
Memorandum

To:	Town of Minto	Fax	<input type="checkbox"/>
From:	Watson & Associates Economists Ltd.	Courier	<input type="checkbox"/>
Date:	February 22, 2016	Mail	<input type="checkbox"/>
Re:	Water & Wastewater Consumption and Rate Update	e-mail	<input checked="" type="checkbox"/>

The Town of Minto (the Town) retained Watson & Associates Economists Ltd. (Watson) to update the water consumption estimates and resulting rates for water and wastewater services provided by the Town.

Methodology

- Received latest meter consumption readings for Palmerston (up to December 2015 to January 2016 cycle) and Clifford, Harriston, and Minto Pines (up to November 2015 to December 2015 cycle).
- Compiled cubic metre consumption figures for all consumers and pro-rated consumption to an estimated annual figure, split into estimated consumption among three blocks based on the Town's current rate structure.
 - Readings from the billing cycles where the billing structure switched to a metered consumption approach were utilized, as follows:
 - Palmerston: June 2015 to January 2016 (eight months); and
 - Clifford, Harriston, and Minto Pines: July 2015 to December 2015 (six months).
 - Each customer's consumption in the selected billing cycles were allocated into three blocks:
 - Block 1 – Up to 250 cubic metres per billing cycle;
 - Block 2 – Over 250 and up to 500 cubic metres per billing cycle; and
 - Block 3 – Over 500 cubic metres per billing cycle.
 - Every customer's consumption in each block was pro-rated from the selected billing cycles, resulting in an annual consumption figure for all blocks and for each customer. These figures provides an estimate of the total annual water consumption for each consumption block.

- The number of metered customers, broken down by meter size, was collected from the latest billing data provided by the Town.
- The amount necessary to be recovered by consumption billing for water and wastewater were calculated.
- The total water and wastewater billings required from the 2015 Rate Study were adjusted to account for new base charge revenue estimates.
- Updated water and wastewater rate forecasts were calculated based on two scenarios:
 - Scenario 1: The rate adjustments were made only to Block 1 consumptive rates, with Block 2 and Block 3 remaining at consumptive rates calculated in the 2015 Rate Study.
 - Scenario 2: The base charge rates for customers on $\frac{3}{4}$ " meters were increased (in comparison to 2015 Rate Study projections). Remaining rate adjustments were made only to Block 1 consumptive rates, with Block 2 and Block 3 remaining at consumptive rates calculated in the 2015 Rate Study.

Conclusions

The updated pro-rated annual consumption estimates are significantly lower than those presented in the 2015 Rate Study. This is expected as consumers shift their consumption patterns in response to usage based water and wastewater rates. Table 1 below illustrates a comparison of consumption by block.

Table 1
Town of Minto
Comparison of 2015 Consumption Estimates

Blocks (per billing cycle)	2015 Rate Study	Updated (pro-rated)	Difference
≤250 m ³	543,227	403,821	(139,406)
>250 to ≤500 m ³	3,953	32,492	28,539
>500 m ³	13,769	80,360	66,591
Total Consumption (m³)	560,949	516,673	(44,276)

Overall, there was a decrease of approximately 44,276 cubic meters. However, there were increases to the amounts anticipated in Block 2 and Block 3, of 28,539 and 66,591, respectively.

The updated rate forecasts for water and wastewater are located in the following tables below:

Scenario 1 (Block 1 Consumptive Rate Impact)

Table 2: Water Rate Forecast

Table 3: Wastewater Rate Forecast

Scenario 2 (Block 1 Base Charge and Consumptive Rate Impact)

Table 4: Water Rate Forecast

Table 5: Wastewater Rate Forecast

Table 2
Town of Minto
Water Services
Water Rate Forecast - Declining Block Rate Structure SCENARIO 1
Inflated \$

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Water Consumption Recovery		1,070,562	1,171,181	1,268,028	1,358,763	1,454,258	1,556,243	1,665,157	1,780,905	1,903,900
Total Consumption (m ³)		520,830	529,051	537,273	545,494	553,408	561,475	569,697	577,918	586,139
Total Meters		2,217	2,270	2,324	2,377	2,429	2,481	2,534	2,588	2,641
Total Consumption:										
Up to 250 m ³		407,978	416,199	424,421	432,642	440,556	448,623	456,845	465,066	473,288
Between 250-500 m ³		32,492	32,492	32,492	32,492	32,492	32,492	32,492	32,492	32,492
Over 500 m ³		80,360	80,360	80,360	80,360	80,360	80,360	80,360	80,360	80,360
Block Rates:										
Up to 250 m ³	\$ 1.81	\$ 2.25	\$ 2.42	\$ 2.58	\$ 2.72	\$ 2.87	\$ 3.02	\$ 3.19	\$ 3.36	\$ 3.54
Between 251-500 m ³	\$ 1.40	\$ 1.51	\$ 1.62	\$ 1.70	\$ 1.78	\$ 1.87	\$ 1.97	\$ 2.06	\$ 2.17	\$ 2.28
Over 500 m ³	\$ 1.20	\$ 1.30	\$ 1.39	\$ 1.46	\$ 1.53	\$ 1.61	\$ 1.69	\$ 1.77	\$ 1.86	\$ 1.95
Annual Percentage Change - Block 1		23.9%	7.6%	6.7%	5.5%	5.4%	5.4%	5.4%	5.3%	5.3%
Annual Percentage Change - Block 2		8.0%	7.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Annual Percentage Change - Block 3		8.0%	7.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Water Base Charge (\$/month by meter size):										
¾"	\$ 13.00	\$ 14.00	\$ 15.00	\$ 16.00	\$ 17.00	\$ 18.00	\$ 19.00	\$ 20.00	\$ 21.00	\$ 22.00
1"	\$ 20.00	\$ 21.00	\$ 22.00	\$ 23.00	\$ 24.00	\$ 25.00	\$ 26.00	\$ 27.00	\$ 28.00	\$ 29.00
1 ½"	\$ 24.00	\$ 25.00	\$ 26.00	\$ 27.00	\$ 28.00	\$ 29.00	\$ 30.00	\$ 31.00	\$ 32.00	\$ 33.00
2"	\$ 29.00	\$ 30.00	\$ 31.00	\$ 32.00	\$ 33.00	\$ 34.00	\$ 35.00	\$ 36.00	\$ 37.00	\$ 38.00
3"	\$ 31.50	\$ 32.50	\$ 33.50	\$ 34.50	\$ 35.50	\$ 36.50	\$ 37.50	\$ 38.50	\$ 39.50	\$ 40.50
4"+	\$ 39.00	\$ 40.00	\$ 41.00	\$ 42.00	\$ 43.00	\$ 44.00	\$ 45.00	\$ 46.00	\$ 47.00	\$ 48.00

Table 3
Town of Minto
Wastewater Services
Wastewater Rate Forecast - Declining Block Rate Structure SCENARIO 1
Inflated \$

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Wastewater Consumption Recovery		1,503,464	1,572,775	1,644,495	1,718,702	1,794,301	1,863,919	1,936,128	1,990,645	2,046,017
Total Consumption (m ³)		520,830	529,051	537,273	545,494	553,408	561,475	569,697	577,918	586,139
Total Meters		2,108	2,161	2,215	2,268	2,320	2,372	2,425	2,479	2,532
Total Consumption:										
Up to 250 m ³		407,978	416,199	424,421	432,642	440,556	448,623	456,845	465,066	473,288
Between 250-500 m ³		32,492	32,492	32,492	32,492	32,492	32,492	32,492	32,492	32,492
Over 500 m ³		80,360	80,360	80,360	80,360	80,360	80,360	80,360	80,360	80,360
Block Rates:										
Up to 250 m ³	\$ 2.62	\$ 3.18	\$ 3.27	\$ 3.36	\$ 3.46	\$ 3.56	\$ 3.63	\$ 3.71	\$ 3.76	\$ 3.81
Between 251-500 m ³	\$ 2.00	\$ 2.05	\$ 2.10	\$ 2.15	\$ 2.21	\$ 2.26	\$ 2.32	\$ 2.38	\$ 2.40	\$ 2.42
Over 500 m ³	\$ 1.70	\$ 1.74	\$ 1.79	\$ 1.83	\$ 1.88	\$ 1.92	\$ 1.97	\$ 2.02	\$ 2.04	\$ 2.05
Annual Percentage Change - Block 1		21.1%	2.9%	2.8%	2.8%	2.8%	2.2%	2.2%	1.3%	1.3%
Annual Percentage Change - Block 2		2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	0.8%	0.8%
Annual Percentage Change - Block 3		2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	0.8%	0.8%

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Wastewater Base Charge (\$/month by meter size):										
¾"	\$ 13.00	\$ 14.00	\$ 15.00	\$ 16.00	\$ 17.00	\$ 18.00	\$ 19.00	\$ 20.00	\$ 21.00	\$ 22.00
1"	\$ 20.00	\$ 21.00	\$ 22.00	\$ 23.00	\$ 24.00	\$ 25.00	\$ 26.00	\$ 27.00	\$ 28.00	\$ 29.00
1 ½"	\$ 24.00	\$ 25.00	\$ 26.00	\$ 27.00	\$ 28.00	\$ 29.00	\$ 30.00	\$ 31.00	\$ 32.00	\$ 33.00
2"	\$ 29.00	\$ 30.00	\$ 31.00	\$ 32.00	\$ 33.00	\$ 34.00	\$ 35.00	\$ 36.00	\$ 37.00	\$ 38.00
3"	\$ 31.50	\$ 32.50	\$ 33.50	\$ 34.50	\$ 35.50	\$ 36.50	\$ 37.50	\$ 38.50	\$ 39.50	\$ 40.50
4"+	\$ 39.00	\$ 40.00	\$ 41.00	\$ 42.00	\$ 43.00	\$ 44.00	\$ 45.00	\$ 46.00	\$ 47.00	\$ 48.00

Table 4
Town of Minto
Water Services
Water Rate Forecast - Declining Block Rate Structure SCENARIO 2
Inflated \$

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Water Consumption Recovery		942,882	1,040,357	1,134,060	1,221,651	1,314,122	1,413,023	1,518,793	1,631,397	1,751,248
Total Consumption (m ³)		520,830	529,051	537,273	545,494	553,408	561,475	569,697	577,918	586,139
Total Meters		2,217	2,270	2,324	2,377	2,429	2,481	2,534	2,588	2,641
Total Consumption:										
Up to 250 m ³		407,978	416,199	424,421	432,642	440,556	448,623	456,845	465,066	473,288
Between 250-500 m ³		32,492	32,492	32,492	32,492	32,492	32,492	32,492	32,492	32,492
Over 500 m ³		80,360	80,360	80,360	80,360	80,360	80,360	80,360	80,360	80,360
Block Rates:										
Up to 250 m ³	\$ 1.81	\$ 1.94	\$ 2.11	\$ 2.27	\$ 2.41	\$ 2.55	\$ 2.71	\$ 2.87	\$ 3.04	\$ 3.21
Between 251-500 m ³	\$ 1.40	\$ 1.51	\$ 1.62	\$ 1.70	\$ 1.78	\$ 1.87	\$ 1.97	\$ 2.06	\$ 2.17	\$ 2.28
Over 500 m ³	\$ 1.20	\$ 1.30	\$ 1.39	\$ 1.46	\$ 1.53	\$ 1.61	\$ 1.69	\$ 1.77	\$ 1.86	\$ 1.95
Annual Percentage Change - Block 1		6.7%	8.8%	7.6%	6.2%	6.1%	6.0%	6.0%	5.9%	5.8%
Annual Percentage Change - Block 2		8.0%	7.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Annual Percentage Change - Block 3		8.0%	7.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Water Base Charge (\$/month by meter size):										
¾"	\$ 13.00	\$ 19.00	\$ 20.00	\$ 21.00	\$ 22.00	\$ 23.00	\$ 24.00	\$ 25.00	\$ 26.00	\$ 27.00
1"	\$ 20.00	\$ 21.00	\$ 22.00	\$ 23.00	\$ 24.00	\$ 25.00	\$ 26.00	\$ 27.00	\$ 28.00	\$ 29.00
1 ½"	\$ 24.00	\$ 25.00	\$ 26.00	\$ 27.00	\$ 28.00	\$ 29.00	\$ 30.00	\$ 31.00	\$ 32.00	\$ 33.00
2"	\$ 29.00	\$ 30.00	\$ 31.00	\$ 32.00	\$ 33.00	\$ 34.00	\$ 35.00	\$ 36.00	\$ 37.00	\$ 38.00
3"	\$ 31.50	\$ 32.50	\$ 33.50	\$ 34.50	\$ 35.50	\$ 36.50	\$ 37.50	\$ 38.50	\$ 39.50	\$ 40.50
4"+	\$ 39.00	\$ 40.00	\$ 41.00	\$ 42.00	\$ 43.00	\$ 44.00	\$ 45.00	\$ 46.00	\$ 47.00	\$ 48.00

Table 5
Town of Minto
Wastewater Services
Wastewater Rate Forecast - Declining Block Rate Structure SCENARIO 2
Inflated \$

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Wastewater Consumption Recovery		1,381,664	1,447,831	1,516,407	1,587,470	1,660,045	1,726,579	1,795,644	1,847,017	1,899,245
Total Consumption (m ³)		520,830	529,051	537,273	545,494	553,408	561,475	569,697	577,918	586,139
Total Meters		2,108	2,161	2,215	2,268	2,320	2,372	2,425	2,479	2,532
Total Consumption:										
Up to 250 m ³		407,978	416,199	424,421	432,642	440,556	448,623	456,845	465,066	473,288
Between 250-500 m ³		32,492	32,492	32,492	32,492	32,492	32,492	32,492	32,492	32,492
Over 500 m ³		80,360	80,360	80,360	80,360	80,360	80,360	80,360	80,360	80,360
Block Rates:										
Up to 250 m ³	\$ 2.62	\$ 2.88	\$ 2.97	\$ 3.06	\$ 3.15	\$ 3.25	\$ 3.33	\$ 3.41	\$ 3.45	\$ 3.50
Between 251-500 m ³	\$ 2.00	\$ 2.05	\$ 2.10	\$ 2.15	\$ 2.21	\$ 2.26	\$ 2.32	\$ 2.38	\$ 2.40	\$ 2.42
Over 500 m ³	\$ 1.70	\$ 1.74	\$ 1.79	\$ 1.83	\$ 1.88	\$ 1.92	\$ 1.97	\$ 2.02	\$ 2.04	\$ 2.05
Annual Percentage Change - Block 1		9.7%	3.1%	3.1%	3.1%	3.0%	2.4%	2.4%	1.4%	1.3%
Annual Percentage Change - Block 2		2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	0.8%	0.8%
Annual Percentage Change - Block 3		2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	0.8%	0.8%

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Wastewater Base Charge (\$/month by meter size):										
¾"	\$ 13.00	\$ 19.00	\$ 20.00	\$ 21.00	\$ 22.00	\$ 23.00	\$ 24.00	\$ 25.00	\$ 26.00	\$ 27.00
1"	\$ 20.00	\$ 21.00	\$ 22.00	\$ 23.00	\$ 24.00	\$ 25.00	\$ 26.00	\$ 27.00	\$ 28.00	\$ 29.00
1 ½"	\$ 24.00	\$ 25.00	\$ 26.00	\$ 27.00	\$ 28.00	\$ 29.00	\$ 30.00	\$ 31.00	\$ 32.00	\$ 33.00
2"	\$ 29.00	\$ 30.00	\$ 31.00	\$ 32.00	\$ 33.00	\$ 34.00	\$ 35.00	\$ 36.00	\$ 37.00	\$ 38.00
3"	\$ 31.50	\$ 32.50	\$ 33.50	\$ 34.50	\$ 35.50	\$ 36.50	\$ 37.50	\$ 38.50	\$ 39.50	\$ 40.50
4"+	\$ 39.00	\$ 40.00	\$ 41.00	\$ 42.00	\$ 43.00	\$ 44.00	\$ 45.00	\$ 46.00	\$ 47.00	\$ 48.00

The following table (Table 6) illustrates a summary of monthly base charge and per cubic meter consumptive rates calculated in the 2015 Rate Study, and rates as calculated in scenarios 1 and 2 shown above.

Table 6
Town of Minto
Comparison of 2016 Base Charge (monthly) & Consumptive Rates (per cubic meter)

	2015 Rate Study	Scenario 1 (Block 1 Rate Impact)	Scenario 2 (Block 1 Base Charge and Rate Impact)
Water Rates			
5/8" or 3/4" Monthly Base Charge	14.00	14.00	19.00
≤250 m3	1.96	2.25	1.94
>250 to ≤500 m3	1.51	1.51	1.51
>500 m3	1.30	1.30	1.30
Wastewater Rates			
5/8" or 3/4" Monthly Base Charge	14.00	14.00	19.00
≤250 m3	2.69	3.18	2.88
>250 to ≤500 m3	2.05	2.05	2.05
>500 m3	1.74	1.74	1.74

Table 7 provides an overview of the total bi-monthly bill by customer types under past and proposed rate structures.

Table 7
Town of Minto
Comparison of Customers' Bi-Monthly Bill

	m ³ per 2 Months	Bi-Monthly Bill Analysis			
		2014 Equivalent Bill (before rate structure change)	2015 Current Rates	2016 Proposed Rates (Scenario 1)	2016 Proposed Rates (Scenario 2)
Average Residential Home	25.7	\$ 212.50	\$ 165.85	\$ 195.55	\$ 199.87
Residential Home - Low Consumption	18.0	\$ 212.50	\$ 131.74	\$ 153.74	\$ 162.76
Residential Home - Med. Consumption	38.9	\$ 212.50	\$ 224.33	\$ 267.23	\$ 263.50
Residential - 12 units	240.0	\$ 1,458.48	\$ 1,503.20	\$ 1,747.20	\$ 1,600.80
Non-Residential - Low Consumption	25.0	\$ 262.00	\$ 190.75	\$ 219.75	\$ 204.50
Non-Residential - Medium Consumption	265.0	\$ 877.45	\$ 1,238.50	\$ 1,494.90	\$ 1,342.40
Non-Residential - High Consumption	3,450.0	\$ 10,882.50	\$10,628.50	\$11,335.50	\$11,183.00

Recommendations

- That Council approve the use of Scenario 1 or Scenario 2 rate adjustments;
- That Council approve the 2016 water and wastewater rates and implementation schedule as shown in Tables 2 and 3 (Scenario 1) or Tables 4 and 5 (Scenario 2).