higher than the surcharge fee the City currently charges to high strength wastewater generators. If high strength wastewater is not surcharged, the additional cost of treatment will be passed on to all utility users.

The proposed new surcharge rate calculation formula is representative of what the charge should be to reflect the City's additional cost associated with treating high strength wastewater. Through consultation with industry, as detailed in Appendix G, a 12 year phase-in plan was developed. This phase-in plan is outlined in Appendix E. This plan allows time for ICI customers to adjust their processes or to implement pre-treatment to manage their costs. This staged approach is also appropriate, since the additional costs for treating high strength wastewater will increase as the available capacity of the WWTP decreases. This change to surcharge fees will not impact residential users.

The proposed changes to both the parameters, as well as the surcharge rate, will encourage industry currently producing high strength wastewater to follow best practices for pre-treatment of wastewater prior to releasing it to the City's wastewater collection system. This combined approach of decreasing limits and increasing surcharge rates over time reduces the risk to the wastewater collection system and frees capacity at the WWTP for future city expansion.

In addition to revising quality and surcharge parameters for discharged wastewater, the Administration recommends increased penalties in the case of non-compliance. These penalties are identified in Appendix A to this report.

### **Bylaw Reorganization and Re-formatting**

In addition to the changes to the content of the bylaw, the Administration will also take the opportunity to reorganize the Sewer Bylaw by re-writing it to put it in a format that is easier for the public to follow. This reorganization is required as a result of numerous small changes over the life of the Sewer Bylaw. The changes focus mainly around reorganizing the Sewer Bylaw so it is easier to read and understand, and around updating relevant definitions and terminology.

The new sewer bylaw will retain a large number of the concepts and provisions of the current Sewer Bylaw. This report provides a list of the provisions of the Sewer Bylaw that will be incorporated, relatively unchanged, into the new sewer bylaw. There may be some minor housekeeping changes made to these retained provisions to ensure consistency with terminology and formatting. Appendix B to this report is the current Sewer Bylaw, and the provisions highlighted in yellow represent the provisions the Administration recommends retaining in the new bylaw (subject to housekeeping modifications for terminology and formatting).

### **Complementary Reports**

Two other reports are being presented in conjunction with this report. The other reports are: "*Revised Hauled Wastewater Program*"; and "*Sewer Service Bylaw Change – Weeping Tile Discharge – Removal from Sanitary Sewer System*".

## RECOMMENDATION IMPLICATIONS

### Financial Implications

The increased surcharges proposed in Appendix E are intended to modify customer behaviour and offset increased treatment costs. While there may be a short term increase in revenue, over time, the impact is intended to be neutral.

Increased education and enforcement are expected to gradually improve the quality of wastewater, resulting in improved system capacity and service levels. Longer term results may include reduced operational costs.

The changes to the bylaw do not require any operational funding increases. It is anticipated that any proposed increases to the current enforcement program will be managed on a cost recovery basis through permits or user fees.

### Environmental Implications

The detrimental impact of FOG entering and blocking the wastewater collection system can include severe public health and environmental issues. It can also contribute to the reduction of capacity of the collection system, resulting in sewer backups into businesses and residents homes.

Enhanced protection of the WWTP will improve the City's ability to ensure adequate treatment of wastewater prior to release to the environment. The result of failing to protect the WWTP could result in breaches of the City's permit to operate the wastewater collection system and the City's permit to operate the WWTP, and result in an unauthorized release into the environment.

### Policy and/or Strategic Implications

Limiting the strength of the institutional, commercial and industrial wastewater permitted into the City's wastewater collection system effectively increases the capacity of the WWTP. This change encourages institutional, commercial and industrial generators to pre-treat their own wastewater, as opposed to using up capacity at the WWTP that could be used for further city expansion.

### Other Implications

The Water Security Agency has recently directed the City to increase the capacity of the City's sanitary sewer and storm sewer collection systems. The reduction of FOG and grit in the collection system that reduce its performance is a key component of maintaining or increasing this capacity.

### Accessibility Implications

None with respect to this report.

## COMMUNICATIONS

The City worked with its industrial partners to develop chemical parameters that are both realistic and appropriate to protect the wastewater infrastructure and the environment. The City held open houses with wastewater haulers and industry most likely to be affected by these changes. In addition, industries that are currently known to discharge high strength wastewater have been sent information on the planned changes. The City offered one-on-one meetings to these industries in the correspondence and at the open houses. Details of the consultation efforts are included in Appendix G to this report.

Due to the progressive implementation of the process, the Administration will continue to work with current emitters to help them meet the requirements in the proposed changes.

## DELEGATED AUTHORITY

The recommendations contained in this report require City Council approval.

Respectfully submitted,

PUBLIC WORKS AND INFRASTRUCTURE COMMITTEE



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Linda Leeks, Secretary