

Att. B to 10/27/11 memo

**CHAMPAIGN COUNTY
LAND EVALUATION AND SITE ASSESSMENT SYSTEM**

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**Prepared by the
Champaign County Regional Planning Commission**

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INTRODUCTION

The Champaign County Land Evaluation and Site Assessment System (LESA) is a tool designed to provide County officials with a systematic and objective means to numerically rate a site or a parcel in terms of its agricultural importance.

Intended Use of LESA

The LESA is intended for the following applications within Champaign County:

- To assist County officials to evaluate the proposed conversion of farmland on a parcel or site in County rezoning cases that include farmland conversion to a non-agricultural land use.
- To assist in the review state and federal projects for compliance with the Illinois Farmland Preservation Act and the Federal Farmland Protection Policy Act in terms of their impact on important farmland.

Additionally, the Land Evaluation (LE) portion of LESA is intended as a means to determine the 'Best Prime Farmland' designation of a particular site or parcel.

The LESA is one of several tools intended to assist in making land use decisions; it should be used in conjunction with the *Champaign County Land Resource Management Plan* and county land use regulations such as the zoning ordinance, subdivision regulations, and stormwater management policy.

About the LESA Score

The LESA system is a numerical rating system that consists of two separate components:

- Land Evaluation (LE) The LE portion of LESA is based on the soils properties of the site.
- Site Assessment (SA) The SA portion of LESA is based on non-soil factors that relate to the site.

The maximum LE score possible for a site is 100 points. The maximum SA score possible for a site is 200 points. The total LESA score is the sum of the LE points and SA points for a particular site or parcel. The maximum total LESA score possible for a site is 300 points.

The higher the total LESA score, the more highly rated the site or parcel is to be protected for continued agricultural use. The total LESA score of a site signifies a rating for protection of a site or parcel as follows:

220 – 300	very high rating for protection
200 – 219	high rating for protection
180 – 199	moderate rating for protection
179 or below	low rating for protection

LAND EVALUATION

The Land Evaluation (LE) portion of LESA is based on the ranking of Champaign County soils according to the following three soils classification systems.

- ***Land Capability Classification***

A system of grouping soils developed by the United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS). Soils are grouped primarily on the basis of their capability to produce common cultivated crops and pasture plants without deteriorating over a long period of time. A detailed explanation of the Land Capability Classification system is provided in the USDA NRCS National Soil Survey Handbook, Part 622.02, available at <http://soils.usda.gov/technical/handbook/contents/part622.html>

- ***Farmland Classification***

A soils classification system developed by the USDA NRCS to better manage and maintain the soils resource base of land most suitable for producing food, feed, fiber, forage, and oilseed crops. The farmland classification identifies the soils series map units as: prime farmland; farmland of statewide importance; or farmland of local importance. A detailed explanation of the Farmland Classification soils classification system and the USDA NRCS definition of 'prime farmland' is provided in the USDA NRCS National Soil Survey Handbook, Parts 622.03-622.04, at <http://soils.usda.gov/technical/handbook/contents/part622.html>

- ***Productivity Index of Illinois Soils Under Optimum Management***

This soils productivity index is based on data published in Table S2 of Bulletin 811, developed by the Office of Research, College of Agricultural, Consumer and Environmental Sciences, University of Illinois at Urbana-Champaign. Bulletin 811 provides crop yields and productivity indices under an optimum level of management used by the top 16% of farmers in Illinois. The crop yields were updated in January, 2011 to reflect growing conditions from 2000 to 2009. Bulletin 811 Year 2011 crop yields and productivity indices for optimum management are maintained at the following UIUC Department of Natural Resources and Environmental Sciences web site: <http://soilproductivity.nres.illinois.edu>.

Agricultural Value Group

The LE portion of LESA places the soils of Champaign County into eight 'Agricultural Value Groups' ranging from the best to the worst, based on the three soils classifications systems indicated above, which generally gauge a site's suitability for crop production based on soil properties. A relative value was determined for each Agricultural Value Group; the best group was assigned a relative value of 100 and all other groups assigned lower relative values. Details are provided in Appendices A and B.

Appendix A contains 'Table 1. Soil Series Classifications and Land Evaluation Groups.'

Appendix B contains a description of Agricultural Value Groups and LE data.

Calculating a Land Evaluation Score

The Land Evaluation (LE) score is calculated separately from the calculations to determine the Site Assessment (SA) score.

For a rezoning request, the LE score of a site or parcel is calculated by the Champaign County Soil and Water Conservation District office, and typically the LE score is provided as part of the Natural Resource Report for a site or a parcel.

The 'LE Worksheet' is provided on the following page. The LE score for a subject site or parcel can be calculated by working through the following steps:

1. Use Geographic Information Systems (GIS) software to outline the subject site or parcel(s) of land to be rezoned, and overlay with a Champaign County soils map unit layer. Soils data produced by the National Cooperative Soil Survey is available at the NRCS operated 'Web Soil Survey', online at <http://websoilsurvey.nrcs.usda.gov/>.

Soils data produced by the National Cooperative Soil Survey, and Champaign County parcel data, is available at the Champaign County GIS Consortium website 'GIS Web Map – Public Interface for Champaign County, Illinois' at <http://www.maps.ccgisc.org/public/>.

2. In Column 1, list individual Soil Types within the outlined area of concern, indicating both the 'Soil Map Unit' and 'Soil Series' (e.g., '154A Flanagan').
3. From Table 1 (in Appendix A), record the Agricultural Value Group for each Soil Type in Column 2.
4. From Table 1 (in Appendix A), record the Relative Value for each corresponding Agricultural Value Group in Column 3.
5. Use GIS to calculate the acreage of for each Soil Type within the outlined area of concern. Record the number of acres for each Soil Type in Column 4.
6. For each Soil Type, multiply the Relative Value (from Column 3) by the number of Acres (from Column 4). Record the product in Column 5.
7. Sum up the Column 4 values (Acres for each Soil Type) and record this total as Item (a).
Sum up the products shown in Column 5 and record this total as Item (b).
8. Divide Item (b) by Item (a). The result is the LE Score for the subject site or parcel.

The maximum number of LE points possible for any given parcel is 100.

A score ending in 0.49 or lower shall be rounded down to the nearest whole number. A score ending in 0.5 or higher shall be rounded up to the next whole number.

LE WORKSHEET

1 Soil Type	2 Agricultural Value Group	3 Relative Value	4 Acres	5 Product of (a) and (b)
Total:			a	b
			LE Calculation:	b / a
			LE Score:	

Example

A 5.3 acre parcel that has five soil types: 134B Camden, 152A Drummer, 242A Kendall, 3107A Sawmill, and 570C2 Martinsville. Based on the LE calculations described on previous Page 3, the LE score equals 88.

1 Soil Type	2 Agricultural Value Group	3 Relative Value	4 Acres	5 Product of (a) and (b)
242A Kendall	4	87	0.20	17.40
152A Drummer	2	100	0.83	83
570C2 Martinsville	6	75	0.01	0.75
134B Camden	5	83	1.64	136.12
3107A Sawmill	4	87	2.63	228.81
Total:			5.31 (a)	466.08 (b)
			LE Calculation:	b/a = 87.77
			LE Score:	88

SITE ASSESSMENT

The Site Assessment (SA) process provides a system for identifying important factors, other than soils, that affect the economic viability of a site for agricultural uses.

SA Factors

Primary criteria used to select the SA factors was that the each factor be relevant to the continued agricultural use of a rural site or parcel in Champaign County and measurable.

For a rezoning request, the SA score of a site or parcel is calculated by the Champaign County Planning and Zoning Department staff. The SA scoring is based on a staff review of several sources of information which may typically include:

- Champaign County GIS Consortium parcel, corporate limit, zoning district, ortho photo data layers
- *Champaign County Land Resource Management Plan 'Land Use Management Map'*
- site inspection
- landowner interview

The maximum number of possible SA score for a subject site or parcel is 200. The 12 SA factors are assigned points that collectively total the maximum possible SA score of 200.

Each of the SA factors has categories ranked on a 'best-to-worst' scale.

The 'SA Worksheet' used to calculate the SA score is provided on the following pages. To calculate the SA score of a subject site or parcel, the following procedure

1. Select the most appropriate point value category for each SA factor, based on an assessment of the site or parcel, or the surrounding area as it relates to the SA factor in question.
2. Add the points of all SA factors to arrive at a total SA score for the subject site or parcel.

SA WORKSHEET

1	Percentage of area in agricultural uses within 1 mile of subject site.	75% or more	20 points	
		50% to 74%	10 points	
		25% to 49%	5 points	
		Less than 25%	0 points	

Description: This factor is a major indicator of the agricultural character of the general area, based on the assumption that areas in the County that are dominated by agricultural uses are generally more viable for farm purpose.

Scoring: Measure outward from the property lines of the subject site. Estimate the percentage of area may be based on visual inspection of most currently available CCGIS Consortium digital ortho photography.

2	Is the land use adjacent to subject site in agricultural or non-agricultural use?	All sides of subject site in agricultural use	20 points	
		1% to 25% of the perimeter in non-agricultural use	16 points	
		26% to 50% of the perimeter in non-agricultural use	12 points	
		51% to 75% of the perimeter in non-agricultural use	8 points	
		76% or more of the perimeter in non-agricultural use	0 points	

Description: This factor assesses pre-existing land uses adjacent to the subject site, with more points assigned to sites surrounded by other agricultural land uses.

Scoring: Obtain a linear measure of the perimeter of a subject site adjacent to non-agricultural use, based on visual inspection of most currently available CCGIS Consortium digital ortho photography. Divide this measure by the total linear measure of the subject site to obtain a percentage.

3	Percentage of site in agricultural production in any of the last 5 years.	80% to 100%	15 points	
		60% to 79%	11 points	
		40% to 59%	7 points	
		20% to 39%	3 points	
		Less than 20%	0 points	

Description: This factor assesses agricultural use of the subject site over the past five years, assigning more points to sites mostly used for agricultural production.

Scoring: Estimate the area of the subject site in agricultural production, based on visual inspection of 2011 - 2006 digital ortho photography. Select the highest percentage of area of the site in agricultural production over the past five years.

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4	Percentage of land zoned AG-1 Agriculture, AG-2 Agriculture or CR Conservation-Recreation within 1 mile of subject site.	75% or more 50% to 74% 25% to 49 % 10% to 24% Less than 24%	20 points 15 points 10 points 5 points 0 points	_____
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Description: This factor measures the amount of land in the one-mile area surrounding the subject site which zoned either AG-1, AG-2, or CR. Land within these rural zoning districts is subject to land use restrictions and limits on the density and location of non-agricultural land uses.

Scoring: Estimate the area outward one mile from the property lines of the subject site. An estimate the percentage of area may be based on visual inspection of the Champaign County Zoning Map.

5	Distance from the subject site to the nearest city or village limits.	Greater than 1 mile 1/2 mile to 1 mile Less than 1/2 mile	15 points 10 points 0 points	_____
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Description: It is generally assumed that the further the subject site is from a municipality, the less chance of nearby land uses or developments that would conflict with the agricultural use of that subject site.

Scoring: Obtain a linear measurement outward from the property lines of the subject site to the nearest corporate limits of a municipality, based on most currently available corporate limits CCGIS Consortium map layer.

6	Is the subject site located within <u>either</u> of the following areas? <ul style="list-style-type: none"> • the 'Contiguous Urban Growth Area' of the Champaign County Land Resource Management Plan • an area that could be served by a municipal public sewer system 	No	40 points	
		Yes	0 points	

Description: This factor is a general measure of development pressures which tend to support the conversion of agricultural sites to urban uses. The factor is based on the 'Land Use Management Areas Map' of the Champaign County Land Resource Management Plan.

The Land Use Management Areas Map indicates 'agriculture' as the predominant planned land use of the majority of the unincorporated area. Land designated for non-agricultural land use is shown as being within the 'Contiguous Urban Growth Area' (CUGA). The CUGA consists of:

- land designated for urban land use on the future land use map of an adopted municipal comprehensive land use plan, intergovernmental plan or special area plan, and located within the service area of a public sanitary sewer system with existing sewer service or sewer service planned to be available in the near-to mid-term (within approximately five years);
- land to be annexed by a municipality and located within the service area of a public sanitary sewer system with existing sewer service or sewer service planned to be available in the near-to mid-term (within approximately five years); or
- land surrounded by incorporated land or other urban land within the County.

Scoring: The response should be based on the most current version of the *Champaign County Land Resource Management Plan* "Land Use Management Map" If the subject site is located outside of the CUGA, the response should also take into consideration the most currently available data regarding the location of public sewer systems that serve smaller communities in the County.

7	a) How close is the subject site to a known livestock management facility of 400 or more animal units? <i>Answer Part b) only if the subject site is more than 1 mile from a known livestock management facility of 400 or more animal units.</i>	Adjacent 10 points 0.25 mile to less than adjacent 8 points 0.26 to 0.50 mile 6 points 0.51 to 0.74 mile 4 points 0.75 to 1 mile 2 points More than 1 mile <i>proceed to Part b</i>	
	b) How close is the subject site to a known livestock management facility of 50 or more animal units?	Adjacent 5 points 0.25 mile to less than adjacent 4 points 0.26 to 0.50 mile 3 points 0.51 to 0.74 mile 2 points 0.75 to 1 mile 1 point More than 1 mile 0 points	

Description: This factor is a measure of the compatibility of a site for continued agricultural use based on its proximity to an existing nearby livestock management facility.

Scoring: The maximum points possible for this factor is 10 points.

This is a two-part factor. Part a) is a measure of the proximity of a subject site to a larger category of livestock management facility. If the subject site is located more than 1 mile from such facility, then Part b) should be answered instead.

Responses to this factor may be based on data available from the Livestock Management Facilities Program, Illinois Department of Agriculture, site inspection, and/or landowner interview.

8	What is the distance from the subject site to the nearest public assembly land use (e.g., a school)?	More than 1 mile 10 points 0.75 to 1 mile 8 points 0.51 to 0.74 mile 6 points 0.26 to 0.50 mile 4 points 0.25 mile to less than adjacent 2 points Adjacent 0 points	
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Description: This factor is a measure of the compatibility of the subject site for continued agricultural use based on its proximity to a public assembly use. For the purposes of this factor, a 'public assembly land use' is defined as an ongoing (as opposed to temporary) permitted land use where more than 200 persons congregate or assemble for any purpose. Examples of public assembly land uses are schools, churches, or hospitals.

Scoring: All measurements are from the closest point on the property line of the subject site to the façade of the public assembly structure in question. Information will be most typically available from CCGIS Consortium parcel data, site inspection, or phone interview.

9	What is the distance from the subject site to the nearest 10 or more 'non-farm' dwellings?	More than 1 mile	10 points	
		0.75 to 1 mile	8 points	
		0.51 to 0.74 mile	6 points	
		0.26 to 0.50 mile	4 points	
		0.25 mile to less than adjacent	2 points	
Adjacent	0 points			

Description: For the purposes of this factor, a non-farm dwelling is defined as a dwelling located on a lot less than 35 acres. An exception to this standard would be when information is provided to the Zoning Board of Appeals to indicate that a dwelling is part of on-site agricultural operations or otherwise qualifying as a farm dwelling.

Scoring: Measure the linear distance outward from the closest point on the property line of the subject site to the façade of the nearest 10 non-farm dwellings. The response is the linear distance to the furthest façade of the 10 nearest dwelling structures.

10	What size is the subject site?	35 acres or more	10 points	
		25 to 34.9 acres	8 points	
		10 to 24.9 acres	6 points	
		5 to 9.9 acres	4 points	
		2 to 4.99 acres	2 points	
		Less than 2 acres	0 points	

Description: This factor considers that the size of the subject site or parcel has an impact on its long-term viability for agricultural purposes. The factor recognizes that the predominant row crop form of agriculture is generally more efficiently farmed on larger sites.

Scoring: Respond based on the area of the subject site or parcel.

11	Is the subject site Best Prime Farmland ?	Yes	20 points	
		No	0 points	

Description: This factor values the Best Prime Farmland designation of a subject site or parcel, consistent with the Champaign County Land Resource Management Plan goals, objectives and policies, and because County land use regulations place higher restrictions on the use of Best Prime Farmland for non-agricultural land uses.

Scoring: Respond based on whether the subject site or parcel is designated as Best Prime Farmland.

12	a) Have drainage improvements been made to the site to support agricultural production? <i>Answer Part b) <u>only</u> if the drainage improvements have been made to the site to support agricultural production.</i>	Yes <i>Proceed to Part b)</i> No 0 points	_____
	b) What type of drainage improvements exist on the subject site?	a modern, patterned tile system (e.g., a Herringbone patterned tile system) 10 points a linear tile system (e.g., a single clay tile line) 5 points	_____

Description: This factor generally assesses the presence and type of drainage improvements made to the subject site that support agricultural production on the subject site.

Modern pattern-tiled drainage improvement systems have a higher point value than a single linear type drainage tile system.

Scoring: Responses to this factor may be based on data available from information provided by the landowner of the subject site, or a site inspection.

SA Total Score	_____
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CALCULATING THE TOTAL LESA SCORE

The total LESA score is the sum of the LE points and SA points for a particular site or parcel. The maximum total LESA score possible for a site is 300 points.*

LE Total	___
SA Total	___
Total LESA Score	___

The higher the total LESA score, the more highly rated the subject site or parcel is to be protected for continued agricultural use. The total LESA score of a site signifies a rating for protection of the subject site or parcel as follows:

220 – 300	VERY HIGH RATING FOR PROTECTION
200 – 219	HIGH RATING FOR PROTECTION
180 – 199	MODERATE RATING FOR PROTECTION
179 OR BELOW	LOW RATING FOR PROTECTION

* The maximum LE score possible for a site is 100 points.
The maximum SA score possible for a site is 200 points.

DEFINED TERMS

AGRICULTURE: The growing, harvesting and storing of crops including legumes, hay, grain, fruit and truck or vegetable crops, floriculture, horticulture., mushroom growing, orchards, forestry and the keeping, raising and feeding of livestock or poultry, including dairying, poultry, swine, sheep, beef cattle., pony and horse production, fur farms, and fish and wildlife farms; farm buildings used for growing, harvesting and preparing crop products for market, or for use on the farm; roadside stands, farm buildings for storing and protecting farm machinery and equipment from the elements, for housing livestock or poultry and for preparing livestock or poultry products for market; farm dwellings occupied by farm owners, operators, tenants or seasonal or year-round hired farm workers. It is intended by this definition to include within the definition of agriculture all types of agricultural operations, but to exclude therefrom industrial operations such as a grain elevator, canning or slaughterhouse, wherein agricultural products produced primarily by others are stored or processed. Source: Champaign County Zoning Ordinance.

AGRICULTURAL LAND: Land in farms regularly used for agricultural production. The term includes all land devoted to crop or livestock enterprises, for example, the farmstead lands, drainage ditches, water supply, cropland, pasture land, or timberland (whether or not in current production), and grazing land of every kind in farms.

AGRICULTURAL USES: All agricultural and related uses that can be considered to be part of a farm operation. This would include farmland (cropland), pasture lands, raising livestock, or timberlands whether or not in current production, farm residences, barns and outbuildings. In addition, land enrolled in a conservation program shall also be considered as part of an agricultural land use.

ANIMAL UNITS: A measure that is based on the number, species and size of an animal. The following table lists for selected species, the size and number of animals multiplied by a specified conversion factor equivalent to 50 animal units:

Species/Size	Conversion Factor	50 Animal Units
Swine over 55 lbs.	0.4	125
Swine under 55 lbs.	0.03	1,667
Dairy	1.4	35
Young dairy stock	0.6	84
Cattle	1.0	50
Sheep, lamb, goats	0.1	500
Horses	2.	25
Turkeys	0.02	2,500
Laying hens or broilers	0.01 – 0.03 *	1,667 -5,000 *
Ducks	0.02	2,500

Source: <http://www.agr.state.il.us/Environment/LMFA/index.html>

Table Note: * depends on type of livestock waste handling facility provided

BEST PRIME FARMLAND: The Soil Survey of Champaign County identifies 94.6% of Champaign County as 'Prime Farmland.' A complete definition of 'Prime Farmland' is provided in the Appendix B excerpt of the NRCS NSSH Part 622, Prime Farmland Soils (622.04). Due to the great proportion of soils that are considered Prime Farmland, almost any development in Champaign County is likely to be on Prime Farmland.

Based on the LE portion of LESA, the County identifies 'Best Prime Farmland' as a specified range of Agricultural Value Groups which have the highest ranking LE scores. (Refer to Table 1 in Appendix A.)

The *Champaign County Land Resource and Management Plan* contains land use policies that call for higher development standards intended to preserve farmland designated as Best Prime Farmland.

The *Champaign County Zoning Ordinance* contains maximum lot size limits that apply to new development on Best Prime Farmland. The *Champaign County Subdivision Regulations* requires, for new developments, that the amount of Best Prime Farmland occupied by a lot be minimized as much as possible.

LIVESTOCK MANAGEMENT FACILITY: A 'livestock management facility' is any animal feeding operation, livestock shelter, or on-farm milking and accompanying milk-handling area. A 'livestock waste handling facility' is an immovable structure or device (except sewers) used for collecting, pumping, treating, or disposing of livestock waste or for the recovery of by-products from the livestock waste. Two or more livestock management facilities under common ownership, within ¼ mile of each other, and that share a common livestock waste handling facility are considered a single livestock management facility. (Illinois Livestock Management Facilities Act (510 ILCS 77/et seq.)

