

**City of Toronto  
Biosolids and Residuals Master Plan  
Decision-Making Model Peer Review**

**Peer Review Panel Report**

**February 2008**



### Executive Summary

In May 2007, Ehl Harrison Consulting Inc. (EHC), in partnership with Genivar, was retained by the City of Toronto to coordinate and facilitate a peer review of the decision-making process employed in the creation of the draft Biosolids and Residual Master Plan (BRMP) completed in September 2004.

The peer review was to focus on:

- the decision-making model used to determine the recommendations of the plan;
- the decision-making criteria; and,
- the scoring that was used to determine the recommended residuals and biosolids management options and strategies for the City's water and wastewater treatment plants.

It is important to note that the peer review was not to include a specific review of the various technologies that were considered in the master planning process, but only the decision-making model, and scoring.

Based upon a set of criteria, and public and staff input, a seven member expert Panel was retained. Members were drawn from a broad range of biosolids-related fields. Between October and December 2007, the Panel met three times and corresponded frequently via e-mail and in telephone conversations with the consulting team. Their initial work was focused on establishing a logical set of charge questions to guide them and obtaining the necessary background information. Once the charge questions were established, the Panel focused its work on responding.

The Panel found that the decision-making model used in the City of Toronto's BRMP is commonly used in master plans and environmental assessments and, to that extent, is not an unreasonable decision-making model. The Panel did, however, find shortcomings in its implementation and suggested improvements, as well as additional tools that could be used to add rigor to the decision-making process.

The Panel's critical comments can largely be placed into five categories.

- The way that the relationship between the Mediation Agreement and the Master Plan is reflected.
- A lack of detail and clarity in the BRMP documentation.
- The limited reach of the consultation and consultation tools used.
- Absence of incorporation of "public perception" of risk.
- The process of weighting criteria and scoring of alternatives.

This Panel report represents the consensus view of Panel members. The following recommendations are intended to provide the City with some options to assist with furthering this important project. Specific rationale and implementation details are found in the body of this report. The Panel also made a number of observations regarding longer term actions that could assist similar projects to move ahead smoothly in the years to come.

### ***Mediation Agreement***

The portions of the Mediation Agreement (MA) which are relevant to this review are ambiguous and appear to be contradictory in a number of key sections, but the spirit of the MA is that incineration should be avoided at the Ashbridges Bay Treatment Plant (ABTP). The City should recognize the ambiguity in the MA and decide what (if anything) it wants to do about it.

It would also be helpful if City Council provided current policy guidance about whether or not to include incineration options as part of future biosolids and residual management evaluations.

In general, the Panel felt that it would be beneficial if the City remained open to new and developing technologies and policies for biosolids management, while at the same time recognizing the critical importance of both public education and public buy-in.

### ***BRMP Documentation***

The Panel found that there were a number of steps in the implementation of the BRMP decision-making model that were not easily understood. To improve clarity, and to assist anyone trying to replicate the results, the Panel has suggested elaboration of definitions, and step-by-step descriptions of the calculations behind some of the outcomes.

### ***Public Consultation***

Although the public consultation component of the BRMP meets and exceeds the requirements of the Class EA, the Panel felt that the “way” the consultation was done (i.e. some of the aspects of the consultation and/or the methods used) could be improved. The Panel felt that the City engaged a relatively small number of individuals in the various stakeholders groups, who for the most part may not be statistically representative of their communities. In addition, many urban and rural communities were not represented. This could be improved by using a different set of consultation tools, such as focus groups.

The evaluation of “public acceptance” would be improved by using a systematic instrument for measuring public responses to the options such as a statistically valid survey tool. This is important because the BRMP is a plan for the entire City of Toronto. A similar tool should be utilized in the rural communities



### ***Public Perception and Risk***

Public perception of the risks, related to both human health and other environmental impacts, associated with various technologies should be addressed across all communities, both urban and rural, for any given biosolids treatment option. The suggestion here is that a “risk assessment” framework may be a useful addition to this master plan.

It would be helpful for the BRMP to note that there are no biosolids management options that are totally risk-free. This information could help explain the challenge faced by the technical consultants to the general public and to the neighbours to treatment plants. However, the City must also demonstrate that it is following all best management practices and regulations to mitigate risks to the public’s health and safety, so that no community bears a disproportionate amount of risk. This should be conveyed in the BRMP.

### ***Weighting Criteria and Scoring Alternatives***

Future readers of the BRMP should be able to readily understand and replicate the decision-making model and its outcomes. The BRMP should be revised with this in mind. Data sets should be double checked, definitions elaborated on, and the approach and outcomes verified. This would build confidence in the rigour of the model, the BRMP process and the validity of its outcome. Data can also then be confidently utilized in any additional decision-making tools (i.e. risk assessment, etc.) and in future updates to the BRMP.

### ***Longer Term Recommendations***

There is a need for ongoing education of the Toronto public about wastewater management issues so that the general public becomes aware and interested in this important issue, and is able to provide knowledgeable input for future evaluation processes. The City’s Public Health Department is suggested as the group in the best position to deliver these services. Although public education material on the City’s website is excellent, more resources are needed to bring the public education program into the community.

It would be helpful for the City to gain an understanding of community “knowledge of and values about” biosolids. Quantitative studies, such as survey work, and qualitative investigation, such as through focus groups, could help to set the planning context for future projects.

The provision of information exchange opportunities and education materials in rural communities who may receive biosolids is also important, as is an understanding of their community values.

***Looking forward***

In recognition of the time that has passed since the development of the BRMP, the City should consider an up-to-date review of industry best practices for biosolids management and an update of the Master Plan.

In closing, the Panel commented that in the near future, biosolids management is likely to become even more challenging due to external forces such as the need for energy conservation, increased regulations on greenhouse gas emissions, tighter regulations on contaminant emissions to water and air, higher national standards for trace inorganic and organic contaminants in the land application of biosolids, greater urbanization, and more competition for taxpayer dollars. It is hoped that the opinions and suggestions found in this document will assist the City to move forward with a comprehensive plan. The BRMP should be considered a “decision-making tool”, continuously evolving, and improving, enabling the City Council to recognize the implications of alternative decisions on various stakeholders, urban and rural, to benefit the rural communities and to make good decisions for the entire City.