



TransAqua

GREATER MONCTON
WASTEWATER
COMMISSION

COMMISSION
DES EAUX USÉES
DU GRAND MONCTON

ANNUAL REPORT 2016



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1. INTRODUCTION

1.1 Mission and Vision

MISSION

To collect and treat wastewater in a reliable, cost-efficient and environmentally responsible manner.

VISION

To be an outstanding environmental steward supporting regional planning, economic development and quality of life for the communities of Dieppe, Moncton and Riverview.

1.2 History 1983-Present

The Greater Moncton Sewerage Commission (GMSC) was created by an order-in-council in 1983 based on a model outlined in a consultant's report by Boyd A. Touchie Engineering Ltd. and Anderson Associates Limited in consultation with the three municipalities and the Government of New Brunswick.

The GMSC was then mandated to implement the Master Plan as laid out in the study. From 1983 to 1995, the GMSC oversaw the construction of a 31-km network of collector sewers intercepting more than 80 untreated outfalls; the construction of a major pumping station along with eight smaller ones; implementation of an advanced primary treatment system; and implementation of a long-term sustainable Biosolids Management Program with a new innovative composting system.



Clarifier under construction.

In 2012, the federal government's new Wastewater Systems Effluent Regulations (WSER-2012) were enacted under the Fisheries Act. This legislation guides the effluent compliance requirements for wastewater treatment facilities and requires that the Commission meet these new requirements by 2020.

The Greater Moncton Sewerage Commission changed its legal corporate name to the Greater Moncton Wastewater Commission

(GMWC) in 2014 and introduced a new trade name, TransAqua as the day-to-day business name. TransAqua is bilingual, easier to remember and better conveys what the Commission does: transforming ("trans") wastewater ("aqua") and returning it to nature, i.e. the Petitcodiac River. Changes to its Board and management structure in 2012 have improved transparency, accountability, public communication effort and operations.

After 32 years, the Commission continues to move away from concentrating on what goes into the pipe (i.e. sewage) and concentrate on what comes out of the other end – high quality treated wastewater which will be enhanced after secondary treatment is implemented by 2020. These mandated upgrades will be the main focus of TransAqua's activities between 2017 and 2020. We take our responsibility as an environmental steward very seriously and are committed to being part of the solution. Other initiatives which were planned for prior to – or in – 2017 include:

- Wastewater heat-recovery system pilot project to reduce energy costs;
- Continued improvements to Composting Facility in order to track biosolids piles from cradle to grave;
- Through planned upgrades by 2020, we will achieve 95% of solids removed from effluent released into the Petitcodiac River. As well, through disinfection via ultraviolet light, the effluent released into Petitcodiac River will be of quality suitable for recreational use. In 2016, 67% of solids were removed.

The Commission has been proven as an effective tri-community model and has demonstrated co-operation and the ability and efficiency to deliver. Its assets are well managed and maintained within a sustainable financial model that remains affordable to ratepayers. The administration, operations and maintenance teams continue to meet current expectations and aim to anticipate future needs to the benefit of all ratepayers, stakeholders and the environment.

2. CHAIR'S REPORT

TransAqua had a busy and productive year in 2016. Of critical importance was our success in obtaining funding for the plant expansion necessary to meet new federal guidelines by 2020. The federal and provincial governments announced they would each fund 25% of the estimated project costs of \$90.4 million or about \$22.6 million each. This funding will allow TransAqua to meet its environmental commitments while minimizing the impact on ratepayers. Rates will be frozen for 2017 and assuming no unforeseen issues the Board expects that it is likely that future rate increases could be minimal if necessary at all.

The TransAqua Board had three members leave in 2016 – Winston Pearce and George Somers representing Moncton and Julie Thériault representing Dieppe. Winston was our long-time Chairman and led the organization over the past few years in improving its processes, procedures and governance. The Board appreciates the contribution of all three of our retiring members and welcome their replacements – Michel Desjardins and Bryan Inglis representing Moncton and Mylène Roy representing Dieppe.

TransAqua was able to successfully conclude negotiations with its CUPE union in 2016 due to the diligent efforts of senior management and the CUPE negotiating team. The signing of a multi-year Collective Agreement will ensure labour stability and enable all parties to focus on working together. On the management side, 2016 saw the hiring of a new Director of Finance – Jennifer Langille, CPA, CMA, CPC - whose professional accounting and management skills will be put to good use as TransAqua moves forward.

The Board continued to work on updating its corporate policies and improving its operating procedures. Meeting agendas have been streamlined and a Communication Strategy has been developed and is in the process of being implemented. This will ensure that ratepayers and stakeholders understand TransAqua and what we do.

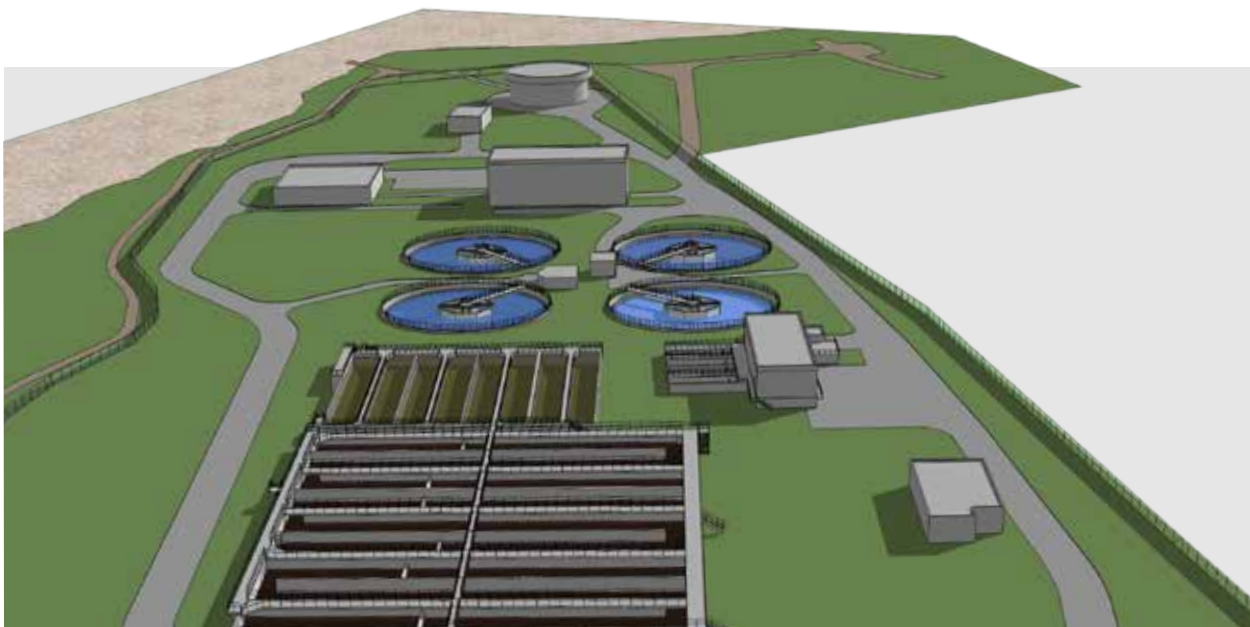
It has been several years since the Auditor General performed audits of the provincial wastewater commissions and her final follow-up report was recently released. In it she stated, "While Environment and Local Government did not implement all of the recommendations we made, the changes that have been made appear to have had a significant, positive impact on the governance and oversight of the Greater Moncton Sewerage Commission." The TransAqua Board and staff have worked hard to implement the Auditor General's recommendations where possible and are pleased to see that their efforts were recognized.

The next few years will be busy ones for TransAqua as we move forward with our plant expansion. It will be challenging but I have no doubt that with the help of the Board, management and staff we will be successful on all accounts.

Respectfully submitted,



David Muir, CPA, CA
Chair



Aerial view of TransAqua's Proposed Secondary Wastewater Treatment Facility in Riverview

3. GENERAL MANAGER'S REPORT

3.1 2016 Overview

Obtaining tripartite funding remained the main focus for 2016. A tripartite funding announcement for TransAqua's WWTF Upgrade and Modernization Project was made on December 12, 2016.

The Commission Board amended GMWC By-laws Nos. 1, 2, 3 and 6 along with a number of GMWC Policies that were integrated into a new format that requires review every two years.

In 2016, there were many activities taking place that were building the foundations for a sustainable future. The completion of the Public Funding Business Strategy and Community Stakeholder Communications Strategy allows TransAqua to better understand how to realize long term financial sustainability and to enhance community engagement. A new compost curing pad to handle the additional 50% of biosolids that will be created by secondary treatment in 2020 was constructed and commissioned. Major automation upgrades in the Main Pumping Station were completed.

With the Commission's Mission and Vision in mind, the management team focused on the four strategic objectives of the 2014-2018 strategic priorities, primarily the upgrade of the facility to a point where effluent released into the local environment complies with the federal wastewater regulations by 2020.

The Technical Committee consisting of representatives from TransAqua and the three municipalities worked to develop a number of Sub-Agreements that were of mutual benefit. TransAqua and the City of Dieppe ratified a Cost Sharing Agreement for the Babineau Creek Project. TransAqua and The Cities of Dieppe and Moncton also ratified Cost Recovery Agreements to complete projects of mutual benefit at Bourque Road and Jonathan Creek. The overarching Service Agreement

between TransAqua and the three municipalities continued to be developed and is expected to be completed in 2017.

Technical staff worked with consulting engineering firm CBCL Limited to complete as much of the detailed design for Phase 1 – Preliminary Treatment and Septage Receiving as possible while awaiting a funding announcement. The detailed design for Phase 2: Primary Treatment also began. The pre-selected equipment for Phase 1 was awarded and purchase Orders issued in 2016.

TransAqua received the Final Certificate of Determination with Conditions of Approval completing the Environmental Impact Assessment process. TransAqua also received approval for its submission of the required Environmental Management Plan from the regulators.

Insourcing/Outsourcing Analyses were completed for the compost tractor operation, site snow clearing, site landscaping, On-Call Crew response and the compost facility. At this time, it is determined that the current models that are in place provide the best value for money. Templates have been created to be able to quickly complete an analysis if and when market conditions change.

The Technical Committee began discussions related to Climate Change Adaptation Strategies to understand how climate change will impact municipal and TransAqua infrastructure that will be continued into 2017 as the GMWC Climate Change Policy is developed.

The management team and their respective support staff have continued the great work and high standards for which the Commission is known. The following projects were completed in 2016, in line with TransAqua's long-term strategic plan objectives:

- The General Manager gave a number of presentations in 2016 to various groups;
- Updated the TransAqua website (www.transaqua.ca) on a regular basis;
- Public Safety Canada site risk assessment regarding business continuity and security;
- TransAqua and CUPE Local 5217 ratified its first Collective Agreement on May 20, 2016;



- The tunnel under the Petitcodiac River extending from Moncton to the WWTF in Riverview was inspected using an innovative approach with a model boat equipped with a GoPro camera and LED lights was completed showing there were no major deficiencies or infiltration. The tunnel was insured in 2016 for \$12M;



- All required legislated and operational requirements were met in 2016 with the submission of National Pollutant Release Inventory, Combined Sewer Overflow Reports, quarterly Quality Monitoring Report through ERRIS and to the DELG, the GMWC Annual Report, compost site groundwater monitoring wells analysis, AMEC/STANTEC river sampling program analysis and the BNQ site visits to ensure compost conformity;
- The detailed design for the Administration Building Upgrade began in 2016. Construction is expected to begin in 2017 to meet the requirements for an upgraded WWTF and to replace assets (HVAC, etc.) that are at the end of their life cycle;

- The laboratory passed the October 2016 Proficiency Testing that is the first step towards achieving national accreditation status;
- TransAqua participated as a member of the Light up Riverview Committee and installed holiday lighting at the entrance near the sign that received many favorable comments from the public. TransAqua expects to expand this initiative in 2017 towards the other entrance; and
- TransAqua staff exceeded its Safety Goal in 2016 of resolving 70% of all safety issues brought forward to the JHSC. In 2016, as many issues that were brought forward were resolved along with a number of issues identified in 2015.

Patricia Casas, TransAqua's Liquid Systems Manager, obtained her Class 4 Wastewater Treatment Operator certification through the New Brunswick Department of Post-Secondary Education, Training and Labour. This allows TransAqua to meet its future regulatory requirements to operate the upgraded wastewater treatment facility which will become a Class 4 facility upon commissioning in 2020.

Peter Brown, TransAqua's Lead Operator, obtained his Class 3 Wastewater Collection Operator certification through the New Brunswick Department of Post-Secondary Education, Training and Labour. While TransAqua's current sewer collection system is Class 2, this positions TransAqua very well in the event of any regulatory changes or future upgrades to the existing system (ie. second river crossing at Virginia Street).

TransAqua's new Director of Finance and Administration, Jennifer Langille CPA, CMA, CPC joined TransAqua in May 2016. Jennifer brings extensive experience with more than 17 years of management experience from the private sector.

TransAqua would like to thank all community members who took an active interest in TransAqua and its activities in 2016 through participation in various visits and tours and providing ongoing support for TransAqua as it continued to lobby for government funding to meet the 2020 regulatory deadline for improved wastewater treatment standards.

Respectfully submitted,

R. Kevin Rice, B.Sc., CET
General Manager

3.2 2014-2018 Strategic Plan Update

There are four Strategic Priorities outlined in the 2014-2018 Strategic Plan; Minimizing Negative Environmental Impact of GMSC, Common Vision and Plan with Municipal and Community Partners, Long Term Reliability and Sustainability of GMSC Infrastructure and Long Term Financial Viability and Cost Effectiveness. In 2016, a number of Goals to support the Strategic Priorities have been completed:

Minimizing Negative Environmental Impact of GMSC - The Financing Plan and Implementation Plan goals were resolved when the Government of Canada and Province of New Brunswick announced a tripartite funding agreement for the WWTF Upgrade and Modernization Project (Project) in December 2016. The Public Funding Business Strategy outlined the ratepayer impacts related to various funding models. Construction of the Project will begin in mid-2017 for the Preliminary Treatment and Septage Receiving Facility and the Primary Clarification phases. Compost Pad # 3 and the compost curing pad expansion to handle additional biosolids created by the secondary treatment process by 2020 have been completed.

Common Vision and Plan with Municipal and Community Partners - TransAqua and the City of Dieppe ratified a Cost Sharing Agreement for the Babineau Creek Trunk Sewer and a Cost Recovery Agreement for the Forcemain from the Fox Creek Pumping Station to the new Babineau Creek Trunk Sewer in 2016. TransAqua also ratified a Cost Recovery Agreement with the City of Moncton for the Relocation of the GMWC Collector Sewer at Jonathan Creek. TransAqua will continue to work with its municipal partners in 2017 to ratify the overarching Service Agreement and the Cost Recovery Sub-Agreement. TransAqua continues to present its annual budget presentations to Moncton, Dieppe and Riverview Councils. TransAqua's Annual General Meeting (AGM) is open to the public and is held in each municipality on a rotational basis. TransAqua developed a Communications Strategy and an Implementation Plan in 2016 to ensure timely and appropriate communications with all levels of government (municipal, provincial, federal), NGOs and ratepayers regarding its activities. A composting marketing brochure was developed to assist the community in better understanding what the compost is; how to use it; as well as how, when and where it can be accessed easily. In 2017, a Social Media Strategy, Issues Management Plan, Quarterly Newsletter, among other initiatives will be undertaken.

Long Term Reliability and Sustainability of GMSC Infrastructure - In 2016, the TransAqua Business Continuity Plan was approved by the Commission Board to support the existing Emergency Preparedness and Response Plan. This Plan outlines the procedures to be taken in the event of a major service disruption. Initial contact with the Moncton EMO Director was made to determine the priority level for restoring service during an emergency situation. This collaboration will continue into 2017. TransAqua's asset inventory and condition assessment was completed in 2016 and an asset categorization system was developed. In 2017, TransAqua will be commissioning a Computerized Maintenance Management System (CMMS) to ensure the optimum replacement point to replace equipment is identified. This will allow TransAqua to better plan and budget for major infrastructure repairs and/or replacement at the appropriate time. The Public Funding Business Strategy also identified the rate structure that will continue to be approved annually. Work is ongoing to develop a long term plan to ensure that funding is available in the GMWC General Capital Reserve Fund to replace major assets (sewer tunnel, clarifiers, buildings, etc.) at the end of their life cycle.

Long Term Financial Viability and Cost Effectiveness - The Technical Committee continues to work to determine a Cost Recovery Sub-Agreement that will ensure fair and equitable ratepayer cost distribution amongst the three municipalities while ensuring that TransAqua receives the revenue required to pay for its short and long term operations, asset replacement and Capital Plan projects. As a result of the Government of Canada and Province of New Brunswick Funding Contribution Agreements, TransAqua will not be required to borrow any funds required to complete the WWTF Upgrade and Modernization Project. TransAqua plans to deliver this Project on time and on budget. By pre-selecting equipment rather than including it in the overall Project tender documents have already saved the ratepayers \$1.6M when compared to the Engineer's estimate. TransAqua's goal to ensure that the rate remains consistent has been met. In 2017, a Septic Hauler Service Agreement will be implemented to ensure that the process is receiving the appropriate septic water and eliminate any potential contaminants that can negatively impact the operations and the final compost product. TransAqua has an opportunity through collaboration with the municipalities to introduce more compost into the community through their Parks and Recreation projects. TransAqua ratified its first Collective Agreement with CUPE Local 5217 in May 2016 that expires on December 31, 2019.

3.3 Existing Assets and Condition

Currently, TransAqua’s infrastructure consists of eight Remote Pumping Stations, 31 km of trunk sewers and tunnels, a Main

Pumping Station, a Wastewater Treatment Facility (WWTF) located at Outhouse Point in Riverview and a Composting Facility located in Moncton on a 140-hectare property.

3.3.1 Collector Sewer System

Eight Remote Pumping Stations along the collector sewer system are operated to pump wastewater to the WWTF and to protect low-lying areas from flooding during wet weather events. The 31 km of trunk sewers and tunnels extend to the causeway around the traffic circle and all the way to Dover Road on the north side of the Petitcodiac River. On the Riverview side, it extends from the causeway to Mill Creek. The culminating achievement of this collector network is the 1.1-km-long tunnel under the riverbed from Bore Park to the Main Pumping Station. It is a 1.6-m diameter tunnel and is 22 m below the ground surface. In 2016, just over 6 kms of sewer, the tunnel and the WWTF’s effluent pipe were inspected using an innovation developed by Peter Brown, TransAqua’s Lead Operator. This innovative approach to visually inspecting sewer pipe has resulted in major savings for the ratepayers. The tunnel had not been inspected in over fifteen years and required a complex and costly operation until now! The tunnel received insurance coverage in 2016 where there was previously none.



3.3.2 Main Pumping Station

The Main Pumping Station located on the plant site at Outhouse Point (property having been granted initially to a Mr. Robert Outhouse) is the heart of the collector sewer system, a point of collection for all lines and continuous pumping to the WWTF. The station is equipped with four non-clog type vertical centrifugal pumps, rated at 1020 L/s at 28.7 m head. The cylindrical structure extends 30 m below grade and 9 m above ground, much like a 10-storey building underground. In 2016, the Programmable Logic Controllers in the Main Pumping Station were upgraded in anticipation of the secondary treatment process.



3.3.3 Wastewater Treatment Facility (WWTF)

The preliminary treatment building houses screening equipment, grit tanks, grit handling equipment, chemical storage and feeding equipment. Three 39-m diameter settling tanks are used for the chemically enhanced primary treatment. The dewatering building houses dewatering centrifuges, screw conveyors, lime silos and polymer equipment all of which transform the wastewater by-products (sludge) extracted from

wastewater into an important feedstock for the Composting Facility, namely biosolids.

The actual WWTF was commissioned in 1994 with a capacity of 115,000 m³ per day, or 25 million gallons per day. The plant was designed to facilitate expansion to biological treatment in the future which will occur between 2017 and 2021.

3.3.4 Composting Facility

The composting process used by the Commission combines bottom positive aeration and a cover system on three large concrete thermophilic composting pads. The key to the composting process is the mix ratio of biosolids and wood waste consisting primarily of bark and ground forestry waste. The bulking material provides a source of carbon but is essential in obtaining a porosity that facilitates the migration of air for a thorough and complete aerobic process.

The current original system has a capacity to process 10,000 tonnes of biosolids mixed with 10,000 tonnes of wood waste for a total of 20,000 tonnes of input materials per year. An additional third concrete composting pad and an expansion

of the asphalt curing pad was completed in 2016 to increase capacity for an additional 5,000 tonnes of biosolids and 5,000 tonnes of wood waste per year that will accommodate additional biosolids due to the commissioning of secondary treatment in 2020.

Compost curing and finishing take place on adjacent asphalt pads. The design concept is based on total containment of surface runoff from rainfall and snowmelt from the composting site flowing into an on-site retention pond together with leachate generated from the composting process and then flowing back to the wastewater treatment plant through sanitary sewers for treatment.



3.4 Wastewater Operations

In 2016, the WWTF treated more than 22.9 million m³ of wastewater or an average of 62,554 m³ per day. At this flow rate, 25 Olympic-size swimming pools would be filled in a day. The wastewater treatment plant power consumption for 2016 was 5,063 MW hours or an average of 13,833 KW hours per day with an average monthly power bill of \$43,092.

Screening of large objects and removal of inorganics such as sand and gravel particles are accomplished through the screening and grit-removal processes. The materials removed are then transported to the Southeast Regional Service Commission waste management facility for disposal.

The existing enhanced primary treatment is designed to remove suspended solids and reduce biochemical oxygen demand to some extent. In 2016, the removal rate of Total Suspended Solids (TSS) was measured at 67%. Biological Oxygen Demand (BOD) is a measure of organic biodegradable matter which is partially removed (approximately 52%) with the current process. The planned plant upgrades to biological treatment would bring these removal rates to more than 95%.

Approximately 11,635 m³ of septage collected from rural communities surrounding Greater Moncton (50-km radius) were also treated at the WWTF.

Chemically assisted primary treatment uses chemical coagulants to increase the removal of settleable solids. Sludge is dewatered by centrifuge to increase dryness. Lime is then added to produce lime-stabilized biosolids. In 2016, 11,311 tonnes of biosolids with

an average solids content of 28% were shipped from the WWTF to the Composting Facility.

The five-year historical operational data can be seen below in Table 1:

Table 1: 2012 – 2016 Historical WWTF Operational Data

	2012	2013	2014	2015	2016
Annual volume - m ³	23,034,466	23,871,805	27,328,601	25,341,627	22,869,117
Daily average - m ³ /day	62,923	65,257	74,865	69,384	62,554
Anionic polymer - tonnes	0.7	0.6	0.4	0.7	0.7
Cationic polymer- tonnes	12.0	12.9	10.4	10.9	13.4
Ferric sulfate - tonnes	402.5	410.7	390.3	398.5	452.7
Lime - tonnes	103.6	133.6	127.3	118.9	113.3
Power consumption - MW	5,034	5,279	5,557	5,137	5,063
Diesel Generators - hours	139	125	190	187	177
Biosolids (Wet) - tonnes	9,106	10,358	10,855	11,449	11,311
Biosolids (Dry) - tonnes	2,591	3,072	3,089	3,229	3,169
Solids - %	28.5	29.7	28.4	28.2	28.0
Precipitation - mm			1501	1352	995
Cost / m ³ - \$			\$0.17	\$0.20	\$0.21

The total cost to treat 1 m³ of wastewater in 2016 was \$0.31 compared to \$0.20 in 2015. GMWC reimbursed \$2,470,581 to the City of Dieppe for the Babineau Creek Cost sharing project in 2016. Removing this one-time expense, the total operating cost to treat 1 m³ of wastewater in 2016 was \$0.21. In recent years, citizens are using less water and there has been less precipitation (rain and snowmelt). This has resulted in less wastewater from

citizens and combined sewers requiring treatment. Because of this lack of dilution, more polymer is required for treatment that creates more biosolids which means less solids going into the Petitcodiac River. The higher operating cost in 2016 also reflects the increased cost of electricity, property taxes, contracted services, chemicals, materials and investments in safety initiatives.

3.4.1 Regulatory Compliance

In 2016 TransAqua effluent discharged to the Petitcodiac River met requirements set in the Transitional Authorization issued by the New Brunswick DELG in November 2014. This authorization sets conditions for effluent quality that are appropriate for the current Advanced Primary Treatment Process in place:

- The average carbonaceous biochemical oxygen demand (CBOD₅) must not exceed 130 mg/L.
- The average concentration of total suspended solids (TSS) in the effluent must not exceed 96 mg/L.
- The maximum concentration of un-ionized ammonia in the effluent should be less than 1.25 mg/L, expressed as nitrogen (N), at 15°C ±1°C.

2015 average effluent concentrations for the pollutants above described are as follows:

- Carbonaceous biochemical oxygen demand (CBOD₅): 72 mg/L.
- Total suspended solids (TSS): 54 mg/L.
- Un-ionized ammonia: 0.111 mg/L, expressed as nitrogen (N), at 15°C ±1°C.

The following table contains monthly averages for TSS and CBOD₅ and maximum concentrations of un-ionized ammonia for 2016:

Table 2: 2016 Monthly Effluent Average

2016	CBOD ₅ mg/L	TSS mg/L	Un-NH ₃ max mg/L
January	55	51	0.123
February	50	61	0.137
March	61	51	0.112
April	51	46	0.146
May	53	53	0.116
June	60	52	0.188
July	79	60	0.109
August	101	50	0.171
September	76	59	0.240
October	68	51	0.157
November	85	50	0.137
December	71	55	0.112
Average	67	53	0.146

By 2020, TransAqua discharge to the Petitcodiac River will meet the Wastewater System Effluent Regulations (WSER). These federal regulations require that WWTF effluent must not be acutely lethal and must also meet the following conditions at the final discharge point to be authorized to be discharged:

- The average carbonaceous biochemical oxygen demand (CBOD₅) must not exceed 25 mg/L.
- The average concentration of total suspended solids in the effluent must not exceed 25 mg/L.
- The average concentration of total residual chlorine in the effluent must not exceed 0.02 mg/L.
- The maximum concentration of un-ionized ammonia in the effluent should be less than 1.25 mg/L, expressed as nitrogen (N), at 15°C ±1°C.

3.4.2 Laboratory Operations

The TransAqua wastewater laboratory is located at the WWTF Operations Center. This laboratory produces essential data that enables personnel to determine wastewater characteristics, process efficiency and effluent quality. Adjustments and improvements to treatment processes can be done based on laboratory results. The Canadian Association for Laboratory Accreditation Inc. (CALA) provides laboratories with national accreditation that meet rigorous testing quality standards. As part of the accreditation process, laboratories are required to participate in biannual (March, October) Proficiency Testing for some of the following parameters that are currently being tested at the TransAqua laboratory:

- pH and temperature
- Total suspended solids (TSS) and volatile suspended solids (VSS)
- Five-day carbonaceous biochemical oxygen demand (CBOD₅)
- Chemical oxygen demand (COD)
- Ammonia

- Total Kjeldahl nitrogen (TKN)
- Total phosphorus (TP)
- Alkalinity

TransAqua's laboratory participated in the October 2016 CALA Proficiency Testing Program and passed all parameters that were required to be submitted. In 2017, upgrades to the Administration Building, including the laboratory, will allow the laboratory to apply for CALA accreditation. TransAqua's Certificate of Approval issued by the Province of New Brunswick requires certain parameters to be analyzed by a nationally accredited laboratory. By achieving the accreditation status, TransAqua's laboratory will not only meet the Province's testing requirements but will be able to offer laboratory testing services to other sectors generating revenue.

3.5 Composting Operations

Wastewater treatment by-products, or biosolids, are used as a key ingredient in the TransAqua composting process. Up until recently, biosolids were considered to be 'waste' that required expensive disposal. Personal attitudes are quickly changing to realize that compost containing biosolids are nutrient rich and are being seen as a value added product that can be reintroduced to the earth for many uses.

Treatment of biosolids at the WWTF involves conditioning with liquid lime, dewatering by high-speed centrifuges followed by the addition of dry lime. These centrifuges will be upgraded in 2017 not only to extend their life cycle by another 20 years but also increase their processing capacity to deal with additional solids that will be generated by the secondary treatment process that will be commissioned by 2020.

Biosolids are transferred to the Composting Facility where they are mixed with green waste consisting of bark (from sawmills), ground forestry waste, wood chips and other green waste. The initial mixture is two parts of green waste to one part of biosolids by volume. Biosolids are much denser (heavier) than green waste.

In 2016, 11,311 tonnes of treated biosolids were processed along with approximately 11,311 tonnes of green waste. The initial mix produced 50 windrows which are 50 m long on the composting pad. Windrows spend a minimum of eight weeks on the active



aerated pad and are turned over three times. The windrows are covered with a breathable cover during the initial phases and can reach temperatures of more than 70°C. The windrows are then moved and grouped into lots on the curing pad where they are conditioned and left to compost at a slower rate while cooling down. The complete process takes one year. Consequently, 2016's production will be available for use in 2017.

Processing and product usage in 2016 involved screening of the 2015 stockpiles (lots) for use by the general public, landscapers and local municipalities.

The public was allowed to pick up compost free of charge from the self-loading bins. If customers required a small tractor to load their truck or trailer, a \$15 / cubic yard fee was paid. Product was sold to landscapers and is also provided to the Greater Moncton area municipalities for their horticultural activities.

The five-year usage summary (tonnes) is shown in Table 3. There were approximately 6,800 tonnes of 2015 product available to the public in 2016.

Table 3: 2012 – 2016 Historical Compost Operational Data (tonnes)

Compost Clientele	2012	2013	2014	2015	2016
Public pick-up bins	2,880	4,000	3,696	4,000	5,750
Commercial users	280	515	160	960	1,000
City of Moncton	1,464	42	535	800	40
City of Dieppe	192	1,009	26	200	60
Town of Riverview	128	16	34	96	150
Community projects	128	128	24	400	200
Trials/tests/promotional	360	680	600	400	200
Miscellaneous/TransAqua	320	400	400	400	200
Annual compost output totals	5,752	6,790	5,476	7,256	7,600
End of Season Inventory				1,750	100

TransAqua was pleased that 2016 surpassed 2015 as the best year to date with respect to participation from the public, commercial users and municipalities. There was a significant increase in volume removed from the compost facility compared to 2015 and is the highest volume to date. To put this in a visual perspective, TransAqua could load approximately 600 to 700 dump trucks with compost every year. Once secondary treatment is commissioned, up to 50% more biosolids will be created that

will be converted into compost and made available to the public as a value added product.

The product available for use in 2016 were Lots 2015-1 to 2015-12, each tested in order to confirm product quality. Lot 2015-1, 2015-2 and 2015-4 was recycled back into the process due to very high moisture levels. Approximately 100 tonnes of screened and approved compost from Lots 2015-12 remained on site at the end of the season and will be available for use in early 2017.

3.5.1 BNQ Compost Certification

TransAqua's Composting Facility operation was developed on the basis of meeting BNQ standards (Bureau de Normalisation du Québec).



The BNQ is a standard development organization which is part of the Centre de Recherche Industrielle



du Québec (CRIQ). The BNQ was created in 1961 and is one of the four standards-development organizations accredited by the Standards Council of Canada and is therefore a member of the National Standards System.

The Commission went through the process of obtaining BNQ certification in 2009 for its Category "A" quality compost. This certification is under the Standard CAN/BNQ 0413-200/2005. Product certification level was upgraded to Category "AA" in 2011 – which is the highest certification level achievable in Canada for compost.

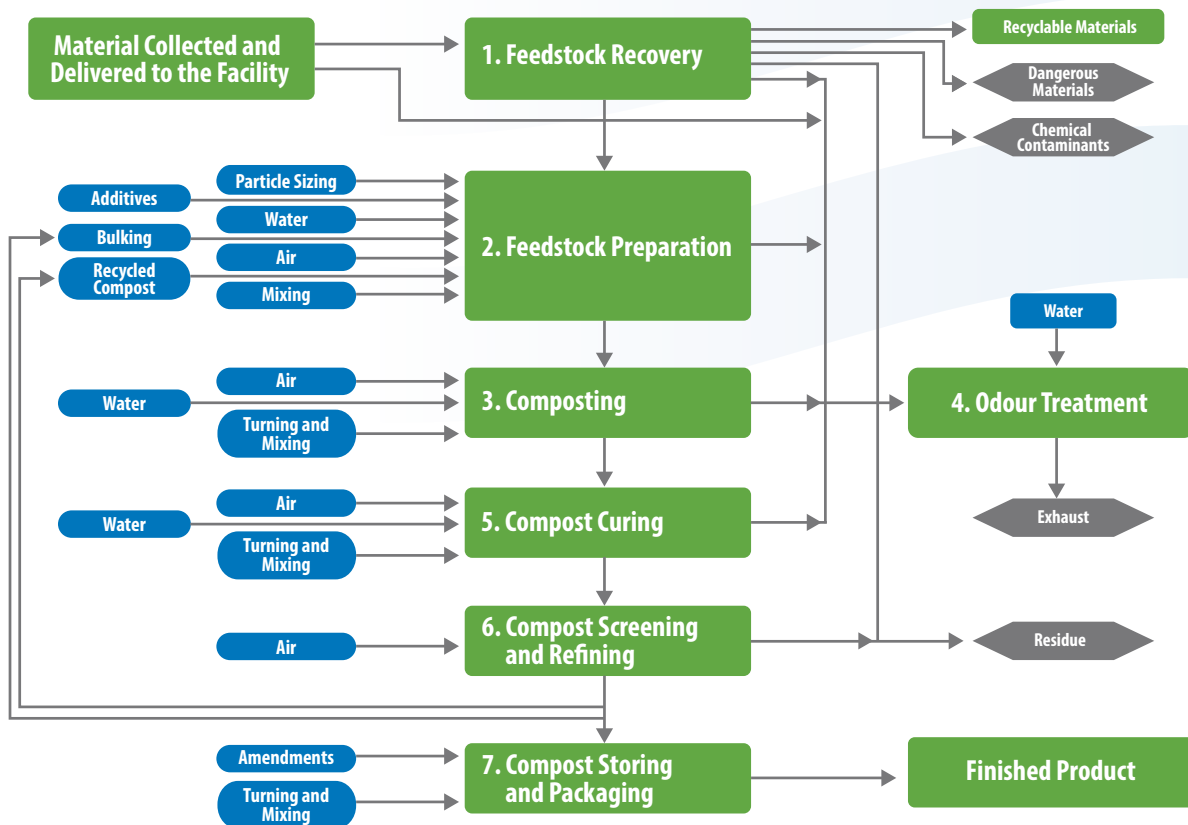
The BNQ certification standards underwent changes in 2016 and TransAqua will be required to review and make any required adjustments in 2017 to meet the newly revised standard to maintain future certification.

3.5.2 CQA Certification

TransAqua is a member of the Canadian Composting Council (CCC) and is also a member of its Compost Quality Alliance (CQA) Program. The CCC is active at continuing education through regional workshops and an annual conference. Although there is no regulatory requirement, TransAqua operators have received the Level 1 Compost Facility Operator certification through this organization.



Biosolids Composting Process



3.6 Human Resources



Front Row: Cory Babineau; Christopher Petrie; Marc Hebert – Second Row: Jordon Welsh; Burtis Hayes; Patricia Casas; Conrad Allain; Lawton Hicks; Candace Jonah; Kevin Rice – Third Row: Peter Brown; Jennifer Langille – Fourth Row: Gordon Buck; Stella Richard – Missing: Ralph Green; Shawn Hackett

In 2016, TransAqua employed a staff of 15, augmented in the summer months with university students from the local community. The overall system of collector sewers and pumping stations, the WWTF and Composting Facility was overseen by General Manager, Kevin Rice.

The General Manager is supported by a management and administration team, WWTF operators, maintenance personnel for mechanical and electrical systems, a laboratory technician and heavy equipment operators for the Composting Facility.

In addition to the General Manager position, the management team also consists of the Director of Finance and Administration (responsible for all in-house financial activities), the Director of Technical Services (responsible for delivery of capital programs and engineering activities), the Manager of Solid Systems and Maintenance

(responsible for composting activities and overall operational maintenance requirements), and the Manager of Liquid Systems (responsible for WWTF and WWPS performance). TransAqua welcomed Jennifer Langille, CPA, CMA, CPC in May 2016 as the new Director of Finance and Administration. In 2017, a Wastewater Systems Engineer will be hired to work directly with the Director of Technical Services to provide assistance with the WWTF Upgrade and Modernization Project and as a key component of succession planning.

TransAqua and CUPE Local 5217 ratified its first Collective Agreement in 2016 that expires on December 31, 2019. This provides workforce stability and allows for increased collaboration between management and its unionized employees.

3.7 Public Outreach

TransAqua plays a significant role in raising awareness of the importance of wastewater treatment on public health and the environment.

TransAqua maintains a bilingual website, www.transaqua.ca, to promote its current communication strategy, to keep the local community informed of its operations and goals for the future and update progress of the treatment plant upgrade and funding requests to government. In 2015, TransAqua updated its website to improve the ability for the public to register to receive information.

TransAqua continued to host numerous technical tours on a regular basis to school classes, technical colleges, universities and local community groups (Scouts, etc.). Elected government representatives and candidates toured the WWTF throughout 2016. The TransAqua Chair and General Manager gave numerous presentations to local groups, federal and provincial politicians and municipal councils.

During 2016, the public was invited to pick up Type “A” and “AA” compost; the highest provincial and nationally accredited quality compost at the Compost Facility off Delong Drive. For small quantities (self-loaded), the product was provided free of charge. Those citizens that required assistance loading a trailer or pickup truck were charge \$15.



TransAqua participated as a member of the Light Up Riverview Committee and installed blue, green and white lights (TransAqua colours) on four large trees surrounding the TransAqua sign in front of the property. Many favourable comments were received from the public and TransAqua expects to expand this effort in 2017 to the trees adjacent to the other TransAqua driveway to the west. Students at Riverview Middle School assisted TransAqua by installing the lights into the sockets and took great pride in this community effort!

TransAqua adopted the Community Stakeholder Communications Strategy and its Implementation Plan in 2016. There is now a clear direction that TransAqua will take beginning in 2017 to increase its profile in the community and help raise the community’s awareness of who we are and what we do. The community can expect to see increased social media messaging and the development of a quarterly newsletter in 2017.

3.8 TransAqua WWTF Upgrade and Modernization Project Funding



TransAqua worked very closely with Moncton, Dieppe and Riverview to proclaim TransAqua’s WWTF Upgrade and Modernization Project (Project) not only as their municipality’s highest infrastructure priority but also as the highest regional infrastructure priority. A delegation of municipal representatives and TransAqua met with the Provincial Ministers Melanson, Boudreau and Kenny in January 2016 to outline the benefits of this Project to the Greater Moncton Area. With continued efforts by TransAqua Commissioners and municipal Mayors working with Provincial and Federal

politicians, a tripartite funding announcement for the Project was announced on December 12, 2016. The Government of Canada and Province of New Brunswick each committed to providing 25% of the funding with TransAqua providing the remaining 50% of funding towards this \$90.4M infrastructure project. As a result of this tripartite funding announcement, TransAqua will not be required to borrow any funds to complete this Project by the 2020 federally mandated deadline for secondary treatment.

3.9 Capital Works Program

3.9.1 Advanced Biological Treatment

The federal government enacted new Wastewater Systems Effluent Regulations (WSER-2012) under the Fisheries Act in July 2012 to harmonize regulatory and reporting requirements across Canada. This regulation came as a result of the Canadian Council of Ministers of the Environment's (CCME) Canada-wide strategy for management of municipal wastewater effluent.

The current treatment works provide for an Advanced Primary Treatment Process. The new regulations will require that the WWTF be upgraded to an Advanced Biological Treatment Process in order for it to achieve new effluent requirements. The new requirements are in place now, however the Commission has been given until 2020 to complete the upgrades required to support the biological process.

The Commission started planning for the upgrade well ahead of the deadline and has had time to carefully evaluate the best available technology and most sustainable approach in meeting the new regulatory limits. Extensive studies and evaluations completed will greatly reduce risks and ensure successful outcome.

This planning started with the completion of a report titled "Advance Biological Treatment Process Selection" by Conestoga-Rovers & Associates dated April 2010. The Commission then constructed a Pilot Plant and carried out extensive pilot testing. The compiled Pilot Plant data was used to carry out computer process simulations and to produce a report entitled Design Basis and Preliminary Conceptual Design Report – BNR Secondary Wastewater Treatment Facility by Conestoga-Rovers and Associates in October 2013.

In late 2013, a request for proposal (RFP) was issued to complete the pre-design of the upgraded plant and also to provide detail design services. CBCL of Halifax was awarded the pre-design phase which was completed in early 2015. This first phase allowed the Commission to determine the extent of the

required upgrades and to use this information at evaluating the best procurement options and to support applications to funding programs.

In July 2015, the Commission decided to proceed on the basis of a design, bid, build model of procurement in phases and to continue pursuing funding from various levels of government. The Commission awarded the detail design of the Preliminary Treatment Works (Phase 1) to CBCL as per their original detailed proposal. Detail designs and equipment pre-selection were initiated in late October 2015 with the intent of proceeding to tender in spring of 2016 for this first phase consisting of two new Grit Chambers, new Screening Equipment and a new Septage Receiving System. In view of activities associated with seeking funding, it was decided not to proceed to tender until a funding decision had been made. The detail design for Primary Treatment (Phase 2) which will include the construction of four double chamber Primary Clarification Tanks with associated grinders, pumps and skimmers was initiated in early fall 2016. With the completion of Phase 1 and 2, the existing process will then flow into the new Primary Clarifiers so that the existing clarifiers can be converted into the Final Clarifiers in anticipation of the new Bioreactors.

With the funding announcement in Dec 2016, it was decided to combine Phase 1 and Phase 2 into one larger contract. All equipment pre-selection has now been completed and detail drawings being developed for a tender call in the spring on 2017.

The EIA process was completed in 2016 along with the required Environmental Management Plan. The required Heritage Resources Impact Assessment Field Survey was also completed. Detailed design for Phase 1: Preliminary Treatment and Septage Receiving and Phase 2: Primary Treatment will be completed in early 2017 followed by advertising a construction tender, award and beginning construction.

3.9.2 Collector System

In addition to regulatory driven projects, the Long-term Sustainable Wastewater Collection and Treatment Strategy (June 2010) has identified wastewater conveyance improvements to ensure that a robust collector system is maintained. Major projects identified include a second river crossing, upgrades to the existing Fox Creek pumping station and a new pumping station at Virginia Avenue in Dieppe.

A preliminary engineering study was awarded to Stantec in early 2015 to determine the best long-term configuration of the Commission's collector sewer in Dieppe considering the new Babineau Creek trunk sewer and the need to increase capacity from the Fox Creek drainage basin.

In view of the rapid growth in the City of Dieppe, the Commission will need to increase capacity of the conveyance by constructing a 3,800 metre forcemain along Bourque Road and Pumping Station for redirecting flows at Fox Creek to a new trunk sewer constructed along Babineau Creek. The City of Dieppe was resurfacing a 200 metre section of Bourque Road in 2016, so TransAqua completed this length of forcemain to prevent re-excavation of a new road. In 2017, another 810 metres of this forcemain is expected to be installed along Fox Creek Road for the same reason.

3.9.3 Combined Sewer Overflows (CSO)

The new federal regulations also required the Commission to develop a Combined Sewer Overflow Long-term Strategy to address overflows resulting during wet weather events from older areas which still have combined sewers. The goal is to focus on increasing CSO capture rates to provide an adequate level of treatment. CSO facilities have been identified at strategic locations of the system.

A request for proposal (RFP) was issued in 2014 to develop the CSO Strategy and prepare conceptual designs of the major CSO facilities. The engineering contract was awarded to R.V. Anderson Associates Limited and the CSO strategy was filed with the New Brunswick DELG prior to December 31, 2015 under the new WSER-2012. Conceptual designs for the identified CSO pumping and treatment facilities will be available for use within the 2017-2035 Capital Plan and Capital Budget.



3.9.4 Composting Facility

The initial composting system was capable of processing 20,000 tonnes per year (10,000 tonnes of biosolids with 10,000 tonnes of amendments). The process incorporates recycled green wastes and purchased bark from sawmills in the process. The system which produces “AA” compost quality is fully aerobic using a bottom aeration system and a cover system.

In anticipation of the Advanced Biological Treatment Process which will increase the volume of biosolids requiring treatment, the Commission completed construction and commissioned compost pad #3 in 2015 and the expansion of the compost curing pad in 2016.

Compost pad No.3 incorporates a new control system and a compost pile tracking fully integrated to the overall plant system. This system will ensure full traceability of every compost lot that is put out to the market and facilitate the process data gathering and archiving.



3.9.5. Plant Automation

The Commission embarked on a modernization program of its Supervisory Control and Data Acquisition System (SCADA) in 2014. Initially, the focus was on updating workstations and software to allow for a smooth transition to the new-generation control hardware (Programmable Logic Controllers, or PLCs).

These new PLCs will replace the aging older hardware and make use the fibre-optic network for communication. Fibre-optic trunk lines were installed throughout the plant several years ago.

The control hardware upgrade was completed in 2015 at the Dewatering Facility. This provides the new control platform to support a major retrofit of the three large dewatering centrifuges. The centrifuge upgrade, scheduled for 2017, will include

compatible PLCs that will be integrated to the plant system. Various sub-systems such as the heating and ventilation have also been upgraded to compatible hardware. The 2016 control hardware upgrade was completed at the Main Pumping Station. Significant improvements and upgrades were also included as part of the project.

The first contract of the WWTF Upgrade and Modernization Project will now combine the upgrading and expansion of the Preliminary Treatment Facility as well as new Primary Tanks. An upgrade to the existing Preliminary Treatment Control System as well as a new Primary Treatment control system will be installed as part of this project.

3.9.6. Jonathan Creek Culvert Replacement

The City of Moncton and CN reconstructed a major culvert in 2016 under the railway track to improve drainage of the Jonathan Creek watershed in order to eliminate risk of flooding in the Jones Lake area and Main Street. This construction project involved the relocation of City of Moncton infrastructure and a section of the GMWC Collector Sewer. The engineering for the collector sewer relocation was awarded to Crandall

Engineering Ltd, the same consultant completing the work for CN. The Commission, working closely with the City on this project has been able to relocate the collector sewer within the new roadway right of way and at the same time, set aside a parcel of land for a future Combined Sewer Overflow Facility in that area. All of this infrastructure work was completed in 2016 with work continuing in 2017 for the roadway and site finishes.



3.9.7. Administration Building Upgrade

The detailed design for the upgrade of the Administration Building began in 2016. The laboratory requires significant upgrades to meet national accreditation standards. The upgrade design deals with some of the recommendations within the TransAqua Critical Infrastructure Resilience Tool Report conducted by Public Safety Canada; create more distance between the parking lot and front entrance, add a

security camera to the front of the building and install doors leading from the reception area into the office areas through a swipe card system among others. The garage area is being expanded to be capable of providing more space for equipment maintenance and storage considering secondary treatment will realize the addition of many more assets.

3.10 Energy Sustainability

In 2014, TransAqua completed the installation of a pilot project to test commercial grade geothermal heat pumps and plate type heat exchangers in order to confirm design criteria and equipment necessary for a plant-wide heating system using heat extracted from wastewater. This project is being done to support the Commission's goal toward efficiency and sustainability. The Pilot Plant has been operating since 2014 and will provide valuable data and insight that will support full-scale system design and implementation.

The composting facility is designed with a very low energy input to sustain the fully aerobic process. The process itself generates high temperatures, an important aspect for pathogen inactivation. In view of this excess heat, the concrete pads were equipped with network of polyethylene pipes carrying a glycol solution and configured to extract heat from the hot slab. This heat is then circulated within the blower enclosure to pre-heat intake air, and can also be directed to other parts of the pad to melt snow and ice. The newly constructed operations centre was also designed to also take advantage of this green energy. The heating system is a deep-well geothermal system that will be integrated to the pad heat-recovery system using heat exchangers. Planning for the full integration of all facilities is underway.

4. TREASURER'S REPORT

With over seven hundred thousand dollars in guaranteed investment income supported with tight expense control, TransAqua had an operating surplus of \$4,961, 420 in 2016.

Overall expenditures were \$1,628,525 below budget in part due to reassessed property taxes in our favour, unused budget utilities allocated for our new treatment facility upgrade and for capitalized items such as new pumps instead of expensing them. TransAqua forwarded \$2,400,000 to the City of Dieppe towards its share of the Babineau Creek Project Cost Sharing Agreement. Another \$429,000 in funds for this Project has been postponed until this development project is completed. TransAqua also saw a \$94,000 increase in septage and compost revenue in 2016 compared to budget.

With the tripartite funding now being in place, our Capital Reserve Fund is sustainable to complete the WWTF Upgrade and Modernization Project without having to borrow any funds for this Project. Through implementation of our 2014-2018 Strategic Plan underway we are confident to have solid returns in the coming years even during construction phase and the freezing of our rates for the coming year.

Respectfully submitted,



Chanel Michaud
Treasurer



5. COMMISSION MEMBERS



CLARENCE SWEETLAND

Representing Riverview

Current term to July 2017

- Secretary of the Commission Board
- Member of Executive Committee

BRYAN INGLIS

Representing Moncton

Current term to September 2020

- Commission Member

CHANEL MICHAUD

Representing Dieppe

Current term to September 2019

- Treasurer of the Commission Board
- Chair of Finance, Audit and Governance Committee
- Member of Executive Committee

DAVID MUIR

Representing Riverview

Current term to October 2017

- Member of Executive Committee
- Member of Finance, Audit and Governance Committee
- Chair of the Commission Board

MYLÈNE ROY

Representing Dieppe

Current term to September 2018

- Commission Member

MICHEL DESJARDINS

Representing Moncton

Current term to September 2020

- Commission Member

6. 2015 AUDITED FINANCIAL STATEMENTS

GREATER MONCTON WASTEWATER COMMISSION

FINANCIAL STATEMENTS
DECEMBER 31, 2016

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INDEPENDENT AUDITOR'S REPORT

February 23, 2017

To the Chairman and Members of Greater Moncton Wastewater Commission

We have audited the accompanying financial statements of **Greater Moncton Wastewater Commission** which comprise the statement of financial position as at December 31, 2016 and the statements of operations and accumulated surplus, changes in net financial assets and cash flows for the year then ended, and the related notes, which comprise a summary of significant accounting policies and other explanatory information.

Management's responsibility for the financial statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian generally accepted accounting principles, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements present fairly, in all material respects, the financial position of Greater Moncton Wastewater Commission as at December 31, 2016 and the results of its operations, and its cash flows for the year then ended in accordance with Canadian public sector accounting standards.

PricewaterhouseCoopers LLP

Chartered Professional Accountants

Moncton, New Brunswick

GREATER MONCTON WASTEWATER COMMISSION

STATEMENT OF FINANCIAL POSITION As at December 31, 2016

	2016 \$	2015 \$
Financial assets		
Cash		
Operating	8,163,007	3,920,946
Reserve funds (schedule II)	577,919	5,440,726
Accounts receivable		
General	21,445	30,604
Federal government and its agencies (note 3)	68,965	33,359
Accrued interest receivable (schedule II)	550,783	108,065
Investments (note 4 and schedule II)	35,150,000	30,075,000
	44,532,119	39,608,700
Financial liabilities		
Accounts payable and accrued liabilities	1,491,205	756,269
Holdbacks payable	36,482	-
	1,527,687	756,269
Net financial assets	43,004,432	38,852,431
Non-financial assets		
Tangible capital assets (note 8)	42,400,486	41,556,809
Prepaid expenses and deposits	78,303	112,561
	42,478,789	41,669,370
Accumulated surplus	85,483,221	80,521,801

Approved by the Board of Directors



David Muir, *Chair*



Chanel Michaud, *Treasurer*

The accompanying notes are an integral part of these financial statements.

GREATER MONCTON WASTEWATER COMMISSION

STATEMENT OF OPERATIONS AND ACCUMULATED SURPLUS For the year ended December 31, 2016

	2016 Budget \$	2016 Actual \$	2015 Actual \$
Revenue			
User fees			
City of Moncton	8,369,136	8,369,130	8,106,520
Town of Riverview	1,661,388	1,661,384	1,636,720
City of Dieppe	2,369,640	2,369,640	2,280,420
	<hr/> 12,400,164	<hr/> 12,400,154	<hr/> 12,023,660
Septic hauler and compost income	215,000	309,686	294,836
Interest income (schedule II)	382,270	721,709	600,329
	<hr/> 12,997,434	<hr/> 13,431,549	<hr/> 12,918,8250
Expenses			
Plant and operating expenses			
Easement and property taxes	647,904	329,226	629,039
Salaries and benefits	1,742,855	1,557,848	1,471,431
Amortization of tangible capital assets	1,729,853	1,735,753	1,750,526
Electricity	703,870	546,515	552,890
Telephone	30,660	31,737	29,462
Insurance	174,264	159,716	184,470
Maintenance and operating	1,705,001	1,250,957	1,373,146
Consulting services	57,926	32,724	394,768
Vehicle expense	25,860	9,152	16,649
Miscellaneous	2,900,004	2,470,581	-
	<hr/> 9,718,197	<hr/> 8,124,209	<hr/> 6,402,381
General expenses			
Marketing and communications	80,580	73,057	47,797
Office expenses	56,935	18,196	22,861
Travel, training and education	57,420	37,909	36,839
Governance	77,767	40,074	19,930
Interest and bank charges	4,136	3,330	1,8354
Professional fees and consulting	103,614	173,354	185,864
	<hr/> 380,452	<hr/> 345,920	<hr/> 315,126
Total expenses	<hr/> 10,098,649	<hr/> 8,470,129	<hr/> 6,717,507
Annual surplus	<hr/> 2,898,785	<hr/> 4,961,420	<hr/> 6,201,318
Accumulated surplus – beginning of year		<hr/> 80,521,801	<hr/> 74,320,483
Accumulated surplus – end of year		<hr/> 85,483,221	<hr/> 80,521,801

The accompanying notes are an integral part of these financial statements.

GREATER MONCTON WASTEWATER COMMISSION

STATEMENT OF CHANGES IN NET FINANCIAL ASSETS

For the year ended December 31, 2016

	2016 Budget \$	2016 \$	2015 \$
Annual surplus	2,898,785	4,961,420	6,201,318
Acquisition of tangible capital assets	(10,421,249)	(2,588,971)	(831,150)
Amortization of tangible capital assets	1,729,853	1,735,753	1,750,526
Loss on sale of tangible capital assets	–	(7,146)	–
Proceeds on sale of tangible capital assets	–	16,687	–
	(8,691,396)	(843,677)	919,376
Change in prepaid expenses	26,935	34,258	32,950
Change in net financial assets	(8,664,461)	4,152,001	7,153,644
Net financial assets – Beginning of year	38,852,431	38,852,431	31,698,787
Net financial assets – End of year	30,187,970	43,004,432	38,852,431

The accompanying notes are an integral part of these financial statements.

GREATER MONCTON WASTEWATER COMMISSION

STATEMENT OF CASH FLOWS For the year ended December 31, 2016

	2016 \$	2015 \$
Cash provided by (used in)		
Operating activities		
Annual surplus	4,961,420	6,201,318
Charges (credits) to income not involving cash		
Amortization of tangible capital assets	1,735,753	1,750,526
Loss on sale of tangible capital assets	(7,146)	–
	6,690,027	7,951,844
Net change in non-cash working capital balances related to operations		
Decrease (increase) in accounts receivable	(469,165)	(2,528)
Decrease (increase) in prepaid expenses	34,258	32,950
Increase (decrease) in accounts payable and accrued liabilities	734,936	(334,080)
Decrease in holdback payable	36,482	(94,491)
	7,026,538	7,553,695
Investing activities		
Purchase of investments, net of maturities	(5,075,000)	(7,075,000)
Proceeds on sale of tangible capital assets	16,687	–
Cash used to acquire tangible capital assets	(2,588,971)	(831,150)
	(7,647,284)	(7,906,150)
Net change in cash during the year	(620,746)	(352,455)
Cash – Beginning of year	9,361,672	9,714,127
Cash – End of year	8,740,926	9,361,672
Cash consist of:		
Cash in bank – operating	8,163,007	3,920,946
Cash in bank – reserve funds	577,919	5,440,726
	8,740,926	9,361,672

The accompanying notes are an integral part of these financial statements.

GREATER MONCTON WASTEWATER COMMISSION

NOTES TO FINANCIAL STATEMENTS For the year ended December 31, 2016

1. Purpose of organization

The Greater Moncton Wastewater Commission (the “Commission”) is incorporated and operates under the provisions of the Province of New Brunswick Municipalities Act and the Clean Environment Act. As a municipality, the Commission is exempt from income tax under section 149(1)(c) of the Income Tax Act of Canada.

The Commission operates a wastewater treatment plant, wastewater collection system and composting facility in the greater Moncton region and provides wastewater treatment for the cities of Moncton and Dieppe and the town of Riverview.

2. Summary of significant accounting policies

The financial statements of the Commission are prepared in accordance with Canadian public sector accounting standards (“PSAS”) and reflect the accounting policies enumerated below.

The focus of PSAS financial statements is on the financial position of the Commission and the changes thereto. The statement of financial position includes all of the assets and liabilities of the Commission.

Reporting entity

The financial statements reflect the assets, liabilities, revenues, expenditures and changes in net debt and cash flows of the reporting entity. The reporting entity is comprised of all organizations and enterprises accountable for the administration of their affairs and resources to the Commission and which are owned or controlled by the Commission.

Budget

The budget figures contained in these financial statements were approved by the Commission on November 19, 2015 and submitted to the Minister of Local Government. Certain budget figures have been reclassified to conform with the financial presentation adopted for the current year.

Revenue recognition

The Commission recognizes revenues from user fees, septic hauler and compost income as the services are rendered or the goods are sold, the price is fixed or determinable and collection is reasonably assured. Interest income is recognized on an accrual basis and recorded in the statement of reserve fund balances as a direct increase to the reserve fund.

Use of estimates

The preparation of the financial statements in conformity with PSAS requires management to make estimates that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amount of revenues and expenses during the reporting period. Actual results may differ from those estimates.

Financial instruments

The Commission’s financial assets and liabilities are initially measured at fair value and subsequently carried at amortized cost with interest recorded in the statement of operations and accumulated surplus as earned.

GREATER MONCTON WASTEWATER COMMISSION

NOTES TO FINANCIAL STATEMENTS
For the year ended December 31, 2016

2. Summary of significant accounting policies (continued):

Credit risk

Credit risk arises from the potential that a debtor will be unable to meet its obligations. The Commission conducts a thorough assessment of its debtors prior to granting credit and actively monitors the financial health of its debtors on a continuous basis. Credit risk arises primarily from cash, accounts receivable and investments. There are no significant concentrations of credit risk.

Cash

Cash includes cash on hand and cash in banks not subject to other restrictions.

Tangible capital assets

Tangible capital assets are stated at cost less accumulated amortization. The Commission provides for amortization at rates designed to amortize the cost of the tangible capital assets over their estimated useful lives. Annually, amortization is calculated using the straight-line method over the estimated useful lives as follows:

Operations centre	10 - 60 years
Treatment facilities	5 - 60 years
Collection System	10 - 75 years
Fleet	5 - 20 years
Computer hardware and software	3 - 5 years

Assets under construction are not amortized until the asset is available for productive use.

Accrued sick leave

The Commission provides for sick leave that accumulates at 1.25 days per month worked for full-time employees. The employees can accumulate up to a maximum of 120 days. On retirement or resignation after being employed for at least 60 months, any employee having accrued sick leave will receive an allowance equal to fifty percent of the value at a rate of pay effective immediately prior to retirement or resignation.

The sick leave is an unfunded benefit. As such, there are no applicable assets. Benefits are paid out of general revenue as they come due. The unfunded liability at December 31, 2016 of \$158,980 (2015 - \$147,571) is recorded in accounts payable and accrued liabilities.

GREATER MONCTON WASTEWATER COMMISSION

NOTES TO FINANCIAL STATEMENTS
For the year ended December 31, 2016

3. Due from Federal government and its agencies

	2016 \$	2015 \$
Canada Revenue Agency (HST refund)	68,965	33,359

4. Investments

The details of the investments held by the Commission are as follows:

	2016 \$	2015 \$
Guaranteed investment certificate (1.85%, maturing July 2018)	5,000,000	5,000,000
Guaranteed investment certificate (2.04%, maturing November 2017)	15,000,000	15,000,000
Guaranteed investment certificate (1.60%, maturing October 2016)	–	5,075,000
Guaranteed investment certificate (1.82%, maturing May 2017)	5,000,000	5,000,000
Guaranteed investment certificate (2.00%, maturing Sep 2021)	5,075,000	–
Guaranteed investment certificate (2.00%, maturing Sep 2021)	5,075,000	–
	35,150,000	30,075,000

5. Short-term borrowings and compliance

Short-term borrowings outstanding

The Commission has obtained credit in the amount of \$100,000 for credit cards held with Bank of Montreal. The Commission has set the limit on the credit cards at \$10,000 each. Credit cards are unsecured and bear interest at a rate of 18.4%. The Commission pays the balance owing on the credit cards on a monthly basis.

Short-term borrowings compliance

As of December 31, 2016, the Commission had no borrowings outstanding. As a result, the Commission was in compliance with all required municipal ratios noted below.

Interim borrowing for capital

The Commission does not have any short term borrowing in excess of cash as of December 31, 2016.

Operating borrowing

As prescribed in the Municipalities Act, the borrowing to finance its utility operations is limited to 50% of the Commission's operating budget. In 2015, the Commission has complied with these restrictions.

Inter-fund borrowing

The Municipal Financial Reporting Manual requires that short-term inter-fund borrowings be repaid in the next year unless the borrowing is a capital project. The amounts payable between funds are in compliance with the requirements.

GREATER MONCTON WASTEWATER COMMISSION

NOTES TO FINANCIAL STATEMENTS
For the year ended December 31, 2016

6. Post-employment benefits payable

The Commission sponsors an RRSP plan for substantially all its employees. The plan allows for RRSP contributions of 7% of employee salaries. Prior to December 31, 2016, the employee were not required to pay into the RRSP plan in order to obtain this benefit. Subsequently, in accordance with the collective agreement signed between the Commission and Canadian Union of Public Employees Local 5217 on May 20th, 2016, each employee will contribute a minimum percentage of salary each year (2017 – 2%, 2018 – 4%, 2019 – 6%, thereafter 7%). There is no unfunded liability associated with this post-employment benefits payable.

7. Accumulated surplus

The accumulated surplus noted on the statement of financial position is the result of the excess of revenue over expenditures from the commencement of the Commission's operations to the date of financial position. The accumulated surplus is made up of the following:

	2016 \$	2015 \$
Net financial assets	43,004,432	38,852,431
Non-financial assets	42,478,789	41,669,370
	<hr/> 85,483,221	<hr/> 80,521,801

The net financial assets consist of cash flows necessary for day-to-day operations and reserve funds held for future capital expenditures. The non-financial assets consist of tangible capital assets and prepaid expenses that the Commission has purchased or had constructed as of the end of the year.

GREATER MONCTON WASTEWATER COMMISSION

NOTES TO FINANCIAL STATEMENTS
For the year ended December 31, 2016

8. Tangible capital assets

	Land \$	Operations centre \$	Treatment facilities \$	Collection system \$	Fleet \$	Computer hardware and software \$	Assets under construction \$	Total \$
COST								
Balance – Beginning of year	518,185	2,743,575	48,121,619	33,499,545	1,682,953	73,763	3,080,388	89,720,028
Net additions during the year	–	–	3,554,507	153,867	279,298	79,636	(1,478,337)	2,588,971
Disposals during the year	–	–	(330,972)	–	(120,497)	–	–	(451,469)
Balance End of year	517,785	2,743,575	51,345,154	33,653,412	1,841,754	153,399	1,602,051	91,857,530
ACCUMULATED AMORTIZATION								
Balance – Beginning of year	–	2,321,119	32,053,587	13,098,515	668,647	21,351	–	46,446,715
Amortization during the year	–	47,974	1,072,515	462,591	114,908	37,765	–	1,735,753
Accumulated amortization disposals	–	–	(330,972)	–	(110,956)	–	–	(441,928)
Balance – End of year	–	2,369,093	32,795,130	13,561,106	672,599	59,116	–	49,457,044
Net book value of tangible capital assets 2015	518,185	422,456	16,068,032	20,401,030	1,014,306	52,412	3,080,388	41,979,489
Net book value of tangible capital assets 2016	518,185	374,482	18,550,024	20,092,306	1,169,155	94,283	1,602,051	42,400,486

9. Comparative figures

Certain comparative figures have been reclassified to conform with the financial position adopted for the current year.

GREATER MONCTON WASTEWATER COMMISSION

SCHEDULE OF REGULATORY REPORTING REQUIREMENTS

For the year ended December 31, 2016

The Department of Local government of New Brunswick has requested disclosures in addition to Canadian public sector accounting standards for monitoring purposes. The Commission has provided these disclosure requirements in the following pages.

I. Reconciliation of annual surplus

	General fund \$	Capital Fund \$	Reserve Fund \$	Total \$
2016 annual surplus	6,042,262	(1,735,753)	654,911	4,961,420
Adjustments to annual surplus for funding requirements				
Second previous year surplus	6,310,872	–	–	6,310,872
Transfer from operating to capital	(2,588,971)	2,588,971	–	–
Amortization expense	–	1,735,753	–	1,735,753
Total adjustments to 2016 annual surplus	3,721,901	4,324,724	–	8,046,625
2016 annual fund surplus	9,764,163	2,588,971	654,911	13,008,045

II. Statement of reserves

	2016 \$	2015 \$
Capital reserve		
<u>Assets</u>		
Cash	577,919	5,440,726
Accrued interest receivable	550,783	108,065
Investments	35,150,000	30,075,000
Accumulated surplus	36,278,702	35,623,791
<u>Revenue</u>		
Interest	654,911	534,026
Transfers from operating funds	–	7,760,955
Annual surplus	654,911	8,294,981

GREATER MONCTON WASTEWATER COMMISSION

SCHEDULE OF REGULATORY REPORTING REQUIREMENTS For the year ended December 31, 2016

III. Operating budget to public sector accounting

	Operating \$	2016 \$	Transfers \$	Total \$
Revenue				
User fees	12,400,164	–	–	12,400,164
Interest and miscellaneous	597,270	–	–	597,270
	<u>12,997,434</u>	<u>–</u>	<u>–</u>	<u>12,997,434</u>
Expenses				
Plant and Operating Expense				
Easement and property taxes	647,904	–	–	647,904
Salaries and benefits	1,742,855	–	–	1,742,855
Amortization of tangible capital assets	–	1,729,853	–	1,729,853
Electricity	703,870	–	–	703,870
Telephone	30,660	–	–	30,660
Insurance	174,264	–	–	174,264
Maintenance and operating	1,705,001	–	–	1,705,001
Consulting services	57,926	–	–	57,926
Vehicle expense	25,860	–	–	25,860
Miscellaneous	2,900,004	–	–	2,900,004
	<u>7,988,344</u>	<u>1,729,853</u>	<u>–</u>	<u>9,718,197</u>
General				
Marketing and communications	80,580	–	–	80,580
Office expenses	56,935	–	–	56,935
Travel, training and education	57,420	–	–	57,420
Governance	77,767	–	–	77,767
Interest and bank charges	4,136	–	–	4,136
Professional fees and consulting	103,614	–	–	103,614
	<u>380,452</u>	<u>–</u>	<u>–</u>	<u>380,452</u>
Fiscal services				
Transfer from operating fund to capital fund	10,421,244	–	10,421,244	–
Transfer from operating fund to reserve fund	518,266	–	518,266	–
Second previous surplus	(6,310,872)	–	(6,310,872)	–
	<u>4,628,638</u>	<u>–</u>	<u>4,628,638</u>	<u>–</u>
	<u>12,997,434</u>	<u>1,729,853</u>	<u>4,628,638</u>	<u>10,098,649</u>
Annual surplus	<u>–</u>	<u>(1,729,853)</u>	<u>4,628,638</u>	<u>2,898,785</u>



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▶ GREATER MONCTON
WASTEWATER
COMMISSION

▶ COMMISSION
DES EAUX USÉES
DU GRAND MONCTON

355 Hillsborough Road
Riverview NB E1B 1S5
Canada

Tel: 506-387-7977
Fax: 506-387-7389
information@transaqua.ca
www.transaqua.ca