DILLON CONSULTING

Ridge Landfill Expansion Environmental Assessment

SUPPORTING DOCUMENT 2:

Consideration of Alternatives to the Undertaking

Progressive Waste Solutions

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1.0 Introduction and Background

Progressive Waste Solutions Canada Inc. (PWS) is undertaking an Environmental Assessment (EA) pursuant to the *Environmental Assessment Act* for the proposed expansion of the Ridge Landfill. This supporting document to the EA Terms of Reference (ToR) presents the rationale for the alternatives proposed for consideration in the EA.

This supporting document includes an evaluation of "Alternatives to" the Undertaking and recommends a preferred "Alternative to". Southern Ontario (identified as central Ontario, southwestern Ontario and the Greater Toronto Area) is the study area for this evaluation. Considering the preferred "Alternative to", the document also identifies the types of alternative methods to be considered in the EA.

1.1 Previous Ridge Landfill Environmental Approval Processes

An EA for the expansion of the Ridge Landfill was completed in January, 1997. This EA identified need, considered "Alternatives to" the Undertaking, considered "alternative methods" of carrying out the undertaking and documented potential effects and mitigation associated with the preferred alternative.

The 1997 EA considered the following "Alternatives to": do nothing, landfill, incineration, and increased waste diversion. It was determined that the preferred "Alternative to" was to pursue additional landfill capacity and investigate additional diversion activities.

Within the "alternative methods" step of the EA, consideration was given to the expansion of the Ridge Landfill as well as a new landfill site in another location. The study area for this work was southern Ontario. The evaluation was carried out in two steps:

- a primary analysis considered whether an expansion of the Ridge Landfill would meet provincial guidelines and to see how it compared to other approved landfill sites within the study area; and
- a confirmatory siting analysis to determine whether there are any sites significantly better than the Ridge Landfill in the study area.

The primary analysis concluded that the Ridge Landfill Site met all regulatory requirements, Provincial policies and guidelines and that the site was similar to or better than other sites approved under the *Environmental Assessment Act.* As part of this analysis, the Ridge Landfill was compared to eight other landfills within the 1997 study area that had been recently approved by the Ministry of Environment and Climate Change (MOECC). Based on the analysis, the conclusion was that the Ridge site should be considered an excellent site for a landfill in southern Ontario.

The confirmatory siting analysis considered whether another site in southern Ontario would be more suitable for a landfill than the Ridge site.

To further confirm the results of this evaluation, the 1997 EA also completed a screening analysis of lands that were considered "comparable or potentially better than the Ridge" based on the following criteria:

- Avoids specialty crop areas;
- Avoids disruption of environmentally significant areas;
- Avoids significant aquatic habitat (including fisheries) along with a 500 m buffer;
- Avoids significant woodlands;
- For naturally attenuating landfills, identify areas containing thick geologic sequences capable of naturally attenuating landfill leachate;
- Avoids lands not in proximity to a 400 series highway;
- Avoids removal and/or disruption of existing residential areas, community and recreation features, institutions or businesses;
- Avoids removal/disruption of other sensitive land uses;
- Avoids areas with important unextracted aggregate resources;
- Avoids First Nation reserve lands;
- Site boundaries shall be defined by provincial highways, county roads, local roads, active railway line right-of-way, oil and gas pipeline right-of-way, or high voltage hydro line right-of-way; and
- Minimum site size of 162 ha for a rectangular shape and 182 ha for a square shape.

The review of lands in the Counties of Elgin, Essex, Kent, Lambton and Middlesex based on these criteria identified only one potential site located in Lambton County that was considered comparable to Ridge Landfill. This site was compared with the Ridge and it was concluded that the site located in Lambton County had several of the advantages of the Ridge in terms of site location; however it was not considered to be significantly better than the Ridge location.

The EA was submitted in January 1997 seeking EA approval for a Ridge Landfill Expansion to accommodate a total of 13.6 million tonnes of residual waste and 4.38 million tonnes of bio-remediated soil to be disposed over the 20-year site life. The EA was approved June 24, 1998.

In 2010, the Ridge Landfill underwent an environmental screening process to modify the daily/annual rate of fill. The former annual rate of fill was 899,000 tonnes and the former daily rate of fill was 4,391 tonnes. As a result of the screening level evaluation the Environmental Compliance Approval (ECA) (Number A021601) was amended on July 25, 2011which increased the maximum quantity of waste that can be received daily to 6,661 tonnes and the maximum annual quantity to 1,300,000 tonnes.

2.0 Consideration of "Alternatives To"

Waste management EA processes typically consider "Alternatives to" the Undertaking or functionally different ways of managing waste. The MOECC *Code of Practice for Preparing and Reviewing Environmental Assessment Terms of Reference* (2014), recognizes that private companies may not be able to implement some alternative ways of managing waste and provides guidance on focusing a Terms of Reference. Two steps were undertaken to determine the range of disposal related alternatives to be considered.

Step 1: Defining Reasonable "Alternatives to"

To define reasonable alternatives one key question was asked: Is the alternative consistent with PWS' core businesses so that the Company can continue to provide cost effective services to its customers once the current capacity of the site has been reached?

Only those alternatives that achieved a positive response to this question were considered reasonable and practicable for PWS to pursue. Since PWS' core waste management services are collection, waste diversion/processing, transfer stations and landfill disposal, the "Alternatives to" assessment included waste processing and landfill related alternatives. It is noted that the Do-Nothing Alternative, while not reasonable or practical for PWS to pursue, was considered to provide a benchmark against which potential impact can be measured. Each of the alternatives is describe in Section 3.0 of this document.

Step 2: Evaluating "Alternatives to"

Using the full definition of the environment as described in the *Environmental Assessment Act* (e.g. natural, socio-economic, cultural, and built environments), as well as technical considerations and impacts to Indigenous and Treaty rights, the reasonable "Alternatives To" were qualitatively evaluated to determine the preferred alternative. For each of the criteria, the advantages and disadvantages of the alternatives were identified.

Stakeholders had the opportunity to review and provide input on the identification and evaluation of Alternatives through two Open Houses held on May 3, 2016 and June 28, 2016 and the review of the draft Terms of Reference. Display material at both Open Houses included a panel on alternatives to expansion. No comments on the alternatives were received.

3.0 Defining the "Alternatives To"

For the purposes of this evaluation, the following "Alternatives to" were considered to be reasonable and practical for PWS to pursue:

1. Do-Nothing;
2. Close the Ridge Landfill and construct a new landfill at a different site;
3. Expand the existing Ridge Landfill; and
4. Expand the existing Ridge Landfill with enhanced diversion.

Increasing diversion is often considered as an alternative to disposal. While the recent *Waste-Free Ontario Act, 2016* identifies a provincial desire for increased diversion it still recognizes that landfill disposal will be required for the foreseeable future. PWS does not have any regulatory authority over diversion; however, they actively participate in diversion programs with their customers as follows:

- at-source segregation programs (e.g. cardboard, metal, shingles, concrete, drywall etc.);
- regular customer audits to identify diversion opportunities;
- recovery of recyclables through material recovery facilities within the PWS waste management network;
- segregation of waste at PWS transfer stations to remove recyclable materials from disposal (e.g. cardboard, metal, concrete, etc.); and
- audits of small loads at the Ridge Landfill to identify opportunities for diversion from disposal.

The ongoing diversion efforts of PWS are included in each of the "Alternatives to" described below.

As noted, the core waste management services of PWS are collection, waste diversion/processing, transfer stations and landfill disposal, thus incineration/thermal treatment processes were not considered to be a reasonable alternative for PWS.

3.1 Alternative 1 - Do Nothing

This alternative involves continuing landfill operations until the existing approved capacity is reached without any changes to modify the existing footprint or to increase the quantity of waste disposed. The "Do-Nothing" alternative would mean that the Ridge Landfill will reach capacity by approximately 2022 and will no longer be able to provide waste disposal capacity in southern Ontario including for the current customers of PWS. PWS would continue to provide the collection, materials recovery and transfer services they currently offer customers in southern Ontario including diverting materials from disposal in response to customer need. PWS could also provide some level of response to programs arising from the *Waste-Free Ontario Act, 2016* (e.g. source-segregation by customers of designated or

otherwise mandated materials where feasible); where third-party processors or markets are reasonably available. However, residual waste would need to be taken to an alternate disposal facility once the Ridge reaches capacity.

Waste disposal is a key service element of an integrated waste management services business for PWS. To exit the waste disposal business at the Ridge Landfill would place PWS at a significant competitive disadvantage in the southern Ontario marketplace and would lead to an erosion of the value and quality of the company's services in Ontario.

The PWS customer base includes the Municipality of Chatham-Kent (the Municipality) and contingency capacity for surrounding counties of Essex, Lambton, Middlesex and Elgin. Closure of the Ridge Landfill would lead to local job losses and a significant loss of both revenues for the Municipality of Chatham-Kent and the loss of economic benefits for local surrounding communities. The Municipality would need to seek an alternative disposal location for their residual waste. That disposal location, likely in southwestern Ontario would need to be determined by the Municipality through a formal procurement process. The Municipality would also require permitting and construction of a new centralized waste transfer station and haulage and disposal contract resulting in significant costs.

3.2 Alternative 2 - Close Ridge Landfill and Construct a New Landfill

This alternative involves closing the Ridge Landfill when it reaches capacity and opening a new landfill at a different location. PWS would continue to provide the collection, materials recovery and transfer services they currently offer customers in southern Ontario including diverting materials from disposal in response to customer need. PWS could also provide some level of response to programs arising from the *Waste-Free Ontario Act, 2016* (e.g. source-segregation by customers of designated or otherwise mandated materials where feasible); where third-party processors or markets are reasonably available.

To meet the need for southern Ontario landfill capacity and the needs of the same or a similar customer base as PWS has now, a new site would need to be located in southern Ontario. Depending on the location of a new landfill this alternative could lead to local job losses and loss of revenues for the Municipality of Chatham-Kent and economic benefits for the local surrounding communities. With the assumption of a southern Ontario location, residual waste from the Municipality could still be disposed of at the new landfill however this may have to be determined through a formal municipal procurement process. It must be noted that, unlike municipal operators, PWS does not have the benefit of the powers of expropriation with regard to siting; therefore its ability to develop a new site is inherently constrained.

The new site would be an engineered landfill that includes a liner, leachate management system and a landfill gas management system. It would need to be a size that could accommodate 1.3 million tonnes annually for 20 years (the current approved fill rate for Ridge Landfill). PWS searched for other landfill siting opportunities in southern Ontario in a previous 1997 EA for the Ridge Landfill. The previous siting process involved two steps (see Section 1.1):

- An assessment of whether an expansion of Ridge would meet provincial guidelines including comparison of the Ridge Landfill to eight other landfills in the 1997 study area. Based on this analysis it was concluded that the Ridge Landfill should be considered an excellent site for a landfill in southern Ontario.
- A confirmatory siting analysis was completed to identify if there were potential sites in southern Ontario that were "comparable or potentially better" than the Ridge Landfill. This siting analysis was based on the characteristics of the Ridge Landfill. A review of lands in the Counties of Elgin, Essex, Kent, Lambton and Middlesex identified only one potential site considered comparable to Ridge and this site was not considered to be significantly better than the Ridge location.

Since landfill siting is mainly based on environmental conditions that would not have changed since the 1990s, the conclusions of this past EA are still valid - that no new site to serve PWS' customers was significantly more advantageous than the Ridge Landfill.

3.3 Alternative 3 - Expand the Existing Landfill

The current Ridge Landfill has been in operation since 1966. Approximately 35 years of ground and surface water monitoring at the site has shown the landfill design and operation to be extremely effective in protecting ground and surface water. Over its 50 year operating life, PWS has established a positive relationship with the neighbours of the Ridge Landfill and the landfill provides significant economic benefits to the community. Nuisance complaints such as odour and litter have been minimal and when they arise are responded to quickly. This alternative involves maintaining the Ridge Landfill and adding capacity through expansion within the Ridge site. Expanding the landfill could include a lateral expansion, increasing the height of the Old Landfill and/or mining the Old Landfill or any combination of these alternative site development methods. Depending on the configuration of the expansion, the expanded fill area could range from approximately 40 to 90 ha.

The expansion would be contained on property owned by PWS and the required infrastructure for the expanded landfill is already in place or can be put in place cost effectively. To provide further comfort, there is a highly capable management and operations team already in place at the Ridge Landfill.

PWS believes it can continue to mitigate any reasonable concerns of its neighbours as they relate to future operations at the Ridge Landfill within the successful expansion of its disposal capacity. PWS has consistently demonstrated over the past 50 years its ability to manage and mitigate any environmental issues at the site and be a good neighbour. Monitoring of site performance after 50 years of operations has demonstrated its ability to meet stringent environmental regulations at the landfill.

It is noted that with this alternative PWS would continue to provide the collection, materials recovery and transfer services they currently offer customers in southern Ontario including diverting materials from disposal in response to customer need. PWS could also provide some level of response to programs arising from the *Waste-Free Ontario Act, 2016* (e.g. source-segregation by customers of

designated or otherwise mandated materials where feasible); where third-party processors or markets are reasonably available.

3.4 Alternative 4 - Expand the Existing Landfill with Enhanced Diversion

This alternative involves laterally expanding the current landfill and/or increasing the height of the Old Landfill and/or mining the Old Landfill as described in Alternative 3 and thus would have similar benefits and potential for effects on neighbours of the Ridge Landfill and the environment. Similar to Alternatives 1-3, with this alternative PWS would continue to provide the collection, materials recovery and transfer services they currently offer customers in southern Ontario including diverting materials from disposal in response to customer need. PWS could also provide some level of response to programs arising from the *Waste-Free Ontario Act, 2016* (e.g. source-segregation by customers of designated or otherwise mandated materials where feasible); where third-party processors or markets are reasonably available.

The key difference with this alternative is PWS' proactive efforts to enhance diversion including:

- An expanded public drop-off area at the Ridge Landfill to divert additional recyclable materials (e.g. household hazardous, electronic wastes, etc.) and other recyclable materials that may be designated by the Province.
- Commitment to working with Chatham-Kent, the province and others to proactively evaluate how PWS can participate in additional future diversion opportunities resulting from the *Waste-Free Ontario Act, 2016* that are technically feasible and economically viable for PWS. This commitment would involve the evaluation of various system approaches to additional waste diversion. Diversion infrastructure could be provided at the Ridge or at other PWS facilities.

It is noted that should additional diversion occur at the Ridge Landfill there is the potential for more traffic to the site and associated nuisance effects as well as potential nuisance effects from on-site processing activities (e.g., noise, dust, odour).

4.0 Evaluation of "Alternatives To"

4.1 Evaluation Criteria

To determine the preferred "Alternative to" to be included in the EA, the following criteria were applied. These incorporated the questions included in the MOECC *Code of Practice* as appropriate as well as considering the potential for impact on all aspects of the environment.

Table 1: "ALTERNATIVES TO" EVALUATION CRITERIA"

Criteria	Indicators
Potential for Impact to the Natural Environment	• Potential for impact on natural features. • Potential for impact on groundwater, surface water and air quality.
Potential for Impact to the Socio-Economic, Cultural, Built Environments	• Potential for impact on communities.
Potential to Address Need/Opportunity and Provincial Planning Objectives	• Potential to address the need/opportunity for waste management capacity. • Potential to be consistent with planning objectives and provincial government priority initiatives. • Ability for PWS to implement the alternative in a manner that is practical and financially realistic.
Consideration of Indigenous and Treaty Rights	• Potential to impact indigenous treaty rights.

4.2 Evaluation of "Alternatives To"

Table 2 evaluates the four (4) alternatives based on the above noted criteria. For each of the criteria, the advantages and disadvantages of the alternatives were identified. These advantages and disadvantages were used as the basis for qualitatively determining which alternative was preferred overall. The final row of the table identifies the preferred alternative and provides the summary of the evaluation.

Based on the evaluation shown in Table 2, Alternative 4 is the preferred alternative as it supports disposal of residual waste, continues the current efforts of PWS related to waste diversion from disposal and commits to an expanded public drop-off at Ridge and the evaluation of diversion systems to proactively address regulations resulting from the *Waste-Free Ontario Act, 2016*. Implementation of this alternative will provide continued residual waste disposal capacity in southern Ontario for an additional 20 years. This alternative enables PWS to meet the demands of its current customer base and to consider future waste diversion opportunities.

Table 2: Application of the "Alternatives To" Criteria

Criteria/Indicator	Alternative 1 - Do-Nothing	Alternative 2 – Close the Ridge Landfill and Open a New Landfill	Alternative 3 – Expand the Ridge Landfill	Alternative 4 – Expand the Ridge Landfill with Enhanced Diversion
Potential for Impact to the Natural Environment				
Potential for impact on natural features.	Preferred - Closing the Ridge Landfill Site is anticipated to have minimal negative effects on the natural environment. The site has a closure plan with a long term environmental monitoring program.	Less Preferred – While a new landfill would be developed to minimize impact on natural features, more land would be required in a location that is currently undisturbed by landfill activity. This would likely result in greater displacement and disruption of natural features.	Equally Preferred - The expansion of the Ridge Landfill has the potential to impact natural features. However, it is noted that there are minimal on-site natural features and through the EA process PWS will commit to mitigate potential negative effects on the natural environment.	Equally Preferred - The expansion of the Ridge Landfill has the potential to impact natural features. However, it is noted that there are minimal on-site natural features and through the EA process PWS will commit to mitigate potential negative effects on the natural environment.
Potential for impact on groundwater, surface water, and air quality.	Equally Preferred – From a geology/hydrogeology perspective the Ridge site offers significant natural protection of groundwater as the site is underlain by a clay till that is 30 metres or more in thickness. Approximately 35 years of ground and surface water monitoring has shown the landfill design and operation to be extremely effective in protecting ground and surface water. Odour complaints over the operating life of the landfill have been minimal. Following decommissioning and closure of the Ridge Landfill ongoing environmental monitoring would still be required.	Equally Preferred – Previous EA work on the Ridge Landfill completed in 1997 looked for a site comparable or significantly better than the Ridge Landfill within southern Ontario. No other site was found that was considered equal to or significantly better than the Ridge Landfill. It is reasonable to assume that a similar conclusion would be reached today. This assessment included consideration of geology/hydrogeology conditions. It is noted that a new site would not afford the same depth of groundwater knowledge as an expansion. Following decommissioning and closure of the Ridge Landfill ongoing environmental monitoring would still be required.	Equally Preferred – An expansion of an existing landfill has the potential for impacts on ground and surface water. From a geology/hydrogeology perspective the Ridge site offers significant natural protection of groundwater as the site is underlain by a clay till that is 30 metres or more in thickness. Approximately 35 years of ground and surface water monitoring has shown the landfill design and operation to be extremely effective in protecting ground and surface water. Odour complaints over the operating life of the landfill have been minimal. Given this history, it is reasonable to assume that ongoing operation will continue to protect ground and surface water.	Equally Preferred – An expansion of an existing landfill has the potential for impacts on ground and surface water. From a geology/hydrogeology perspective the Ridge site offers significant natural protection of groundwater as the site is underlain by a clay till that is 30 metres or more in thickness. Approximately 35 years of ground and surface water monitoring has shown the landfill design and operation to be extremely effective in protecting ground and surface water. Odour complaints over the operating life of the landfill have been minimal. Given this history, it is reasonable to assume that ongoing operation will continue to protect ground and surface water.
Potential for Impact to the Socio-Economic, Cultural, Built Environments				
Potential for impact on communities.	Less Preferred – Closing the Ridge Landfill is anticipated to minimize the potential for nuisance effects as a result of operation. It is noted however, that the economic contribution PWS currently provides to the local communities would be eliminated once the site is no longer operational. Given the minimal nuisance impacts from the site and the significance of PWS' contribution to the community the closure of the site is considered a disadvantage.	Less Preferred – A new site would require more land and thus is likely to involve greater displacement and disruption than an expansion. While mitigation measures would be put in place to minimize impacts, this alternative would impact a new community that has not adapted to living with a landfill neighbour over the past 50 years. It is also noted that the economic contribution PWS currently provides to the current host community would be eliminated once the site is no longer operational.	Equally Preferred – There is potential for community impacts as a result of an expansion of the Ridge Landfill. It is noted that opportunities to mitigate impacts will be part of the EA. It is also noted that a degree of adaptation has occurred at the Ridge and the surrounding communities and PWS has established a positive relationship and significant economic benefits with the community over the landfill's 50-year operating history. Given the minimal impacts associated with the site and the significance of PWS' contribution to the community, continuing operation of the site is considered an advantage to the community.	Equally Preferred – There is potential for community impacts as a result of an expansion of the Ridge Landfill. It is noted that opportunities to mitigate impacts will be part of the EA. It is also noted that a degree of adaptation has occurred at the Ridge and the surrounding community and PWS has established a positive relationship and significant economic benefits with the community over the landfill's 50-year operating history. There is also some potential for additional traffic to the site associated with the enhanced drop off proposal. The degree of traffic is anticipated to be minimal and the drop-off also provides a positive community benefit. Given the minimal impacts associated with the site and the significance of PWS' contribution to the community continuing operation of the site is considered an advantage to the community.
Potential to Address Need/Opportunity and Provincial Planning Objectives				
Potential for alternative to address the need/opportunity for waste management capacity.	Less Preferred – This alternative does not provide the required new disposal or diversion capacity identified as needed in southern Ontario.	Preferred – A new landfill could address the need for additional capacity; however, It is noted that based on the work completed in 1997, it is unlikely that a location can be found that is more suitable for a landfill than Ridge.	Preferred – This alternative provides the required new disposal capacity identified as needed in southern Ontario.	Preferred – This alternative provides the required new disposal and diversion capacity identified as needed in southern Ontario.
Potential to be consistent with planning objectives and provincial government priority initiatives.	Less Preferred – Finding solutions to disposal capacity within our province is favourable over export to the USA (and reliance on US facilities). This alternative does not provide needed additional capacity in southern Ontario. It also does not provide opportunities to increase diversion which is a provincial focus.	Less Preferred – This alternative is focused on disposal only and does not include opportunities to increase diversion which is a provincial focus.	Less Preferred – This alternative is focused on disposal only and does not include opportunities to increase diversion which is a provincial focus.	Preferred – This alternative supports regional management of residual waste and provides additional opportunities to increase diversion addressing the provincial waste diversion focus.

Criteria/Indicator	Alternative 1 - Do-Nothing	Alternative 2 – Close the Ridge Landfill and Open a New Landfill	Alternative 3 – Expand the Ridge Landfill	Alternative 4 – Expand the Ridge Landfill with Enhanced Diversion
Ability for PWS to implement the alternative in a manner that is practical and financially realistic	Less Preferred – This alternative is not practical or financially realistic for PWS. PWS would not be able to offer cost effective waste management and disposal services to its customer base without a disposal facility to replace the Ridge Landfill.	Less Preferred – This alternative is not practical or financially realistic for PWS to pursue. A new landfill alternative would have high capital costs and would require a change in operation to accommodate a new location. It would also require PWS to maintain two sites. As noted, a new site that is significantly better than Ridge was not found in 1997 as part of the EA work undertaken at that time. PWS does not own or is aware of any property in the study area that would be preferable to its current Ridge Landfill site.	Preferred – This alternative is practical and financially realistic as it allows PWS to maintain its current operation in southern Ontario. PWS owns all of the property needed to undertake a landfill expansion.	Preferred – This alternative is practical, financially realistic and economically viable as it allows PWS to maintain its current operation in southern Ontario. PWS owns all of the property needed to undertake a landfill expansion.
Consideration of Aboriginal and Treaty Rights				
Potential to impact Indigenous treaty rights.	Preferred – The discontinuation of the Ridge Landfill site will have no impact on Indigenous treaty rights. It is noted that there are no outstanding claims at the Ridge Landfill.	Less Preferred - The potential for a new site to impact Indigenous treaty rights is uncertain as the site location is unknown.	Preferred – There are no outstanding claims at the Ridge Landfill.	Preferred - There are no outstanding claims at the Ridge Landfill.
Overall Summary of "Alternatives To" Evaluation	Alternative 1 - Do-Nothing was <u>not preferred but will be carried forward</u> While the potential for impact on the natural socio-economic and cultural environment is minimal for this alternative it does not outweigh the disadvantage that it does not provide the additional capacity to meet the continued need for waste disposal capacity in southern Ontario and is not practical or financially realistic for PWS. It is noted that the Do-Nothing alternative represents baseline conditions and will continue to be used in the EA to assist in the assessment of potential impacts.	Alternative 2 – Close the Ridge Landfill and Construct a New Landfill was <u>not preferred</u> This alternative has no advantages and is not preferred. It is not considered practical or economically viable for PWS to pursue as PWS does not own or is not aware of any other property on which it could develop a new landfill in southern Ontario. Furthermore, based on work completed as part of the approved 1997 EA for a Ridge Landfill Expansion, if a new landfill site was found in southern Ontario, it would likely have a similar or greater potential for impact on the natural environment and the community.	Alternative 3 – Expand the Ridge Landfill was <u>not preferred</u> This alternative has the advantage of providing the needed waste disposal in a manner that is practical and economically viable for PWS to implement. While there are potential impacts on the natural and socio-cultural environment associated with the Ridge Landfill, past history with the site has proven that potential effects on the natural environment and the community can be reasonably predicted and mitigated and there is a significant economic benefit to the local host communities.	Alternative 4 – Expand the Ridge Landfill with enhanced diversion was <u>preferred and will be further considered</u> in the Environmental Assessment This alternative has the advantage of providing the needed waste disposal in a manner that is practical and economically viable for PWS to implement. While there are potential impacts on the natural and socio-cultural environment associated with the Ridge Landfill, past history with the site has proven that potential effects on the natural environment and the community can be reasonably predicted and mitigated and there is a significant economic benefit to the local host communities. It is noted that this alternative addresses disposal needs in southern Ontario and has the added advantage of a commitment from PWS for an expanded public drop-off at Ridge and the evaluation of diversion systems to proactively address regulations resulting from the *Waste-Free Ontario Act*.

5.0 Consideration of Alternative Methods

In addition to consideration of "Alternative To" the Undertaking, proponents must also consider a reasonable range of alternative methods for carrying out the proposed Undertaking. Developing and evaluating alternative methods for expanding the existing landfill and proactive evaluation of enhanced waste diversion opportunities will be a focus of the EA. PWS is proposing to evaluate the following alternative methods in the EA:

- Site Development Alternatives – this will include consideration of different ways to expand the landfill capacity such as lateral expansion and/or increasing the height of the Old Landfill and/or mining the Old Landfill.
- Enhanced Diversion System Alternatives – this will include an evaluation of different diversion system alternatives to provide additional waste diversion capacity for PWS customers in southern Ontario.