
**Peer Review of the Port Hope Project Draft
Screening Report**

September 2006

Prepared for:

The Municipality of Port Hope

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Executive Summary

In 2001, the Government of Canada, the Town of Port Hope and the Township of Hope (now amalgamated into the Municipality of Port Hope) and the Municipality of Clarington signed an agreement for the cleanup and long-term safe management of historic, low-level radioactive wastes situated in their communities (Legal Agreement, 2001). Subsequently, Natural Resources Canada (NRCan) launched the Port Hope Area Initiative (PHAI) in June 2001 which included the Port Hope Long-Term Low-Level Radioactive Waste Management Project (“the Port Hope Project”) for the amalgamated Municipality of Port Hope. This also set in motion an Environmental Assessment (EA) process for the Port Hope Project pursuant to the requirements of the Canadian Environmental Assessment Act (CEAA). The Scope of the Environmental Assessment (EA Scope), finalized by the Responsible Authorities (NRCan, Canadian Nuclear Safety Commission and Fisheries and Oceans Canada) in July 2002, provided guidance for the Environmental Assessment. The Low-Level Radioactive Waste Management Office (LLRWMO) was designated as the proponent for the project and was delegated the task of undertaking the environmental assessment studies.

Following the completion of the environmental assessment studies and the preparation of an Environmental Assessment Study Report (EASR) by the LLRWMO, the Responsible Authorities prepared the Draft Screening Report (DSR) for the Port Hope Project which summarizes the analysis of the EASR by the RAs, federal authorities and interested Ontario ministries. In the Draft Screening Report, the RAs conclude that the Port Hope Project is not likely to cause significant adverse environmental effects. They state however that a follow-up program is needed and they identify the preliminary requirements for the development of such a program.

This report presents to Port Hope Council (“Council”) the results of the Municipal Peer Review Team (MPRT) review of the DSR for the Port Hope Long-Term Low-Level Radioactive Waste Management Project.

Key Comments and Recommendations

The MPRT notes that the description of the project presented in the DSR is essentially unchanged from the description of the project contained in the Draft EASR which formed the basis of Council's consent in 2005 for the environmental assessment to be submitted for government review.

The MPRT concludes that on balance, the DSR provides a reasonable analysis and review of the Final EASR, and is in agreement with its main conclusion that, with the implementation of identified mitigation measures and proper monitoring programs; the project is not likely to cause significant adverse environmental effects.

In a few areas where the MPRT has not been able to arrive at the same conclusion as the proponent, additional investigations should occur prior to construction and monitoring for these effects during construction.

The mitigation measures and follow-up program are key elements to the successful implementation of the project. It is these mitigation measures and the follow-up program that will ensure that the adverse effects are eliminated or reduced so that they are not significant. In this regard, the MPRT believes that the discussion of the mitigation measures in the DSR should be inclusive, clear and provide the level of detail required by the EA Scope document. The MPRT's key comments about mitigation measures addressed by the DSR are:

- All mitigation and enhancement measures identified in the EASR need to be included in the Screening Report
- Measures to improve the design on which the assessment of residual effects is based need to be listed

- There needs to be more detail on the mitigation measures as required by the EA Scope
- There needs to be a commitment to enforce the implementation of mitigation and enhancement measures and identify who will provide the oversight. The MPRT is of the view that the document needs to clarify which mitigation and enhancement measures the Responsible Authorities intend to enforce.
- The role of the Municipality and the community in monitoring is not sufficiently addressed.

There are opportunities to further minimize some effects towards levels approaching what could be considered barely measurable. The MPRT is seeking greater confidence that the necessary commitments (mitigation measures and Follow-up Program elements) will be implemented and enforced. The MPRT believes the DSR should strengthen provisions and implement a follow-up program that minimizes impacts on the community and residents to the extent possible. Necessary commitments need also to be made with respect to socio-economic mitigation and enhancement measures by the RAs in consultation with the Municipality and its residents.

Detailed Recommendations

The MPRT has developed a number of detailed recommendations to the RAs in response to the DSR. These recommendations are:

Recommendation 1: The Screening Report should list and describe all of the mitigation measures necessary to address environmental effects (where and when they will be incorporated and by whom). The Screening Report should require the LLRWMO to confirm how mitigation measures incorporated into the environmental assessment to reduce effects have been incorporated into the project design.

The Screening Report should incorporate a table that systematically lists and describes the mitigation measures and follow-up activities, including who is responsible for various commitments and assurances.

Recommendation 2: The MPRT recommends that all of the mitigation measures referred to in the Draft Screening Report and Final EASR be strengthened by stating that they “will” be implemented. This would clarify the RAs’ intentions with respect to the enforcement of mitigation measures.

Recommendation 3: The MPRT recommends that the Screening Report direct the proponent to list and describe ‘enhancement’ measures identified in the EASR.

Recommendation 4: The Screening Report should require the RA’s and the Proponent to further involve the community in obtaining feedback on whether the mitigation measures are seen to be effective and whether the monitoring and follow-up strategies are sufficient.

Recommendation 5: The Screening Report should acknowledge that some effects will be quite noticeable within certain areas in Port Hope and at specific times during the Construction and Development Phase, and should attempt to adjust mitigation plans accordingly.

Recommendation 6: Each mitigation strategy for socio-economic effects needs to be further defined in the Screening Report.

Recommendation 7: The PVP Program should be implemented during construction and into the monitoring and maintenance phase, with on-going review to determine its duration and future needs.

Recommendation 8: The commitment of the Government of Canada to assume financial responsibility for repairing or replacing municipal works damaged as a result of the project should be articulated within the Screening Report.

Recommendation 9: The MPRT suggests that additional data and groundwater analysis should be required to be completed in subsequent studies. This will also require careful monitoring and groundwater management as part of the construction program to ensure that base flow of the creek is as estimated in the studies.

Detailed groundwater monitoring will be required at some remediation sites (Highland Drive for example) to assess the long-term effect of the remediation on groundwater quality. Other solutions to mitigate groundwater effects (such as reactive barriers) may be needed. The determination of mitigation measures and the duration of long-term monitoring of remediated sites will require further consideration as part of final design.

Recommendation 10: Given that the amount of contaminated water to be treated over this phase is still relatively large in quantity (estimated at 116,280 m³/a), technological improvements to the leachate treatment system should be sought rather than simply using the old system. This should have a beneficial effect of reducing cumulative emissions to Lake Ontario over the construction phase and of improving effluent water quality. Other sites such as the landfill and sediment sites where

contaminated ground water may have to be treated could also benefit from such a technological improvement.

Recommendation 11: The MPRT would like a more complete discussion of all air quality effects management and mitigation measures included in the DSR. This is consistent with our request for a complete listing of mitigation measures and assignment of responsibility for undertaking each and for oversight to ensure that they are implemented effectively.

Recommendation 12: The Screening Report should acknowledge that further assessment is required prior to licensing regarding potential odours associated with excavation at the landfill and the harbour, and, further mitigation might be required to ensure that there are no residual adverse effects from the odours from the landfill or the harbour.

Recommendation 13: The MPRT recommends that some of the follow-up programs such as air and soil quality monitoring should be more focused on the residential areas affected by the project such as south of the LTWMF and north of Marsh Road, in the air shed region, and Ward 1 residential areas near the remediation sites and properties to be cleaned up.

Additional air quality mitigation measures should be adopted in the Screening Report wherever such measures are practical and reasonable.

Recommendation 14: The MPRT recommends that adequate aquatic data be collected and should be used in finalizing mitigation measures and follow-up programs for aquatic effects.

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Recommendation to Council

That Port Hope Council forward the Municipality of Port Hope Peer Review Team (MPRT) report to Natural Resources Canada (NRCan) as representing the comments of the Municipality on the Draft Screening Report prepared by the Government of Canada regarding the Port Hope Long-Term Low-level Radioactive Waste Management Project (August 2006).

1. Purpose of Report

This report presents to Port Hope Council (“Council”) the results of the Municipal Peer Review Team (MPRT) review of the Draft Screening Report (DSR) pertaining to the Port Hope Long-Term Low-Level Radioactive Waste Management Project. The report also provides some specific comments on the Final EASR.

The DSR is the screening level assessment of the potential environmental effects of the Port Hope Project from the perspective of the responsible authorities (RAs) pursuant to the requirements of the Canadian Environmental Assessment Act (CEAA).

2. Background

In 2001, the Government of Canada, the Town of Port Hope and the Township of Hope (now amalgamated into the Municipality of Port Hope) and the Municipality of Clarington signed an agreement for the cleanup and long-term safe management of historic low-level radioactive wastes situated in their communities (Legal Agreement, 2001). The agreement is founded on the municipalities' independent proposals to the Federal Government to host facilities for the long-term management of historic wastes located in their respective communities.

Subsequently, NRCan launched the Port Hope Area Initiative (PHAI) in June 2001 which included the Port Hope Long-Term Low-Level Radioactive Waste Management Project ("the Port Hope Project") for the amalgamated Municipality of Port Hope.

An Environmental Assessment (EA) is required under the Canadian Environmental Assessment Act (CEAA) at a 'screening' level (i.e. assessment conducted pursuant to section 18 of CEAA including a consideration of effects set out in subsection 16 (1) of CEAA) before the Port Hope Project can be approved and implemented. The Low-Level Radioactive Waste Management Office (LLRWMO) as proponent completed an environmental assessment study and issued a draft Environmental Assessment Study Report (EASR) in February 2005. In March 2005 the Municipal Peer Review Team (MPRT) reported its comments on the draft EASR to Council. The MPRT concluded that the preferred Concept for long term low-level radioactive waste can be designed to protect human health and the natural and social environments of Port Hope for the short and long terms. Council subsequently passed a resolution consenting to the LLRWMO recommendation that the environmental assessment of the proposed Concept be forwarded to the RAs for federal government review.

The Concept consists of: a Long-Term Waste Management Facility (LTWMF) for the low-level radioactive wastes in Port Hope to be located south of Highway 401, west of Baulch Road; the remediation of on-land contaminated sites; remediation of the harbour; and

transportation of the contaminated material and clean fill via prescribed transportation routes.

The EASR was submitted to the RAs for a federal government review. Upon completion of that review, the LLRWMO issued a Final EASR on January 2006 including an Addendum in July 2006.

The Responsible Authorities (Natural Resources Canada, Canadian Nuclear Safety Commission and Fisheries and Oceans Canada) prepared the Draft Screening Report for the Port Hope Project based on their review of the Final EASR prepared by the LLRWMO. Their comments summarize the analysis of the EASR completed by the RAs, Federal Authorities and interested Provincial ministries. The RAs conclude the Port Hope Project is not likely to cause significant adverse environmental effects. They state that a follow-up program is needed and they identify the preliminary requirements for the development of such a program.

In August 2006 the Draft Screening Report was released by the RAs for public comment prior to the finalization of their Report. Once finalized, each RA will use the report in its respective decision-making processes for the project.

During the review of the Draft Environmental Assessment Study Report and its support documents, the MPRT identified where they had reached agreement with the proponent and areas where there continue to be outstanding concerns. The disposition of these concerns is summarized in our Peer Review Report (*“Peer Review of the Port Hope Project Environmental Assessment Study Report”*, Hardy Stevenson and Associates Limited, March 2005) and thereafter, in the various Comment Disposition Forms associated with the Environmental Assessment Study Report and supporting documents.

In this review, we focus on the Draft Screening Report and the Final EASR (January 2006 and Addendum July 2006). Our current and earlier comments on these various supporting materials need to continue to be taken into consideration in the future work as may be pertinent, such as detailed design, licensing phase and other works as the project evolves to

the construction phase (see Appendix B for a listing of items which the MPRT and the LLRWMO agreed could be addressed during detailed design and licensing).

Below we provide our General Comments (Section 3) followed by Specific Comments (Section 4) on the Draft Screening Report.

3. General Comments

On balance, the Draft Screening Report (DSR) provides a reasonable analysis and review of the Final EASR. The MPRT is in agreement with its main conclusion that, with the implementation of identified mitigation measures, the project is not likely to cause significant adverse environmental effects. The MPRT also supports the implementation of a follow-up program to monitor and confirm the accuracy of predictions of environmental effects and effectiveness of mitigation measures.

The Municipality wants to ensure that while dealing with this long-standing waste management problem, the impacts on the communities and the residents should be minimized especially for those in the vicinity of the proposed facility, the remediation sites and along the transportation routes. While the MPRT agrees with the main conclusion of the DSR, it believes that there are additional opportunities in the current design to minimize some effects to as low as reasonably achievable and beyond to the point where effects for residents, the community and the environment are barely measurable. In our opinion, it is necessary to identify, acknowledge and commit to such opportunities now.

3.1 Review of the Draft Screening Report

3.1.1 Proposed Project

The description of the project presented in the DSR forms the basis of the assessment. It is essentially unchanged from the description of the project contained in the Draft EASR upon which Council provided consent for the Project Environmental Assessment to be submitted for federal government review (Municipality of Port Hope, Council Resolution No. 91/2005).

The proposed project consists of a single LTWMF to be developed on the property currently occupied by the Welcome Waste Management Facility and will consist of an above-

ground engineered containment mound. The LTWMF will host historic low-level radioactive waste (LLRW) currently located in Welcome WMF, various consolidation sites, various LLRW-contaminated sites on land and the Port Hope Harbour. The LTWMF will also store the waste from designated industrial waste-contaminated sites.

Remediation of these sites will be carried out by excavating contaminated material and transferring it to the LTWMF in highway-licensed trucks via prescribed routes. In the case of the Port Hope Harbour, the contaminated sediments will be dredged and transferred to the LTWMF. The remediation of the sites will be based on agreed upon cleanup criteria and will generally consist of backfilling with clean material imported via prescribed routes.

3.1.2 Has the DSR Adequately Completed Studies as Required by the Scope Document?

Within the Federal Environmental Assessment Study, the “EA Scope Document” establishes the terms of reference for the environmental assessment and provides guidelines for what is to be studied. For the Port Hope Project, the EA Scope document was prepared by the RA’s and approved by the Government of Canada (*“Scope for the Environmental Assessment for the Port Hope Long-term Low-level Radioactive Waste Management Project”*, July 2002). The table below summarizes a systematic overview of what the environmental assessment was intended to achieve and the MPRT’s review of whether the DSR meets the requirements.

Overall, the DSR adequately addresses the matters originally identified to be addressed in the EA Scope, although, the MPRT is of the opinion that further work is required by the RAs to clarify, list and describe mitigation measures to be implemented during and after construction of the LTWMF. The DSR should:

- Document, refine and recommend mitigation measures, and,
- Encourage continuing efforts to minimize residual adverse effects.

**EA Scope Document and Draft Screening Report:
Does the DSR Meet Key Requirements?**

Requirements with reference to the relevant section of the EA Scope Document	MPRT's assessment of the DSR
<p>Page 5, refers to paragraphs 16 (1) (a) to (d) of the Canadian Environmental Assessment Act (“CEAA”):</p> <ul style="list-style-type: none"> • “measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project” 	<p>MPRT is generally satisfied that the proponent has included mitigation measures that can be applied to address significant adverse environmental effects. There are additional opportunities to strengthen the Screening Report by identifying and listing all mitigation measures that the proponent should implement.</p>
<p>Section 6.4.1 description of the Project:</p> <ul style="list-style-type: none"> • “the proposed institutional control system for the Project, including plans for long-term stewardship and continued oversight” 	<p>The DSR acknowledges that institutional controls cannot be precisely defined at this point and it provides only a limited description of this important requirement. The MPRT is of the opinion that as a minimum, the Agency to be tasked with responsibility for long-term stewardship activities should be identified and its <i>modus operandi</i> described.</p>
<ul style="list-style-type: none"> • “a description of the types and the objectives of all management plans, protocols and any related communications to be developed, including environmental protection plans, health and safety plans, emergency response plans and contingency plans.” 	<p>The DSR describes the types and objectives of the management plans but is weak on the protocols and communications, and details of such plans. The MPRT suggests that the Screening Report require the early development and implementation of such plans since these constitute an important element of effects management.</p>
<p>Section 6.8.1 Methodology (p. 19)</p> <ul style="list-style-type: none"> • “The proponent must describe the general and specific measures that it proposes to implement to mitigate the potentially adverse environmental effects and to enhance beneficial effects of the project.” (p 19) • P.29 “Mitigation measures to minimize or eliminate adverse effects and enhance beneficial effects will have also been considered.” 	<p>The DSR omits the discussion and quantification of measures that would enhance beneficial effects of the project. This should be addressed.</p>
<ul style="list-style-type: none"> • “Mitigation measures should be described in terms of their purpose, timing and duration, economic feasibility, anticipated effectiveness, previously demonstrated performance and potential risk of failure. Thresholds for the activation of mitigation measures should be specified.” (p. 19) 	<p>Mitigation measures are not described to the specificity required by the EA Scope. They should be.</p>
<p>Section 6.12 Follow-up Program (p. 21)</p>	<p>The MPRT's opinion is that the follow-up</p>

<p>“The purpose of a follow-up program under the <i>CEAA</i> is to assist in determining if the environmental effects of the project are as predicted in the environmental assessment. It is also to confirm whether the mitigation measures implemented are effective, and to determine if new mitigation strategies are required. Additional monitoring may also be required as a result of any authorization under section 35(2) of the Fisheries Act.</p>	<p>program described in the DSR does not adequately meet the standard for determining the accuracy of predictions regarding effects to groundwater and to aquatic habitat. A number of outstanding comments in this area are discussed in Section 3 and Appendix B.</p> <p>Additional baseline data must be collected prior to final design to confirm existing groundwater and biophysical conditions. A detailed monitoring program must be developed as part of final design.</p>
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3.2 Strengthening of Commitments and Assurance regarding Mitigation, Enhancement Measures and Follow-up Program Elements

3.2.1 Definition of Mitigation

The CEAA defines mitigation as the elimination, reduction or control of the adverse environmental effects of the project, and includes restitution for any damage to the environment caused by such effects through replacement, restoration, compensation or any other means. In this respect, the MPRT considers that the goal for this project should be to reduce adverse effects to as low as reasonably achievable such that the impacts on the environment, the municipality, and the public are eliminated or minimized.

3.2.2 Complete Listing of Mitigation Measures

The MPRT was pleased to see a number of additional design and procedural measures introduced to the Project during the analysis of environmental effects. While the MPRT is supportive of the addition and further refinement of these measures, we would like to see a consolidated listing of them to ensure that they are included in the project design.

Furthermore, the Final EASR does not include all mitigation measures provided earlier in the Draft EASR reviewed by the MPRT (see Appendix C for comparisons of mitigation measures). To address this, the MPRT has included in this report a preliminary list of mitigation measures that we would expect to have been included in the Screening Report (Appendix E). We believe it is the job of the RA's and LLRWMO to finalize the list.

The MPRT has prepared a tabulated summary of the commitments and assurances that we believe are also required to be included in the Screening Report (Appendix D). The list should be completed in sufficient detail that residents of Port Hope can understand how adverse effects will be addressed during the construction phase.

Recommendation 1: The Screening Report should list and describe all of the mitigation measures necessary to address environmental effects (where and when they will be incorporated and by whom). The Screening Report should require the LLRWMO to confirm how mitigation measures incorporated into the environmental assessment to reduce effects have been incorporated into the project design.

3.2.3 Mitigation Statements in the Screening Report Need to be Strong and Consistent

The DSR is inconsistent when referring to mitigation measures. In many cases the document “identifies” mitigation measures; in other places it “recommends” mitigation measures and elsewhere it states that the LLRWMO “is also considering”. In addition, some of the mitigation measures identified in the Draft and Final EASR are not referred to in the DSR.

Recommendation 2: The MPRT recommends that all of the mitigation measures referred to in the Screening Report and Final EASR be strengthened by stating that they “will” be implemented. This would clarify the RAs’ intentions with respect to the mitigation measures.

3.2.4 Identify and List Enhancement Measures

While some mitigation measures are intended to minimize or eliminate negative effects, other ‘enhancement measures’ are intended to maximize positive effects. The EA Scope document directs the proponent to consider enhancement of beneficial effects (“Mitigation measures to minimize or eliminate adverse effects and enhance beneficial effects will have also been considered.” p. 29). It is the opinion of the MPRT that the RA’s can do more to direct the proponent to consider enhancement measures where opportunities arise.

Recommendation 3: The MPRT recommends that the Screening Report direct the proponent to list and describe ‘enhancement’ measures identified in the EASR.

3.2.5 Clarify Who Does What in Table Format

The Draft Screening Report states (page 134) that the CNSC is the lead RA for most of the follow-up activities with respect to biophysical environment and health and safety. DFO

will lead follow-up activities for effects related to fish and fish habitat under the Fisheries Act, and NRCan will be the lead for other follow-up activities, including socio-economic aspects. Once the Port Hope Project Screening Report is finalized, NRCan, DFO and the CNSC will each make their own decisions under Section 20 of CEAA on their course of action with respect to the approval of the environmental assessment.

The MPRT expects that the RAs will fully define their commitment to mitigation and enhancement provisions in their respective areas, contingent upon a full analysis during the detailed design and licensing activities. To this end, the MPRT is pleased to see the elements for follow-up tied directly to each mitigation strategy (*Table 12.1 of the DSR*).

However, on the matter of who does what, the MPRT is of the view that it is necessary for the Screening Report to systematically identify and describe the commitments (mitigation actions and Follow-up Program elements) that will be implemented and enforced.

We recommend preparing a Table of Commitments and Assurances within the Screening Report as a further step toward consolidating mitigation and follow-up measures. We have attached a model table that addresses a few mitigation measures that are now required based on the DSR table of mitigation measures (See Appendix C). Similar commitment tables are generated at the EA study level in other projects¹ and can be further refined as the project evolves to licensing stage.

Recommendation 4: Prepare a Table that systematically lists and describes the mitigation measures and follow-up activities, including who is responsible for various commitments and assurances.

3.2.7 Involve the Community in Finalizing and Implementing Strategies

Given the importance of mitigation measures and monitoring programs, the community should be involved further in providing feedback on whether these mitigation strategies are sufficient. A public workshop could be convened where the residual effects are presented,

¹ See for example, the Comprehensive Study Report for the Deltaport Third Birth Project, Appendix A.

along with proposed mitigation measures and monitoring activities (Table 10.4 in the DSR provides a suitable model for presenting proposed mitigation). Participants could then discuss refinements, additions, deletions and possible changes to mitigation strategies. There would then need to be a follow-up with the proponent involving the Municipality and the community to ensure commitment to carrying out the appropriately defined mitigation, monitoring and following-up of the strategies.

Although our comments are intended to be applied across the Municipality, regarding socio-economic effects we feel that the proponent should also give special emphasis to working with residents who feel they may be the most affected by the Project (for example, neighbours close to the LTWMF and large clean-up sites, the closest neighbours to the proposed access road and Toronto Road interchange).

Recommendation 5: The Screening Report should require the RA's and Proponent to further involve the community in obtaining feedback on whether the mitigation measures are seen to be effective and whether the monitoring and follow-up strategies are sufficient.

3.2.8 Summary Recommendations about Mitigation Measures

Although the DSR provides a summary of mitigation measures, the MPRT is of the view that a more complete listing of the measures and further development of these measures should be included in the Screening Report:

- All EASR mitigation measures need to be carried forward to the DSR
- Measures to improve the design on which the residual effects are based also need to be listed
- The measures can be strengthened and applied consistently
- Enhancement measures proposed by the Proponent should be included
- There needs to be more detail on those mitigation measures that have already been listed
- There needs to be a commitment to enforce the implementation of all mitigation measures
- The responsibilities for implementing mitigation measures should be clearly stated.
- The responsibilities for providing enforcement and oversight in the event that mitigation measures need to be adapted or revised should be clearly stated.

3.3 Institutional Arrangements

In Section 6.4.1, the EA Scope document states that “*the proposed institutional control system for the Project, including plans for long-term stewardship and continued oversight*” should be addressed by the Screening Report.

With respect to this requirement, the MPRT feels there is room to strengthen and better delineate institutional arrangements for long-term management and continued oversight. Without details on who will carry out the project and how (within and under the direction of the Government of Canada) the MPRT cannot evaluate whether the Institutional Controls outlined in the DSR are adequate.

We suggest that the following statement be considered for inclusion to substantiate the Government of Canada responsibilities in the project: “*The Government of Canada will ultimately be responsible for institutional arrangements of the project. For the LTWMF, organizational systems which are in place now (e.g., implementing agencies, staff etc.) may need to change, or new systems may need to be designated specifically for this project. These institutional arrangements will continue to evolve and will be further developed during the licensing phase*”.

Details should be included, but not be limited to, addressing questions such as the following:

- What is the purpose of the organization? Will it be created as a “stand-alone” entity or as a part of an existing organization? Why and how was this decision made? Will the private sector be involved?
- What type of structure will the organization have – centralized, decentralized, hierarchical, self-managing? How will it be governed and how will decisions be made (current decision making protocols may not be appropriate)?
- What funding levels will the facility receive and how will adequate levels be maintained over 500 years?
- How will the Canadian government entity for this project be evaluated? Who will evaluate?
- What types, frequency and quality of corrective action and emergency response plans and procedures, quality assurance procedures/ mechanisms, and mechanisms for handling complaints/ non-compliance/ problems will the institution have?

- What will be the protocols and systems for both internal and external communications? How will their effectiveness be assured?
- How will it be assured that the facility complies with changing regulatory requirements?
- How will record keeping, archiving, accounting systems, etc. be set up to assure continuity for 500 years?
- What roles and responsibilities will staff have across different expertise and within different functions?
- What training and skill development practices, policies and mechanisms will be in place? How will these assure continuity from one generation to the next? Will practices, policies and mechanisms be the same or different for any contractors that are hired?
- What types, numbers and qualifications of staff will be needed? How will they be recruited, screened, hired, trained and evaluated to assure continuity of the facility over the long term? What types of pay, benefits and incentives will be provided? How will these contribute to long-term continuity?

3.4 Socio-economic Effects

Our first concern about socio-economic effects pertains to how the Screening Report proposes to address the social environment. The DSR notes that *“under the Canadian Environmental Assessment Act, environmental effects are defined as direct changes to the biophysical environment caused by the project and the effects of these environmental changes on specific components of the environment. The components include health and socio-economic conditions.”* Mitigation measures listed in the DSR are those intended to minimize or alleviate residual effects directly related to the ‘physical works of the project’ with insufficient consideration to changes to the ‘social environment’ caused by the project. It is our opinion that this rigid adherence to CEAA definitions in the DSR as they apply to a *project*, will not serve the Municipality of Port Hope or its residents well. How the ‘people aspects’ of the project are managed (in addition to the management of changes to the biophysical environment) will, to a large extent, determine the success of the project.

The second observation is that the DSR appears to define measures to protect the social environment as fortuitous gestures offered by the proponent. For instance, the DSR states that the proponent has offered some mitigation measures which are not required under

CEAA (Section 10.6, pg 92) with respect to socio-economic aspects. The MPRT is of the view that socio-economic assessment and mitigation measures for this Project should address the full range of socio-economic effects and should not be limited by specific CEAA requirements.

Perhaps as a consequence of this approach, none of the residual adverse effects are found to be “significant” in the DSR. In the MPRT’s judgment, several of the effects could be placed in the category “possibly significant.” The problem with the existing rating system in the EASR is that it is essentially “all or nothing.” Although the socio-economic effects of Construction and Development are not predicted to be widespread and overwhelming, they *will* occur and be disruptive for some residents, facility users and businesses. For example, the following effects are evaluated as “moderate to high” for one or more of the indicators used in the EASR (e.g., magnitude, extent, duration, frequency, permanence):

- Increased potential for out-migration
- Changes in use of property and reduced enjoyment of property
- Changes in community character (highest rating with 3 moderates and 1 high.)
- Reduced property values

Recommendation 6: The Screening Report should acknowledge that some effects will be quite noticeable within certain areas in Port Hope and at specific times during the Construction and Development Phase.

The Property Value Protection Program (PVP Program) is an important element of the Project. It provides the assurance to property owners that their investment in their property will not be affected by the Project. The Legal Agreement requires that the Program extend through the construction phase and two years into the maintenance and monitoring phase. The DSR proposes to place this time limit on the PVP Program.

The Draft EASR correctly recommends review and monitoring of the need for the PVP Program. Given that the duration of influence of the Project on property values remains uncertain, the MPRT is of the opinion that the intent of recommendation from the Draft EASR should be included in the Screening Report.

Recommendation 7: The PVP Program should be implemented during construction and into the monitoring and maintenance phase, with on-going review to determine its duration and future needs.

We also recommend that each mitigation strategy for socio-economic effects be further defined and elaborated upon as described above in Section 3.2, “*Complete Listing of Mitigation Measures*” and according to the Table of Commitments and Assurances in Appendix C. The MPRT recommends that a community-based process be used to finalize the socio-economic mitigation measures. A community-based monitoring group could also monitor implementation of the mitigation strategies.

Recommendation 8: Each mitigation strategy for socio-economic effects needs to be further defined in the Screening Report.

Additionally, where Municipal works/infrastructure (e.g., roadways, road beds, water or sewer mains, sidewalks) are moved, removed, or damaged for any project works, the MPRT wants to ensure works/infrastructure will be replaced by the Government of Canada at its expense to the relevant government standards of the day for those works. This commitment should be clarified in the Screening Report.

Recommendation 9: The commitment of the Government of Canada to assume financial responsibility for repairing or replacing municipal works damaged as a result of the project should be articulated within the Screening Report.

3.5 Groundwater Effects

The MPRT is pleased that additional stormwater modeling related to rainfall events, and their effect on the flow to the creek has been adequately studied in the EASR Addendum document. However, the MPRT’s biggest issue regarding groundwater effects addressed by the DSR is that there are gaps in groundwater data, making it difficult to support the DSR conclusions.

Of concern, groundwater may affect base flow into the creek, and sufficient data is not provided to support the finding that there will not be an effect as a result of the base flow

change. No baseline monitoring has been identified to verify this finding. The base flow to the creek is an important parameter in assessing various natural environmental effects, particularly the aquatic effects.

The groundwater drawdown (expected to be several metres) could potentially affect water wells in the area and the base flows in the creek. No new modeling or analysis has been presented in DSR.

Recommendation 10: The MPRT suggests that additional data and groundwater analysis should be required to be completed in subsequent studies. This will also require careful monitoring and management as part of the construction program to ensure base flow of the creek is as estimated in the studies.

Detailed groundwater monitoring will be required at some remediation sites (Highland Drive for example) to assess the long-term effect of the remediation on groundwater quality. Other solutions to mitigate groundwater effects (such as reactive barriers) may be needed. The determination of mitigation measures and the duration of long-term monitoring of remediated sites will require further consideration as part of final design.

With regards to leachate treatment, it appears that the drainage and groundwater containing residual contamination during the construction phase will be treated with the existing treatment system.

Recommendation 11: Given that the amount of contaminated water to be treated over this phase is still relatively large in quantity (116,280 m³/a), technological improvements to the leachate treatment should be sought rather than simply using the old system. This should have a beneficial effect of reducing cumulative emissions to Lake Ontario over the construction phase and of improving effluent water quality. Other sites such as the landfill and sediment sites where contaminated ground water may have to be treated could also benefit from such a technological improvement.

3.6 Atmospheric Effects

The DSR discusses mitigation measures that were developed in the Final EASR in order to reduce a number of predicted exceedances. Very little mention is made of all of the other mitigation measures incorporated into the air quality assessment. These should be discussed as well because they are important to the conclusion of the assessment.

DSR correctly identifies the uncertainties in the odour assessment for the landfill and the harbour and that additional field studies are required. It is assumed that studies regarding odour will be appropriately reviewed and any recommendations will be incorporated into final design and operations. No timing is given or recommended to complete these studies. This should also be stated.

Recommendation 12: The MPRT would like a more complete discussion of all air quality effects management and mitigation measures. This is consistent with our request for a complete listing of mitigation measures and assignment of responsibility for undertaking each and for oversight to ensure that they are implemented effectively.

The Screening Report should also acknowledge that further assessment is required prior to licensing regarding potential odours associated with excavation at the landfill and the harbour, and, further mitigation might be required to ensure that there are no residual adverse effects from the odours from the landfill or harbour.

3.7 Natural Environmental Effects

Our main concern with natural environment effects relates to effects on soil quality during the construction program. Although effects management and mitigation measures have been developed to reduce particulate concentrations both in air and soil, arsenic and cobalt among non-radiological particulates and thorium-230 among radiological particulates seem to persist in the soil elevating existing levels. Although the air particulate levels are not considered to cause adverse effects and are below AAQC and NORM limits and soil levels are below MOE standards for soil, our view is that further improvements/additions to mitigation measures should be considered. These measures could reduce the release of these additional concentrations in soil in keeping with ALARA. We note that mitigation measures as discussed in our specific comments (Section 4) are still open to improvements in this regard.

Recommendation 13: The MPRT recommends that some of the follow-up programs such as air and soil quality monitoring should be more focused on the residential areas affected by the project such as south of the LTWMF and north of Marsh Road and in the air shed region, and Ward 1 residential areas near the remediation sites and properties to be cleaned up.

Additional air quality mitigation measures should be recommended in the Screening Report wherever such measures are practical and reasonable.

We are pleased that the LLRWMO is prepared to provide mitigation measures (page 86) to protect the aquatic environment. However, the Draft Screening Report has not addressed the identified deficiencies in data necessary to assess aquatic effects. Statements in this section of the DSR such as *“These effects, however, might be further enhanced with the implementation of a fisheries compensation plan...”* and *“Such a plan could include...”* are not commitments. It appears that in this, as well as in other sections such as Section 12, page 134, mitigative measures are left to the discretion of Federal RAs at some undetermined future date. A firmer commitment is required to undertake baseline studies, monitoring and implementing appropriate mitigative measures, in a timely fashion.

At the initiation of the environmental assessment study a number of valued ecosystem components (“VECs”) were identified. The follow-up program should include a commitment to ensuring the realization of the long term beneficial effects to these VECs. Also required is an environmental construction management plan to ensure that short term, as well as long term, impacts are adequately monitored and appropriate mitigative and/or remediation measures are implemented as required. A commitment to the municipality on how this plan is to be designed and the role of the Municipality in monitoring progress of the cleanup activities should be provided.

The MPRT also notes that measures to enhance the terrestrial environment are not given a strong commitment in the DSR. They should be.

Development of mitigation measures with regard to the aquatic environment has suffered somewhat due to inadequate aquatic baseline data gathering. The MPRT has highlighted this as an outstanding concern during the EASR review and at other times. Many of our specific comments in Section 4 and 5 elaborate on this gap.

Recommendation 14: The MPRT recommends that adequate aquatic data be collected and should be used in finalizing mitigation measures and follow-up programs in aquatic effects area.

3.8 Cleanup Activities at Residential Properties

The MPRT notes that the clean-up of residential properties is addressed in the EASR. The Screening Report needs to specifically and completely address potential effects associated with the cleanup of residential properties and public safety issues associated with radon and particulate emissions at these sites during remediation activities. This would include remedial work that may have to be carried out in close proximity to foundations of privately owned homes and associated safety issues. Special attention is required to ensure that no undue harm, financial or biophysical, results from residential cleanup programs. An acknowledgement of the LLRWMO environmental monitoring program and other protocols during residential cleanup is required in the Screening Report.

4. Specific Comments

The MPRT has a number of specific comments on the DSR, which are intended to further strengthen the Screening Report and better represent the detail and analysis of the EASR.

These comments are provided in the table below.

Chapter/Page	Comment
Section 2.0	
Page 8, paragraph 2	The inventory of radioactive materials with a half-life greater than one year is stated to be 1000 TBq as a trigger level for a comprehensive study. In the EA Scope, this was stated to be 100 TBq. Please clarify why the earlier limit was changed.
Section 7.0	
Page 22, paragraph 4	The contaminant concentrations at Welcome reported here appear to be significantly at odds with those reported in LLRWMO Clean-up Criteria document (Report LLRWMO-01611-TE-11004, Final Draft, Table 1.2-1). Please clarify.
Page 23	Waste Characterization at Industrial Waste Sites. The volume and nature of wastes and impacted soil and ground water at the industrial sites has not been fully characterized as suggested in the report. There is on-going discussion regarding this matter between the Municipality and NRCAN. We note that the screening report deals with the issue of the possible increase of volume of waste materials satisfactorily.
Page 24, Section 7.3	Cleanup criteria discussion should include radon criterion which would be important for residential cleanup. It should also be mentioned that with respect to the harbour, complete dredging will be carried out and the criteria will be used to establish the cleanup boundary at the approach channel.
Page 24, paragraph 3, last sentence	It is stated that there are no changes in the waste volumes as a result of finalizing the criteria. This should be explained, or proper reference (Addendum Report) should be cited. As we understand, there may be changes to the waste volumes as a result of finalizing the criteria, but the total volume will be bounded by the assumptions made in the design.
Page 24, paragraph 5, first sentence	Please clarify why cleanup criteria values for inorganic COPCs are for surface soils only (MOE criteria are full-depth standards).
Page 24, paragraph 5, line 9	It is stated that action levels triggering investigations would be established. Please clarify what these levels signify (concentrations? radioactivity levels? ALARA?). These have not been discussed in the cleanup criteria development process with the Municipality.
Page 25, Section 7.5 Site Remediation Activities	The description focuses on large sites. How will these be adapted for small sites and the cleanup of residential properties?
Page 25, paragraph 5, last sentence	It is stated that tie-down tarps will be used to cover truck boxes to prevent release of material. It is our view that in most cases, contaminated material would not be sufficiently dry because of groundwater and/or water spraying that will be used for dust suppression during excavation. A tie-down tarping may not be an adequate procedure. It may be necessary to implement plastic sheets in-lining the truck boxes (particularly for radioactive soils) and a procedure for properly sealing the materials inside the truck boxes. Such care will reduce spills and ease truck decontamination requirements.
Page 25, last paragraph, second	At the end, add "pending municipal approval". Please add this to all references to the use of Municipal sanitary and/or storm sewers. The Municipality must provide

sentence	approval to ensure that the operations of the sewage treatment plan are not compromised in any way.
Page 26, paragraph 1	We did not discuss Sculthorpe Marsh remediation during our peer review process with the LLRWMO. If there is LLRW above criteria, the LLRW should be removed. What is the volume of sediments expected here and what are the waste characteristics? We would also like to be appraised of the site-specific ERA when it is completed and the conclusion that this may entail.
Page 27	Industrial Waste, Contaminated Sites. Similar to the comment for Page 24. The text suggests that the extent of contamination and the cleanup requirements for the industrial sites have been fully determined, and this is not the case. The depths of excavation for cleanup are noted and are incorrect. For example, the depth for cleanup at the coal gas plant may exceed 6 m. It is noted that ground water from the coal gas plant would be discharged to the sanitary sewer. This has not yet been determined. There is a potential that risk assessments may be conducted at some of the sites, rather than a complete cleanup. This should also be noted in this section of the report.
Page 29, paragraph 2	The suitability of the HDPE geomembrane for the structural and leachate chemical environments that the liner will face over the life of the facility needs to be assessed in detail during the detailed design. This consideration has already been raised with the proponent.
Page 29, paragraph 4	Why is the maximum hydraulic conductivity quoted as 1×10^{-7} cm/s given that the geomembrane has a hydraulic conductivity of 1×10^{-13} cm/s?
Pages 29 and 30	Under the heading "Liner System" on Page 29, it is noted that the liner will have a hydraulic conductivity of 1×10^{-7} cm/sec. Under the heading "Cover System" on Page 30, it is noted that the cover system will have a hydraulic conductivity of 1×10^{-8} cm/sec. It is our opinion that the hydraulic conductivity of the liner and the cover will be directly similar, since they are constructed of similar thickness and types of materials. This difference should be clearly explained for the reader.
Page 30, paragraph 1	The geomembrane for the cover system is stated as: e.g. thick HDPE. It appears from the wording that a decision has not been made on this. Are other choices being considered (e.g. LDPE)?
Page 30	Cover System. It should be noted that the design of the cover system may be "enhanced" to further reduce the infiltration of water. This should be examined in the context of overall improvements to the facility during the detailed design and licensing phase.
Page 30, paragraph 3, last sentence	The duration over which the pipe has to function may make periodic replacement necessary. The integrity of the existing pipe should be evaluated prior to licensing.
Page 32, paragraph 3	The leachate collection system and access areas are not mentioned.
Page 32, paragraph 3, first sentence	During the early life, based on field experience of cover systems, significant attention could be required against soil erosion by agencies of surface water, wind and ice and weathering processes (frost action, wet/dry cycling etc) particularly before the vegetation stabilizes the cover. Some repair work could be entailed.
Page 32	It is noted that performance of monitoring systems be put in place, and that they would "focus on ground water, surface water quality, air quality, terrestrial and aquatic biota, leachate and gas generated by the facility". In order for these monitoring systems to be effective, it will be necessary to gather baseline information regarding ground water levels and ground water quality, and conduct biophysical inventories to assess terrestrial and aquatic biota. These assessments must be conducted prior to construction of the facility to provide reasonable baseline data with which to compare the results of future monitoring programs.

Page 32, Section 7.9	Special attention would be required in our view with regard to monitoring for radon emissions through the MSW gas collection and venting system since this would form a perpetual unattenuated radon path for the MSW cell. Assessment may be needed for the radon emission through this pathway. Engineering measures may be possible to mitigate its effect on construction crews and end users by diverting the system piping to a suitable end-of-pipe destination away from the construction zone. This should be acknowledged in the report although details can be worked out during the licensing stage.
Page 33, Section 7.10	Besides workplace safety, safety of transportation should be included in various programs discussed here. A bullet to indicate compliance with applicable Municipal by-laws and regulations in case of work undertaken on Municipal lands (including permits) could be added.
Page 34, paragraph 2	Environmental Effects Management EPP protocols seem to have missed air quality control, which would be an important component of EPP (i.e. control of various types of emissions, not just dust control).
Page 34	Worker and Public Health and Safety: The section appears focused on Worker health with little reference to public health. Although this may be appropriate commensurate with the hazard, given the public concern, “human exposure monitoring” could include protocols for management of fugitive dust, neighbourhood monitoring for dust and monitoring truck traffic, etc.
Page 35, paragraph 1	Although the report acknowledges that an operating agency would be established, no details are provided. Such an agency would have to be appointed early in the program and should be involved in the development of follow-up, maintenance and monitoring programs. This agency would then be able to contribute to the program rather than take over a fait- accompli system. Also important would be the financing arrangements for the operating phase, which would have to be guaranteed by the Federal Government. These issues should be acknowledged and discussed in the report.
Page 35, paragraph 1	Last bullet: what about assuring long term operation of the facility, in addition to establishing an operating agency?
Page 35, paragraph 2	Last bullet: There is insufficient detail regarding institutional controls, and continued concern regarding institutional controls. We need to be thinking about possibilities for institutional control, and having mechanisms for ensuring continuity of these institutional controls and/or mechanisms to adapt/update such controls (see general comments above in Section 3.0).
Page 38, Figure 7-3	Scheduled activities appear to have been moved for the LTWMF activities from April 2007 (EASR 2005) to January 2008 thus compressing the time available for front-end activities for the LTWMF. The schedules for the remediation sites activities have not been changed. Is the time adequate for completing front-end LTWMF activities (site preparation, excavation, liner installation, initial cell construction etc) for receiving wastes from remedial sites? Provide details within the LTWMF schedule.
Page 38, Figure 7.3	Highland Drive Landfill is shown as being remediated over one full year with activity in the spring, summer and fall months as well as the winter. Yet the document states that the work would be done in the winter to help to mitigate the odour concern. It may be more appropriate to schedule other activities in the immediate area for the warmer months (e.g., PSNE) and undertake the landfill remediation in the colder months.
Section 8.0	
Page 43, paragraph 8	The statement is not clear with respect to the context of this timeframe (i.e. beyond the LTWMF design life >2500). Does this mean there exists a potential for operating the LTWMF beyond the design life, or for inadvertent loss of control? We do not find adequate analysis in the EASR for such an eventuality. It should be stated that the

	operational life will be monitored by the federal operating agency and the facility will be converted to a safe mode (by decommissioning or by other methods) such that unsafe situations do not develop over time.
Page 48, paragraphs 5 and 6	The report correctly reflects current standards for PM10 and PM2.5, but then indicates that there are further recommendations from a provincial-federal working group recommending lower “reference levels”. It is not clear what is meant by this comment. The report should clearly state that if lower reference levels are adopted by the governments, they will be used.
Section 9.0	
Page 49, paragraph 6	The subsection on radon should include some discussion on existing indoor radon levels in Port Hope with relation to the Health Canada’s new limit of 200 Bq/m3. This information will be important with respect to property cleanups.
Page 49, Noise and also pg 69 “Noise” and Ch 10, pg 77 “Noise” and pg 102 “Noise”	Noise and nuisance effects from traffic at and near to the Toronto Road and proposed access road intersection appear to be based on the original alignment of the proposed access road. We understand that the alignment may be moved to the north. If the access road is realigned to the north, the proponent must re-evaluate its receptor locations and confirm its effects assessment on nearby residents.
Page 50, Section 9.3	Existing Geology and Groundwater Environment section should include a brief description of the leachate collection system, volumes and water quality before and after treatment since this will be an important baseline for comparing project leachate quality.
Page 50	Soil Quality. The comparison of soil quality to MOE Table 3 Standards may not be appropriate in all cases. Table 2 Standards will apply where the ground water is used for potable supply purposes (water supply wells); and, Table 1 will apply in those areas which are close to sensitive features such as streams, wetlands, or other natural areas.
Page 51	Ground Water Quality. The ground water quality is compared to “MOE Criteria”. The MOE Criteria should be specifically mentioned (Table 2 or Table 3 Standards).
Page 52, Section 9.3 (b)	Wherever exceedances are mentioned, they should be numerically quantified and discussed in terms of effects. Benchmarks (such as PWQO) should be cited wherever they are available (the DSR text is not consistent in this regard). Without that, it is hard to judge the extent of contamination in the existing environment.
Page 58, Section 9.4 (b)	Some discussion is needed as to whether the noted level of contaminants in surface water and sediments are significant or otherwise.
Page 69	Noise: Was noise from deceleration of traffic (mostly trucks) included in the assessment; particularly at the proposed signalized intersection at Toronto Road and the proposed access road. Trucks are noisy when slowing down as well as when gearing up and should be included in a noise assessment.
Section 10.0	<p>Assessment and Mitigation of Environmental Effects. In our view, this Section requires additional technical editing. Particularly:</p> <p>The Section mentions effects management measures built into the design stating that a comprehensive plan is being developed. Without this plan, crediting effects management measures in the analysis becomes difficult. More attention is required in the discussion of these measures and their assumed contribution to effects mitigation.</p> <p>The effects management measures and mitigating measures should be tabulated to provide a consolidated list and mandatory measures required for each effect area should be stated. As is, these measures are discussed in a scattered manner and often repeated from subsection to subsection and clarity is lacking.</p> <p>The Section should include a discussion on the proposed plan for further development</p>

	of these measures and a plan for commitment/due diligence of these measures during construction.
Page 72	Birds associated with Port Hope harbour are not adequately discussed. The existing bird species list is preliminary, and does not provide sufficient data for us to determine if there could be adverse effects. Even if SARA species are not presently utilizing this area, it has some significance, if only at a local level. Mitigation of locally significant effects as well as Regional and National effects should be a consideration in the final mitigation plan.
Page 74, Section 10.2 (a) Non-radiological effects, Subsection on Air Quality	<p>Eliminating air quality exceedances during construction is a very important aspect of managing construction safety. Various mitigation measures and management features discussed in the report would be important in handling this issue. The EA Scope requires that measures that are technically and economically feasible to mitigate any significant adverse environmental effects are to be included. Our key concern is that despite high level of dust control measures and several mitigation measures, soil quality predictions show deposition of several key elements (e.g. arsenic, cobalt, thorium-230).</p> <p>While we agree with the effects management measures to control dust and the mitigation measure of restricting construction vehicle movement on contaminated material to eliminate exceedances with respect to AAQC and improve soil quality, we are of the opinion that an important dust source could be the activities directly related to excavation and dumping of waste materials at the site. A mitigation opportunity may exist in controlling dust during these activities by the use of plastic shrouds. Use of plastic shrouds could be useful in controlling dust without occupational dose impacts.</p> <p>Verification programs for monitoring air quality usually generate information after the exceedances have occurred, sometimes much later due to problems of real-time sampling, and may not be very useful in preventing dust episodes. More detailed protocols would be needed to make verification useful and timely.</p> <p>Although it may not be necessary to develop all the details with regard to air quality control at the EA stage, commitment to study and optimize mitigation measures in order to reduce emissions to ALARA would be most desirable. In particular, we would expect a focus on real-time monitoring of dust levels.</p>
Page 75, paragraph 2	Factoring of plume depletion should be considered as an inherent modeling assumption to reflect reality (not as an indirect mitigation step).
Page 75	See “proponent developed a mitigation scenario”. Also Page 76. “Mitigation Measures”. Page 81; “Mitigation Measures”; Table 10.4 page 113 and page 123/124. Table 12.1, page 134. The DSR only mentions those mitigation measures that were developed in the final assessment to further reduce a number of predicted exceedances. Very little mention is made of all the other mitigation measures incorporated into the air quality assessment to mitigate effects. A more complete discussion of all key mitigation would be appropriate. This is consistent with our request for a complete listing of mitigation measures and assignment of responsibility for undertaking each and for oversight to ensure they are done.
Page 76, paragraph 2, second last sentence	This report in places suggests that landfill remediation will occur throughout the year and not just in winter (also see the Schedule). Yet a mitigation measure for landfill odours cites winter excavation. Please explain.
Page 76/77	As with odours, VOCs were measured in peripheral wells at the site. The DSR does not mention that these too must be updated in the follow-up program.
Page 77	Second bullet. Page 113, Table 10.4. Page 137, Table 12.1. Why is the use of lower

	emission off-road equipment referred to as “when practicable”? There could be a stronger commitment.
Page 77	DSR correctly identifies the uncertainties in the odour assessment for the landfill and the harbour. No timing is given or recommended to complete these studies. It is assumed that these studies will be appropriately reviewed and any recommendations incorporated into final design and operations. On page 113, Table 10.4, there should be a statement that further assessment and mitigation might be required to ensure no residual adverse effects from the odours from the landfill or harbour.
Page 78, last paragraph, last sentence	What does it mean that activities at small scale sites would be limited to “daylight hours”. The second bullet under mitigation measures below defines daylight hours as to prohibit work between 11 PM to 7 AM. Elsewhere in the report it is stated that the work day would be 9 or 10 hours. Clarification is required as to what would be considered as working hours.
Page 79, paragraph 2,	With regards to Residual Environmental Effects, the last sentence is weak. It only mentions monitoring and does not prescribe actions to address noise. Also “would be warranted” should be changed to “will be undertaken”.
Page 79, paragraph 5	Please indicate how the radon emission through the landfill gas piping is managed, and discuss the extent of its impact on radiological effect. Does the residual environmental effect quoted on Page 80 bound radon escape through the landfill piping system? Does radon emission through this pathway compromise the need to have the surface area to be safely accessible for active and passive recreational purposes?
Page 80, paragraph 2	Cleanup of LLRW from residential properties would also be a source of radon. Do the residual effects quoted here bound residential cleanup situations?
Page 81, Section 10.3 (a)	Non-radiological effects, subsection Soil Quality. Although arsenic contamination of the soil from construction is well below the MOE soil quality standards, it is 65% over baseline concentration with the assumed travel distance control for vehicles traversing the waste area at the site. Similar excess is also reported for cobalt although to a lesser extent. The baseline characterization studies for Geology and Groundwater have identified COPC exceedances of the MOE Table 3 guidelines and ODWS. These highlight the importance of carefully considering all mitigation measures to keep such emissions as low as reasonably achievable. As mentioned earlier, an opportunity may exist in controlling fugitive dust at the waste loading and unloading points with the use of shrouds (See our comment on Page 74, Section 10.2 (a) above).
Page 82	Ground Water and Drainage Water Flow, Quantity and Quality. The report notes there will be a significant reduction in infiltration at the site as a result of placement of the low permeability cover. This will reduce ground water seepage to the surface by approximately 66%. The potential impact of this reduction on ground water base flow in the area needs to be assessed as noted previously in other comments.
Page 82, paragraph 6	It appears that the drainage and groundwater containing residual contamination during the construction phase will be treated with the existing treatment system. Given that the amount of contaminated water to be treated over this phase is still relatively large in quantity (116,280 m ³ /a), improvements to the leachate treatment efficiency should be sought rather than simply using the existing system. This will have a beneficial effect of reducing emissions to Lake Ontario over the construction period and of improving effluent water quality. Other sites such as the landfill and harbour sites where contaminated water may have to be treated could also benefit from this improvement.
Page 83	See our earlier comments on overall groundwater contamination. Better delineation of groundwater and management during construction is also recommended.
Page 83	Remediation site. The report notes that removal of contaminated soils will result in an improvement in ground water quality, and that “natural attenuation processes could

	result in a continued decline of contaminated concentrations in the ground water”. While we agree with this statement, it should be noted that this decline will be long-term in nature and may occur over a period of several decades or more.
Page 83, paragraph 6	Please explain the relevance of steady state mass loading rate assessments (10,000 years for arsenic and 5 million years for uranium) given that the LTWMF life is limited to several hundred years only and the facility would have to be refurbished or taken out of service.
Page 84, paragraph 1	It is reported that thorium-230 concentration in soil will increase by 63% over baseline value due to construction. Please put this in context in comparison to the background thorium-230 concentrations in the soil. How much reduction can be expected from the mitigation measures planned for dust control? Due to delays in sampling thorium-230, it may be difficult to implement prompt verification programs and any corrective steps that may be necessary to reduce thorium-230 in the soil. How would this issue be managed?
Page 86, paragraphs 5 and 6	The Mitigation Measures Statements “might be further enhanced...” and “Such a plan could include...” are not very definitive. We have not received the details of the Fisheries Compensation Plan, so we cannot comment at this stage.
Page 86, paragraph 3	Add a second sentence: “If it is determined that there is historic LLRW in Sculthorpe Marsh above cleanup criteria, it is Canada’s obligation to remove the material, unless the Municipality of Port Hope specifically agrees with another course of action.”
Page 86, paragraph 5, first sentence	Change the last word from “warranted” to “required”. If the testing shows the soils have LLRW above the cleanup criteria they must be removed.
Pages 88-89, Section 10.5	Vegetation communities: The RA’s outlined a number of mitigation measures for the project at specific sites. The measures proposed are reasonable to protect and preserve as much of the fen community as possible and transplant existing material to the rehabilitated area. The preparation of detailed plans to be submitted is necessary to ensure the work is completed as required.
Page 91 last paragraph, last sentence	Add a sentence to confirm that the proponent is not restricted from providing enhancements and additional mitigation measures. For example, “However, the proponent is not limited by the Act and can determine all effects of the project, their significance and develop and commit to appropriate mitigation or off-setting benefits.”
Pages 92, 93, 94, 95, 96, 97, 98	Does “Measures have been identified” mean that they will be implemented? If not, wording is required to ensure that the measures are required and will be implemented.
Page 92	There is an opportunity to talk about positive effects here.
Page 93	Section 10.6, “Noise Barriers along the access road from Toronto Road” – How would this be implemented? Would this be implemented on one side or both sides? When would this be implemented? It is not discussed as a mitigation measure in the Transportation section.
Page 94, paragraph 3	First bullet. The PVP may need to extend beyond two years into the Maintenance and Monitoring phase. There is evidence elsewhere of property value effects resulting from stigma continuing for up to 10 years after remediation. The draft EASR had incorporated monitoring of the program and extension if required. Such a statement should be placed in this report and in the final EASR.
Page 95, paragraph 4	Third bullet: enhanced liaison should also include yacht club members and boaters in the Harbour.
Page 95, paragraph 5	Last bullet. Add visitors fishing. Even with curtailing trucking during first 2 weeks of fishing season, there is likely to be disruption during subsequent weeks of fishing.
Page 96	Section 10.6 Do the projected truck volumes account for the 500,000 cu m of contingency? These

	<p>should be addressed in the project traffic projections.</p> <p>If the potential to stockpile material for the remediation sites at the long-term waste management facility becomes feasible, the associated traffic volumes should be incorporated into the project traffic projections.</p> <p>“Upgrading of Cavan Street from Highland Drive to Jocelyn Street:” – This road should be upgraded to current Municipal design standards and through consultation with the Municipality of Port Hope.</p> <p>“Undertaking of remedial pavement treatment on route segments where excessive road wear has been detected” – How will excessive road wear be detected? This should also apply to line painting/pavement markings and these should be upgraded where excessive wear has been detected. The Municipality should be involved in the determination of excessive wear. When will the remedial pavement treatments be provided? Consultation with the Municipality of Port Hope is necessary to ensure that the pavement treatments are undertaken to the satisfaction of the Municipality.</p> <p>“Installation of signalization at the intersection of Toronto Road and the LTWMF access road. The intersection would be designed with an exclusive northbound left turn lane, an exclusive southbound right turn lane and southbound and northbound acceleration lanes” – The design of the intersection upgrades will meet current Municipal design standards and the design should be coordinated with the Municipality of Port Hope. Signal timings should be investigated. The Municipality currently uses fixed signal timing plans. It may be necessary to upgrade to actuate signals. The existing Municipal signal timing plans should be catalogued by the end of 2006 and could be obtained for the investigation of this issue.</p> <p>“Ensuring access and proper construction signage for neighbourhoods affected by remediation activities and, through the project communication program, distribute notices to affected households advising on site remediation scheduling” – The access to individual households and businesses should also be maintained. Monitoring should be provided to ensure that traffic queues do not interfere with access points. The construction signage should be developed in consultation with the Municipality of Port Hope.</p> <p>“Improving pavement marking and signage along the transportation routes in accordance with the requirements of the Ontario Traffic Manual” – Changeable message signs should also be investigated. These improvements should be developed in consultation with the Municipality of Port Hope.</p> <p>We would also recommend the preparation of a traffic monitoring plan.</p> <p>The design of all mitigation measures are subject to the approval of the Municipality.</p> <p>A preconstruction survey should be completed along all of the hauling transportation routes. The pavement should be tested along all of the hauling transportation routes to ensure that the roads can support the traffic projections.</p> <p>Design upgrades should also be implemented at the intersection of Jocelyn Road and</p>
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	<p>Cavan Street. We have significant concerns regarding this intersection due to the vertical upgrades and the lower acceleration rate of truck traffic. The sidewalk along Jocelyn Road does not connect to Cavan Street.</p> <p>We also have concerns at the Queen/Robertson intersection. Design upgrades should be investigated. Traffic controls may be needed. Additional investigation is recommended.</p> <p>A Contingency Plan and Emergency Response Plan specific to transportation needs to be prepared to ensure that appropriate measures are in place if one of the transportation routes is closed, an accident occurs, etc.</p>
Page 97, paragraph 3	Under “mitigation measures” it is stated that the LLRWMO is “also considering” various mitigation measures. What does “also considering” mean? We expect that these too are enforceable mitigation measures. More specific information is required. Also, we are looking for more concrete descriptions of how implementing the measures, such as disclosing results of the noise levels, will address people’s loss and enjoyment of property.
Page 98, paragraph 3	Fifth bullet – Presence of a licensed archaeologist on site should be considered.
Page 100 and 101	Though noise protection is mentioned, there is no mention of the potential need for dust/airborne contaminant PPE. It is likely that this will be required during some operations.
Page 101, last paragraph	Third bullet: who determines what is “practicable”? For example, if lower emission diesel engines are available, and yet more expensive than existing diesel engines, would they be used?
Page 103, Section 10.8 (b)	Radiological Effects, Subsection Workers. The assessments of worker doses are very sensitive to certain assumptions in the analysis such as thickness of steel shielding on the vehicle bottom, other geometrical factors, etc. Current analysis is driven by a certain set of assumptions made in the Microshield program. We are of the view that these assessments should be tested based on actual data at the time of detailed design/construction. Although with the assumptions inherent in the analysis, assessment indicates doses to be acceptable, serious attention should be given to minimizing occupational doses. Shielded cabins for drivers and monitoring technicians, shielding between LLRW and the drivers, and careful planning of worker exposure situations (such as direct handling of the waste particularly with hot spots) to minimize times involved would all be important. Although rotating workers may be useful to reduce individual dose further, this should only be considered to minimize occupational radiation at the work environment after dose reduction has been implemented. Special attention should also be given to minimizing inhalation/ingestion pathways including radon exposure. The project should actively put in place a dose minimization program as part of its radiation protection program. Such procedures would require further analysis and need to be acknowledged as may be needed in the report.
Page 104, paragraph 3	Reasonably foreseeable projects include “Cameco plant physical modifications (Vision 2010)”. Vision 2010 also includes the remediation and transportation of 150,000 m3 of historic LLRW to the facility. Where is that addressed?
Page 105, paragraph 5	Radiological Effects. This does not address effects at the remediation sites, including small scale (back yards, etc.).
Page 105, paragraph 4	Is good communications alone sufficient to reduce adverse effects? Effective communications, combined with a good health and safety track record are generally among the factors that contribute to building trust and goodwill.

Page 108, Table 10.3	<p>Malfunctions and Accidents. Row 2. Failure of dewatering area. Rather than deal with this contingency, engineered measures should be considered to prevent such a failure. A possibility would be in sizing/dispositioning of the lagoon below grade level such that the lagoon will be able to catch the water and failure of the geotubes will not result in the rupture of the berm.</p> <p>Row 4. The Emergency Response Plan should consider not only a spill situation, but also a potential fire hazard and a fire management plan.</p> <p>Row 5. Will a failed and undetected geomembrane/GCL in the cover system compound the consequences of this failure?</p> <p>The last two malfunctions/accidents deal with the issue of loss of institutional control and are considered in the report to be not credible and indicate unacceptable situations if they do occur. The assessment does not provide confidence in the institutional controls discussed in the DSR. The event scenario description for loss of institutional control is open to misgivings since these stretch to large timeframes that may involve serious geomorphological changes, direct migration of waste materials from their intended site into the surrounding environment and intrusion scenarios that could involve direct movement of waste materials by humans to outside environment. Contingency plans need to be develop for these eventualities.</p>
Page 109	Encountering of Unidentified Landfill Hazards (Methane Gas and Other Gases). The results of this event scenario should be more clearly explained. We agree that the likelihood of a large-scale fire or explosion is unlikely. However, there is still a risk of personal injury to workers.
Page 109, Table 10.3	There appears to be a contingency plan for #4, but nothing for #3 related to effects on the aquatic environment. Other possible adverse effects could occur and therefore require a response.
Page 110	Failure of Primary and Secondary Liner Systems. The failure and malfunction of the cover system should also be discussed in this section of the report. The failure of the cover system will have a more profound effect on the volume of leachate which is generated and which may require treatment. It is recognized that the cover system can be repaired or replaced, whereas the liner system cannot. However, this should be addressed in this section of the report.
Page 111, Table 10.3	Last two rows: how do we assure institutional controls for 500 years? Also on page 112 – there is insufficient detail regarding institutional controls
Page 111, Table 10.3	Item 8. Strong winds. The description is correct, but the results do not reflect the issue of high winds and contamination. Contingencies will need to be developed as part of the operations plan.
Page 113, Table 10.4	Last paragraph regarding mitigation measures. Should be more specific as to what is required. The word “could” sounds ambiguous.
Page 113, Table 10.4	Add additional mitigation measure “For the Highland Drive Landfill, activities involving open excavation of the landfill will be restricted to the period November to mid-April”
Page 114 Table 10.4	All potential adverse aquatic effects are apparently attributed to a possible accidental oil spill or the potential remediation of Sculthorpe Marsh. Are there no other adverse effects that require mitigation?
Page 119: Table 10.4	<p>Property Values: Please add that the proponent will monitor the effects on property values during the maintenance and monitoring phase and extend the PVP if negative effects are identified.</p> <p>Revise PVP, if required, to include purchase of the property or guarantee of value prior to a sale (to encourage the sale of a house) if it has been on the market for an extended time.</p>

Page 120, Table 10.4	First row: develop and require the implementation of – add italics emphasis to truck drivers’ orientation
Page 120, Table 10.4	Second row, Fourth bullet: contract clauses is another place where institutional factors come into play
Page 123, Table 10.4	Human Health and Safety. Unusual to express effect in terms of LOAEL. This would be better if expressed in terms of the air quality standards. Standards have safety factors built in due to uncertainty. As such, standards and LOAEL, though linked, are not the same.
Page 123, Table 10.4	First row, 3 and 4th bullets – “should” should really be “would”.
Page 124:	Second row. Add a new mitigation measure: “At the intersection of Toronto Road and the proposed access road prepare a noise abatement/mitigation plan for resident consideration as soon as is practicable after acceptance of the Final Screening Report by the RAs.”
Page 126, Table 10.4	1st bullet – change “may” to “will” result in termination? 2nd bullet – these site inspections ought to include a community monitoring group
Page 131, Table 11.3;	Increased potential for out migration, reduced property values, increased difficulties in marketing properties all seem more “significant” than “not significant.” That is not to say that they are widespread and serious, but they will affect people. Consider change “extent” in “reduced property values” and “increased difficulties in marketing properties to “medium” from “low”
Page 133, Table 11.3	Adverse changes to community character is rated “not significant” yet 3 criteria are moderate and 1 is high (how does this rating fit within rating scale described on p. 128?)
Page 133, Table 11.3	Increased stress – Consider change “permanence” from “low” to “moderate”; same with “changes in people’s feelings of health, sense of well-being, satisfaction with living in the community...”
Section 12.0	
Page 134, paragraph 4	There is very little information provided on the operational and long-term environmental monitoring of the facility. A Table similar to 12.1 (or harmonized with Table 12.1) would help in putting this in perspective.
Page 134, paragraph 8	It is not clear what toxicity testing would be further investigated.
Page 134	Follow-up Program. It is noted that the purpose of the follow-up program is to “ensure that the operational requirements and objectives of the Port Hope project are met and maintained”. It is agreed that the follow-up program is an important part of the project and this is described in this section of the report. However, in order for the follow-up program to be effective, it will be necessary to collect additional baseline information regarding the existing conditions. This has been noted in our previous comments.
Page 134 and Table 12.1	DSR summarizes the need for the follow-up programs well. There are a number of areas that should require further comment: Table 12.1. first Row. “Verify implementation of mitigation measures”. This seems to refer only to a few final measures proposed in the air quality assessment report. It does not seem to include the more extensive measures and assumptions that went into the initial air quality assessment. There is further detail (but again not complete) on Page 138 for radiological effects, but there were similar mitigation measures for non-radiological effects. Page 147. Last row. Not clear why the Health and Safety (H&S) plan is only for demolition. There is no mention of a H&S plan for the site operations specific to contaminant exposure. As per previous comments, only noise PPE is listed, not

	contaminant exposure PPE. This seems to be a significant oversight – given the public interest and issue. Even if predictions indicated no need for a radiological H&S plan it should be there for contingencies.
Page 135, paragraph 1, first sentence	Table 12.1 is fine, but another table should be included with all other follow-up activities and mitigation / enhancement measures identified by the proponent.
Page 137, Table 12.1	Summarizes the follow-up program. All follow-up activities are related to sediment and water quality. Benthos is used as an indicator of water quality. What about the fish community? Are there no follow up programs to determine if the predictions of “benefits” due to improved quality, are realized?
Page 138, Table 12.1,	Second row. The radon pathway may persist due to the release of radon through the MSW gas collection piping.
Page 142, Table 12.1	Groundwater quality and radiological effects –Issue is that of lingering contaminated groundwater being dispersed over time. If this doesn’t happen is there follow up and monitoring?
Page 143	Ground Water Flow. The predicted effect is that “ground water discharge to Brand Creek is predicted to decrease by 2%”. The follow-up program is “monitor stream flow and perform a base flow separation to get ground water discharge, to confirm predicted 30% decrease”. The difference between these two numbers should be reconciled.
Page 145	First row. There is not enough detail on volumes. More information is required.
Page 149	Radiological effects. Should radiation doses be monitored to avoid over-exposures?
Page 151	Second row, last paragraph: “would” in “mitigation measures” column should be changed to “will”.
Page 151	Table 12.1 b) Community services How will the implementation of mitigation measures be verified? We would like to see a commitment to the design and delivery of a follow-up program and restoration plan for road segments where excessive road wear has been detected to ensure traffic safety and good riding quality. This shall ensure that road quality after the project has been restored.
Page 152	Second row. Monitor for what? Numbers, nature of the activities, severity, duration, breadth, etc. should be mentioned.
Section 13.0	
Page 154, paragraph 4, first bullet	The in-situ decommissioning option as discussed appears to be in fact a refurbishing of the facility and not decommissioning in the conventional sense of the term since the waste will remain in-situ in this option. Furthermore it does not fit with the Glossary definition of decommissioning. The term abandonment should apply to this situation only if the institutional control is intentionally or inadvertently removed. Second Bullet. If the wastes are removed, there will be nothing to abandon. This situation should be termed as decommissioning. This Section should also address the eventuality of a contingency (i.e. unforeseen event leading to failure of the facility) in which the waste may have to be relocated or treated elsewhere and the facility may have to be decommissioned.
Page 156, last paragraph	The assessment relies on historical data only with respect to birds, and it is difficult to say whether it’s important or not.
Glossary	
Page 162	“alternative means” and “alternatives to”. The terms “functionally similar” and “functionally different” are somewhat ambiguous. A statement as to what it could not

	include may help (i.e. sites outside the local area, interim storage technologies and deep geological options).
Page 163	With regards to “local study area”, it is not clear why the adjectives “obvious” and “easily understood” are used here. These are not used for regional and site study areas. With regards to “long-term”, we suggest changing “at least 500 years” to “several hundred years”. See our comment on Page 15.
APPENDIX 1 Page 166, Table A.1.1.	The note to this Table is not clear as to the assumptions made. It should either be clarified or proper references should be cited. Flouride. The Cleanup Criteria Document states that fluoride is present only at Port Granby in the Calcium fluoride waste. Please clarify if it is significant at Welcome.
APPENDIX 2 Page 169, Table A.2.1 Footnote 7	Is it relevant to Port Hope?
Page 171, Table A.2.3	Are these criteria suitable to discharge to potable water supplies? Define the boundaries where these criteria can be used or exceptions where these cannot be used.
Page 173, Table A.2.5	There should be a footnote that summation rule applies for radionuclides. Why does the recommended criterion for uranium (0.1) differ from that of the Cleanup Criteria Document where it is stated to be 0.02 (Table A.7-3)? Why are several other COPCs not included? Are these meant to be examples? If so, reference should be provided for a full list.

5. Additional comments on the Final EASR

The MPRT commented on the Draft EASR in March, 2005. Since that time, the EASR has undergone changes based on the federal government review. The MPRT provides the following comments on the Final EASR.

Section	Comment
<i>Atmospheric Environment</i>	
Page 3-63, Section 7.1 Appendix C4-33	The initial odour and VOC impact assessment from the MSW waste at Highland Drive was done using gas samples from the periphery of the landfill waste area. It was recognized that these will not contain the maximum potential odours and VOCs. Further odour studies are recommended to refine the predictions and improve mitigation if necessary. These studies are recommended in the report. No timing is given to complete these studies. It is assumed that these studies will be completed prior to licensing with appropriate review and any recommendations incorporated into final design and operations.
Page 3-67, Section 7.1	The initial impact assessment for odour impacts due to sediment removal in the basin was done as a theoretical assessment based on sulphur content. It was recognized that further assessment of odour from the sediment was required. Further odour studies are recommended to refine the predictions and improve mitigation if necessary. These studies are recommended in the report. No timing is given to complete these studies. It is assumed that these studies will be completed prior to licensing with appropriate review and any recommendations incorporated into final design and operations.
Section 7.1	Further monitoring prior to construction is recommended. Details are not provided. It is suggested that monitoring start 12 to 6 months prior to construction. We would suggest 12 months is more appropriate in order to capture a similar season during the monitoring. A more detailed plan needs to be developed and reviewed prior to initiating the pre-construction monitoring.
Section 7.1	The details of the monitoring and mitigation plans (especially the “adaptive management plan”) are key in ensuring predicted impacts are not exceeded. As noted and agreed to in many comments and issues, this will be developed during detailed design and licensing. This plan will require very detailed development of monitoring plans to confirm predictions and to provide real-time monitoring during operations. Confirming predictions will require longer-term monitoring in key locations. Operational monitoring will need to be real-time monitoring to ensure the operations can be modified if trigger levels are exceeded. As well, the operational plan will need to reflect all mitigation measures and specific details on their implementation. The plan will need to provide sufficient detail and clarity to ensure that there is no ambiguity during operations. For example, it is not sufficient to indicate that extra watering will be done on hot, dry days. This does not provide clear instructions as to when watering is required. No timing has been given to complete this plan. It is assumed that the plan will be appropriately reviewed.
Numerous locations	The mitigation of emissions takes many different forms. Some of these are obvious mitigation (e.g. watering, tarping of trucks), but others are inherent in the assessment. Examples of the latter type of “mitigation” include limiting exposed surface areas, truck weights, number of trucks and length of site roadways. Though these are not normally

	seen as “mitigation” they are part of the assumptions used in the assessment. It will be important in the development of the monitoring and mitigation plan that ALL of the key mitigation and operational aspects assumed in the air quality assessment are included. We would recommend that a detailed list of these be developed and reviewed prior to the development of the monitoring and mitigation plan.
<i>Transportation</i>	
Appendix F4 of the Final EASR	1.13 Encroachment of Trucks over the Centreline (also relates to Comment #6 of Federal Agencies comments) <i>“Given the likelihood of an accident and the extensive mitigation that has been proposed, further mitigation such as major intersection upgrades along the Recommended / Preferred Transportation Routes are not considered warranted nor cost-effective.”</i> – Mitigation measures to improve the operations of the truck turning movements should be reinvestigated during detailed design. It is possible that alternative mitigation measures could be implemented to improve the safety at these locations.

6. Key Conclusions of the Peer Review

The key conclusions of the MPRT's peer review of the DSR are the following:

1. The description of the project presented in the DSR and forming the basis of the assessment is essentially unchanged from the description of the project contained in the Draft EASR upon which Council provided consent for the Project Environmental Assessment to be submitted for Federal Government review. (Municipality of Port Hope, Council Resolution No. 91/2005). With this premise, we are of the view that the MPRT comments as provided to the Council and forwarded to the LLRWMO earlier still hold and that the proponent should take into consideration these comments at the time of detailed design and licensing.
2. The MPRT concludes that on the balance, the Draft Screening Report (DSR) provides a reasonable analysis and review of the Final EASR.
3. The MPRT is in agreement with its main conclusion that, with the implementation of identified mitigation measures and proper monitoring programs; the project is not likely to cause significant adverse environmental effects.
4. The MPRT supports the implementation of a follow-up program to confirm the accuracy of predictions of environmental effects and effectiveness of mitigation measures. The follow-up program is a key element to the successful implementation of the project. The MPRT has noted a number of recommendations with respect to mitigation measures and has discussed them at length in this report. Our key recommendations are:
 - All mitigation measures identified in the EASR need to be carried forward to the SR
 - Measures to improve the design on which the assessment of residual effects is based need to be listed
 - Enhancement measures proposed by the Proponent should be included

- There needs to be more detail on the mitigation measures as required by the 'Scope of the EA'.
 - There needs to be a commitment to enforce the implementation of mitigation and enhancement measures and identify who will provide the oversight.
 - In most cases where mitigation measures are discussed the wording can be strengthened and clarified. Currently, we are not sure if the DSR intends that all of the mitigation measures will be undertaken (e.g., statements such as the 'LLRWMO recommends'; 'these could' apply etc.)
5. The Screening Report should strengthen provisions that minimize impacts on the community and residents to the extent possible, especially those in the vicinity of the proposed facility and the remediation sites and along the transportation routes.
 6. The MPRT believes there are additional opportunities in the current clean up program design to further minimize some effects beyond ALARA to levels approaching what could be considered barely measurable. The MPRT recommends that it is necessary for the Screening Report to identify and acknowledge/commit to such opportunities.
 7. The MPRT is of the view that the institutional control and long-term stewardship of the project need to be further defined in the Screening Report and recommends that the federal operating agency (FOA) that will carry out these activities should be confirmed as early as possible. The FOA should also execute the necessary follow-up programs in the short and long term to ensure that the mitigation is achieved during and after construction of the LTWMF and assure the transition of the facility to a long-term monitoring and surveillance mode. Furthermore, the necessary resources for such programs and the overall functioning of the FOA in the long term should be assured as early as possible in the program given the staff training required to achieve this objective.

8. The MPRT has some concerns regarding outstanding comments that were not addressed in the DSR. These comments are related to potential groundwater and aquatic environment impacts and odour effects during excavation of the Highland Drive landfill and the harbour. The MPRT is of the opinion that these issues do not need to hold up the submission of the Screening Report. They can be resolved through additional studies carried out as part of final design, and through development of a detailed monitoring program. The monitoring program to be required by the Screening Report should include additional baseline studies prior to facility construction.
9. The MPRT is seeking greater confidence that the necessary commitments (mitigation actions and Follow-up Program elements) will be implemented and enforced. Necessary commitments need also be made with respect to socio-economic mitigation and enhancement measures by the RAs in consultation with the Municipality and its residents. In interpreting the DSR, the MPRT is of the view that the document limits itself to identifying mitigation measures, and should be strengthened with a more complete description of each mitigation and include the responsibilities for implementation and oversight.
10. The Property Value Protection Program (PVP Program) is an important element of the Project. The Legal Agreement requires that the Program extend through the construction phase and two years into the maintenance and monitoring phase. The DSR proposes to place this time limit on the PVP Program. The MPRT is of the opinion that the intent of recommendation from the Draft EASR should be included in the Screening Report.
11. In concluding, the MPRT recommends that the Port Hope Council forward the Municipality of Port Hope Peer Review Team (MPRT) report to NRCAN to represent the comments of the Municipality on the Draft Screening Report for the Port Hope Long-Term Low-level Radioactive Waste Management Project (August 2006) prepared by the Government of Canada.

APPENDICES

APPENDIX A – Editorial Comments

From an editorial perspective, we are of the view that the DSR should be a self-standing report citing references where details of the assessment in the EASR are used in the DSR. Towards this objective the DSR should not only provide a summary of results but also key justification and related key information in support of the results. Although the DSR has admirably dealt with this in most respects, we have identified several areas where additional information would be of added interest.

We noted some inconsistencies in narrative for effects (e.g., pp. 91-98) and tables summarizing effects (p. 117-123, 149-152). These tables should be checked for consistency. Some specifics were provided in Table 2 that compared residual effects reported in the EASR with those in the DSR.

Chapter/Page	Comment
<i>Section 1.0</i>	
Page 7, paragraph 1	A direct statement that Canada has accepted responsibility for this waste and historical facts that shifted this responsibility from the original producers to the Federal Government could be mentioned at the outset for clarity on the ownership of the waste.
Page 8, paragraph 4	It should be confirmed in the DSR that the CNSC responsibilities include enforcement of Packaging and Transportation of Nuclear Substances Regulation (2004) as indicated in the EASR Addendum Report (Page 36) under the NSCA.
<i>Section 5.0</i>	
Page 12, paragraph 4, first sentence	The characterization of Welcome waste as containing trace amounts of uranium, radium, arsenic etc seems inappropriate. The LLRW and contaminated soils contain uranium, its radioactive decay products and other metals in concentrations elevated beyond being characterized as just trace amounts.
Page 13, paragraph 4	It is important to distinguish between the terms. A disposal facility (term used with respect to earlier studies) and long-term management facility in the Port Hope Project Proposal subsection. Also suggest including these terms in the Glossary.
Page 14, paragraph 1, 2 nd sentence	Minimizing exposure and health risks are important and are an outcome of the Construction Monitoring Program. However, the purpose of the CMP is “to minimize the possible spread, during construction activities within the Town of Port Hope, of soil which is contaminated with historic low-level radioactive wastes, and to minimize the permeation of radon and radon daughter products from such soil into newly constructed structures within the Town of Port Hope”. Legal Agreement, January 11, 1989, Schedule A, Section 1.
Page 15, footnote	Long-term should be considered as “several hundred years”, the term used everywhere else in the text, rather than a more specific, “at least 500 years” as stated

	here and in the Glossary.
Page 17, paragraph 2	The paragraph should include a statement from earlier documents as to why a single facility for all of PHAI (Port Hope and Clarington) was screened out in spite of this being a local solution by definition (i.e. EA Scope states that “local” means the geographic area encompassing Clarington and the Municipality of Port Hope). The reason that the Municipality of Clarington did not agree to the waste crossing the municipal boundaries could be cited.
Page 18, paragraph	With respect to results of the evaluation of feasible concepts, the key reasons why changes have been made should be stated. Reference to the supporting documents should be made. It is not seemingly obvious to the reader why, for example, dredging is better than dewater/excavate for the Port Hope Harbour.
<i>Section 7.0</i>	
Page 21, last bullet	This should read “150,000 m3 of Cameco historic decommissioning and stored historic LLRW waste materials.” Note that the Legal Agreement addresses only historic LLRW for Cameco’s allocation as well.
Page 24	Waste Characterization of Cameco Wastes: This should read “150,000 m3 of Cameco historic decommissioning and stored historic LLRW wastes. . . ., including drummed historic wastes, and historic LLRW ...”
Page 24, First paragraph, last line	Please use the terminology from the Legal Agreement to be consistent with it and the EASR. It should read “...for all current and foreseeable unrestricted uses.”
Page 24, paragraph 3	Second sentence: remove “land” from before “uses” to be consistent with the Legal Agreement. And insert “all” before “current”.
Page 24	Cleanup Criteria. This section of the report should clearly note the following: <ul style="list-style-type: none"> • The cleanup criteria were developed based on detailed studies to assess potential risks to human health and the natural environment. • The cleanup criteria were generally developed to allow foreseeable unrestricted use of the lands. • The cleanup criteria generally meet or exceed similar values developed by federal (CCME) and provincial (MOE) agencies. The current discussion on cleanup criteria does not clearly convey these points. The cleanup criteria will incorporate any changes to federal or provincial values where those volumes are more stringent.
Page 26, 5 th paragraph, 1 st sentence	Add “pending municipal approval” to the end of the sentence. Also add to page 27 paragraphs 4 and 6. See comment above on Ch 7, S. 7.5, pg 25, last paragraph, second sentence.
Page 27, paragraph 5, 1 st sentence	Add “approximately” before 51,250m3 to be consistent with the NRCan proposal to the Municipality of Port Hope
Page 32, Section 7.9	Suggest replacing “CNSC” with “CNSC or its successor organization” in this Section.
Page 36, Figure 7.1	The “Location Plan” does not show small-scale sites and does not footnote unknown sites. Therefore the red dot should be “known major LLRW remediation site”. It should also note the transportation route and the preferred “primary” route as other routes will be used from small scale sites and major sites to the centroid.
<i>Section 8.0</i>	
Page 43, paragraph 3	Construction Phase was earlier mentioned to start in 2008, not 2009
<i>Section 10.0 Assessment and Mitigation of Environmental Effects</i>	The trail of assessment results from likely effects to predicted effects, then to proposed mitigation measures, residual effects and follow-up programs needs to be harmonized into a single consolidated table such that unnecessary duplication of

	information in various tables can be eliminated and presentation improved.
Page 102, paragraph 1	Air Quality, Residual Effects, First sentence. State where the exceedances are.
Page 102, paragraph 4	Under Noise mitigation measures: this paragraph indicates measures would “include...” Are there are measures beyond what is in the paragraph? If so, state them; if not, “consist of” would be a better word.
Page 110, Table 10.3, 5.	Explain what is meant by “mounding on the liner”.
<i>Section 12.0</i>	
Page 134, 3 rd paragraph	Change “consider” to “determined”.
Page 137, Table 12.1	Last row Follow-up Program add “and the intersection of Toronto Road and the proposed access road” after LTWMF.
Page 139, first row	Health Canada reference value for uranium is missing.
<i>APPENDIX 2</i>	
Page 170, Table A.2.2	The primary COPCs are not shown in bold as noted in the footnote.

APPENDIX B – Summary of Additional Work requested of the LLRWMO during the review of the EASR

The following Table summarizes additional work the LLRWMO agreed to be addressed in subsequent phases of the Project.

Summary of Additional Work Requested of the LLRWMO

Discipline	Work to be completed	Timeframe
General	Continually monitor waste volumes during excavation to determine whether design volumes are being exceeded. Prepare a contingency plan for greater volumes of waste	Detailed Design / Construction
Atmospheric	Optimize and further reduce effects from dust and other particulate matter, including preparing mitigation measures for dust control	Detailed Design
	Conduct sampling from the Highland Drive landfill and the Port Hope Harbour to reassess the potential for odour, and develop appropriate mitigation measures, as required	Pre-construction follow-up
	Measure levels of nitrous oxides (NO _x) and carbon monoxide (CO) within the LSA and SSA	Pre-construction follow-up
	Further examine exceedances for receptors at the fence line of the facility and for end-users	Detailed Design
Geology / Groundwater	Determine the extent of groundwater contamination at the existing Welcome WMF and the remediation sites	Detailed Design
	Develop mitigation measures to minimize effects from the Project on groundwater base flow	Detailed Design
	Provide analysis to show that discharging storm water to Brand Creek will not result in a net increase of loading of contaminants to Brand Creek	Detailed Design
	Conduct an inventory of the number of drums and their contents associated with Cell 3 of the LTWMF and assess other options for handling and placement of drums	Detailed Design
	Confirm that the existing pipe carrying treated water from the site to Lake Ontario does not need replacement	Detailed Design
	Conduct baseline monitoring of groundwater base flows	Detailed Design
	Provide detailed groundwater monitoring program for all sites.	Detailed Design
Aquatic	Conduct additional sampling on watercourses within the LSA to complete the baseline data and determine effects on habitat, changes to the channel morphology, water temperature, etc.	Pre-construction follow-up

Discipline	Work to be completed	Timeframe
	Conduct spawning surveys in the near shore in the vicinity of treated leachate plumes to predict the effects on fish communities	Pre-construction follow-up
	Conduct a site-by-site assessment to determine the potential for harmful alteration, disruption, and destruction of fish habitat (HADD) as a result of the project	Pre-construction follow-up
	Take geomorphology measurements to help understand how the streams may change as a result of the project	Detailed Design
	Provide a detailed explanation of how the fish will be removed from the Port Hope Harbour prior to dredging	Detailed Design
Terrestrial	Collect data to identify migratory birds and raptors for the Port Hope Harbour as consistent with the Migratory Birds Convention Act	Pre-construction follow-up
	Assess the impact on migratory birds and over wintering waterfowl from closing and dredging the harbour and changing the bottom structure	Detailed Design
	Conduct site-specific assessments regarding effects on the woodlots at Alexander Creek, Pine Street North, Waterworks, and Lions Park Ravine	Detailed Design
Socio-economic	Prepare a plan for the short term and long term institutional controls of the Project	Detailed Design
	Prepare more explicit descriptions of the mitigation measures for addressing adverse effects	Detailed Design
	Conduct a detailed visual sensitivity analysis, that includes an expanded viewshed	Detailed Design
	Complete the inventory of existing traffic conditions, especially regarding information related to the transportation routes	Pre-construction follow-up
	Conduct a detailed safety review of the recommended haul routes to identify safety/operational deficiencies and the methods/measures to remediate these deficiencies.	Pre-construction follow-up
Human Health and Safety	Prepare mitigation measures to address the effects of stress	Detailed Design
	Assess the effects of air quality emissions on the future users of facility, including people using the mound (e.g., pregnant women)	Detailed Design
	Optimize and demonstrably reduce effects from radiation doses to the public and the workers to as low as reasonably achievable (ALARA) levels	Detailed Design

APPENDIX C - Comparison of Mitigation Measures

Environmental Assessment Study Report (PH EASR), Rev 0d3 and Draft Screening Report (DSR)

PH EASR Rev 0d3 February 2005	PH EASR 1d1 January 2006	DSR (August 2006)	Comparison
Identified for "Population and economic base"			

PH EASR Rev 0d3 February 2005	PH EASR 1d1 January 2006	DSR (August 2006)	Comparison
<ol style="list-style-type: none"> 1. Implement a communications plan for businesses potentially affected by the project works and activities 2. Address business losses related to verified acute or chronic nuisances, prolonged road closures, direct property damage and property value losses attributable to the project 3. Address farm business losses related to verified acute or chronic nuisances, prolonged road closures, direct property damage and property value losses attributable to the project 4. Provide a mitigation package, including relocation assistance for displaced business (e.g., Bailey's Auto Wreckers) 5. Implement a business oriented communications/ advertising plan regarding the completion of the Port Hope project 6. Conduct enhanced liaison with economic development and tourism officials aimed at identifying and resolving scheduling conflicts between project works and major tourism events 7. Implement a farmer assistance program aimed at keeping farmers in agricultural production 	<ol style="list-style-type: none"> 1. Implement a business-oriented communications program regarding completion of PH activities 2. Enhance liaison with economic development and tourism officials regarding conflicts with project activities and tourism events 3. Enhance liaison with farmers aimed at keeping farm operators aware of Project works and activities, environmental monitoring results, peak traffic periods, potential road closures and access restrictions through regularly using newsletters and mailings, special event notices, direct communications and a toll-free telephone service 	<ol style="list-style-type: none"> 1. Implement a communications program that is business-oriented; enhance liaison with economic development and tourism officials regarding conflicts with project activities and tourism events; enhance liaison with farmers 	<p>More detail provided in EASR regarding communications program, and efforts aimed at minimizing loss; less in DSR regarding minimizing loss Several specific strategies deleted from DSR</p>

PH EASR Rev 0d3 February 2005	PH EASR 1d1 January 2006	DSR (August 2006)	Comparison
		2. Implement a two-tiered complaints resolution process	Not mentioned in EASR
		3. Arrange alternative accommodation in cases where short term relocation of residents is necessary	Not in EASR
8. (Recommended) Implement a business activity enhancement program aimed at maximizing local business opportunities and benefits of the project	4. (Recommended) Implement a business activity enhancement program aimed at maximizing local business opportunities and benefits of the project	4. LLO has suggested plans to implement a policy to maximize local business opportunities and benefits	Earlier version of EASR refers to a program while revised EASR and DSR refers to a policy; not sure of the difference
Identified for “Visual setting”			
9. Provide visual berms along the access road	5. Place visual berms, noise barriers and landscaping along the access road aimed at minimizing the visibility and disruption associated with Project-related traffic	5. Place visual berms, noise barriers and landscaping along the access road	Noise barriers added in revised EASR and DSR
10. Implement an on-site landscaping and lighting program to minimize the visibility of the Facility 11. Implement an off-site tree planning program to minimize the visibility of the Facility	6. Implement a lighting and landscaping plan to minimize the visibility of the LTWMF	6. Implement a lighting and landscaping plan to minimize the visibility of the LTWMF	Earlier version of EASR offers a tree planting program specifically as one element of landscaping
Identified for “Community infrastructure”			

PH EASR Rev 0d3 February 2005	PH EASR 1d1 January 2006	DSR (August 2006)	Comparison
12. Continue to implement the property value protection program during construction, with on-going review to determine its duration and future needs	7. Continue to implement the property value protection program during construction and for 2 years into the Maintenance and Monitoring phase.	7. Continue to implement the property value protection program during construction and for 2 years into the Maintenance and Monitoring phase.	Earlier version of EASR is open-ended about when the PVP would end; revised EASR and DSR specifies an end date
Identified for "Community services"			
13. Implement a nuisance effects management program for each remediation site and the LTWMF	8. Implement a nuisance effects management program for each remediation site and the LTWMF	8. Implement nuisance effects management measures	Similar strategy; both documents lack sufficient details
14. Enhance facilities to make areas more attractive to both resident and non-resident fishers (e.g., improve general aesthetics; improve the amenities (e.g., benches, play facilities, shelters) provided to anglers	9. Minimize remediation activities during the first 2 weeks of fishing season on the Ganaraska River	9. Minimize remediation activities during the first 2 weeks of fishing season on the Ganaraska River	Early EASR focuses on making fishing areas more attractive, while revised EASR and DSR focuses on when remediation activities would be curtailed

PH EASR Rev 0d3 February 2005	PH EASR 1d1 January 2006	DSR (August 2006)	Comparison
<p>15. Enhance liaison with anglers and fishing clubs aimed at keeping them aware of project activities, environmental monitoring results, peak traffic periods and potential road closings and restrictions</p> <p>16. Enhance liaison with educational facility operators and parents aimed at keeping them informed about air quality, noise levels, project schedules and where to call for more information</p>	<p>10. Enhance liaison with anglers and fishing clubs aimed at keeping them informed of air quality, noise levels, project works and where to get more information</p> <p>11. Enhance liaison with educational facility operators and parents aimed at keeping them informed about air quality, noise levels, project schedules and where to call for more information</p>	<p>10. Communicate with anglers and fishing clubs to keep them aware of project activities; as needed, conduct enhanced liaison with parents, and educational facility operators to keep them informed about air quality, noise levels, project works and where to get more information</p>	<p>Liaison with parents and educators, offered “as needed” in DSR versus without this condition in the EASR</p>
<p>17. Implement a mitigation package for the Port Hope Yacht Club, yacht club members and Canadian Fire Fighters Museum for direct effects and financial losses incurred as a result of the project</p>			<p>DSR does not offer mitigation regarding yacht club users, and museum goers/museum operators</p>
<p>18. Develop a contingency plan to address disruption of outdoor activities at Port Hope High School</p>			<p>Nothing in DSR regarding mitigation at Port Hope High School</p>
<p>19. Avoid trucking during school bus pick-up and drop off times along recommended transportation routes</p>	<p>12. Avoid trucking during school bus pick-up and drop off times along recommended transportation routes</p>	<p>11. Avoid trucking during school bus pick-up and drop off times</p>	<p>Same in both documents</p>

PH EASR Rev 0d3 February 2005	PH EASR 1d1 January 2006	DSR (August 2006)	Comparison
20. Work with relevant stakeholders (e.g., School Boards, parent organizations) to optimize school bus routes, drop-off and pick-up points along recommended transportation routes	13. An orientation program for all truck drivers, focused on school and children safety issues along transportation route. Drivers should pay special attention to the presence of schools, children and guardians crossing Toronto Road during peak times of the school. The school cross guard program should be reinforced, whereby crossing guards are notified of the presence of PH project truck traffic.	12. Conduct an orientation program for all truck drivers focused on school and child safety	Shift in focus from working with those affected to working with those who can control who is impacted
21. Implement a management plan to improve the access of recreational trails for the Ganaraska Trail, Waterfront Trail and Highland Drive area trails (e.g., provide temporary alternative routes and signs) 22. Implement a restoration and enhancement plan for trails in the vicinity of Highland Drive		13. Undertake measures to maintain access to the recreational trails during project activities where possible and to restore trails following remediation	EASR specifies where mitigation related to improving access and restoring trails would occur. DSR is does not indicate locations, and includes the condition of “where possible.” Removed the “enhancement” plan
23. Design and deliver a follow up program and contingency plan to address disruption of operations at Jack Burger Sports Complex due to noise and dust			Nothing mentioned regarding Jack Burger Sports Complex in DSR

PH EASR Rev 0d3 February 2005	PH EASR 1d1 January 2006	DSR (August 2006)	Comparison
		14. Modify the complaint resolution process to handle complaints on a case-by-case basis through a 2-tiered system.	Complaint process not mentioned in EASR.
Identified for "Traffic and transportation"			
24. Upgrade Cavan Street from Highland Drive to Jocelyn Street by applying localized hot mix patches to hold the pavement structure pre-project and rehabilitate the pavement post-project by mill and pave and install improved sub-drain system	14. Upgrade Cavan Street from Highland Drive to Jocelyn Street by applying localized hot mix patches to hold the pavement structure pre-project and rehabilitate the pavement	15. Upgrade Cavan Street from Highland Drive to Jocelyn Street	EASR more specific about types of upgrades to occur
25. Patch or plan route segments which show excessive road wear	15. Patch or plan route segments which show excessive road wear	16. Repair pavement on route segments where excessive road wear has been detected	Same for both documents

PH EASR Rev 0d3 February 2005	PH EASR 1d1 January 2006	DSR (August 2006)	Comparison
<p>26. Install signals at the Toronto Road/new Access Road intersection designed with an exclusive northbound left turn lane, an exclusive southbound right turn lane and southbound and northbound acceleration lanes.</p> <p>27. Install signals at the Toronto Road/Jocelyn Street intersection designed to accommodate project related traffic. Design an left turn lane and a shared through right turn lane in all approaches</p>	<p>16. Install signals at the Toronto Road/new Access Road intersection designed with an exclusive northbound left turn lane, an exclusive southbound right turn lane and southbound and northbound acceleration lanes.</p> <p>Assumed already to be in place: Install signals at the Toronto Road/Jocelyn Street intersection designed to accommodate project related traffic. Design an left turn lane and a shared through right turn lane in all approaches</p>	<p>17. Install signals at the intersection of Toronto Road and the LTWMF access road; Designate an exclusive northbound left turn lane, an exclusive southbound right turn lane and southbound and northbound acceleration lanes</p>	<p>Essentially equivalent in both documents for Toronto Road and the Access road. Nothing in DSR regarding signals at Toronto Road and Jocelyn Street intersection</p>
<p>28. Construct a sidewalk on the south side of the road fro Ontario Street to Cavan Street to connect to the sidewalk at the intersection of Ontario Street and Rose Glen Road</p>			<p>Nothing in revised EASR or DSR regarding a sidewalk</p>
<p>29. Facilitate an extension east to Fox Road when designing the dedicated access road</p>			<p>Nothing regarding Fox Road in the revised EASR or the DSR</p>

PH EASR Rev 0d3 February 2005	PH EASR 1d1 January 2006	DSR (August 2006)	Comparison
30. Provide safety training for all project-related drivers	17. Conduct an orientation program for all truck drivers focused on safety issues along transportation routes		Safety training for drivers combined in contract clause – see next row.
	18. Ensure, through contract clauses, that trucks adhere to designated routes. Impose financial penalties for non-compliance	18. Ensure, through contract clauses, that trucks adhere to designated routes and drivers pass an orientation program about safety	Designated routing not listed in EASR (maybe came from PG ideas for mitigation)?
	19. Optimize off-site truck activities through delivery timing windows, using convoys, and stockpiling materials to minimize disruption to local residents	19. Optimize off-site truck activities through delivery timing windows, using convoys, and stockpiling materials to minimize disruption to local residents	Optimizing off-site truck activities not listed in EASR (maybe came from PG ideas for mitigation)?
	20. Design and deliver a contingency plan in case of a temporary closure of a transportation route (e.g., Highway 401) or an accident involving LLRW to ensure appropriate emergency response	20. Establish a contingency plan in case of a temporary closure of a transportation route or an accident	Contingency planning not listed in early draft of EASR (maybe came from PG ideas for mitigation)?

PH EASR Rev 0d3 February 2005	PH EASR 1d1 January 2006	DSR (August 2006)	Comparison
31. Implement proper construction traffic management in areas where a remediation site is close to neighbourhoods. Proper signs such as “Road Closure – Detour” and “Local traffic only” should be in place. Employ flagmen as needed. (Recommended) Distribute notices to affected households.	21. Ensure access and proper construction signage for neighbourhoods affected by remediation; Distribute notices to households about when remediation will be taking place	21. Ensure access and proper construction signage for neighbourhoods affected by remediation; Distribute notices to households about when remediation will be taking place	The presence of “flagmen” is offered in the early EASR, but not revised EASR or the DSR.
32. Review the pavement marks and signs on Strachan Street. A centre yellow line on the road, for example, will guide drivers through the curve and minimize the potential for collisions. Driver training should address this location specifically.	22. Improve pavement marks and signs along the transportation routes	22. Improve pavement marks and signs along the transportation routes	Early EASR gives a specific location to improve pavement marks and signs as well as notes driver safety training for a particular location. The revised EASR and DSR are more general.
Identified for “Municipal finance and administration”			
33. None are given.	23. None given	23. None are given.	Same
Identified for “Residents and communities”			

PH EASR Rev 0d3 February 2005	PH EASR 1d1 January 2006	DSR (August 2006)	Comparison
<p>34. Conduct enhanced communications with local residents, included targeted communications with newcomers, aimed at keeping them informed of the air quality and noise levels, environmental monitoring results, schedule of project works and activities and where to call for answers to questions and site inspection privileges</p> <p>35. Implement an information program for affected neighbourhoods, including requirements for disclosure of monitoring information to designated neighbourhood representatives, real-time monitoring of noise and dust, and site inspection privileges</p>	<p>24. Enhance communications with local residents, included targeted communications with property owners who properties are subject to clean up activities and newcomers to PH, aimed at keeping them informed of the air quality and noise levels, environmental monitoring results, schedule of project works and activities and where to call for answers to questions and site inspection privileges</p> <p>25. Implement an information program for affected neighbourhoods, including requirements for disclosure of monitoring information to designated neighbourhood representatives, real-time monitoring of noise and dust, and site inspection privileges</p>	<p>24. Implement a project communications program to keep residents informed about project activities</p>	<p>Similar strategy, but EASR provides somewhat more detail</p>

PH EASR Rev 0d3 February 2005	PH EASR 1d1 January 2006	DSR (August 2006)	Comparison
<p>36. Coordinate the existing LLO complaints reporting and resolution procedure with those of the Municipality.</p> <p>37. Provided a comprehensive basis for resolving concerns of affected stakeholders</p>	<p>26. Modify the LLO complaint resolution process to address complaints in a two-tiered fashion, whereby the LLO records, investigates and tracks all complaints received.</p>	<p>25. Modify the LLO complaint resolution process to address complaints on a case-by-case basis, using a 2 tiered system</p>	<p>Not sure what the intent is of the recommendation from the EASR for strategy #42.</p>
<p>38. Implement a mitigation package and procedure to address loss of use and enjoyment of property within neighbourhoods nearest to the Facility, major remediation sites and along Strachan Street.</p>	<p>27. Implement mitigation measures to address loss of use and enjoyment of properties within neighbourhoods nearest to the LTWME, major remediation sites, all small-scale sites on private properties and residences along Strachan Street.</p>	<p>26. The LLO office is also considering: Implement mitigation measures and an information program for affected neighbourhoods to address loss of use and enjoyment of properties, including disclosure of mentoring results, real-time monitoring of noise and dust and allowing the site to be inspected</p>	<p>Essentially equivalent. Offered as a consideration in DSR; identified in the EASR</p>
<p>39. Provide an end-use that maximizes the potential for passive and active recreation</p>	<p>28. Incorporate an end-use that maximizes the potential for passive and active recreation to address effects on community character</p>	<p>27. The LLO office is also considering: Create an end use that would maximize the potential to address effects on community character</p>	<p>Essentially equivalent, with EASRs focusing more on recreation and DSR focusing on community character. Offered as a consideration in DSR; identified in the EASR</p>
<p>40. Develop a “name” for the Facility that does not associate it with the Municipality of Port Hope or any community</p>	<p>29. Adopt a “name” that is not associated with any particular community to address effects on community character</p>	<p>28. The LLO office is also considering: Adopt a “name” that is not associated with any particular community</p>	<p>Essentially equivalent, although the DSR suggests this strategy even more tentatively than in the EASR</p>

PH EASR Rev 0d3 February 2005	PH EASR 1d1 January 2006	DSR (August 2006)	Comparison
41. Implement a plan to remove the International Joint Commission's designation of an "area of concern" for the Harbour and remove requirements for such measures as radiological status letters.	30. Assist relevant stakeholders in removing the International Joint Commission designation of an "area of concern" for the Harbour and the removal of requirements for existing contaminated property management measures (e.g., Radiological Status Letters) to address effects on community character	29. The LLO office is also considering: Provide assistance in removing the International Joint Commission designation of an "area of concern" for the Harbour	Essentially equivalent, although the DSR suggests this strategy even more tentatively than in the EASR, and does not list removal of requirements for existing contaminated property management measures (e.g., Radiological Status Letters)
	31. Request a CNSC license condition that explicitly assures that the LTWMF cannot be used for any other purpose than for long-term management of a specified volume of historic LLRW from the Municipality of Port Hope		Listed only in the revised EASR.
42. Implement a nuisance effects contingency plan related to verifying acute or chronic nuisances, prolonged road closures, direct property damage attributable to the project		See follow-up program for similar entry.	Not mentioned in DSR.

PH EASR Rev 0d3 February 2005	PH EASR 1d1 January 2006	DSR (August 2006)	Comparison
<p>43. Implement a socio-economics effects follow-up and monitoring program aimed at verifying predicted effects, demonstrating positive effects</p>		<p>30. Confirm % of out migration of residents near remediation sites, transportation routes and LTWMF</p> <p>31. Monitor new and resale housing to verify impact on property values</p> <p>32. Monitor complaint resolution process and PVP program</p> <p>33. Verify implementation of business oriented communications plan</p> <p>34. identify enhancements to liaison with economic development and tourism officials, and with farmers</p> <p>35. Conduct a business survey to evaluate impact on business/farmers</p> <p>36. Monitor traffic levels and any project related accidents along the transportation routes</p> <p>37. Verify tourism rates with Port Hope Tourist Board</p> <p>38. Verify implementation of mitigation measures</p> <p>39. Monitor complaints and communications program</p> <p>40. Monitor public attitudes through surveys</p>	<p>More specific types of follow up are described in the DSR, although neither document describes any activities to evaluate the effectiveness of the mitigation so that mitigation can be adjusted, if needed.</p>

APPENDIX D – Commitments and Assurances

The following is sample table of commitments and assurances. The text following the table provides a preliminary listing of the commitments that the PRT believes are required. The listing could serve as a guide for the preparation of a complete listing of all commitments for the project.

Ref	Objective Commitments and Assurances	Timing	Delivered By	Approving/ Lead Agencies	Advisory Agencies
	Worker Safety				
1.	<p>The owner will develop a worker safety program. The program must meet safety considerations required for workers for radiological safety and include:</p> <ul style="list-style-type: none"> Workers exposed to radiation fields will be designated as Nuclear Energy Workers (NEWs) The owner will develop a plan with an ALARA component to ensure that radiation doses are minimized and meet Canadian Radiation Protection Regulations The owner shall actively monitor radiation doses and if necessary rotate workers in and out of positions where there is a risk of receiving a higher dose. 	Pre-construction Construction Maintenance & monitoring	FOA	CNSC	Health Canada

List of Commitments and Assurances

Worker Safety

1. The proponent will develop a worker safety program. The program must meet safety considerations required for workers for radiological safety and include:
 - Workers exposed to radiation fields will be designated as Nuclear Energy Workers (NEWs).
 - The proponent will develop a plan with an ALARA component to ensure that radiation doses are minimized and meet Canadian Radiation Protection Regulations.
 - The proponent shall actively monitor radiation doses and if necessary rotate workers in and out of positions where there is a risk of receiving a higher dose.
2. The proponent shall put in place health and safety plan procedures and environmental protection plan protocols to ensure:
 - Proper work practices to protect workers and reduce dust.
 - Address demolition activities and appropriate management of debris materials.
 - Debris materials are managed or disposed of in accordance with appropriate provincial regulations and municipal by-laws
 - Provide/require workers to use personal noise protection equipment in the construction zone.
 - Toxic materials are identified and removed prior to demolition.

Public Radiological Safety

3. The proponent shall put in place necessary plans to monitor and protect the public from radiological effects. The plan shall include:
 - Put in place measures to minimize, control and monitor radiological constituents in air/dust and to assess their effect on the public.
 - Put in place measures to minimize, control and monitor radon concentrations in air and to assess their effects on the public.
 - Put in place necessary procedures and emergency response plans to protect the public in the event of unacceptable emissions and exposures.
 - All public radiation exposures will be in compliance with applicable regulations.

Public Conventional Safety

4. The proponent shall put in place measures to ensure air quality in terms concentrations of contaminants (including NO₂) complying with all applicable regulations including:
 - Develop and implement plans to reduce dust emissions at the construction/remediation sites to as low as reasonably achievable.
 - Develop and implement plans to provide barriers at specific targeted locations to control dust emissions.

- Develop plans to minimize exhaust emissions from construction equipment and trucks complying with applicable emission regulations.
5. The project has the potential of unacceptable risk to bounding case workers as a result of exposure to conventional contaminants and potential for construction accidents involving injury and serious health consequences. The proponent shall implement a policy that all occupational illnesses and injuries are preventable and adopt an objective of zero illnesses and injuries.

Public Health

6. The project has the potential to affect feelings of health, sense of well-being, levels of satisfaction with living in the community and feelings of personal security, all of which could result in increased stress on the affected individual's health. The proponent shall implement a communication program with protocols for delivering information, and addressing the concerns.

Noise

7. The project has the potential to result in incremental noise levels at a number of locations associated with construction and remediation. The proponent shall develop protocols to minimize and maintain noise levels below acceptable levels and take steps to notify residents when an acceptable noise threshold is expected to be exceeded.
8. Monitor noise levels and prevent public access to areas where noise level might exceed acceptable levels.

Transportation

9. The proponent will develop a *Traffic Management Plan*. The Plan must reflect other conditions discussed in the final EASR and include points 10 to 16 below.
10. The proponent will develop a Plan to reduce the potential for traffic incidents in the local community resulting from construction activities related to the Project. All construction truck traffic, with the exception of materials sourced locally, shall access the site solely via provincial highways rather than roadways within the Municipality of Port Hope's jurisdiction.
11. The specific traffic commitments to be undertaken in consultation with the Municipality of Port Hope include:
 - Install signals at Toronto Road and access road, as approved by the Municipality of Port Hope;
 - Monitor pre- and post-construction noise adjacent to the LLRWF and if necessary implement appropriate sound attenuation measures, subject to results of monitoring.
12. The proponent will participate with the Municipality of Port Hope and other stakeholders in the preparation of an incident management plan regarding traffic management and assist with the geometric and structural improvements to accommodate incident management traffic and response measures along with safety improvement measures associated with truck incidents on the corridor.
13. The proponent will work with Municipality of Port Hope to conduct a preliminary design of improvements to Cavan Street from Highland Drive to Jocelyn Street.

14. The proponent will continue to work with the Municipality of Port Hope to reduce traffic impacts and improve traffic safety.
15. The proponent commits to working with relevant authorities and parties to optimize the performance, efficiency and reliability of container truck movements to relieve traffic congestion on local roads.
16. The proponent will ensure that the Project implementation team designs, constructs and operates the Project with care and attention provided to transportation and traffic considerations, so as to minimize and mitigate negative impact and effects. The proponent will resolve Project related transportation and traffic issues in consultation with the Municipality of Port Hope.

Environmental Management Plan

17. The LLRWMO will develop and implement an Environmental Construction Management Plan (ECMP). This plan shall include, but not be limited to:
 - Sediment and Erosion Control Plan
 - Surface Water Quality/Quantity Management Plan
 - Spill Control Plan
 - Vegetation Impact Mitigation and Enhancement Plan
 - Fish and Wildlife Management Plan

The ECMP is to be designed to meet the highest level of protection of the natural and human environment that is practically feasible. Only meeting quality guidelines is not acceptable.

Environmental Monitoring

18. Using site specific data from the site of each remediation site and the final waste disposal site, monitoring plans will be developed to verify that the impacts predicted, including no impacts, are not exceeded for each discipline.
19. The proponent will ensure that each of the environmental monitoring plans will outline the rationale for the monitoring, the parameters to be monitored, monitoring program details, and follow-up actions to be taken.
20. The proponent will engage an independent Environmental Monitor for the construction phase of the project. The person or firm with this responsibility will review, evaluate and report to the proponent, the Municipality of Port Hope and the appropriate Regulatory Agencies the construction activities completed and the effectiveness of the environmental control strategies and mitigation measures employed.
21. In addition to the construction management plan, a long term monitoring program will be developed based upon the results of the ECMP monitoring.

Groundwater

22. Efforts should be made to enhance the cover design to minimize infiltration.
23. The cover design must include a comprehensive monitoring program to assess leakage through the cover through the use of lysimeters or other equipment.

24. Ground water base flow conditions in the Brand Creek and Highland Creek must be assessed during the design phase and prior to construction. This assessment will require the installation of monitoring wells and monitoring of stream flows.
25. A ground water monitoring program must be developed to assess potential impacts on stream flows during facility construction and following construction. A mitigation program must be developed to allow restoration or mitigation of loss of base flow if this is measured.

Contingency Plans

26. For both the ECMP and the longer term plan developed later, a contingency plan for dealing with unanticipated monitoring results will be prepared. Clearly identified targets will be set for each monitoring program that will trigger remedial action once exceeded. This plan will clearly identify additional measures to be employed to ensure all emissions to the natural or human environment are minimized to the lowest practical level. This plan will be adaptive in nature to ensure that, should higher than anticipated emissions occur, more environmentally appropriate means of excavation, transportation and construction are identified and implemented. This adaptive strategy may require modification to the timing and methods of all dredging, excavation, construction and monitoring components of the rehabilitation program.

Population and economic activity

27. Implement a communications program that is business-oriented; enhance liaison with economic development and tourism officials regarding conflicts with project activities and tourism events; and addressing potential business losses; enhance liaison with farmers.
28. Implement a two-tiered complaints resolution process.
29. Arrange alternative accommodation in cases where short term relocation of residents is necessary.
30. Assist businesses which will be dislocated with finding a new location to operate and any appropriate job training (e.g., Bailey's Auto Wreckers).

Visual setting

31. Place visual berms, noise barriers and landscaping along the access road.
32. Implement a lighting and landscaping plan to minimize the visibility of the LTWMP.

Community infrastructure

33. Continue to implement the property value protection program during construction and into maintenance and monitoring, with on-going review to determine its duration and future needs.

Community services

34. Define and implement nuisance effects management measures.
35. Minimize (stop??) remediation activities during the first 2 weeks of fishing season on the Ganaraska River.
36. Communicate with anglers and fishing clubs to keep them aware of project activities.

37. As needed, conduct enhanced liaison with parents, and educational facility operators to keep them informed about air quality, noise levels, project works and where to get more information.
38. Avoid trucking during school bus pick-up and drop off times.
39. Conduct an orientation program for all truck drivers focused on school and child safety.
40. Undertake measures to maintain access to the recreational trails during project activities (delete: where possible) and to restore trails following remediation.
41. Modify the complaint resolution process to handle complaints on a case-by-case basis through a 2-tiered system.
42. Implement a mitigation package for the Port Hope Yacht Club, yacht club members and Canadian Fire Fighters Museum for direct effects and financial losses incurred as a result of the project.
43. Reimburse the Municipality for revenue lost from any of its facilities such as Centre Pier and the Yacht Club during cleanup.
44. Design and deliver a follow up program and contingency plan to address disruption of operations and outdoor activities at Jack Burger Sports Complex, Lions Recreation Centre Park, Ruth Clark Activity Centre, and Port Hope High School due to noise and dust.
45. List mitigation measures and the responsibility to carry them out in contracts for construction workers.

Traffic and transportation

46. Upgrade Cavan Street from Highland Drive to Jocelyn Street.
47. Repair pavement on route segments where excessive road wear has been detected.
48. Install signals at the intersection of Toronto Road and the LTWMF access road, and designate an exclusive northbound left turn lane, an exclusive southbound right turn lane and southbound and northbound acceleration lanes.
49. Ensure, through contract clauses, that trucks adhere to designated routes and drivers pass an orientation program about safety.
50. Optimize off-site truck activities through delivery timing windows, using convoys, and stockpiling materials to minimize disruption to local residents.
51. Establish a contingency plan in case of a temporary closure of a transportation route or an accident.
52. Ensure access and proper construction signage for neighbourhoods affected by remediation; distribute notices to households about when remediation will be taking place.
53. Improve pavement marks and signs along the transportation routes.
54. Limit truck traffic on transportation to weekdays and “normal” business hours (Noise by-law may not provide sufficient limitations to when trucks can be moving through the community).
55. Construct a sidewalk on the south side of the road from Ontario Street to Cavan Street to connect to the sidewalk at the intersection of Ontario Street and Rose Glen Road.
56. Facilitate an extension east to Fox Road when designing the dedicated access road.

Residents and communities

57. Implement a project communications program to keep residents informed about project activities.
58. Modify the LLO complaint resolution process to address complaints on a case-by-case basis, using a 2 tiered system.
59. Delete: The LLO office is also considering: Implement mitigation measures and an information program for affected neighbourhoods and newcomers to address loss of use and enjoyment of properties, including disclosure of mentoring results, schedule of project works, real-time monitoring of noise and dust, privileges for the site to be inspected, and where to get more information.
60. Delete: The LLO office is also considering: Create an end use that would maximize the potential to address effects on community character.
61. Delete: The LLO office is also considering: Adopt a “name” that is not associated with any particular community.
62. Delete: The LLO office is also considering: Provide assistance in removing the International Joint Commission designation of an “area of concern” for the Harbour.
63. Request a CNSC license condition that explicitly assures that the LTWMF cannot be used for any other purpose than for long-term management of a specified volume of historic LLRW from the Municipality of Port Hope.

Follow up program (socio-economic)

64. Confirm % of out migration of residents near remediation sites, transportation routes and LTWMF.
65. Monitor new and resale housing to verify impact on property values.
66. Monitor complaint resolution process and PVP program; adapt complaint resolution process as needed based on its effectiveness.
67. Verify implementation and evaluate the effectiveness of business oriented communications plan.
68. Identify enhancements to liaison with economic development and tourism officials, and with farmers; and evaluate the effectiveness of the enhancements.
69. Conduct a business survey to evaluate impact on business/farmers.
70. Monitor traffic levels and any project related accidents along the transportation routes.
71. Verify tourism rates with Port Hope Tourist Board.
72. Verify implementation and evaluate the effectiveness of mitigation measures.
73. Monitor complaints and communications program and evaluate their effectiveness.
74. Monitor public attitudes through surveys.
75. As needed, adjust mitigation strategies based on results of evaluations.