Agenda – Council – October 25, 2017

Report – Standing Policy Committee on Water and Waste, Riverbank Management and the Environment – October 2, 2017

Item No. 1 Winnipeg Sewage Treatment Program 2016 Annual Report Program Agreement Between The City Of Winnipeg And VWNA Winnipeg Inc. (Veolia)

STANDING COMMITTEE RECOMMENDATION:

On October 11, 2017, the Executive Policy Committee concurred in the recommendation of the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment and submitted the following to Council:

1. That the report be received as information.

Agenda – Council – October 25, 2017

Report – Standing Policy Committee on Water and Waste, Riverbank Management and the Environment – October 2, 2017

DECISION MAKING HISTORY:

EXECUTIVE POLICY COMMITTEE RECOMMENDATION:

On October 11, 2017, the Executive Policy Committee concurred in the recommendation of the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment and submitted the matter to Council.

STANDING COMMITTEE RECOMMENDATION:

On October 2, 2017, the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment concurred in the recommendation of the Winnipeg Public Service and submitted the matter to the Executive Policy Committee and Council.

ADMINISTRATIVE REPORT

Title: **WINNIPEG SEWAGE TREATMENT PROGRAM 2016 ANNUAL REPORT PROGRAM AGREEMENT BETWEEN THE CITY OF WINNIPEG AND VWNA WINNIPEG INC. (VEOLIA)**

Critical Path: **Standing Policy Committee on Water and Waste, Riverbank Management and the Environment - Executive Policy Committee – Council**

AUTHORIZATION

Author	Department Head	CFO	CAO
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EXECUTIVE SUMMARY

This Annual Report to Council summarizes the accomplishments and financial results that were realized in 2016, the sixth year of the 30 year program, as well as the plans and objectives that have been set for 2017.

The Veolia personnel augment the City's team and bring capacity and worldwide expertise to the Winnipeg Sewage Treatment Program (WSTP). Through Veolia's global network the City will benefit from strategic procurement strategies and extensive experience in operations and maintenance of the upgraded sewage treatment plants. Veolia's earnings are performance based and at risk for 30 years.

The Winnipeg Sewage Treatment Program (WSTP) day-to-day operations are governed by the program's Management Team (MT). The MT provides advice and recommendations on the WSTP activities to the Director and on the administration of the WSTP to the Leadership Team (LT). The City retains full ownership and control of the sewage treatment plant facilities.

2016 provided opportunities for the WSTP to innovate and evolve program activities.

Each year the Director of Water and Waste approves the WSTP's performance goals, and key performance indicators (KPI) as outlined in an Annual Program Plan (APP). The priorities for the WSTP in 2017 remain focused on the SEWPCC major Design-Bid-

Build capital project, the NEWPCC major Design-Build capital project, and operational readiness to support and receive the new works.

RECOMMENDATIONS

That Council receives this report as information.

REASON FOR THE REPORT

A 30 year consulting services agreement with VWNA Winnipeg Inc. (Veolia) was executed on April 20, 2011, which included advice on operations and capital upgrades at the City's three sewage treatment plants. This agreement requires the City to report on results of the WSTP to City Council on an annual basis.

IMPLICATIONS OF THE RECOMMENDATIONS

There are no implications as this report is being received as information.

HISTORY/DISCUSSION

On April 20, 2011, the City entered into a consulting services agreement with VWNA Winnipeg Inc. (Veolia). The scope of the agreement includes advice on operations and capital upgrades at the City's three sewage treatment plants for the duration of a 30 year agreement.

The City retains full ownership and control of the sewage treatment plant facilities. The City-Veolia contractual relationship abides by the following WSTP principles:

- City employees are managing and operating the facilities;
- Decisions are being made on the basis of whole-life costs;
- Best for job and best for Program decisions are being made;
- Open book accounting and audit of direct costs continues;
- The City and Veolia work collaboratively, openly and honestly within a no fault/no blame culture;
- Compensation is based upon performance.

The Contract is implemented by key participants from the Water and Waste Department's Engineering Services, Wastewater Services and Finance and Administration Divisions, along with dedicated on-site Veolia staff members. Together they form the Winnipeg Sewage Treatment Program (WSTP).

The WSTP day-to-day operations are governed by the program's Management Team (MT). The MT provides advice and recommendations on the WSTP activities to the Director and on the administration of the WSTP to the Leadership Team (LT).

The LT meets monthly and is comprised of senior leaders from Veolia North America as well as Divisional Managers from the Water and Waste Department. The LT makes recommendations to the Director of the Water and Waste Department on matters including WSTP activities, objectives, budgets, and compliance with Environment Act licences. Within City delegated authority, it is the Director who approves all final decisions related to the WSTP.

(See Appendix 1 for the current composition of the MT and LT)

1. PROGRAM MANAGEMENT INITIATIVES:

(a) Roadmaps

Roadmaps for the WSTP, SEWPCC, and NEWPCC were developed for the purpose of communicating the overall project schedule, key activities and issues associated with the short term and long term goals for both the MT and the LT. Roadmaps provide a high level view of key milestones and decision points. They assist to prioritize activities, reveal, explain and plan for gaps. Key risks and an overview of supporting resources are identified. At team meetings the Program Roadmap has proven valuable as a communication tool to clarify prioritization of activities on all projects.

(b) Benefit Register

A Benefits Register was created to enable the WSTP to improve reporting on value and benefit realization. The register captures value, impact and the status of benefit realization. Training on use and implementation has been completed.

(c) Financial Reporting

Improved management reporting regarding the status of budget and actual spending within the WSTP encourages transparency and assists in ensuring there is a fiduciary responsibility for cost control. WSTP Financial Forecast is presented to the LT on a regular basis.

(d) Communication Plan

Program success is enhanced through proactive community understanding of the WSTP's commitment that targeted large capital programs are meeting enhanced environmental regulations for sewage treatment and environmental protection. Effective communication of these matters assists to generate an appreciation for how the City is managing the various stages of the capital projects. Communication workshops began in the second quarter and resulted in the development and finalization of the WSTP Communication Plan. The goal of the communication plan is to proactively communicate clearly and effectively with a consistent message to

the appropriate audience. Targeted audiences should include: regulators, elected officials, media, industry, public service, and the general public. The communication plan details recommended key delivery tactics, and key messaging by audience type. Three execution plans were also drafted specific to the Program, SEWPCC and NEWPCC which will become part of the focus for 2017.

(e) Compliance

NEWPCC Total Suspended Solids (TSS) and Fecal/E-coli

- Investigation of the root cause of the TSS compliance lead to modifications of the operating strategy with respect to the NEWPCC primary clarifier resulting in successful control of TSS levels. Fecal and E-coli results show improvement over the established baseline.

Process Control Management Program (PCMP)

- The PCMP, implemented in 2013, provides management of key business process for quality assurance of treatment compliance. In 2016, an audit was completed and reported that the PCMP has been accepted as a quality management process tool and adds value to risk mitigation within the sewage treatment plants. The PCMP has been revised based on audit recommendations and reissued addressing non-conformance concerns.

Digester Risk Strategy

- The existing digester operational strategy was reviewed considering impacts from changes on raw sludge as a result of future commissioning of the SEWPCC upgrade and expansion project. Risks related to the accumulation of grit and screenings have been identified, and recommendations to address these risks were prioritized.

Wastewater Information Management System (WIMS)

- WIMS, which supports the use of PCMP, is comprised of a set of tools which allows efficient collection, analysis and reporting of operational process data allowing timely informed process control decision making. In 2016, the WIMS project has reviewed and confirmed business requirements, and developed a procurement strategy. Development of an RFP is underway and a market scan has been completed. Project implementation is expected in 2017.

Ultraviolet Lamp Pilot Study

- A study was conducted to compare the performance of lamps, the reliability, disinfection performance and maintenance effort. These results will be considered when securing future bid opportunities.

(f) Maintenance Strategy

Strengths, weaknesses and gaps relating to maintenance activities are being addressed by the maintenance strategy project initiated in 2015. Long term planning

of this project is facilitated through the application of the maintenance maturity model. Some of the features include:

- Recruitment of key (manpower) resources
- Maintenance planning and scheduling at NEWPCC
- Creation of a maintenance model
- Project charters crafted for workshop facilities, maintenance procurement and inventory control

NEWPCC Centrifuge Contract

Centrifuges used to dewater sludge are critical to process compliance and require regular maintenance. Overhaul of these machines is one of the largest maintenance costs for the facility due to their size, age and complexity. A multi-year service contract was developed and awarded in 2016. This will reduce the administration costs of managing the work, provide greater cost certainty of each overhaul and improve the quality of service from the vendors.

NEWPCC Sludge Auto loading

Dewatered sludge known as “Biosolids” is hauled off site for safe disposal. A project to replace the aging automated truck loading system was completed in 2016 with final commissioning to occur in 2017. This will improve safety and reliability as well as reduce maintenance and operating costs (until the entire dewatering facility is replaced through the planned major upgrade project).

Asset Refurbishment and Replacement program

Replacement of the Return Activated Sludge (RAS) pipeline at the WEWPCC was completed as the original pipework was at the end of its design life. A similar project was initiated at the NEWPCC, as the RAS pipeline is also at the end of its design life. An award of a contract for condition assessment of the RAS pipe at the site was completed.

(g) Staffing Resources

City of Winnipeg hired the following: Maintenance Planner, Automation and Industrial Engineer, Senior Project Engineer, Project Engineer, Operational System Branch Head and NEWPCC Project Operations Liaison. The City of Winnipeg is at its full complement for the Program and no further recruitment is anticipated in the near term.

Veolia appointed two construction project managers dedicated to major upgrade projects at NEWPCC and SEWPCC and four specialists: Operations Support Engineer, Maintenance Engineer, Maintenance Oversight Planner and Electrical and Instrumentation Engineer. Full staff complement will be reached once a Process and Commissioning Engineer position is filled later in 2017.

2. NEWPCC – POWER SUPPLY AND PLANT UPGRADE:

Two major capital projects are being undertaken at the NEWPCC. The NEWPCC Power Supply Project, to upgrade and modernize the power supply to ensure an adequate power source for all the upgraded facilities as well as the NEWPCC Upgrade Project.

a) NEWPCC Power Supply Project

The NEWPCC Power Supply Project is being delivered as a design-build project. It is progressing in advance of the major NEWPCC Upgrade project to ensure appropriate integration into the future project. The NEWPCC Power Supply Project work to date includes:

- Request for qualifications (RFQ) was closed and two design-build proponents were qualified to move to the Request for Proposal (RFP) stage.
- Preliminary design has been completed along with a Class 3 cost estimate.
- Manitoba Hydro is to review and provide a preliminary design for necessary power supply upgrades.
- The draft Design–Build Agreement is in the final review stages.

b) NEWPCC Upgrade Project

The NEWPCC Upgrade Project will ensure the facility meets the new Regulatory Licence requirements related to nutrient levels, biosolids reuse and new effluent limits for nitrogen and phosphorous. The NEWPCC Upgrade Project will:

- Add wet weather treatment capacity.
- Add a new facility to treat the sludge from all three treatment plants.
- Replace equipment that is at operational end of life.
- Incorporate a project design that will accommodate expected influent flows and loads to 2037.
- Be delivered through a Design-Build (DB) procurement model with a fixed fee set at preliminary design.
- Incorporate a risk register to proactively capture, organize and manage project risks.
- Facilitate systematic management of risk which allows for effective and timely communication to both the Management and Leadership Teams.
- Improve communication through industry information sessions that have been presented to audiences in Winnipeg and abroad to facilitate commercial interest for RFQ.
- AECOM Canada Ltd. has been engaged as both the design-build owner’s advocate (OA) and the design-build consultant .

Operational Readiness activities continue to provide information and feedback between the project team and the existing operations thereby enhancing operations, maintenance and design inputs.

An overall schedule is under development that seeks to identify conflicts with WSTP projects and other City of Winnipeg projects in order to minimize risk.

3. SEWPCC – BNR UPGRADE AND EXPANSION:

The SEWPCC BNR Upgrade and Expansion Project is required to meet the new regulatory licence requirements and to increase the plant capacity to meet demands from growth of the City. The project is being delivered as a Design-Bid-Build project. A staged approach to the construction was adopted to allow work to proceed as design was completed. Construction began in the fourth quarter of 2014 and is phased through four major contracts.

Contract 1
From the fourth quarter of 2014 to February 2016, 2,000 concrete piles were driven and excavations for the bioreactors and secondary clarifiers were completed.

Contract 2
Comprised of the concrete work related to the construction of the new High Rate Clarifier and Grit Removal facilities. Substantial performance reached in December 2016 and total performance expected in early 2017.

Contract 3
Involves the structural and concrete work for the bioreactors, blower building and secondary clarifiers. This work has continued through the winter and will be completed in 2017.

Contract 4
This will complete the construction of the facility and is comprised of the work to erect the Chemical/Electrical Building and the Grit Building as well as the related mechanical, structural, electrical and controls.

During 2016, CH2MHill, the project team, and operations/maintenance collaborated in planning the construction sequencing and phased commissioning of the new facility. A document management system is now used for all SEWPCC construction correspondence including change management and all other project related documentation. A gap analysis was performed on operational and maintenance readiness and plans were put in place to address data preparation, supply chain, maintenance, commissioning, operations and maintenance resource planning, and sludge management.

4. 2016 FINANCIAL RESULTS:

Veolia's compensation components that are earned remain at risk for the duration of the Agreement. 2016 components include:

1) fees on aggregate program target costs;

2) gain share/pain share allocations;
3) meeting key performance indicators;
4) interest adjustments.

Compensation earnings in any given year are credited to the Earnings At Risk Account (EARA) and earn interest. EARA categories are itemized in the following table.

Earnings At Risk Account Summary ($thousands)	**December 31, 2016**		December 31, 2015	
Balance, beginning of year		**$5,535**		$4,372
Compensation earned				
Fees	**$ 848**		$ 672	
Share of gain/(pain) on operations	**(116)**		(161)	
Key performance indicators	**813**		500	
Interest on funds held	**193**	**1,738**	152	1,163
Balance, end of year		**$7,273**		$5,535

The EARA is compared to the At Risk Amount (ARA) to determine if Veolia is entitled to withdraw any of those earnings. The ARA represents numerically the amount of risk remaining in the Program over the balance of the contract, and includes best estimates of operating and capital expenditures. Veolia can only withdraw funds from the EARA at such time as the EARA balance exceeds the ARA balance.

As at December 31, 2016, the ARA balance was $35.1 million ($38.5 million, 2015) and the EARA balance was $7.2 million ($5.5 million, 2015). Veolia is not currently eligible to draw compensation from the EARA account.

As required by the agreement, Veolia has posted $50 million security ($25 million letter of credit and $25 million performance bond). There is also a Parental Guarantee in place to protect the City whereby Veolia North America guarantees all of Veolia's obligations under the agreement.

Veolia earnings remain at risk for the entire duration of the agreement.

Financial summary for 2016 with comparative 2015 figures is as follows:

Financial Summary ($millions)	**December 31, 2016**	December 31, 2015
Reimbursement of Veolia direct costs	**$ 2.9**	$ 2.8
Earnings At Risk Account (EARA)	**$ 7.3**	$ 5.5
At Risk Amount (ARA)	**$ 35.1**	$ 38.5
Performance Security posted by Veolia	**$ 50.0**	$ 50.0

5. 2017 ANNUAL PROGRAM PLAN DELIVERABLES:

The priorities of the Program for 2017 are to build upon the strategy established in 2016 and remain focused on:

- program management initiatives, which will continue to focus on key areas such as communication, risk and change management;
- the NEWPCC major Design-Build capital project (a new project delivery model for the City);
- the SEWPCC major Design–Bid-Build capital project; and,
- operational readiness to support and eventually receive the new works.

5.1 Program Management Initiatives

(a) Roadmaps

Roadmaps have been established for the NEWPCC and SEWPCC major projects and the Operational Readiness project. A new roadmap will be developed for the Asset Refurbishment and Replacement Program.

(b) Communication Plan

New initiatives will focus on increasing public awareness and engagement, and fostering inter and intra-departmental communication.

(c) Risk Management

Risk identification and analysis has been established at the project level. Enhanced program risk management will be achieved by improving risk evaluation processes across projects, follow up on mitigation plans and monitoring top level risks.

(d) Benefit Register

The Benefit Register has been established as a tool to document Program achievement and risk. In 2017 the focus will be on identifying and delivering value using this data.

(e) Change Management

Management of change will continue to be an important strategy for the Program. There has been rapid growth in terms of staffing and the pace and complexity of activities. Design-Build (DB) model training will be extended to operation and maintenance staff through tailored presentations. Additional change management activities will be developed on operational readiness and maintenance strategy.

(f) Collaboration

Program success can be better assured through a collaborative working environment among the City, Veolia, and WSTP consultants and contractors with all parties supporting the idea of a common purpose and goal, clarity of roles and focus as well as open and effective communication.

(g) Knowledge Transfer
The Program provides an opportunity to transfer knowledge and experience between Veolia and the City utilizing formal training and presentation workshops as well as lunch and learn opportunities on topics of interest.

(h) Asset Refurbishment and Replacement Program (ARR)
The ARR Program will continue to evolve as the maintenance strategy matures and will be prioritized according to risk.

(i) Veolia Staffing Resources
The Process and Commissioning Engineer position will be recruited in 2017.

5.2 NEWPCC Upgrade

This upgrade continues to be addressed via two projects:

- NEWPCC Power Supply Upgrade Project which will focus on procurement execution and preparation for contract administration, and
- NEWPCC Upgrade Project which will focus on areas of project management, preliminary design, and procurement.

5.3 SEWPCC BNR Upgrade and Expansion

Major activities include:

- closure of contract 3 since the majority of the work should be complete in 2017, and
- finalization of the design by the design consultant, procurement of the contractor for contract 4, the final and largest contract package, which includes the construction and commissioning of the mechanical, electrical and process automation components of the work.

5.4 Compliance, Operation and Maintenance

PCMP will continue to be central to the operating strategy. An RFP is planned for the Wastewater Information Management System (WIMS) Dashboard with procurement, configuration and implementation targeted for 2017.

6. 2017 PROGRAM KPI SUMMARY

6.1 NEWPCC Switching Procedures

Procedures will be developed for anticipated core shut down scenarios.

6.2 Advanced Design-Build Training

Training sessions and interactive discussions on advanced topics associated with design-build project delivery for WSTP staff.

6.3 Condition Monitoring Strategy

Progress towards implementation of condition monitoring and predictive maintenance strategies within the sewage treatment works.

6.4 Inventory Optimization Program

Improve the structure of parts and consumables inventory to support the maintenance strategy.

6.5 Communication

Improve and enhance the publically available information regarding the Program.

6.6 Maintenance Planning Implementation

Develop an implementation plan for integrating electrical and instrumentation activities into maintenance planning.

FINANCIAL IMPACT

Financial Impact Statement Date: May 11, 2017

Project Name:

WINNIPEG SEWAGE TREATMENT PROGRAM 2016 ANNUAL REPORT PROGRAM AGREEMENT BETWEEN THE CITY OF WINNIPEG AND VWNA WINNIPEG INC. (VEOLIA).

COMMENTS:

There is no financial impact as the report is received for information. Financial implications of the Program are discussed in the Financial Results section of the report.

"Original signed by L. Szkwarek, CPA, CGA"
Lucy Szkwarek, CPA, CGA
Acting Manager of Finance and Administration

CONSULTATION

This Report has been prepared in consultation with:

WSTP Leadership Team

OURWINNIPEG POLICY ALIGNMENT

This report is in accordance with the OurWinnipeg policies through

OurWinnipeg Reference: Sustainable Water and Waste Direction Strategy, Environment

SUBMITTED BY

Department: Water and Waste Department
Division: Finance and Administration
Prepared by: Don Blain, CPA, CMA
Date: May 23, 2017
File No.: 020-17-06-10-01

APPENDIX 1 Leadership and Management Team Membership

LEADERSHIP AND MANAGEMENT TEAM MEMBERSHIP

APPENDIX 1

Leadership Team		Management Team	
Veolia	**City**	**Veolia**	**City**
Senior VP, Technical and Performance	Manager Finance Chair	Program Leader	Project Director
Senior VP, COO Business Development	Manager Wastewater Services	Facility Leader	Wastewater Engineer
VP Veolia Resource Optimization	Manager Engineering Services	Construction Leader	Wastewater Planning and Project Delivery Branch Head
		Technical Lead	Assistant Controller