



*Office of the Auditor General / Bureau du vérificateur général*

**FOLLOW-UP TO THE 2006 AUDIT OF THE MUNSTER HAMLET  
SEWER REHABILITATION PROJECT**

**2009**

**SUIVI DE LA VÉRIFICATION DU PROJET D'AMÉLIORATION DU  
RÉSEAU D'ÉGOUT DE MUNSTER HAMLET DE 2006**



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## EXECUTIVE SUMMARY

### ***Introduction***

The Follow-up to the 2006 Audit of the Munster Hamlet Sewer Rehabilitation Project was included in the Auditor General's 2009 Audit Plan.

The key findings of the original 2006 audit included:

- Project to improve sewage treatment in Munster Hamlet experienced significant cost overruns.
- Decisions made over the course of this project added significantly to the cost, however, we found no indication that the design or construction of the Munster Hamlet pipeline was inadequate.
- Technical and environmental analysis resulting in the pipeline decision was thorough and in accordance with the requirements of the Province.
- A review of all records as well as a physical examination of the pipeline showed no deficiencies in the design or construction.
- Better assessments of the time and cost implications of alternatives are needed to guide Council's decision-making.

### ***Summary of the Level of Completion***

The table below outlines our assessment of the level of completion of each recommendation as of Fall 2009.

| CATEGORY               | % COMPLETE | RECOMMENDATIONS  | NUMBER OF RECOMMENDATIONS | PERCENTAGE OF TOTAL RECOMMENDATIONS |
|------------------------|------------|------------------|---------------------------|-------------------------------------|
| LITTLE OR NO ACTION    | 0 – 24     | -                | -                         | -                                   |
| ACTION INITIATED       | 25 – 49    | -                | -                         | -                                   |
| PARTIALLY COMPLETE     | 50 – 74    | -                | -                         | -                                   |
| SUBSTANTIALLY COMPLETE | 75 – 99    | -                | -                         | -                                   |
| COMPLETE               | 100        | 1, 2, 3, 4, 5, 6 | 6                         | 100%                                |
| TOTAL                  |            |                  | 6                         | 100%                                |

### ***Conclusion***

We consider that the City has implemented the required mechanisms to address the recommendations emanating from the original audit. The City has completed the implementation of the six recommendations from the original audit where Management agreed with the recommendations.

## ***Acknowledgement***

We wish to express our appreciation for the cooperation and assistance afforded the audit team by management.

## RÉSUMÉ

### *Introduction*

Le Suivi de la vérification du projet d'amélioration du réseau d'égout de Munster Hamlet de 2006 était prévu dans le Plan de vérification du Bureau du vérificateur général de 2009.

Les constatations principales de la vérification initiale de 2006 sont les suivantes :

- Le projet visant à améliorer le traitement des eaux usées à Munster Hamlet a enregistré d'importants dépassements de coûts.
- Les décisions prises durant le projet ont fait augmenter substantiellement les coûts; cependant, aucune indication n'a été trouvée comme quoi la conception ou l'aménagement de la conduite de Munster Hamlet était inadéquate.
- L'analyse technique et environnementale qui a donné lieu à l'installation de la conduite était exhaustive et conforme aux exigences de la province.
- L'examen de tous les dossiers ainsi que l'examen physique de la conduite n'ont révélé aucune défaillance dans la conception ou l'aménagement.
- De meilleures évaluations des délais et des coûts des solutions de rechange sont nécessaires afin d'orienter la prise de décision du Conseil.

### *Sommaire du degré d'achèvement*

Le tableau ci-dessous présente notre évaluation du degré d'achèvement de chaque recommandation à l'automne 2009 :

| CATÉGORIE                    | POURCENTAGE COMPLÉTÉ | RECOMMANDATIONS  | NOMBRE DE RECOMMANDATIONS | POURCENTAGE DU TOTAL DES RECOMMANDATIONS |
|------------------------------|----------------------|------------------|---------------------------|--|
| PEU OU PAS DE MESURES PRISES | 0 - 24               | -                | -                         | -  |
| ACTION AMORCÉE               | 25 - 49              | -                | -                         | -  |
| COMPLÉTÉE EN PARTIE          | 50 - 74              | -                | -                         | -  |
| PRATIQUEMENT COMPLÉTÉE       | 75 - 99              | -                | -                         | -  |
| COMPLÉTÉE                    | 100                  | 1, 2, 3, 4, 5, 6 | 6                         | 100 %                                    |
| TOTAL                        |                      |                  | 6                         | 100 %                                    |

### *Conclusion*

On peut estimer que la Ville a mis en œuvre les mécanismes requis pour répondre aux recommandations émanant de la vérification originale. La Ville a terminé la mise en œuvre des six recommandations de la vérification avec lesquelles la direction était d'accord.

## **Remerciements**

Nous tenons à remercier la direction pour la coopération et l'assistance accordées à l'équipe de vérification.

## 1 INTRODUCTION

The Follow-up to the 2006 Audit of the Munster Hamlet Sewer Rehabilitation Project was included in the Auditor General's 2009 Audit Plan.

The key findings of the original 2006 audit included:

- Project to improve sewage treatment in Munster Hamlet experienced significant cost overruns.
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- Technical and environmental analysis resulting in the pipeline decision was thorough and in accordance with the requirements of the Province.
- A review of all records as well as a physical examination of the pipeline showed no deficiencies in the design or construction.
- Better assessments of the time and cost implications of alternatives are needed to guide Council's decision-making.

## 2 KEY FINDINGS OF THE ORIGINAL 2006 AUDIT OF THE MUNSTER HAMLET SEWER REHABILITATION PROJECT

### **Environmental Study Report, 1996**

1. The 1996 ESR met the requirements of the Class EA and the solution selected based on the study was supported by the engineering analysis, public and agency input, and the evaluation of the various alternatives.
2. The public participation component of the 1996 ESR exceeded the requirements of the Class EA. In addition, Totten Sims Hubicki Associates (TSH) met with individual property owners to review their concerns.
3. The 1996 ESR included Snowfluent as part of the alternative solutions. The Snowfluent system was subsequently evaluated as part of the alternative designs, but was not selected based on the evaluation method.
4. TSH adjusted the Snowfluent cost data to ensure that the interests of the Region would be protected if the Snowfluent system was the highest ranking design.
5. The pipeline solution had many serious constraints at the time that the ESR was done (1995, 1996), which made it unfeasible. The main constraint was the result of the policy used to determine the committed hydraulic capacity at the Richmond Pumping Station. Based on the policy at the time, the hydraulic capacity of the Richmond Pumping Station was fully committed. The

committed hydraulic capacity allocation policy resulted in other constraints, including the negative effect of receiving Munster flows at Richmond, which would remove development potential in Richmond; and the very high cost of improving the Richmond Pumping Station and the forcemain to accommodate the additional flows from Munster and from future development in Richmond.

6. The 'bump-up' requests received in 1996 delayed the start of the implementation of the preferred solution by about one year.

### **Unsolicited Proposals**

1. It appears that Delta's intention, when it made the unsolicited proposal, was to be allowed as an alternative to the upgrade to the lagoons and spray irrigation system (in other words, that the Region would consider an alternative bid when the tenders were solicited).
2. Once Delta made its unsolicited proposal, CMS became involved and opened the door for the re-evaluation and eventual ESR Addendum study.
3. The design of the upgrades to the sewage lagoons and the spray irrigation system was practically complete when the implementation process was halted by Council in March 1998.
4. Staff was committed to implementing the upgrades to the sewage lagoons and the spray irrigation system, and correctly recommended to Council to stay the course.
5. Re-opening the evaluation of alternatives, as directed by Council, at such a late stage did not take into account the increase in cost due to the required additional studies and extension of the voluntary abatement process.
6. Staff indicated to Council that such course of action would require a re-evaluation of alternatives, and that the project implementation could be delayed 12 to 18 months.

### **ESR Addendum, 1999**

1. The Conestoga Rovers and Associates (CRA) re-evaluation of alternatives correctly started at Phase 2 of the Class EA process.
2. The use of a design/build proposal call as part of the CRA re-evaluation process in the form of a formal request for proposals is unusual during a Class EA study.
3. The request for proposals (RFP) had the appearance and wording to lead the proponents to conclude that a contract would be negotiated if their proposal was considered acceptable. The RFP document contained legal clauses to permit the Region to not enter into negotiations; however, the overall document format and the circumstances of the competition supported the perception by

- the proponents that the Region would enter into negotiations with the successful proponent.
4. The RFP document accepted technologies and implementation programs, thus opening the door to pipeline alternatives.
  5. The RFP document was not clear that the proposals were intended to provide firm cost estimates for use in the ESR Addendum and not for the selection of a particular proponent.
  6. Based on the RFP document, the proponents were correct in expecting that the result would be negotiation of a contract with them.
  7. It appears that up until the pipeline alternatives were received as a result of the RFP, the Region staff had not considered a pipeline as a viable alternative (possibly as a result of the previous estimates and constraints).
  8. For completeness and to comply with the Class EA, the CRA ESR Addendum study had to examine the pipeline option and other options.
  9. The CRA studies were carried out in accordance with the Class EA process requirements.
  10. The CRA public participation scope and methods went far beyond the requirements of the Class EA, and were similar to those that would have been used in an individual Environmental Assessment.
  11. The weights used in the evaluation methods took into account the input from the public and the professional experience of the project team. The weights were similar to those applied by TSH.
  12. The cost estimates for the various alternatives were adjusted by CRA to normalize them. CRA had a duty to ensure that the costs used in the evaluations reflected all the costs of the projects.
  13. The pipeline alternative became feasible when the policy of the Region changed and permitted the “just-in-time” provision of sewer capacity, rather than the use of capacity allocations for events long into the future. This change in policy allowed the excess capacity at the Richmond Pumping Station to be used for Munster Hamlet.
  14. CRA evaluated five alternative pipeline routes using standard evaluation procedures that took into account the input received from the Region and the public. The evaluation of the alternative pipeline routes included a comprehensive public participation process.
  15. The Richmond Pumping Station improvements were part of the overall wastewater system master plan, and would have proceeded regardless of the events at Munster.
  16. The ‘bump-up’ requests in 1999 delayed the project by up to one year.

17. CRA included in their report the time that may have been required for a 'bump-up' request and noted the need for an Official Plan Amendment and possible OMB hearing.

### **Ontario Municipal Board Hearing**

1. The Ontario Municipal Board decision took an excessive amount of time.
2. The OMB disregarded the fact that a Class EA process, correctly conducted as confirmed by the MOE decision to reject the 'bump-up' requests, had already been conducted.
3. The OMB decision should have been limited to whether the Official Plan Amendment No. 5 should be upheld. Instead, the OMB provided a decision that delved into the method of selection of alternatives, without a clear understanding of the process.
4. Aside from the long time that it took to render a decision, the OMB decision was incomplete, as it should have either approved or rejected the OPA. If it considered that the evidence for a communal system was more credible than that for a pipeline solution, the decision should have been for rejection of the OPA; on the other hand, if the pipeline solution was acceptable, then the OPA should have been approved.
5. The OMB hearing was not a hearing under the Environmental Assessment Act and hence had no jurisdiction on the selection of the preferred solution.

### **Design/Build Contract**

1. The award of the design and construction management contract to Doran Contractors was endorsed by the Ottawa Construction Association to maintain the integrity of the request for proposals process.
2. Award of the contract was done to expedite implementation of the project, at the City's risk. However, staff apprised Council of the risks, including the possibility of having to throw out the design if the OMB denied the OPA.

### **Re-Evaluation of Alternatives**

1. In our interpretation of the OMB decision, the City could have indicated that they were satisfied with the Class EA report and proceeded with implementation of the recommended solution, i.e. the Munster Pumping Station and the force main to Richmond.
2. The RVA Re-evaluation of Alternatives presented at the meeting in December 2002 was incomplete; the report should have taken into account the factors that were later included in the Technical Memorandum. For example, the impact of having to re-open the ESR process if a solution other than the pipeline was selected, the regulatory risk to the City in case of further delays in implementing a solution to the Munster sewage treatment problem, and the impact of the

additional property acquisition required if the Snowfluent design assumptions were not accepted by the MOE.

3. Staff committed to release the RVA Re-evaluation of Alternatives to the public without first reviewing the results of the study. This was a well-intentioned error in judgment caused by the desire to demonstrate that the study was conducted independently of the City. However, it is unusual for a consultant to present results of a study to the public without allowing the client an opportunity to review the report. Review by City staff would have disclosed before the December presentation that the report work was not complete.
4. The additional analyses required by City staff were necessary to complete the Re-evaluation of Alternatives. Without the additional analysis, the report would not be complete.
5. Once the City was satisfied with the results of the re-evaluation of alternatives, it was correct in proceeding to completion as recommended by staff. Further delays in implementing a solution to the Munster Hamlet sewage problem substantially increased the risk to the City of being found non-compliant by the Ministry of the Environment.

#### **Detailed Design and Construction**

1. The design of the pumping station and the force main were completed in accordance with the accepted standards for design.
2. The construction methodology used reduced the impact of the force main during construction and the cost of implementation.
3. The design made provisions for protection of the wells in Richmond by selecting the route that had the least number of wells; used high-density polyethylene pipe with a thick wall and thermally-fused joints; and provided a control valve west of Richmond to reduce the operating pressures through Richmond to provide a 5.0 factor of safety against failure of the pipe.
4. The design and construction has implemented an acceptable, state-of-the-art system for monitoring of force main pressures for leak detection.
5. The construction of the force main generally conforms to the plans and specifications. Two excavations were done on May 31, 2006 to inspect the force main, and it was possible to confirm that construction was done per the design.
6. The design of the pumping station made provisions for odour control due to hydrogen sulfide emissions by installation of a bio-scrubber at the Richmond Pumping Station.
7. The malodour problem in the summer of 2005 was the result of an operational mistake that was corrected immediately. Subsequent malodour problems were due to the release of gases other than hydrogen sulfide, which could not be

controlled using a bio-scrubber; the City installed a temporary biofilter and the malodours have been controlled. The City is currently constructing a permanent biofilter at the Richmond Pumping Station.

### **General**

1. In general terms, if Council had followed staff recommendations in 1998 it would have saved the City about \$7.9 million dollars, although the solution would have been on-site treatment rather than a force main. In all instances in which Council superseded the recommendations of staff, the cost of the project went up and the project was delayed substantially.
2. Much of the delays have been caused by the multiple objections and roadblocks placed by individuals and interest groups. Some of the objections and roadblocks do not appear to be based on factual information.
3. All pertinent costs have been included in the project budget.
4. All pertinent costs have been reported to Council in various forms.

## **3 STATUS OF IMPLEMENTATION OF 2006 AUDIT RECOMMENDATIONS**

### **2006 Recommendation 1**

**That staff provide an assessment of time and subsequent costs to Council when presenting alternative courses of action.**

### **2006 Management Response**

Agree in principle. This would have been particularly difficult in earlier stages (prior to amalgamation) of the project due to the unusual and occasionally unpredictable nature of the Council direction and decision making. The final report to Committee/Council in May/June 2003 addressed timelines and associated costs extremely well.

### **Management Representation of the Status of Implementation of Recommendation 1 at December 31, 2008**

Implementation of this recommendation is 100% complete.

*Management: % complete* 100%

### **OAG's Follow-up Audit Findings regarding Recommendation 1**

The follow-up audit reviewed two reports to committees and Council, prepared after the original audit was completed, in which the City provided a detailed assessment of timelines and estimated costs to Council for alternative courses of action.

Implementation of this recommendation is 100% complete.

***OAG: % complete***

***100%***

## **2006 Recommendation 2**

That the Public Works and Services Department develop a policy for Council approval that once an Environmental Study Report has been in the public record for the statutory 30-day review period and any Part II Order requests have been resolved or the Ministry of the Environment has rejected them, the Class EA process not be re-opened unless the factors provided for in the Municipal Class Environmental Assessment take effect (Section A.4.2.2 of the Municipal Class EA).

### **2006 Management Response**

Disagree. The Municipal Engineers Association Class Environmental Assessment process is itself an undertaking approved under the Environmental Assessment Act. Both processes recognize and include provisions for changing circumstances including for completed Class EAs a mandatory requirement to review and reconfirm or modify both the assumptions and conclusions of a completed EA study every 5 years. The recommendation would seem to contradict this legislated requirement. The provisions for mandatory review contained in the Class EA process anticipate a wide range of circumstances including changes in legislation, new technologies, changes in original assumptions, etc.

Although this resulted in long delays and created controversies in the community in the case of Munster, there are often instances where revisiting EA decisions due to new information is warranted. Restricting the reconsideration of decisions previously made would not be in keeping with intent of the overall Class EA process.

### **Management Representation of the Status of Implementation of Recommendation 2 at December 31, 2008**

Implementation of this recommendation is considered 100% complete. Further to discussion at a meeting with the City Manager on August 1, 2007, the Auditor General indicated that he accepts the management response.

***Management: % complete***

***100%***

### **OAG's Follow-up Audit Findings regarding Recommendation 2**

As the OAG accepted the management response, it can be considered complete.

***OAG: % complete***

***100%***

**2006 Recommendation 3**

That the RFP process not be used during an EA study to obtain firm prices for alternative solutions. Instead, if alternative technologies are desired, that the City solicit Expressions of Interest or other non-binding solicitations with clear objectives and explanation to the invitees. To confirm cost estimates during a study or preliminary design, that the City consider retaining a contracting firm to provide cost estimates.

**2006 Management Response**

Agree. Although Supply Management had no involvement in the RFP process described in this audit report, we agree with this recommendation, and would not issue an RFP that was not intended to result in a contract award. We also agree that if cost estimates are sought for solutions, the RFP is not an appropriate mechanism, and as suggested by the AG, a consulting firm could have been retained to provide those estimates.

**Management Representation of the Status of Implementation of Recommendation 3 at December 31, 2008**

Implementation of this recommendation is 100% complete.

*Management: % complete* *100%*

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**OAG's Follow-up Audit Findings regarding Recommendation 3**

Together, the current Supply Management procedures, as described by the Manager, Supply Management in correspondence, and the current Purchasing By-law contain sufficient policies and procedures to eliminate the possibility of an RFP being used for cost estimation. Supply Management has confirmed in writing that they do not use the RFP process as a method to obtain cost estimates for evaluation of alternatives. Furthermore, the Infrastructure Management Plan, Section 3.4.2 addresses the manner in which the City will consider alternative technologies.

*OAG: % complete* *100%*

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**2006 Recommendation 4**

If the maker of proprietary product submits a proposal for its use by the City, that the City accept it only with a clear understanding by the proponent that any evaluation or consideration of the proposal does not bind the City to its use.

**2006 Management Response**

Agree.

**Management Representation of the Status of Implementation of Recommendation 4 at December 31, 2008**

*Management: % complete* *100%*

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**OAG's Follow-up Audit Findings regarding Recommendation 4**

The City has in place the Ottawa Option Policy, which addresses specifically the manner in which unsolicited proposals will be managed by the City. The Option Policy provides the City with the required means to address unsolicited proposals in a manner that is beneficial to the City.

*OAG: % complete* *100%*

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**2006 Recommendation 5**

**That City staff do not release results of consultant's studies without previous review.**

**2006 Management Response**

Agree in general. Staff generally work closely with consultants to carry out studies and develop appropriate recommendations. However, in the case of Munster, the City intentionally had RVA undertake an independent re-evaluation and make recommendations based upon their re-evaluation of the three treatment alternatives. To do otherwise in this situation, recognizing the long history of this project even at that time would have been problematic.

**Management Representation of the Status of Implementation of Recommendation 5 at December 31, 2008**

*Management: % complete* *100%*

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**OAG's Follow-up Audit Findings regarding Recommendation 5**

The City provided three sample projects in which the City reviewed the draft reports prepared by consultants, prior to finalization of the report.

*OAG: % complete* *100%*

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**2006 Recommendation 6**

**That all major changes in policies regarding the use of infrastructure capacity be brought forward for Council approval.**

**2006 Management Response**

Agree in principle. For the particular issue that seems to have resulted in this recommendation – capacity allocation – the Region's 1997 Wastewater Master Plan included policies regarding capacity allocation and system efficiencies. The report does not make further references, however if there is other evidence that policies are not being brought forward to Council this recommendation may have value. If the recommendation is related only to the specific issue of capacity allocation, related policies were presented to and approved by Regional Council.

**Management Representation of the Status of Implementation of Recommendation 6 at December 31, 2008**

*Management: % complete* **100%**

**OAG's Follow-up Audit Findings regarding Recommendation 6**

The City provided the 2009 Infrastructure Management Plan as an example of a presentation to Council of major changes in policies regarding infrastructure capacity.

*OAG: % complete* **100%**

## 4 SUMMARY OF THE LEVEL OF COMPLETION

The table below outlines our assessment of the level of completion of each recommendation as of Fall 2009.

| CATEGORY               | % COMPLETE | RECOMMENDATIONS  | NUMBER OF RECOMMENDATIONS | PERCENTAGE OF TOTAL RECOMMENDATIONS |
|------------------------|------------|------------------|---------------------------|-------------------------------------|
| LITTLE OR NO ACTION    | 0 – 24     | -                | -                         | -                                   |
| ACTION INITIATED       | 25 – 49    | -                | -                         | -                                   |
| PARTIALLY COMPLETE     | 50 – 74    | -                | -                         | -                                   |
| SUBSTANTIALLY COMPLETE | 75 – 99    | -                | -                         | -                                   |
| COMPLETE               | 100        | 1, 2, 3, 4, 5, 6 | 6                         | 100%                                |
| TOTAL                  |            |                  | 6                         | 100%                                |

## 5 CONCLUSION

We consider that the City has implemented the required mechanisms to address the recommendations emanating from the original audit. The City has completed the implementation of the six recommendations from the original audit where Management agreed with the recommendations.

## 6 ACKNOWLEDGEMENT

We wish to express appreciation to the staff and management for their cooperation and assistance throughout the audit process.