Minute No. 520
Report – Standing Policy Committee on Infrastructure Renewal and Public Works – July 3, 2012

Item No. 1 Winnipeg Sewage Treatment Program 2011 Annual Report - Program Agreement between the City of Winnipeg and Veolia

COUNCIL DECISION:

Council concurred in the recommendation of the Standing Policy Committee on Infrastructure Renewal and Public Works, and adopted the following:

1. That the report from the Winnipeg Public Service be received as information.

2. That the Proper Officers of the City be authorized to do all things necessary to implement the intent of the foregoing.

Report – Standing Policy Committee on Infrastructure Renewal and Public Works – July 3, 2012

DECISION MAKING HISTORY:

Moved by Councillor Vandal,

That the recommendation of the Standing Policy Committee on Infrastructure Renewal and Public Works be adopted by consent.

Carried

EXECUTIVE POLICY COMMITTEE RECOMMENDATION:

On July 11, 2012, the Executive Policy Committee concurred in the recommendation of the Standing Policy Committee on Infrastructure Renewal and Public Works, and submitted the matter to Council.

STANDING COMMITTEE RECOMMENDATION:

On July 3, 2012, the Standing Policy Committee on Infrastructure Renewal and Public Works 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 2011 ANNUAL REPORT - PROGRAM AGREEMENT BETWEEN THE CITY OF WINNIPEG AND VEOLIA**

Critical Path: **Standing Policy Committee on Infrastructure Renewal and Public Works, Executive Policy Committee, Council**

AUTHORIZATION

Author	Department Head	CFO	CAO
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RECOMMENDATIONS

That Council receive this report as information.

REASON FOR THE REPORT

A thirty-year consultant services agreement with Veolia was executed on April 20, 2011.

The agreement was signed by the Chief Administrative Officer via authority delegated by City Council, and requires the City to report on results of the program to City Council on an annual basis.

This is the first such report to be tabled with City Council.

IMPLICATIONS OF THE RECOMMENDATIONS

This first Annual Report to Council confirms that Veolia is delivering value to the City of Winnipeg and summarizes:

- 2011 accomplishments,
- 2011 financial results, and
- a program plan for 2012.

The first year of the program was a success. The program team, comprised of city managers working collaboratively with Veolia, accomplished the following:

- Met targets set by the program team for 2011 in terms of capital program delivery, operations and program management, in the following work areas:
    - South End Sewage Treatment Plant
    - North End Sewage Treatment Plant
    - Biosolids Master Plan
    - Baseline Operations Target Cost
    - Automation Master Planning
- Completed much of the foundation work necessary to earn the long term program results, in the following work areas:
    - Integrated Management System
    - Document Management System
    - Risk Management
    - Procurement Practices
- Played a key role in the reestablishment of the plant operations following a major process upset at the South End Sewage Treatment Plant. Veolia's technical expertise brought the plant back online much quicker – the City had never experienced such an upset and quick mobilization of Veolia process experts was able to solve the operating issue in a timely manner. In addition, on the advice of Veolia, the City has implemented procedures that will significantly mitigate the risk of this occurring at all three plants.
- Veolia saved the City approximately $1.5 million in consulting fees as they delivered engineering and technical advice at rates roughly 30% below market and at lower overall cost to the City.

The accomplishments are described in further detail later in the report.

HISTORY

On November 19, 2009, City Council authorized the Winnipeg Public Service to:

- begin the procurement of a strategic partner that could bring private sector experience to the design, construction, finance and potentially the operation of the North and South End Sewage Treatment Plants as well as potential operation of the West End Water Sewage Treatment Plant, and
- authorized the Chief Administrative Officer to approve and issue the Request for Expressions of Interest followed by a Request for Qualifications and the Request for Proposals.

On May 19, 2010, City Council:

- directed the Chief Administrative Officer to approve and issue a Letter of Notification to Veolia in order to immediately begin design and construction of the North and South End Sewage Treatment Plant upgrades, expansion and biosolids handling facility, which are required under the current Provincial Environment Act licence requirements and estimated at $661 million, and
- delegated authority to the Chief Administrative Officer to enter into a multi-year contract with Veolia.

On April 20, 2011, a consulting services agreement with Veolia was signed. The scope of the agreement includes advice on operations and capital upgrades at the City's three sewage treatment plants for the 30 year duration of the agreement.

When the contract was signed, a briefing was held for all members of City Council and a summary of the key terms of the agreement was published on the City of Winnipeg's website (Appendix 1).

PROGRAM PRINCIPLES

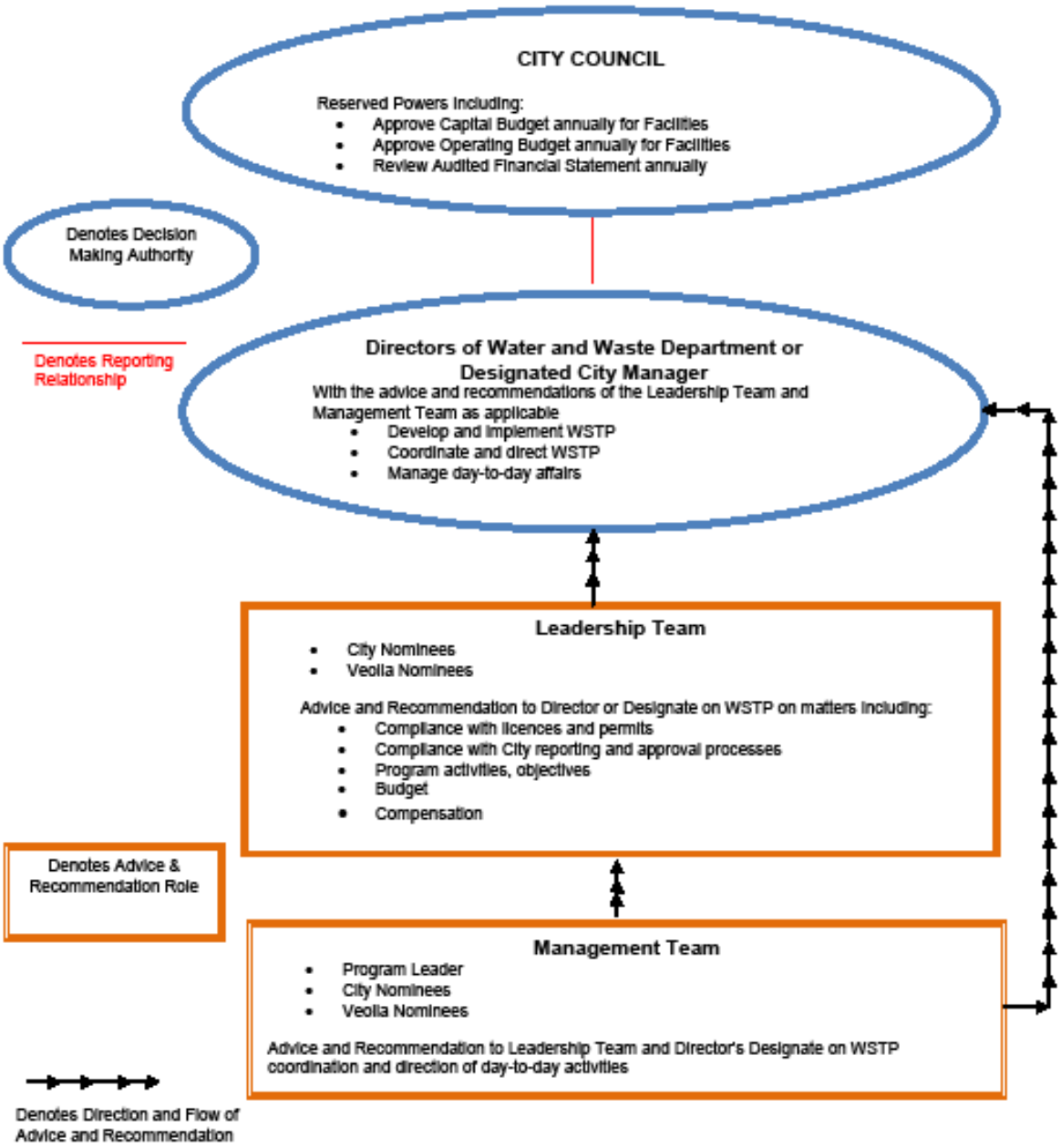
The program principles as specified in the agreement are being adhered to:

- The City of Winnipeg retains complete ownership of the sewage treatment plants
- 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
- Full open book accounting and audit of direct costs is occurring
- The City and Veolia are working collaboratively, openly and honestly within a no fault/no blame culture
- Compensation is based upon performance

PROGRAM GOVERNANCE

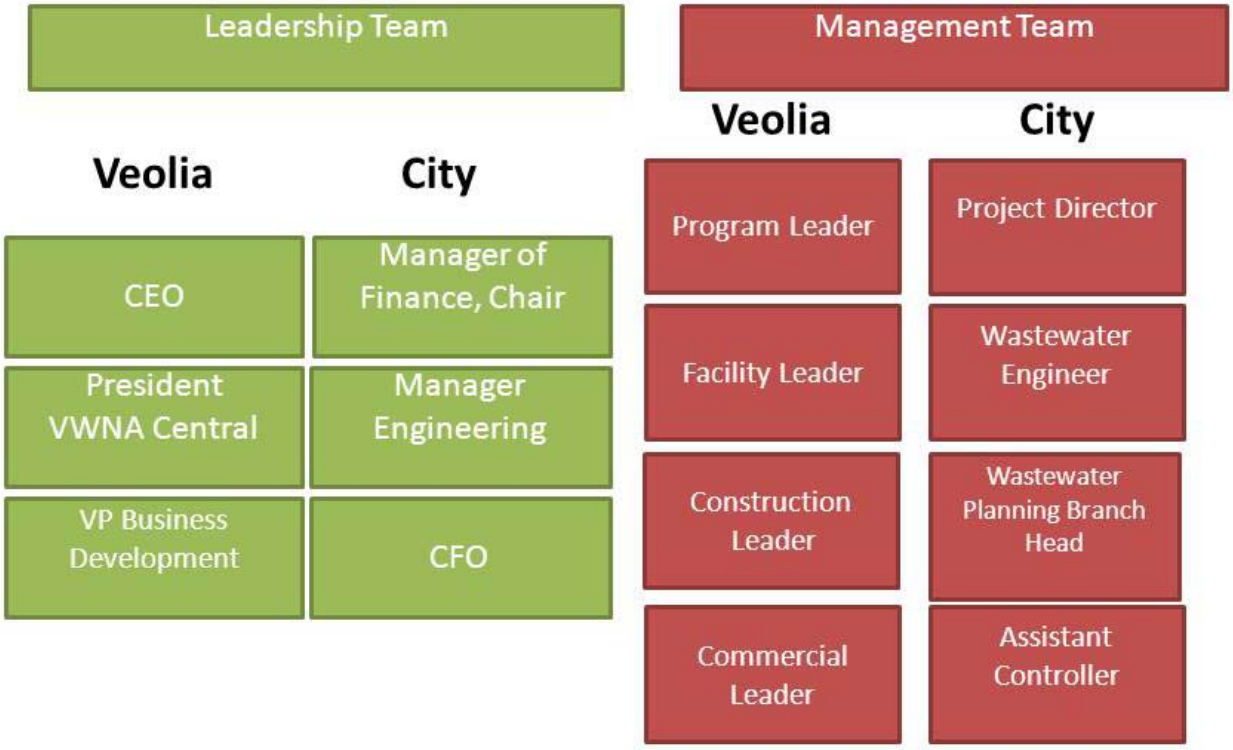
The City retains full ownership and control of the sewage treatment plant system and the program governance structure is as follows and as described in the agreement.

WINNIPEG SEWAGE TREATMENT PROGRAM (WSTP)
Governance Structure, Advisory and Decision Flow Chart



The key management representatives participating in the Winnipeg Sewage Treatment Program are as follows:

Leadership and Management Team Membership



The management team has also organized a number of task groups to distribute the work and assign management team accountability for certain tasks. The assignment and the groups are as follows:



PROGRAM VISION

"World Leader in Innovative and Sustainable Delivery of Wastewater Treatment Services"

The Winnipeg Sewage Treatment Program (WSTP) management team engaged a management consultant to assist with change management and develop a vision and guiding principles which were approved by the Director. The WSTP vision cascades from the City's overall planning framework.



The program will be delivered with the following values:

- Accountability
- Integrity
- One team/one goal
- Continuous improvement
- Consensus based culture
- No fault/no blame
- Excellence in delivery
- Open knowledge-sharing
- Informed risk management

PROGRAM ACCOMPLISHMENTS - 2011

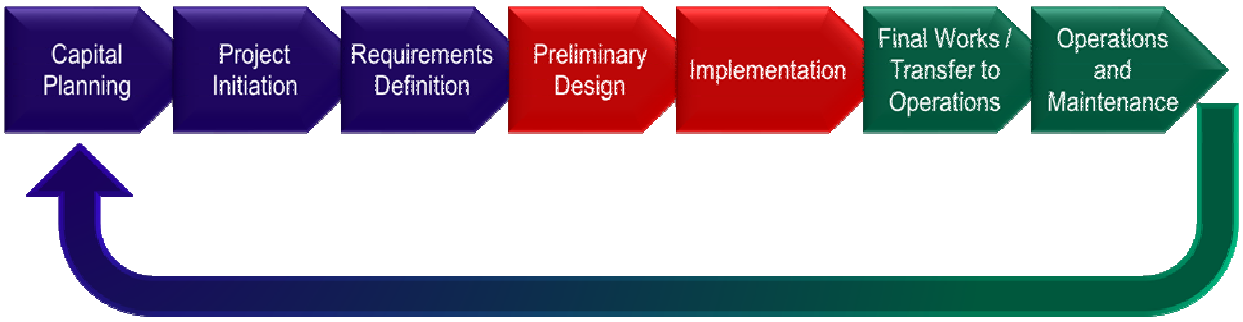
The WSTP management team set the vision for the program and then set program targets for the first year. They made significant progress on the foundation work for implementation of the 30 year agreement as well as capital program delivery.

The very innovative and unprecedented contractual relationship has required the development and implementation of various new and revised business processes – processes that will allow for successful program delivery while operating within the Council-approved policy framework for the City of Winnipeg. Neither Veolia nor the City of Winnipeg has operated under such type of agreement and significant work is underway to establish management information systems and procedures that will allow for careful measuring of program results and management of program risks.

Major activities that were completed and/or initiated in 2011 with the advice and assistance of Veolia include:

Capital Program Delivery

The management team has defined an end-to-end process for delivering projects and has developed a detailed user manual. The methodology that can be summarized as follows;



South End Sewage Treatment Plant Upgrade

The program team researched and selected a "best for program" process for the South End Sewage Treatment Plant biological nutrient removal and expansion. The Process Selection Report (PSR) included detailed financial and technical analysis and was incorporated into a Conceptual Design Report that was submitted to Manitoba Conservation in fall 2011.

The PSR complements and updates the conceptual design of the South End plant expansion and upgrade project, initiated in 2005 with a consortium of local consultants. On the basis of the work already done, the PSR updated the assumptions, the requirements and the goals of the project and complemented the process selection study for the wastewater treatment facility. The PSR led to the selection of the "best for project" treatment technologies and to the high level definition of the conceptual design of the plant. The main outputs of the PSR have been:

- Update of the population at target year (2031),
- Definition of the design flows and loads,
- Agreement on the effluent requirements,
- Technical and financial comparison of three process alternatives, and
- Selection of the preferred alternative through scoring and weighting approach by the program team.

The approval of the PSR was dependent on a series of controls and reports:

- Validation of the process design criteria by the City Council, required mainly because of the difference between the regulation and the selected treatment options by the program,
- Confirmation that Bill 46, Save the Lake Winnipeg Act, was of no effect on the Process Selection Report for the South End sewage treatment plant,
- The PSR is a high-level concept design document that allowed the issuance of the South End Sewage Treatment Plant Concept Design Report to the Provincial regulator in September 2011.

The PSR is the first step in preparing the major project delivery sequence. The next step before starting the construction engineering is the Project Definition validation which is captured in the Project Definition Report (PDR). Preparing the PDR has been assigned to a local consultant with the global objective of completing the design criteria defining the South End Sewage Treatment Plant expansion and upgrade construction concept.

The outputs expected from this task are:

- Confirm all the assumptions of the project: population, design flows and loads, effluent requirement,
- Confirm the feasibility of the selected process option,
- Update and upgrade the engineering work performed on the process option to a level of conceptual design, and
- Assessment of the risks and opportunities on the preliminary design associated with the level of knowledge of the project at the conceptual stage.

The project definition validation objectives have been met and the PDR is currently under final review by the Program Team and is expected to be complete this year. The expected in service date for the South End Sewage Treatment Plant upgrade and expansion is 2016. The management team has been preparing the delivery strategy for this project, including:

- Best procurement strategy taking into account contract provisions for Veolia affiliates participation in a public tendering process,
- Global program capital delivery organization,
- Negotiation with the consultant for the delivery of the preliminary and detailed design of the plant, and
- Preparation of the Percentage Target Cost Report.

These deliverables will be part of the year 2012 Program Annual Report.

North End Sewage Treatment Plant Upgrade

The management team is working towards the selection of a process for the North End Sewage Treatment Plant upgrade.

In 2011, the work done has allowed the following:

- Definition of target year and the population at target year;
- Definition of the design flows and loads,
- Definition of six effluent requirements scenarios, based on the regulatory documents and the on-going negotiation between the City and the Regulator, and
- Pre-selection of two preferred process options.

The two pre-selected process options are now under technical and financial development. This will allow performing a comparison and selecting the best for project solution. The effluent requirements scenarios analysis will also provide City Council with some technical and financial justification for the process selected.

The expected in service date for the North End Sewage Treatment Plant upgrade and expansion is 2019.

Biosolids Master Plan

The management team is developing a master plan for biosolids handling and treatment that will be incorporated into the design for both the South End and North End Sewage Treatment Plant upgrades.

Building on previous biosolids master planning produced by the City, the program commissioned Kruger (a Veolia Integrated Affiliate) to produce a report which would allow the Program to make a decision as to the overall strategy for treating biosolids. The scope and the timing of this work was planned to produce deliverables which would allow the major improvement projects at the South End and North End Sewage Treatment Plant to proceed.

The biosolids decision report is nearing completion. To date the following reports associated with this work include:

- Intermediate report regarding strategic biosolids decisions for SEWPCC,
- Regulatory framework regarding Winnipeg biosolids, and
- Biosolids Emissions Assessment Model Overview.

Operations

Baseline Operations Target Cost

The management team is working on the baseline operations target cost (BOTC). This is the target that all future savings or cost increases (pain/gain) from operations will be measured against on an annual basis. The BOTC is derived from two major planning tools – the asset condition assessment and the cost model.

A baseline asset condition assessment has been conducted at all three sewage treatment plants. This is a detailed inventory of all assets (e.g., condition, age, useful life). This will form the basis for future plant improvements (on a life cycle cost basis) and will highlight areas in need of critical repair.

This exercise was completed by third party contractors to provide an independent view of asset condition in the plants. The exercise covered electrical, civil, mechanical and control assets across the three plants.

In addition to these external consultants, Veolia Integrated Affiliates surveyed approximately 8,400 assets in the sewage treatment plants to provide an assessment of asset condition risk which will be used in the implementation of the Asset Management Plan in 2012. The deliverables in 2011 were:

- Winnipeg BOTC – Phase I Condition Assessment Report
- Winnipeg BOTC – Phase II Condition Assessment Report
- Electrical Installation Technical Assessment and Road Map for Improvement
- Condition Assessment of Wastewater Treatment Plants
- Site Inspection Reports for the three plants

The cost model is a sophisticated operations model that characterizes/predicts plant operating costs based upon asset condition, influent flows and loads and expected consumables (primarily electrical, chemical and asset maintenance costs).

Automation Master Planning

Work has commenced on an automation master plan that will set a vision for all plants with respect to the plant SCADA (Supervisory Control and Data Acquisition) and instrumentation. These are the systems that operate, monitor and control the plant processes. The automation master plan will provide functional requirements and objectives for the preliminary design of the sewage treatment plant upgrades. This is a best practise that will be implemented by the management team.

South End Sewage Treatment Plant Process Upset

The South End Sewage Treatment Plant experienced a major process upset in October 2011, a first for this plant. The program team were instrumental in getting the plant back on line and implementing effective solutions. Through Veolia the program team were able to bring in expert resources with experience in managing the recovery from upsets in similar processes. Once a multi-disciplined team was assembled to address the incident, process recovery was established in approximately three weeks.

As part of the lessons learned from this incident, the Program has begun investigating the extent to which business processes for treatment process control and management used by Veolia Water could be adopted by the program.

Program Management Best Practices

Integrated Management System

The development of an Integrated Management System (IMS) and Document Management System (DMS) is underway. The IMS is primarily a quality management system and is being designed to ISO 9004 standards if certification is warranted in the future.

The IMS is the backbone that documents the policy framework, process maps, detailed procedures, tools/templates and progress in each of the major program areas. The IMS is structured along the major program activities of capital planning, design and implementation; governance, structure and program management; and operations and maintenance. The IMS is 80% complete.

The Integrated Management System is designed to address the general and specific requirements of the Program Agreement. The system will have the following elements:

Management Activities	• Management commitment • Customer focus • Quality policy • Planning (quality objectives and quality management system planning)

	• Responsibility, authority and communication • Management review
Resource Management	• Provision of resources • Human resources (# and competence, training and awareness) • Infrastructure • Work environment
Product/Service Realization	• Planning and developing the processes • Customer-related processes • Design and development (inputs and outputs), review, verification, validation and changes
Measurement, Analysis and Improvement	• Monitoring and measuring • Control of non-confirming product • Analysis of data • Improvement – continual improvement and corrective action

The IMS will be completed in 2012.

Document Management System

The DMS is the tool that will allow collaboration across the large program team as well as contractors and global Veolia resources that will participate in program delivery. The DMS will allow efficient control of a multitude of electronic documents that will be generated over the course of multiple projects during the program. The system will have tracking features and allow automation of workflow for review and approvals and document all decisions made by the City with respect to the program. The DMS will be integrated with the IMS and will be operational in 2012.

SharePoint online was evaluated as the best solution with the necessary functionality. It has the following attributes:

- Manageable by program resources,
- Best solution for returning documents back to the department upon program completion,
- Allows workflow (approvals, reviews, feedback),
- Allows security at a library, folder, file level,
- Provides access for staff/partners globally,
- Full search capabilities (metadata, content),
- Check-in/check-out,
- File activity reports by email,
- Version history,
- Email notifications (alerts) for file/library activity,
- Acceptable backup/retention, and
- Shared calendar access for all program staff.

Risk Management

A series of risk and opportunity workshops have been held to profile risk sharing in the program. An overall program risk profile has been developed which will aid in successful program delivery. Additional workshops have been held for:

- Operations and maintenance
- South End Sewage Treatment Plant Project Definition Report
- South End Sewage Treatment Plant Preliminary Design

Risk management is fundamental to program control and will be integral to all processes. Detailed risk profiles will be prepared for each capital project and when establishing target costs for both operations and capital projects.

Risk management is a critical component of program control.

Procurement Practices

The management team has implemented procurement practices to ensure the proper internal controls are in place for the works that are performed by Veolia's integrated affiliates, which is provided for in the agreement. A set of procedures have been developed to ensure proper scope and control of this work and no work is undertaken without the prior approval of the City.

Although the agreement allows the opportunity for Veolia to procure, this procurement must comply with the City's purchasing policy. To ensure proper control of scope and cost, consultant advice from Veolia Integrated Affiliates are managed by a detailed proposal submission including preliminarily approval at the Management Team level. The finance team governs the control of these expenditures and closing of these work packs while the appropriate task group will control the delivery of the assigned task. The program procurement processes will be integrated into the IMS in 2012.

Invoicing/Reimbursement of Direct Costs

The management team has established invoicing/direct cost reimbursement procedures for the program. The payment and tracking of costs requires detailed data capture due to the complexities of the compensation model. The City has been diligent in auditing the "open book" costs submitted by Veolia and Veolia has been cooperative in this effort.

In complying with the agreement principle of transparency, through a series of workshops, the team has developed:

- Invoicing templates,
- Cost control review and approval to facilitate expense tracking,
- Written policies to govern costs, and
- Requirements for a time-keeping system.

The team also continues to work on optimizing the PeopleSoft financial system to capture the required financial information to manage the compensation model as well as identify further financial reporting systems that may be required.

The policies, processes and systems will be part of the IMS.

ANNUAL PROGRAM PLAN – 2012

The Annual Program Plan has been approved by the Director. In addition to the business process transformation, a summary of key program deliverables is:

Targets Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Bio-solid recommendation report by MT												
Automation Master Planning issued by the MT												
NEWPCC Process selection report and Plan for Bill 46												
SEWPCC Preliminary design												
Produce Operational Improvement Report												
Implementation of Safe work method Practices												
SEWPCC Target Cost				TC%							TC(*)	
EARA Report												

The Leadership Team meets on a monthly basis to review program results, provide strategic advice and advise Director of same.

The Key Performance Indicators for 2012 are:

Objectives 2012	Description
Operations Cost Model implementation	Baseline target cost delivered on time and accurate compilation of the information for reporting during the 2012 year.
Program Integrated Management System (IMS) implementation	Implementation of at least 80% of actual IMS documents validated by MT for implementation. IMS made easily accessible for the team via a web page interface.
Document Management System (DMS) development and implementation	DMS implementation is a fundamental tool for the control of major Capital Projects. The target for this year is to implement it for the SEWPCC and in general for the Program Management and Finance and Administration.
Establishing risk management plan and controls	Define and implement risk management processes, procedures and tools at the program operations and capital projects levels.
General design criteria	Development of design criteria for the wastewater treatment

Objectives 2012	Description
	capital projects. The design criteria include all documents for the plants that are produced today in the Bid Opportunities for tenders in each individual capital project. The objective of the KPI is to consolidate the documents into one program standard that will be the basis for design of each major and small project. This includes standards for design but also equipment and material.
Process Management Control in the facilities	Approach, methodology and partial implementation of systems for monitoring and controlling wastewater treatment processes in the facilities.

FINANCIAL RESULTS

Veolia is not entitled to draw any compensation in the first year of the program

Financial results are long term and program delivery is in its earliest stages. The City is confident that the program will achieve the intended outcome, as the key risk sharing mechanism in the agreement that Veolia's margins/earnings are at risk of forfeiture for the entire 30 years, will drive positive results. The collaborative nature of the agreement provides incentive for both parties to achieve success and in fact, Veolia's earnings are tied to a successful program.

Veolia earn compensation in three ways – margins applied to direct costs, gain sharing on operations and capital target costs and meeting key performance indicators. The earnings of Veolia in any given year are credited to the Earnings At Risk Account (EARA). The EARA is then compared to the At Risk Amount (ARA) to determine if Veolia is entitled to withdraw any of those earnings.

In 2011, there were no target costs established because work on the BOTC continues with calibration of the detailed models and the South End Sewage Treatment Plant preliminary design work will not be completed until 2012. In the first year the program team did not set any key performance indicators. The financial results from the first year of the program are summarized in the following table:

Financial Summary as at December 31, 2011	
Reimbursement of Veolia Direct Costs	$4.4 Million
Earnings at Risk	$384,000
At Risk Amount	$56 Million
Security posted by Veolia	$50 Million

Notes:

- Reimbursement of Veolia direct costs was subject to audit by the Public Service. The majority of those costs are for Veolia expert time and in the first year they logged 3,475 days of effort at a rate approximately 30% less than market rates or a savings of $1.5 million
- Earnings at risk are comprised solely of margins calculated in the first year of the program.
- Security posted is in the form of a letter of credit (50%) and a performance bond (50%).

As at December 31, 2011, the EARA balance was $384,000 and the ARA balance was $56.8 million.

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.

It is far too early in the contract to experience any substantial savings. It is a 30-year agreement and until target costs are established (will be input to budget planning processes) there will be no adjustment to operating or capital budgets.

While no savings have yet been realized, it is still the expectation that the program will protect taxpayers with savings in the range of 10 to 20% of the program costs over the life of the agreement.

The program was successful in development of systems necessary to realize future savings.

FINANCIAL IMPACT

Financial Impact Statement **Date:** April 3, 2012

Project Name:

WINNIPEG SEWAGE TREATMENT PROGRAM 2011 ANNUAL REPORT - PROGRAM AGREEMENT BETWEEN THE CITY OF WINNIPEG AND VEOLIA

COMMENTS:

There is no financial impact associated with the recommendation of this report. Financial implications are discussed in the Financial Results section of the report.

Moira L. Geer, C. A.
Manager of Finance & Administration

CONSULTATION

In preparing this report there was consultation with:

WSTP Leadership Team

SUBMITTED BY

Water and Waste Department
Finance and Administration Division
Prepared by: Moira L. Geer, CA, Manager of Finance and Administration
Date: May 22, 2012
File No. 020-17-06-10-01

Appendix 1

Winnipeg's Sewage Treatment Plant Upgrade and Expansion Program

Summary Document Of the Program Agreement Signed on April 20, 2011

By the City of Winnipeg And Veolia