Waste Management of Canada Corporation

Environmental Assessment for a New Landfill Footprint at the West Carleton Environmental Centre

SOCIO-ECONOMIC DETAILED IMPACT ASSESSMENT

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Project Number:
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1. Introduction

This report documents the Socio-Economic impact assessment of the Preferred Alternative Landfill Footprint for the Environmental Assessment (EA) for a new landfill footprint at the West Carleton Environmental Centre (WCEC). In the preceding Alternative Methods phase of the EA, a net effects analysis as well as a comparative evaluation of the four alternative landfill footprint options were carried out in order to identify a Preferred Alternative Landfill Footprint. The Preferred Alternative Landfill Footprint was determined to be Option #2. The potential environmental effects, mitigation or compensation measures to address the potential adverse environmental effects, and the remaining net effects following the application of the mitigation or compensation measures were identified for the Preferred Alternative Landfill Footprint.

The Preferred Alternative Landfill Footprint was refined based on stakeholder comments received and in order to further avoid or mitigate potential adverse environmental effects, and is illustrated in **Figure 1**.

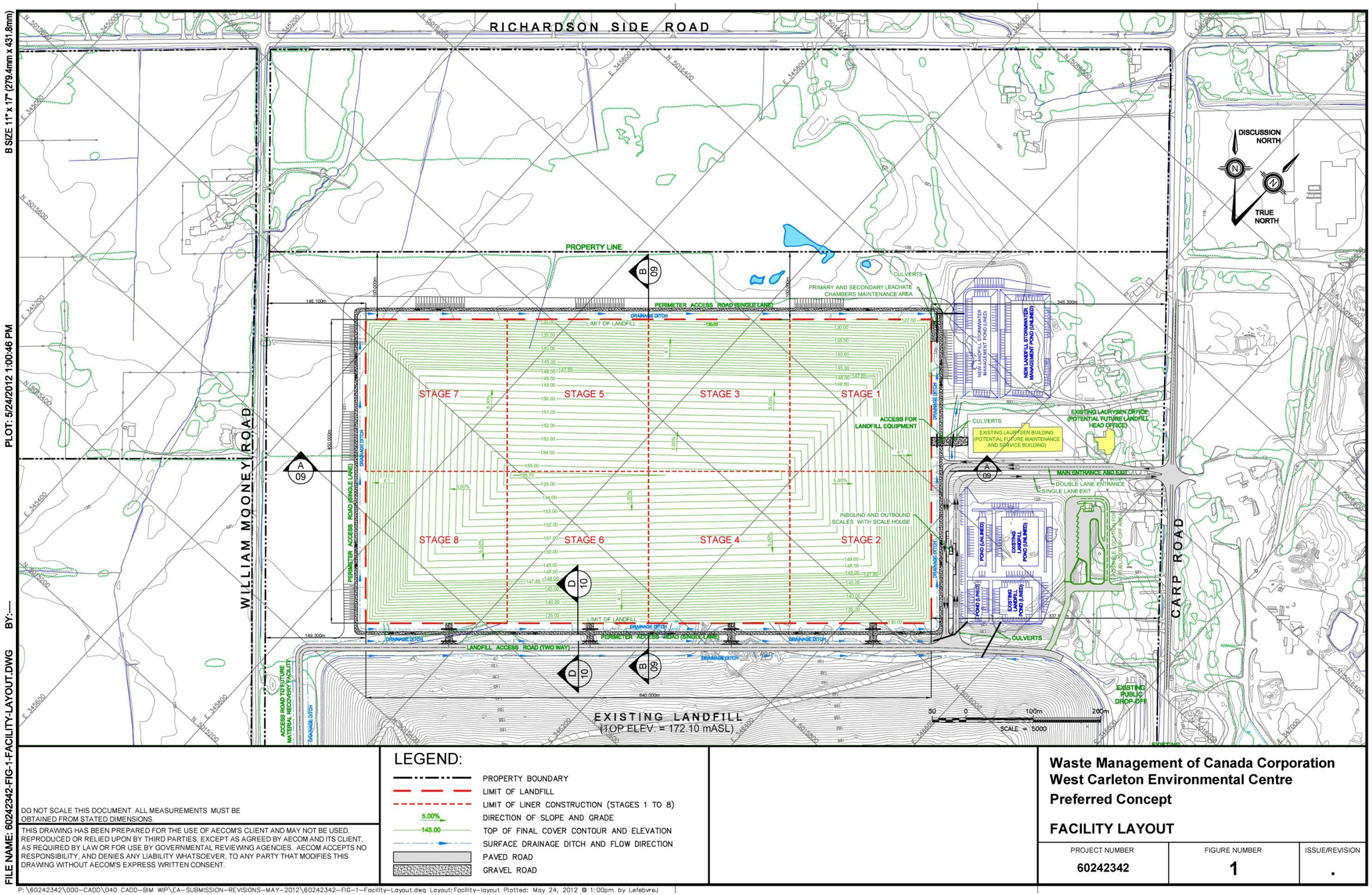
A Facility Characteristics Report (FCR) as well as a description of the ancillary facilities associated with the WCEC have been prepared so that potential environmental effects and mitigation or compensation measures identified for the Preferred Alternative Landfill Footprint during the Alternative Methods phase of the EA can be more accurately defined, along with enhancement opportunities and approval requirements.

The discipline-specific work plans developed during the Terms of Reference (ToR) outlined how impacts associated with the Preferred Alternative Landfill Footprint would be assessed. The results of these assessments have been documented in the following 10 standalone Detailed Impact Assessment Reports:

- Atmospheric (Air Quality, Noise, Odour, and Landfill Gas)
- Geology and Hydrogeology
- Surface Water
- Biology
- Archaeology
- Cultural Heritage
- Transportation
- Land Use
- Agriculture
- Socio-Economic (including Visual)

Despite being standalone documents, there are; however, interrelationships between some of the reports, where the information discussed overlaps between similar disciplines. Examples of this include the following:

- Geology and Hydrogeology, Surface Water and Biology (Aquatic Environment); and
- Land Use, Agricultural, and Socio-Economic (including Visual).



DO NOT SCALE THIS DOCUMENT. ALL MEASUREMENTS MUST BE OBTAINED FROM STATED DIMENSIONS.

LEGEND:

- PROPERTY BOUNDARY
- LIMIT OF LANDFILL
- LIMIT OF LINER CONSTRUCTION (STAGES 1 TO 8)
- 5.00% DIRECTION OF SLOPE AND GRADE
- 145.00 TOP OF FINAL COVER CONTOUR AND ELEVATION
- SURFACE DRAINAGE DITCH AND FLOW DIRECTION
- PAVED ROAD
- GRAVEL ROAD

Waste Management of Canada Corporation
West Carleton Environmental Centre
Preferred Concept

FACILITY LAYOUT

PROJECT NUMBER	FIGURE NUMBER	ISSUE/REVISION
60242342	1	.

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Figure 1. Preferred Alternative Landfill Footprint

1.1 Description of the Preferred Alternative Landfill Footprint

The southern half of the Preferred Alternative Landfill Footprint is on WM-owned lands and the northern half is on lands that WM has options to purchase. A 100 m buffer is maintained between the north limit of the Preferred Landfill Footprint and the private lands to the north (e.g., lands which front onto Richardson Side Road) in accordance with Ontario Regulation 232/98, and an approximate 350 m buffer is maintained between the east limit of the footprint and Carp Road. A light industrial building (e.g., the Laurysen building) is situated in the eastern portion of the WM optioned lands, which WM anticipates using for equipment storage/maintenance or waste diversion activities in the future. An approximate 45 to 50 m buffer is maintained between the toe of slope of the existing and new landfill footprint, thus allowing sufficient area for a new waste haul road to the new footprint, and for maintenance and monitoring access. The location of the west limit of the Preferred Alternative Landfill Footprint was determined by maintaining the noted buffers and providing the required 6,500,000 m^3 of disposal capacity, while maintaining landfill elevation below 158 mASL (as reported in the Conceptual Design Report (CDR)) and maintaining side slopes required by Ontario Regulation 232/98 (e.g., varying from 4H to 1V to 5%). This results in an approximate 146 m buffer between the west limit of the Preferred Footprint and William Mooney Road. This buffer preserves a portion of the existing woodlot within the west part of the WM-owned lands.

The final contours of the landfill are shown in **Figure 1** and reflect a rectangular landform with a maximum elevation (top of final cover) of 155.7 mASL. This elevation is approximately 30.7 m above the surrounding existing grade. By comparison, the maximum elevation of the existing Ottawa WMF landfill is approximately 172 mASL or approximately 47 m above the surrounding existing grade. The contours reflect maximum side slopes of 4H to 1V, and a minimum slope of 5%. The total footprint area of the new landfill is 37.8 ha.

1.2 Facility Characteristics Report

The FCR presents preliminary design and operations information for the Preferred Alternative Landfill Footprint (Option #2) and provides information on all main aspects of the landfill design and operations including:

- site layout design;
- surface water management;
- leachate management;
- gas management; and,
- landfill development sequence and daily operations.

The FCR also provides estimates of parameters relevant to the detailed impact assessment including estimates of leachate generation, contaminant flux through the liner system, landfill gas generation, and traffic levels associated with waste and construction materials haulage.

1.3 Other WCEC Facilities

In addition to the new landfill footprint, the WCEC will also include other facilities not subject to EA approval. These may include:

- A material recycling facility
- A construction and demolition material recycling facility
- An organics processing facility
- Residential diversion facility
- Community lands for parks and recreation
- A landfill-gas-to-energy facility
- Greenhouses

Although these facilities do not require EA approval, it is important to consider environmental impacts from all potential activities at the WCEC, not just the new landfill footprint. As such, the synergistic impacts of these facilities in relation to the Preferred Alternative Landfill Footprint will also be assessed in the EA.

1.4 Socio-Economic Study Team

The Socio-Economic study team consisted of AECOM staff. The actual individuals and their specific roles are provided as follows:

- **Sara Jarrett –** Social Scientist responsible for compiling the socio-economic detailed impact assessment
- **Maryna Semenova –** Economist responsible for documenting the existing socio-economic conditions
- **Tomasz Wlodarczyk –** Senior socio-economist responsible for review and quality assurance.
- **Jennifer Owen and Catherine Parker –** Staff members who undertook field investigations.

The Socio-Economic – Visual Impact study team also consisted of AECOM staff. The actual individuals and their specific roles are provided as follows:

- **Alan Becking – Landscape Architect –** conducted detailed visual impact assessment of site on surrounding area. Prepared graphics, illustrations, and detailed impact assessment report.
- **John Holst – Multi-Media Designer –** prepared graphics, illustrations, maps for detailed impact assessment report.
- **Shery Cherian – Senior Architectural Technologist –** prepared 3-D modelling for report.

2. Study Area

The general On-Site, Site-Vicinity, and Regional study areas for the Preferred Alternative Landfill Footprint at the WCEC are listed below:

On-Site ..... the lands required for the Preferred Alternative Landfill Footprint;

Site-Vicinity..... the lands in the vicinity of the Preferred Alternative Landfill Footprint, extending about 500 m in all directions; and,

Regional ..... the lands within approximately 1-5 km of the Preferred Alternative Landfill Footprint for those disciplines that require a larger analysis area (i.e., socio-economic, odour, etc.).

For the purposes of the Socio-Economic Detailed Impact Assessment, the general Study Areas were augmented as described below and shown in **Figure 2.**

On-Site ..... the lands required for the Preferred Alternative Landfill Footprint;

Site-Vicinity..... the lands in the vicinity of the Preferred Alternative Landfill Footprint, extending about 500 m in all directions; and

Regional ..... the lands and neighbourhoods within approximately 3 km of the perimeter of the Preferred Alternative Landfill Footprint.

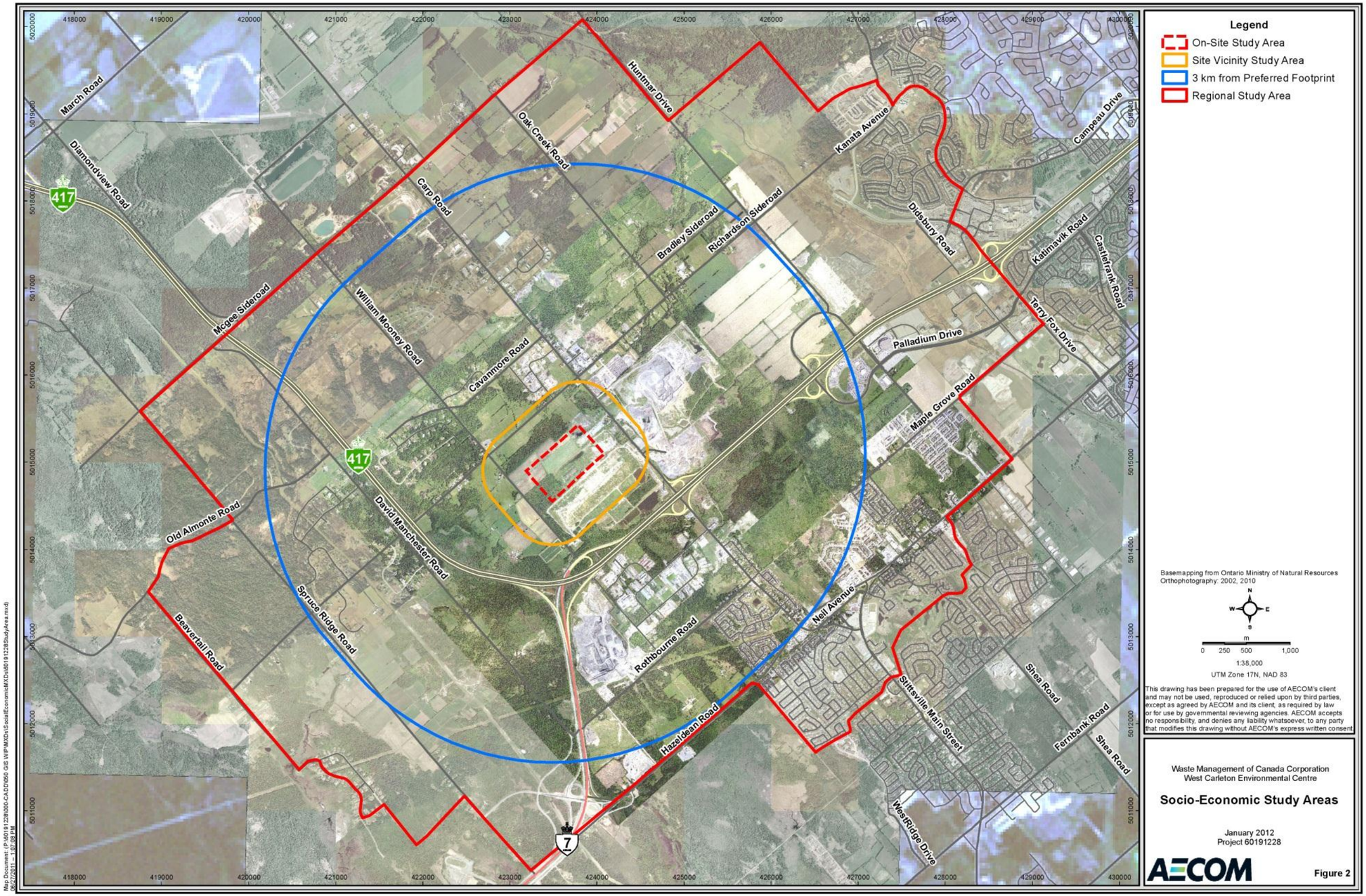


Figure 2. Socio-Economic Study Areas

The specific On-Site, Site-Vicinity, and Regional study areas for the Socio-Economic – Visual Detailed Impact Assessment are described below and illustrated in **Figure 3**.

On-Site ..... the lands required for the Preferred Alternative Landfill Footprint;

Site-Vicinity..... the lands in the vicinity of the Preferred Alternative Landfill Footprint, extending about 500 m in all directions from the edge of the preferred landfill footprint; and,

Regional..... the lands within approximately 5 km of the Preferred Alternative Landfill Footprint.

For the purposes of the Socio-Economic Visual Impact Assessment all directions noted will be based on 'Discussion North.'

3. Methodology

The assessment of impacts associated with the Preferred Alternative Landfill Footprint was undertaken through a series of steps that were based, in part, on a number of previously prepared reports (Socio-Economic Existing Conditions Report, Socio-Economic Comparative Evaluation Technical Memorandum). The net effects associated with the four Alternative Landfill Footprint Options identified during the Alternative Methods phase of the EA were based on conceptual designs. These effects were reviewed within the context of the preliminary design plans developed for the Preferred Alternative Landfill Footprint, as identified in the FCR, to determine the type and extent of any additional investigations required to ensure a comprehensive assessment of net effects. Additional investigations were then carried out, where necessary, in order to augment the previous work undertaken.

With a more detailed understanding of the socio-economic environment developed, the previously identified potential effects and recommended mitigation or compensation measures associated with the Preferred Alternative Landfill Footprint (documented in the Socio-Economic Comparative Evaluation Technical Memo, September 2011) were reviewed to ensure their accuracy in the context of the preliminary design for the Preferred Landfill Footprint. Based on this review, the potential effects, mitigation or compensation measures, and net effects associated with the Preferred Alternative Landfill Footprint were confirmed and documented. In addition to identifying mitigation or compensation measures, potential enhancement opportunities associated with the preliminary design for the Preferred Alternative Landfill Footprint were also identified, where possible.

Figure 3. Socio-Economic Visual Detailed Impact Assessment Study Areas

Following this confirmatory exercise, the requirement for monitoring in relation to net effects was identified, where appropriate. Finally, any socio-economic approvals required as part of the implementation of the Preferred Alternative Landfill Footprint were identified.

4. Additional Investigations

4.1 Visual

During the existing conditions review and comparative evaluation of the site and surrounding area, the Visual Impact Assessment Team used a radius of 3 km from the on-site study area as the envelope to assess the potential visual impact on the surrounding area from each of the proposed Landfill Footprint Alternatives. Upon review of the findings with the public during subsequent open houses it became apparent that a larger envelope should be included in the detailed impact assessment of the Preferred Landfill Footprint. The team increased the study area to a radius of 5 km in order to include viewpoints from residential areas located along Terry Fox Drive North as well as residential areas located in the northeast portion of Stittsville.

Within the 5 km study area, views of the Preferred Landfill Footprint can be placed into one of three different categories based on the degree of existing screening by a combination of topography, vegetation, and man-made features: 1) fully screened, 2) partially screened, or 3) fully exposed. These categories can be further divided into two different classes: distant or close-up views. The detailed visual impact assessment was conducted with these classifications in mind.

The team conducted an additional visit to the site and surrounding areas in late October, 2011 to assess the visual character of the project site and collect additional photographs (Refer to **Appendix A**). The field inventory included the nature of distant vistas beyond the project site from various viewpoints. The additional photos show the site when deciduous trees are without leaves, resulting in less effective screening.

With these additional investigations in mind, the potential impact on the socio-economic environment of the Preferred Alternative Landfill Footprint was documented.

5. Detailed Description of the Environment Potentially Affected

5.1 Socio-Economic

The Preferred Alternative Landfill Footprint is situated within the WM-owned or optioned lands located at the intersection of Highway 417 and Carp Road, along the industrialized section of the Carp Road corridor. This area is a transitional rural/industrial section in the west end of the City of Ottawa. This area has been identified as a significant rural employment area and has a mixture of heavy industrial and commercial uses. The study area can be broken down into three relevant communities; Carp, Stittsville and Kanata, all of which have relevant features within the study area boundary.

Economically, the area has experienced significant economic and land development growth with the potential for further growth in upcoming years. WM is a significant employer in the area and is the largest provider of waste services in Ottawa. For further detail on existing land use and potential growth in the area please refer to the Land Use Impact Assessment Report.

The following subsections describe the existing environment within the On-site, Site-Vicinity and Regional study areas.

5.1.1 On-Site

For the purposes of the socio-economic assessment, the On-Site study area was defined as the lands owned or optioned by WM required for the Preferred Landfill Footprint.

Within the boundaries described above there are limited opportunities for significant impacts on the socio-economic environment. Much of the land in this area is used for agricultural purposes, farmed by the dairy farmer on the west side of William Mooney Road to provide feed for his herd; however, these are not considered prime agricultural areas and will not be included in the socio-economic assessment. For further information on the effects to the agricultural lands, please see the Agricultural Impact Assessment Report.

5.1.2 Site-Vicinity

For the purposes of the socio-economic assessment the Site-Vicinity study area was defined as the lands within 500 m of the Preferred Alternative Landfill Footprint.

The Site-Vicinity Study Area extends to just past Carp Road to the east, just past William Mooney Road to the west, slightly north of Richardson Side Road, and covers the area occupied by the existing landfill in the south. This area includes five residences and does not contain any recreational resources.

5.1.3 Regional

For the purposes of the socio-economic assessment the Regional study area was defined as the lands and neighbourhoods within approximately 3 km of the perimeter of the Preferred Landfill Footprint, as described above. This area extends 3 km northwest to McGee Sideroad, southwest to Beavertail Road and southeast of Hazeldean Road into Stittsville. Northeast of the site the study area includes Terry Fox Drive in Kanata in order to encompass streets included in WM's door to door campaigns in 2007 and 2010. This area is considered to be a conservative estimate of the area that may be directly affected by nuisance effects generated by the WCEC such as noise, dust and odour.

The Regional Study Area contains a significant number of residential properties (approximately 6,100) including new subdivisions with existing and planned homes as well as older rural residences that are generally single homes on large plots. These properties may be sensitive to landfilling activities with potential impacts on the use and enjoyment of their property.

There are a small amount of agricultural lands in the site vicinity, however none have livestock operations and are not considered sensitive to landfilling activity.

In terms of recreational resources, the Regional Study Area includes neighbourhood parks, walking trails, recreational facilities such as golf clubs and community features such as schools, cemeteries and churches. There is potential for impacts on these facilities from noise, dust, and odour as well as impacts on access and egress.

5.2 Visual

The Preferred Alternative Landfill Footprint is located within an area that is already significantly screened from the surrounding areas. The following are descriptions of the visual conditions on site, within the site-vicinity (immediately adjacent areas), and at the regional scale (distances up to 5 km away) with respect to the Preferred Alternative Landfill Footprint.

5.2.1 On-Site

The preferred site is a relatively flat parcel of land comprised of farmland, a section of existing woodlot, and a large open disturbed area that is sporadically covered mostly with low growing scrub material. The Preferred Footprint has no significant adverse effect on the existing vegetation, requiring only partial removal of a woodlot from the interior of the site. There are only two locations from which the site can be viewed within the surrounding area, including an opening in the tree-line along Richardson Side Road, just west of the Carp Road intersection, and across the farmland that borders William Mooney Road just south of the intersection at Richardson Side Road. Both views are limited with no distant views of areas to the south or the east. In both cases, the existing landfill feature blocks views beyond.

5.2.2 Site-Vicinity

The existing surrounding vegetation and topographic features block any distant views through the site from all adjacent viewpoints. As discussed in the previous section there are only a few opportunities to view the interior of the site from the adjacent surrounding areas. With significant vegetation growth and topographic features around the site there are already extensive screening elements in place to obscure views of the preferred landform. The woodlots along the north and west edges of the site have significant stands of coniferous trees providing effective screening year round. Along the east edge of the site there is a ridge that rises approximately 8 m adjacent to the west side of Carp Road. The ridge is covered with hedgerows and stands of mixed vegetation, offering varying levels of screening.

5.2.3 Regional

The surrounding region is generally flat with the exception of a ridge approximately 4.5 km east of the site that runs northwest along the east bank of the Carp River. The Preferred Landfill Footprint is located immediately north of the existing landfill mound and will be approximately 13 m lower than the existing landfill mound. For this reason, the new landfill feature will have little to no adverse effect on the existing views from the south and the north. From these two directions, the Preferred Footprint will not impact the horizon or any distant views. When viewed from the south, the Preferred Footprint will be completely hidden by the existing landfill feature. When viewed from the north, the Preferred Footprint will be back-dropped by the existing landfill mound. The area to the west and northwest of the proposed site is heavily vegetated. This vegetation obscures all views of the existing landfill feature as well as distant views from the east. Due to the size of the Preferred Footprint, it will not be visible from any viewpoint from the west and northwest (i.e., Highway 417, or any points west of the highway). From areas to the east and southeast there are varying levels of views of the Preferred Footprint, ranging from fully screened to fully exposed.

6. Socio-Economic Net Effects

As mentioned, the previously identified potential effects and recommended mitigation or compensation measures associated with the Preferred Alternative Landfill Footprint were reviewed to ensure their accuracy in the context of the preliminary design of the Preferred Alternative Landfill Footprint. This was based on the more detailed understanding of the Socio-Economic environment developed through the additional investigations. With this in mind, the confirmed potential effects, mitigation or compensation measures, and net effects are summarized in **Table 1** and described in further detail in the sections below.

6.1 Potential Effects

6.1.1 Potential Effects on Socio-Economic Environment

When looking at potential effects on the socio-economic environment the following components were considered:

- **Effects on the cost of services to customers;** Maximizing the ratio of landfill disposal airspace achieved to total soil handled translates to reduced construction and operation costs, which are ultimately transferred to the customer.
- **Continued services to customers;** By developing the facility WM can continue to provide waste disposal services within the City of Ottawa for a further 10 years.
- **Economic benefit to local municipality;** Development of the WCEC will create more jobs in the area and also present the opportunity to provide improved products or services to people in the area.
- **Effects on residential and commercial development;** The development of the WCEC has the potential to affect development in the area, as some developers may choose not to build within the vicinity of a landfill.
- **Effects on property tax revenue in the City of Ottawa;** Changing the use of land from agricultural to commercial will change the rate of tax paid to the City of Ottawa.
- **Visual impact of the facility and surrounding areas;** In building and operating the Preferred Footprint, the visual impact of the site must be considered. If there is an impact visually there may be additional, indirect social impacts including: stigma, perceptions of the community to people from outside the area.

- **Local residents;** Local residents can be affected by work at the site by increased levels of noise, odour, dust and traffic. These issues can affect the extent to which people can use and enjoy private property and the ease with which they can travel in the site vicinity.
- **Recreational facilities:** Use and enjoyment of recreation facilities in the area can be affected by factors such as noise, odour, dust and traffic. This is particularly so at outdoor facilities such as golf courses.

Together, these components represent the features in the socio-economic environment that are potentially susceptible to effects from the proposed alternatives. There is potential for both direct and indirect effects on the socio-economic components listed above and they may not all be affected by the site developments.

The socio-economic environment has already been summarized in this document and detailed in the Existing Conditions Report. There are a number of residential homes, businesses and recreation facilities in the study areas, all of which make up the social fabric of the area and have the potential to be affected by both the construction and operation of the Preferred Alternative Landfill Footprint.

To determine whether or not there has been an effect or not, there must be a measurable difference from the existing conditions previously documented.

6.1.2 Potential Effects on Visual Impact

In general, the introduction of the Preferred Landfill Footprint Option will have minimal impact on the visual environment from distant viewpoints.

Although the height of the Preferred Landfill Footprint will be visible on the horizon, there are no natural or man-made landmarks within the view-sheds that will be obscured.

Within the Site-Vicinity and Regional Study Areas views of the Preferred Footprint vary from fully obscured to fully exposed (Refer to **Appendix A**).

Distant Views (Regional)

- Distant views from the west, southwest, and south will not be impacted by the introduction of the Preferred Footprint due to the presence of existing vegetation and topographic features.

- Distant views from the north (e.g., Huntmar Drive south of Old Carp Road) will have a minimal visual impact. From the north, only a small portion of the top of the preferred landfill option will be visible. There is significant vegetation growth present in the immediate site vicinity that will obscure the majority of the Preferred Footprint.
- Distant views from the east will be most affected by the introduction of the Preferred Landfill Footprint. From this area (e.g., Kanata Avenue at Terry Fox Road North), which is an elevated position, existing vegetation growing east of the site is less effective for screening, but will be capable of obscuring over half the height of the Preferred Footprint.

Close-Up Views (Site-Vicinity)

- Close-up views from the south will not be impacted by the introduction of the Preferred Landfill Footprint due to the presence of the existing landfill feature.
- Generally, close-up views from the west will be unaffected by the introduction of the Preferred Footprint due to the presence of significant vegetation along the west edge of the site. This dense vegetation is largely composed of coniferous trees that create a year-round visual screen. There is; however, a portion of the northwest edge that is devoid of any vegetation where existing farmland flanks approximately 300 m of William Mooney Road.
- Generally, close-up views from the north will be unaffected by the introduction of the Preferred Footprint due to the presence of an existing significant woodlot that runs along the south side of Richardson Side Road from the William Mooney Road intersection to the Carp Road intersection. This woodlot is largely composed of coniferous trees that create a year-round visual screen. There is; however, a stretch of open land approximately 200 m long with little to no existing vegetation which exposes the interior of the site located immediately west of Carp Road on the south side of Richardson Side Road.
- Close-up views along the east side of the site will experience various levels of impact from the introduction of the Preferred Landfill Footprint. There is an existing woodlot towards the north end of the site along the west side of Carp Road that will screen views to the site. Continuing south along Carp Road, the vegetative cover thins out and the elevation of the land begins to rise relative to the road corridor, leaving the site obscured from the road. At the southeast corner of the site, close to the existing landfill feature, the site is devoid of vegetation. This corner leaves an exposed view of the space that the Preferred Footprint will occupy, although the site at ground level will not be visible.

- Close-up views along the south side will not be impacted by the introduction of the Preferred Footprint as the existing landfill feature completely obscures any views.

The Preferred Landfill Footprint, when completed, will be very uniform in its configuration and only the turf surface treatment will appear from high visibility viewpoints (e.g., distant views from the north and east). The turf surface may appear stark and disconnected from the surrounding landscape, accentuating the size of the landform.

6.2 Mitigation and/or Compensation Measures

6.2.1 Socio-Economic Mitigation and/or Compensation Measures

Table 1 below documents the necessary mitigation measures required to ensure that the various aspects of the socio-economic environment are not adversely affected. Recommended mitigation measures include (but are not limited to) the following:

- Best Management Practices (BMPs) implemented across the facility;
- Noise barriers;
- Appropriate equipment and vehicle maintenance;
- Progressive implementation of landfill gas collection and utilization;
- Making any reconfigurations to the road layout in accordance with city and provincial standards; and
- Implementing visual screening to minimize visual impacts.

6.2.2 Visual Mitigation and/or Compensation Measures

The assessment of the Preferred Footprint indicates that the Preferred Footprint at completion will not interfere, obscure, or compete with any nearby man-made or natural landmarks, nor will it significantly alter the existing vistas present within the Study Area. The impact of the Preferred Landfill Footprint is dependent on how it is perceived by the public from surrounding viewpoints. Different approaches can be taken to lessen the impact of the Preferred Footprint. These include measures that will obscure the feature from the surrounding areas or measures that will improve the aesthetic quality of the landfill feature itself. A third option is to develop an approach that combines the first two options so that the Preferred Footprint is aesthetically pleasing in high visibility public areas and unobtrusive near more private residential and rural areas.

The level of visual impact varies from different locations around the site. To show how the Preferred Alternative Landfill Footprint will appear from various viewpoints, the Visual Impact

Assessment Team has prepared photo simulations of the Preferred Footprint in the existing setting with and without mitigating measures used to lessen its visual impact (Refer to **Appendix B**).

6.3 Net Effects

As documented in **Table 1** net effects on the socio-economic environment are considered to be low and, in some cases, may be positive. It should be noted that additional criteria and indicators have been included in **Table 1** that are considered "standalone" environmental components. The socio-economic environment is comprised of many different factors, and evaluation must draw on other disciplines in order to be complete. Table 1 contains information on aspects such as noise and air emissions. While technical information is provided on these in their respective Impact Assessments they are included in the socio-economic impact assessment as they have potential to effect the social environment. Nuisance levels of noise or emissions for example can affect the social environment in many ways; they can affect the extent to which people can use and enjoy their private property or other outdoor areas such as recreation facilities, public spaces and parks. Consequently, it is important to consider these aspects when conducting this socio-economic impact assessment.

Effects from aspects such as noise, odour and air emissions should be effectively managed so as not to affect people's use and enjoyment of their private property and of other areas, such as outdoor recreation facilities and community facilities. An increase in the work force will bring more employment to the area and provide important economic stimulus; a positive net effect. There may be some short term inconvenience from additional traffic; however, it is not expected that there will be increased traffic congestion around the site over the long term.

Table 1. Potential Effects, Proposed Mitigation and Compensation Measures, and Resulting Net Effects

ID Number	Potential Effect	Mitigation/ Compensation	Net Effect
1	**Effects on the Cost of Services to Customers** Maximizing the ratio of airspace achieved to total soil handled translates to reduced construction and operation costs, which are ultimately transferred to the customer. • Ratio of airspace achieved to total amount of soil handled is 6.5 mil m^3 to 1.87 mil m^3.	• No mitigation measures required.	• Ratio of airspace achieved to total amount of soil handled is 6.5 mil m^3 to 1.87 mil m^3
2	**Continued Service to Customers** By developing the facility WM can continue to provide waste disposal services within the City of Ottawa for a further 10 years. • The total optimized site capacity is 6.5 mil m^3 over 10 years.	• No mitigation measures required.	• The total optimized site capacity is 6.5 mil m^3 over 10 years.
3	**Economic Benefit to Local Municipality** Development of the WCEC will create more jobs in the area and also present the opportunity to provide improved products or services to people in the area. • Up to 75 new jobs in waste diversion, disposal and green energy facilities for the next ten years. • Continued services to customers for waste disposal.	• No mitigation measures required.	• Up to 75 new jobs in waste diversion, disposal and green energy facilities for the next ten years. • Continued services to customers for waste disposal.
4	**Effects on Residential and Commercial Development** The development of the WCEC has the potential to affect development in the area, as some developers may choose not to build in the vicinity of a landfill. • No impact on residential development plans. • No impacts on commercial development plans.	• No mitigation measures required.	• No impact on residential or commercial development plans.
5	**Effects on Property Tax Revenue on the City of Ottawa** Changing the use of land from agricultural to commercial will change the rate of tax paid to the City of Ottawa. • Transition from agricultural to commercial property tax rate.	• No mitigation measures required.	• Transition from agricultural (low) to commercial (high) property tax rate.
6	**Visual Impact of the Facility on Surrounding Areas** The proposed development of the WCEC will create a different landscape and surrounding environment to the current environment. This can have an impact on the social environment of the area. • Preferred Footprint visible from rural residential areas to the immediate west along small sections of William Mooney Road and Richardson Side Road. • Preferred Footprint visible to small section of Carp Road immediately east of site. • Removal of a portion of existing woodlot. • Preferred Footprint visible from distant viewpoints to the north and east of site. Given the configuration and typical surface treatment, the landform will appear uniform and stark from a distance.	• Introduce berm/vegetation treatments at strategic locations around the perimeter of the site to screen and/or compliment the views of the proposed landform. • Introduce berm/vegetation treatments at strategic locations between the east side of the preferred landfill site and Carp Road to screen views from immediately adjacent areas to the east. • Planting program to introduce screening around the perimeter of the site, incorporating similar species at a quantity that will compensate for the loss of existing vegetation. • Introduce topographic variations to the landform and treat the surface with natural elements such as rock outcroppings, and native grass, shrub, and tree species.	• Views of the landform from rural residential areas that are located west and north of the Preferred Footprint will be obscured. • Views of the landform from public viewpoints immediately east of the Preferred Footprint will be obscured. • The planting approach for the site will use native species and natural planting arrangements along the perimeter of the site in-keeping with the existing woodlots. The result will be a natural visual barrier around the site that will obscure the majority of the views from surrounding areas. • Aesthetic quality of the Preferred Footprint will be increased as mitigation measures help to integrate it into the surrounding landscape.
7	**Local Residents** Local residents can be affected by increased noise, odour, air emissions and traffic and also by increased numbers of residents. If high levels of noise, odour and air emissions from the landfill site are experienced it can be considered a nuisance effect affecting the socio-economic environment. • 5 residences within 500 m of the landfill footprint. • Approximately 6,100 residences within approximately 3 km of the landfill footprint.	• Best Practice Measures (BPM) will be put in place to ensure that the site does not create increased nuisance related effects during construction and operation will help ensure that the presence of the site does not create an unfavourable living environment. See mitigation measures below for Noise, odour and air emissions.	• No negative net effects on local residents are expected; positive effects on local residents may occur as a result of increased population and the associated effects on the local economy.

Table 1. Potential Effects, Proposed Mitigation and Compensation Measures, and Resulting Net Effects

ID Number	Potential Effect	Mitigation/ Compensation	Net Effect
8	**Recreational Facilities** Use and enjoyment of recreational facilities within 500 m of the landfill can be affected by factors such as noise, odour, air emissions and traffic. • There are no recreational facilities within 500 m of potential landfill footprint, but there are recreation facilities within the 3 km boundary of the Regional Study Area.	• No mitigation measures required.	• No recreational facilities within 500 m of potential landfill footprint.

9	**Potential Noise Effects**
	If noise is considered to be a nuisance then it can adversely affect the following aspects of the socio-economic environment:
	• Population and Demographics: Noise from construction and operation has the potential to affect the population of the area by discouraging new residents to move to the area and also could potentially cause existing residents to move away from the area if works are prolonged.
	• Economy: There may be indirect effects on tourism and the likelihood of new businesses establishing operations in the area.
	• Community Infrastructure and Services: Noise from construction, operations and from heavy vehicles can affect the extent to which people can enjoy and utilize outdoor recreation facilities such as golf courses, walking trails and outdoor patios as well as the effective operation of facilities such as churches, care homes and schools. Increased noise can lower the appeal of the area and potentially have indirect effects on property values.
	• Residents and Community: Noise from construction, operations and from heavy vehicles can affect the extent to which local residents can enjoy personal outdoor, and in extreme cases, indoor spaces. Nuisance noise levels can create an unfavourable perception to those not from the area.
		• In order to ensure sound levels do not exceed 55dBA (MOE Noise Guideline for Landfills) or within 3dB of the background noise levels, appropriate steps should be taken to ensure that noise is not a nuisance to those living in the site vicinity. The majority of receptor points in the site vicinity are not expected to notice any changes.
		• In order to ensure noise levels do not reach nuisance levels the following mitigation measures are suggested:
		  • Maintenance to keep haul trucks and construction trucks in good working order;
		  • Screening berms to provide noise reduction for specific operations;
		  • Noise Best Management Practices (BMPs) to minimise the potential for excess noise levels during normal operations;
		  • Efficient traffic flow of on-site vehicles to ensure that vehicles are moving and are not sitting idle for prolonged periods of time.
			• No net effects on the socio-economic environment from noise are anticipated.

10	**Potential Atmospheric Effects**
	If increased levels of air emissions (e.g., dust, exhaust fumes, gas emissions) are found it can be considered a nuisance effect affecting the following aspects of the socio-economic environment:
	• Population and Demographics: Resultant air emissions from construction and operation has the potential to affect the population of the area by discouraging new residents to move to the area and also could potentially cause existing residents to move away from the area if works are prolonged.
	• Economy: There may be indirect effects on tourism and the likelihood of new businesses establishing operations in the area.
	• Community Infrastructure and Services: Air emissions from construction, operations and from heavy vehicles can affect the extent to which people can enjoy and utilize outdoor recreation facilities such as golf courses and walking trails as well as the effective operation of facilities such as churches, care homes and schools. Increased air emissions can lower the appeal of the area and potentially have indirect effects on property values.
	• Residents and Community: Air emissions from construction, operations and from heavy vehicles can affect the extent to which local residents can enjoy personal outdoor spaces. Nuisance air emissions levels can create an unfavourable perception to those not from the area.
		• Landfill gas emissions were evaluated to determine the potential to exceed any air quality standards within the site vicinity. All levels are expected to be within compliance levels. This is based on implementing the following mitigation measures:
		  • The landfill gas collection and utilisation system is incorporated and implemented progressively over the lifespan of the landfill; and
		  • BMPs are incorporated to reduce the potential for dust to occur during normal operations.
		• For dust emissions, predicted concentrations were in compliance with applicable standards. However, this is dependent on ensuring efficient traffic flow on site. Additional mitigation measures should be outlined to minimize dust levels once construction begins.
			• No net effects on the socio-economic environment from air emissions are anticipated. There is still some potential for effects from higher than usual dust levels should effective mitigation measures not be implemented.

Table 1. Potential Effects, Proposed Mitigation and Compensation Measures, and Resulting Net Effects

ID Number	Potential Effect	Mitigation/ Compensation	Net Effect

11	**Potential Odour Effects**
	If odour emissions from the landfill site are experienced it can be considered a nuisance effect affecting the following aspects of the socio-economic environment:
	• Population and Demographics: Odour levels experienced from operations have the potential to affect the population of the area by discouraging new residents to move to the area and also could potentially cause existing residents to move away from the area if odour issues are ongoing.
	• Economy: There may be indirect effects on tourism and the likelihood of new businesses establishing operations in the area.
	• Community Infrastructure and Services: Odour from the preferred landfill alternative can affect the extent to which people can enjoy and utilize outdoor recreation facilities such as golf courses and walking trails as well as the effective operation of facilities such as churches, care homes and schools. Increased noise can lower the appeal of the area and potentially have an indirect effect on property values.
	• Residents and Community: Odour from operations can affect the extent to which local residents can enjoy personal outdoor spaces. Nuisance odour levels can create an unfavourable perception to those not from the area creating an unwanted stigma.
		• In order to ensure that odour levels are not of a nuisance level, the following mitigation measures will be taken:
		  • The landfill gas collection and utilisation system is incorporated and implemented progressively over the lifespan of the landfill; and
		  • BMPs are incorporated to reduce the potential for odour to occur during normal operations.
		• Analysis of all receptor points identified in the existing conditions report showed that no off-site receptor points are predicted to be affected. Odour issues are more likely to occur closer to the landfill.
			• No net effects on the socio-economic environment from odour.

12	**Traffic and Transportation** Construction works and ongoing operations may have an impact on traffic and transportation around the proposed site. Increased work force during the construction and operation of the preferred alternative footprint may result in increased traffic in the vicinity of the site. • Community Infrastructure and Services: Increased traffic levels can affect emergency service response times in the area. Indirectly, any increase in travel time can affect the ease by which people can access recreation and municipal facilities. Increased noise and fumes from traffic can affect use and enjoyment of recreation facilities. • Residents and Community: Increased traffic levels resulting in longer travel time can affect the quality of life of local residents and impact the ease by which people can travel by road. Increased noise and fumes from heavy vehicles can also affect the extent to which residents can use and enjoy their private property.	• The preferred alternative design will result in increased truck traffic in the site vicinity and will require a new entrance including a northbound left turn lane from Carp Road into the WCEC. This will improve safety by reducing conflict between northbound left turning vehicles to the site and from through traffic. • The inconvenience to the public during construction of the left turn lane will be temporary and similar to disruption experienced during other similar road construction. Staging of traffic during construction will be done in accordance with the city and provincial standards for safety of construction workers, vulnerable road users and vehicular traffic as well as for reasonable traffic operations.	• No net effects on the socio- economic environment are anticipated from increased traffic levels in the site vicinity.
13	**Increased Work force** The proposed expansion and operation will require increased levels of staffing and this will have a significant impact on the socio-economic environment. • Population and Demographics: A larger work force will increase the local population, albeit on a temporary basis. • Economy: A larger work force will have significant economic effects, with a greater use of local businesses and facilities, and may indirectly create increased demand on housing stock and temporary accommodation. These increased numbers will also directly affect municipal finances • Community Infrastructure and Services: An increase in population brings additional demands on municipal services such as schools and hospitals as well as other services available in communities such as fire-fighting, policing and other emergency services. • Residents and Community: Changes in the local population can affect community character and cohesion and can indirectly affect property values.	• The preferred alternative design will create jobs in local community in waste diversion, disposal and green energy facilities over the next ten years. It is estimated that there will be an increase of approximately 75 jobs having a positive effect on the local economy.	• The resulting effect on the socio economic environment is expected to be high due to increased employment and a positive effect on the community.

7. Impact Analysis of Other WCEC Facilities

Other facilities that may be included in the WCEC include:

- A material recycling facility;
- A construction and demolition material recycling facility;
- An organics processing facility;
- Residential diversion facility;
- Community lands for parks and recreation;
- A landfill-gas-to-energy facility; and
- Greenhouses.

Table 2 documents the additional facilities and lists the potential interactions with the socio-economic environment.

Table 2. Impact Analysis of Other WCEC Facilities

Facility Name	Description	Potential Effects
Materials Recycling Facility (MRF)	• Will have capacity to process up to 250 TPD or 78,000 TPY of recyclable materials from residential and IC&I sectors. • Will use manual sort system to harvest cardboard and wood. Other recyclable material will be compacted and shipped for further processing at other locations. • Will accept leaf and yard material from residential and IC&I sectors for processing, including shredding and chipping. • Recycled materials will be stored inside, save for leaf and yard materials that will be stored outside. • Hours of Operation: Monday to Friday 6:30 a.m. to 8:00 p.m., Saturday 6:30 a.m. to 6:00 p.m. • Generated traffic is as follows: - Vehicles per day inbound = 35-40 - Vehicles per day outbound = 15-20 • Operations will be located inside.	• The most significant effects are likely to come from increased heavy vehicle traffic, potentially creating increased noise, odour and air emissions as well as traffic issues. By keeping operations inside, effects from operations in terms of noise, odour and air emissions are minimized. Keeping operating hours to the daytime will minimise impacts on the social environment and any reconfiguration of the road will only cause temporary (which will be completed anyway as part of the greater site redevelopment) inconvenience and ultimately improve traffic movement around the site. BMPs for site traffic must be implemented to ensure no nuisance effects from increased traffic.

Table 2. Impact Analysis of Other WCEC Facilities

Facility Name	Description	Potential Effects
Construction and Demolition Facility	• Will have capacity to process up to 150 TPD or 46,800 TPY of recyclable materials from construction and demolition sectors. • Will use manual sort systems to harvest wood, asphalt paving, asphalt, tires, roofing, scrap metal, concrete/brick and block, old corrugated cardboard, drywall and plastics (film, plastic pipe and finally as all other mixed plastics). • Will transfer and ship most material for further processing at other locations. • Will process wood and concrete on-site using shredding and chipping. Recycled materials will be stored outside. • Hours of Operation: Mon-Fri 6:30 a.m. to 8:00 p.m., Sat 6:30 a.m. to 6:00 p.m. • Generated traffic is as follows: - Vehicles per day inbound = 55-60 - Vehicles per day outbound = 15-20 • Operations will be located outside.	• As these operations will be outside there is the potential for effects on the social environment from noise, odour and air emissions. Increased site traffic may also cause congestion on haul routes. By restricting operations to daytime hours this will minimise disruption from noise. Best Practice Measures (BPM) should be implemented to ensure that noise, odour, air quality and traffic do not reach nuisance levels.
Organics Processing Facility	• Will be included in processing capacity of Materials Recycling Facility (i.e., leaf and yard material will be only organics processed on-site during planning horizon). • Putrescible (wet) organics, such as food waste, will be hauled direct from source to internal or third-party facilities not located at the WCEC • Hours of Operation: Mon-Fri 6:30 a.m. to 8:00 p.m., Sat 6:30 a.m. to 6:00 p.m. • Traffic information included in MRF. • Operations will be located outside.	• No further impacts are anticipated other than already documented in the Materials Recycling Facility.
Community Lands for Parks and Recreation	• Will include predominantly passive uses, such as trail systems and open spaces, located in buffer lands around the perimeter of the WCEC.	• Positive effects on the socio-economic environment, increased recreation facilities for local people can only enhance the socio-economic environment.

Table 2. Impact Analysis of Other WCEC Facilities

Facility Name	Description	Potential Effects
Landfill-Gas-to-Energy Facility	• Will be same as current facility (i.e., approximately 6.5 MW of electricity generation). • Will include offices and research areas located indoors. • Hours of Operation: Mon-Fri 6:30 a.m. to 8:00 p.m., Sat 6:30 a.m. to 6:00 p.m. - Facility will function on a 24hr basis (i.e., equipment continues to operate) • Generated traffic is as follows: - Vehicles per day inbound = 5-10 - Vehicles per day outbound = 5-10	• Minimal effects on the socio-economic environment. The greatest potential for adverse effects is from noise as operations will be 24 hours. However, as this facility has already been operating at the site it is not expected that there will be any change from the current operations.
Greenhouse Facility	• Will have approximately 2.0 hectares of greenhouses, including indoor storage, processing and offices, subject to attainment of third-party operator arrangement of facility. • Hours of Operation: Mon-Fri 6:30 a.m. to 8:00 p.m., Sat 6:30 a.m. to 6:00 p.m. ○ Facility will function on a 24hr basis (i.e., greenhouse continues to operate) • Generated traffic is as follows: - Vehicles per day inbound = 20-30 - Vehicles per day outbound = 20-30	• Impacts on the socio-economic environment from the greenhouse facility are expected to be minimal.

The most significant effect on the socio-economic environment from these additional features is likely to come from the increased number of vehicles entering and exiting the WCEC. The aforementioned reconfiguration of the road to allow for left turns into the WCEC will help ensure that traffic is not congested outside the site. Any inconvenience from the work on the road will be temporary and so there should not be any ongoing issues from traffic congestion. Heavy vehicles can create additional noise and air emissions; however, by restricting the working hours of the facilities to daytime any nuisance noise or air quality levels can be minimized.

The other WCEC facilities will generally have little to no visual impact on the surrounding area. Facilities including the leachate evaporator, the leachate treatment, and the greenhouse operations proposed in the interior of the site immediately south of the existing landfill will be obscured from adjacent and distant public viewpoints by existing topographic features and

vegetation. The gas to energy operation in its existing configuration, located at the southeast corner of the site, is fairly well screened from public viewpoints.

There are two WCEC ancillary facilities that will be visible to adjacent areas. Both of these areas present opportunities for WM to convey a positive corporate image to the public through landscape treatment.

1. The area along Carp Road located near the present site of Laurysen Kitchens will be the site for public drop-off of household waste and the administration control for the landfill operation. This area presents an opportunity to develop a landscape treatment that will convey the company's environmental interest and commitment to the public. Design opportunities include natural vegetative screening, native ornamental planting, naturalization of stormwater ponds, and interpretive signage to communicate environmentally sound operations.

2. The existing facility located at the southwest corner of the WM site, which will be the base of operations for the receiving, sorting, staging, and transferring of recycled materials, construction and demolition materials, and organic waste, is visible from an existing rural residential area at the south end of William Mooney Road. This waste diversion operation area will be accessed via internal service roads. The existing entrance to the site will be maintained. There should be a combination of natural screening measures and controlled landscape treatments incorporated at this point to minimize the adverse impact on neighbouring areas while maximizing the profile of the company.

8. Monitoring and Commitments for the Undertaking

To ensure that the mitigation measures identified in **Section 6** are implemented as envisioned, a strategy and schedule was developed for monitoring environmental effects. With these mitigation or compensation measures and monitoring requirements in mind, commitments have also been proposed for ensuring that they are carried out as part of the construction, operation, and maintenance of the landfill.

8.1 Monitoring Strategy and Schedule

As mentioned, a monitoring strategy and schedule was developed based on the Socio-Economic Impact Assessment carried out for the Preferred Alternative Landfill Footprint to ensure that (1) predicted net negative effects are not exceeded, (2) unexpected negative effects are addressed, and (3) the predicted benefits are realized.

Further work to ensure that a favourable socio-economic environment is maintained could also be conducted. Ensuring open and effective communication with the public and the community will help to make sure that any concerns over the operation of the facility and the construction work are managed effectively. A possible means of encouraging public input and involvement would be the creation of a Community Liaison Committee (CLC). The CLC members would be drawn from local residents, associations, businesses and community leaders who can provide input into the decision making process and enhance consultation with the communities affected by the project.

8.1.1 Environmental Effects Monitoring

In order to ensure that there are no adverse effects on the socio-economic environment adequate monitoring of the potential effects already documented should be conducted before, during and post construction and also during the operation of the new WCEC. By doing this, any deviation from the baseline conditions can be noted and mitigated.

A monitoring program for all landscape treatments will include an ongoing review of the installation during construction, followed by an ongoing program that includes the review and maintenance of the plant material to ensure proper establishment of the desired native vegetation, the control of non-native invasive species, and that corrective actions are conducted in a timely manner. Proposed monitoring requirements for the Preferred Landfill Footprint in relation to the socio-economic environment are listed in **Table 3**.

Table 3. Proposed Monitoring Requirements

ID Number/ Potential Effect	Proposed Monitoring Requirement	Associated Licences, Permits or Authorizations
1. Effects on the Cost of Services to Customers	• No monitoring required	• N/A
2. Continued Service to Customers	• No monitoring required	• N/A
3. Economic Benefit to Local Municipality	• No monitoring required	• N/A

Table 3. Proposed Monitoring Requirements

ID Number/ Potential Effect	Proposed Monitoring Requirement	Associated Licences, Permits or Authorizations
4. Effects on Residential and Commercial Development	• No monitoring required	• N/A
5. Effects on Property Tax Revenue on the City of Ottawa	• No monitoring required	• N/A
6. Visual Impact of the Facility on Surrounding Areas	• Oversee earthwork construction and planting of perimeter landscape screen areas to ensure design is adhered to. • Ongoing review of condition of perimeter planting. Maintain and replace plant material as required. • Oversee installation of landscape features as required during the course of the landfill operation to ensure that landscape design/plan is adhered to. • Ongoing review of landfill landscape and surface treatment to ensure that plant material is establishing and that non-native materials are being controlled.	• N/A
7. Local Residents	• Monitor effectiveness of measures implemented to mitigate nuisance-related effects.	• N/A
8. Recreational Facilities	• No monitoring required	• N/A
9. Noise	• Monitoring noise levels at 24 receptor points in the site vicinity to ensure that noise levels are less than 55dBA (MOE noise guidelines for Landfills) or within 3dBA of background noise levels.	• N/A
10. Air Quality	• Assuming that BPMs are incorporated and that landfill gas collection is implemented progressively over the lifespan of the landfill, there is not expected to be any effects on landfill gas emissions. Equally, dust emissions are expected to be within compliance levels but are dependent upon ensuring efficient traffic flow on site. Monitoring of dust and emissions at the receptor points to ensure that dust and emission levels are not exceeding the applicable guidelines.	• N/A
11. Odour	• Monitoring of odour at the 24 receptor points should be undertaken to ensure that odour levels are not above 1 Odour Unit (OU) over a 10 minute period.	• N/A

Table 3. Proposed Monitoring Requirements

ID Number/ Potential Effect	Proposed Monitoring Requirement	Associated Licences, Permits or Authorizations
12. Traffic and Transportation	• Monitoring of traffic around the site, particularly on Carp Road, will be required to ensure that site traffic does not cause any additional congestion. Construction to create the left turn lane at the site should be conducted in accordance with the city and provincial standards for safety.	• N/A
13. Increased Work force	• No monitoring required	• N/A

For all potential effects, the CLC will provide an outlet for ongoing feedback and monitoring throughout the construction and operation phases.

8.1.2 Development of an Environmental Management Plan

An Environmental Management Plan (EMP) or Plans will be prepared following approval of the undertaking by the Minister of the Environment and prior to construction. The EMP will include a description of the proposed mitigation measures, commitments, and monitoring.

8.2 Commitments

The following commitments have been proposed for ensuring that the identified mitigation or compensation measures and monitoring requirements are carried out as part of the construction, operation, and maintenance of the undertaking:

a) Ensure the principles of the Odour Enforcement Mechanism, as outlined in Appendix D in the ToR, are implemented.

b) Ensure that the site does not create additional traffic congestion in the site vicinity increasing journey times and affecting the day to day lives of people in the area. See commitments in the Transportation Detailed Impact Assessment Report.

c) Prepare a landscape design/plan for the treatment of the site perimeter, including screening measures and corporate image. This landscaping will be installed prior to the commencement of landfill operations.

d) Prepare a landscape design/plan detailing the surface treatment for the Preferred Footprint to be instituted in a manner that is in-keeping with its staged creation.

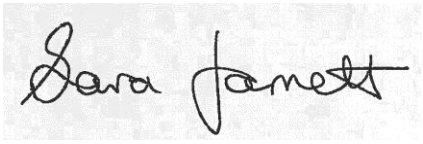
e) Maintain both perimeter and landfill landscape features through installation, establishment, and an ongoing monitoring and corrective action program.

f) Take all required measures to protect existing vegetation that is to remain on the site during construction and operation.

9. Socio-Economic Approvals Required for the Undertaking

With respect to the socio-economic environment, there are no designated approvals which would be necessary for this undertaking. The socio economic assessment is dependent upon other disciplines (e.g., noise, land use, air quality, etc.) gaining the necessary approvals for their work.

Report Prepared By:



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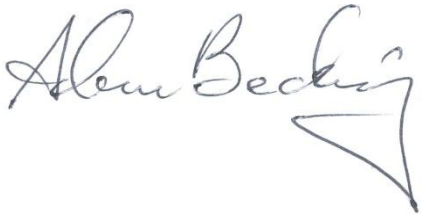

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Appendix A

Existing Views of Site from Surrounding Area

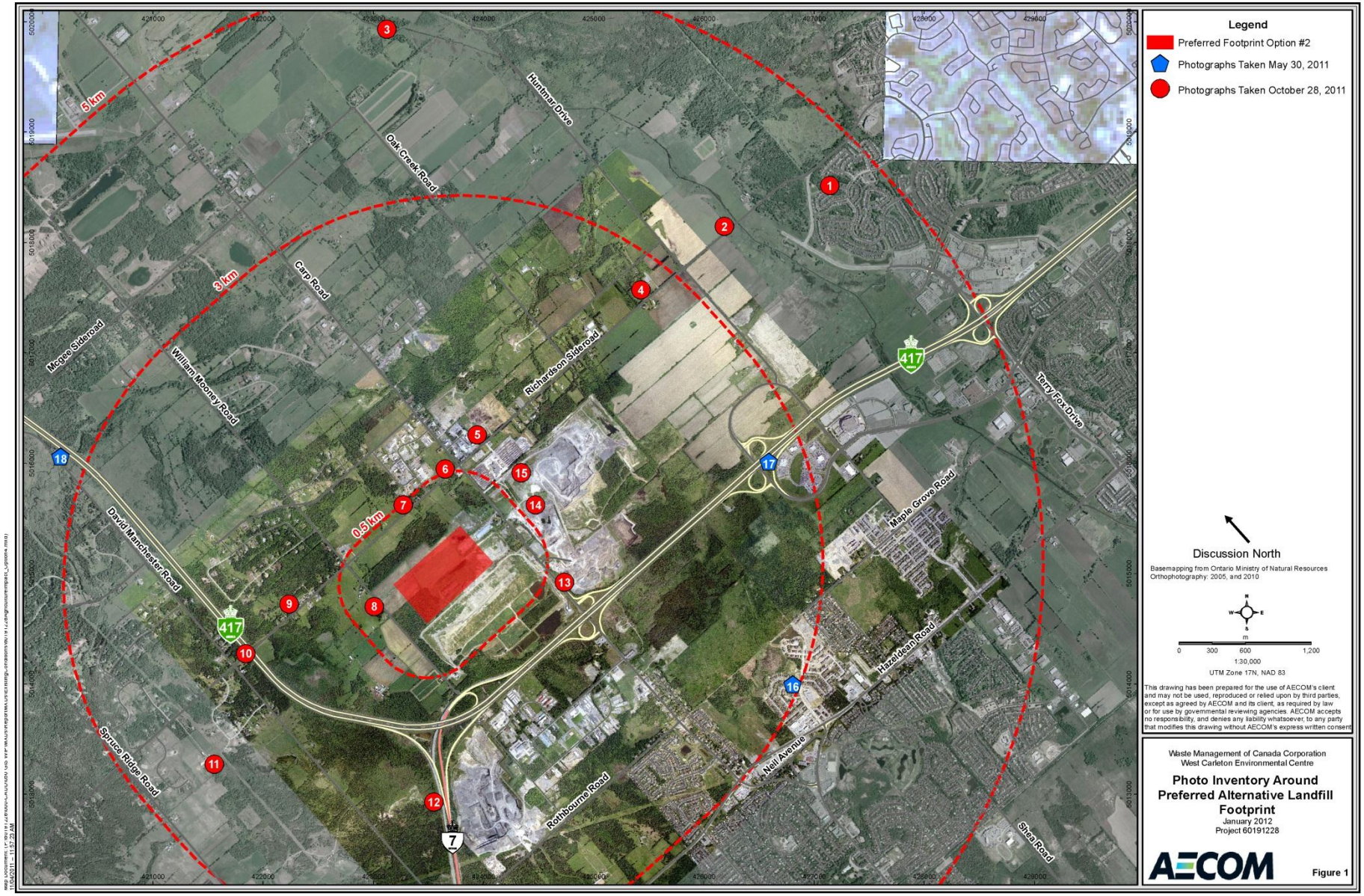

Figure A1. Photo Inventory Around Preferred Alternative Landfill Footprint

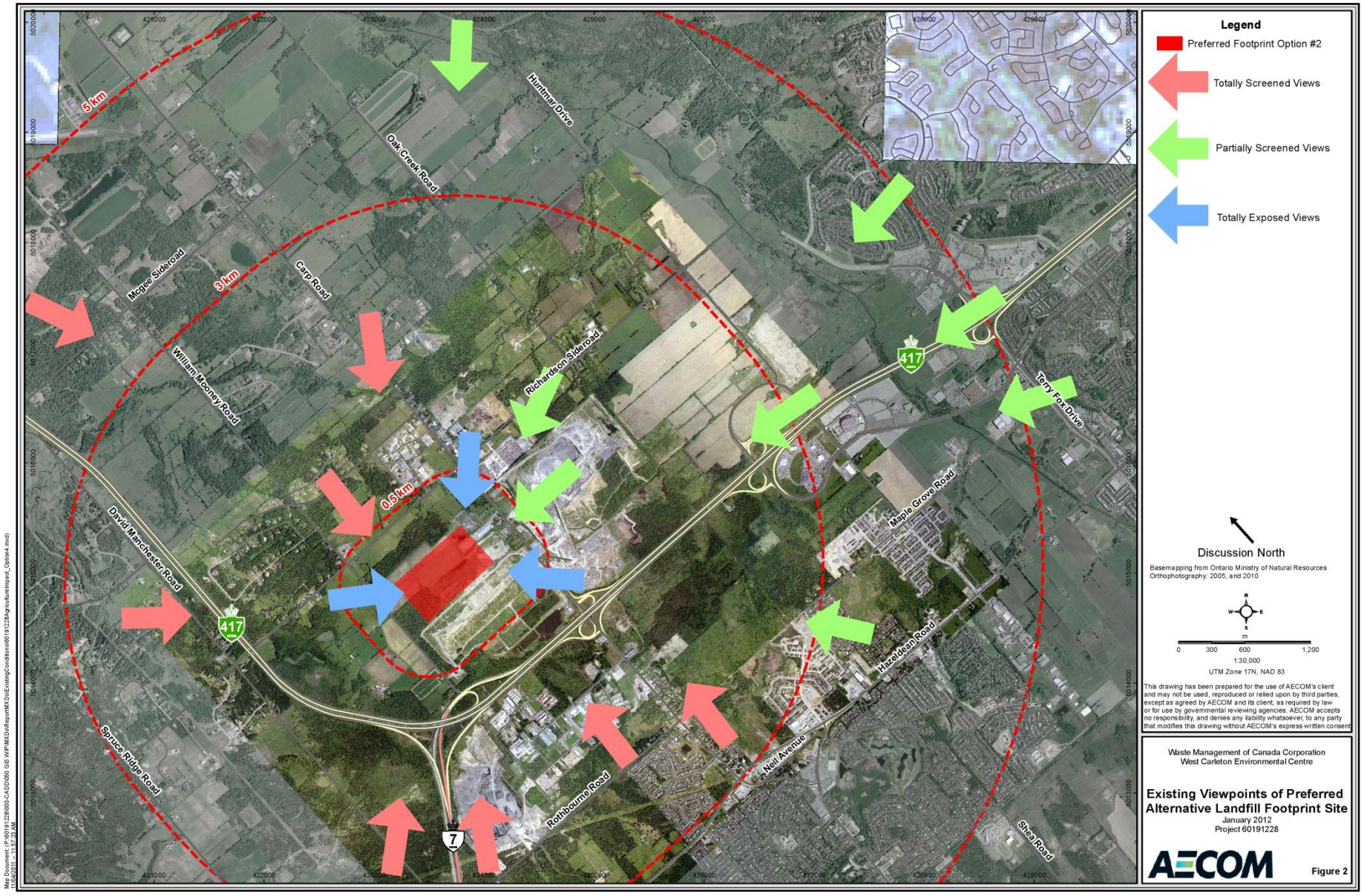

Figure A2. Existing Viewpoints of Preferred Alternative Landfill Footprint Site

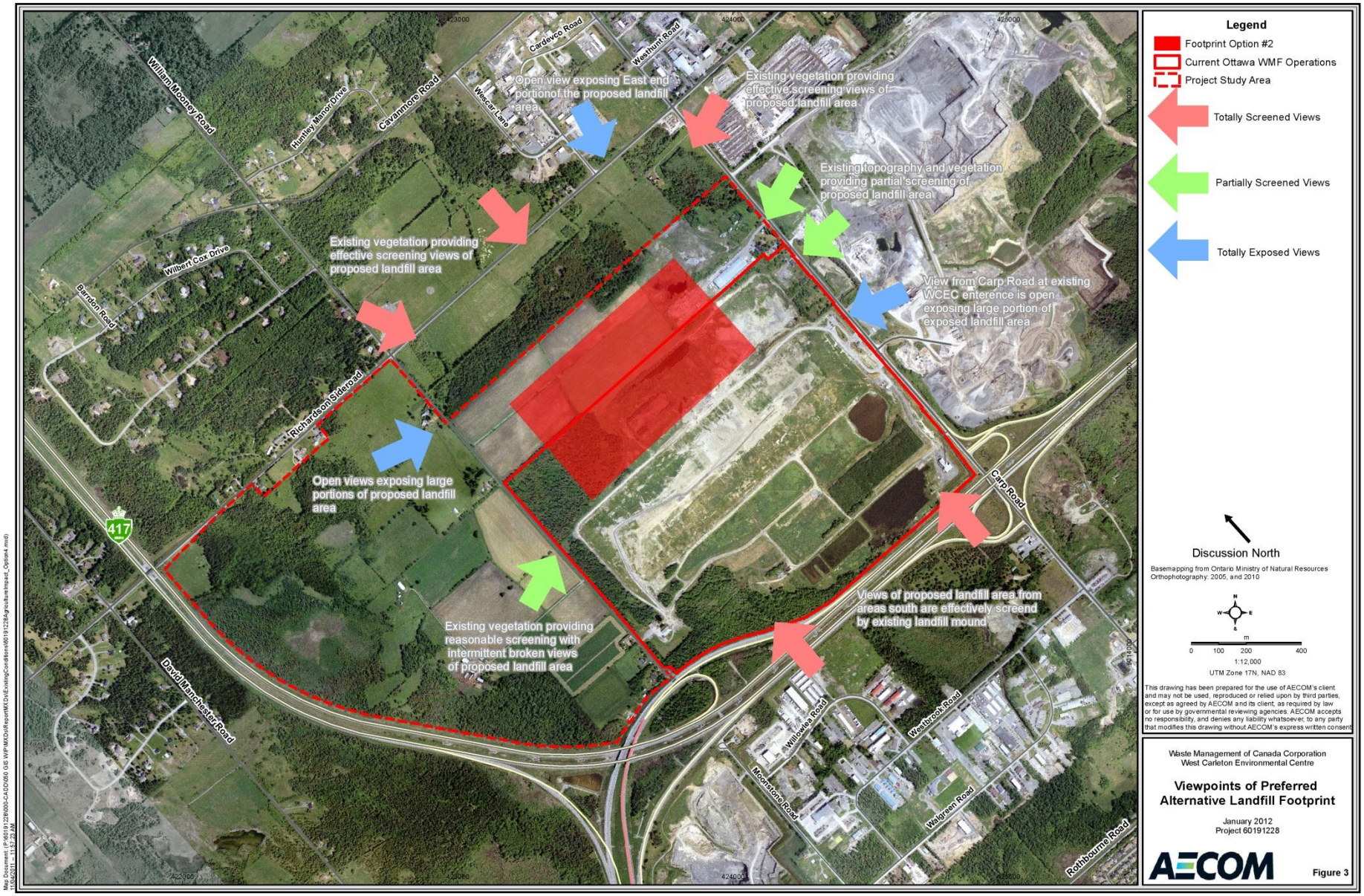

Figure A3. Viewpoints of Preferred Alternative Landfill Footprint

Photo 1. Kanata Avenue east of Terry Fox Drive – looking west to landfill site. Partially screened view of Preferred Landfill Footprint.

Photo 2. Richardson Side Road at Terry Fox Drive – looking west to landfill site. Partially screened view of Preferred Landfill Footprint.

Photo 3. Huntmar Drive just south of Old Carp Road – looking south to landfill site. Partially screened view of Preferred Landfill Footprint.

Photo 4. Richardson Side Road just west of Huntmar Drive – looking west to landfill site. Fully screened view of Preferred Landfill Footprint.

Photo 5. Richardson Side Road just west of Carp Road – looking southwest to landfill site. Partially screened view of Preferred Landfill Footprint.

Photo 6. Richardson Side Road just west of Carp Road – looking south to the landfill site. Fully exposed view of Preferred Landfill Footprint.

Photo 7. Richardson Side Road between Carp Road and William Mooney Road – looking south to the landfill site. View of Preferred Landfill Footprint fully screened.

Photo 8. William Mooney Road south of Richardson Side Road - looking southeast to landfill site. Fully exposed view of Preferred Landfill Footprint.

Photo 9. Richardson Side Road between William Mooney Road and Highway 417 Overpass – looking southeast to landfill site. Partially screened view of the Preferred Landfill Footprint.

Photo 10. Richardson Side Road at the Highway 417 Overpass – looking southeast to the landfill site. Fully screened view of the Preferred Landfill Footprint.

Photo 11. David Manchester Road south of Richardson Side Road - looking east to landfill site. Fully screened view of the Preferred Landfill Footprint.

Photo 12. Highway 7 north of Hazeldean Road – looking north to the landfill site. Fully screened view of the Preferred Landfill Footprint.

Photo 13. Carp Road north of Highway 417 – looking northwest to the landfill site. Fully exposed view of the Preferred Landfill Footprint.

Photo 14. Carp Road at Laurysen Kitchens – looking west to landfill site. Partially screened view of the Preferred Landfill Footprint.

Photo 15. Carp Road south of Richardson Side Road – looking southwest to the landfill site. Fully screened view of the Preferred Landfill Footprint.

Photo 16. Klimpton Drive – looking northwest to the landfill site. Partially screened view of the Preferred Landfill Footprint.

Photo 17. Huntmar Drive at Highway 417 – looking west to the landfill site. Partially screened view of the Preferred Landfill Footprint.

Photo 18. David Manchester Road south of McGee Side Road – looking southeast to the landfill site. Fully screened view of the Preferred Landfill Footprint.

Appendix B

Possible Landscape Treatments to Screen from Adjacent Surrounding Areas

Photo 1. View from northwest along William Mooney Road of Preferred Landfill Footprint with no screening treatment.

Photo 2. View from northwest along William Mooney Road of Preferred Landfill Footprint with possible natural landscape screening treatment.

Photo 3. View from southeast along Carp Road of Preferred Landfill Footprint with no screening treatment.

Photo 4. View from southeast along Carp Road of Preferred Landfill Footprint with possible landscape screening treatment.

Photo 5. View from northeast along Richardson Side Road of the Preferred Landfill Footprint with no screening treatment

Photo 6. View from northeast along Richardson Side Road of the Preferred Landfill Footprint with possible landscape screening treatment