City of Hamilton
Agriculture and Rural Affairs
Advisory Committee ADDENDUM

Meeting #:	21-002
Date:	April 12, 2021
Time:	7:00 p.m.
Location:	Due to the COVID-19 and the Closure of City Hall All electronic meetings can be viewed at: City's YouTube Channel: https://www.youtube.com/user/InsideCityofHamilton

Alicia Davenport, Legislative Coordinator (905) 546-2424 ext. 2729

Pages

10. DISCUSSION ITEMS

10.2. Land Needs Assessment Process

GRIDS 2 / MUNICIPAL COMPREHENSIVE REVIEW

PLANNING FOR POPULATION AND JOB GROWTH TO 2051

Agriculture & Rural Affairs Advisory Committee

April 12, 2021

MCR GRIDS 2
Moving Forward Together

Agenda for Today's Meeting

GRIDS 2 / Municipal Comprehensive Review Background

Community Area Land Need and Intensification

Employment Area Land Need

Climate Change Considerations

Next Steps: Growth Options Evaluation and Phasing Review

LANDS NEEDS ASSESSMENT PLANNING FOR POPULATION AND JOB GROWTH TO 2051

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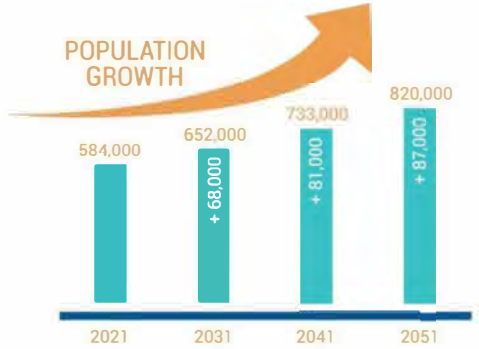
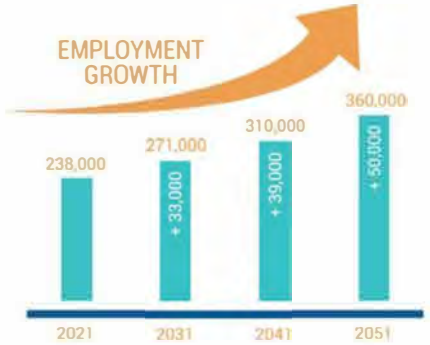
BEFORE WE BEGIN...
GRIDS 2 AND THE MCR:
WHAT ARE THEY?

Municipal Comprehensive Review (MCR) – Provincial requirement to update the City's Official Plans (Urban and Rural) to bring them into conformity with the most recent versions of provincial policy documents.

Growth Related Integrated Development Strategy (GRIDS) 2 – long-term planning exercise to 2051 that will guide where the forecasted growth of people and jobs will be located, and will inform future infrastructure planning.





LANDS NEEDS ASSESSMENT PLANNING FOR POPULATION AND JOB GROWTH TO 2051

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WHAT IS A
LAND NEEDS ASSESSMENT?

- A **Land Needs Assessment** (LNA) considers how much land the city currently has for population and job growth, and whether more land is needed over the next 30 years (to 2051).
- Methodology is set by the Province.
- Uses a 'Market-Based' approach.
- "Community Area Land Need" – Land for Population-Related growth (housing, institutional, commercial, office).
- "Employment Area Land Need" – Land for Employment Area growth (industrial, manufacturing, logistics, research parks).

GROWTH FORECAST: 2051

An increase of **236,000 people**, for a total **population of 820,000 people**

An increase of **122,000 jobs**, for a total **employment of 360,000 jobs**

LANDS NEEDS ASSESSMENT PLANNING FOR POPULATION AND JOB GROWTH TO 2051

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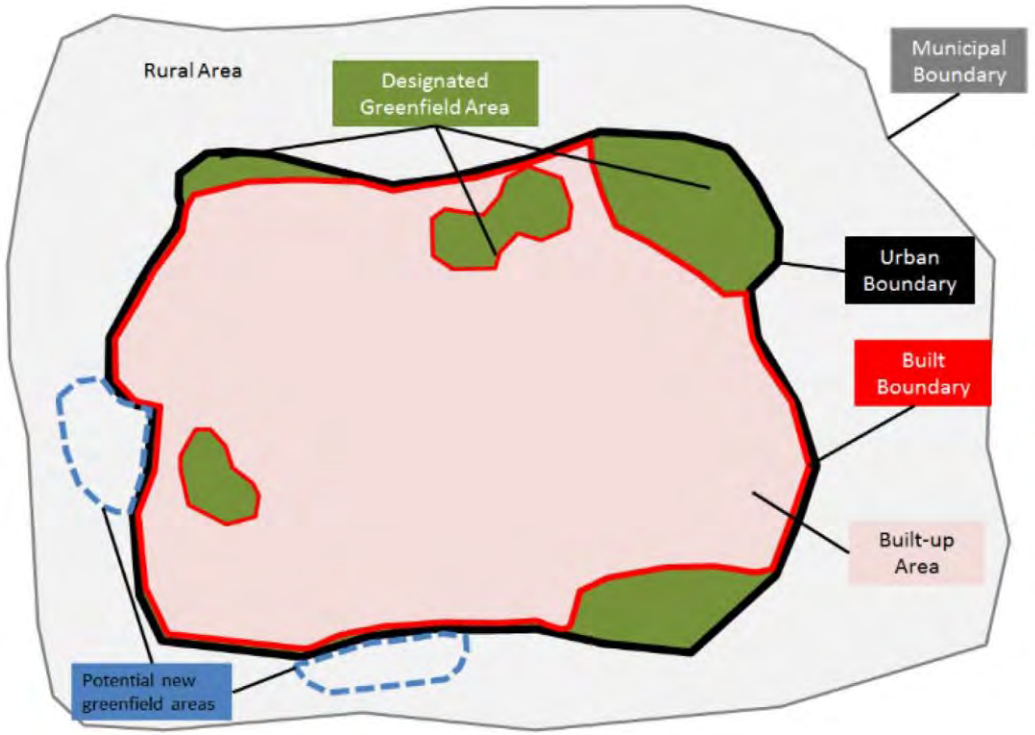
PLANNING AREAS AROUND THE CITY:

WHERE CAN WE GROW?

- **Urban Boundary:** The divide between the urban and rural areas of the City.
- **Built-Up Area:** the developed urban area where new development is measured as "Intensification". The 'intensification target' applies within this area. This area was defined by the 2006 Growth Plan.
- **Designated Greenfield Areas (DGA):** Areas within the urban boundary that were undeveloped at the time of the 2006 Growth Plan, but had potential to accommodate future development. Development is measured by "Density" – the number of people and jobs per hectare of land.
- **Potential New Designated Greenfield Areas (New DGA):** lands in the rural area that may be available to be brought into the urban boundary for future development. Sometimes called 'Whitebelt Lands', these are lands that are outside Ontario's Greenbelt Plan area.



WHAT IS
INTENSIFICATION?

Residential intensification is the development of a property, site or area at a higher residential density than currently exists, and includes:

- redevelopment of a site (including brownfields);
- development of vacant/underutilized lots within previously developed areas;
- infill development; and,
- expansion or conversion of existing buildings.

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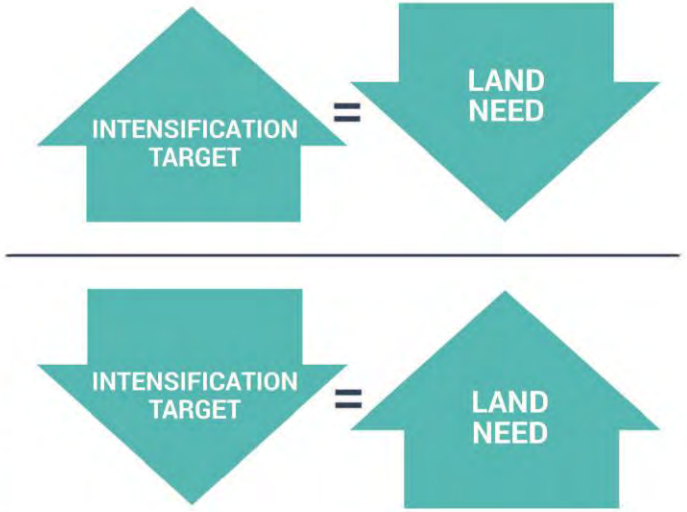
COMMUNITY AREA LAND NEED:

INTENSIFICATION

- Relationship between intensification target and land need
- 50% Intensification – Growth Plan Minimum

LNA Findings – 4 Intensification Scenarios to Consider:

Option	Intensification Rate (%)	Land Need (hectares)
Current Trends (Information only)	40%	3,440 ha
Growth Plan Minimum	50%	2,200 ha
Increased Targets (phased over 2031, 2041, and 2051)	50%, 55%, 60% (Avg. of 55%)	1,640 ha
Ambitious Density (phased over 2031, 2041, and 2051)	50%, 60%, 70% (Avg. of 60%)	1,340 ha



NO URBAN BOUNDARY EXPANSION OPTION?

To achieve a result of 0 ha of new Community Area land need, the City would need to plan for an intensification rate of 81%. This would be considered a 'no urban boundary expansion' scenario. The LNA did not model this scenario because an intensification rate this high far exceeds the City's forecasted demand for intensification and would result in the majority of new housing units being apartments.

COMMUNITY AREA LAND NEED:

DESIGNATED GREENFIELD AREA (DGA) DENSITY

- Must meet a minimum density of 50 people and jobs per hectare (pjh) in DGA Areas (Growth Plan)
- Housing unit mix (single, semis, townhouse) and how densely they are built (lot widths, mix of townhouse forms) influences the overall DGA density
- Density can influence how much land is required to support a mix of housing forms

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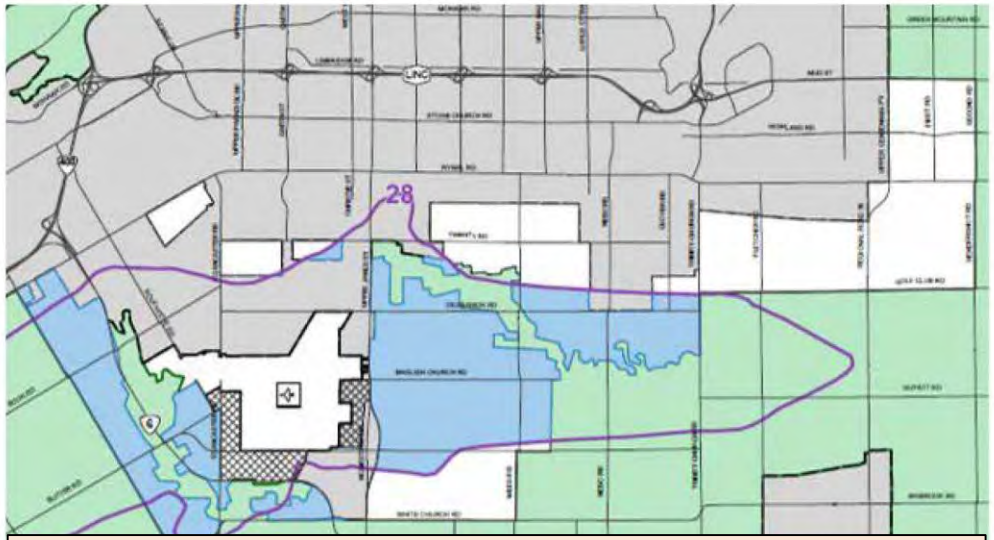
AVAILABLE WHITEBELT LAND SUPPLY



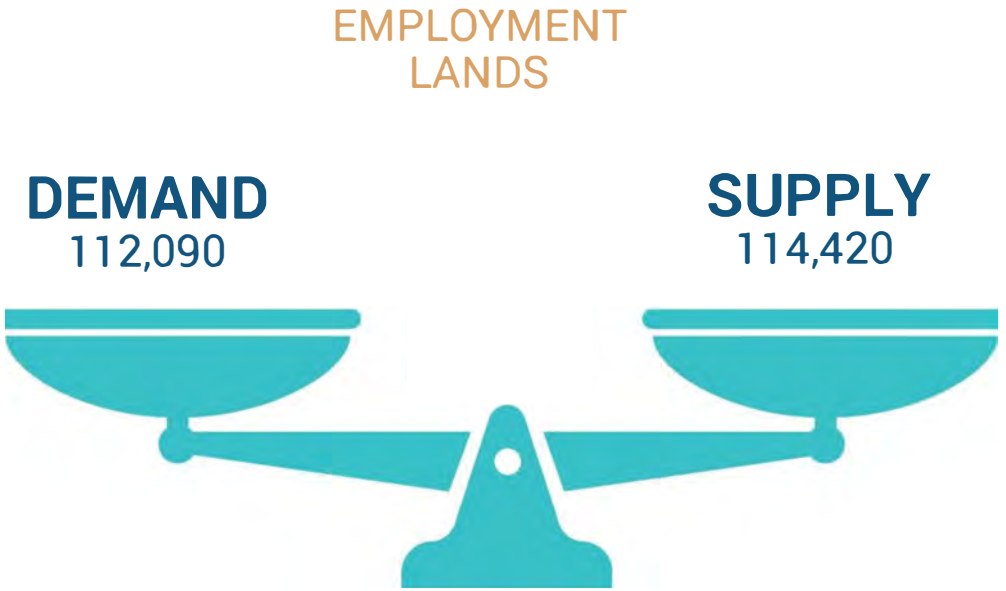
The approximate size of the City's available whitebelt lands for Community Area growth is 1,600 net hectares

COMMUNITY AREA LAND NEED:

KEY FINDING The 'Increased Targets' and 'Ambitious Density' scenarios result in a land need that fits within the available 'Whitebelt' land supply

EMPLOYMENT LAND NEED

- **122,000 New Jobs in Hamilton by 2051**
- Takes into account the different types of industrial areas in the City (new greenfield business parks, old industrial areas, and specialized areas like the AEGD)
- Considers how much of these existing areas will develop, or redevelop, and the number of jobs that can be located in these areas
- Determines if the supply of designated employment land is enough to meet the number of jobs needed by 2051



CLIMATE CHANGE IMPACTS

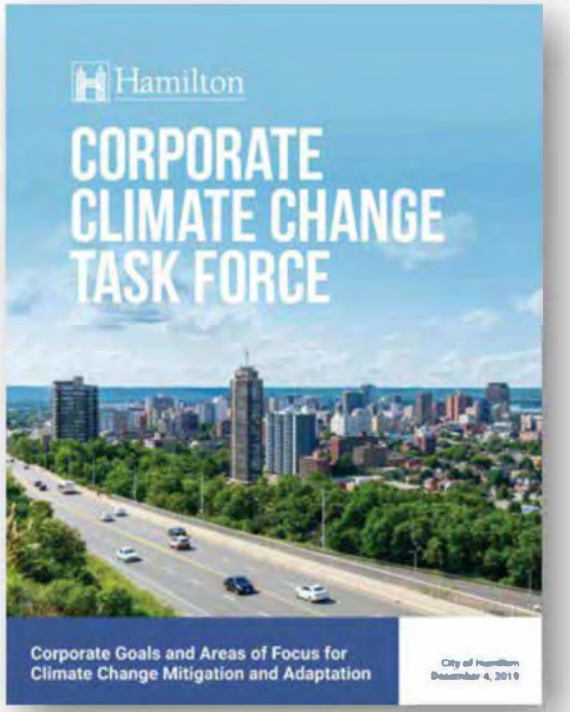
- Goal 4 of Hamilton's Corporate Goals and Areas of Focus for Climate Change Mitigation and Adaptation (Dec. 2019):

  "To ensure a climate change lens is applied to all planning initiatives to encourage the use of best climate mitigation and adaptation practices"

- LNA is a Technical Exercise based on Market-Based assumptions and trends in housing choice and employment

- Urban Boundary Expansion may result in climate change impacts, however contiguous expansion provides the most opportunity for connection with existing communities, transit and infrastructure

Applying a climate change lens at the LNA stage of the decision-making process would suggest pursuing intensification and density targets at the aggressive end of the spectrum, while still meeting the provincial requirement for a market-based assessment. This approach would be reflected in the Ambitious Density scenario



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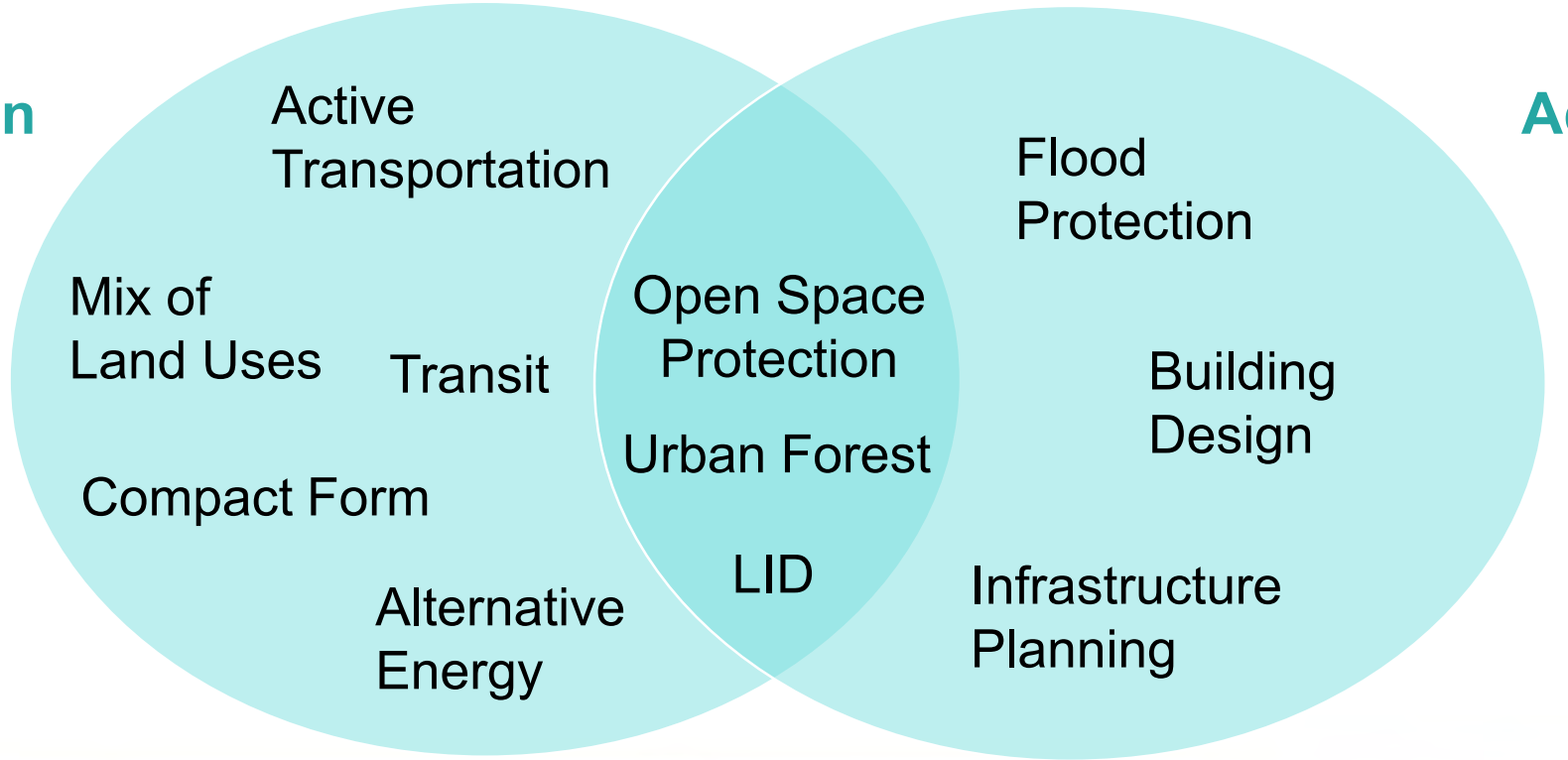
Climate Change and New Communities



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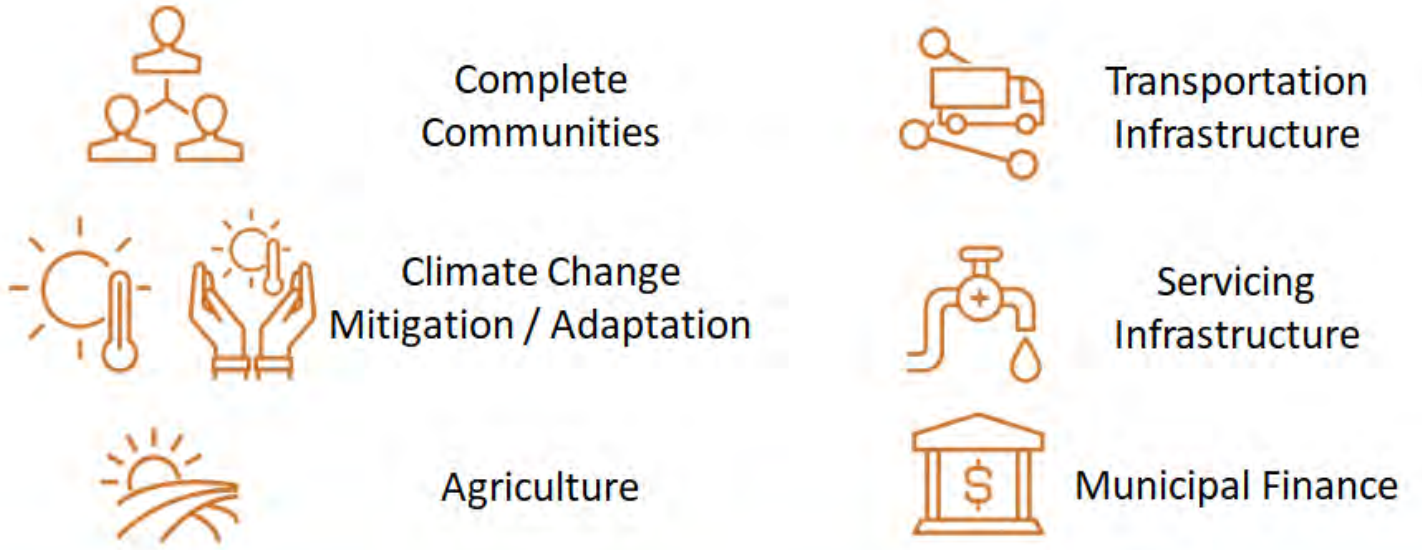
Next Steps: Evaluation & Phasing of Growth Options

Where and when to Grow?

Evaluate potential expansion areas against provincial and local criteria

Phasing scenarios (2021 - 2031, 2031 - 2041, 2041 - 2051)



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Next Steps: Evaluation & Phasing of Growth Options

Where and when to Grow?

Agriculture

Does the phasing scenario prioritize development of areas that are non-prime agricultural and / or areas that have fewer agricultural operations?

Does the phasing scenario minimize land fragmentation?

LANDS NEEDS ASSESSMENT PLANNING FOR POPULATION AND JOB GROWTH TO 2051

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WANT TO LEARN MORE?

GRIDS2 – MCR Project Webpage

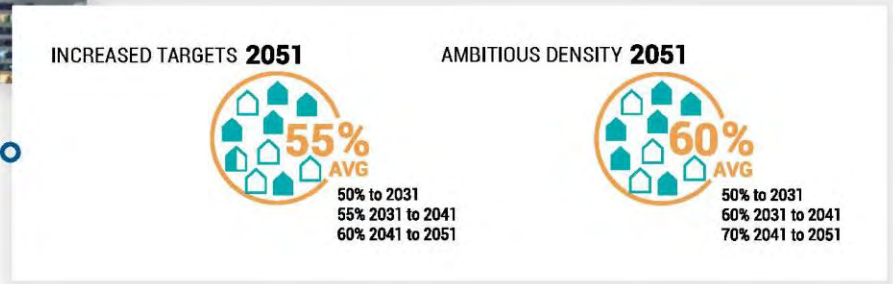
www.Hamilton.ca/GRIDS2-MCR

- General project information
- Past reports

Land Needs Assessment Webpage

www.Hamilton.ca/LNA

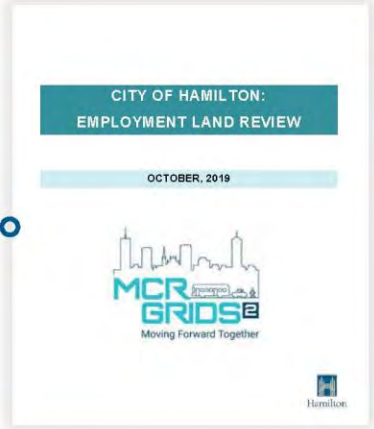
- Land Needs Assessment and Related Reports
- Supplementary Material (bubble diagrams etc.)



Employment Land Review Webpage

www.Hamilton.ca/EmploymentLandReview

- Employment Land Conversion Criteria
- Draft Employment Land Review



Thank you!

CONTACT POLICY PLANNING STAFF

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THE CITY OF HAMILTON

CONSULTANT SERVICES FOR THE PREPARATION OF A LAND EVALUATION AND AREA REVIEW STUDY (LEAR)

Contract Number: C2-03-03

Purchasing Division
Finance Department
Planning and Development

FINAL REPORT

Submitted by:
THE SOIL RESOURCE GROUP
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Guelph, Ontario
N1H 6T9

February, 2005

SRG
SOIL RESOURCE GROUP

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EXECUTIVE SUMMARY

The LEAR system of land evaluation and area review for identifying prime agricultural areas was developed at the provincial level by the Ontario Ministry of Agriculture and Food (OMAF) but the methodology is established and applied at the local level. A key benefit of the system is that it takes into account local factors, other than just inherent soil capability, that affects the agricultural potential of land. While the LE factor (land evaluation) considers the soil capability classification, the AR factors (area review) such as conflicting land- use, size of parcels or surrounding land use may address additional considerations that also affect long-term agricultural productivity.

In June 2003, the City of Hamilton initiated a LEAR study to identify prime agricultural areas in contiguous designations within the City and to differentiate these from rural (non-prime) lands. The Soil Resource Group was retained by the City to work with planning staff and the local agricultural working committee (AWG) to conduct the study. City planning staff provided data, map resources and contributed to the process of final prime agricultural area delineation. The AWG provided an important link to the local agricultural community and were instrumental in the development of relevant AR criteria, the weighting of factors, and the establishment of a LEAR threshold value. The Ontario Ministry of Agriculture and Food was represented on the study team by members of their professional planning staff to provide input on relevant provincial planning issues.

The purpose of this report is to define the prime agricultural areas in the City of Hamilton and describe the approach used to delineate prime versus non-prime lands. Details of the methodology development and testing are included in the appendices to the report.

The study area included all agricultural and rural lands within the City of Hamilton municipal limits, excluding those lands:

- Contained within the urban boundary and within designated rural settlements areas, as identified in the applicable Official Plan (Regional and Area Municipal)
- North of Highway No. 8 to the QEW and east of Fruitland Road to the municipal boundary (lower Stoney Creek)

Lower Stoney Creek, generally, the area north of Highway 8 to the QEW and east of Fruitland Road to the municipal boundary was not included in the LEAR study area. This area, also referred to as the Stoney Creek Urban Boundary Expansion Area (SCUBE), was subject to a different process, a City initiated Regional Official Plan amendment to extend the urban boundary. An agricultural assessment of this area was completed by an agrologist about a year prior to the initiation of the LEAR study. OMAF Staff assisted in the development of the terms of reference for that study. The Regional Official Plan Amendment was adopted by Council in October 2003, and subsequently appealed to the Ontario Municipal Board by the Ministry of Municipal Affairs. The matter is currently before the Board.

A review of agricultural production in the study area revealed two unique agri-climatic areas with contrasting crop production. The largest part of the study area was characterized by soil and climatic conditions most suitable for common field crop production. A small (approximately 1500 ha) part of the study area, within the Niagara escarpment planning area in Stoney Creek

had unique climatic conditions that created the potential for specialty crop (vinifera grapes, pears/plums) production. As a result of the contrasting crop production potential in the two areas, a separate LEAR analysis was conducted for each of these distinct agricultural production areas.

A test area was selected in Stoney Creek to develop and test the LEAR study methodology for both the common field and specialty crop production systems prior to applying the methodology to the remaining rural lands. The test area was used to:

- Evaluate digital data bases (eg. property boundary and land use mapping) provided by the City for use in the study
- Assess the use of property boundaries as opposed to blocks defined by road networks as the basic unit for land evaluation
- Establish relative weightings of LE and AR factors
- Determine LE scores for the property and block evaluation units
- Develop and test methods to field check data inputs
- Select appropriate AR factors and the relative weighting of the factors
- Determine AR factor scores for the property and block evaluation units
- Calculate LEAR scores for the property and block evaluation units
- Develop final methodology for use in the study area

Analysis of test area data by the study team resulted in the final methodology development for use in the common field and specialty crop study areas. The property boundary was chosen as the preferred evaluation unit for the study since the block scale units were found to lump too much information while masking many land attributes. LE scores were determined for common field crops except in the specialty crop area where the higher of the common field crop or specialty crop (vinifera grapes, pears/plums) rating was used in the calculation. At the suggestions of the AWG, the relative weighting of LE: AR was determined to be 60:40 in order to provide greater weighting to the soil capability factor and reduce the impact of low AR scores. Three equally weighted AR factors were selected for use in the study as follows: AR1 – surrounding agricultural land use defined as the proportion of agricultural land with 1km of a property; AR2 - conflicting land use defined as the number of residential properties within 1km of a property; and AR3 – land fragmentation defined as the total number of properties (excluding residential) within 1km of a property. LE and AR values were field checked by roadside observations and the use of aerial photographs.

LEAR scores were calculated for each property in the study area and grouped into 4 equal classes for illustration purposes on the basis of relative scores. LEAR scores ranged from 20 to 190. Higher LEAR scores in the study area were located in Glanbrook and southern Stoney Creek, Ancaster and West Flamborough, extending through to the southern part of the former township of Beverely. In the specialty crop production area, the highest LEAR scores were located on land above the Niagara escarpment.

A LEAR threshold score for defining prime agricultural land was developed by the study team. LEAR threshold scores ranging from 110 – 140 were evaluated to determine at what point the inclusion of non- agricultural (class 5-7 land) was minimal. In addition, the AWG viewed maps of the distribution of the series of LEAR threshold values (110 –140) to determine which

threshold value reflected their understanding of sustainable agricultural production in the study area. A final LEAR threshold score of 120 was selected since it resulted in a distribution of prime agricultural land that made sense to the AWG and could be supported on a technical basis in that the inclusion of marginal class 5 to 7 land was minimal.

The study team used the LEAR 120 threshold map as a base to delineate prime agricultural areas in the study area. A rule set was developed by the SRG and City Staff to define the prime agricultural area that included: a minimum LEAR score of 120, >250 ha of contiguous land and 70% of the properties with LEAR scores >120 and a number of rules for defining boundaries. Based on the rule set developed and subsequent field validation, maps illustrating the City of Hamilton's prime agricultural areas were produced.

The results of this study provide technical information that will be required in the development of a new Official Plan for the City of Hamilton. The findings in this report will be a primary consideration with other land use factors when determining rural land use designations for the new Official Plan.

1 INTRODUCTION

1.1 Purpose of the LEAR Study

In keeping with the Provincial Policy Statement, the City of Hamilton has used the Land Evaluation and Area Review (LEAR) approach to identify the prime agricultural areas in the City that are to be protected for long-term agricultural use. The general LEAR process was developed by the Ministry of Agriculture and Food (OMAF 2002) as an alternative to simply designating Canada Land Inventory Class 1 to 3 lands as 'prime'. The LEAR process allows factors other than soil capability to be accounted for when identifying better agricultural areas in the City.

The Land Evaluation (LE) component of the LEAR review rates the agricultural resources on the basis of the Canada Land Inventory Soil Capability Classification for Agriculture (ARDA 1965). The Area Review (AR) component can incorporate the effects of non-soil factors that can also affect long-term agricultural productivity, such as proximity to non-agricultural land uses, and the existence of situations that can potentially enhance or impede production. LE and AR values are weighted and combined into a final LEAR score, which is then used to help determine Prime Agricultural Areas.

The purpose of the LEAR study was to delineate prime agricultural land in the City of Hamilton.

The main body of this report briefly describes the study methodology used to delineate prime and non-prime agricultural land in the City of Hamilton and present the final maps. The appendices to the report provide detailed description of the study methods and methodology development. Appendix (1 and 2) describes the development and testing of the study methodology and results. The minutes of the Agricultural Working Group (AWG) meetings included in Appendix (3) documents local agricultural input to the methodology development and the selection and weighting of input variables. Appendix (4) contains a digital file of data inputs and Arcview (map) files used in the study. Appendix (5) contains a list of the study participants and their affiliations.

1.2 Project Objectives

The objectives for the Hamilton LEAR Study are to:

- Develop a LEAR evaluation methodology suitable for assessing agricultural land in the City of Hamilton
- Use the LEAR methodology developed and refined in the *study test* area to evaluate all agricultural lands in the City of Hamilton.
- Identify prime agricultural areas in the City of Hamilton, and differentiate these from rural (non-prime) areas.

1.3 The Study Team

The LEAR Study team consisted of representatives from the following groups:

- The City of Hamilton Planning Staff
- Hamilton Agricultural Working Group (AWG)
- The Soil Resource Group team (SRG)
- Ontario Ministry of Agriculture and Food (OMAF)

Individual members of the study team and their affiliations are listed in Appendix (5).

The Hamilton planning staff were responsible for developing and overseeing the LEAR project, providing background databases and map resources, providing liaison between the AWG and SRG, and contributing to the final threshold and prime agricultural area delineation processes.

The AWG provided an important link to the agricultural community of Hamilton. Their comments and information regarding agricultural production in the area were invaluable in helping to understand the nature of farming in the City of Hamilton and in determining LEAR evaluation factors that are important to farmers in the City. The role of the AWG was to assist in the development of AR criteria and relative weightings, to chose appropriate LE: AR weighting, to decide on a reasonable LEAR score threshold and to help delineate prime agricultural areas in the City.

The Soil Resource Group team provided a senior and experienced group of agricultural scientists and planners to employ the LEAR system to identify and inventory lands of high potential agricultural importance. The study team brings strong technical background in soil capability classification, data base management and the LEAR approach to land evaluation. SRG was responsible for compiling and analysing the LEAR data, for summarizing results and preparing the final LEAR databases, maps, and documentation.

The Ontario Ministry of Agriculture and Food was represented on the study team with professional staff from their planning and information branches. The OMAF planning representative attended meetings and provided input on provincial planning issues throughout the LEAR study process.

2 THE STUDY APPROACH

2.1 General Procedures

The general LEAR process developed and advocated by OMAF was the system used to identify prime agricultural areas.

Any modifications to the LEAR approach to support the specific needs of the City of Hamilton were clearly documented with the appropriate rationale for the change. All factors used in the LEAR evaluation were measurable and clearly defined so that they could be consistently applied across the study area.

In order to identify prime agricultural area designations that can obtain public support, the SRG team recommended that the land evaluation (LE) and area review (AR) inputs must be based on accurate and current information. Since the existing soil survey and soil capability information was dated (1965) and not at an appropriate scale (1:63360) for direct use at the property level, SRG proposed to review and upgrade the existing soil capability information for use at the property level. Since most of the regions and counties bordering the former Wentworth County (Niagara, Haldimand, Brant, Waterloo) have updated soil and agricultural capability mapping, the study team checked to see if the Wentworth soil capability classifications are supported by the neighbouring updated inventories. Based on the recent review of soil capability mapping for Wentworth County, slope and bedrock limitations were found to be the dominant factors affecting non-agricultural soil capability classes. Accordingly, SRG reviewed the soil capability mapping and used topographic maps, aerial photographs and roadside surveys to determine slope and potential depth to bedrock limitations that might lead to significant changes in the published soil capability classifications.

The study team also recognized the need for updated soil capability classification for the specialty crop production areas in the City (especially below the Niagara Escarpment). Since specialty crop ratings were not part of the available published soil report, the SRG agronomist reviewed the soil specialty crop ratings in adjacent counties and regions and adapted these specialty crop capability ratings for (pears/plums, vinifera grapes) crops grown in the City of Hamilton. These tender fruit and vinifera grape crops were selected for study since their commercial production in Ontario is restricted to the favourable microclimate conditions afforded to the lands between the Lake and the Niagara escarpment and they represent the dominant specialty crops currently grown in the area. The soil capability of each soil series found in the specialty crop production area was rated for the production of pears/plums and vinifera grapes. The highest soil capability rating of the three was used for further analysis.

The data inputs were based on the most up-to-date information available from the City of Hamilton Land Use Information System. AR criteria used in the study were developed in consultation with the Agricultural Working Group (AWG) and OMAF. Each of the AR criteria considered for use were identifiable at the property level and could be confirmed using maps, aerial photograph interpretation and roadside surveys. To maximize project efficiencies, the SRG team used a field survey team to collect the field LE and AR confirmation data at the same time. Since natural areas are important considerations in developing rural policy, the field survey team also confirmed the extent of these features.

2.2 Distinct Climatic Areas for Crop Production

A review of agriculture in the study area revealed the existence of a unique agri-climatic area in the northern portion of the most eastern area in Hamilton, bordering Niagara Region and in proximity to the Niagara Escarpment. After consultation with OMAF grape and tender fruit experts from the Vineland Research Station, the decision was made to divide Hamilton into two distinct study areas, based on the unique climatic and farming conditions found in the Stoney Creek area as compared to elsewhere in the Municipality. These differing climatic areas are as follows:

- Specialty Crop Area - this area was identified as unique in terms of growing potential for vinifera grapes and tender fruits (pears/plums), mainly due to the effects of its unique climate. The study area (1500 ha) was bounded to the north by Highway 8, to the east by the Regional Municipality of Niagara, to the west by the Urban Area of Hamilton and to the south by the Niagara escarpment region. The two specialty crop types selected (vinifera grapes and pears/plums) had the highest acreage specialty crops within this area.
- Common Field Crop Area - this area includes all of the City of Hamilton except for the specialty crop production area.

A separate LEAR analysis was conducted for each of these 2 distinct climatic regions of the study area. Soil capability analysis of the specialty crop area was based on the potential to grow tender fruits (pears/plums, vinifera grapes) and common field crops, utilizing the highest capability rating. Analysis for the remainder of the study area was based on the soil capability potential for growing common field crops.

As defined in the Provincial Policy Statement, specialty crop land means an area where specialty crops such as tender fruits (peaches, cherries, plums), grapes, other fruit crops, vegetable crops, greenhouse crops, and crops from agriculturally developed organic soil lands and predominately grown, usually resulting from:

- Soils that have suitability to produce specialty crops, or lands that are subject to special climatic conditions, or a combination of both; and/or
- A combination of farmers skilled in the production of specialty crops, and of capital investment in related facilities and services to produce, store, and process specialty crops.

The current Official Plan (OP) of the former Region of Hamilton-Wentworth (1995) identifies two small areas of specialty cropland in lower Stoney Creek beyond the limits of the LEAR study area. The OP mapping was based on information provided by the Province.

The LEAR study has identified a new area of specialty crop production land in the City of Hamilton in Upper Stoney Creek above the escarpment.

2.3 Development and Testing of LEAR Approaches

A test area in Stoney Creek that included the two distinct climatic areas and associated cropping practices was selected for development and testing of the LEAR methodology. The test area was used to:

- Focus the study on assessing lands used for common field crops and specialty crop production
- Adapt LEAR approaches to Hamilton conditions (soil, topography, climate, agricultural and non-agricultural community factors)
- Develop appropriate LE and AR factors, weightings and scores

- Select an evaluation unit after considering the use of property boundaries or blocks (based on road networks) as a base unit for assessment
- Develop and test field methods to evaluate the data
- Recommend study methodology

Detailed analyses of the test area data are reported in Appendix 1 of this report.

3 STUDY METHODOLOGY

3.1 Study Area

The study area included all agricultural and rural lands within the City of Hamilton municipal limits, excluding those lands:

- Contained within the urban boundary and within designated rural settlements areas, as identified in the applicable Official Plans (Regional and Area Municipal).
- North of Highway No. 8 to the QEW and east of Fruitland Road to the municipal boundary

Lower Stoney Creek, generally, the area north of Highway 8 to the QEW and east of Fruitland Road to the municipal boundary was not included in the LEAR study area. This area, also referred to as the Stoney Creek Urban Boundary Expansion Area (SCUBE), was subject to different process, a City initiated Regional Official Plan amendment to extend the urban boundary. An agricultural assessment of this area (AgPlan Ltd. 2003) was completed by an agrologist about a year prior to the initiation of the LEAR study.

3.2 Evaluation Unit

Property boundaries were chosen as the preferred unit for conducting the LEAR analysis. Analysis in the test study area indicated that the property units provided a higher level of detail that was easier to understand than the results generated by aggregating property units into larger block units. Further, property scale data was also easier to verify in the field than the more generalized block data. Detailed discussion of the two evaluation units evaluated in the test area is found in Appendix 1.

3.3 Databases

The City of Hamilton provided the principle digital-data bases required to conduct the LEAR study. The most important of these data bases were: property boundaries and related information (assessment roll number, assessment code, property size); the City of Hamilton land use information system; digital maps of soil type and soil capability classification; and available mapping of official plan designations and municipal zoning.

3.4 AR Criteria

It is important to recognize that Hamilton is an amalgamated City and is not dealing with a consistent policy approach on settlements throughout Rural Hamilton. The four former rural municipalities covered the spectrum with respect to their approach to Rural Settlement Areas (RSAs). Some former municipalities had comprehensive boundaries for their settlements whereas others did not. Some identified all rural clusters as settlement areas, whereas others just identified the major RSAs, and one did not recognize any RSAs at all.

It was decided to include all of these areas as part of the rural area for the following reasons:

- the desire to treat all RSAs, rural clusters and strip development consistently.
- new settlement areas would need to be identified to treat all rural settlement areas, rural clusters and strip development consistently, however, the identification of new RSAs is prohibited by Greenbelt policies;
- the extensive additional studies (e.g., settlement capability studies) and a lengthy public process required to identify boundaries for existing RSA that do not have recognized boundaries would put impractical time and resource constraints on the LEAR;
- the committee indicated that the impact of residential density on farm operations, where higher densities result in higher conflicts, occurs regardless of location of residential lots in the RSAs or rural area

The urban area called for a different approach than the RSAs. The application of the area review factors to properties close to the urban boundary would result in a continuous and permanent strip or shadow of non-prime area or fringe area up to 1kmetres wide that would stretch along the entire urban boundary. Rural designation of this strip would continually be an impetus for urban expansion. It was decided that development in the urban area would be excluded from the evaluation.

The three AR criteria that were used in the study are listed below, along with the reasons for including the criteria as determined through AWG meetings. The AWG provided an important link to the local agricultural community and were instrumental in the development of these AR criteria that reflect local agricultural conditions and production realities. The minutes of the AWG meetings included in Appendix (3) documents the discussions that led to the selection of AR criteria.

AR1: Agricultural Land Use

- Measures:
    - The proportion of land within 1km of each ‘agricultural’ property that is comprised of other properties identified as ‘agricultural’.

- Rationale behind this criterion:
    - The more agricultural the area, the more likely that the area will stay in

agricultural use (good indication of the long-term potential of an area to be farmed)
    - Agricultural properties that have a high proportion of surrounding area also in agriculture are more likely to sustain agricultural production (greater 'critical mass' of agriculture, more land available to rent near home operations, less interference in day-to-day operations from non-agricultural land uses, etc.)

AR2: Conflicting Land Use (Residential)

- Measures:
    - The number of properties within 1km of each "agricultural" property that are identified with a "residential" land use code in the City of Hamilton Land Use Information System.

- Rationale behind this criterion:
    - Farming operations can be hindered or obstructed by conflicting land use, in particular, residential land uses.
    - The presence of residential properties can limit farm expansion and create nuisance complaints related to normal farming activities such as spraying and low tolerance to farm related noise and odour, especially for livestock operations.
    - Conditions resulting from residential development can evolve over time and the adverse impact on farms can increase (increased traffic and safety concerns, road salt, road expansion)
    - The pressure to expand the number of residences and other non-farm uses permitted in an area is greatest where there is already significant residential development

AR3: Land Fragmentation

- Measures:
    - the total number of properties, excluding those identified with a "residential" land use code, within 1km of each "agricultural" property.

- Rationale behind this criterion:
    - The greater the number of properties within 1km, the smaller the average property size.
    - Smaller parcels of land are more susceptible than larger parcels to being taken out of agricultural production due to lack of adequate land area required to sustain a commercial farm operation.
    - It may be potentially easier to change the use of a small parcel of land to a non-farm land use (e.g. residential).
    - More parcels of land may be required to establish economically viable farm units.
    - Properties with a "residential" land use code are excluded from this criterion to

avoid ‘double counting’ with the second criterion.

3.5 LE Criteria

Soil and topographical information was obtained from the Soils of Wentworth County (OMAF 1965). Each combination of soil series and slope class for each agricultural property was identified and the associated soil capability class determined.

The proportion of each agricultural parcel occupied by one or more of these soil and topography combinations within each agricultural property was calculated and recorded. A weighted LE score was determined for each property, based on the proportion of the land parcel in each CLI class. The LE value assigned to each CLI class is multiplied by the percentage of parcel land occupied by that class. These values are then summed to attain a total LE Score out of a possible 100 (Appendix 1.2.2).

LE scores were assigned differently in the specialty crop area than in the other areas of the study area. A weighted LE score was calculated for each parcel on the basis of both the CLI ratings for common field crops AND for specialty crops. The final LE Score that is assigned to an EU in the specialty crop area is the higher of the two LE Scores - Field and Specialty Crop (i.e. either the common field crop score or the specialty crop score).

Soil Capability Classification for Common Field Crops

Digital copies of the soil map that illustrated the distribution of soil series in the study area were provided by the City of Hamilton at a scale of 1:63,360. Each combination of soil series and slope class in each agricultural parcel was identified.

CLI capability ratings for common field crops range from Class 1 (no significant limitations for crop use) to Class 7 (no capability for arable agriculture or permanent pasture).

The soil capability ratings for common field crops for all soils in the study area were obtained from the Soil Survey of Wentworth County (1965).

Soil Suitability Classification for Specialty Crops

Specialty crop suitability ratings for each soil in the Specialty Crop production area were taken from the Niagara Soil Survey Report (Kingston and Presant 1989). The two crop categories chosen from the soil report (vinifera grapes and pears/plums) for the soil suitability analysis were the most dominant (Census of Agriculture 2001) specialty crops grown in the Specialty Crop study area. The specialty crop soil suitability ratings used in the study were analogous to the ratings used by AgPlan Ltd. 2003 in the Lower Stoney Creek area for vinifera grapes and pears/plums.

The soil suitability of fruit production for vinifera grapes and pears/plums uses a 7 class suitability rating scheme ranging from good (soils with little limitation to growth and yields) or a rating of 1, to unsuitable with a rating of 7. The management improvements associated with the use of drainage or irrigation was assumed in determining the soil suitability ratings.

3.6 Weighing of Factors

OMAF LEAR guidelines recommend a 50:50 weighting between LE and AR Scores in determining a final LEAR Score but modifications to this weighting can be made when the rationale for change is documented. The AWG recommended a 60:40 weighting instead of a 50:50 weighting in recognition of the significant number of rural residences and associated fragmentation of farmland that has already occurred. This recommendation was based on the desire to give more weight and emphasis to inherent LE scores that reflect CLI soil capability and to reduce the effects of AR-related factors. The AWG was concerned that the existing fragmentation of the land base in the study area could lower LEAR scores (e.g. significant land fragmentation and conflicting land uses). The minutes of AWG meetings #2 and 3 located in Appendix (3) include discussion on the weighting of the LE factor and rationale for the final recommendation of the AWG.

In the absence of a rationale to weight the AR criteria differently, the AWG also agreed that all three AR criteria values be weighted equally in determining LEAR scores.

3.7 Calculation of LEAR Scores

A LEAR score for each agricultural property was determined by summing the respective LE value (0 to 100 range) with the combined AR value (0 to 100 range) while weighting the LE: AR values 60:40. The resulting LEAR scores can range from 0 to 200.

3.8 Field Verification of Data

Checking of soil capability class and LE values assigned to each property was required because the scale of the original soil mapping was not specific enough to accurately portray this information on a property-specific basis. City of Hamilton Land Use Information codes for each property were field checked by City staff.

The purpose of field checks were to:

- Verify property LE values by:
    - Determining if soil and CLI classifications, as identified on existing soil and land capability maps, were accurate
    - Identify any additional potentially limiting soil capability factors not indicated on existing maps or in databases as being present within the parcels (e.g. steep topography, bedrock outcrops, wetlands)
    - Where necessary, add additional information to existing database on limiting factors
    - Identify parcels that may not be as limited for agriculture production as might be indicated on the existing maps, and update or modify database as required.
- Verify property AR values by:
    - Providing a basic overview assessment of whether or not AR values appeared to generally reflect the nature of the limitations associated with a parcel
    - Ascertain that land use information was accurately recorded in surveys used as

part of the LEAR study and update or modify database as required.

4 LEAR SCORES FOR THE STUDY AREA

LEAR values for City of Hamilton study area ranged from about 20 to 185. The distribution of LEAR values for common field crops is shown in Figure 1.

High LEAR scores for Hamilton were concentrated in 3 major areas:

1. Upper Stoney Creek and Glanbrook
2. Ancaster
3. West Flamborough, extending to the southern part of the former township of Beverly

The first 2 areas are typically characterized as having high-quality soils, reflected in relatively high LE values for these areas, compared to the rest of Hamilton. Any reduction in the overall LEAR scores for these areas was the result, in general, of lower AR scores. Lower AR scores resulted from the areas, relatively high concentration of non-farm residential properties, greater property fragmentation and smaller agricultural parcel sizes relative to the rest of the City of Hamilton. The third area was typified by generally lower AR values and by good to very good agricultural soils.

LEAR scores for the specialty crop study area are shown in Figure 2. Here, the highest concentration of high LEAR scores is located above the escarpment. Smaller isolated parcels of higher LEAR scores are found below the escarpment.

5 THRESHOLD LEAR SCORE FOR PRIME AGRICULTURAL PROPERTIES

While a LEAR score (0 to 200) was calculated for each property in the study area, it was necessary to establish a value (threshold) to separate prime from non-prime agricultural areas.

Two potential methods for determining threshold LEAR values for prime agricultural Land designations are outlined in the OMAF LEAR Guidelines. These are:

1. Allowing a single threshold score to control the decision (eg let a LEAR score of 140 be used to establish prime for non-prime agricultural areas
2. Computing a threshold value by determining a minimum acceptable value for each of individual LE and AR factors used and calculating, using the appropriate weightings, the associated LEAR score.

The following decisions were reached over the course of discussions at the AWG meeting (Appendix 3 Meeting #5):

- It was not possible for the members of the AWG to determine an absolute minimum threshold score for individual or combined AR criteria. For example, the AWG could not conclude the number of rural residences surrounding an agricultural property where the threshold between prime and non-prime land could be established. Similar difficulties occurred with attempts to establish a threshold for land fragmentation of

prime and non-prime land.

- Since it was not possible for the study team to develop minimum acceptable value for the AR factors, it was not possible to compute a threshold value for prime and non prime agricultural area.
- The study team recommended that the final cut-off decision be based on a review of absolute LEAR scores and the relative land base that they represent. A range of LEAR scores were evaluated with respect to the inclusions of clearly non agricultural land (CLI class 5 to 7 land).
- Initially, the threshold cut off range was chosen as between 110-140. Threshold values between these scores would result in most of the CLI Class 1-4 land being identified as "Prime" and would include a tolerable amount of Class 5-7 land (Appendix 2). Subsequent to further analysis, mapping and field verification, a final threshold LEAR Score of 120 was selected by the AWG. The 120 threshold provided a visual distribution of prime agricultural land that made sense to the AWG and could be supported technically since only a small (<7%) percentage of lands with soil capability classes 5 to 7 were included.
- It was decided that the threshold value of 120 will be used for both common and specialty crop areas in the absence of any rationale to change the approach used for these crops.

Figures 3 and 4 illustrate the distribution of land with LEAR values greater than the threshold value of 120. Glanbrook, Upper Stoney Creek, Ancaster and west Flamborough had large proportions of LEAR scores >120 (Figure 3). In the specialty crop study area, the area with the greatest concentration of LEAR scores >120 was located above the escarpment (Figure 4).

6 PRIME AGRICULTURAL AREAS

The following rule set was defined for the delineation of prime agricultural areas in the study area:

- Agricultural areas will have a LEAR score = >120
- The agricultural area will be large contiguous areas >250 ha, as recommended in OMAF land use policy statements, with 70% agricultural land having LEAR scores= >120
- The agricultural area may include the following land uses:
  - Minor areas of agricultural land below the LEAR threshold of 120
  - Minor areas of non-farm residential development
  - Minor areas of non-agricultural use
  - Natural areas
- Boundaries of agricultural areas will follow:
  - Designated regional urban area boundaries
  - Natural or man-made features
  - Original lot lines (concession lines)
  - Original half-lot lines
  - Existing legal lot lines

Maps showing the final Prime Agricultural areas in the City of Hamilton, as defined by using the LEAR approach, are shown in the Figures 5 and 6. Large concentrations of prime agricultural areas are located in Glanbrook, Upper Stoney Creek, Ancaster and west Flamborough (Figure 5). The largest areas of prime specialty crop production are located above the escarpment (Figure 6).

7 CONCLUSIONS

The City of Hamilton was found to have two distinct climatic regions for agriculture production. The climate for the majority of the City is most suitable for the production of common field crops while an approximately 1500 ha of land surrounding the Niagara escarpment in Stoney Creek has the potential for specialty (vinifera grapes, pears/plums) crop production.

Prime agricultural land was mapped in the City of Hamilton using the LEAR system of land evaluation and area review proposed by the Ontario Ministry of Agriculture and Food. A separate LEAR analysis was conducted for each of the 2 distinct climatic areas in the study area. The LEAR system of land evaluation uses soil capability (LE) and area review factors (AR) to identify prime as opposed to non-prime agricultural land. LE and AR factors were developed for all properties in the study area.

The City of Hamilton's Agricultural Working Group (AWG) contributed to the selection of AR factors, the determination of the relative weighting of AR and Le factors and the development of a threshold score for prime agricultural land designations. The AWG proposed 3 area review factors for study that addressed conflicting (residential) land use, land fragmentation and surrounding agricultural land use.

LEAR scores were determined for each property in the areas of common field crop and specialty crop production in the study area. LEAR values ranged from about 20 to 185. A threshold LEAR score for delineating prime agricultural land was developed by the AWG employing the methodologies proposed by the Ontario Ministry of Agriculture and Food. A threshold value of 120 was selected to delineate prime from non-prime agricultural land in the common field crop and specialty crop production area.

In order to delineate prime versus non-prime agricultural land, a rule set was established to apply consistently across the study area. Maps of the study area delineating prime agricultural land for common field and specialty crop production were produced. Glanbrook and Ancaster appeared to have the greatest concentration of prime agricultural land for common field crop production while the well-drained land bounding the Niagara escarpment had the greatest potential for specialty (pears/plums, vinifera grape) crop production.

The results of this study provide technical information that will be required in the development of a new Official Plan for the City of Hamilton. The findings in this report will be a primary consideration with other land use factors when determining rural land use designations for the new Official Plan.

Figure 1. Distribution of LEAR scores in the study area

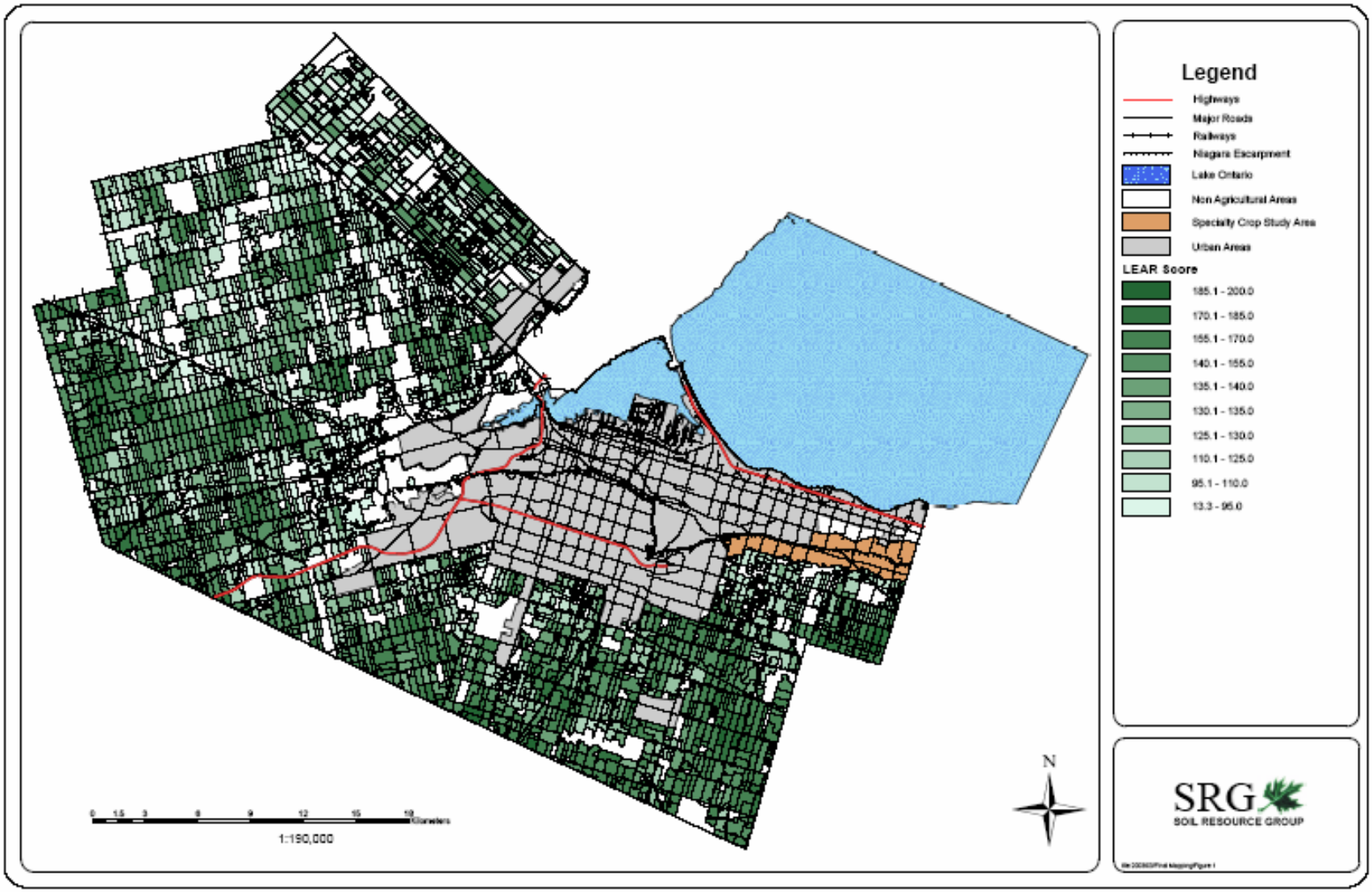


Figure 2. Distribution of LEAR scores in the specialty crop production study area

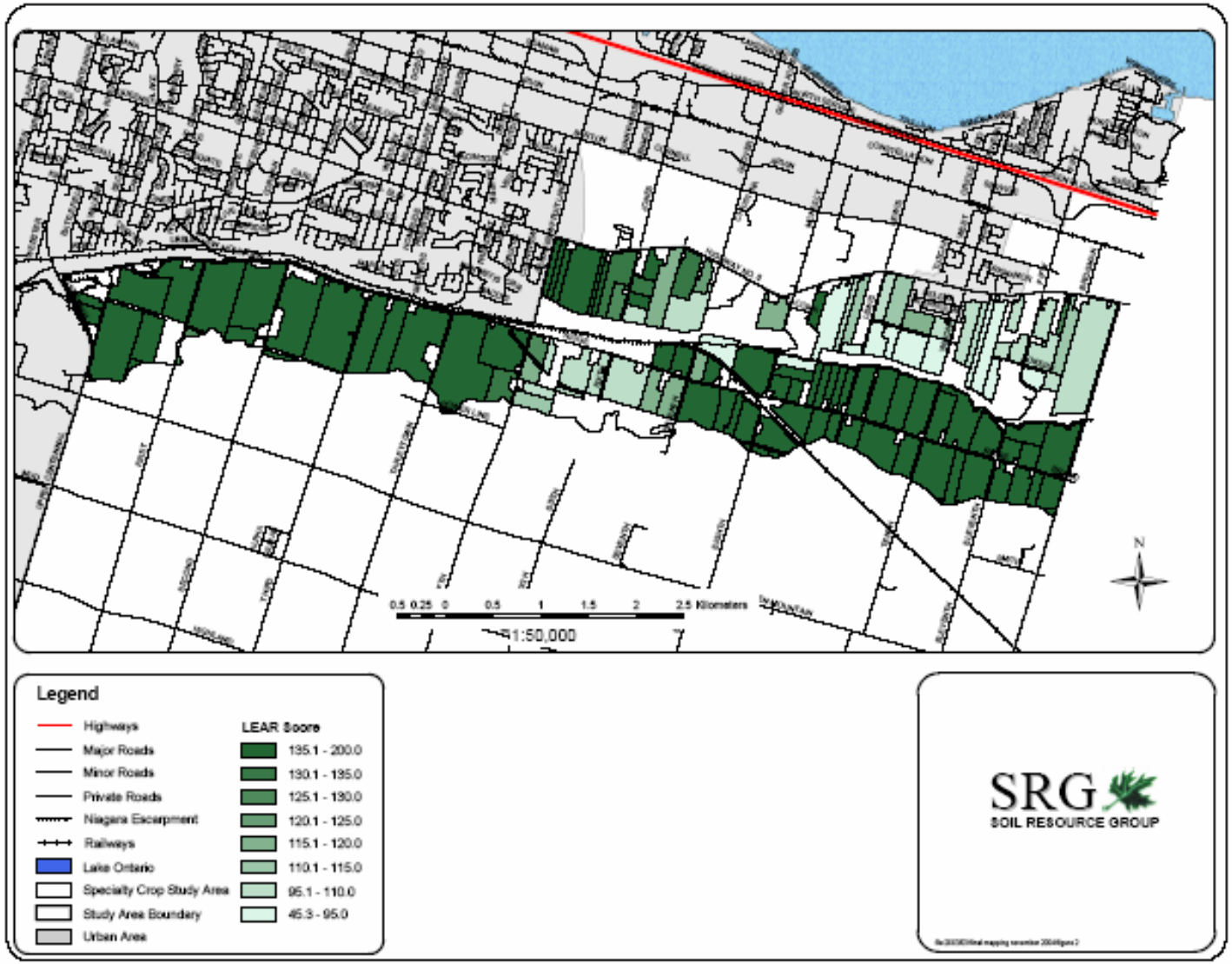


Figure 3. Distribution of LEAR threshold >120 scores in the study area

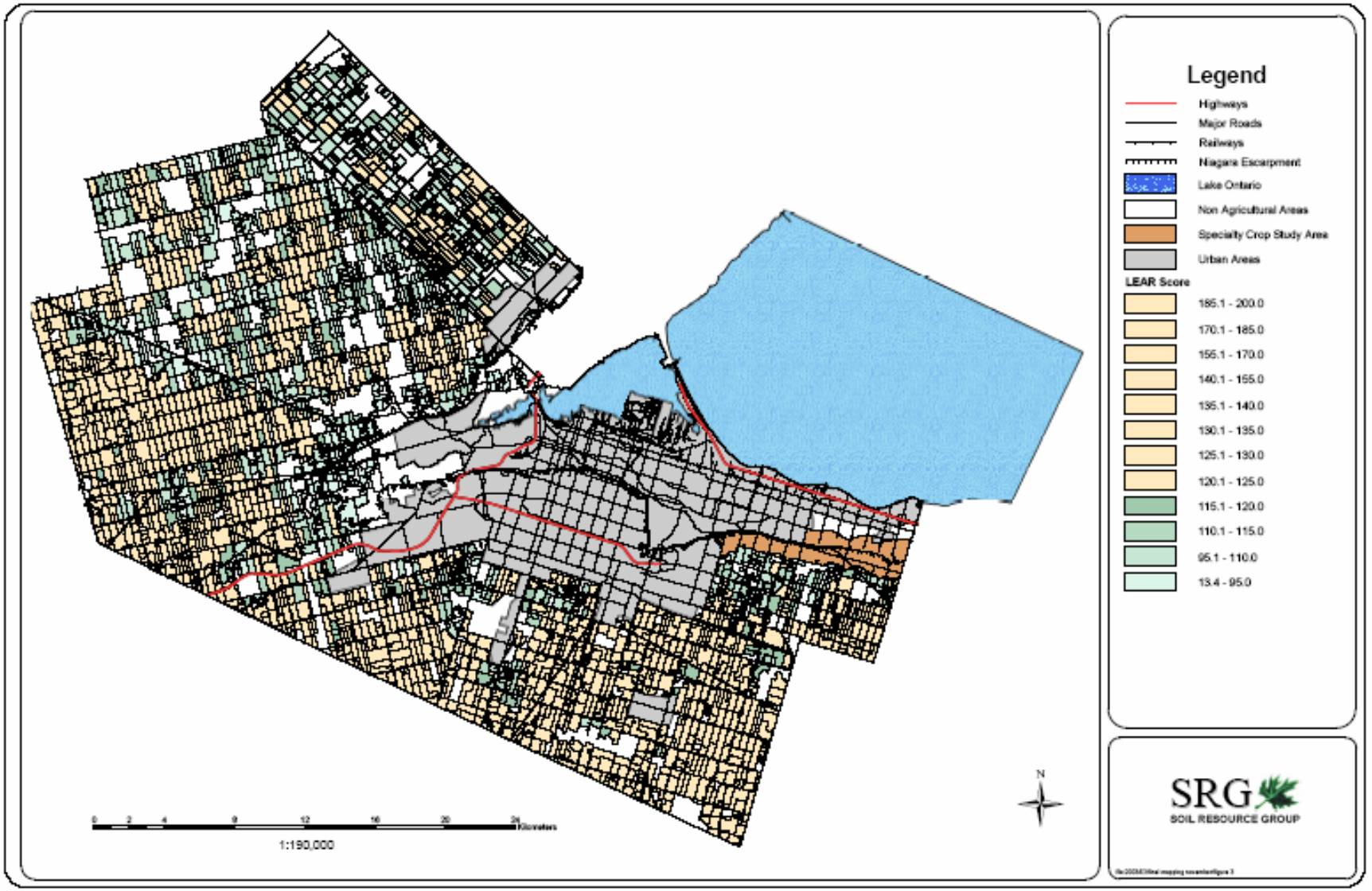


Figure 4. Distribution of LEAR threshold >120 in the specialty crop production study area.

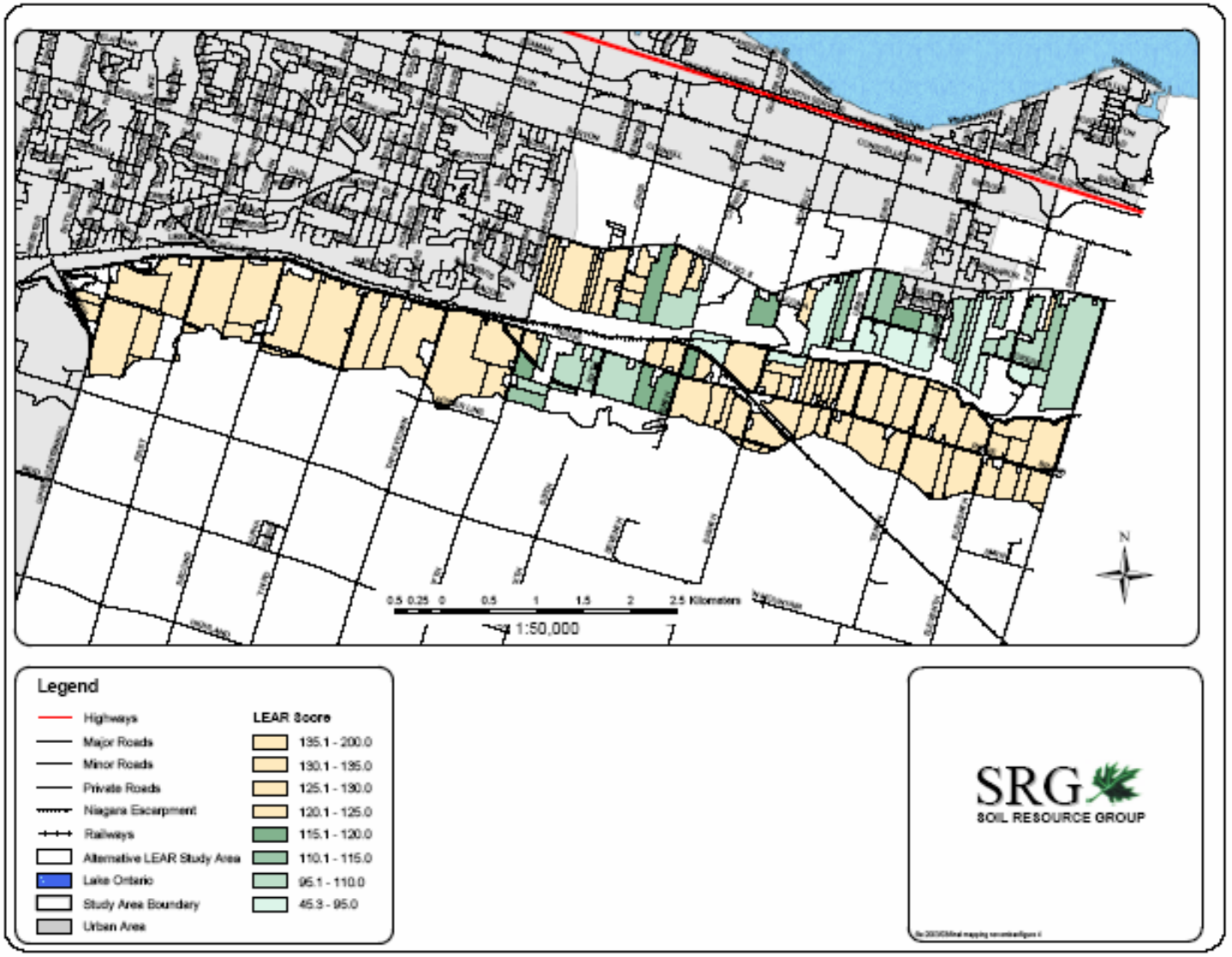


Figure 5. Location of prime agricultural areas in the study area.

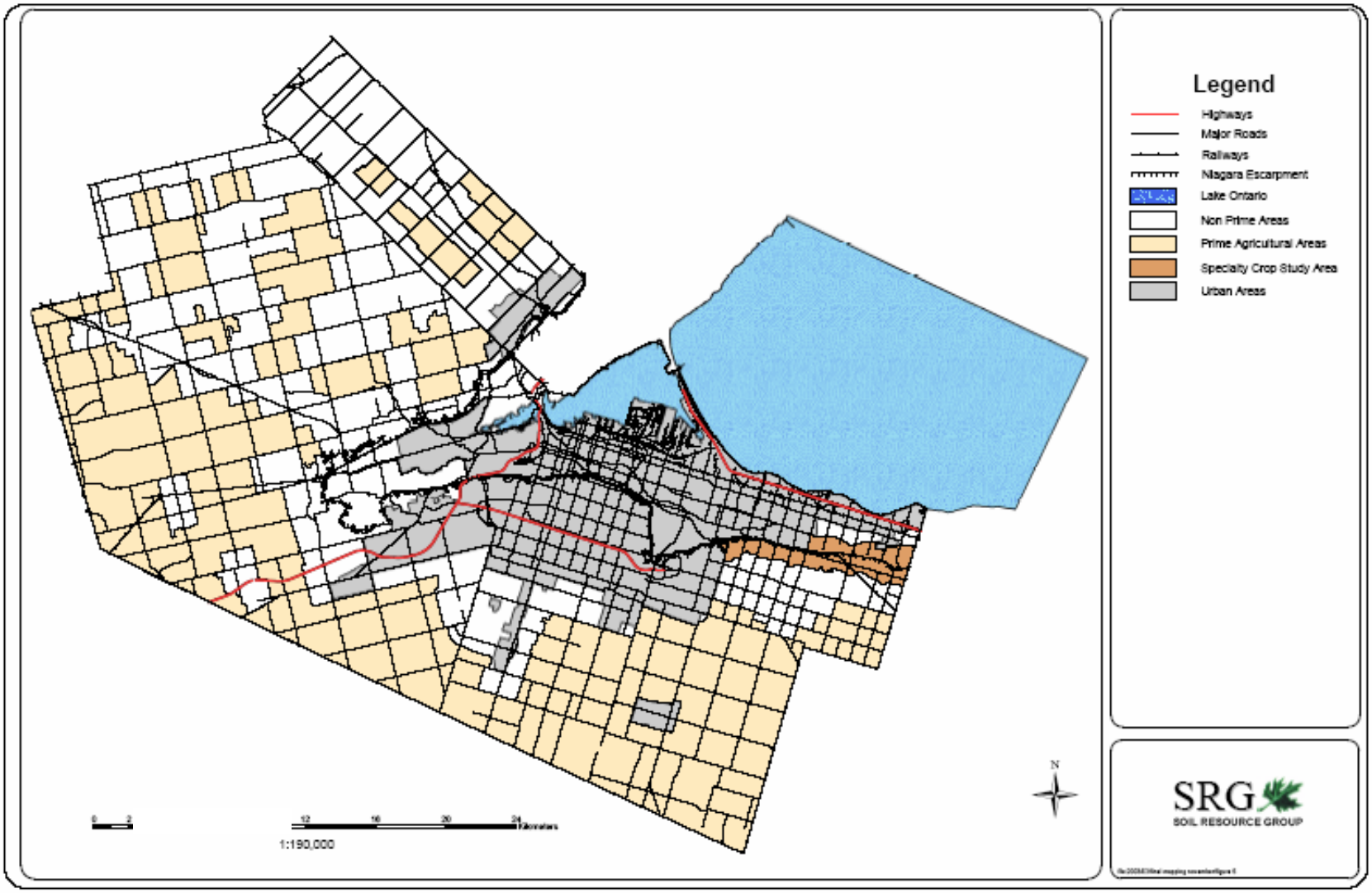
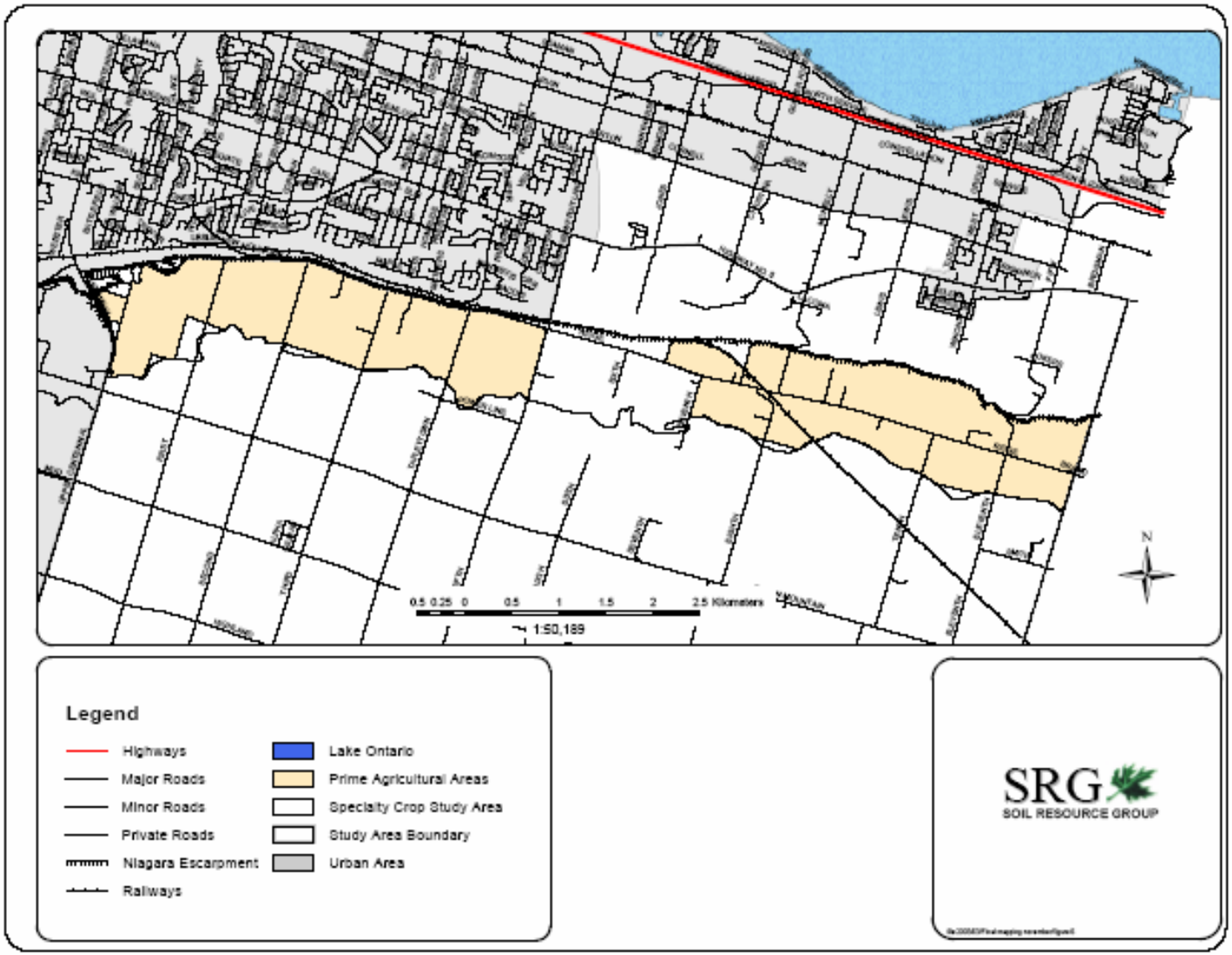


Figure 6. Location of prime agricultural areas in the specialty crop production study area.



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APPENDICES

APPENDIX 1

A1. DEVELOPMENT AND TESTING OF STUDY METHODOLOGY

Study Test Area

The Test Study Area included:
The former Upper Stoney Creek area and the former Lower Stoney Creek area between the Niagara Escarpment and Highway 8 from Fruitland Road to the City of Hamilton municipal boundary. It is bounded by Highway 8 on the north, Fruitland Rd on the east, Highway 20 on the south and the City of Hamilton municipal boundary on the west.

A map illustrating the location of the test area is shown in Figure 7.

Evaluation Units (EUs)

Two different scales were considered for evaluating the Hamilton study area. These were the **property** and **block** units of evaluation. In the property analysis, individual farm properties would be the smallest units evaluated and given a LEAR Score. Figure 8 shows the boundary of the property units in the test area.

In a block analysis, farm properties would be amalgamated into 67 approximately 250 ha blocks defined by roads. Each block would be evaluated and assigned a LEAR Score. Figure 9 shows the boundary of the block units in the test area and the rule set used to define the blocks.

A1.1 Methods Common to Both Property and Block Analysis

Databases

The following information was obtained from the City of Hamilton to identify and categorize each property in the LEAR study area:

- Property boundaries (from assessment mapping) and the following related information: assessment roll number, assessment code (e.g. farmland, residential, commercial, etc.), property size, property owner.
- This information was available for the entire study area and was checked by SRG. Based on findings, City staff verified, updated and corrected information for some parcels.
- Each property was given a code to ensure that all had a unique identification number. In cases where two parcels had the same Teranet number, the number >9= or >8= (for lower Stoney Creek) was placed in front of one of the parcels number, to identify it as a separate parcel but to retain reference to the original number.
- Mapped information for each property was linked to individual data files

- Digital mapping availability of official plan designations and municipal zoning
- City of Hamilton digital maps of municipal zoning districts were used where available.
- Appropriate policy excerpts and Schedules from the related Officials Plans of the subject former municipalities within the City of Hamilton (Region of Hamilton-Wentworth, City of Stoney Creek, Town of Flamborough, Town of Dundas, Town of Ancaster and the Township of Glanbrook).
- Appropriate excerpts form the related Zoning by-laws, as amended, of the former municipalities
- OMAF Soils, Drainage, Land Use Systems mapping (1983)
- Additional resources (e.g. aerial photographs; recent Agricultural Economic Impact Study; Agricultural Assessment for Lower Stoney Creek (AgPlan, March 2003; Statistics Canada Census of Agriculture information)
- Aerial photographs (2002), where available, were used as part of the field verification of soil capability maps
- Additional map availability (e.g. existing and proposed/approved transportation corridors; lands with access to piped water and sanitary sewer services; licensed aggregate operations and areas of high aggregate extraction potential; Up-to-date map of any lands approved for development beyond what is identified on the paper copies of the official plan maps already received.
- Bedrock maps were used to identify areas of possible bedrock exposure. These areas were verified to determine if in fact bedrock outcrops were present, and if soil capability maps reflected this limitation.
- Servicing and transportation maps were not used in the final analysis, as the AR factors chosen did not relate to these potential limiting factors.

City of Hamilton Land Use Information System

- Only properties with an “agricultural” land classification code as identified in the City of Hamilton Land Use Information System were considered. Other non-agricultural properties and natural features (e.g. water bodies) will still be considered as part of the Study Area but they will not be subject to individual agricultural evaluation. Their potential inclusion in a priority agricultural area will be determined later in the study, once LEAR scores for surrounding agricultural properties have been determined.

Rural Settlement Areas (RSA)

It is important to recognize that Hamilton is an amalgamated City and is not dealing with a consistent policy approach on settlements throughout Rural Hamilton. The four former rural municipalities covered the spectrum with respect to their approach to Rural Settlement Areas (RSAs). Some former municipalities had comprehensive boundaries for their settlements whereas others did not. Some identified all rural clusters as settlement areas, whereas others just identified the major RSAs, and one did not recognize any RSAs at all.

It was decided to include all of these areas as part of the Rural area for the following reasons:

- the desire to treat all RSAs, rural clusters and strip development consistently.
- new settlement areas would need to be identified to treat all rural settlement areas,

rural clusters and strip development consistently, however, the identification of new RSAs is prohibited by Greenbelt policies;
- the extensive additional studies (e.g., settlement capability studies) and a lengthy public process required to identify boundaries for existing RSA that do not have recognized boundaries would put impractical time and resource constraints on the LEAR;
- the committee indicated that the impact of residential density on farm operations, where higher densities result in higher conflicts, occurs regardless of location of residential lots in the RSAs or rural area; and

The urban area called for a different approach than the RSAs. The application of the area review factors to properties close to the urban boundary would result in a continuous and permanent strip or shadow of non-prime area or fringe area up to 500 metres deep that would stretch along the entire urban boundary. Rural designation of this strip would continually be an impetus for urban expansion. It was decided that development in the urban area would be excluded from the evaluation.

Non-agricultural land uses (and Quarries)

Properties with non-agricultural uses were not evaluated as having agricultural potential; however, they were included in the analysis of the agricultural areas. The following rationale explains why these properties were not evaluated:

- Small non-agricultural properties (including commercial, industrial, institutional, recreational and small rural residential uses)
  It is unlikely that these legally existing uses, many with permanent structures and of a substandard size for agricultural production will return to agricultural production.
- Larger non-agricultural properties (e.g., African Lion Safari, the Conservation Areas)
  These properties are primarily active recreational uses, Conservation Authority lands, and whose primary function is not agriculture.
- Licensed aggregate resource extraction areas
  Although licensed aggregate areas are referred to as a temporary use, their impacts tend to be more permanent in Hamilton. The larger obvious licensed areas are quarries many of which go below the water table. Further, many of the licensed areas throughout the city were licensed prior to an emphasis being placed on rehabilitation to agriculture by the Aggregate Resources Act. Therefore, due to the nature of the operations and their licenses, it is not feasible nor a requirement for the operators to rehabilitate the sites to agriculture.

Please note that all properties were considered in development of the prime agricultural areas in order to meet the objective of mapping large contiguous uninterrupted prime areas. Many of the smaller non-agricultural properties were included in the prime agricultural areas where they met the appropriate criteria *(see section 6).*

Urban and Residential Development Areas

- Areas designated “Urban” in the former Region of Hamilton-Wentworth Official Plan are not included in the analysis. The boundary of this area is treated as a barrier, and

potential negative farm influences (e.g. residential density, traffic, number of properties etc) from within the urban boundary are not assessed as part of the LEAR scoring system.
- Properties within “Settlement Areas” (delineated in the official plans of former lower tier municipalities) and other properties outside the “Urban” area are not included in the analysis.

Land in Adjacent Municipalities

- Properties beyond the boundary of the City of Hamilton were not assessed as part of the LEAR scoring system since compatible land use and property data were not available. However, the official plans of adjacent municipalities in conjunction with recent aerial photographs were used to prevent the creation of incompatible land classifications between jurisdictions.

Soil and CLI Agricultural Land Capability Data

- Soil and CLI digital data are taken from:
  Wentworth Soil Survey Report Number 32 (1965)
- Soil, CLI data were used for property and block evaluations for initial analysis. Field validations of the soil capability values were field checked and corrected at a later date.
- Class 1 to 4 CLI equivalent lands were identified from this information and used as a reference in determining cut-off threshold levels for LE values and LEAR Scores. Maps of CLI class 1 to 3 and 1 to 4 are reported in Figures 16 and 17.

Land Evaluation (LE) Values

- An LE value between 1 and 100 is assigned to each CLI rating, which is then used to determine an overall LE score for each evaluation unit (EU) by weighting each different LE value according to the proportion of land that it occupies in the EU (Table 1).
- LE values are assumed to adequately represent the soil capability for an EU.

Area Review (AR) Factors

- AR factors were chosen, based on farming conditions and concerns affecting farming in Hamilton as identified by members of the Agricultural Working Group (AWG). AR factors reflect both agriculture-enhancing and detracting influences and assist in assessing long-term agricultural sustainability of different areas in the City.
- The AWG was relied upon to contribute information that led to the development of AR factors that best reflect the nature of farming in their community.
- Each individual AR for a property or block is given equal weight when calculating a final overall AR Score for the EU.

AR Factor Buffers

- As part of the LEAR assessment, it was agreed that land uses and activities within 1km

of an agricultural property would be considered in determining potential impact on the agricultural potential of a property. Properties within a 1km radius of the center of each evaluation unit were assessed.

Calculating Separation Distances

- Each agricultural unit was assigned a location grid coordinate (centroid) situated in the middle (or approximately in the middle, in the case of irregularly shaped parcels). Every other surrounding property that fell within a 1km radius of the agricultural property centroid was included in the property's buffer. If a property centroid fell within the 1km circumference, it was included as part of the evaluation, even if part of the property was outside of the radius. Conversely, a property whose centroid was outside of the radius, even though some of the property area fell within the buffer, was excluded from the evaluation.

Designation of a "Specialty Crop Area"

- The Lower Stoney Creek and adjacent Upper Stoney Creek area was identified as a "Specialty Crop Area", due to it's unique climatic nature and its existing and potential capability to support the production of grapes and other tender fruit crops (e.g. vinifera grapes, other grapes, pears/plums).
- Vinifera grapes and pears/plums were chosen for analysis since they represent the two predominant specialty crops grown in the study area.
- SRG staff, in consultation with OMAF grape and pear specialists, defined the boundary for the production of vinifera grapes and pears/plums. The boundary for this Specialty Crop production area is partially based on extrapolation of the existing OMAF Niagara grape area maps, and also incorporates consideration of the unique climatic characteristics of this area that allow for the production of specialty crops (vinifera grapes, tender fruits) that are not grown in any other parts of the study area. It is also noted that this is one of the few areas in Canada suited to the production of these specialty crops.
- When evaluating agricultural properties in the Specialty Crop Area, the face of the Niagara escarpment is treated as a 'barrier' to AR-related influences. Given the physical size and characteristics of the Escarpment, the size and use of properties above the brow are unlikely to negatively influence the agricultural potential of properties below the escarpment and visa versa. Accordingly, properties above the brow are not assessed as part of the LEAR scoring system for the Specialty Crop Area evaluation.
- LE and AR scores in the Specialty Crop Area were calculated differently than for the wider City of Hamilton study area. LE's were based on a comparison of CLI ratings for both common field crops and specialty crops and utilization of the highest/best rating. ARs will have class limits for each criteria based on frequency distributions of data from within the Specialty Crop Area only.

Planning Considerations

- References were made to the Parkway Belt West Plan area and the Niagara Escarpment Plan. Agricultural properties in these Provincial planning areas were considered as part of the applicable LEAR study areas and evaluated using the same LEAR criteria as other lands in these areas.

Weightings of LE:AR Scores

- OMAF Guidelines recommend a 50:50 weighting between LE and AR Scores in determining a final LEAR Score. Any modifications to this weighting should be agreed upon by the AWG and documented accordingly.
- The AWG decided to adopt a 60:40 weighting instead of a 50:50 weighting. This decision was made in order to give more weight and emphasis to LE scores that reflect better CLI soil capability ratings and to minimize the effects of AR-related factors that are commonly found in Hamilton (e.g. significant land fragmentation and conflicting land uses).
- All three AR criteria values were weighted equally in determining AR property scores.

Threshold LEAR value for Prime Agricultural Land

- The study team developed a threshold level for LEAR scores to differentiate between prime agricultural and rural land by a process described earlier in the report. A LEAR score of >120 was recommended to define prime agricultural land.

Two potential methods for determining threshold LEAR values for prime agricultural Land designations are outlined in the OMAF LEAR Guidelines. These are:

1. Allowing a single threshold score to control the decision (eg let a LEAR score of 140 be used to establish prime for non-prime agricultural areas
2. Computing a threshold value by determining a minimum acceptable value for each of individual LE and AR factors used and calculating, using the appropriate weightings, the associated LEAR score.

The following decisions were reached over the course of discussions at the AWG meeting (Appendix 3 Meeting #5):

- It was not possible for the members of the AWG to determine an absolute minimum threshold score for individual or combined AR criteria. For example, the AWG could not conclude the number of rural residences surrounding an agricultural property where the threshold between prime and non-prime land could be established. Similar difficulties occurred with attempts to establish a threshold for land fragmentation of prime and non-prime land.
- Since it was not possible for the study team to develop minimum acceptable value for the AR factors, it was not possible to compute a threshold value for prime and non prime agricultural area.
- The study team recommended that the final cut-off decision be based on a review of absolute LEAR scores and the relative land base that they represent. A range of LEAR

scores were evaluated with respect to the inclusions of clearly non agricultural land (CLI class 5 to 7 land).

- Initially, the threshold cut off range was chosen as between 110-140. Threshold values between these scores would result in most of the CLI Class 1-4 land being identified as "Prime" and would include a tolerable amount of Class 5-7 land. Subsequent to further analysis, mapping and field verification, a final threshold LEAR Score of 120 was selected by the AWG. The 120 threshold provided a visual distribution of prime agricultural land that made sense to the AWG and could be supported technically since only a small (<7%) percentage of lands with soil capability classes 5 to 7 were included.
- It was decided that the threshold value of 120 will be used for both common and specialty crop areas in the absence of any rationale to change the approach used for these crops.

A1.2 Test Area Analysis - Property Analysis

A1.2.1 Rationale for Using a Property as a Unit of Evaluation

The rationale for using individual farm properties as EUs (Unit of Evaluation) was:

- Evaluation unit is based on individual agricultural properties that are easily identified on maps and in data bases
- Lowest common denominator in terms of consistently mapped assessment unit.
- Readily understandable when referring LE and AR values to parcel.
- Visual assessments of LE and AR possible during field verification of data.
- LE and AR values are property specific and not averaged or generalized amongst several different properties.

A1.2.2 Land Evaluation (LE) - Property Analysis

Soil and topographical information was obtained from the Soils of Wentworth County (OMAF 1965). Digital copies of the soil maps were provided by the City of Hamilton at a scale of 1:63,360. Each combination of soil series and slope class in each agricultural parcel was identified.

CLI suitability ratings for common field crops range from Class 1 (best suited to agriculture) to Class 7 (poorest). A similar 7 class soil suitability rating scheme was used for specialty crops (Niagara Soil Survey Report).

The CLI or suitability rating for each soil and topography combination was determined for each soil series within each parcel.

An LE value was assigned to each class rating (Table 1).

Table 1. Soil capability class (CLI) with associated land evaluation values (LE) for common field crops and specialty crops

CLI Class for Field Crops	LE value for Field Crops	Suitability rating for Specialty Crops	LE value for Specialty Crops
1 (best)	1.00	Good	1.00
2	0.80	Fair to Good	0.80
3	0.65	Fair	0.60
4	0.55	Poor to Fair	0.40
5	0.50	Poor	0.20
6	0.40	Very Poor	0.00
7 (unsuitable)	0.00	Unsuitable	0.00

The proportion of each agricultural parcel occupied by one or more of these soil and topography combinations within each agricultural property was calculated and recorded. A weighted LE score was determined for each property, based on the proportion of parcel land in each CLI class. The LE value assigned to each CLI class is multiplied by the percentage of parcel land occupied by that class. These values are then summed to attain a total LE Score (out of a possible 100) using the LE Calculation Procedure (as follows).

LE Calculation Procedure for Study Area

From the Wentworth soils map, determine each different soil series that is located within the boundary of the EU. Determine the CLI rating for common field crops for each soil series in each EU.

- Calculate the proportion of the total area of the EU occupied by each soil series, and hence each CLI rating for the series.
- Determine the proportion of land in the EU in each of the 7 CLI classes by summing the area within each class.
- Assign a LE value to each CLI, based on the information in Table 1.
- Multiply the LE value by the proportion of EU occupied, to obtain a weighted LE value
- Sum the weighted LE values to obtain an overall LE Score for the EU. Scores will range between 0 and 100

LE Calculation Procedure for Specialty Crop Area

LE scores were assigned differently in the Specialty Crop Area than in the other areas of the study area. A weighted LE score was calculated for each parcel on the basis of both the CLI ratings for common field crops AND for the two fruit specialty crops.

- Common Field Crop LE - The LE Score calculation procedure for field crop CLI ratings is the same as above.
- Specialty Crop LE - In addition, an LE Score is calculated for selected specialty crops (vinifera grapes, pears/plums)

- The final LE Score that is assigned to an EU in the Specialty crop area is that weighted LE that is the higher of the two LE Scores - Field and Specialty Crop (i.e. either the common field crop score or the specialty crop score).

Figure 10 illustrates the range and location of LE values in the test area.

A1.2.3 Area Review (AR) - Property Analysis

LEAR studies from other municipalities were referred to during the initial stages of AR criteria development. These previous studies were reviewed to identify AR criteria that had been used in the past and to determine if any of these had potential for use in the Hamilton LEAR study.

Based on AR examples outlined in "A Guide to the Land Evaluation and Area Review (LEAR) System for Agriculture" (OMAF, 2002) and on reviews of previous LEAR studies, a range of AR criteria were considered for use in Hamilton. These included the following:

- Percentage of surrounding land in agriculture
- Size of the agricultural parcel
- Percentage of the agricultural parcel used for common field crop production
- Percentage of the agricultural parcel used for specialty crop production
- Presence, size, type or value of farm buildings and other structures on the agricultural parcel
- Proportion of the agricultural parcel that is tile drained
- Proximity to:
    - Farm services
    - Non-conflicting land uses
    - Transportation corridors and gravel vs. paved roads
    - Utility corridors
    - Urban boundaries, towns, villages, settlement areas
    - Rural residences
    - Commercial and industrial land uses
    - Aggregate extraction areas
    - Recreational and open space areas

AR Considerations and Concerns for the City of Hamilton

In the initial Agricultural Working Group meeting (Appendix 3), the farm representatives identified the following as primary concerns for agriculture in the City of Hamilton:

- Potential conflicts with rural residences and non-farm residents impacting the ability to continue, difficulty in carrying on normal farming practices (neighbour complaints about odour, noise, , spraying of crops, etc.; increased non-farm traffic causing, congestion, safety; concerns and difficulties for timing field work)
- Maintain 'agricultural' stability of the rural area and limit potentially conflicting non-agricultural land uses

- Farm parcel size was generally not a concern, but fragmentation of farmland with non-agricultural land uses and severances were.

Factors of lesser importance or concern were:

- Infrastructure (farm buildings, tile drainage, greenhouses)
  Damage to property
- Farm income or inputs
- Non-conflicting land uses (e.g. natural areas, utility corridors, institutional uses, cemeteries)
- Acknowledgement of the 'uniqueness' of some agricultural areas in Hamilton, particularly in the advantageous climatic regions below the escarpment

After reviewing preliminary AR criteria compiled by SRG, the AWG decided to focus the ARs for the Hamilton LEAR study on agricultural land use in the area, rural residential properties and fragmentation.

Description of AR Criteria

Three AR criteria were developed for the test area. Over the course of the testing, these AR's were subsequently modified and improved according to suggestions from the AWG to make the criteria better reflect conditions and concerns in the region.

The three AR criteria that were used are listed below, along with the reasons for including the criteria as determined through AWG meetings:

AR1: Agricultural Land Use

- Measures:
  - The proportion of land within 1km of each 'agricultural' property that is comprised of other properties identified as 'agricultural'.

- Rationale behind this criterion:
  - The more agricultural the area, the more likely that the area will stay in agricultural use (good indication of the long tem potential of an area to be farmed)
  - Agricultural properties that have a high proportion of surrounding area also in agriculture are more likely to sustain agricultural production (greater 'critical mass' of agriculture, more land available to rent near home operations, less interference in day-to-day operations from non-agricultural land uses, etc)

AR2: Conflicting Land Use (Residential)

- Measures:
  - The number of properties within 1km of each "agricultural" property that are

identified with a “residential” land use code in the City of Hamilton Land Use Information System.

- Rationale behind this criterion:
    - Farming operations can be hindered or obstructed by conflicting land use, in particular, residential land uses.
    - The presence of residential properties can limit farm expansion and create nuisance complaints, especially for livestock operations
    - Conditions resulting from residential development can evolve over time and the adverse impact on farms can increase (increased traffic and safety concerns, road salt, road expansion)
    - The pressure to expand the number of residences and other non-farm uses permitted in an area is greatest where there is already significant residential development

AR3: Land Fragmentation

- Measures:
    - the total number of properties, excluding those identified with a “residential” land use code, within 1km of each “agricultural” property.

- Rationale behind this criterion:
    - The greater the number of properties within 1km, the smaller the average property size.
    - Smaller parcels of land are more susceptible than larger parcels to being taken out of agricultural production due to lack of adequate land area required to sustain a commercial farm operation.
    - It may be potentially easier to change the use of a small parcel of land to a non-farm land use (e.g. residential).
    - More parcels of land may be required to establish economically viable farm units.
    - Properties with a “residential” land use code are excluded from this criterion to avoid ‘double counting’ with the second criterion.

Summaries of the AR criteria used in the property analysis for the common field crop and specialty crop study areas are shown in Tables 2 and 3.

Table 2. Area review criteria, City of Hamilton (excluding Specialty Crop Area)

AR Criteria	Assessment Methodology and Categories
1. Agricultural land use	Identify properties with an "agricultural" land use code in the City of Hamilton Land Use Information System. Determine the proportion of land within 1km of each "agricultural" property that is comprised of other properties identified as "agricultural". Categorize as follows: >= 96.29% of land within 1km comprised of agricultural properties 92.23 - < 96.29% of land within 1km comprised of agricultural properties 87.79 - < 92.23% of land within 1km comprised of agricultural properties 82.21 - < 87.79% of land within 1km comprised of agricultural properties 74.15 - < 82.21% of land within 1km comprised of agricultural properties 57.42 - < 74.15% of land within 1km comprised of agricultural properties 0 - < 57.42% of land within 1km comprised of agricultural properties
2. Conflicting land use (residential)	Identify properties with an "agricultural" land use code in the City of Hamilton Land Use Information System. Determine the number of properties within 1km of each "agricultural" property that are identified with a "residential" land use code in the City of Hamilton Land Use Information System. Categorize as follows: 0 to 7 residential properties within 1km 8 to 11 residential property within 1km 12 to 16 residential properties within 1km 17 to 23 residential properties within 1km 24 to 36 residential properties within 1km 37 to 72 residential properties within 1km greater than 72 residential properties within 1km
3. Land fragmentation	Identify properties with an "agricultural" land use code in the City of Hamilton Land Use Information System. Determine the total number of properties, excluding those identified with a "residential" land use code, within 1km of each "agricultural" property. Categorize as follows: 0 to 9 properties within 1km 10 to 12 properties within 1km 13 to 14 properties within 1km 15 to 17 properties within 1km 18 to 21 properties within 1km 22 to 29 properties within 1km >29 properties within 1km

Table 3. Area review criteria for the Specialty Crop Study Area

AR Criteria	Assessment Methodology and Categories
1. Agricultural land use	Identify properties with an "agricultural" land use code in the City of Hamilton Land Use Information System. Determine the proportion of land within 1km of each "agricultural" property that is comprised of other properties identified as "agricultural". Categorize as follows: >= 85.83% of land within 1km comprised of agricultural properties 81.28 - < 85.83% of land within 1km comprised of agricultural properties 75.53 - < 81.28% of land within 1km comprised of agricultural properties 70.59 - < 75.53% of land within 1km comprised of agricultural properties 66.48 - < 70.59% of land within 1km comprised of agricultural properties 59.04 - < 66.48% of land within 1km comprised of agricultural properties 0 - < 59.04% of land within 1km comprised of agricultural properties
2. Conflicting land use (residential)	Identify properties with an "agricultural" land use code in the City of Hamilton Land Use Information System. Determine the number of properties within 1km of each "agricultural" property that are identified with a "residential" land use code in the City of Hamilton Land Use Information System. Categorize as follows: 1 to 13 residential properties within 1km 14 to 19 residential properties within 1km 20 to 22 residential properties within 1km 23 to 29 residential properties within 1km 30 to 45 residential properties within 1km 46 to 59 residential properties within 1km greater than 59 residential properties within 1km
3. Land fragmentation	Identify properties with an "agricultural" land use code in the City of Hamilton Land Use Information System. Determine the total number of properties within 1km of each "agricultural" property excluding properties with a "residential" land use code. Categorize as follows: 1 to 19 properties within 1km 20 to 23 properties within 1km 24 to 25 properties within 1km 26 to 29 properties within 1km 30 to 33 properties within 1km 34 to 40 properties within 1km >40 properties within 1km

Calculation of AR Factors - Property Analysis

AR 1: Determining the proportion of land within 1km that is identified as "agricultural"

1. Identify properties with an "agricultural" land use code in the City of Hamilton Land Use Information System. Using an agricultural property's assigned centroid (x, y coordinates), determine which "agricultural" (Secondary Land Use Code in the 870's) and non-agricultural properties' (all remaining parcels) centroids are within 1km of the parcel. Repeat this procedure for each agricultural property in Hamilton.
2. Sum the area of all agricultural properties with centroids located within 1km of the agricultural property being evaluated to determine the total area of agricultural land. (If some of a property's area falls within the 1km limits but the centroid of the property does not, then none of the property area is include in the sum.)
3. Sum the area of all non-agricultural properties within 1km. As with the agricultural property procedure described above, inclusion or exclusion of non-agricultural properties within the radius depends on the position of the parcel's centroid, relative to the 1km limit.
4. Add the total area of agricultural land and the total area of non-agricultural land within 1km of each agricultural property. (Note: this total could be less or more than $1km^2$ depending on the size of individual properties included in the sums and the potential location of the evaluation unit with 1km of an urban boundary or the City of Hamilton boundary.)
5. Determine the proportion of the total area occupied by the agricultural land area (Total Ag. Area within 1km x 100 / Total Area = % Ag Land in area surrounding Ag. Parcel). Note: There will be one % value for each Ag. Parcel.
6. Amalgamate all Ag. Parcels and associated '% surrounding land use' values. Sort by size of '%' in preparation for determining Class Limits (following)
7. Once Class limits have been determined for AR1 in the Test area, assign the appropriate category points for each parcel score from the Points column in Table 4 (Weightings).

AR 2: Determining the number of "residential" properties within 1km of a designated "agricultural" parcel

1. Using the agricultural parcel's assigned centroid (x, y coordinates), determine what "residential" properties' centroids (Primary Land Use Code of 100) are within a 1km radius of the parcel.
2. Sum the number of all residential properties with centroids within 1km radius of the Ag. Parcel being evaluated
3. Amalgamate all Ag. Parcels and associated "Number of residential properties within 1km". Sort by residential property numbers in preparation for determining Class Limits (following)
4. Once Class limits have been determined for AR2 in the Test area, assign the appropriate category points for each parcel score from the Points column in Table 4 (Weightings).

AR 3: Determining the total number of properties within 1km of a designated "agricultural" parcel

1. Using the agricultural parcel's assigned centroid (x, y coordinates), determine the number of other property centroids (both ag. and non-ag.) that are located within 1km.
2. Sum the number of all properties within 1km radius of the agricultural parcel being evaluated.
3. Amalgamate all agricultural parcels and associated "Number of all properties within 1km". Sort by Number of Properties in preparation for determining Class Limits.
4. Once Class limits have been determined for AR3 in the Test area, assign the appropriate category points for each parcel score from the Points column in Table 4 (Weightings).

Table 4. Weightings for individual AR and AR criteria

Criteria	Assessment Methodology	Individual ARs	
		Points	Weight in Combined AR Score
1. Agricultural land use	Identify properties with an "agricultural" land use code in the City of Hamilton Land Use Information System. Determine the proportion of land within 1km of each "agricultural" property that is comprised of other properties identified as "agricultural". Categorize as follows:		1/3
	>= 96.29% of land within 1km as agr. properties	1	
	92.23 - < 96.29% of land within 1km as agr. properties	0.9	
	87.79 - < 92.23% of land within 1km as agr. properties	0.75	
	82.21 - < 87.79% of land within 1km as agr. properties	0.6	
	74.15 - < 82.21% of land within 1km as agr. properties	0.4	
	57.42 - < 74.15% of land within 1km as agr. properties	0.2	
	0 - < 57.42% of land within 1km as agr. properties	0.1	
2. Conflicting land use (residential)	Identify properties with an "agricultural" land use code in the City of Hamilton Land Use Information System. Determine the number of properties within 1km of each "agricultural" property that are identified with a "residential" land use code in the City of Hamilton Land Use Information System. Categorize as follows:		1/3
	0 to 7 residential properties within 1km	1	
	8 to 11 residential property within 1km	0.9	
	12 to 16 residential properties within 1km	0.75	
	17 to 23 residential properties within 1km	0.6	
	24 to 36 residential properties within 1km	0.4	
	37 to 72 residential properties within 1km	0.2	
	greater than 72 residential properties within 1km	0.1	
3. Land fragmentation	Identify properties with an "agricultural" land use code in the City of Hamilton Land Use Information System. Determine the total number of properties, excluding those identified with a "residential" land use code, within 1km of each "agricultural" property. Categorize as follows:		1/3
	0 to 9 properties within 1km	1	
	10 to 12 properties within 1km	0.9	
	13 to 14 properties within 1km	0.75	
	15 to 17 properties within 1km	0.6	
	18 to 21 properties within 1km	0.4	
	22 to 29 properties within 1km	0.2	
	>29 properties within 1km	0.1	

Determining a Final Overall AR Score

Determining Class Limits (For AR 1, 2 or 3) Based on AR Frequency

- The Class Limits / Breaks for each AR Factor criteria were established after the individual agricultural parcel scores for each AR were calculated.
- Class breaks were based on the distribution of AR data for all parcels (Table 5. AR distribution and associated class values). These class breaks were identified in the OMAF LEAR manual, and were used for the Hamilton AR values because the seven classes provided adequate differentiation between all the parcels.

Table 5. AR distribution and associated class values

Class	Percent of total parcels in class	Class Value
A (>best case= AR situation)	15	1.0
B	15	0.9
C	15	0.75
D	15	0.6
E	15	0.4
F	15	0.2
G (>least preferable= situation)	10	0.1

Frequency Distribution Method of Delimiting Class Breaks

1. Using data for AR in question, determine the total number of agricultural parcels in the dataset. Sort and arrange AR-related parcel values from 'Best case' ones (Highest '% surrounding agricultural land, low number of residential properties and low total number properties) to 'Worst case' in dataset columns.
2. Determine what % of this total number each individual parcel represents (Parcel %)
3. By consecutively adding each Parcel % to the one before (sorted according to AR-related value), determine the cumulative percent (first parcel in dataset will have lowest % value, last parcel in list should represent 100%)
4. Based on this distribution, determine which parcels fall within the following categories: 1-15% of all agricultural parcels, 16-30%, 31-45%, 46-60%, 61-75%, 76-90%, 91-100% (>worst-case= AR-related values are in the last category). AR class names of a, b, c, d, e, f, and g and weights of 1.0, 0.9, 0.75, 0.6, 0.4, 0.2 and 0.1 are assigned to these classes, respectively. (reference: OMAF LEAR manual)
5. Determine what AR-related values coincide with the dividing point between each of the previous >population distribution= classes. These coinciding values will be unique for each separate dataset, and need to be recalculated each time a dataset is modified.
6. Assign Class Limits based on these break-points. Class limits may or may not fall exactly on the division point, depending on the nature of the dataset. (E.g. for AR 2 & 3, often a >population distribution= break does not coincide exactly with a change in the AR-related value. In this case, the rule is that the upper limit of the class break is assigned

based on the highest AR-related value within the population distribution class.)

This method was used to define class breaks for the following distributions:

- All Agricultural Properties / Blocks within the Stoney Creek test area EXCLUDING the Specialty Crop Area
- All Agricultural Properties / Blocks within the Stoney Creek test area WITHIN the Specialty Crop Area
- All Agricultural Properties / Blocks within the City of Hamilton

Each of the above analyses yielded different class breaks, which are dependent on the number of properties/blocks used in the analyses and the calculated AR value for each of these properties/blocks.

Class breaks are reported in the AR Criteria Tables and illustrated on the cumulative percent distribution graphs in the Appendix.

Assigning an AR Score to a Property

The following procedure was used to determine a final overall AR Score for each agricultural parcel:

- Individual AR Values
    - Once class breaks for each individual AR were determined, based on population distribution, an AR class name and value was assigned to each Ag. Parcel, based on it's AR-related value
    - Each parcel had 3 individual AR values assigned, for: % surrounding agricultural area / Number of residential properties / Number of all properties
- Overall AR Score
    - An overall AR Score for each property is derived by summing all 3 of the Individual AR values (AR 1, 2, 3).
- The highest value possible for Combined AR values was 1.0, and the lowest was 0.1. Class values are given in Table 5.

Figure 11 shows the AR 1 to 3 combined values for the test area.

A1.2.4 LEAR Score Determination for Each Property

- The LE and AR Scores for each property were combined giving 60% weight to the LE score and 40% weight to the AR score and adding the two numbers. The AWG requested that a 60:40 weighting scheme be used for the following reason(s):
    - Better soils would have more weight given to them
    - Lower AR scores would not weigh as heavily

Figure 12 shows the LEAR scores for properties in the study test area.

A1.3 Test Area Analysis – Block Analysis

- Evaluation unit is based on a 'block' identified on maps as units equivalent to 1 square Upper Stoney Creek concession (bounded by nearest roads on all sides) or approximately 1 square km. The blocks identified for use in the Stoney Creek test area are illustrated in the Block map (Figure 9).

A1.3.1 Rationale for Using a Block as a Unit of Evaluation

- Grouping of parcels allows for easier delineation between Prime Agricultural Areas and Rural (non-prime) areas
- Data is more generalized than in the property analysis, with the influence of data anomalies eliminated or reduced.
- Visual in-field verification difficult, because of grouped nature of data: additional resources such as aerial photos required

A1.3.2 Land Evaluation (LE) – Block Analysis

LE Treatment for the Test Area - Block Analysis

The CLI rating for each soil and topography combination was determined for all soils in each parcel. An LE value was assigned to each CLI class rating, as based on Table 1.

The proportion of area occupied by each of these soil and topography combinations within each block was calculated and recorded for every agricultural parcel. A weighted LE score was determined for each block, based on the proportion of parcel land in each CLI class.
The LE value assigned to each CLI class is multiplied by the percentage of parcel land occupied by that class. These values are then summed to attain a total LE Score (out of a possible 100) using the LE Calculation Procedure outlined in the Property Method section.
Sum the weighted LE values to obtain an overall LE Score for the EU. Scores will range between 0 and 100.

Figure 13 presents the LE values for blocks in the test area. Blocks located in the southern part of the test study area generally have the highest LE scores.

LE Treatment for Specialty Crop Area - Block Analysis

LE scores were assigned differently in the specialty crop Area than in the other areas of the study area. A weighted LE score was calculated for each parcel on the basis of both the CLI ratings for field crops AND for specialty crops.

- Field crop LE - The LE Score calculation procedure for field crop CLI ratings is the same as above.
- Specialty Crop LE - In addition, a LE Score is calculated for selected specialty crops, as identified previously.
- The final LE Score that is assigned to an EU in the specialty crop area is that weighted LE that is the higher of the 2 LE Scores for field and specialty crops

A1.3.3 Area Review (AR) – Block Analysis

The same general AR factors and principles behind the property-based analysis were used for the Block analysis.

Modifications to AR1 calculations for block analysis

1. Exclude from the data, all land designated for non-agricultural use in provincially approved official plans.
2. Determine the % of land within each block that is used for agriculture as identified in the City of Hamilton's Land Use Information System.
3. Amalgamate all AR1 >% surrounding land use values for the test area. Sort by size of % in preparation for determining Class Limits (following section)
4. After determining Class Limits, identify the appropriate category for each block from the criteria table (according to the % determined above).
5. Assign the appropriate category points for each block score from the Points column in Table 4 (Weightings).

Modifications to AR2 calculations for block analysis

1. Identify and determine the number of properties identifed as 'Residential' within each block.
2. Amalgamate all AR2 values for the test area. Sort by size (no. of residences in block) in preparation for determining Class Limits (following section)
3. After determining Class Limits, identify the appropriate category for each block from the criteria table.
4. Assign the appropriate category points for each block score from the Points column in Table 4 (Weightings).

Modifications to AR3 calculations for block analysis

Note: In the testing of the Block Analysis, properties within the block were first divided according to size before being counted. Three trial groupings were used - those properties under 2ha, under 5ha and under 10ha. The sample calculation is shown for tabulating properties under 2ha.

1. Determine the number of properties less than 2ha within each block.
2. For each block, identify the appropriate category from the criteria table.
3. Choose the appropriate category points for each block score from the Points column in Table 4 (Weightings).
4. Multiply the Points for each block by the appropriate criteria weight to determine the criterion AR.

Figure 14 shows the combined AR values for the study test area.

A1.3.4 LEAR Score Determination for Each Block

The LE and AR Score for each block were combined and illustrated on maps, using the same weighting scheme used for the property analysis (LE:AR = 60:40 weighting)
(Figure 15). Generally the highest LEAR scores were located in the south-western corner of the test study area.

A1.4 Recommendations Resulting from Property and Block Analysis

Within the Test Study Area, LEAR scores and maps illustrating results using property evaluation units and block evaluation units were presented to the AWG, City staff and OMAF staff for consideration. Minutes of the AWG meetings are included in Appendix 3.

LEAR scores for property and block units of evaluation for the test area are shown in Figures 12 and 15 respectively. While the range of LEAR values reported for the two units of evaluation do not differ significantly, the LEAR values of a significant number of properties is lost in the block analysis. Concerns over the potential loss of prime agricultural property resulting from lumping of information in the block analysis was a significant consideration of the AWG in recommending that the property rather than the block unit of evaluation be used in the study.

A1.5 Data Verification Procedure

Data sources and field checks

Background data sources included:

- Topographical maps
- Aerial photographs
- Bedrock / maps based on >R= limitations of CLI
- CLI soil capability for agriculture class ratings for common field crops and specialty crops, identified on a property by property basis
- AR values and maps

Field method:

- Roadside survey
- Soil description verification B roadside checks, profile sampling
- Documentation of changes
    - In field B comments, recommended properties to receive further review or to be re-evaluated were recorded on CLI and field maps

Databases Modifications and Updating Procedures

Rules

A number of rules were established to assist in the decision making process involved in checking and modifying databases.

- Once a property was identified as having a potential discrepancy between what was recorded in the databases for soil or land use capability data and that observed in the field, the area was identified on the field map as requiring further investigation and/or possible modification of LE / CLI rating
- If subsequent in-field and office analysis and scrutiny (via aerial photography, other existing maps) confirmed that the recorded classification differed from the observed, changes were made to the LEAR database if:
    - The soil series reported was not correct
    - The observed conditions differed substantially from the reported (i.e. a change of at least 2 CLI classes)
    - The recommended change would alter the calculated LE value to the extent that the property would change by one or more LE classes

Incorporating changes into the database

Any revised information for properties was treated as follows:

- Potential changes were recorded on field sheets, as were comments comparing the original mapped data to that from additional sources (aerial photos, etc)
- Updated or modified property data was transferred to electronic databases as required
- The revised data was used to recalculate LE and AR values and incorporated into the LE and LEAR Score for property

Figure 7. Location of study and test areas

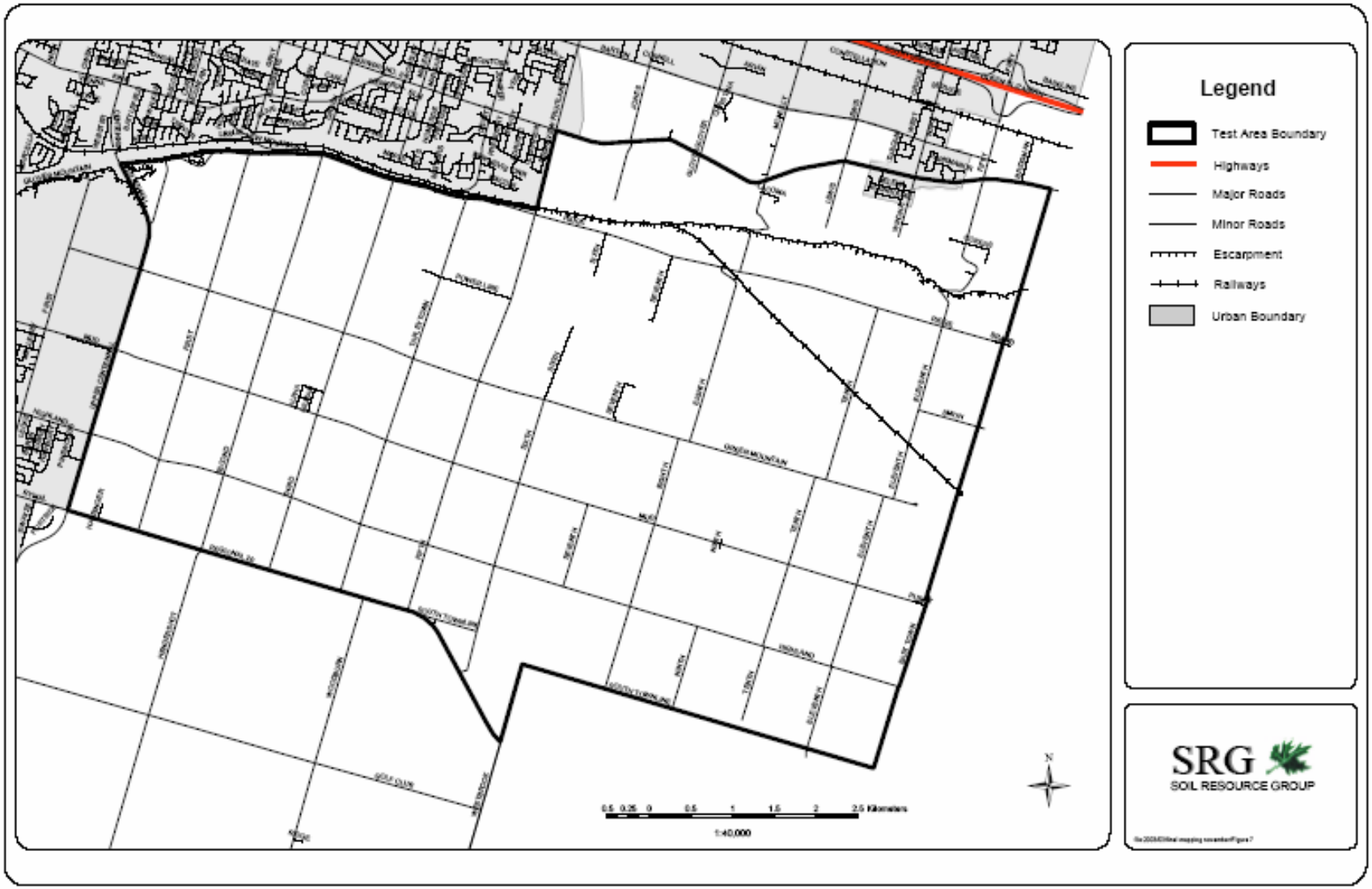


Figure 8. Boundary of property units in the test area

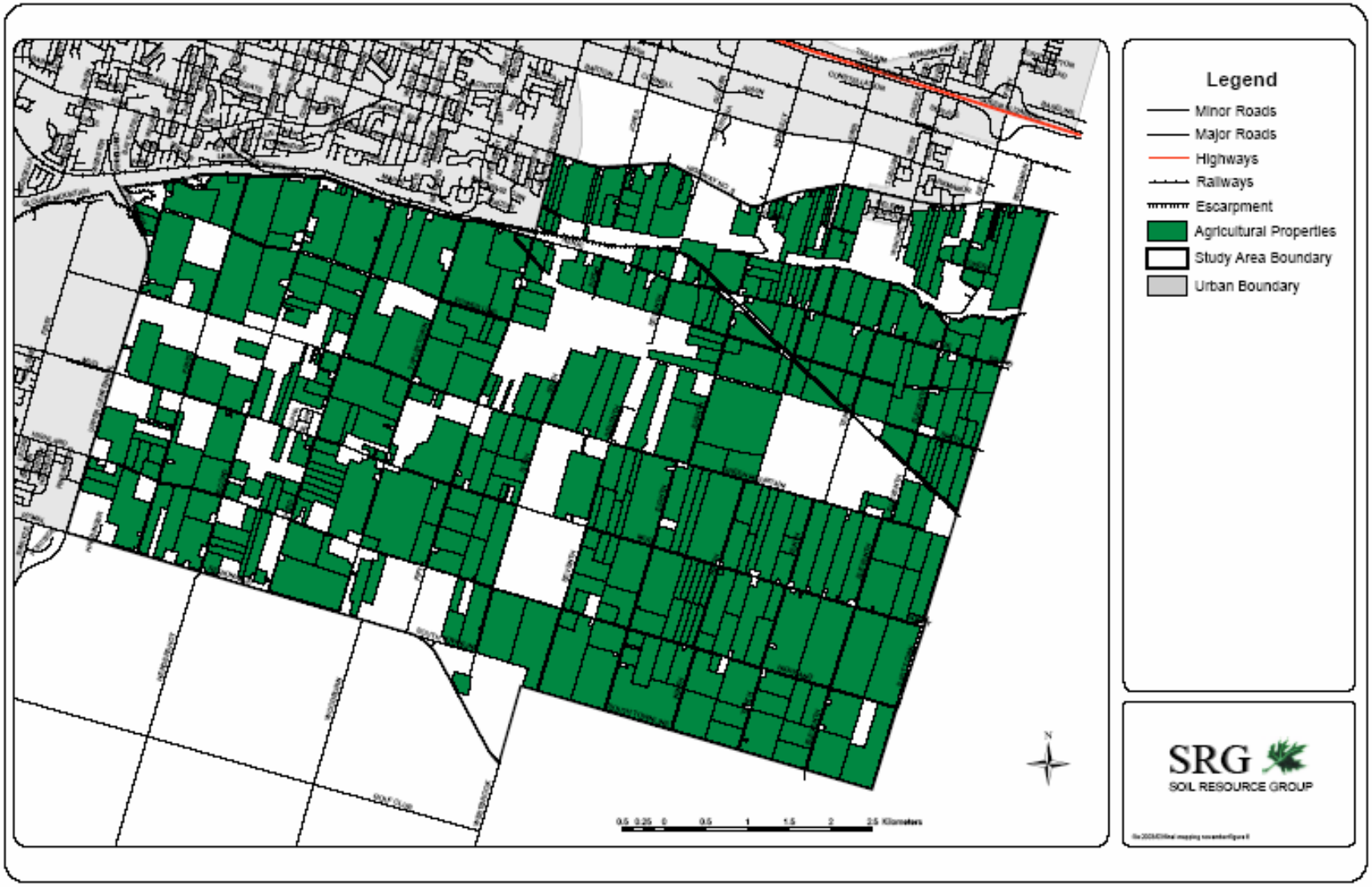


Figure 9. Boundary of block units in the test area

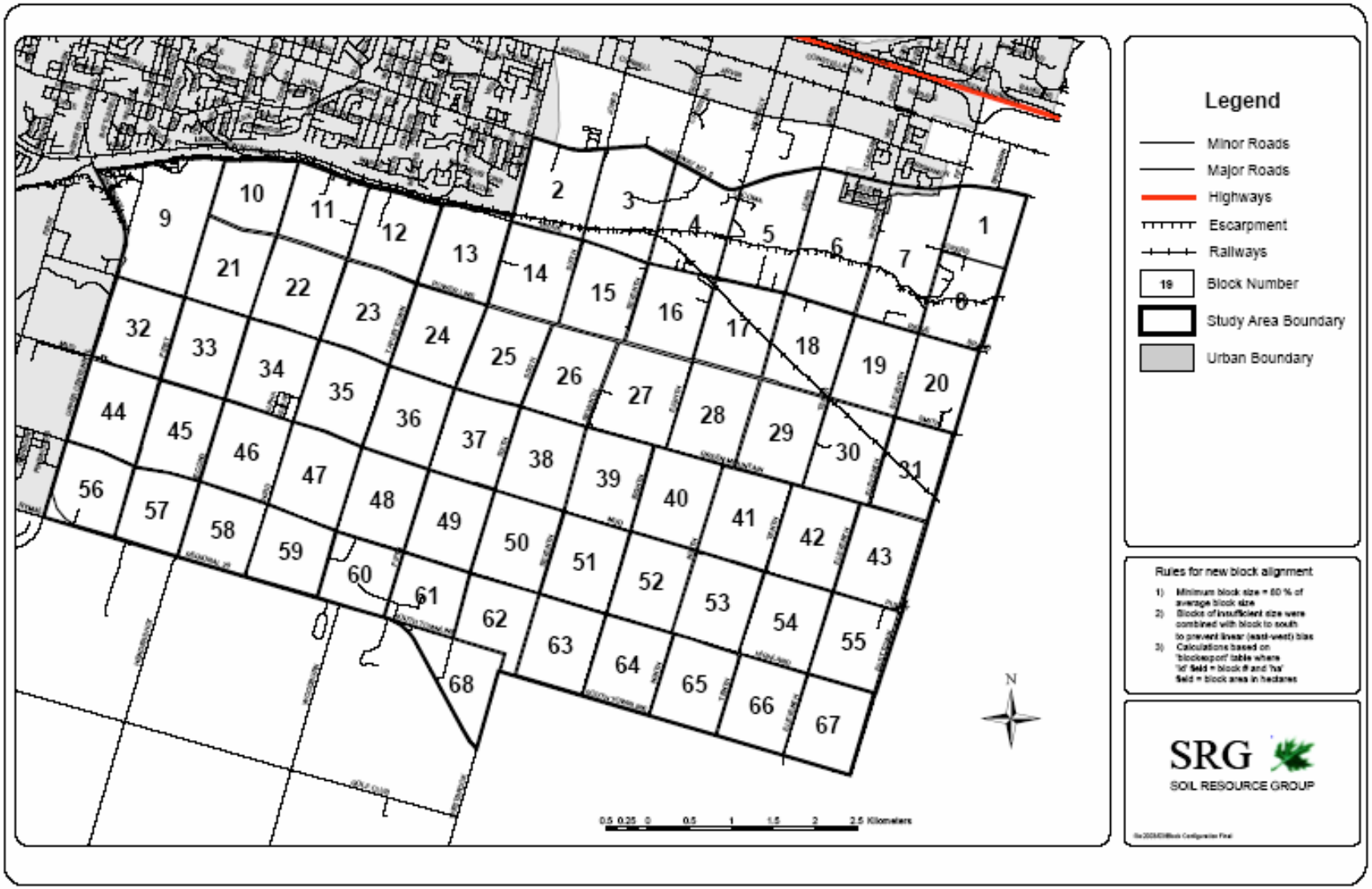


Figure 10. LE values for properties in the test area

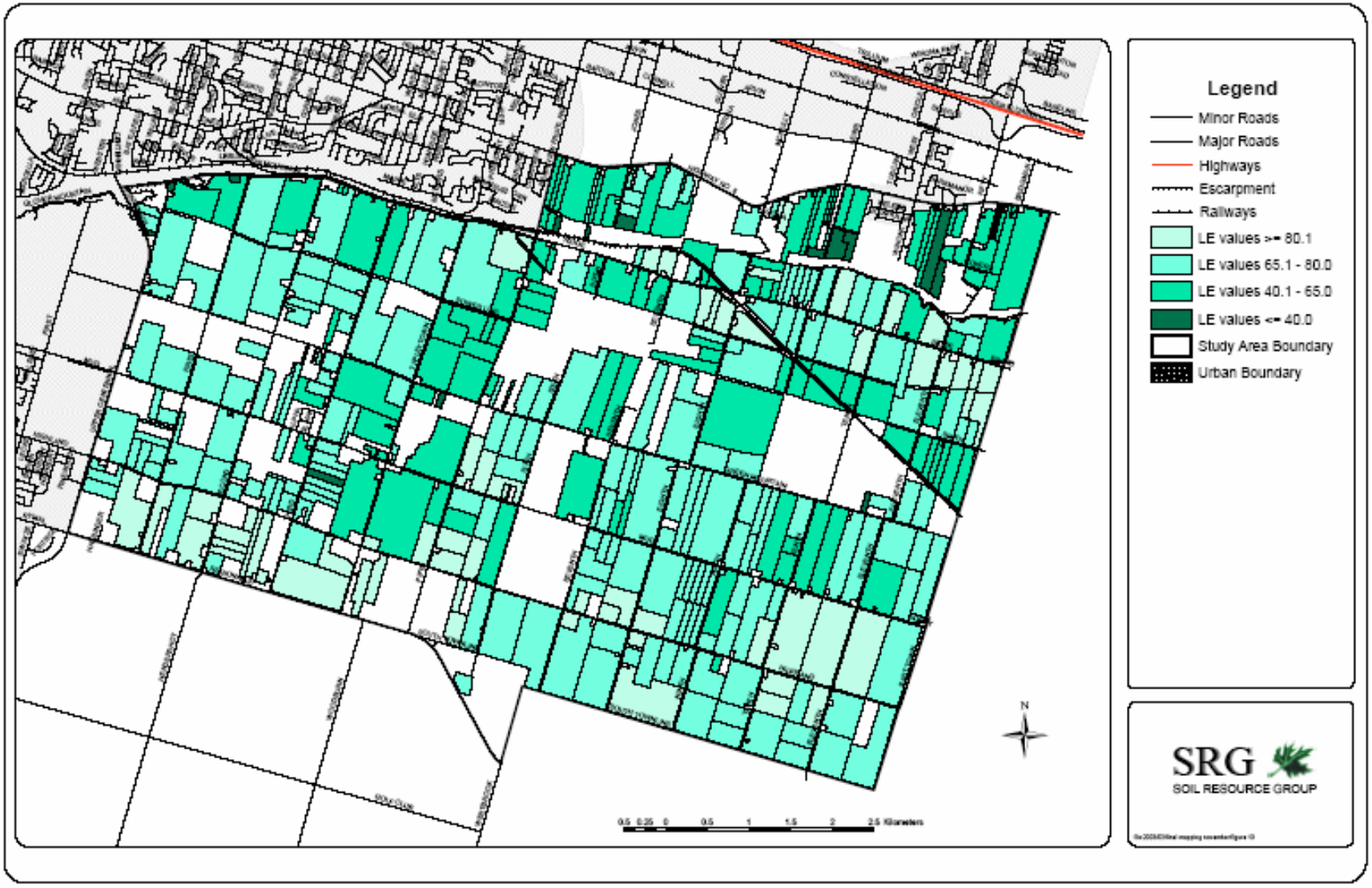


Figure 11. AR 1-3 combined values for properties in the test area

Figure 12. LEAR scores for properties in the test area

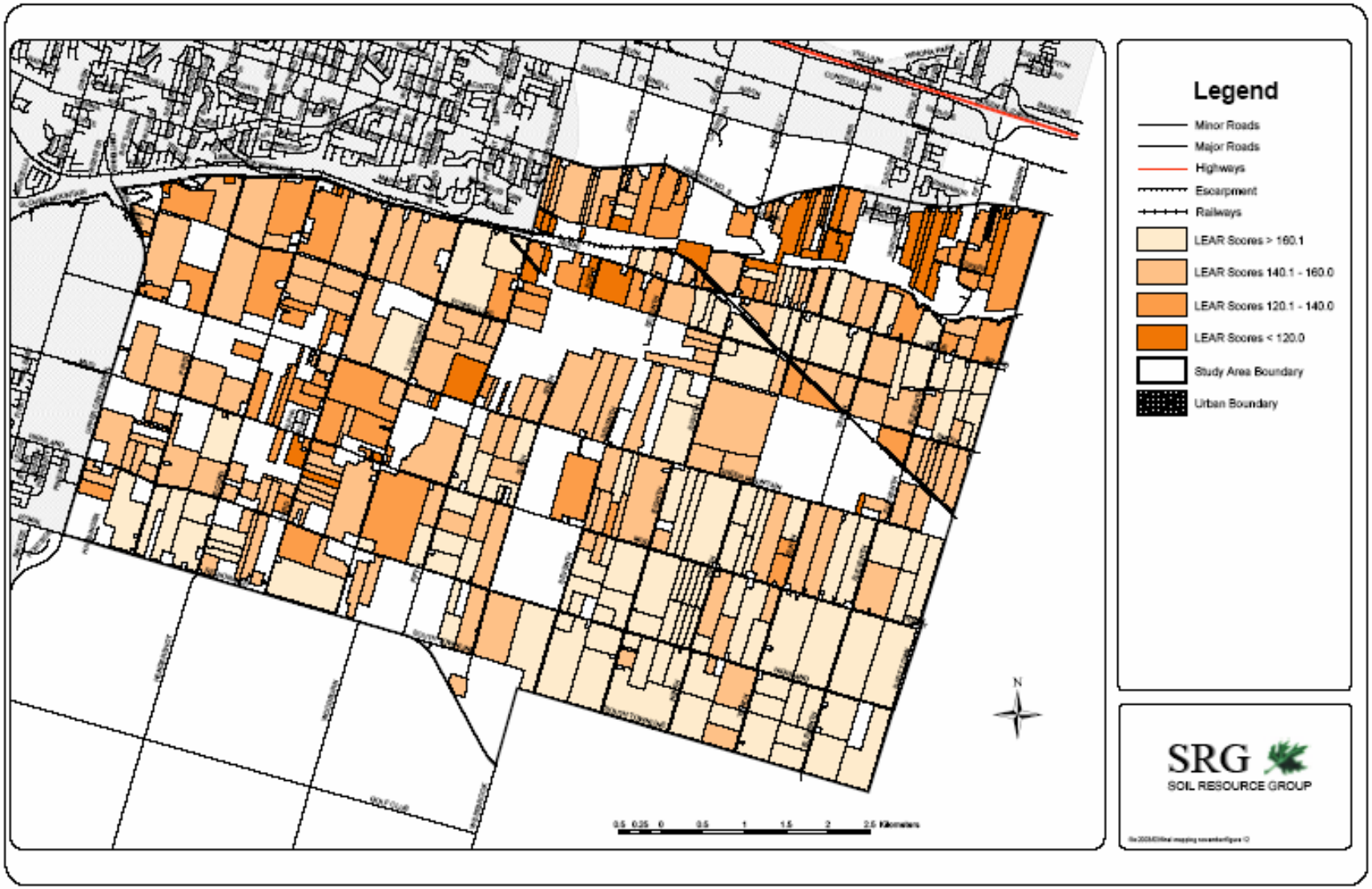


Figure 13. LE values for blocks in the test area

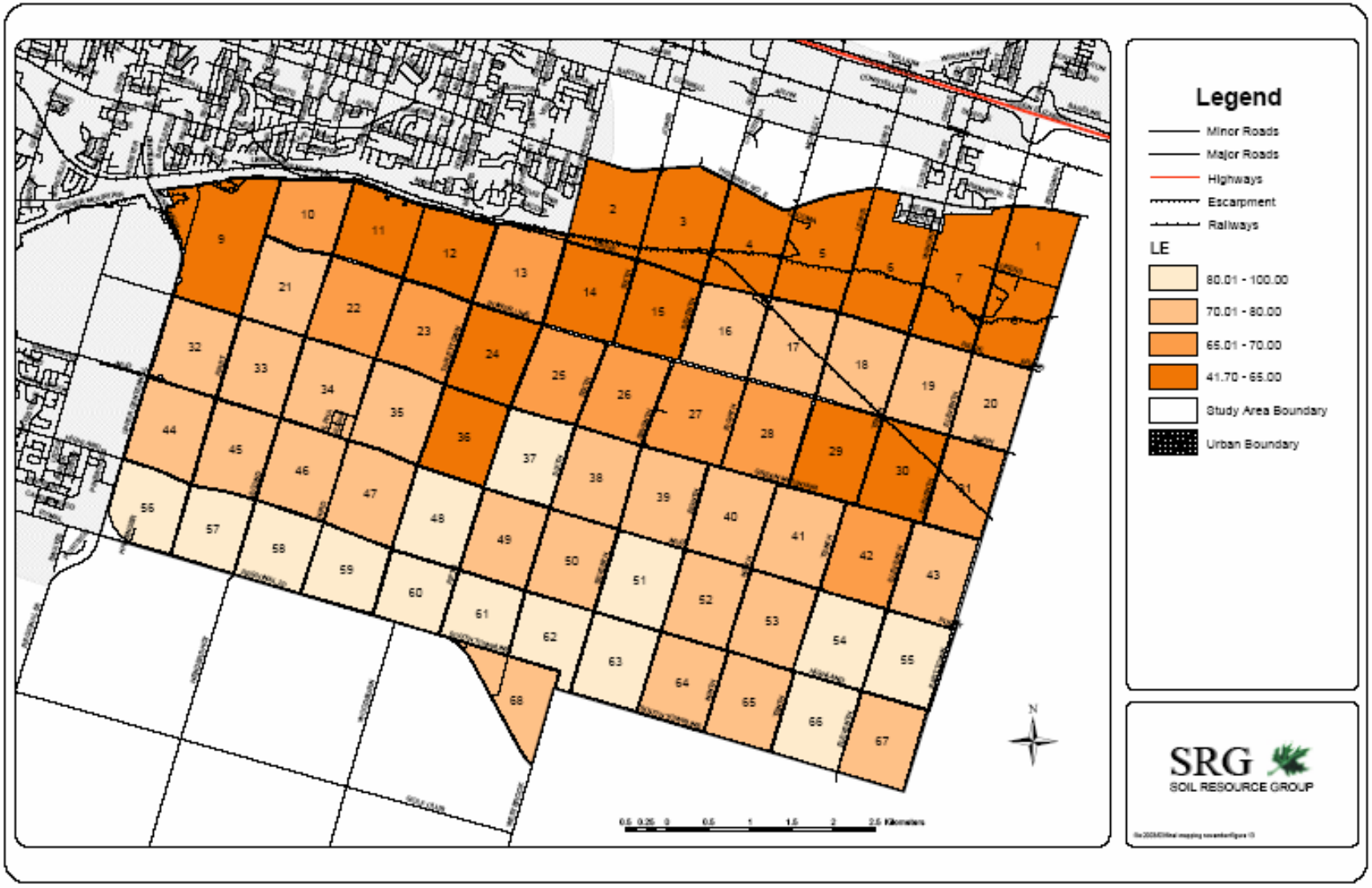


Figure 14. AR 1-3 combined values for blocks in the test area

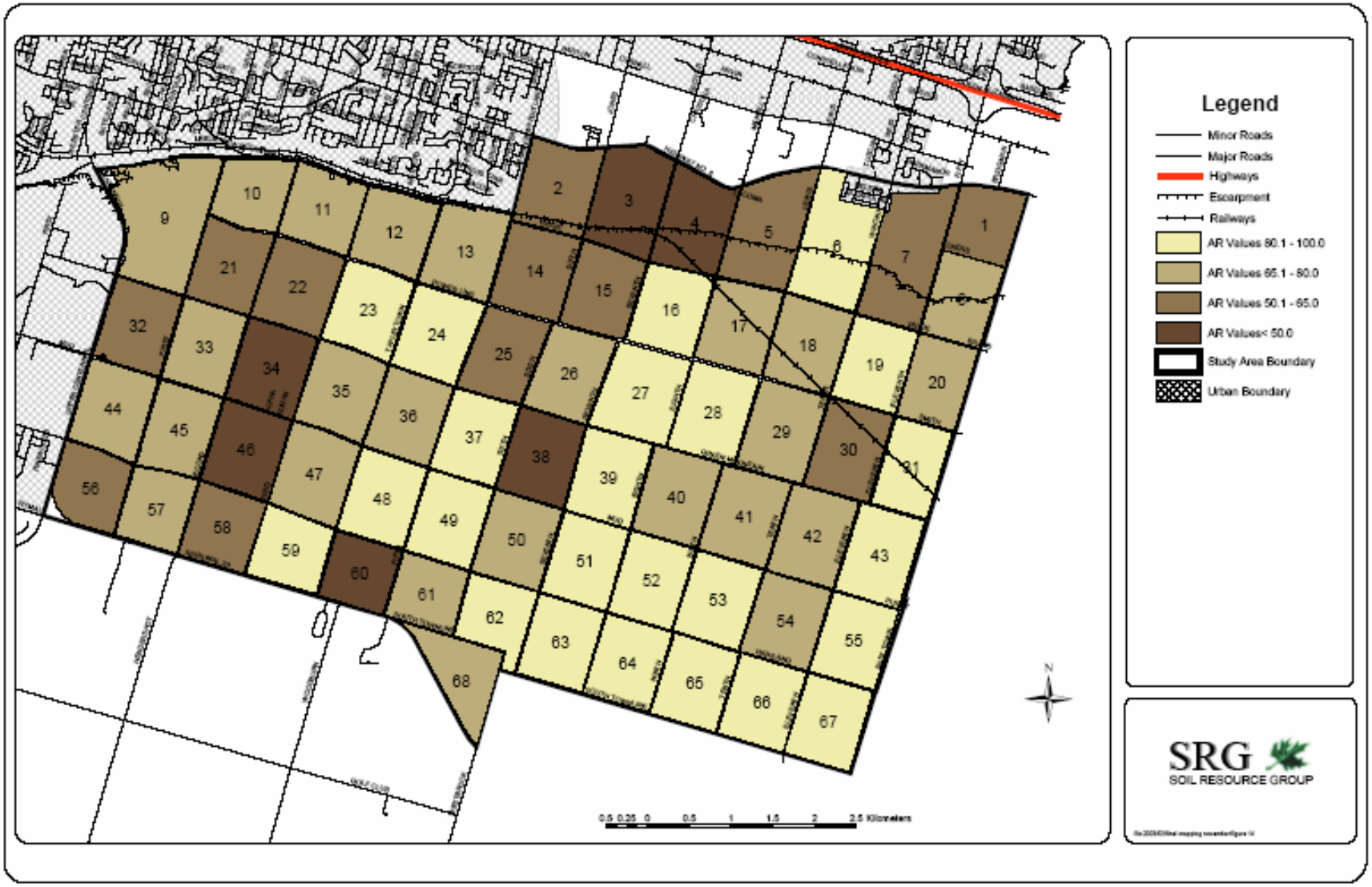
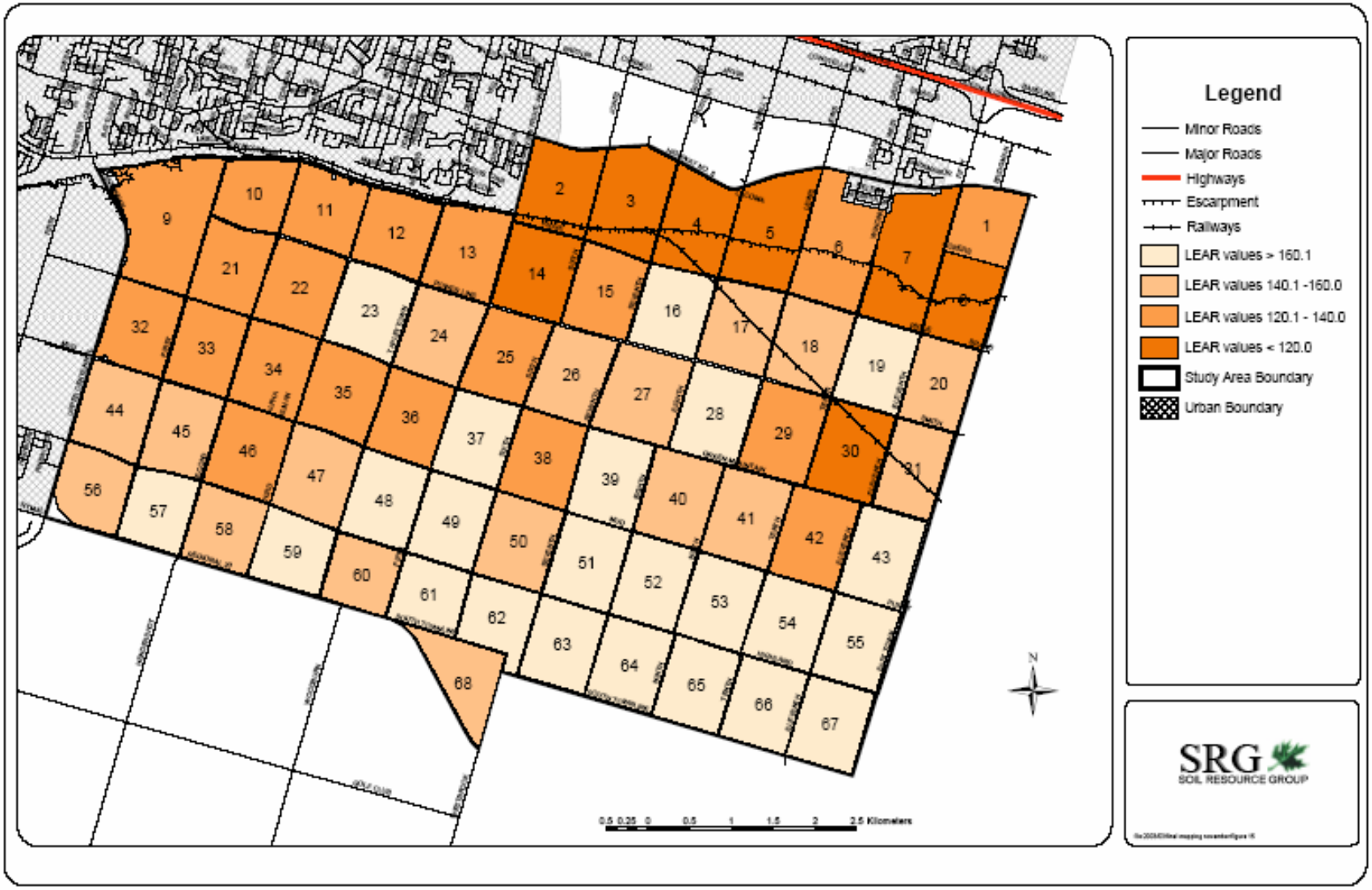


Figure 15. LEAR scores for blocks in the test area



APPENDIX 2

A2. STUDY RESULTS

Figure 16. Soil capability classification (1-3) for the study area

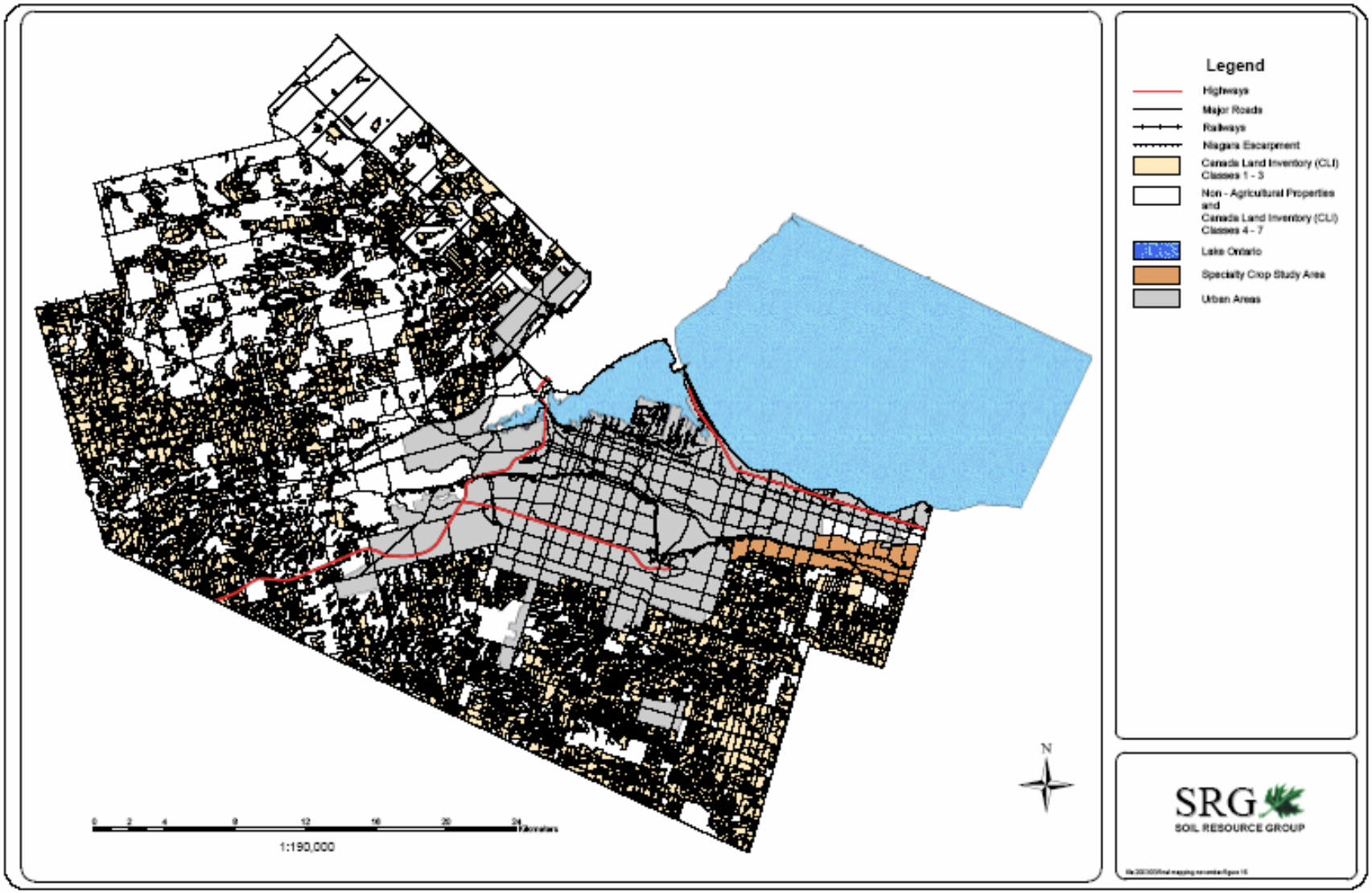


Figure 17. Soil capability classification (1-4) for the study area

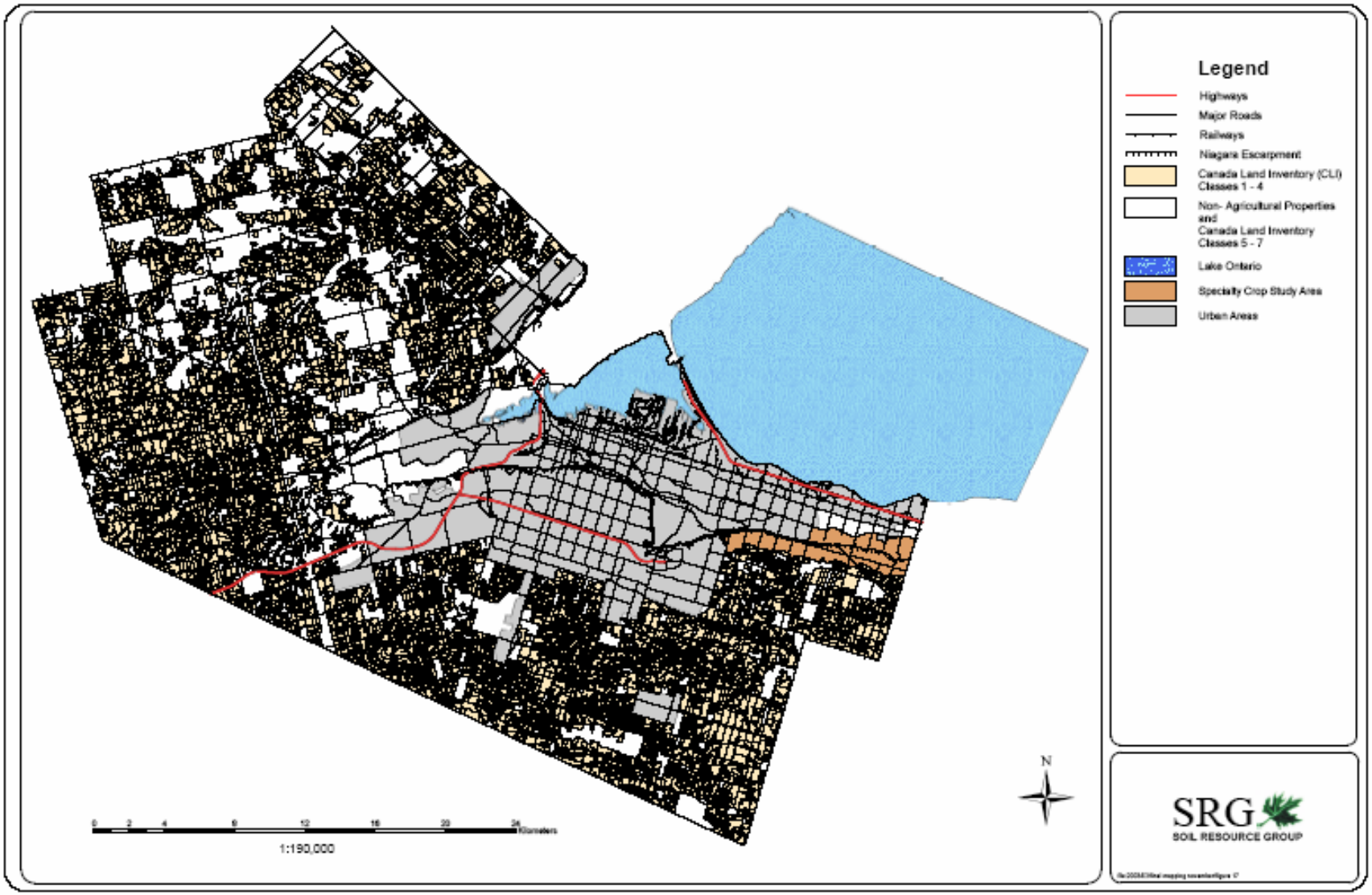


Figure 18. Distribution of LEAR >115 threshold values in the study area

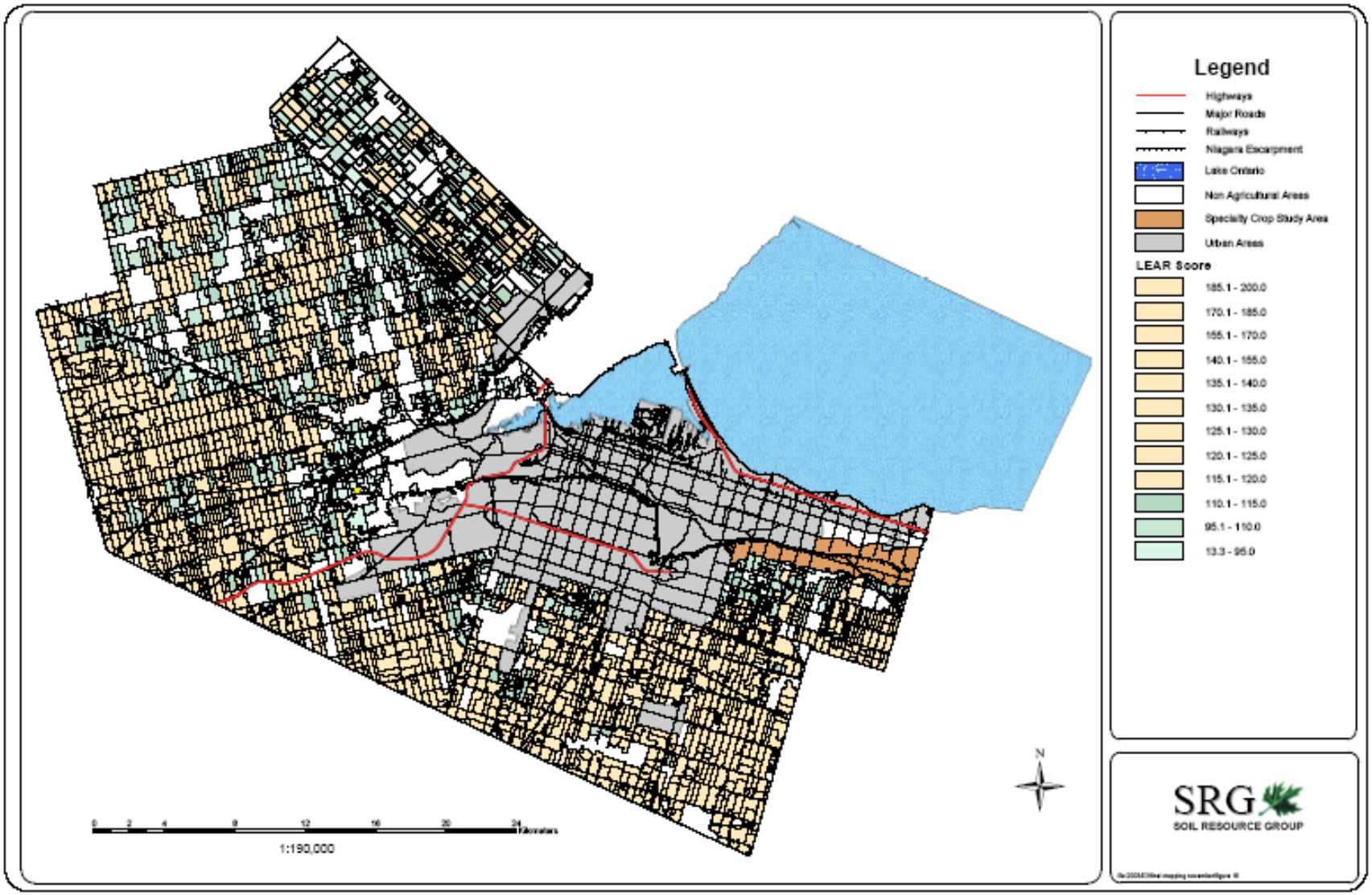


Figure 19. Distribution of LEAR >115 threshold values in the specialty crop study area

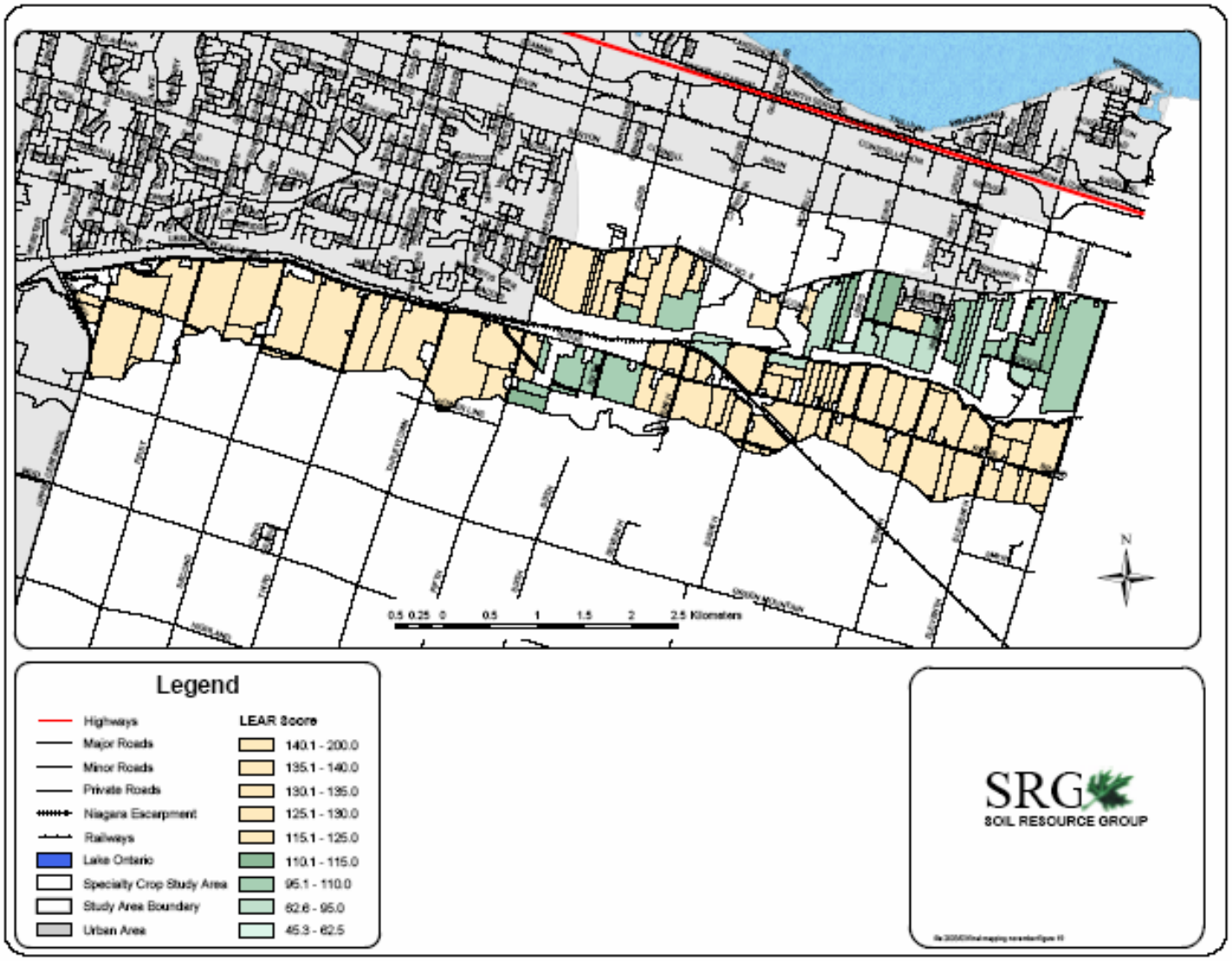


Figure 20. Distribution of LEAR >130 threshold values in the study area

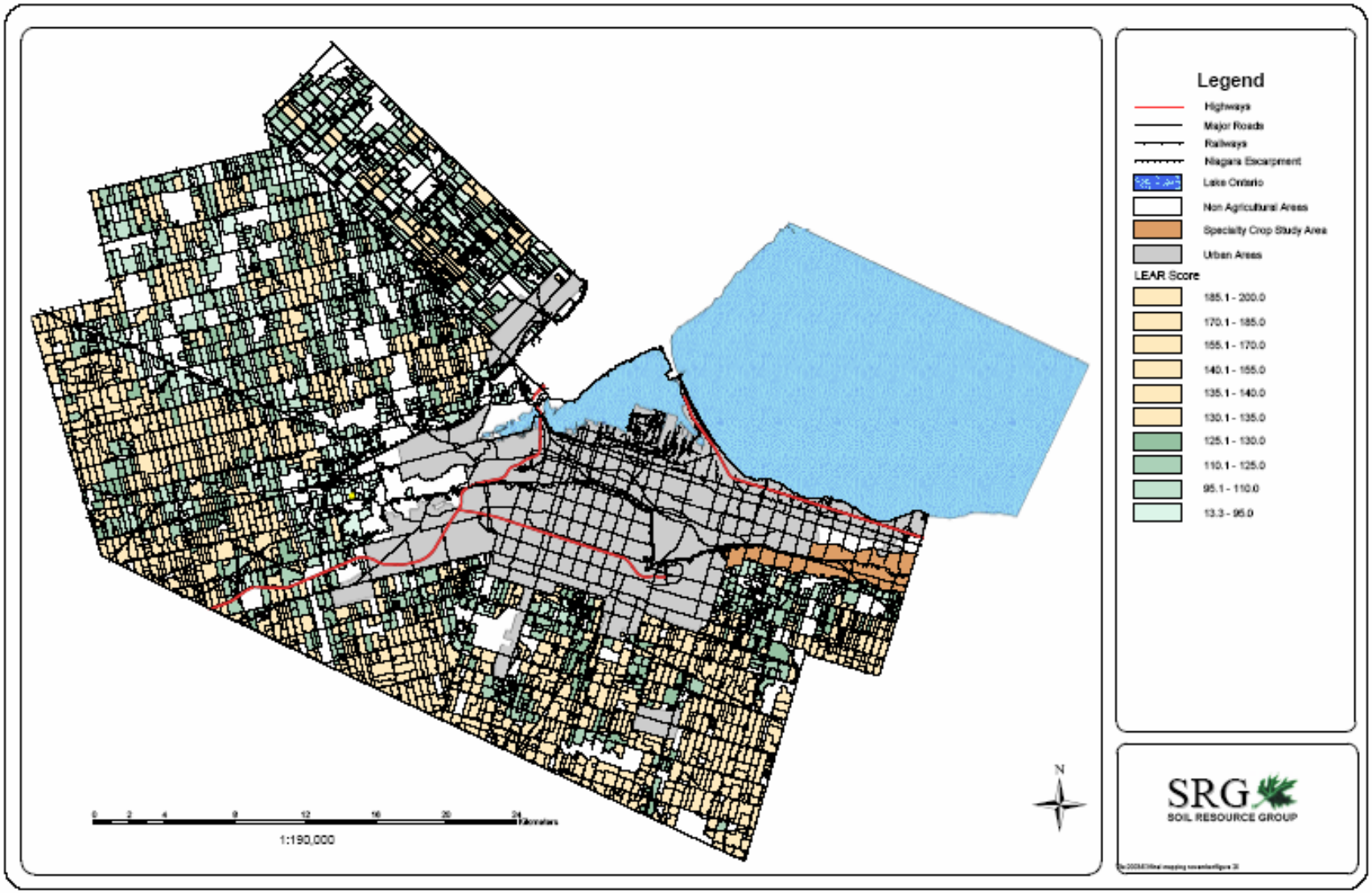


Figure 21. Distribution of LEAR >130 threshold values in the specialty crop study area

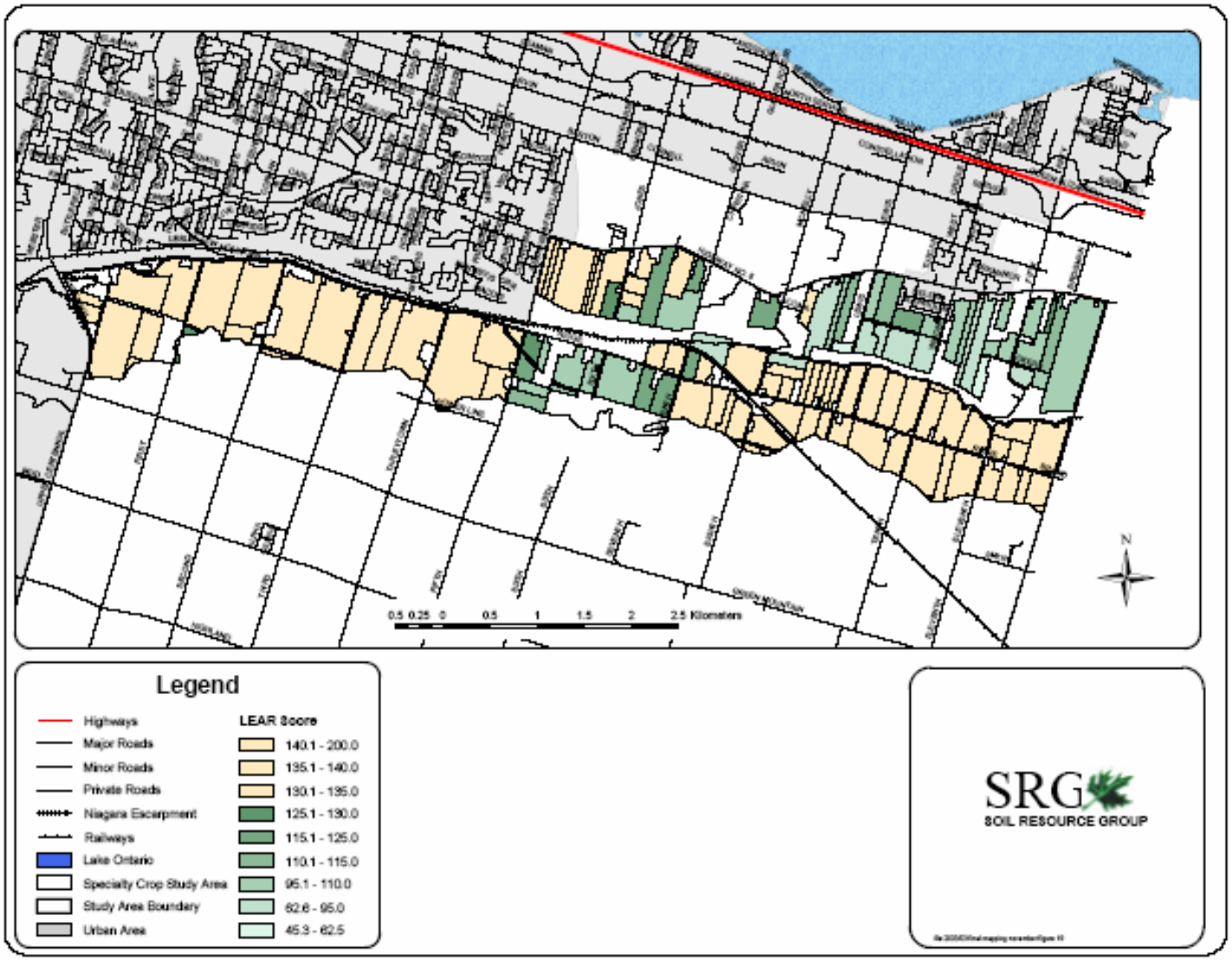


Figure 22. Distribution of LEAR >140 threshold values in the study area

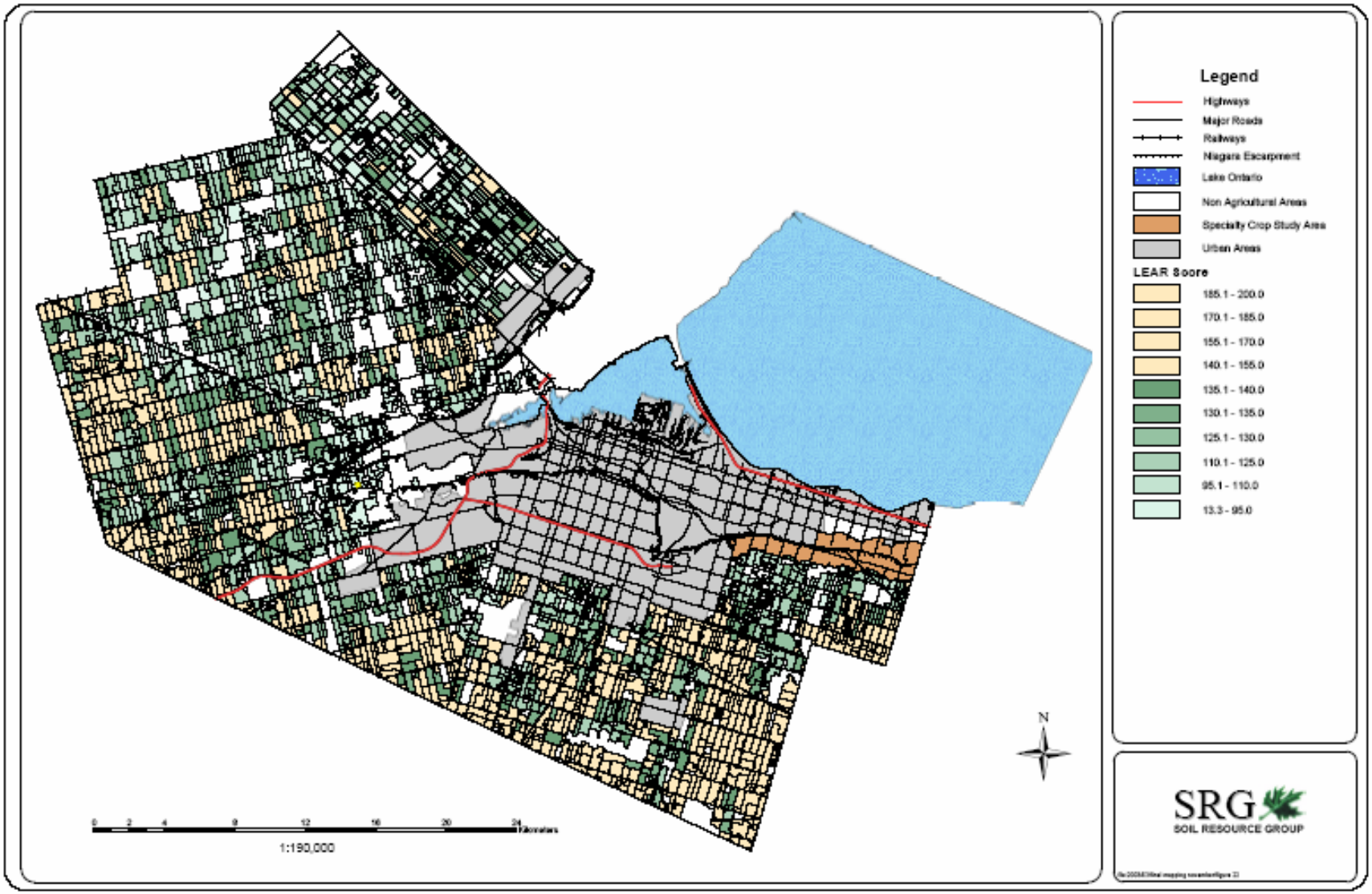
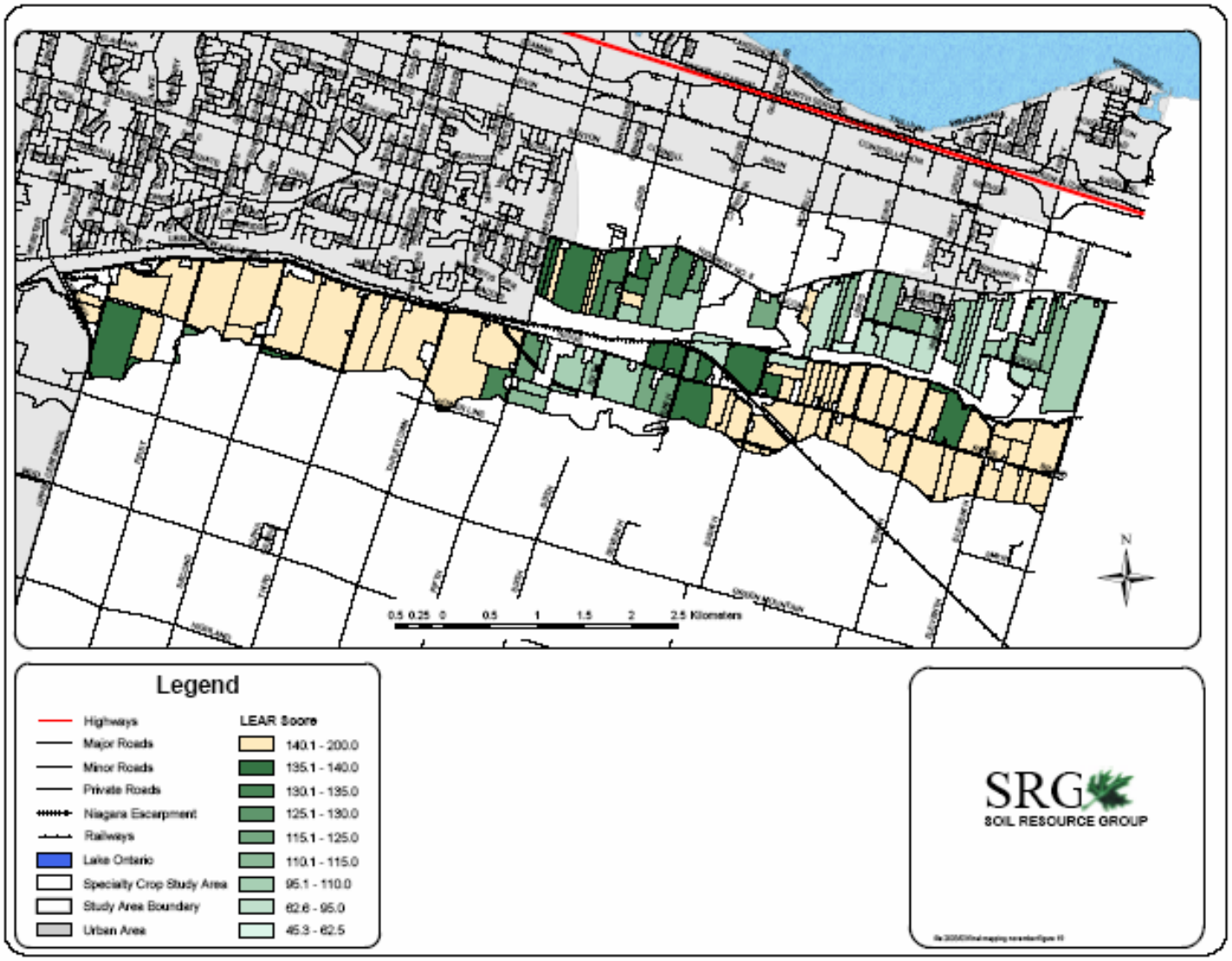


Figure 23. Distribution of LEAR >140 threshold values in the specialty crop study area



APPENDIX 3

A3. MINUTES OF AGRICULTURAL WORKING GROUP MEETINGS

Meeting #1
Agricultural and Rural Affairs Advisory Committee
LEAR Study Meeting

July 17, 2003
Ancaster Fairgrounds Boardroom
625 Garner Road, Ancaster
12:15 p.m. – 3:15 p.m.

Attendees

Agricultural and Rural Affairs Advisory Committee:
- Robert Pastura
- Philip Krakar
- Robert Murphy
- Marjorie Tregunno
- Roy Shuker
- Nancy Mills
- Barbara Oldfield
- Melvin Switzer
- Kathy Smith
- Carl Loewith

LEAR Consultants:
- Greg Wall, SRG
- Mark Dorfman, Mark L. Dorfman, Planner Inc.
- Irene Shelton, SRG
- Dave Hodgson, SRG
- Donald King, SRG
- Heather Fraser, SRG

Provincial/City Staff:
- Paul Mason, Director Long Range Planning and Design
- Joanne Hickey-Evans, Manager Official Plan and Zoning By-law Reform
- Michelle Sergi, Senior Planner, Official Plan and Zoning By-law Reform
- John Turvey, OMAF
- Carol Pupo, OMAF

A copy of the presentation made to the Committee has been attached for information.

Minutes

Introductions – Soils Resource Group (SRG) Team (Roles and Responsibilities)

The objectives of the meeting were set out as follows:
- Establish a dialogue between the Committee and SRG,
- Discuss local issues, and

- Committee input into the LEAR process.

The members of the Agricultural and Rural Affairs Advisory Committee (ARAAC) introduced themselves and gave a brief description of their affiliations.

The members of SRG introduced themselves to the committee and provided a description of their professional and personal experience, as well as described their roles and responsibilities with respect to the LEAR Study.

NB: Contact information for all consultants involved in the study have been attached to these minutes for information purposes.

Background Information and Assumptions

Recognizing that the Committee has received presentations related to the LEAR Methodology, the LEAR and information sources were reviewed briefly.

Role of the Agricultural and Rural Affairs Advisory Committee

Mark Dorfman, Mark L.Dorfman, Planning Inc., explained that SRG's role is to facilitate open discussion with the ARAAC and the community. He provided an overview of roles and responsibilities of the ARAAC.

NB: Notes outlining the roles and responsibilities of the Committee have been attached to the minutes for information.

Local Issues

Mark Dorfman initiated a discussion regarding local issues. The purpose of the discussion was to identify issues that SRG should be aware of during the course of the study and to provide insight for the development of Area Review factors. It was explained that local issues could be broken down into four possible categories (Community Issues, Municipal Problems, Business/Management and Personal Observations)

R Murphy	Land Severances (business constraint) – more homes equate to more problems. His farm and herd cannot expand because of the presence of non-farm residential lots. He wants to look at the long term viability of agriculture. What will happen in 200 years? The issues are both the presence of non-farmers and the taking of land out of production.
N. Mills	Expressed concerns about non-farm residential uses. There is also an issue with urbanites "speeding" through the rural area.
R. Murphy	Severances/Retirements lots have been abused. There is a need to determine the prime area and keep it prime.
P. Krakar	Farms are being bought by urbanites who want to farm. The land is not being used to its potential. He provided some examples.

N. Smith Non-farmers like the country setting, but little else. Some lease the land back to farmers. They do not need to make a living off the land, and they are driving the price of land up. Farmers cannot afford to expand or live. Taxes are also increasing as a result.

M. Dorfman Is water or water quality an issue?

C. Loewith Water and water quality are not a very big issue in Hamilton. There are no intensive livestock operations.

R. Shuker There is not a lot of spreading of biosolids. This is not a major issue.

M. Switzer There are complaints about manure, because there are too many non-farm houses.

R. Murphy The spreading of manure is an issue when it is moved into an area where it has not been used in the recent past. Complaints will result.

M. Dorfman Is the protection of Natural Areas an issue?

Committee The Committee generally responded that this is not an issue.

M. Dorfman Should the non-farm residential community be involved in study?

M. Switzer Non-farm residents are not involved in the community. They treat the rural area like a bedroom community.

M. Dorfman The study may get resistance from non-farm community

R. Murphy How long can we farm in Hamilton? Will agricultural land be protected in the long term?

R. Pasuta Areas in south-western Ontario have done a beautiful job protecting agricultural land. There are no residential lots. Realistically, how many years do we plan on farming in Hamilton?

K. Smith Speculators are an issue.

C. Pupo There is an issue with large houses built in the middle of large parcels (40 acres).

M. Dorfman Do they lease the land?

N. Mills Some producers lease and some take land is taken out of production.

C. Loewith There has been an exit of livestock operations, however unlike other

communities, they have not been replaced by intensive operations. They have been replaced with cash crop, nursery trade, vegetables. There are no intensive operations because there are no 200/300 acre blocks for sale. Parcels for sale are in the 20 to 50 acre range.

R. Shuker Fragmentation is an issue. Previously, real estate firms severed the land as small as possible and created many 20 acre parcels throughout the rural area. Some parcels are rented. Some parcels are vacant. Many who rent will not allow pesticides to be used. This impacts productivity.

M. Dorfman Where have the speculators purchased?

B. Oldfield Upper Stoney Creek.

K. Smith Ancaster.

R. Shuker Binbrook.

C. Loewith There is little speculation near the Brant County Line.

Another issue is the number of Highways 403, 52, 5. If you take equipment on the Highway after a half a kilometer, there is a line of 50 cars and trucks behind you.

P. Krakar The number of severances is a large issue in Stoney Creek and Flamborough.

R. Shuker It is not dense development. The lots are too scattered.

B. Oldfield Compatibility issues for tender fruit include spraying and bangers. Productivity is lost if farmers cannot use bangers.

R. Shuker Assessment is an issue. If an investment is made such as the building of a winery, the land is assessed as industrial.

P. Krakar Similarly, if a horse farm adds an arena, the area is taxed higher than the rest of the farm.

Specialty Cropland

Don King, SRG, provided a brief overview of crop diversity within the City of Hamilton and discussed a need to evaluate specialty crops. Specialty crops generally include fruits and vegetables. There is a mix of specialty crops throughout the overall study area. It was pointed out that the specialty crop information derived from the test area cannot be transferred to other rural areas in Hamilton. The Stoney Creek test area will consider grapes and tender fruit, while Flamborough and Ancaster includes vegetables such as broccoli. The difference in temperature across the overall study area was again highlighted as a major influence.

The appropriateness of the test area location was raised as an issue. It was decided to revisit

this issue toward the end of the meeting.

Area Review Factors

Irene Shelton, SRG, explained that the Area Review (AR) factors provide an opportunity to build social, economic and environmental considerations into the identification of the prime agricultural area. Potential factors were broken down into two categories, factors that diminish capability, and factors that enhance capacity.

She provided an overview of the three AR factors that OMAF includes in their LEAR guide (percent of unit in agricultural use, parcel size/land fragmentation, percent of surrounding area in agricultural use). It was explained that the weighting developed by OMAF can be used, or the committee can develop its own weighting system for the factors.

John Turvey, OMAF, indicated that when deciding on the AR factors to be included, the committee should consider whether or not the proposed factors can be measured, and if the necessary information available. It was pointed out that the more factors included, the more difficult it is to calibrate the weights for the factors. With more factors, you run the risk of double counting, or conversely canceling out the relative importance of factors.

Specific comments related to potential AR factors are as follows:

Conflicting Land Use

J. Turvey — The Committee could consider the number of non-farm lots within a specific proximity.

M. Dorfman — An alternative to the number of non-farm lots could consider the percentage of a site boundary that is non-farm.

N. Mills — Raised the example of a greenhouse on a one acre lot.

I. Shelton — Suggested that this type of situation could be accounted for with a factor dealing with infrastructure.

Infrastructure

C. Loewith — Raised concerns about factors related to infrastructure. Capital improvements are not a representative indication of value for agriculture. If someone has added a corn drying operation, the operation would have to remain in use if the farm was sold.

P. Krakar — Expressed concerns about infrastructure. Reviewing the dollars spent is not a good idea. For a livestock operation, a large capital investment could lead to bankruptcy. Further, many parcels are rented. Little or no investment is occurring, however, the land is still valuable.

I. Shelton Suggested that infrastructure could be reviewed in a variety of ways. The factors developed for the test area will be brought back to the Committee for their consideration.

Conflicting Land Use

P. Mason Suggested looking at types of conflicting land use (e.g., industrial, recreation, chemical operations, religious retreats, etc.). The factors could attempt to deal with the gradation of conflicting land uses. There may be need for a more sophisticated method to deal with conflicts. It may not be as simple as 'yes' or 'no'.

P. Krakar The most important issue is conflicting land use. An existing sawmill does not pose an issue. Rothsay does not pose an issue for the farm community.

Proximity to Sewer and Water

C. Loewith Proximity to sewer and water is a potential factor.

J Turvey May not want to consider distance to the pipe. As an alternative, the committee may want to consider proximity to the urban boundary.

R. Shuker Pointed out that there is a pipe to Binbrook and suggested that there is a need to measure urban influence.

M. Dorfman Pointed out that we must be careful when dealing with the edges/urban boundary. If land close to the boundary is removed from prime land because of proximity to the boundary, in effect, we move the boundary.

Speculators

M. Switzer Speculators are present in the area between Binbrook and Hamilton.

It was explained that a variety of AR factors and weighting scenarios will be prepared for the test area and presented to the committee for input.

The process and importance of assigning relative weights to the AR factors was highlighted.

Test Area

A brief discussion took place regarding the suitability of the location and size of the test area. It was recognized that the rural area of Hamilton is diverse and that it is very difficult to find one representative area to be used as the test area. Alternate test areas or the possibility of a second test area in Ancaster or Flamborough were discussed.

John Turvey pointed out that the decisions made following the test area are not final. If necessary, once the data is gathered for the entire rural area and applied, it will likely be

necessary to 'tweak' or alter some of the decisions made at the completion of the test area.

It was decided by consensus of the committee that the proposed Stoney Creek test area was sufficient in size and diverse enough to be used as the test area.

Study Timetable and Expectations

The test area evaluation will be completed in September 2003.

It was agreed that all Committee members will participate in the first phase of the study.

Committee members emphasized a preference for evening meetings.

Media Relations

It was agreed that any media inquiries related to the LEAR would be directed to Joanne Hickey-Evans.

The next meeting of the Agricultural and Rural Advisory Committee for the LEAR Study was set for Tuesday, September 30, 2003, Ancaster Fairgrounds Boardroom, 7:30 to 10:00 p.m.

NOTES REGARDING AWG ROLES AND RESPONSIBILITIES
LEAR STUDY

1. The consultants facilitate open discussions among the various participants such as the Agricultural Working Group (AWG).

2. The AWG represents a variety of interests in the community. It is a derivation of Hamilton's Agricultural Advisory Committee.

3. The role of the AWG is to provide advice and opinions as an integral part of the study team. The study team includes the AWG, the study consultants and city staff.

4. The more specific role of the AWG is to develop and assess the LE and AR criteria and evaluate the data. The study may be technical, but it must reflect community values.

5. The exchange of information, ideas, and opinions at the meetings should be open, frank and forthright.

6. Comments should be brief in order to hear from as many people at each meeting. Try not to have one or two people dominate the discussion.

7. Every idea is valuable. We expect that people will agree or disagree with each other.
8. The tone of the discussion should be civil. (No yelling, blaming, name-calling or insulting others.)

9. Any conclusions by the group will be reached by consensus; that is, each person can leave the meeting knowing that their ideas/opinions were heard by the group.

10. The consultants will make notes of the discussion and use them in the course of the study.

Meeting adjourned.

Meeting #2
Agricultural and Rural Affairs Advisory Committee

September 30, 2003
Ancaster Fairgrounds Boardroom
625 Garner Road, Ancaster
7:30 p.m. – 10:00 p.m.

Attendees

Agricultural and Rural Affairs Advisory Committee:
- Philip Krakar
- Melvin Switzer
- Henry Swierenga
- Robert Pastura
- Nancy Mills
- Roy Shuker
- Kathy Smith
- Barbara Oldfield
- Ralph Kikkert
- Carl Loewith
- Jamie Wood

LEAR Consultants:
- Greg Wall, SRG
- Mark Dorfman, Mark L. Dorfman, Planner Inc.
- Irene Shelton, SRG
- Jackie Van de Valk, VDV Consulting
- Donald King, SRG
- Heather Fraser, SRG

Provincial/City Staff:
- Paul Mason, Director Long Range Planning and Design
- Joanne Hickey-Evans, Manager Official Plan and Zoning By-law Reform
- Michelle Sergi, Senior Planner, Official Plan and Zoning By-law Reform
- John Turvey, OMAF
- Carol Pupo, OMAF

Councillors:
- Councillor Mitchell
- Councillor Ferguson

Introductions

The members of the Agricultural and Rural Affairs Advisory Committee (ARAAC), City staff, OMAF staff, Councillors and members of the SRG team introduced themselves and gave a brief description of their affiliations.

Meeting Objectives

Greg Wall, SRG reviewed the objectives of the meeting. The objects were as follows:

- Obtain input on selection and weighting of area review (AR) factors; and
- Provide update on study progress in the development of land evaluation (LE) factors).

LE Factors for Test Area

Don King, SRG provided detail to the committee concerning the development of the land evaluation (LE) factors.

Two classifications have been identified and developed for the test area:
- Common Field Crops, and
- Specialty Crops (Tender Fruits and Vinifera Grapes)

The common field crop classification is based on Canada Land Inventory Classes 1 to 7 soils as outlined in the agenda package.

The specialty crops classification is based on the classification system developed for specialty crops by OMAF. The classification system ranges from Good to Unsuitable, as outlined in the agenda package.

A specialty crop area has been identified in the test area. The specialty crop area is an agroclimatic zone. The zone includes lower Stoney Creek south of Highway No. 8 to the escarpment and a portion of the test area above the escarpment. The area is suitable for the growing of tender fruit and vinifera grapes. Working with Dr. Helen Fisher, University of Guelph, a combination of elevation, climate and soils determined the limits of this specialty crop area. It is an extension of specialty crop area that has been identified in Niagara Region.

Weightings for both the Common Field Crops and Specialty Crops have been developed and tested by OMAF.

Selection of Area Review Factors (AR)

Jackie Van de Valk, VDV Consulting, outlined the base assumptions for the development and evaluation of the AR factors.

Five Area Review Factors were developed for review and consideration by the committee. The factors are as follows:
- Farm property size
- Use of farm property
- Agricultural land use in surrounding area
- Proximity to conflicting land use
- Land fragmentation in surrounding area

Jackie defined each factor for the committee. The purpose and assessment methodology for each factor was provided in the agenda package.

R. Kikkert Raised concerns about Factor 2, Use of Farm Property. Investors may have stopped using the land for farm purposes, however, this is not a reflection of

capability. The issue is whether or not the land is farmable. This factor may promote investors to stop farming land.

J. Van deValk Indicated that the LEAR scores are a snapshot in time, and the scoring should not encourage existing and future investors to stop utilizing the land for farm purposes.

R. Kikkert Responded that the factor would be rewarding investors for not taking care of the land.

Several members of the committee indicated that they are in agreement with this position. Capability is more important than use.

R. Kikkert Commented on Factor 4, Proximity to Existing Land Use and Factor 5, Fragmentation. He indicated that Fragmentation, non-farm residential, is an issue, however, proximity to the urban boundary is not relevant.

G. Wall Pointed out that there are compatibility issues related to proximity to the urban boundary such as traffic.

H. Swierenga Explained that agriculture is an industry, and urbanites must realize that when they move next to an agricultural operation, they are moving next to industry. Urbanites would not move next to the airport, and should not move next to a farm. A hard firm policy that makes urbanites understand the implications of moving into an agricultural area is required.

C. Loewith Pointed out that Factors 3, Agricultural Land Use, and 4, Proximity to Conflicting Land Use, are the same, and questioned if twice the weight would be placed on essentially the same issue. He questioned if it was possible to consider either Factor 3 or 4, not both.

M. Switzer Commented that in general, the discussion is referring to land "likely" to remain in agriculture, and suggested that "will" remain in agriculture is more appropriate.

R. Kikkert With respect to Factors 3 and 4, indicated that his farm is located at Peters Corners and there are several non-agricultural uses in the area. He does not have any issues with these uses, however, he does have issues with the non-farm residential uses in the area.

P. Krakar Asked how natural areas would be dealt with. These areas are not agricultural, however, they do not conflict with agricultural activities. Factor 2, Use of Farm Property would unjustly penalize land that had a portion of it that was a natural area.

J. Van deValk With respect to Factor 1, asked if anyone on the Committee was aware of an original survey lot size that was smaller than 100 acres.

P. Krakar Indicated that although they are not the original survey size, there are many productive farms in Flamborough that are smaller than 100 acres. He again expressed that reviewing the use of the farm property (Factor 2) would not be productive.

R. Shuker With respect ot the Assessment Methodology for the Factors, he indicated that a special or separate weighting for specialty crop land is required.

P. Mason Pointed out that there has been large investments made on properties such as drainage, buildings, and expertise. He questioned if the investments should be protected and how to reflect their value in the Factors.

C. Loewith Indicated that he felt that investment is not very important. Agricultural technology changes very quickly.

P. Krakar Indicated that many farm operations are using more than one parcel. Many rent additional parcels. In many cases the buildings on the rented land are useless, but the land can still be productively farmed. Further, sheep and cattle operations must maintain a low level of investment to remain profitable. He suggested leaving investment off the list of factors.

R. Kikkert Raised concerns about Factor 1, Farm Property Size. Many farmers own more than one parcel or rent. He is still struggling with the assessment methodology and size as a 50 acre parcel is viable.

G. Wall Indicated that it is too difficult to find out who owns several parcels, and assessment information on rented properties is not available for use in this study.

M. Dorfman Clarified that the issue with Factors 2 and 3 is that both are dependent on use.

There was a discussion about removing the word "Active" from the assessment methodology categories of Factor 3.

P. Krakar Suggested that "Suitable" could be substituted for the work "Active".

R. Shuker Provided an example of a previously rented farm parcel that was no longer farmed as the owner did not want pesticides used on the land. The land is now abandoned; however, its current state is not a reflection of its capability.

P. Krakar Clarified that the land is not devalued, it is simply not used.

R. Shuker Pointed out that the land in the agroclimatic area is fragmented and many parcels are rented.

J. Van deValk Explained that with respect to Factor 1, in the agroclimatic area, smaller parcels would receive a higher value, regardless of the agricultural use.

B. Oldfield Questioned the production of specialty crops outside the agroclimatic area.

J. Van deValk Referenced Factor 2 and footnote 3, and indicated that specialty crop production could be rated higher regardless of the location within or outside the agroclimatic area.

J. Hickey-Evans With respect to Factor 4, referred to earlier discussions about agriculture as an industry and questioned if industry should be removed from this factor as a conflicting use.

R. Shuker Indicated that agriculturally related industry is not a conflict.

J. Van deValk Drew attention to footnote 6 (Factor 4) that indicates that "small commercial and industrial uses on properties primarily used for agricultural production and small institutional uses that are compatible with agriculture (e.g., churches, and cemeteries) will be excluded from this area".

P. Krakar Again questioned Factor 4's 500 metre distance from the urban boundary. He stated that abutting conflicting land use should be considered.

R. Kikkert Proposed the development of two factors one that deals with abutting conflicting land use and one that deals with conflicting land use in proximity to the parcel.

J. Van deValk Reminded the committee that ultimately we are trying to identify areas of prime agricultural land, not just properties

P. Krakar indicated that it will be difficult to find a property in Flamborough that does not have a house that is located within 200 metres.

R. Shuker Asked for the definition of a Rural Settlement Area.

J. Hickey-Evans Explained that the Rural Settlements are the areas that are identified in the Regional Official Plan as Rural Settlement Areas.

R. Kikkert With respect to Criteria 5, he indicated that he liked the category, Land Fragmentation, however, the categories may need to be changed.

Weighting of factors (LE, AR) for 2 contrasting sites

Irene Shelton explained three possible weighting scenarios for the AR Factors:

- Scenario 1 (OMAF)
- Scenario 2 (Emphasis on Agricultural Land)
- Scenario 3 (Emphasis on Non-agricultural Influences)

Using two examples, a property within the specialty crop area and a property within the common field crop area, the three weighting scenarios were used to develop scores for the properties. The variance between the scores for each scenario demonstrated the effect of

emphasizing particular influences on the property.

M. Dorfman Factors 3 and 4 may be double counting the effect of the urban boundary. He pointed out that Factors 2 and 3 may also be double counting.

R. Kikkert Recognized that when OMAF developed their factors and weighting system, they were likely based on the entire province. Rural Hamilton is not like the rest of rural Ontario. Hamilton has a significant number of speculators and conflicting uses throughout the rural area.

There was a discussion about OMAF's weighting system for the LE Factor.

J. Turvey Explained that reviewing the weighting for Class 4, 5, and 6 land may be appropriate for Hamilton, however, he cautioned that any changes must be well documented and justified.

P. Krakar Smart growth as it relates to rural areas in Ontario is the opposite in Hamilton. Other areas want to attract industry whereas, Hamilton is trying to eliminate industry from the rural area.

G. Wall Asked for clarification on whether the committee wanted to go with OMAF's approach or develop others.

R. Kikkert *Indicated that land is not being treated equally under the OMAF Scenario*

P. Krakar Pointed out that in Huron County and elsewhere in Ontario, most farms are actively farmed. This is not the case in Hamilton.

P. Mason Expressed the need for the committee to determine the real values to sustaining agriculture. The real drivers for agriculture in Hamilton need to be determined. Non-farmers that bought land in the rural area will fight our evaluation and policies that stem from this study. Our approach must be defensible. The committee must have a good comfort level with the factors and weighting, and they should be based on what's important to farming in Hamilton. This must be determined to justify our approach. We need a good solid rationale.

M. Switzer Stated that LE is more important than the AR Factors. The split should be at least 60:40

P. Krakar Agreed that the LE is more important, and voiced a preference for Scenario C, Emphasis on non-agricultural influences. He also expressed that Factors 1, 2 and 3, the factors developed by OMAF, should not be used.

J. Turvey Confirmed that the committee did not need to use the OMAF Factors, but emphasized the importance of documenting why other factors were developed.

M. Dorfman Pointed out that the discussion is leading towards using factors 4 and 5 and possibly a modified factor 3.

J. Hickey-Evans Asked J. Turvey to comment on double counting.

J. Turvey Indicated that at this point, the best approach is to run the numbers and evaluate the findings for double counting.

R. Kikkert Raised concerns about OMAF's weighting system for the LE factors. He questioned rating Class 5 land as 0.50. He was concerned that there is little difference between prime land (Class 1, 2 and 3 soils) and non-prime land.

J. Turvey Explained that when reviewing the entire province, there are areas where Class 4 and 5 lands are productively used for agriculture. The weightings are more reflective of yield. It pointed out that the LE weightings developed by OMAF are well documented and have been tested. Modifying the weightings would require clear strong justification to ensure the changes are defensible.

P. Krakar Indicated that there are agricultural uses such as horse farms, and Christmas tree farms in Flamborough that are located on Class 5 land. He suggested that OMAF's weightings should be considered.

J. Van deValk Pointed out that there may be some philosophical questions that need to be explored regarding the LE weighting

C. Loewith Reiterated earlier sentiments of committee members that the LE factor be given more weight that the AR factors.

Summary of discussion on selection and weighting of AR Factors

Mark Dorfman provided a summary of the discussion on the selection and weighting of the factors.

<u>LE Factors</u>
The LE factors deal with agricultural soil capability of land within the City. The weightings established by OMAF have been tested and will stand up. Field Crop weightings will be revisited to consider issues raised by the committee regarding the perceived high weights given to lower class soils.

<u>Area Review Factors</u>
These factors are the non-soils factors. The influences of Factors 4, proximity to conflicting land use, and 5, land fragmentation, are extremely important

A portion of Factor 3, Agricultural land use in surrounding area, or a modified Factor 3 is also considered important. However, double counting may be an issue if used in conjunction with Factor 4.
With respect to Factor 4, a further breakdown of the 500 m and 400 m distances from the farm property should be considered. Consideration should also be given where farm property

abuts a conflicting land uses and the implications of the change should be determined.

Factors 4, 5 and a modified 3 are fine in content as described or defined. With respect to the ratings for these factors, there is no consensus. The ratings need to be tested.

Once the committee has agreed on the three criteria, there is a need to find relative weighting between the criteria.

On the relative importance of the LE and AR factors, LE is more important and therefore, should have a greater weight. SRG will test the different ratios (e.g., 55:45, 60:40)

With respect to the weightings assigned to the AR factors, Scenario 3 (Emphasis on Non-Agricultural Uses) is preferred. Scenario 1 (OMAF) is not preferred,

All decisions, AR factors, weightings ratio between LE and AR must be justified. The methodology must be defensible.

C. Pupo — Questioned the preference for a variation of Scenario 3, given that it currently includes all five factors.

M. Dorfman — Clarified that the emphasis will be on factors 4 and 5. The committee has expressed that it does not want all 5 criteria to stay.

J. Van deValk — Asked for John Turvey's input on the current discussions. She asked if there were any red flags.

J. Turvey — Indicated that there are no red flags at this time, but reiterated the importance of all decisions being defensible. It is all right to use criteria other than those proposed by OMAF BUT THERE IS A NEED TO DOCUMENT WHY THE COMMITTEE DECIDED TO USE DIFFERENT CRITERIA.

Next Meeting

The next meeting of the Agricultural and Rural Advisory Committee for the LEAR Study was set for Wed Jan 7th, 2004, Ancaster Fairgrounds Boardroom, 7:30 to 10:00 p.m.

Meeting #3
Agricultural and Rural Affairs Advisory Committee
LEAR Study Meeting

January 7, 2004
Ancaster Fairgrounds Boardroom
625 Garner Road
7:30 p.m. to 10:10 p.m.

Attendees

Carl Loewith
Philip Kraker
Melvin Switzer
Roy Shuker
Robert Murphy
Kathy Smith
Nancy Mills
Robert Pastura
Dale Smith

Guest-Student

Laura Dainard

LEAR Consultants

Greg Wall, SRG
Mark Dorfman, MLD,pi
Irene Shelton, SRG
Jackie Vandervalk, VDV
Donald King, SRG
Dave Hodgson, SRG

City and Provincial Staff

Paul Mason, Director, Long Range Planning and Design
Joanne Hickey-Evans, Manager, Official Plan and Zoning By-law Reform
John Turvey, OMAF
Carol Pupo, OMAF

1. Introduction

Joanne welcomed everyone to the meeting., She explained that this is a working meeting and that certain decisions need to be made by the committee.

2. Update on Activity in Test Area

Greg made a presentation

Two different methodologies were used - Property and Block analysis.

The methods were built upon the input from the advisory committee. Adjustments were made in the AR factors.

There are 68 blocks and 421 agricultural properties in the test area.

We will show the results of the two methods.

When we look at the whole study area, we will fine tune the methodology.

3. Meeting Objectives

Mark outlined the four objectives for this meeting.

(a) Use of LE rating in tender fruit/vinifera grapes agro-climatic region

The common field crop scores are consistently higher than the tender fruit scores for soils. The OMAF guidelines suggest that the higher of the two scores should be used for the LE.

The official plan designates the specialty crop area, yet the common field crops have a higher soil capability than the tender fruit soils.

Need to decide how to use the LE scores in the specialty crop area.

(b) AR factors to be employed

At the September, 2003 meeting, the advisory committee was presented with five AR factors. These were reduced to three factors that are now been presented. There are choices to be made. The AR factors used in the methodology are:

Other agricultural land use in area or other agricultural properties in area of primary agricultural properties

Residential land use that conflicts with primary agricultural properties in area

Land fragmentation in area

It is possible that there could be two AR factors.

(c) Block or Property Analysis

There are differences in the results using both methodologies. Joanne explained that the City wanted to test the block methodology now in the test area rather than later when we are doing the analysis for the larger study area.

(d) Scoring Approach

How do we score and weigh the LE and AR factors?

4. LE factor results

Don explained the results using tables for the Block and Property analysis for soil capability.

For the specialty crop area, the area narrows in width below the escarpment. There is a narrow band of soils above the escarpment. This is the westerly end of the broad band of specialty crop soils that is located in Niagara Region.

These tender fruit-grape growing soils are fair and below. There is little good (1) soils.

In both analyses, the poorer and non-agricultural areas get merged. If we use the higher common field crop scores, the specialty crop soils get merged.

To make a real difference, we could add a relatively high climatic factor to bring it up to the field crop score. The data indicates that there is little or no unique specialty crop soils in the test area.

Also, we need to confirm that the LE scores should be ranked higher than the AR scores.

5. AR factors for property and block analysis

Jackie explained the AR criteria used in both methodologies.

The first factor determines how '"agricultural" is the area. There are two alternatives. In the property analysis, the first assesses the agricultural land use and agricultural zoning within 1km of each agricultural property; the second assesses the size of agricultural properties by land use within 1km of each agricultural property. In the block analysis, the assessment of each of these alternative factors are confined to each of the blocks.

A question was raised about agricultural properties less than 10 hectares that are used for greenhouses. It appears that they are given a low score. It was stated by the consultants that typically, properties that are less than 10 hectares are not considered as viable farm properties on their own.

The second factor assesses the residential conflicts within 500 m of each agricultural property for the property analysis. The same factor is confined to each block in the block analysis. It was determined from the previous meetings that residential is the land use that most conflicts with agriculture.

The analysis accounts for vacant residential lots.

The rankings are based on the results and they may change when the whole study area is analysed.

The third factor assesses all properties that are less than 2 hectares either within 500 metres

or within each block.

There was a question from the committee whether the size of the agricultural properties (Factor 1b) really measures sustainability because small properties could include intensive agricultural uses.

It was also indicated that in the block analysis, the comparisons between blocks are not analysed.

6. Property and Block AR analysis results

Irene explained the class limits used in the analysis and how they were derived from histograms of data. Each class is now given equal value.

Irene explained the various maps.

The results indicate that Factor 1a produces higher values than Factor 1b.

When weighting is shifted among the three factors, there is some change. She gave examples of how combinations of some of the AR factors change the results.

7. LEAR Score options

Irene explained the final scores using the 60/40 ratio between LE and AR.

8. Discussion of Meeting Objectives

Mark led a discussion of each of the four meeting objectives.

(a) LE scores

Need to include climate as a factor in the specialty crop area. The tender fruit soil is not critical for production.

Could ignore field crop soils in the specialty crop area and use specialty crop soils only as a comparison.

However, when LE scores are added to the AR scores, the results may be the same or even lower because of the specialty crop factors.

If a climate factor is added as a third factor, we will need to use available information such as heat units or frost free days as an indicator.

We could use this area as a specialty area because it is climatically unique.

The consensus of the committee is that this will be identified as a specialty crop area and assessed independently of the rest of the study area.

The next discussion was whether the LE/AR ratio should be 50/50 or 60/40. It was suggested that the LE/AR ratio could be 70/30.

The consensus of the committee is that we will use a 70/30 ratio for the study area provided that we are able to document the reasons for the ratio.

(b) Agricultural land AR factor

The consensus of the committee is that Factor 1a should be used as discussed and that Factor 1b should not be used.

There was considerable discussion regarding Factors 2 and 3 and their meaning. The committee was unable to determine what was more important: the land fragmentation or conflicting land use.

The consensus of the committee is that both of these factors will be used and a decision will be made to eliminate one or combine them when we see the results.

(c) Block or Property Analysis

The discussion concluded that there is less detail in the Block analysis. It is better to have more detail than less. Also the blocks in the larger study area are much larger.

The consensus of the committee is that the Property analysis should be used in the larger study area.

(d) Scoring Approach

There was little discussion regarding the scoring approach. It would take a lot of time to explain the details of the scoring and the weighting.

Members of the committee who are interested in a detailed explanation of the scoring approach were invited to contact staff to set up a meeting with the consultants at an appropriate time.

The consensus of the committee is use equal weighting.

9. Next Meeting

The next meeting is scheduled for Tuesday, April 6, 2004 at 7:30 p.m. at the Ancaster Fairgrounds. Meeting minutes prepared by Mark Dorfman.

Meeting #4
Agricultural and Rural Affairs Advisory Committee
LEAR Study Meeting

April 6, 2004
Ancaster Fairgrounds Boardroom
625 Garner Road, Ancaster

Attendees

Agricultural and Rural Affairs Advisory Committee:
- Roy Shuker
- Melvin Switzer
- Kathy Smith
- Jamie Wood

LEAR Consultants:
- Greg Wall, SRG
- Mark Dorfman, Mark L. Dorfman, Planner Inc.
- Irene Shelton, SRG
- Jackie Van De Valk, VDV Consulting

Provincial/City Staff:
- Paul Mason, Director Long Range Planning and Design
- Joanne Hickey-Evans, Manager Official Plan Reform
- Michelle Sergi, Senior Planner, Official Plan Reform
- John Turvey, OMAF
- Carol Pupo, OMAF

1. Welcome and Introduction

Greg Wall welcomed the members of the working group and provided a brief introduction.

2. Meeting Objectives

Greg Wall outlined the objectives for the meeting. The objectives were:
- To provide an update on the LEAR Mapping Progress, and
- To make some decisions on establishing the LEAR Threshold for Map Production

3. LEAR Mapping Progress

The committee was updated on mapping for rural Hamilton and the escarpment Agri-climatic area. The mapping of all base information is essentially completed, and the data for the LE and AR Factors has been compiled. Modifications to the classifications and weighting, etc. for the LE and AR Factors and the overall LEAR Score can be completed with ease in a timely manner.

4. LE Factor

Irene Shelton provided a review of the Land Evaluation (LE) Factor. There are over 3,000 parcels within the study area. Each parcel was reviewed for soils, and one LE Factor value was calculated for each parcel. The land that fell within the various Canadian Land Inventory (CLI) soil classes was averaged to determine the overall score for each parcel. Essentially, the LE value is a generalized version of the CLI soils classification on a parcel basis. The LE Factor was divided into eight classes for presentation purposes.

For the unique Agri-climatic Area, field crops and specialty crops (plums, pears and vinifera grapes) were used to determine the LE values for each property. The higher of the two values was used.

Maps of the study area map and the Agri-climatic region illustrating the LE Factor classifications were shown to the committee.

Committee members questioned the values assigned to specific properties. Mark Dorfman pointed out that the overall LEAR evaluation will not be on a property by property basis, but based on areas. Irene Shelton some of the properties will be checked in the field to confirm their scores.

5. AR Factors

Jackie Van De Valk reviewed the three Area Review Factors that were developed (Agricultural Land Use, Conflicting Land Use, and Land Fragmentation).

6. Agricultural Land Use

(The proportion of land within 500 m of agricultural parcel as identified as agricultural)
The Agricultural Land Use Factor values for each agricultural parcel were determined as follows:

- Identify properties within an "agricultural" land use code in the City of Hamilton Land Use Information System
- Determine the proportion of land within 500 m of each "agricultural" property that is comprised of other properties identified as "agricultural".

This factor was divided into seven classes for presentation purposes. The classes were determined by attempting to have a proportionate number of properties within each class. A map of the study area showing AR Factor 1 was provided for discussion purposes.

7. Conflicting Land Use

(Number of properties within 500 m of agricultural parcel identified as residential)
The Conflicting Land Use Factor values for each parcel were determined as follows:

- Identify properties within an "agricultural" land use code in the City of Hamilton Land Use Information System
- Determine the number of properties within 500 m of each "agricultural" property that are identified with a "residential" land use code in the city of Hamilton Land Use Information System.

It was noted that properties within the urban boundary were not counted, however, lots within Registered Plans and Rural Settlement Areas were counted. The results were broken down into 7 classes for presentation purposes. A map was provided for discussion purposes.

Roy Shuker inquired about the properties that appeared in white on the maps that were not assigned to a class. It was explained that these areas or properties were non-agricultural, for example, conservation areas, quarries, etc.
A question was raised about the properties west of Highway 20. It was explained that although the properties are currently used for agricultural purposes, they are within the urban

boundary.

Jackie explained that the properties within the urban boundary were not counted, as the urban boundary is considered to be hard. The decision was made to include the Rural Settlement Areas, as not all of the areas have defined boundaries. . Further, if the properties within the urban boundary were included, there would be an urban shadow of approximately 500 m.

Paul Mason explained that the intent is to deal with the agricultural area around settlement areas consistently. The settlement areas will be the subject of a related but separate policy study.

8. Land Fragmentation

(Total number of properties within 500 m of agricultural parcel)
The Conflicting Land Use Factor values for each parcel were determined as follows:

- Identify properties within an "agricultural" land use code in the City of Hamilton Land Use Information System
- Determine the total number of properties within 500 m of each "agricultural" property.

The results were broken down into seven classes for presentation purposes. A map was provided.

Roy Shuker questioned if AR Factor 3 (Fragmentation) was similar to AR Factor 2 (Conflicting Land Use). Mark Dorfman replied that the two are similar. The second factor counts all of the residential properties, and the third factor counts all properties including the residential properties.

With respect to the break down of the seven Classes for each AR Factor, an attempt was made to place 15% of the properties within each class. (break into even categories)

To determine the number of properties within 500 m of each property, a centroid process was used. A 500 m radius from the centroid of a specific property was determined and all properties with centroids located within the radius were counted. A brief discussion of the pros and cons of this method took place.

Roy Shuker questioned if the results will blend when aggregated.

9. Combining the AR Factors

Jackie Van De Valk explained that the AR Factors were weighted equally (33.3%) and were then summed to determine the AR Score for each property. The AR Score was divided into eight classes.

A map combining the AR factors was provided for review and discussion.

10. LEAR Map for the Study Area

Previously, the committee wanted to consider weighting soils (LE Factor) more heavily that the AR factors. A 60/40 split and a 70/30 split were developed. Eight classes were developed for the total LEAR scores. The classes were developed using even breaks. The specifics of the 60/40 Split and the 70/**3**0 Split were discussed and compared.

It was pointed out that when a higher weight is assigned to the LE Factor, the low classes of soils tend to be accentuated, rather than highlighting the higher classed soils. The result is an overall lowering of the LEAR scores. Mel Switzer indicated that the committee had anticipated the opposite result. It had been assumed that increasing the weighting for the LE would simply highlight the better soils and result in higher LEAR Scores.

The committee indicated that they wanted to review a 50/50 LE:AR split at the next meeting.

11. Developing a LEAR Threshold

Mark Dorfman reviewed the purpose and importance of the threshold with the committee. It was pointed out the minimum value to be considered for the threshold should be where CLI classes 1, 2 and 3 soils would fall in the LEAR Score Classes. The minimum value likely falls between the scores 125.1 and 140 (LEAR Score Class 5). Class 5 will be subdivided into 5 sub-classes to assist with further analysis. It was stressed that the threshold that is decided upon must be justified and tested.

Maps illustrating the cumulative effect of including each additional LEAR Score Class were provided for discussion.

The observation was made that the agricultural land in the Glanbrook area scores higher than the land in Flamborough area. Jamie Wood raised questions about an area in Ancaster that did not fall within the first four classes. The area is known to be good agricultural land. Paul Mason pointed out that the classes are absolute. The area could be caught in the higher values of class 5. Jamie questioned if decisions made earlier in the process had resulted in the area receiving a lower score. It was pointed out that there were residential lots nearby. The possibility and implications of removing either AR factor 2 or AR factor 3 were discussed.

Joanne Hickey-Evans asked John Turvey if the two factors resulted in double-counting. John indicated that three AR factors are not considered too many, however, the factors may in fact be double-counting. He suggested that instead of eliminating one of the AR factors, the committee should consider a 50/50 split between the LE and AR Factors. The consultants indicated that if one of the AR Factors will be dropped, it would likely be AR Factor 2, Conflicting Land Use.

Roy Shuker asked about the City's projections for growth and the amount of land required to accommodate growth. Paul Mason responded that the current projections should be met within the white areas shown on the Map (the urban area). Mr. Mason expressed that the working group should not modify the agricultural area to accommodate other concerns. The study area should be treated consistently.

Mark Dorfman observed that when properties with Class 1 to 4 Lear Scores are shown, there are few around the urban area, however, when Class 5 is added, almost every property around the boundary is included. This illustration was used to emphasize the importance of having a threshold value that can be justified and defended.

Paul Mason stressed that the dividing line or threshold must be crisp. The scores must be

reviewed in the field. Similar areas should be attaining similar scores. There must be confidence in the weighting.

12. Summary of Decision Points

The following information will be prepared for review by the committee for the next meeting.

a. A 50/50 LE:AR split will be provided for review (in addition to the already prepared 60/40 and 70/30 splits).
b. AR factors 2 and 3 will be recomputed using a 1km buffer rather than the 500 m buffer. Covariance testing will be conducted to ensure that each of the 3 AR factors are mutually exclusive (ie different from each other)
c. LEAR Scores will be divided into five sub-classes.

The committee discussed the possibility of changing the weightings for the AR Factors rather than removing a factor. It was suggested that the weight of AR factor 1 could be increased and the weighting of Factors 2 and 3 decreased. Jackie Van De Valk explained that this weighing would mean that the presence of surrounding agricultural land would be highlighted as the most important AR Factor related to the presence and continuation of agricultural production. She asked if the committee was willing to make this statement. It was decided that changing the weighting of the AR Factors would not be considered at this time.

13. Next Meeting

The next meeting of the working group will be April 22, 2004 at 7:30 during the ARAAC regular meeting.

Meeting #5
Agricultural and Rural Affairs Advisory Committee
LEAR Study Meeting

April 22, 2004
Ancaster Fairgrounds Boardroom
625 Garner Road, Ancaster
7:30 p.m. –9:00 p.m.

Attendees

Agricultural and Rural Affairs Advisory Committee:
- Philip Krakar
- Melvin Switzer
- Henry Swierenga
- Robert Pastura
- Nancy Mills
- Roy Shuker
- Kathy Smith
- Barbara Oldfield
- Ralph Kikkert
- Carl Loewith
- Jamie Wood
- Robert Murphy

LEAR Consultants:
- Greg Wall, SRG
- Mark Dorfman, Mark L. Dorfman, Planner Inc.
- Irene Shelton, SRG
- Jackie Van de Valk, VDV Consulting
- Donald King, SRG

Provincial/City Staff:
- Joanne Hickey-Evans, Manager Official Plan and Information Planning
- Michelle Sergi, Senior Planner, Official Plan and Information Planning
- Susan Coverdale, Business Development Consultant, Economic Development
- Carol Pupo, OMAF

Councillors:
- Councillor Ferguson

Minutes

1. Welcome and Introductions

Greg Wall welcomed the committee members and provided a brief introduction.

2. Meeting Objectives

Greg Wall outlined the objectives for the meeting. The objectives were as follows:

- To update the committee on modifications to the AR Factors, and
- To work toward the development of a LEAR score threshold for prime agricultural land.

3. AR Factor Modifications

The modifications to the AR Factors were reviewed with the committee.

The influence area for the AR factors was changed from 500 m to 1km.

AR 3 (Land Fragmentation) was modified. Rather than counting the total number of non-agricultural properties within 500 m of an agricultural property, the total number of non-residential non- agricultural properties within one kilometre of an agricultural property were counted. Co-variance testing was used to ensure that the AR factors were not double counting (i.e. each factor is mutually exclusive).

4. Background Maps of LE and AR factors (grouped into 3 classes) for the study area

(LE, AR1, AR2, AR3, AR combined)

The LE score map was reviewed. It was pointed out that the first four classes likely account for Canada Land Inventory (CLI) Class 1, 2 and 3 soils.

The AR 1 map was reviewed.

The AR 2 map was reviewed. Ralph Kikkert asked about the impact of agricultural land close to settlements such as Orkney. It was explained that residential properties within settlement areas were counted and that agricultural properties close to settlement areas would have a lower AR 2 factor score.

The AR 3 map was reviewed.

5. Threshold Development (Factor Basis)

Greg Wall explained that there are two possible methods for determining the threshold, the Factor Basis and the LEAR Score. Greg described the Factor Basis approach for the committee. With this approach, each factor is reviewed individually and thresholds or cutoffs for each factor are determined. The thresholds for each factor are combined to determine a cumulative threshold value.

<u>LE</u>

Map 1, LE - CLI Class 1, 2 and 3 soils, and Map 2, LE - CLI Class 1 to 4 soils were reviewed. Greg asked whether the committee wanted to identify up to Class 3 or Class 4 soils. Ralph Kikkert inquired about the types of crops grown on Class 4 land. Don King indicated that cereals and forage are grown on Class 4 land. The limitations are likely drainage and slope.

Phil Krakar indicated a preference to include Class 4 land, as Class 1, 2 and 3 land appears too fragmented. Joanne Hickey-Evans pointed out that Hamilton has historically recognized Class 4 land.

Greg Wall indicated that there are sound reasons for including Class 4 soils and that SRG would be comfortable defending the inclusion of Class 4 land.

<u>AR 2</u>

A histogram depicting the cumulative percentage of agricultural properties by the number of residential properties within 1km was shown.

Greg Wall inquired about the tolerable number of residences surrounding an agricultural operation. Robert Murphy indicated that producers may want a lower number, but are stuck with the existing number of residential properties. The desirable number is different from what operators can live with.

Phil Krakar indicated that was not sure that many operators knew how many residential properties are located within 1km of their operation. Others on the committee indicated that they were aware of the exact number of non-agricultural residential properties located around their operation.

Ralph Kikkert indicated that he is not as concerned about settlement areas as residential lots spread out around a property.

Greg Wall indicated that 30% of the agricultural properties in the study area have 12 or less residential properties within 1km. He proposed a threshold of 12 properties or less.

AR 1
The committee reviewed a graph of the cumulative percentage of agricultural properties by the percent of surrounding land use in agriculture. It was pointed out that 70% of the agricultural properties in the study area have 92% or more of the surrounding land in agriculture. This was the recommended threshold.

AR 3
A graph of the cumulative percentage of agricultural properties by the number of surrounding non-agricultural, non-residential properties was reviewed.

Greg Wall indicated that 30% of the agricultural properties in the study area have less than 12 non-agricultural/non-residential properties within 1km. A threshold that corresponds to 12 properties or less was recommended.

Using the Factor Based approach and an LE:AR split of 60:40, the prime agricultural land in the City of Hamilton would have a LEAR Score threshold of 140. This figure is based on:

- soil capability range of Classes 1 to 4,
- 92% of the surrounding land (within 1km) in agricultural use,
- 12 or less surrounding (within 1km) residential properties, and
- 12 or less surrounding (within 1km) properties that are non-agricultural and non-residential.

The Factor Based approach provides a better understanding of the data.

6. Threshold Development (LEAR Score)

Irene Shelton reviewed to LEAR score approach to determining the threshold. It is based on a review of the sequential combination of the LEAR Scores using a 60/40 split (LE/AR).

The LEAR scores were divided into classes. Maps showing the cumulative effect of including additional classes within the threshold were reviewed and discussed. Irene explained that the committee must determine a value that is reasonable. There must be a rationale.

The highest score achieved was 186.

Philip Krakar asked about the uses that would be permitted on lands that score below the threshold. It was explained that some properties that score below the threshold might be included in as part of the prime agricultural areas. It was also pointed out that some Class 1 to 4 lands will have low AR Scores and will not be included in the prime area and some Class 5 to 7 lands would have higher AR scores and move up into the prime areas.

Ralph Kikkert inquired about a 70/30 LE to AR split. Greg Wall responded that there was no significant difference associated changing the ratio.

Ralph Kikkert questioned why a distance of one kilometre was now being used for the AR Factors. Greg Wall explained that because a centroid methodology was being used, a 500 m distance was not far enough from the centroid to generate meaningful results.

Philip Krakar questioned if a threshold of 130 is defensible.

Kathy Smith asked if the number of properties with Class 5 soils with a score at or above 125 could be determined. SRG indicated that the information could be determined and provided to the committee.

Jackie Van de Valk stressed that the study should strive to identify only prime viable agricultural land.

Carl Loewith suggested that a score of 120 or 125 should be considered, as 140 may be too high. He expressed concerns about the long term implications of a higher score.

Joanne Hickey-Evans indicated that once the threshold is set, prime areas and rural areas will be identified. However, rural does not mean urban uses will ultimately be permitted especially if the land is not contiguous to the urban boundary. Non-prime rural areas could be considered for rural uses such as golf courses.

Carl Loewith asked, if more land would be protected for Agriculture if a lower threshold is set.

Greg indicated that more land would be protected, but, at the 115 to 130 range, the amount of CLI Class 5 and 6 land being pulled in must be checked. If a disproportionate amount of Class 5 and 6 land is included, it is harder to defend the threshold and the prime agricultural area based on the threshold.

7. Alternative Weighting of LEAR Scores (50:50)

Irene Shelton gave a brief history of the committee's discussions and decisions with respect to the weighting of the LE and AR Factors. The following splits have been discussed, 50/50,

60/40 and 70/30.

Greg explained that difference between the various splits was not significant. He recommended staying with the 60/40 split.

8. LEAR Scores for Tender Fruit/Vinifera Grape Area

Don King reviewed the LEAR Scores for the Tender Fruit/Vinifera Grape Area with the committee. LE scores for both Specialty Crops (vinifera grapes and pears/plums) and Field Crops were determined for the area. The higher of the two LE scores was used.

Roy Shuker asked if a separate climate factor was used to determine the scores. He expressed concern that fragmentation alone especially in the area below the escarpment could result in lower scores.

Don explained that the AR factors 2 and 3 had higher thresholds in this area. Instead of 12 properties, 17 residential properties and 20 non-residential, non-agricultural properties were being considered for thresholds.

Henry Swierenga expressed disappointment in the LEAR scores of the area. Ralph Kikkert pointed out that although the area does not have the best soils, it has a good climate. Roy Shuker agreed and pointed out that fruit is grown in the area.

Nancy Mills questioned if other factors (e.g., economic) such as dollars generated should be used for the area. Ralph Kikkert questioned if a climate factor should be included. Greg explained that climate had already been considered.

Some members of the committee indicated that they felt the lower rating was a result of urban pressures on the area rather than poor soils. Don King indicated that soils were also an issue in the area. Roy Shuker pointed out that drainage is an issue.

Henry Swierenga asked if they were attempting to preserve an area that should not be preserved. The committee generally agreed that this area requires further consideration. Greg Wall explained that a different threshold could be set for each area (the escarpment area and the rest of the study area).

Roy Shuker expressed the opinion that the only thing protecting the land from development now is the Niagara Escarpment Plan.

Carol Pupo asked about the Greenbelt Protection Act. Joanne Hickey-Evans indicated that the intent is for this study to stand on its own.

Ralph Kikkert asked if SRG had contacted a tender fruit specialist at OMAF in addition to the vinifera grape specialist. Carol Pupo suggested contacting Ken Stingerland.

9. Summary of Decision Points

The following information will be prepared for review at the next meeting:

- LE threshold will be set to include CLI Class 1 to 4 soils.
- LEAR threshold lies between a score of 120 and 140. The value will be dependent upon the number of properties with Class 5, 6 and 7 soils that are bumped up to the prime agricultural area.
- A different threshold will be applied to the specialty agri-climatic region,

10. Next Meeting

The next meeting of the working group will be June 24 at 7:30 p.m. during the ARAAC's regular meeting.

Meeting #6
Agricultural and Rural Affairs Advisory Committee
LEAR Study Meeting

June 24, 2004
Ancaster Fairgrounds Boardroom
625 Garner Road, Ancaster
7:30 p.m. –9:00 p.m.

Attendees

Agricultural and Rural Affairs Advisory Committee:
- Philip Krakar
- Melvin Switzer
- Robert Pastura
- Nancy Mills
- Roy Shuker
- Carl Loewith
- Jamie Wood
- Cathy McMaster
- Doug Cranston

LEAR Consultants:
- Greg Wall, SRG
- Mark Dorfman, Mark L. Dorfman, Planner Inc.
- Jackie Van de Valk, VDV Consulting
- Donald King, SRG

Provincial/City Staff:
- Joanne Hickey-Evans, Manager Official Plan and Information Planning
- Michelle Sergi, Senior Planner, Official Plan and Information Planning
- Susan Coverdale, Business Development Consultant, Economic Development
- Dwayne Evans, OMAF
- Carol Pupo, OMAF

Councillors:
- Councillor Braden

Minutes

1. Welcome and Introductions

Greg Wall welcomed the committee members and provided a brief introduction.

2. Meeting Objectives

Greg Wall outlined the objectives for the meeting. The objectives were as follows:
- To discuss the proposed revisions to the specialty crop area designation
- To review the LEAR 120 threshold map for the study area
- To present and explain the rule set for establishing the Prime Agricultural Area
- To review the Prime Agricultural Area mapping

3. Specialty Crop Area Update

Don King provided a summary of the process to date for the development of the specialty crop area. The current configuration of the area is larger than the previous area shown to the committee. Following up on comments from the committee, the specialty crop area now reflects the suitability for tender fruit, more specifically pears, and vinifera grapes and is based on discussions with Helen Fischer and Ken Stingerland (OMAF). Generally the specialty crop soils and climate are within one kilometer of the escarpment.

Jamie Wood asked if the area follows a natural line or feature, and bisects properties. Don explained that the area follows a contour line. Roy Shuker indicated that based on his experience, he agreed with the location of the area.

LE Factor reviewed
Don reviewed the map showing soil capability for vinifera grapes is moderate. The map showing soil capability for pears/plums above the escarpment along the moraine is class 1. Soil capability for common field crops was also reviewed.

AR Factor review
The score for the Area Review Factors was low because of fragmentation.

To be consistent the LEAR threshold for the area was set at a total score of 120 or greater.

Three options were outlined for the committee for their discussion and input:

- Identify the whole area as one unique area;
- Separate the area into prime/non prime areas with some prime below and above the escarpment; or
- Identify the area above the escarpment as prime, and the area below the escarpment as non-prime.

The lower area has drainage problems, which accounts for some of the lower score received below the escarpment to the east. Roy shuker indicated that water running off the escarpment contributes to the drainage issues in the lower area.
Don King indicated that the review had already bumped up the area assuming drainage for fruit (specialty crops) and that it had been moved up one level based on the Niagara Soils Report. It had only been moved up one level because of the drainage issues and clay content of the soils.

Doug Cranston asked if there was a map that showed existing crops. Mark Dorfman esponded that the existing crop information was not necessary since the LEAR is based on potential to grow specialty crops. Phil Krakar indicated that the smaller the parcel or area, the harder it is to keep it in production. Given the climate and soil in the area, he felt the specialty crop designation is needed. Joanne Hickey Evans indicated that both the LE and AR factors should be considered, and cautioned against ignoring the AR factors. Carl Loweth indicated that he felt there was a need to be consistent with the LEAR approach used in the rest of the study area. He indicated he preferred Option 3 and did not want to include the lower north east area.

At this point it was decided that item 3 would be revisited at the end of the meeting.

4. Common Field Crop Area Review

The LEAR 120 Map of the study area was reviewed with the Committee. No concerns were raised.

5. Defining Prime Agricultural Land

Mark Dorfman reviewed the rule set used to define the prime agricultural areas with the committee. The rules used are as follows:

- Agricultural areas will have a LEAR score of greater than or equal to 120.
- The agricultural areas will be large contiguous areas of greater than 250 hectares.
- The agricultural area may include the following land uses:
    - Minor areas of agricultural land below the LEAR threshold of 120,
    - Minor areas of non-farm residential development,
    - Minor areas of non-agricultural use, and
    - Natural areas.
- Boundaries of agricultural areas will follow:
    - Designated regional urban area boundaries,
    - Natural or man-made features,
    - Original lot lines (concession lines),
    - Original half lot lines, and
    - Existing legal lot lines.

He indicated that the rules were used to rationalize the prime areas and ensure defensibility. Dwayne Evans questioned why residential uses were included in the prime areas. Mark indicated that there were planning reasons for including the residential uses. Based on the planning reforms proposed by the province, it is possible that there will be no further severances in prime areas. Further, including them will stabilize the area and prevent further fragmentation.

Carl Loweth asked if settlement areas would be included in the identified areas. Mark and Jackie Van de Valk clarified that settlement areas were not included in the prime areas.

Jackie Van De Valk reviewed the LEAR Map (Score 120) and explained the overlay of the proposed prime agricultural areas. Jamie would asked if the area between the proposed prime area and the specialty crop area is non-prime. It was explained that it was non-prime. Doug indicated that the area had poor soils. Carl asked if aggregate resources could be included in the prime area. It was indicated that yes, aggregate resources could be in the prime area.

Councillor Braden expressed concerns about developers getting the wrong message in the non-prime areas. In Flamborough, residential development is more of a problem than the topography or wetlands. In the area south of Carlilie, there is a significant grouping of nurseries that are in the proposed non-prime area.

Mark Dorfman explained that the methodology was consistently applied throughout the rural area of Hamilton. The team and the committee recognize the complexity of Flamborough, but the study and methodology must be defensible. The Class 3 and 4 lands were reviewed and it was explained that the objective is to stabilize the prime area.

Phil Krakar suggested that the report should be written very carefully and clearly explain that the same rule set was used throughout the area.

No significant issues were raised with the proposed prime areas or the rule set. Questions about specific properties were addressed by the consultants at the end of the meeting.

At this point the specialty crop area (Item 3) was revisited.

Phil Krakar questioned if the 250 hectare minimum area rule could be changed for this area. It was indicated 250 hectares is the standard set by OMAF.

Councillor Braden asked the consultants for their opinion as to what is defensible.

Greg Wall indicated that it is possible to build a case for all of the area to be included.

Joanne indicated that the amount of land with a lower score concerns her (the light green area on the map).

Nancy Mills indicated that climate should outweigh the 250 hectare rule. The escarpment may be a barrier, but it is also the reason for the special climate.

Carl Loewith indicated that he agreed with Joanne, and reiterated that he felt the approach should be consistent with the rest of the study area. He raised concerns about defensibility if another approach is taken.

Cathy asked if the area would be developed in 10 years. Mel indicated that the area is already owned by developers.

6. Other Business

It was noted that this meeting would be the last formal meeting between SRG and the ARAAC. Greg Wall thanked the committee for their input and commitment to the project.

Joanne Hickey-Evans asked the Committee member if they would like to review the draft report. Committee members indicated that they would like the opportunity to review the report and provide input.

The draft report will be provided to the Committee members in mid-July.

APPENDIX 4

A4. DATA INPUTS AND ARCVIEW (MAP) FILES

(digital information)

APPENDIX 5

A5. STUDY TEAM PARTICIPANTS

The City of Hamilton Planning Staff and Councillors:

Paul Mason
Joanne Hickey-Evans
Michelle Sergi
Shane Thombs
Councillors Mitchell and Ferguson

Hamilton Agricultural Working Group:

Ralph Kikkert, Christian Farmers, Hamilton/Wentworth
Philip Krakar, Federation of Agriculture
Carl Loewith, Producer
Nancy Mills, Women's Institute
Robert Murphy, Wentworth Soil and Crop
Barbara Oldfield, Women's Institute, Producer
Robert Pasuta, Hamilton/Wentworth Pork Producers
Roy Shuker, Hamilton/Wentworth Soil and Crop, Federation of Agriculture
Dale Smith, Hamilton/Wentworth Soil and Crop
Kathy Smith, Ancaster Agricultural Society
Mel Switzer, Federation of Agriculture, Wentworth Plowmen's Association
Jamie Wood, Rockton Agricultural Society
Henry Swierenga, Federation of Agriculture

Ontario Ministry of Agriculture and Food:

Carol Pupo, Regional Information Coordinator, Vineland
John Turvey and Dwayne Evans, Land Use Policy Specialists, Guelph

The Soil Resource Group:

Gregory J. Wall
Donald J. King
Bruce MacDonald
Irene Shelton
Ann Huber
Heather Fraser
Dave Hodgson
Jackie Van de Valk
Mark Dorfman