December 2014

Technical Support Document #8

AGRICULTURE

TAGGART GROUP OF COMPANIES

THE MILLER GROUP

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1.0 INTRODUCTION

This document presents the agricultural component of the environmental assessment (EA) of the proposed Capital Region Resource Recovery Centre (CRRRC) on the Boundary Road Site. The study has been conducted according to the requirements set out in the approved TOR (EASR Appendix A). The general methodology for conducting the EA is presented in Section 2 of the EASR. This agricultural impact assessment was carried out for the Site Development Plan as described in Section 10 of the EASR.

Clark Consulting Services were retained to prepare the agriculture component of the impact assessment.

2.0 ASSESSMENT METHODOLOGY

Data for the agricultural component of the impact assessment was collected and analyzed for three generic study areas as follows:

- Site – The Boundary Road Site lands owned or optioned by Taggart Miller Environmental Services (Taggart Miller) for the proposed CRRRC;
- Site-vicinity – The lands in the vicinity of the Site (within 1 kilometre of the Site boundaries for agriculture) and a general view of lands within 2 kilometres to assess the nature of agriculture production in a broader area; and
- Haul Route – The main haul/access route to the Site.

A compilation and review of agricultural information relevant to the Boundary Road Site was completed, including available published information and visits to the Site and the Site-vicinity. The following tasks were completed:

- A review of the exisitng Official Plan for the City of Ottawa (City of Ottawa, 2003);
- A review of the 2013 Land Evaluation and Area Review (LEAR) project prepared by the City of Ottawa including contact with the City staff responsible for the Review (LEAR, 2013);
- A review of Provincial Policy as it applies to the designation of Prime Agricultural Areas (MMAH, 2014);
- A review of the zoning by-law for the City of Ottawa (City of Ottawa, 2008);
- A review of aerial photography of the Site and the Site-vicinity;
- Field reconnaisance of the Site and Site-vicinity on the following dates:
  - May 12, 2012;
  - January 22, 2013; and
  - July 22, 2013.
- Review of published data and mapping on soils, agricultural land capability classification, drainage and farm tax credit;
- Meeting with farmers to obtain information they were willing to share about their agricultural operations; and
- Meeting with municipal officials to determine any planned agricultural operations and any applications submitted for approval.

An Agricultural Land Evaluation was completed, including a detailed agricultural capability assessment and a review of compatiblity of the proposed CRRRC site devcelopment with adjacent livestock facilities using Minimum Distance Separation Formula calculations (OMAFRA, 2006).

This assessment concluded with the preparation of this Technical Support Document.

3.0 EXISTING ENVIRONMENT

3.1 Existing Conditions

3.1.1 Soils

Report No. 58 of the Ontario Institute of Pedology, prepared in 1987, provides a description of the soils of the Regional Municipality of Ottawa-Carleton excluding the Ottawa Urban Fringe (OMAFRA, 1987). The subject lands are shown on Map 1 of report No. 58. An excerpt of Map 1 is reproduced as Figure 1. The soils in this area have been developed on water deposited parent material. They are characterized as level and the parent material is fine sands and clays. The level nature of the soils combined with the fine parent material has resulted in an area with the principal constraint related to drainage. This is compounded by drainage obstructions such as roads and vegetation that either restricts flow or retains soil moisture.

The soils map shows four soils types on or near the Site as shown in Table 1. The Site lands are predominantly vacant. The only exceptions are the three residences at the north end of Frontier Road, the model airplane facility fronting on Frontier Road just north of Devine Road and one existing residence along Boundary Road. The residences are understood to be owned by Taggart Miller.

Table 1: Site and Site-vicinity Soil Types

Soil Type	Parent Material	Characteristic
St. Thomas sandy loam	fine sand or sand over clay	level, poor drainage
Manotick fine sand	fine sand over clay	1 – level, poor drainage 2* – irregular slopes, poor drainage
Castor fine sandy loam/	fine sand over clay	level, poor drainage
Bearbrook heavy clay	heavy clay	level, poor drainage

The Canada Land Inventory (CLI) provides a Capability for Agriculture based upon 7 classes and a series of sub classes related to limitations of soils for agricultural production (CLI, 1998). The 7 classes rate the soil on severity of limitation to cultivation beginning with Class 1 that has no limitations and progressing to Class 7 that cannot be cultivated. The published capability rating was based upon the Soils Mapping. As shown in Table 2, Report No. 58 (OMAFRA, 1987) divides the soils types into landscape units and establishes the following capability classifications associated with the soil landscape units (CLI, 2013).

Table 2: Canada Land Inventory Rating

Soil Type	CLI Rating
St. Thomas sandy loam (5 & 6)	5FW
Manotick fine sand (M6)	4FW
Complex of Castor fine sandy loam / Bearbrook heavy clay (CS-B4)	3FW/3DW

An excerpt from the CLI Mapping (CLI, 2013) is reproduced as Figure 2.

The CLI mapping as it applies to the Manotick fine sand landscape unit 6 does not agree with the classification as set out in the Soils Report. This landscape unit is classified as 4W'F in the Soils Report. As described in Table 9 of the Soils Report, this classification is based on the poor drainage (W') and the low fertility (F) of the soils in this landscape unit. We also note that the soils descriptions in Report No. 58 (OMAFRA, 1987) do not agree with the detailed geotechnical investigations prepared as part of the site review.

Our conclusion, based upon several site visits is that the entire Boundary Road Site is constrained by poor drainage. Even those areas that have been cleared showed evidence of surface wetness and extended wetness during spring and fall. The wetness constraint for agricultural capability causes several issues that are evident on this Site. The clay and fine sand soils have inherently poor drainage. This natural limitation combined with the level nature of the Site and the lack of sufficient outlet to provide under-drainage compounds the limitation. The Simpson Drain that crosses the property in a west-east orientation has a limited distance of influence in the fine sand soils. Wetness, particularly if it is a major constraint, serves to shorten the growing season, limit growth and restrict the use of planting and harvesting equipment.

The site visits conducted during this assessment confirmed that the drainage channels crossing the property were full of water with little freeboard. With the exception of the major drainage channels, the inverts of all road culverts were very shallow and would not allow drainage depth sufficient to allow root depth development and infiltration of surface water. The treed areas showed signs of on-going wetness by type of vegetation. A limited soil sample survey confirmed the fine sand and clay soils as depicted on the soils map.

It was concluded based on the Site-specific evaluation that the portion of Site shown on the CLI mapping as underlain by Manotick soil is incorrectly illustrated as 3W, and should be labelled as 4WF.This classification is made in accordance with the Ministry Guidelines for the CLI classification (OMAFRA, n.d.).

Table 3 provides a breakdown of the soil capability of the Site based on this assessment.

Table 3: Site-Specific Soil Classification and Area

Classification	Area	Percentage (%) of Total Area
Class 4	120.4 ha (297.9 ac)	62.7%
Class 5	65.3 ha (161.5 ac)	34.0%
Unclassified	6.3 ha (15.6 ac)	3.3%
Total	192.0 ha (475.0 ac)	100.0%

3.1.2 Climate

The Site is located in Climatic Zone E, which is generally classified as mild mesic with respect to temperature and precipitation. Mean annual soil temperature at 50 centimetres depth ranges from 8 to 15 degrees C, and mean summer soil temperature ranges from 15 to 22 degrees C. The period in which the soil is dry is less than 90 days in most years with soil deficits ranging from 2.5 to 6.4 centimetres. This restricts some frost sensitive crops but would allow a range of normal farm crops[2].

3.1.3 Past Farming Practices

The majority of the Site was previously cleared for agricultural purposes; however, a substantial portion of the Site has been allowed to re-vegetate. The predominant form of vegetation is red maple and European white birch. There are several ditches crossing the Site in a west - east orientation. These ditches were full of water at the time of the Site visits. The Site and adjacent lands give evidence of elevated water table.

3.1.4 Non-Agricultural Uses on and Adjacent to the Site

The land uses to the south and east are agricultural. There were no active livestock facilities on lands immediately adjacent to the Site. There is a barn to the south at 6086 Frontier Road that has limited capacity and is currently occupied by Mann Paving for storage of materials and equipment related to their business. Further south there is a large livestock facility.

The land uses within 1 kilometres of the Site are illustrated on Figure 3.

An agricultural land use survey of the Site and the Site-vicinity was conducted. The breakdown for the Site is summarized as in Table 4.

Table 4: Site Land Use Breakdown

Land Use	Area (ha)	Area (ac)	Percentage of Total Area
Crop	31.2	77.0	16.3%
Pasture/Hay	0	0	0.0%
Wooded	147.9	366.0	77.0%
Other	12.9	32.0	6.7%
Total	192.0	475.0	100.0%

The Site has a limited area devoted to active agricultural use. Cropland occupies approximately 16.3% of the Site area. This cropland was not under active cultivation but was fallow or devoted to pasture during our site visits. As noted in the capability assessment, this cropland has significant limitations from an agricultural perspective. The bulk of the Site is vacant and has been in non-agricultural production for many years.

The breakdown of agricultural land use within 1,000 metres of the Site is summarized in Table 5.

Table 5: Site-vicinity (1,000 m) Land Use Breakdown

Land Use	Area (ha)	Area (ac)	Percentage of Total Area
Crop	249.5	617.4	22.7%
Pasture/Hay	3.4	8.4	0.3%
Wooded	683.7	1,691.9	62.1%
Other	164.3	406.6	14.9%
Total	1100.9	2724.3	100.0%

Even within 1000 metres of the Site there is only 22.7% of the land area devoted to active agricultural production and only a few livestock facilities. The bulk of the agricultural production is located to the south and east of the Site.

3.2 Review of Planning Documents

The City of Ottawa Official Plan (City of Ottawa, 2003) designates the subject lands as General Rural Area, as illustrated on Figure 4. The lands to the east and south are designated as Agricultural Resource Area on the Land Use Schedule of the City Official Plan. The lands to the west and north have a variety of commercial, industrial and residential uses.

The City of Ottawa Zoning By-law (City of Ottawa, 2008) zones the subject lands as Rural Countryside (RU) Zone and Rural Heavy Industrial (RH) Zone and Rural General Industrial (RG) Zone. The lands in the area to the east and south are zoned in the Agricultural (AG) Zone and RU zones. The RU Zone permits a range of rural uses. The AG Zone has a more limited list of uses intended to protect the agricultural uses. The zoning is shown on Figure 5.

The Provincial Policy Statement (MMAH. 2014) requires that Prime Agricultural Areas are to be protected for long-term use for agriculture. Prime Agricultural Areas are to be defined as areas where prime agricultural lands predominate. These areas are to be identified by the Ontario Ministry of Agriculture and Food using evaluation procedures established by the Province. This process is reflected in the approved Official Plan of the City of Ottawa (City of Ottawa, 2003) and under review as part of the Ottawa-Carleton Land Evaluation and Area Review for Agriculture (LEAR) study (LEAR, 2013) being conducted by the City in consultation with the Province.

The Site is not designated as Agricultural Resource Area in the current Official Plan of the City of Ottawa (City of Ottawa, 2003). Furthermore the LEAR Study (LEAR, 2013) does not propose to change the current designation. Therefore it was concluded that the Site is not part of a Prime Agricultural Area as defined by the Provincial Policy Statement (MMAH, 2014).

4.0 IMPACT ASSESSMENT RESULTS

4.1 On-Site Agricultural Use

4.1.1 Type and Intensity of Existing Agricultural Production

The Site Development Plan will remove a small area of land currently under marginal agricultural production. As outlined above, this area of land has significant constraints to agricultural production. Use of these lands for the CRRRC will not have a significant impact on farm management for lands beyond those directly impacted. These lands do not have significant investment in agricultural production (Ontario, 2008) as indicated on Figure 6. The information in this figure illustrates that despite the presence of the Simpson Municipal Drain, no agricultural tile drainage has been installed and no farm assessment parcel has been identified on the Site. The agricultural production of these lands is marginal and not high value crop, and the removal of the limited extent of lands currently under production will not impact the viability of other farming operations.

4.2 Off-Site Agricultural Use

Three types of potential impact associated with the CRRRC were assessed, as described below.

4.2.1 Livestock Compatibility

The Ministry of Agriculture Food and Rural Affairs provides Minimum Distance Separation (MDS) Formulae (OMAFRA, 2006) to evaluate the compatibility of non-farm uses with livestock operations. The MDS calculation provides a measurement of the minimum distance recommended to limit the impact of the non-farm use on the livestock operation. The measurement includes consideration of the type of livestock, the housing capacity of the livestock facility, the type of manure handling employed and the tillable area available for both feed production and manure disposal. MDS calculations were prepared for all livestock facilities within 2 kilometres of the Site. The calculations illustrated that there is sufficient distance between existing livestock operations and the Site to ensure compatibility of the proposed CRRRC with these facilities. The actual setback distance between the existing barns and the CRRRC exceeds that required by the MDS calculations, generally by a factor of 2 to 5 times. During our land use survey several farmers were contacted to confirm the information to be used in the MDS calculation. This discussion also included a review of farming operations in the area. The MDS report and calculation sheets are included as Appendix A. The detailed analysis is illustrated on the MDS and Land Use figure in Appendix A.

It is therefore concluded that the proposed CRRRC would be compatible with the existing livestock facilities within 2 kilometres of the Site.

4.2.2 Impact on Agricultural Production

The agricultural production in the Site-vicinity is predominantly field crops. The potential impacts of the proposed CRRRC on field crop production include the following:

- Loss of productive lands:
  - With the exception of the on-Site lands, the proposed CRRRC does not anticipate any direct loss in productive lands due to such impacts as infrastructure improvements, increased runoff or other direct action resulting in the removal of productive lands.

- Changes to productive characteristics of the adjacent lands:
  - The design and operational objectives for the CRRRC includes the control of air, surface water and groundwater impacts resulting from the operation to Ministry of the Environment and Climate Change (MOECC) standards at the Site boundary, which are intended to be protective of human health and the environment. The potential emissions from the CRRRC have been predicted by the impact assessments of other technical disciplines as described elsewhere in the EASR and TSD's. On this basis, it can be concluded that there will be no material changes to the agricultural productive potential of the lands in the Site-vicinity.

4.2.3 Impact on Farming Practises

The normal farming practices on the lands in the Site-vicinity relate to crop production. Based on the review of the Impact on Agricultural Production (Section 4.2.2), no impacts on crop production are anticipated. Farming practices also include the movement of farm equipment for cultivation, seeding and harvesting. The location of the principal access to the Site from Boundary Road will limit access from adjacent roads, and there are no known farm access points off Boundary Road between the location of the Site access and Highway 417. These will limit conflicts between road traffic and the movement of farm equipment on these roads to existing levels.

4.3 Consultation with Farm Organization

As part of this evaluation the Ontario Federation of Agriculture and Christian Farmers Federation of Ontario were contacted for comment. No comments specific to this Site were received.

5.0 MITIGATION, MONITORING AND CONTINGENCIES

Based on the findings of this agricultural impact assessment, no agricultural impacts of any significance are predicted and no mitigation measures or monitoring specific to agriculture are recommended.

The environmental performance of the CRRRC will be adequately monitored by the programs proposed by the other disciplines.

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Figure 1 - Soils Map
Lots 21-25, Concession II, Boundary Road Site

Source: Excerpt from Map 1, The Soils of the Regional Municipality of Ottawa-Carleton

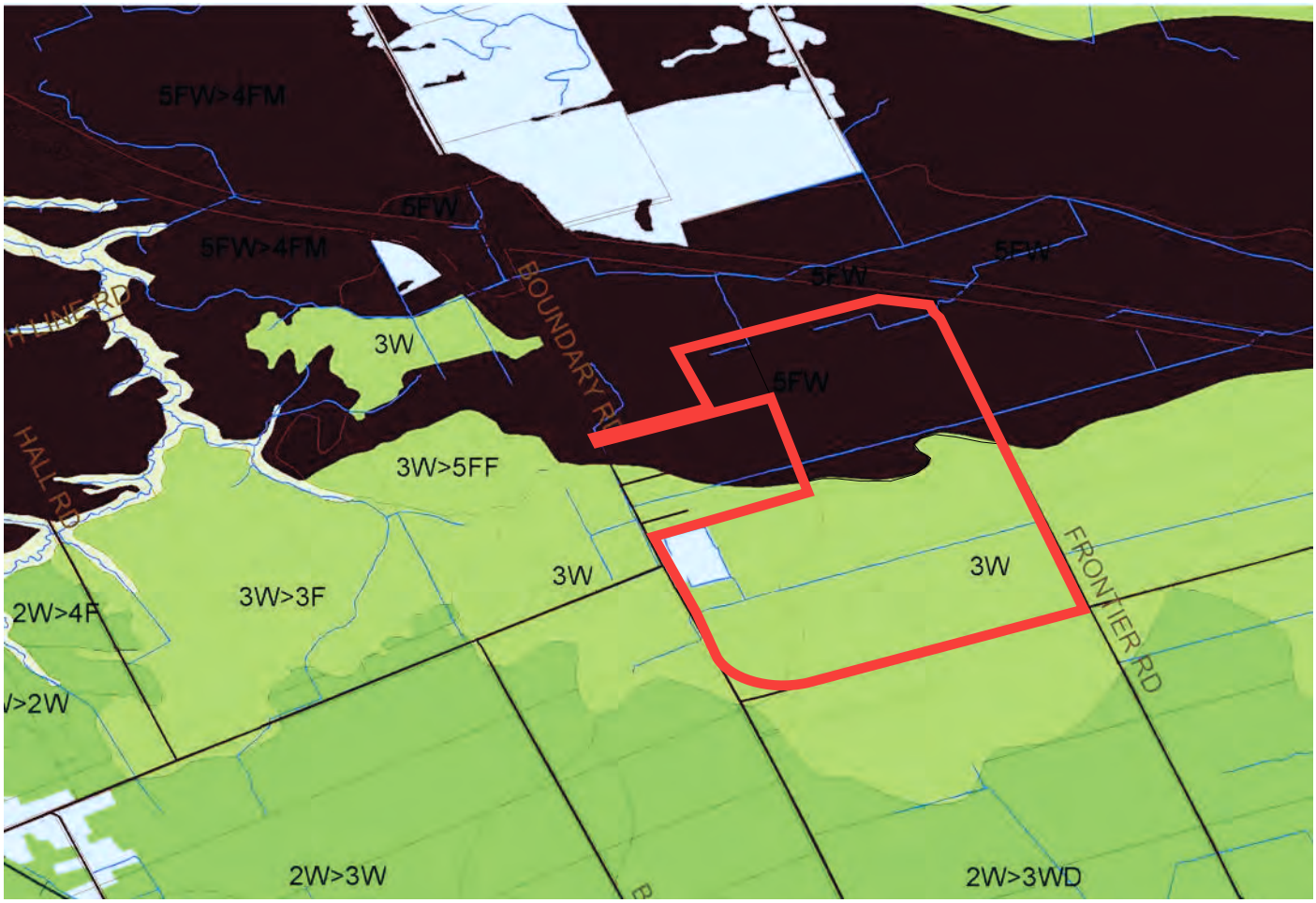
Legend

	Property Boundary
ST6 / 1	St. Thomas sandy loam, slope class 1 - 0.0-0.5%, poor drainage
M6 / 2*	Manotick fine sand, slope class 2, nearly level - 0.5-2%, irregular slopes, poor drainage
M6 / 1	Manotick fine sand, slope class 1 - 0.0-0.5%, poor drainage
B2 / 1	Bearbrook heavy clay, level, poor drainage

Not To Scale

CLARK CONSULTING SERVICES

Figure 2 - CLI Capability Mapping
Lots 21-25, Concession II, Boundary Road Site



Canada Land Inventory Rating

1	6
2	7
3	Organics
4	N/A
5	Water

Property Boundary

Not To Scale

CLARK CONSULTING SERVICES

Date: May 2012/Revised Date: December 2013

z:\1541-CRRRC Ottawa\Boundary Road Site\Figure 2 - CLI Capability Mapping.cdr

Figure 3 - MDS and Land Use
Lots 21-25, Concession II, Boundary Road Site

Legend

Dwelling	Barn Label	Land Use - Treed:	
Barn			
Property Boundary	2,000 metre boundary	Land Use - Crop:	
Road		Land Use - Hay-Pasture:	
MDS Setback Arc		Land Use - Commercial:	
		Land Use - Recreational:	

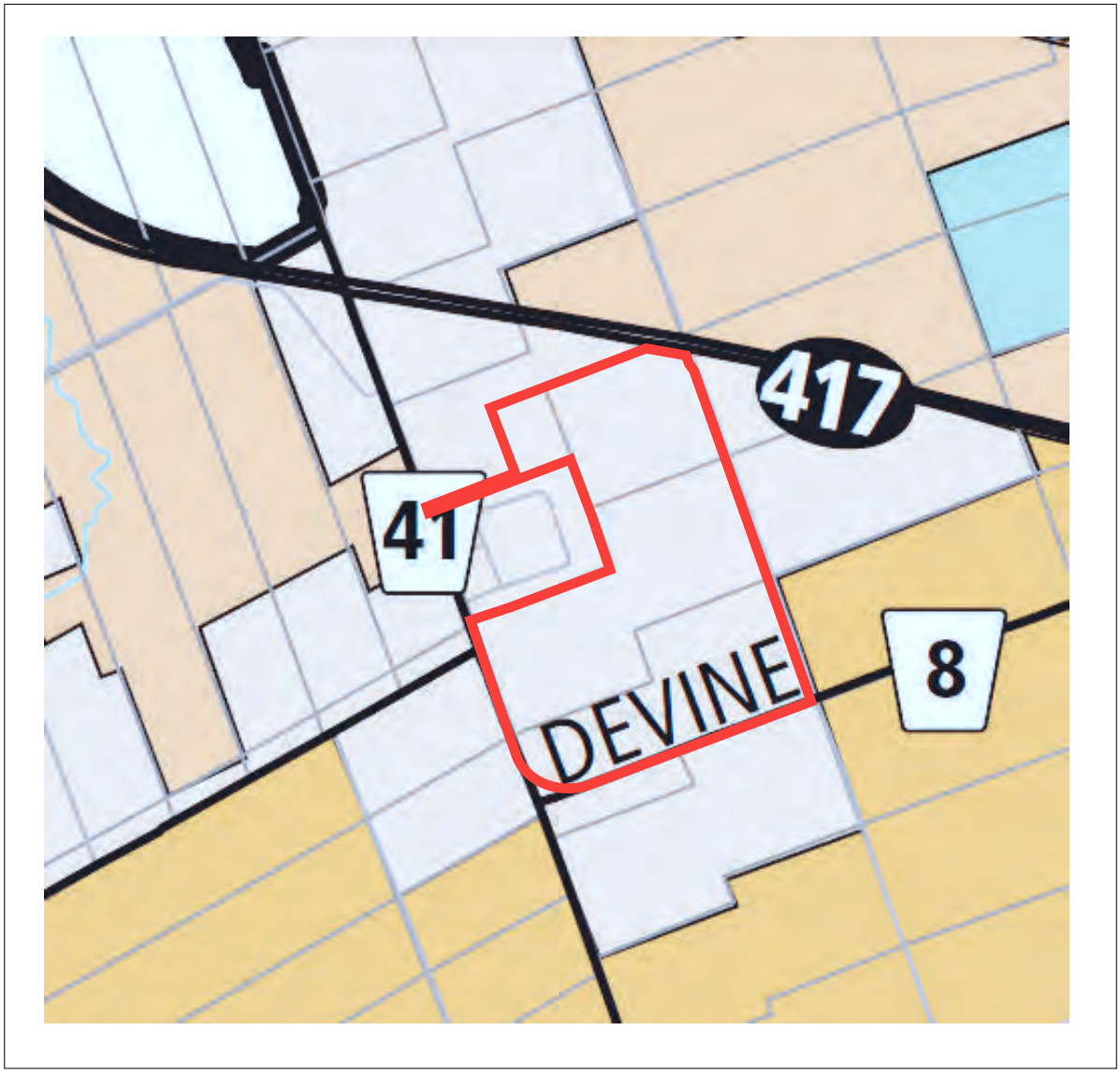
Not To Scale

CLARK CONSULTING SERVICES

Date: August 2013/Revised: December 2013

z:\1541 CRRRC Ottawa\Boundary Road Site\Figure 3 - MDS and Land Use.cdr

Figure 4 - Excerpt from City of Ottawa Official Plan
Lots 21-25, Concession II, Boundary Road Site



Agricultural Resource Area
General Rural Area
Rural Natural Features Area
Natural Environment Area
Property Boundary

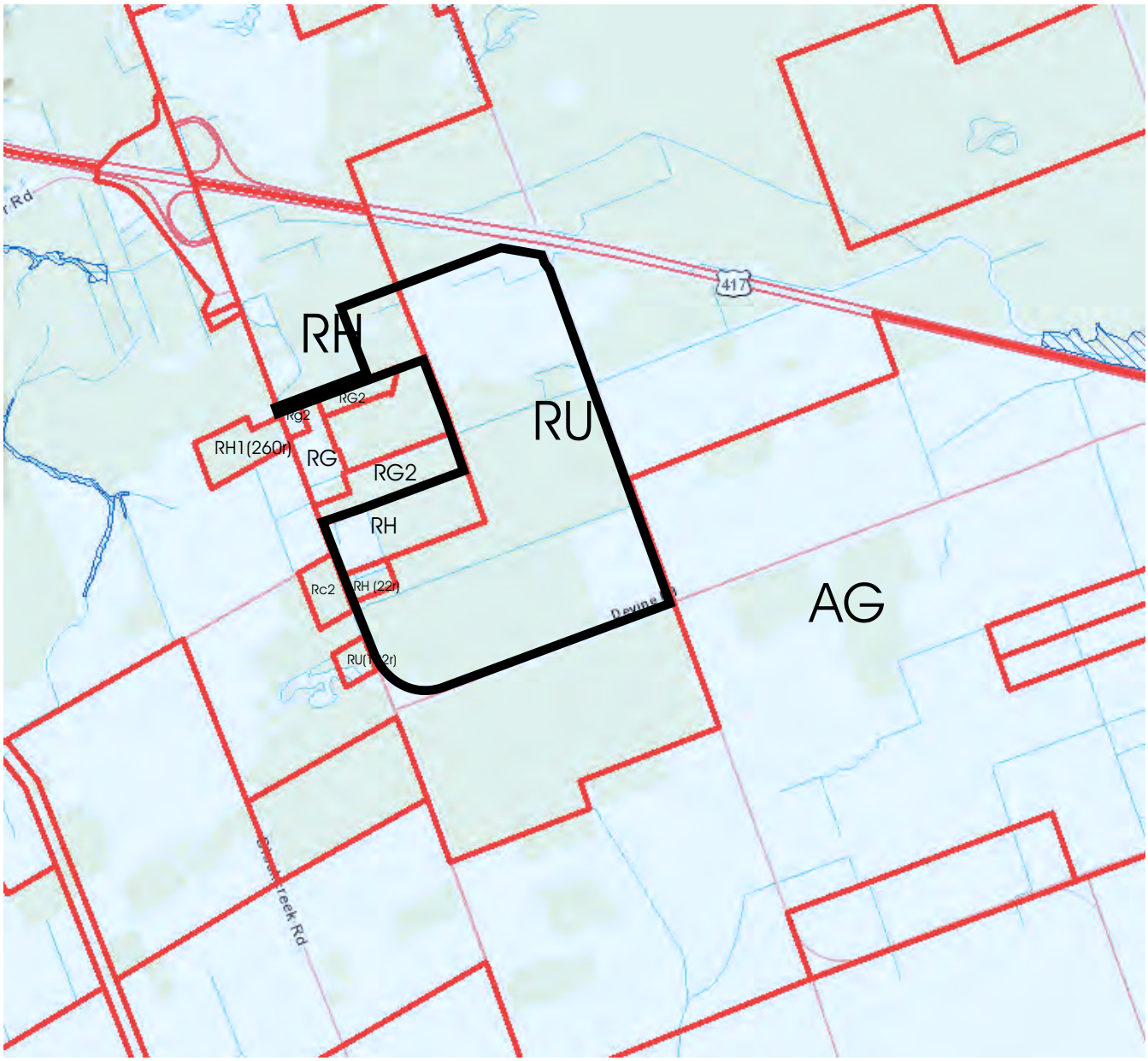
Not To Scale

CLARK CONSULTING SERVICES

Date: May 2012/Revised Date: December 2013

z:\1541-CRRRC Ottawa\Boundary Road Site\Figure 4 - OP Excerpt.cdr

Figure 5 - Excerpt from City of Ottawa Zoning By-law
Lots 21-25, Concession II, Boundary Road Site



LEGEND
RU - Rural Countryside Zone
AG - Agricultural Zone
RH - Rural Heavy Industrial Zone
RG - Rural General Industrial Zone
Property Boundary

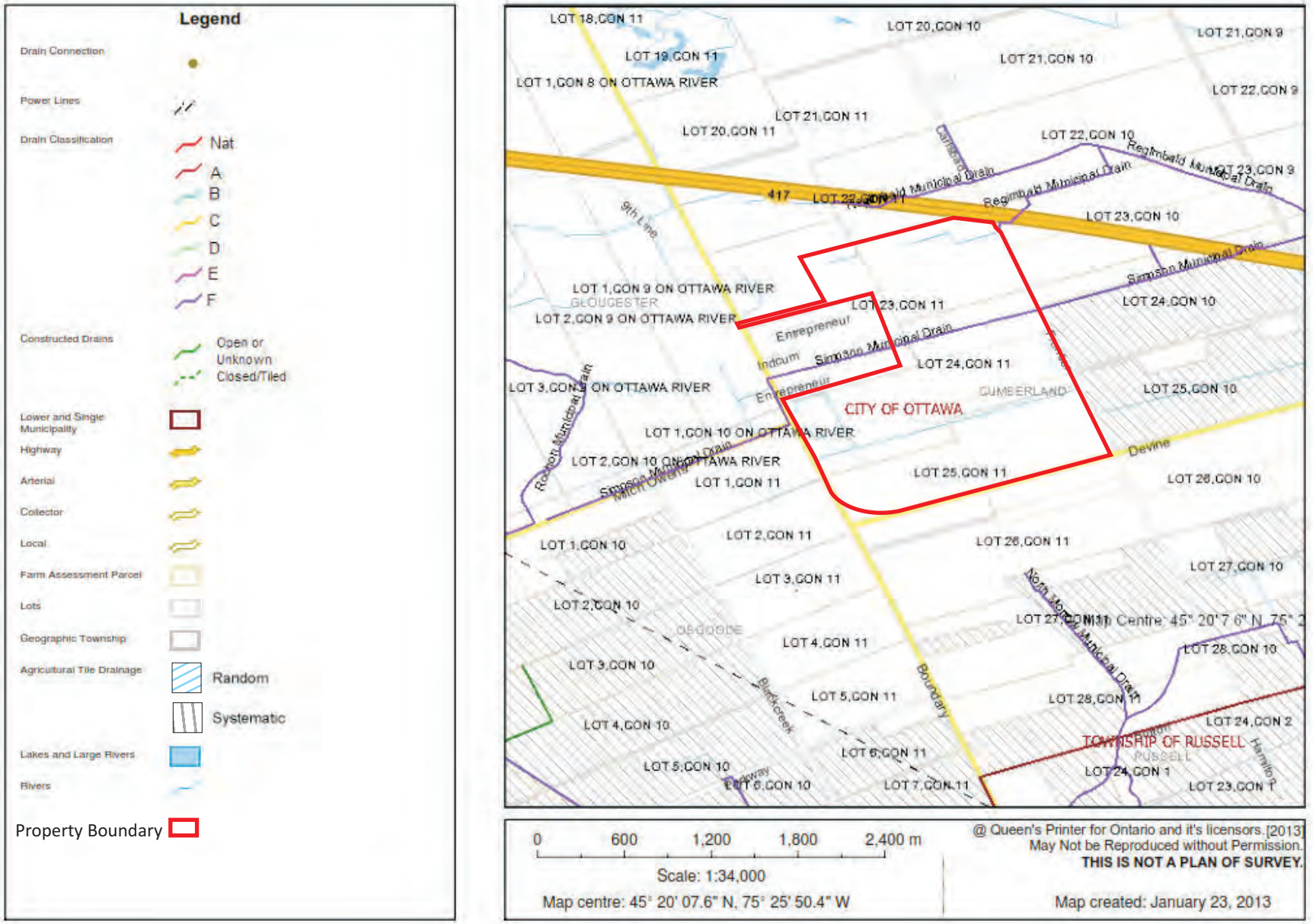
Not To Scale

CLARK CONSULTING SERVICES

Date: December 2013

z:\1541-CRRRC Ottawa\Boundary Road Site\Figure 5 - Zoning Excerpt.cdr

Figure 6 - Excerpt from Agricultural Information Atlas (AIA)
Lots 21-25, Concession II, Boundary Road Site



Not To Scale

CLARK

Date: December 2013

z:\1541-CRRRC Ottawa\Boundary Road Site\Figure 6 - Excerpt from AIA.cdr

APPENDIX A

Minimum Distance Separation Analysis

Minimum Distance Separation Report

Boundary Road Site
Proposed CRRRC
CCS Project No.1541

December 2013

Prepared for: Taggart Miller Environmental Services (Taggart Miller)
Prepared by: Clark Consulting Services

1. INTRODUCTION

As part of the Agricultural Impact Assessment for the CRRRC Boundary Road site, an analysis of livestock barns in proximity to the subject property has been completed. Minimum Distance Separation (MDS) is a tool used in planning to determine appropriate distances from livestock facilities and places of non-farm human activity. In this case the subject lands are Part of Lots 23 and 24, Concession 11, Cumberland, City of Ottawa. The subject lands are located in a mixed use farming, commercial, industrial and residential area. For the purposes of this analysis, a site visit was carried out on July 22, 2013.

In preparing this analysis, we have referred to the MDS Training Manual and the MDS Implementation Guidelines as published by OMAFRA. MDS Guideline 6 contemplates use of MDS when an existing livestock facility may reasonably be expected to be impacted by a variety of planning approvals including proposed development.

2. ANALYSIS

MDS Guidelines assist in the application of MDS to livestock facilities. A vacant barn can be considered a livestock facility unless it is in such physical condition that it is not suitable to house livestock. A number of vacant barns were noted during the site visit and an assessment of condition was made. Vacant barns capable of housing livestock were generally beef or dairy barns. These older barns appear to be former dairy barns. If the barns were refurbished and used as originally intended, housing 20 to 30 dairy cattle, and having tillable land of between 10 and 20 hectares, the resulting MDS setback would be between 316 and 392 m. The closest barn found during the site visit is 912 metres from the subject lands. Many older barns are being used to house horses or small animals. The calculations on these older barns reflect an estimate of capacity if repairs were completed.

The attached MDS and Land Use figure shows the setbacks calculated for each barn. These are shown as grey arcs.

Guideline 35 instructs the analyst to consider proposals as Type A or Type B applications. Type A land uses are typically characterized by uses that have a lower density of human occupancy, habitation or recreational use, including applications to rezone agricultural lands for industrial uses.

For the purposes of the proposed CRRRC, an MDS I Type B application was considered as it has a higher intensity of use.

Guideline 6 requires a review of barns, for a Type B Application, within 2,000 metres of the application lands. The accompanying figure shows a review of lands within the site and within a 2,000 metre area around the site.

MDS is not applied to all structures where animals are kept or exercised. For instance MDS is not applied to a riding arena or milking centre, as per MDS Guideline Definitions: *"Livestock Occupied Portion - Areas of livestock facilities where livestock spend the majority of their time, allowing substantial amounts of manure to accumulate, but not including feed preparation rooms, milking centres, offices, washrooms, riding arenas, livestock loading chutes, or livestock assembly areas".*

Tillable Land
MDS defines tillable hectares as land that can be worked or cultivated to grow crops. During the site visit it was noted that land use in this area includes pasture; crops; rough, wet, fallow lands; industrial and commercial uses; recreational and residential uses.

The MDS and Land Use figure attached to this report shows 13 barns identified from a review of aerial photography and a roadside survey. The barns are identified by letters ranging from A to M and are reviewed in detail below.

Barns A, B, C, and D:
These barns, located along Sabourin and Carlsbad Roads, north of 417, range from 1,800 to 2,000 metres distance from the CRRRC lands, and are located beyond a group of residences. MDS Guideline 12 states that *'where there are four, or more, existing non-farm uses closer to the subject livestock facility and in immediate proximity to the current application, MDS I will not be applied.'* No MDS calculations were therefore made for these barns.

Barn E:
This barn is located at 5325 Hall Road and is comprised of an older wooden sided and metal roofed barn, with a newer metal-clad addition, and connected to a feed silo. The barn appears in good condition and capable of housing livestock. At the time of the site visit no animals were seen. An estimate of housing capacity can be made using the barn size (approximately 300 m^2) and making an assumption that approximately 70% of the floor area in this barn could be used for housing (approximately 210 m^2). The remainder of the floor space would normally be used for feed storage

and preparation, equipment storage, and animal handling space. This barn may have originally been used as a dairy barn. This would result in a housing capacity of 22 large framed milking cows. The land attached to this barn is a mix of hay fields, pasture and rough wooded land. An estimate of 20 tillable hectares has been made from a review of aerial mapping and roadside survey. The MDS setback generated is 392 m. The actual setback to the subject lands is 1,992 m.

Barn F:
Barn F is located at 9341 Mitch Owens Road and is an active livestock farm comprising a number of outbuildings and older equipment across the farm lot. A variety of animals may be kept on the farm and they would use various shelters to protect them from harsh weather. MDS is not applied to field shade shelters and so the barn is the only structure reviewed.

The barn is an older wooden and metal sided barn with boards missing from the outer walls. A lean-to shelter has been added to the north side. Poorly defined manure piles are located on the east and west sides of the barn. This is a smaller barn that may have been used as a small dairy barn but would now be better suited to housing beef cattle. Capacity for this barn would be about 15 cattle. Land around the farm is a mix of crop, hay and pasture. The estimated area of tillable land is 8 hectares. The resulting MDS setback is 345 metres compared to an actual setback of 941 metres.

Barn G:
Barn G is an older dairy barn at 9074 Mitch Owens Road. This barn is approximately 2,070 metres from the subject land and so no calculations have been made.

Barn H:
An older barn, located at 1170 Blackcreek Road, is an older metal roofed building in poor condition. From our review it would appear that part of the roof of this building is missing and so this barn would need substantial repair to be considered a livestock facility. In this case, calculations were completed based upon the possibility that repairs could be made so the barn would be safe to house animals.

The barn is of a type that may have been used to shelter beef cattle during harsh weather. A barn such as this would typically house around 35 cattle. Land attached to the barn consists mainly of pasture, which could be used for hay, with some other rough treed areas. A maximum of 6 ha tillable is attached and so the resulting MDS setback is 308 m and the actual setback is 941 m.

Barn I:
Barn I is located at 9391 Parkway Road. It is in very poor condition with part of the roof collapsed. This barn is not considered a livestock facility and does not generate an MDS setback.

Barn J:
Barn J is a single storey building sitting south and west of the farm house. A smaller vacant building

with a short silo sits within an overgrown field close to the roadside. The main barn is of a type that may be used to grow a limited number of pigs. A field attached to the barn is currently growing corn. Basing the calculations on 30 hectares tillable and an estimated housing area of 220 m^2, the barn generates an MDS setback of 775 metres compared to an actual setback of 1,471 metres.

Barn K:
This farm is located at 6086 Frontier Road. At the time of the site visit the farm was gated and a sign saying "A-1 Mann Paving" suggests the buildings are not being used for livestock. The barn looks like an older dairy barn with a capacity of 20 cows. Using a tillable area of 5 ha, the MDS setback is 253 metres compared to an actual setback of 912 metres.

Barn L:
Barn L is located at 6205 Frontier Road. This barn is a two part structure in poor condition, with sheets missing from the roof and a gable end open to the elements. This barn is not used to house livestock and would require repair to have any capacity. No calculations have been made.

Barn M:
Barn M is at 505 Burton Road. It is a newer dairy barn owned by Mr. Leo Versteeg, who advised that his barn holds 115 milking cows. The farm has approximately 20 tillable hectares. The MDS setback is 463 metres and the actual setback is 1,634 metres.

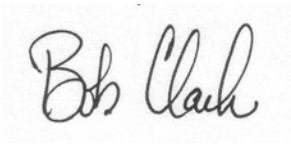
A total of 6 (MDS) setback arcs have been created around the Boundary Road site, as shown on the accompanying figure. None of these setback arcs encroach within the subject CRRRC lands.

3. SUMMARY

In reviewing MDS documents, information supplied, available aerial mapping, and information from a site visit on July 22, 2013, a number of vacant and currently occupied barns are within the 2,000 metre review area of the CRRRC lands. These barns are used to house a variety of animals including horses, dairy and beef cattle. Land in this area is generally flat to gently rolling and many fields are suitable for cultivation and growing crops.

The analysis completed using Minimum Distance Separation I Formulae and the Guidelines as published by OMAFRA show that the actual setback distance between existing barns and the proposed CRRRC lands exceeds the required MDS, typically by between 2 to 5 times.

Respectfully submitted,



Bob Clark, P.Eng., P.Ag., MCIP, RPP, OLE
President

ATTACHMENTS
- MDS Sketch
- MDS Calculations

z:\1541-CRRRC Ottawa\1541-MDS Report-December 2013 (Revised March 6-2014).wpd

MDS and Land Use
Proposed CRRRC
Boundary Road Site, Ottawa

Legend

Dwelling	Barn Label	Land Use - Treed:	
Barn	2,000 metre boundary	Land Use - Crop:	
Property Boundary		Land Use - Hay-Pasture:	
Road		Land Use - Commercial:	
MDS Setback Arc		Land Use - Recreational:	

Scale (metres)

0 100 200 300 400 500 1,000 1,500

NTS

CLARK

Date: August 2013/Revised: December 2013

z:\1541 CRRRC Ottawa\Boundary Road\2000 aerial.cdr

Minimum Distance Separation I (MDS I) Report

File: MDS Type B.mds

Application Date: 06-Aug-2013
File Number: 1541 CRRRC

Preparer Information
Hugh Stewart
Clark Consulting Services
52 John Street
Port Hope, ON, Canada L1A 2Z2
Phone #1: 905.885.8023
Fax: 905.885.4785
Email: hugh@clarkcs.com

Applicant Information
CRRRC
Cumberland, City of Ottawa

City of Ottawa
Geotownship: CUMBERLAND
Concession: 11
Lot: 23

Barn E
5325 Hall Road

Adjacent Farm Contact Information

Cumberland, City of Ottawa
5325 Hall Road
ON, Canada

Farm Location
City of Ottawa
Geotownship: CUMBERLAND
Concession: 9
Lot: 5

Manure Form	Type of Livestock/Material	Existing Capacity	Existing NU	Estimated Barn Area
Solid	Dairy; Milking-age Cows (dry or milking) Large Frame (545 - 636 kg) (eg. Holsteins); 3 Row Free Stall	22	31.4	215 m²

Encroaching Land Use Factor: Type B Land Use
Tillable area of land on this lot: 20 ha
Manure/Material Storage Type: No storage required (manure/material is stored for less than 14 days)

Factor A (Odour Potential): 0.7
Factor B (Nutrient Units): 364
Factor D (Manure/Material Type): 0.7
Factor E (Encroaching Land Use): 2.2
Total Nutrient Units: 31

	Required Setback	Actual Setback
Distance from nearest livestock building 'F' (A x B x D x E):	392 m (1287 ft)	1992 m (6535 ft)
Distance from nearest permanent manure/material storage 'S':	No existing storage	

Signature of Preparer: Hugh Stewart, Clark Consulting Services
Date: Aug 16. 2013

Barn F

9341 Mitch Owens Road

Adjacent Farm Contact Information
Unspecified
9341 Mitch Owens Road
Cumberland, ON, Canada

Farm Location
City of Ottawa
Geotownship: CUMBERLAND
Concession: 9
Lot: 2

Manure Form	Type of Livestock/Material	Existing Capacity	Existing NU	Estimated Barn Area
Solid	Beef; Backgrounders (7 - 12.5 months); Yard/Barn	15	5.0	56 m²

Encroaching Land Use Factor: Type B Land Use

Tillable area of land on this lot: 8 ha

Manure/Material Storage Type: No storage required (manure/material is stored for less than 14 days)

Factor A (Odour Potential): 0.8
Factor B (Nutrient Units): 280
Factor D (Manure/Material Type): 0.7
Factor E (Encroaching Land Use): 2.2
Total Nutrient Units: 5

	Required Setback	Actual Setback
Distance from nearest livestock building 'F' (A x B x D x E):	345 m (1132 ft)	941 m (3087 ft)
Distance from nearest permanent manure/material storage 'S':	No existing storage	

Barn H

1170 Black Creek

Adjacent Farm Contact Information
Unspecified
1170 Black Creek
Cumberland, ON, Canada

Farm Location
City of Ottawa
Geotownship: CUMBERLAND
Concession: 10
Lot: 2

Manure Form	Type of Livestock/Material	Existing Capacity	Existing NU	Estimated Barn Area
Solid	Beef; Backgrounders (7 - 12.5 months); Yard/Barn	35	11.7	130 m²

Signature of Preparer: H. J. Stewart
Hugh Stewart, Clark Consulting Services

Date: Aug 16-2013

Minimum Distance Separation I (MDS I) Report

File: MDS Type B.mds

Encroaching Land Use Factor: Type B Land Use

Tillable area of land on this lot: 6 ha

Manure/Material Storage Type: No storage required (manure/material is stored for less than 14 days)

Factor A (Odour Potential):	0.8
Factor B (Nutrient Units):	250
Factor D (Manure/Material Type):	0.7
Factor E (Encroaching Land Use):	2.2
Total Nutrient Units:	12

	Required Setback	Actual Setback
Distance from nearest livestock building 'F' (A x B x D x E):	308 m (1010 ft)	941 m (3087 ft)
Distance from nearest permanent manure/material storage 'S':	No existing storage	

Barn J

9420 Parkway Road

Adjacent Farm Contact Information
Unspecified
9420 Parkway Road
Cumberland, ON, Canada

Farm Location
City of Ottawa
Geotownship: CUMBERLAND
Concession: 11
Lot: 6

Manure Form	Type of Livestock/Material	Existing Capacity	Existing NU	Estimated Barn Area
Solid	Swine; Feeders (27 - 105 kg); Solid Scrape	169	28.2	188 m²

Encroaching Land Use Factor: Type B Land Use

Tillable area of land on this lot: 30 ha

Manure/Material Storage Type: No storage required (manure/material is stored for less than 14 days)

Factor A (Odour Potential):	1.2
Factor B (Nutrient Units):	419
Factor D (Manure/Material Type):	0.7
Factor E (Encroaching Land Use):	2.2
Total Nutrient Units:	28

	Required Setback	Actual Setback
Distance from nearest livestock building 'F' (A x B x D x E):	775 m (2543 ft)	1471 m (4826 ft)
Distance from nearest permanent manure/material storage 'S':	No existing storage	

Signature of Preparer: Hugh Stewart, Clark Consulting Services

Date: Aug 16 - 2013

Barn K
6086 Frontier Road

Adjacent Farm Contact Information
Unspecified
6086 Frontier Road
Cumberland, ON, Canada

Farm Location
City of Ottawa
Geotownship: CUMBERLAND
Concession: 11
Lot: 27

Manure Form	Type of Livestock/Material	Existing Capacity	Existing NU	Estimated Barn Area
Solid	Dairy; Milking-age Cows (dry or milking) Large Frame (545 - 636 kg) (eg. Holsteins); 3 Row Free Stall	20	28.6	195 m²

Encroaching Land Use Factor: Type B Land Use
Tillable area of land on this lot: 5 ha
Manure/Material Storage Type: No storage required (manure/material is stored for less than 14 days)

Factor A (Odour Potential): 0.7
Factor B (Nutrient Units): 235
Factor D (Manure/Material Type): 0.7
Factor E (Encroaching Land Use): 2.2
Total Nutrient Units: 29

	Required Setback	Actual Setback
Distance from nearest livestock building 'F' (A x B x D x E):	253 m (831 ft)	912 m (2992 ft)
Distance from nearest permanent manure/material storage 'S':	No existing storage	

Barn M
505 Burton Road

Adjacent Farm Contact Information
Unspecified
505 Burton Road
Cumberland. ON, Canada

Farm Location
City of Ottawa
Geotownship: CUMBERLAND
Concession: 10
Lot: 28

Manure Form	Type of Livestock/Material	Existing Capacity	Existing NU	Estimated Barn Area
Liquid	Dairy; Milking-age Cows (dry or milking) Large Frame (545 - 636 kg) (eg. Holsteins); Tie Stall	115	164.3	1175 m²

Signature of Preparer: _____ Date: Aug 16-2013
Hugh Stewart, Clark Consulting Services