
Subject: Hauled Sewage Rate Update

Report To: Public Works Committee

Report date: Tuesday, September 10, 2024

Recommendations

1. That Report PW 26-2024 **BE RECEIVED** for information.

Key Facts

- Staff are proposing an update for 2025 hauled sewage rates to ensure that hauled sewage fees are fair and reasonable to all, and adequately support cost recovery for the treatment of hauled sewage.
- The method used to determine the Region's hauled sewage rate was last updated in 2007. The current fee for hauled sewage is \$46 per 1000 imperial gallons for all sewage types and has remained the same since 2022.
- The Region charges sewage haulers a fee, intended to represent cost recovery, for the disposal of sewage at the Region's wastewater treatment plants. Haulers set their own fees for the services they provide to residential, commercial and industrial customers.
- Proposed changes will include a new multi-rate structure designed to ensure that rate payers and residential customers are not subsidizing high strength commercial and industrial sewage disposals. This involves setting one fee for high-strength sewage generated by commercial/industrial users, and a different fee for low-strength sewage from residential users.
- The proposed hauled sewage rates of \$71 per 1000 imperial gallons for Low Concentration Sources and \$165 per 1000 imperial gallons for High Concentration Sources provide full cost recovery for the Region. These rates are comparable to the average rates charged by other municipalities.
- The draft rates and approach will be posted for consultation from September to October of 2024. Following the completion of a 30-day consultation period, staff will review feedback and make any necessary adjustments.

- The draft rate will be reflected in the W-WW rate budget going forward on November 7, 2024. The final rates will be brought forward as part of the fees and charges by-law for consideration by Budget Review Committee of the Whole in December 2024.

Financial Considerations

A multi-rate fee structure is recommended as an improvement to ensure that the fees for residential hauled sewage disposal are not subsidizing treatment costs for higher strength commercial and industrial sewage types.

The single rate structure used for the last 17 years charged the same rate for both commercial and residential sewage types. The existing hauled sewage rate includes a portion of the Region's overall cost for operations and maintenance related to hauled sewage treatment but does not include capital costs.

The proposed rate setting methodology and the switch to a multi-rate strategy is expected to increase Hauled Sewage revenues by approximately \$0.90 - \$1.1 million annually. The capital sustainment and capital growth portions of the new rates will allow for \$0.54 - \$0.68 million to be transferred to the capital reserves annually to help fund capital infrastructure required to support the hauled sewage program at the associated Wastewater Treatment Plants (WWTP). These estimates were calculated using the proposed rate structure and an average volume of hauled sewage disposals.

It is important to note that these fees are charged to Sewage Haulers and not to sewage generators. Based on a recent review, a typical homeowner with a 1000-gallon septic tank is paying in the range of \$300-\$500 for the disposal service typically once every 5 years. Currently, the Region's portion of the hauled sewage cost is \$46. With the new rate, the Region's portion would be \$71 (a \$25 increase).

For High Strength Sewage, typically generated by wineries and food processors, load volumes are generally in the 3000-gallon range. Therefore, the Region's portion of disposal costs would go from \$46 to \$165 per 1000 gallons to cover the increased cost of treatment for these types of wastes.

Without these changes, water and wastewater rate payers will continue to subsidize the hauled sewage program as the existing hauled sewage rate does not fully recover the program costs. Additionally, domestic/residential sewage generators, under a single rate structure, would be subsidizing commercial and industrial hauled sewage users.

With the proposed multi-rate fee structure, staff anticipate that there will be some incremental increases in samples being collected and tested by the Region's Laboratory which will be provided for within the existing operational budget.

Background

Niagara Region accepts hauled sewage from residential and commercial sources

Niagara Region provides collection and treatment of wastewater to eleven local area municipalities. The Niagara Region wastewater systems consist of trunk gravity sewers, over 110 sewage pumping stations and forcemains, 11 wastewater treatment plants and a sewage biosolids facility. The wholesale cost of wastewater treatment is charged to the 11 local municipalities and paid for by the various rate payers.

For those not connected to the sewer systems, sewage haulers provide a service to close to 1000 commercial and industrial customers and approximately 21,000 residential homes. Wineries, breweries, distilleries and food processors make up the bulk of the commercial and industrial customer base. RV Resorts, campgrounds, and residences make up the remainder of the sewage sources. As a service to recreational vehicle (RV) owners, sewage from RVs is accepted at three (3) plants at no charge.

Currently, hauled sewage is received at seven (7) of the Region's WWTPs. Table 1 below shows the average breakdown by type and volume of sewage received.

Table 1-Average 2021-2023 Yearly Hauled Sewage Disposals

Type	# of trucks	Volume (gallons)	% by Volume
Commercial/Industrial	4719	14,371,701	64
Residential	4313	8,018,154	36
Yearly Average	9032	22,389,855	100

The hauled sewage rate is intended to be fair and reasonable for haulers, the Region and the rate payers.

Although the volume of hauled sewage makes up a small percentage of the overall volume of sewage treated from the collection system, the costs related to treating hauled sewage are not small; a portion of the capacity of each WWTP must be set aside to be available for hauled sewage and not available for other uses (e.g. residential and commercial development connected to the WWTP). There are also costs related to monitoring the hauled sewage program, costs related to monitoring and maintaining the disposal sites and cost related to sampling and testing of the hauled sewage to determine acceptability at the WWTP.

In addition, the risk to the receiving wastewater treatment plant is greater for commercial and industrial sources due to the use of process chemicals, dyes, acids, bases etc.; all of which can have deleterious impacts on the processes and potentially regulatory compliance for the WWTP.

By having a hauled sewage program that provides cost recovery, the rate payers can be assured that the costs are fairly distributed to the users of the system and not paid by the rate payers.

The Region's hauled sewage rate calculation was last updated in 2007.

The Region has had multiple hauled sewage rates since the 1990s. In the late 1980s, the rate for hauled sewage was \$1/1000 gallons for both residential and non-residential sources. By 1992, the rates were increased substantially upon recommendations for more fulsome cost recovery to \$10/1000 gallons residential and \$20/1000 gallons non-residential. In 2006, the rates were \$24/1000 gallons residential and \$40/1000 gallons commercial/industrial. Starting in 2007 the Region moved to a single rate of \$40/1000 gallons. The \$40/1000 gallon rate remained unchanged from 2007 until 2017. In 2018, the rate was incrementally increased and by 2022 had reached \$46/1000 gallons. This rate has remained the same for the last 3 years.

The proposed hauled sewage rate calculation was developed through a review of best practice, industry standards and the practices of other municipalities.

The consultant review of 2022 explored four different methodologies to calculate rates. All methods resulted in higher rates for hauled sewage than staff had predicted. Rates ranged from \$71.60/1000 gallons to as high as \$270/1000 gallons for higher strength wastes. Informed by this report, an internal in-depth financial review was conducted. The internal report averaged costs over a 3-year period and came back with the

proposed multi-rate fee of \$71 for low strength and \$165 for high strength sewage types.

Hauled sewage is generally higher strength, or more concentrated, than sewage received from homes and business through the wastewater collection system. It increases the pollutant loading to WWTPs which impacts operational, maintenance and treatment costs. It also uses up treatment plant capacity that would otherwise be available for treatment of sewage received through the collection system from serviced areas. Costs to increase capacity at WWTPs due to growth is recovered through development charges, whereas the cost of replacement of assets is recovered through wastewater rates. Wastewater services are very capital intensive due to the large size and complexity of the infrastructure. Additionally, the development charge for the Region allocates \$7,840 (31% of the total water and wastewater development charge) for a single detached dwelling to support wastewater growth capital.

Therefore, inadequately accounting for the impacts of hauled sewage results in development charges and wastewater rate payers subsidizing the capital cost impacts from hauled sewage sources.

In order to achieve full cost recovery, the charges for hauled sewage should proportionately offset administrative, operational, maintenance and capital costs related to the capacity used in Niagara's WWTPs.

Appendix 1 of this report shows the breakdown of rates for specific sewage types. Appendix 2 of the report gives a comparison of various hauled sewage disposal rates for surveyed municipalities. For more details on the recommended rate setting methodology, please see Appendix 3.

Key Findings and Proposed Direction

As rural homeowners do not pay development charges related to W&WW when building homes, they have not contributed to future infrastructure needs but are still using capacity at the WWTPs. Therefore, those utilizing the hauled sewage program are taking up capacity that could otherwise be used for growth from urban areas. As the existing rate did not include capital costs for sustainability or growth, a disposal fee that accounts for this ensures accurate full cost recovery and removes the subsidy on the program currently being covered by others.

Recommended Rate Setting Methodology

The new rate setting methodology will help to ensure that the fees charged for hauled sewage fully recover costs which means that the rate payers are not supporting non-rate payers.

In terms of impact of the new rate on residential customers, consider the costs for an average residential 1000 imperial gallon septic tank. This tank is used by the homeowners daily but typically cleaned and pumped out once every five (5) years. Therefore, even with the rate increase of \$46 to \$71 (or \$25), this represents an additional \$5 per year for the average rural homeowner.

Comparison to Other Municipalities

The internal analysis also examined how the new proposed fees compared to other municipalities accepting hauled sewage. Appendix 2 shows a graphical representation of where the Region ranks based on the current hauled sewage rate, as well as after the implementation of the proposed disposal fees. The Region currently has the third lowest hauled sewage rates among all comparable municipalities.

Niagara is unique in its waste source demographic with over 120 local wineries, craft breweries, and distilleries. Niagara Region accepts winery/brewery wastewater from approved sources. The closest comparable, Prince Edward County (PEC), does not accept winery wastewater as it is too pollutant dense and would negatively impact their treatment processes. Wineries in PEC are therefore required to use creative recycling or pre-treatment methods to manage their waste. Even after the rate increases, the Region's rates are still in line when compared to other municipalities.

Consultation

The communication plan will inform the community (including residents, businesses, sewage haulers, Local Area Municipalities, wineries/breweries, industrial/commercial users, Ministry of the Environment, Conservation and Parks (local office), and other community members) of the proposed rate changes in a clear, timely and efficient manner to ensure transparency and a smooth transition. The communication will start immediately following the endorsement of this report. A project page will be dedicated to the hauled sewage rate review and communication links will be sent to interested parties directing them to the page and inviting them to provide feedback. Staff will prepare detailed supporting information addressing potential questions and concerns, including FAQs and a high-level impact assessment for the average citizen. Potential communication channels, directing to the Region's project page, will include digital

media, direct communication, email lists, and website announcements. Staff anticipate that communication of the proposed rates at this early stage will help provide haulers with ample time to adjust their pricing models.

Plan Moving Forward

The draft rates will be posted for consultation from September to October of 2024. Following the completion of a 30-day consultation period, staff will review and incorporate all feedback as appropriate. The draft rate will be reflected in the Water and Wastewater rate budget going forward on November 7, 2024. The final rates will be brought forward as part of the fees and charges bylaw for consideration by Budget Review Committee of the Whole in December 2024.

Alternatives Reviewed

1. Status quo

Keep existing single hauled sewage rate - results in rate payers continuing to subsidize hauled sewage generators. Not recommended.

2. Single Rate vs. Multi-rate

While a single rate strategy is simplest from an administrative perspective, the single rate would be higher for residential generators and lower for high strength commercial for-profit generators. A multi-rate strategy is fairest given the significant differences in pollutant loading between low and high concentration waste sources.

Relationship to Council Strategic Priorities

By updating the hauled sewage rates, we are supporting an 'Effective Region' by providing the fairest approach to all and ensures the Region delivers fiscally responsible and sustainable services.

Other Pertinent Reports

[PW 12-2022 Hauled Sewage Program](#)

(<https://pub-niagararegion.escribemeetings.com/Meeting.aspx?Id=26b77d7d-f909-40fa-8b98-65be21a256bf&Agenda=Merged&lang=English&Item=14&Tab=attachments>)

[PW 21-2022 Councillor Information Request re 2014 Hauled Sewage Rate Review](#)

(<https://pub-niagararegion.escribemeetings.com/Meeting.aspx?Id=c187b549-857b4eb0-ac00-dc15edd83425&Agenda=Agenda&lang=English&Item=12&Tab=attachments>)

[PW 13-2024 Sewer Use By-law and Hauled Sewage Program Policy Update](#)

(<https://pub-niagararegion.escribemeetings.com/Meeting.aspx?Id=7af9be26-6779-40cd-a63a-de5d4602fe13&Agenda=Merged&lang=English&Item=14&Tab=attachments>)

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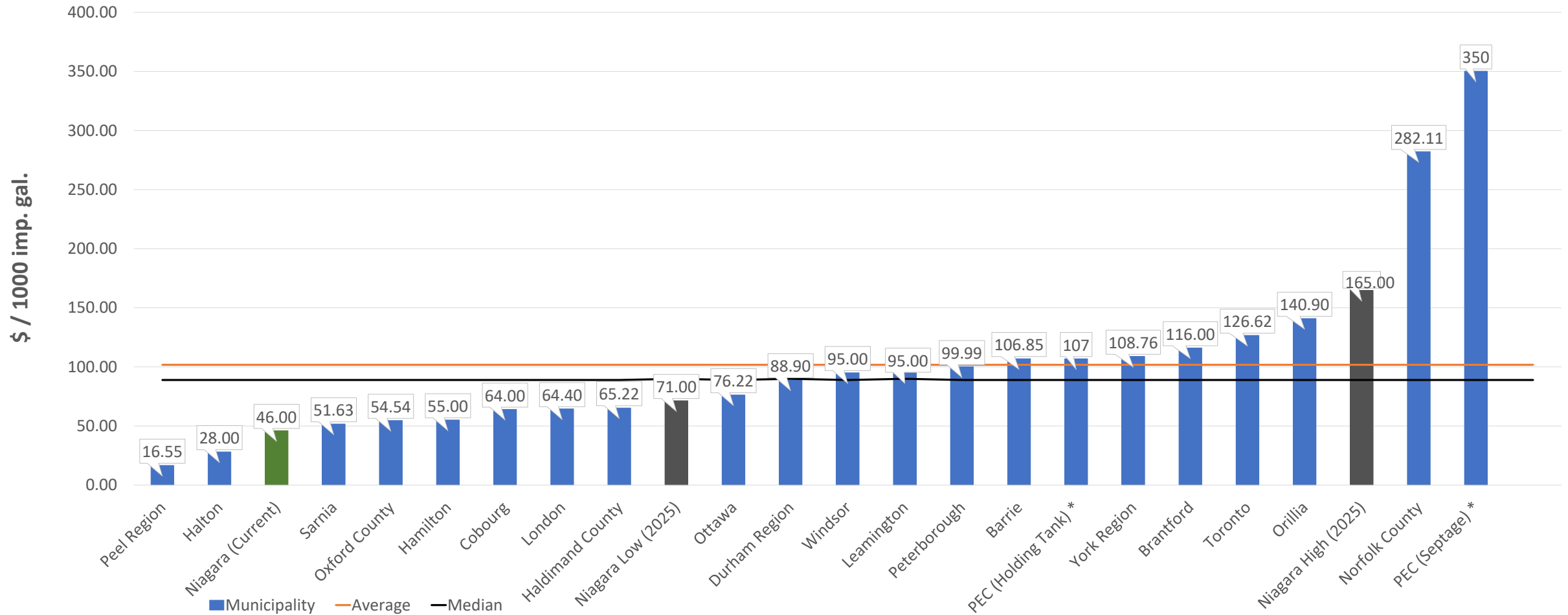
Appendices

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| Appendix 1 | User Fee Rates for Hauled Sewage Sources |
| Appendix 2 | Comparison of Hauled Sewage Rates Across Municipalities |
| Appendix 3 | Supporting Information |

Appendix 1 – Typical Disposal Rates by Source for Hauled Sewage

LOW Concentration	Rate (\$/1000 Imp. Gal.)	HIGH Concentration	Rate (\$/1000 Imp. Gal.)
Cannabis Facility	\$ 71	Brewery	\$ 165
Greenhouse	\$ 71	Abattoir	\$ 165
Domestic Holding Tank	\$ 71	Dairy Farm	\$ 165
Septic Tank	\$ 71	Distillery	\$ 165
Groundwater	\$ 71	Food Processing	\$ 165
Leachate	\$ 71	Winery Wastewater	\$ 165
Portable Toilets	\$ 71	Winery Heavy Waste	\$ 165
Process Tank	\$ 71		
Stormwater	\$ 71		

Hauled Sewage Rates by Municipality



* Prince Edward County does not accept winery waste as it is too pollutant dense and would negatively impact their treatment processes

(1) Niagara is unique in its source demographic compared to neighbouring municipalities as we have over 120 wineries

(2) Based on 2022 data (Peel, Hamilton, Prince Edward County based on 2024 data)

Appendix 3 – Supporting Information

Background on Hauled Sewage Rate Setting

The Region conducted a review of its hauled sewage rate setting approach in response to questions raised at Public Works Committee about the suitability of the current rate and specifically how the revenue collected compares to the true cost of hauled sewage treatment.

Hauled sewage has significantly higher pollutant concentration than sewage received through the collection system (pipe network). For that reason, treatment is much more costly as compared to regular wastewater and the cost of hauled sewage treatment cannot be determined by simply applying the wholesale wastewater rate to the volume of hauled sewage collected at receiving facilities.

Region staff reviewed various potential methodologies to determine the best approach for setting the hauled sewage rate. Each potential methodology was evaluated against various parameters including fairness, accuracy, complexity, and practicality of implementation. After careful evaluation, staff recommend the Weighted Pollutant Concentration Method.

Simply put, the Weighted Pollutant Concentration Method identifies how much it costs to remove various types of pollutants from wastewater, and then determines what it costs to treat an “average” sample of hauled sewage. In other words, the operational & maintenance (O&M) costs are deemed proportional to the relative amounts of treatable pollutants contained in the hauled sewage. This method determines the average concentration of pollutants in regular wastewater and the weighting of each pollutant in the total sewage treated to determine the cost per kilogram to treat each pollutant. This cost is then applied to the average pollutant loading in hauled sewage to determine a treatment cost.

The average strength of various sources of hauled sewage was determined based on a three (3) year historical average of laboratory results from collected samples of hauled sewage. The data used to calculate the Weighted Pollutant Concentration Method is credible, with testing being performed by the internal accredited lab and based on samples collected from sewage haulers. Samples collected and tested were in the thousands, ensuring the data is representative of the overall pollutant concentrations and fit for the purpose intended.

This method accounts for treatment costs at facilities receiving hauled sewage and purposely excludes costs from other wastewater facilities and the sewage collection system not involved in collecting and treating hauled sewage. This ensures the rate charged reflects the true cost of hauled sewage acceptance and disposal.

Hauled sewage received at plants uses up capacity that would otherwise be available for the treatment of wastewater. Therefore, a portion of the proposed hauled sewage rate accounts for capital sustainment needs as well as future capacity expansion needs. Regional staff analysed the most current asset inventory to ensure the portion of the rate contributing to capital sustainment only accounts for the assets that are used in the treatment of wastewater and omits those associated with collection to ensure fair and accurate cost recovery.

Similarly, the portion of the rate contributing to capital expansion needs was determined by looking at the assets required for treatment in the Development Charge Background Study. As rural homeowners do not pay development charges related to wastewater when building, they have not contributed to future infrastructure needs but are still using capacity at wastewater treatment plants. Therefore, those utilizing the hauled sewage program are taking up capacity that could otherwise be used for growth from urban areas. A disposal fee that accounts for this ensures accurate full cost recovery and removes the subsidy on the program currently being covered by development charges.

Due to the variation in pollutant loading between residential and commercial sources of hauled sewage across the Niagara Region, staff recommend moving to a multi-rate disposal fee to distinguish between “low concentration” and “high concentration” waste producers. Under a single rate structure, lower concentration and residential waste producers essentially subsidize the higher concentration producers in the food and beverage industry. Under the multi-rate structure, those driving the cost of treatment pay accordingly. Low concentration sources are defined by having a Biochemical Oxygen Demand (BOD) concentration of under 10,000 mg/L which generally translates into a total pollutant concentration of under 15,000 mg/L. Conversely, a high concentration source is defined by a BOD concentration over 10,000 mg/L and a total pollutant concentration over 15,000 mg/L. **Appendix 1** to Report PW 26-2024 outlines the proposed typical disposal fee for different sources of hauled sewage. **Figure 1** below breaks down the rate into the three (3) components: O&M Cost, Capital Sustainment Cost, Capital Growth Cost.

Figure 1: Hauled Sewage Rate Breakdown

Sewage Type	O&M Costs	Capital Costs (Sustainment)	Capital Costs (Growth Related)	Total Cost (\$/1000 gallons)
Low Concentration	\$48	\$19	\$3	\$71
High Concentration	\$111	\$45	\$8	\$165

In closing, staff recommend the Weighted Pollutant Concentration Method as the most suitable method to establish a rate methodology that will account for the true cost of treating hauled sewage as a Regional service.