

OTTAWA RIVER ACTION PLAN – STATUS UPDATE

**PLAN D'ACTION DE LA RIVIÈRE DES OUTAOUAIS – RAPPORT DE
SITUATION**

COMMITTEE RECOMMENDATION

That Council receive this report for information.

RECOMMANDATION DU COMITÉ

Que le Conseil municipal prenne connaissance de ce rapport présent.

DOCUMENTATION / DOCUMENTATION

1. Steve Kanellakos, Deputy City Manager report dated 18 February 2014 /
Directeur municipal adjoint City Operations / Opérations municipales daté
du 18 février 2014 (ACS2014-COS-ESD-0003).
2. Extract of Draft Minutes, Environment Committee, 18 February 2014 /
extrait de l'ébauche du procès-verbal du Comité de l'environnement, le
18 février 2014.

**Report to
Rapport au:**

**Environment Committee
Comité de l'environnement**

**and Council
et au Conseil**

**February 18, 2014
18 février 2014**

**Submitted by
Soumis par:**

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Ward: CITY WIDE / À L'ÉCHELLE DE LA VILLE File Number: ACS2014-COS-ESD-0003

SUBJECT: OTTAWA RIVER ACTION PLAN – STATUS UPDATE

**OBJET: PLAN D'ACTION DE LA RIVIÈRE DES OUTAOUAIS – RAPPORT DE
SITUATION**

REPORT RECOMMENDATIONS

That the Environment Committee and Council receive this report for information.

RECOMMANDATIONS DU RAPPORT

Que le Comité de l'environnement et le Conseil municipal prennent connaissance de ce rapport présent.

EXECUTIVE SUMMARY

Implementation of the Ottawa River Action Plan (ORAP) is progressing into its fifth year, and the purpose of this report is to provide a status update on all ORAP projects.

Significant progress has been made to date with seven identified projects now complete, and the remaining short term projects nearing completion. As discussed in the ORAP report approved in 2010, several projects extend beyond the original five-year period of ORAP and these longer term projects/programs continue to advance.

Firstly, the City continues to make significant progress in reducing the volume of combined sewer overflows (CSOs). The 2013 annual control period saw the City discharge significantly lower volumes of combined sewage since monitoring began in 2006, which represents a reduction in CSO volume of over 80%.

Another notable accomplishment towards reducing CSOs is that the City has accelerated its sewer separation program under the *Ottawa on the Move* initiative, and the separation of combined sewers outside of the ultimate combined sewer area is now about 90 percent complete.

With respect to stormwater, the Pinecrest Creek/Westboro Stormwater Management Retrofit Study is complete and the Retrofit Study for the City's East End creeks is expected to be complete by the end of 2014. Implementation of the resulting Retrofit Plans will mitigate the long standing impacts of uncontrolled stormwater runoff, such as reducing erosion and improving water quality in receiving watercourses.

In the area of wastewater treatment, the R.O. Pickard Environmental Centre (ROPEC) effluent dechlorination facility is now in operation to meet allowable concentrations of chlorine in the Ottawa River. The removal of residual chlorine from the effluent will have a positive impact on flora and fauna down-stream of the ROPEC outfall.

Work is also substantially underway on the projects aimed at ongoing performance measurement, and the Water Environment Strategy is expected to be tabled at a late

first-quarter/early-second quarter Committee Meeting and is aimed at establishing a long-term strategy to protect and preserve Ottawa's water environment.

Financial Implications

Since adoption of the ORAP Report by Council in 2010, Ottawa has spent approximately \$140 million on ORAP initiatives, with progress occurring in all 17 project/program areas.

Council has approved a capital budget of \$195 million for design and construction of the Combined Sewage Storage Tunnel (CSST). The tendering of the construction contract and final commissioning will be subject to the City securing funding agreements with its senior government partners. Discussions are currently in progress and the City expects that funding will be provided equally between the three levels of government. Assuming cost sharing on an equal basis, this amounts to \$65 million for each level of government. Given that the environmental and economic benefits resulting from the CSST will extend beyond the City, staff believe this is an equitable basis for such an important and significant investment.

Through a cash-allowance, 200 meters of the CSST will proceed in LeBreton Flats as part of the Confederation Line project. It is anticipated that this short section will be completed by 2015.

If funding is not received in the short term, the City will continue with the detailed design of the CSST and initiate property acquisition. Additionally, the construction schedule will be designed such that ongoing construction work will not interfere with the sesquicentennial celebrations.

In addition to the CSST project several long term projects/programs extend beyond ORAPs original five-year spending plan (i.e. Sewer Separation Program, Wet Weather Infrastructure Management Plan, and Stormwater Retrofit Implementation). Future budget requests to support these projects/programs will be brought forward for consideration as part of the annual budget process.

RÉSUMÉ

Le Plan d'action de la rivière des Outaouais (PARO) progresse à sa cinquième année. Le présent rapport vise à faire le point sur l'état des différents projets du PARO

Jusqu'à maintenant, des progrès considérables ont été réalisés : sept projets sont terminés, et les autres projets à court terme sont en voie de l'être. Comme l'indique le rapport sur le Plan d'action de la rivière des Outaouais approuvé en 2010, certains projets dépassent la période de mise en œuvre quinquennale d'origine du Plan d'action de la rivière des Outaouais; ces projets et programmes à long terme continuent de progresser.

D'abord, la Ville continue de réduire grandement le volume de surverses d'égouts unitaires (SEU). Tout comme en 2012, la période annuelle de contrôle de 2013 a permis d'enregistrer le volume d'eaux usées combinées rejetées par la Ville le plus faible depuis le début du suivi en 2006, une réduction d'un peu plus de 80 % du volume de SEU pour cette période.

Une autre réussite notable quant à la réduction des SEU est le fait que la Ville a accéléré son programme de séparation des égouts dans le cadre de l'initiative Ottawa, on se déplace. La séparation des égouts unitaires à l'extérieur de la zone définitive des égouts unitaires est maintenant terminée à 90 %.

En ce qui concerne les eaux pluviales, l'Étude sur la rénovation de l'installation de gestion des eaux pluviales du ruisseau Pinecrest/Westboro est terminée, et l'étude sur la modernisation des ruisseaux de l'est de la ville devrait l'être d'ici la fin de 2014. La mise en œuvre des plans de modernisation subséquents contribuera à mitiger les effets de longue date du ruissellement non contrôlé des eaux pluviales, en réduisant l'érosion et en améliorant la qualité de l'eau dans les cours d'eau récepteurs.

Pour ce qui est de l'épuration des eaux usées, l'installation de déchloration des effluents du Centre environnemental Robert O. Pickard (CEROP) est maintenant en activité, ce qui permettra d'atteindre une concentration de chlore acceptable dans la rivière des Outaouais. L'élimination du chlore résiduel présent dans l'effluent aura des effets favorables sur la faune et la flore vivant à proximité de l'émissaire.

Les projets qui visent la mesure continue du rendement sont également en très bonne voie. La version provisoire de la Stratégie sur le milieu aquatique d'Ottawa sera présentée au Comité en même temps que le présent rapport sur le PARO. Cette stratégie à long terme vise à assurer la protection et la préservation du milieu aquatique à Ottawa.

Répercussions financières

Depuis l'adoption du Plan d'action de la rivière des Outaouais par le Conseil en 2010, Ottawa a investi environ 140 millions de dollars dans la mise en œuvre des initiatives qu'il contient, et des progrès sont constatés les 17 projets et programmes.

Un défi financier majeur demeure l'obtention de financement pour la construction du tunnel du système de captage des eaux usées mixtes (troisième projet du Plan d'action de la rivière des Outaouais). Le coût total de cette infrastructure est estimé à 195 millions de dollars. La Ville ne pourra se permettre de terminer la construction de cet élément essentiel qu'avec la contribution financière des gouvernements provincial et fédéral. Si le partage des coûts se fait en parts égales, la Ville et chaque ordre de gouvernement devront déboursier chacun 65 millions de dollars. Étant donné que les bienfaits environnementaux et les retombées économiques du tunnel du système de captage des eaux usées mixtes dépasseront les limites de la ville, le personnel croit qu'il s'agit d'une formule de financement équitable pour les travaux.

Une allocation en espèces permettra de réaliser 200 mètres du tunnel de stockage des égouts unitaires sur les plaines LeBreton dans le cadre du projet de la Ligne de la Confédération. On s'attend à ce que cette courte section du tunnel soit réalisée pour 2015.

Faute de financement à court terme, la Ville poursuivra la conception détaillée du tunnel et entreprendra l'acquisition de terrains. De plus, le calendrier des travaux sera conçu de façon que ceux-ci n'entravent pas les célébrations du 150^e anniversaire du Canada.

En plus du projet de tunnel du système de captage des eaux usées mixtes, plusieurs projets et programmes à long terme dépassent le plan de dépenses quinquennal original du PARO (soit le programme de séparation des égouts, le Plan de gestion des infrastructures en période de précipitation et la mise en œuvre de la modernisation de l'infrastructure de gestion des eaux pluviales). Il faut admettre qu'il sera nécessaire de prolonger et d'augmenter l'enveloppe de financement pour ces initiatives au fil du temps.

BACKGROUND

On February 24, 2010, Council approved the [Ottawa River Action Plan](#) (ORAP) which takes a watershed-based approach to protect and improve the quality of the Ottawa River with a five-year spending plan of about \$250 million.

ORAP considers municipal impacts on the Ottawa River and consists of 17 individual programs/projects to address the impacts using a cost-effective approach.

The objectives of ORAP are to:

- Achieve and sustain compliance with provincial requirements, with a focus on combined sewer overflow (CSO) control;
- Optimize recreational use and economic development of the river, with a focus on reducing beach closures;
- Maintain a healthy aquatic ecosystem, with a focus on addressing challenges presented by existing infrastructure; and,
- Develop a long-term Water Environment Strategy.

To achieve the objectives, ORAP focuses on the following major elements:

- Reducing combined sewage overflows;
- Reducing stormwater impacts;
- Improving wastewater treatment; and,
- Measuring and monitoring our performance.

Previous [Year-1](#) and [Year-2](#) status update reports were received by Committee and Council in September 2011 and January 2013.

DISCUSSION

After four years of implementation ORAP continues to move forward with seven projects already complete, other short term projects nearing completion and the ongoing progress of longer term projects. As presented in previous reports, this progress update report is organized in accordance with the major elements of ORAP's focus.

Reducing Combined Sewage Overflows

The following projects are focused on providing a targeted service level for combined sewer overflows of zero overflows during a typical swimming season in the design year (design year is defined in Document 1):

- Project 1: Implementation of Real Time Controls (RTC);
- Project 2: Critical CSO and Storm Outfall Monitoring;
- Project 3: CSO Storage in the Ultimate Combined Sewer Area;
- Project 4: Review and Implement Sewer Interconnection Program;
- Project 5: Sewer Separation Outside the Ultimate Combined Sewer Area;
- Project 6: Development of a Wet Weather Infrastructure Management Plan;
- Project 7: Implementation of the Wet Weather Infrastructure Management Plan; and,
- Project 8: Installation of Floatable Traps in Combined Sewer Area Catchbasins.

Project 1: Implementation of Real Time Control (RTC) became fully operational in 2011, and continues to improve the River by significantly reducing CSO volumes. The RTC project consisted of major upgrades to five CSO regulators, and continuous real-time adjustment of gate positions at three key regulators minimizes overflows from the existing sewer system.

The CSO volume for the 2013 control period (defined in Document 1) is estimated to be reduced by over 70% over the past five years. Based on three years of data since the RTC system has been operational, and the rainfall patterns experienced during this time, the performance of the RTC system appears to be stabilizing as the system becomes optimized.

Project 2: Critical CSO and Storm Outfall Monitoring: Two sites were selected as candidates for permanent CSO flow monitoring; Clegg Street and Hemlock pumping stations. Construction of permanent flow monitoring equipment at these two sites is expected to be complete by mid-2014.

Project 3: CSO Storage for the Ultimate Combined Sewage Area: The Class Environmental Assessment study and functional design are complete, and the consultant team of Stantec/CH2M Hill was awarded the design contract. The Consultants are currently focused on finalizing CSO tunnel design in Lebreton Flats in coordination with the NCC and the Light Rail Project, as well as advancing the preliminary design for the remaining tunnel sections. In terms of overall schedule, the design and procurement schedules are such to allow issuance of a Request for Tender in November 2014. This schedule is very aggressive, and is dependent on securing funding from the provincial and federal governments.

Project 4: Review and Implement Sewer Interconnection Program: This project is complete, and a flow diversion project was implemented in 2013 at the Alvin Heights CSO outfall to reduce the risk of overflows.

Project 5: Sewer Separation Outside the Ultimate Combined Sewer Area: The City accelerated the ORAP sewer separation program under the *Ottawa on the Move* initiative and doubled its original five year work plan with projects in the West Wellington area, Rideau Street, and Sussex Drive; to name a few. It is important to note that sewer separation outside of the ultimate combined sewer area is about 90 percent complete and is now estimated to be complete in 20 years.

Projects 6: Development of a Wet Weather Infrastructure Management Plan: The Wet Weather Plan is now complete, and was received by Committee and Council in 2013. This Plan focuses on managing excessive flows within pipe networks and overland in order to reduce impacts on people, property and the environment. Some of the issues addressed include basement and surface flooding, system operation and maintenance, capacity for intensification and growth and environmental protection.

Project 7: Implementation of the Wet Weather Infrastructure Management Plan: The development and implementation of the Wet Weather Plan's main programs and associated support programs have been initiated, and it is important to recognize that the Plan is a long term initiative that extends beyond ORAP's original five-year period.

Project 8: Installation of Floatable Traps in Combined Sewer Area Catchbasins.

This project was completed in 2012 and floatable traps have been installed in Combined Sewer Area catchbasins to capture floatable debris from the street (e.g. plastic bottles, cups, wrappers, and oil) and prevent it from entering the collection system and the natural environment.

It is important to note that CSO volumes and/or frequency have been reduced as a result of completed CSO projects listed above; the overall service level of zero overflows in the control period of the design year cannot be achieved until completion of the Combined Sewage Separation Tunnel and completion of the Sewer Separation Program outside the ultimate combined sewer area, which are both long term initiatives.

It is also important to note that overflows will occur when rainfall events exceed the design year events. For example, in recent years, a system designed to the proposed service level would have experienced one or two overflows per year. This is a very significant improvement over the 30 overflow events that the system currently averages.

Reducing Stormwater Impacts

The second major element of ORAP is reducing stormwater impacts in order to reduce beach closures and maintain healthy aquatic ecosystems. The following projects are focused on stormwater management:

Project 9: Pinecrest Creek / Westboro Stormwater Management Retrofit Plan was received by Council in 2011 and is focused on mitigating the impacts (i.e. water quality and erosion) of uncontrolled stormwater runoff on Pinecrest Creek and the local reach of the Ottawa River. This project also served as a pilot to develop a methodology to be applied to future stormwater management retrofit plans within the urban area. The Pinecrest Retrofit Plan was approved with a 50 year time frame to allow for implementing the various and numerous retrofit opportunities within the rights-of-way and on City owned properties in conjunction with lifecycle replacement projects. This time frame also recognizes the considerable challenges of engaging and facilitating retrofit opportunities by private property owners.

Project 10: Eastern Subwatersheds Stormwater Retrofit Study includes the subwatersheds of Billberry, Voyageur, and Taylor Creeks, and the urban tributaries of Green's Creek. Work is progressing on this study to develop a plan to mitigate the

impacts of uncontrolled runoff on the receiving creeks, the Ottawa River and Petrie Island Beach. This study is scheduled for completion by the end of 2014.

Project 11: Implementation of Retrofit Plans continues to be within the early planning phases, and consists of the following initiatives to date:

- Identification of retrofit opportunities on City owned properties and rights-of-way in concert with life-cycle replacements;
- Pilot retrofit projects on Sunnyside Avenue and Stewart Street that will implement “bioretention” within the right-of-way. “Bioretention” is the use of planted areas that are specially designed to improve water quality and reduce road runoff using a combination of soil, plants and mulch; and,
- A feasibility study for an end of pipe stormwater management facility proposed at the northeast corner of Baseline Road and Woodroffe Avenue.

As referenced above, the implementation of the Stormwater Management Retrofit Plans will be a long term initiative, given the extent of older areas in the City that were built with limited or no stormwater management.

Improving Wastewater Treatment

Wastewater Treatment Plant enhancements is the third component to achieve ORAP's objectives.

Project 12: R.O. Pickard Environmental Centre Effluent Dechlorination is operational and the City is now discharging final wastewater effluent with residual chlorine levels that meet the Wastewater Systems Effluent Regulations effluent quality standards that take effect January 1, 2015.

Measuring and Monitoring Our Performance

The last component of ORAP is measuring and monitoring the City's performance and developing a long term water environment strategy. The following projects are focused on these initiatives:

Project 13: Develop and Implement a Water Environment Strategy: The Water Environment Strategy will be considered by the Environment Committee by the end of the second quarter of 2014.

Project 14: Monitoring and Source Control Program: This program has been integrated into normal operating workplans and will remain ongoing and is a long term initiative aimed at assessing trends in the water environment and seeking out contamination at its source and preventing it from entering the water environment.

Project 15: Wastewater & Drainage Environmental Quality Management System (EQMS) was completed in 2012 and implementation and continual improvement remains ongoing. The Wastewater EQMS allows the City to manage its wastewater business activities in a transparent and accountable manner, through the design and implementation of a system that conforms to the International ISO 14001 Environmental Management System Standard.

Project 16: Updates to the Bacterial Water Quality Computer Model

The update to the Ottawa River computer model has commenced and will be complete in 2014. This model update is linked to data provided by the Real Time Control System (Project 1) and the Eastern Subwatersheds Retrofit Study (Project 10) and is used to assess CSO and stormwater inputs, as well as to identify priorities and evaluate improvement strategies.

Project 17: Public Outreach and Education Work is ongoing, with the objective of informing the public of the linkages between what they do and the health of the water environment, and increasing awareness of ORAP initiatives. The Communication Strategy and Implementation Plan are complete and these initiatives are on-going.

Financial Status

ORAP is transitioning from completing its shorter term projects to moving forward with implementation of its long term initiatives. As discussed in the 2010 ORAP report, it must be understood that the funding commitment for the following long term projects/programs will extend well beyond ORAPs original five-year spending plan:

Project 3: CSO Storage in the Ultimate Combined Sewer Area

Project 5: Sewer Separation Outside the Ultimate Combined Sewer Area

Project 7: Implementation of the Wet Weather Infrastructure Management Plan

Project 11: Implementation of Stormwater Management Retrofit Plans

Document 1 summarizes ORAPs expenditures and commitments and includes comments regarding project duration and current status. The approved funding status of all shorter term projects remains consistent with the previous Year-2 Update report, and the financial status of ORAP's long term projects/programs is presented in the following paragraphs.

As reported in the Year-2 ORAP Update report, the budget for **Project 3: CSO Storage in the Ultimate Combined Sewer Area** is \$195 million. Although the design work is proceeding, the City will require one-third funding contributions from both the Federal and Provincial governments for construction. Given that the resulting environmental and economic benefits from the CSST will extend well beyond the City, the one third funding model is an equitable funding scheme.

Project 5: Sewer Separation Outside the Ultimate Combined Sewer Area: In 2009, the long term funding required to support the Sewer Separation program was estimated to be \$250 million. ORAP's five-year spending plan for sewer separation projects was accelerated to align with the Ottawa on the Move program, and by 2014 the City almost doubled its original five year work plan from \$47 million to \$88 million. The sewer separation program will remain ongoing for 20 years as the City continues to separate sewers outside of the ultimate combined sewer area.

Project 7: Implementation of the Wet Weather Infrastructure Management: The development and implementation of the Wet Weather Plan has been initiated, and is a long term initiative that extends beyond ORAP's original five-year period. Future annual budget requests to support the implementation of this long term initiative will be brought forward for consideration as part of the annual budget process.

Project 11: Implementation of the Stormwater Retrofit Plans: Implementation of the Pinecrest Plan is proceeding, and the Eastern Subwatersheds Plan is scheduled to commence in 2015. The 50 year life cycle cost of the Pinecrest Retrofit Plan was estimated to be \$43 million, and provides the basis for annual budget requests to support the long term implementation of this initiative. The full extent of all future funding commitments required to implement these two retrofit plans is unknown at this time, but will be clarified in subsequent reports to Committee and Council.

In addition to the City's funding commitments, both the Federal and Provincial governments have collectively provided \$66 million to support various ORAP projects.

It should be noted that projects and programs identified under ORAP do not represent nor replace specific Committee/Council approval. Any works or programs identified will be subject to Council consideration in the course of annual budget deliberations.

RURAL IMPLICATIONS

There are no rural implications associated with any of the recommendations in this report.

CONSULTATION

Public consultation was carried out in 2009 and was used in developing the Ottawa River Action Plan.

COMMENTS BY THE WARD COUNCILLOR(S)

This is a City-wide report.

LEGAL IMPLICATIONS

There are no legal impediments to receiving this report for information.

RISK MANAGEMENT IMPLICATIONS

There are no risk management impediments to receiving this report.

FINANCIAL IMPLICATIONS

The financial status of each of the ORAP projects has been included in Document 2. Additional funding requirements beyond the current year will be brought forward for consideration as part of the annual budget process.

The most significant near term ORAP investment is the Combined Sewer Storage Tunnel at an estimated cost of \$195 million. The City is actively seeking a one third sharing formula with the Provincial and Federal levels of government regarding this project. The tendering of the construction contract and final commissioning will be subject to the City securing these funding projects with its senior government partners.

ACCESSIBILITY IMPACTS

There are no accessibility implications associated with this report.

ENVIRONMENTAL IMPLICATIONS

Both the Ottawa River Action Plan and the longer-term Water Environment Strategy will reduce the impact of discharges to the Ottawa River, and will assist in fulfilling the goals of the City's Environmental Strategy for protection of the water environment. Combined, Projects 1, 3 and 5 will allow the City to achieve full compliance with MOE Procedure F-5-5, and significantly reduce the City's discharge of E coli to the Ottawa River.

TECHNOLOGY IMPLICATIONS

There are no direct technical implications associated with this report.

TERM OF COUNCIL PRIORITIES

ORAP will directly impact Environmental Stewardship, which is one of the 2010-2014 Term of Council Strategic Priorities, by reducing combined sewage overflows, reducing stormwater impacts, and improving wastewater treatment.

This initiative relates to all three Strategic Objectives within Environmental Stewardship:

- ES1 – Improve stormwater management,
- ES2 – Enhance and protect natural systems, and,
- ES3 – Reduce environmental impact.

SUPPORTING DOCUMENTATION

Document 1: Glossary of Terms

Document 2: ORAP Project and Financial Status

DISPOSITION

That Committee and Council receive this report for information.

Document 1: Glossary of Terms

Design Year: The Ontario Ministry of the Environment has accepted 1980 as the “design year” because it had “average” wet weather patterns for engineering design purposes.

Control Period: The control period is defined from April 15 to November 15.