



DATE:	February 14, 2012
TO:	LESA Update Committee
FROM:	Susan Monte
RE:	Memo # 2, Additional Information for the February 22 Meeting

Field Test Scoring Results

The LESA scores for the 15 Field Test sites were completed based on the previously assumed Best Prime Farmland (BPF) at LE = 91. Staff re-scored each of the 15 test sites based on the Draft LESA Update dated 2/10/2012, and responded to SA Factor 2 regarding whether the subject site is BPF, based on each of the following assumed BPF definition options:

BPF options:	AVG = Agriculture Value Groups
LE score = 100, all AVG 1 or 2 soils, or any combination of soils with a minimum of 20% AVG 1 or 2 soils	
LE score $\geq$ 94, all AVG 1, 2 or 3 soils, or any combination of soils with a minimum of 15% AVG 1, 2, or 3 soils	
LE score $\geq$ 94, all AVG 1, 2, or 3 soils, or any combination of soils with a minimum of 25% AVG 1, 2, or 3 soils	
LE score $\geq$ 91, all AVG 1, 2, 3, or 4 soils, or any combination of soils with a minimum of 20% AVG 1, 2, 3, or 4 soils	

Attachment A is the scoring results of the 15 test sites based on the early BPF assumption of LE  $\geq$  91 and based on the current BPF option types shown above.

When re-scoring all 15 test sites based on each of the BPF definition options shown above, the same three test sites (Test Sites B, C, and 8) were additionally considered BPF because each had a minimum of 20% AVG 1 or 2 soils:

- Test Site B had 34% soils in AVG 2
- Test Site C had 44% soils in AVG 1 or 2
- Test Site 8 had 20% soils in AVG 1 or 2

These three test sites demonstrate that a subject site with a significant amount of AVG 1 or 2 soils would not otherwise be considered as BPF without a proposed BPF definition option provision such as "...any combination of soils with a minimum of 20% AVG 1, 2 ... soils.."

(continued on next page)

LESA Protection Ratings

The January 25, 2012 Handout distributed at the last meeting included two important questions:

- 1) What type of sites should receive a Very High Rating? potential response:
- sites that are BPF and larger than 25 acres
  - sites not located in CUGA

Based on assumptions outlined in the January 25, 2012 Handout, hypothetical sites meeting the following characteristics and located at least 1 mile from a municipality would typically receive a 'Very High' LESA Protection Rating of at least 250.

The site characteristics assumed in the January 25, 2012 Handout include:

- large ( $\geq 25$  acre) sites not in CUGA
- located in the AG-1 or AG-2 Zoning District
- BPF soils based on a BPF definition recommendation option under current consideration
- no livestock facility within 1 mile
- typical conditions which would not result in lower ratings for SA Factors 3, 7, 8, or 9.

Of the 15 test sites, those listed below meet all site characteristics outlined in the Handout:

	Total LESA Score	LESA Protection Rating based on Draft LESA Update dated 2/10/2012
TS 1	271	very high
TS 7	279	very high
TS 10	281	very high
TS 13	283	very high
TS 16	278	very high

Test Site C met the same outlined site characteristics and had points assigned due to a livestock management facilities within one mile:

	Total LESA Score	LESA Protection Rating based on Draft LESA Update dated 2/10/2012
TS C	263	very high

Of the 15 test sites, three were located within the CUGA and had total LESA scores as follows:

	Total LESA Score	LESA Protection Rating based on Draft LESA Update dated 2/10/2012
TS 2	97	low
TS 4	170	low
TS D	152	low

Based on test site results alone, no further adjustments to the protection ratings appear necessary. However, as indicated in the January 25, 2012 Handout, staff recommends that the Committee consider adjusting the protection ratings thresholds as shown below for a more equitable point spread between the protection rating categories overall:

Draft LESA Update 2/10/2012		<i>point spread</i>	
250 to 300	very high	50	79
220 to 249	high	29	
180 to 219	moderate	39	
179 or below	low	179	

Proposed Adjustment		<i>point spread</i>	
250 to 300	very high	50	69
<b>230 to 249</b>	high	19	
<b>160 to 229</b>	moderate	69	
<b>159 or below</b>	low	159	

BPF and Non-BPF Soils

Recently discussed was whether the various BPF and non-BPF soils estimates provided for review should be based only on soils not included as part of the CUGA or incorporated areas.

The CUGA (which includes 12 incorporated areas) and the remaining 12 municipalities in the County account for approximately 12.7% of all soils in the County.

In the calculations below, staff removed CUGA and incorporated areas from the soils map layer, and recalculated total soils in each of the 18 Agriculture Value Groups (based on the Draft LESA Update dated 2/10/2012). The resulting quantities of soils in AVGs were nearly identical as the soil quantities calculated for the entire County. The table below compares AVG soil totals for the entire County and AVG soils for the County minus CUGA and incorporated areas:

Agriculture Value Group (AVG)	County Soils (est. acres)	County Soils (est. %)	County Soils minus CUGA and incorporated areas (est. acres)	County Soils minus CUGA and incorporated areas (est. %)
	<b>639,055.8</b>		<b>558,008.7</b>	
AVG 1 and 2	394,128.6	61.7	346,331.6	62.0
AVG 3	49,817.6	7.8	41,290.3	7.4
AVG 4	43,354.2	6.8	38,012.4	6.8
<i>Subtotal:</i>		<i>76.3%</i>		<i>76.2%</i>
AVG 5-17	143,964.6	22.5	130,203.5	23.3
AVG 18*	7,790.8	1.2	2,170.8	0.4
<i>Subtotal:</i>		<i>23.7%</i>		<i>23.7%</i>

\*AVG 18 contains urban land, water, gravel pit, landfill or orthents loamy undulating soils. No soil productivity index or land capability classification is assigned to AVG 18.

Attachment B is a map of County Soils outside of CUGA and Incorporated Areas.

Attachment C contains the BPF Definitions Options Data based on 'County Minus CUGA and incorporated areas'. As expected, the numbers reflect the same trends as the BPF Definitions Options Data distributed (also as Attachment C) as part of last Friday's mailing.

Suggested Text of BPF Definition Recommendation

Attachment D contains suggested text for a Best Prime Farmland definition recommendation to forward to the County Board.

Attachments

- A Field Test Scores and BPF Definition Options
- B Map of Soils Outside CUGA and Incorporated Areas
- C BPF Definition Options Data based on Soils Outside CUGA and Incorporated Areas
- D Suggested Text for Best Prime Farmland Definition Recommendation

## Field Test Scores and Best Prime Farmland Definition Options

Test sites were re-scored based on the LESA Update Draft dated 2/10/2012.

Assumption: BPF is defined as all AVG 1, 2, 3, and 4 soils or  $LE \geq 91$

SA Factor	TS 1	TS 2	TS 4	TS 7	TS 8	TS 10	TS 11	TS 13	TS 14	TS 16	TS 17	TS A	TS B	TS C	TS D
1	10	4	10	10	6	10	8	10	6	10	6	10	8	10	8
2a	30	0	30	30	0	30	0	30	30	30	30	0	0	0	30
2b	10	n/a	10	10	n/a	10	n/a	10	0	10	0	n/a	n/a	n/a	0
2c	n/a	0	n/a	n/a	0	n/a	0	n/a	n/a	n/a	n/a	10	0	10	n/a
3a	20	6	20	20	20	20	6	18	20	20	18	10	14	20	18
3b	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
4	40	0	0	40	40	40	40	40	40	40	40	40	40	40	0
5	5	n/a	n/a	15	10	15	5	10	10	5	10	5	5	5	n/a
6	15	n/a	n/a	15	0	15	11	15	15	15	15	15	15	15	n/a
7	10	n/a	n/a	10	10	10	10	10	10	10	10	10	10	10	n/a
8a	20	n/a	n/a	20	20	20	18	20	20	20	18	14	14	20	n/a
8b	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
9	16	n/a	n/a	16	16	20	14	20	18	18	14	12	12	12	n/a
10	0	n/a	n/a	0	4	0	0	0	0	0	0	4	2	2	n/a
SA Score	176	10	70	186	126	190	112	183	169	178	161	130	120	144	56
LE	95	87	100	93	88	91	76	100	97	100	97	81	89	89	96
LESA Score	271	97	170	279	214	281	188	283	266	278	258	211	209	233	152

Each of the 15 test sites were re-scored based on a sample of Best Prime Farmland definition options currently under review by the Committee:

AVG = Agriculture Value Groups

LE score = 100, all AVG 1 or 2 soils, or any combination of soils with a minimum of 20% AVG 1 or 2 soils

LE score > 94, all AVG 1, 2 or 3 soils, or any combination of soils with a minimum of 15% AVG 1, 2, or 3 soils

LE score > 94, all AVG 1, 2, or 3 soils, or any combination of soils with a minimum of 25% AVG 1, 2, or 3 soils

LE score > 91, all AVG 1, 2, 3, or 4 soils, or any combination of soils with a minimum of 20% AVG 1, 2, 3, or 4 soils

Rescored LESA totals for each test site based on the above noted sample of BPF definitions are shown on the reverse side of this page.

The re-scoring results indicate that, for each BPF definition option described above, the three test sites (highlighted below) additionally will be considered as BPF, based on the amount of AVG 1 or 2 soils present.

TS A	LE = 81	0% soils in AVG 1 through 4
TS B	LE = 89	34% soils in AVG 2
TS C	LE = 89	44% soils in AVG 1 or 2
TS D	LE = 96	35% soils in AVG 1 or 2 and 65% soils in AVG 3
TS 1	LE = 95	29% soils in AVG 1 or 2 and 5% soils in AVG 4
TS 2	LE = 87	14% soils in AVG 2
TS 4	LE = 100	94% soils in AVG 1 or 2 and 6% soils in AVG 3
TS 7	LE = 93	46% soils in AVG 1 or 2 and 44% soils in AVG 4
TS 8	LE = 88	20% soils in AVG 1 or 2
TS 10	LE = 91	31% soils in AVG 1 or 2 and 21% in AVG 4
TS 11	LE = 76	12% soils in AVG 2 and 3%
TS 13	LE = 100	100% soils in AVG 1 or 2
TS 14	LE = 97	65% soils in AVG 1 or 2 and 22% soils in AVG 3
TS 16	LE = 100	100% soils in AVG 1 or 2
TS 17	LE = 97	52% soils in AVG 1 or 2 and 47% soils in AVG 3

### Re-scored test sites using optional BPF definitions as shown:

Assumption:

**BPF is defined as all AVG 1 or 2 soils, or any combination of soils with a minimum of 20% AVG 1 or 2 soils**  
(also assumed: a site with an LE = 100 is designated as BPF)

	TS 1	TS 2	TS 4	TS 7	TS 8	TS 10	TS 11	TS 13	TS 14	TS 16	TS 17	TS A	TS B	TS C	TS D
SA Factor															
2a	30	0	30	30	30	30	0	30	30	30	30	0	30	30	30
2b	10	n/a	10	10	0	10	n/a	10	0	10	0	n/a	0	10	0
2c	n/a	0	n/a	n/a	n/a	n/a	0	n/a	n/a	n/a	n/a	10	n/a	n/a	n/a
SA Score	176	10	70	186	156	190	112	183	169	178	161	130	150	174	56
LE	95	87	100	93	88	91	76	100	97	100	97	81	89	89	96
LESA Score	271	97	170	279	244	281	188	283	266	278	258	211	239	263	152

Assumption:

**BPF is defined as all AVG 1, 2 or 3 soils, or any combination of soils with a minimum of 15% AVG 1, 2, or 3 soils**  
(also assumed: a site with an LE ≥ 94 is designated as BPF)

	TS 1	TS 2	TS 4	TS 7	TS 8	TS 10	TS 11	TS 13	TS 14	TS 16	TS 17	TS A	TS B	TS C	TS D
SA Factor															
2a	30	0	30	30	30	30	0	30	30	30	30	0	30	30	30
2b	10	n/a	10	10	0	10	n/a	10	0	10	0	n/a	0	10	0
2c	n/a	0	n/a	n/a	n/a	n/a	0	n/a	n/a	n/a	n/a	10	n/a	n/a	n/a
SA Score	176	10	70	186	156	190	112	183	169	178	161	130	150	174	56
LE	95	87	100	93	88	91	76	100	97	100	97	81	89	89	96
LESA Score	271	97	170	279	244	281	188	283	266	278	258	211	239	263	152

Assumption:

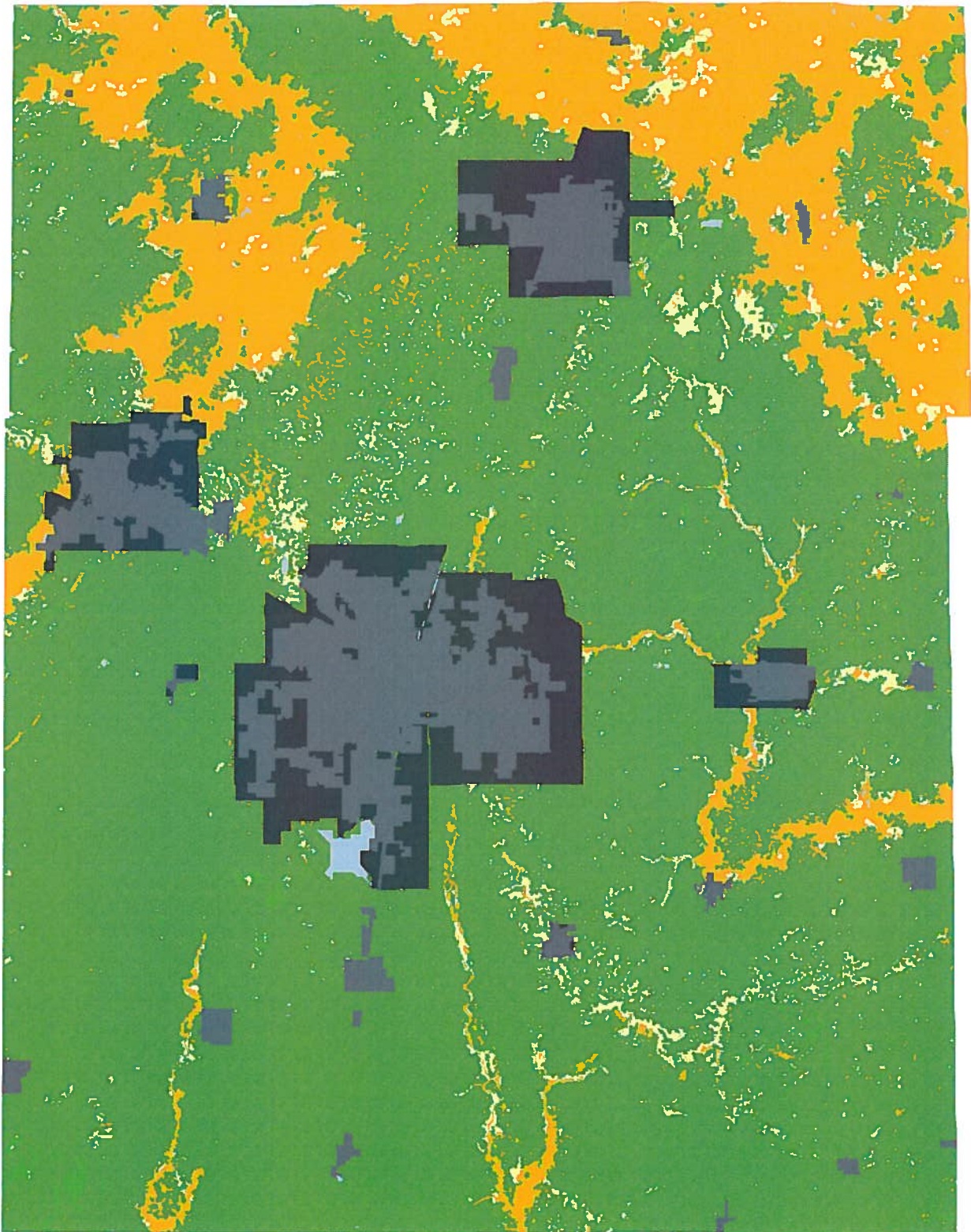
**BPF is defined as all AVG 1, 2, or 3 soils, or any combination of soils with a minimum of 25% AVG 1, 2, or 3 soil**  
(also assumed: a site with an LE ≥ 94 is designated as BPF)

	TS 1	TS 2	TS 4	TS 7	TS 8	TS 10	TS 11	TS 13	TS 14	TS 16	TS 17	TS A	TS B	TS C	TS D
SA Factor															
2a	30	0	30	30	30	30	0	30	30	30	30	0	30	30	30
2b	10	n/a	10	10	0	10	n/a	10	0	10	0	n/a	0	10	0
2c	n/a	0	n/a	n/a	n/a	n/a	0	n/a	n/a	n/a	n/a	10	n/a	n/a	n/a
SA Score	176	10	70	186	156	190	112	183	169	178	161	130	150	174	56
LE	95	87	100	93	88	91	76	100	97	100	97	81	89	89	96
LESA Score	271	97	170	279	244	281	188	283	266	278	258	211	239	263	152

Assumption:

**BPF is defined as all AVG 1, 2, 3, or 4 soils, or any combination of soils with a minimum of 20% AVG 1, 2, 3, or 4 soils**  
(also assumed: a site with an LE > 94 is designated as BPF)

	TS 1	TS 2	TS 4	TS 7	TS 8	TS 10	TS 11	TS 13	TS 14	TS 16	TS 17	TS A	TS B	TS C	TS D
SA Factor															
2a	30	0	30	30	30	30	0	30	30	30	30	0	30	30	30
2b	10	n/a	10	10	0	10	n/a	10	0	10	0	n/a	0	10	0
2c	n/a	0	n/a	n/a	0	n/a	0	n/a	n/a	n/a	n/a	10	n/a	n/a	n/a
SA Score	176	10	70	186	156	190	112	183	169	178	161	130	150	174	56
LE	95	87	100	93	88	91	76	100	97	100	97	81	89	89	96
LESA Score	271	97	170	279	244	281	188	283	266	278	258	211	239	263	152



### County Soils outside of CUGA and Incorporated Areas

- AVG 1 and 2
- AVG 3
- AVG 4
- AVG 5-17
- AVG 18 (n/a)
- Incorporated Areas
- CUGA\_2012

AVG = Agriculture Value Group

62.0 % of soils are in AVG 1 & 2 (LE = 100)  
 69.4 % of soils are in AVG 1, 2 and 3 (LE = 94 or Greater)  
 76.2 % of soils are in AVG 1, 2, 3, and 4 (LE = 91 or Greater)  
 23.3 % of soils are in AVG 5 thru 17 (LE = 88 thru 50)  
 0.4 % soils are n/a (in AVG 18)

Map Preparation Date: 2/13/2012



Acronyms:

- AVG Agriculture Value Group
- BPF Best Prime Farmland
- LE Land Evaluation

**BPF Definition: all AVG 1 or 2 soils, or any combination of soils with a minimum \_\_\_ % of AVG 1 or 2 soils**

total acres of Non-BPF		acres of BPF at risk of not being protected when combined with non-BPF <sup>1,2</sup>	maximum total acres of non-BPF and BPF at risk of not being protected
211,677	@ 10% of any site:	23,520	235,197
	@ 15% of any site:	37,355	249,032
	@ 20% of any site:	52,919	264,596
	@ 25% of any site:	70,559	282,236
	@ 30% of any site:	90,719	302,396
	@ 35% of any site:	113,980	325,657
	@ 40% of any site:	141,118	352,795

Notes:

1. The calculation to estimate acres of BPF at risk is the same type of calculation used in the Attachment B table entitled *Comparison of At Risk Amounts of LE = 100 Soil under different BPF Definitions* dated 12/28/2011. (See the following page for details regarding the calculation.)

**BPF Definition: all AVG 1, 2 or 3 soils, or any combination of soils with a minimum \_\_\_ % of AVG 1, 2, or 3 soils**

total acres of Non-BPF		acres of BPF at risk of not being protected when combined with non-BPF <sup>1,2</sup>	maximum total of non-BPF and BPF at risk of not being protected
170,387	@ 10% of any site:	18,932	189,319
	@ 15% of any site:	30,068	200,455
	@ 20% of any site:	42,597	212,984
	@ 25% of any site:	56,796	227,183
	@ 30% of any site:	73,023	243,410
	@ 35% of any site:	91,747	262,134
	@ 40% of any site:	113,591	283,978

2.

The 'at risk' BPF could be any one of the various AVG soils included in the BPF definition.

**OUTSIDE CUGA & INC.**

**BPF Definition: all AVG 1, 2, 3, or 4 soils, or any combination of soils with a minimum \_\_\_ % of AVG 1, 2, 3, or 4 soils**

total acres of Non-BPF		acres of BPF at risk of not being protected when combined with non-BPF <sup>1,2</sup>	maximum total of non-BPF and BPF at risk of not being protected
132,375	@ 10% of any site:	14,708	147,083
	@ 15% of any site:	23,360	155,735
	@ 20% of any site:	33,094	165,469
	@ 25% of any site:	44,125	176,500
	@ 30% of any site:	56,732	189,107
	@ 35% of any site:	71,279	203,654
	@ 40% of any site:	88,250	220,625

**Calculation Explanation**

Equation used to identify 'x', where 'x' is the unknown acres of BPF 'at risk' of being not counted as BPF when occurring in combination with non-BPF soils on a county-wide aggregate basis.

$$\frac{x}{\text{total acres of non-BPF}} = \frac{\text{proportion of aggregate consisting of BPF}}{\text{proportion of aggregate consisting of non-BPF}}$$

**Example: Assume BPF is defined as AVG 1 or 2 soils, or any combination of soils with a minimum 20% of AVG 1 or 2 soils.**

The total acres of BPF soils (consisting of AVG 1 or 2) countywide is: 394,127 acres.

The total acres of non-BPF soils (consisting of all other AVG soils) countywide is: 237,101 acres.

The following calculation is intended to represent the hypothetical aggregate amount of BPF soils that would be at risk of not being identified as BPF when occurring in combination with non-BPF soils.

$$\frac{x}{237,101} = \frac{.20}{.80}$$

$$x (.80) = 237,101 (.20)$$

$$x = 59,275$$



Suggested Text for Best Prime Farmland Definition Recommendation

Best Prime Farmland is Prime Farmland soils that under optimum management have **{x% to 100%}** of the highest soil productivities in Champaign County, as reported in the *Bulletin 811 Optimum Crop Productivity Ratings for Illinois Soils*. Best Prime Farmland consists of:

- a) soils identified as Agriculture Value Groups 1, 2 **{and 3 / 3, and 4}** in the Champaign County Land Evaluation and Site Assessment (LESA) System;
- b) soils that, in combination on a subject site, have an average LE of x or higher, as determined by the Champaign County LESA System; or
- c) any development site that includes a significant amount **x%** or more of the area proposed to be developed) of Agriculture Value Groups 1, 2, **{and 3 / 3, and 4}** soils.