

Use of the Land Evaluation and Site Assessment (LESA) System for Potential Farmland Protection Program Easement Lands

This procedure is a modified LESA evaluation system for farms that are being considered for the Farmland and Ranchland Protection Program (FRPP) funding. The system is different from what's used when completing the Farmland Conversion Impact Rating form (AD1006).

The Land Evaluation (LE) portion of the calculation will take soil productivity, capability class, and (forest tree) site index into account. The highest potential score for the LE portion of LESA is 80 points.

In doing the LE portion of the LESA calculation, you'll need to reference Land Capability Classes, Yield (corn) per Acre information, and the Forest Productivity/Site Index information for your county. The references are available on-line.

Before you begin your LESA calculations, inventory all the soil-mapping units on the parcel and note the acres in each unit. The LE portion of the evaluation system will require two tabulations.

For the capability class portion; class 1 (I) soils will earn 40 points, class 2 (II) soils will earn 30 points, class 3 (III) soils will earn 20 points, and class 4 (IV) soils will earn 10 points¹. Class 5, 6, and 7 soils won't earn any points.

Soil productivity for all the soil mapping units will be based on either corn yield (bushels per acre) or the highest site index for the soil mapping unit. Each mapping unit that has a corn yield will be compared with the highest yielding mapping unit in the county. Soil mapping units that lack a corn yield will be evaluated on a (forest productivity) site index basis. The highest listed site index for the soil mapping unit will be compared with the highest listed site index for the county. For both corn yield and site index, the highest yielding soil mapping unit in the county will be valued at 40.

¹ In some of the older soil surveys, some "C" slopes, in a severely eroded state, are classified as Class 4 soils. Consult with your resource soil scientist if a review of the soils finds this situation on the parcel you evaluate.

EXAMPLES

Example # 1 of how to calculate a Land Evaluation (LE) score - The example farm will be a 200-acre farm in Kent County, Maryland. The maximum corn yield in Kent County is 140 bushels per acre. The maximum site index is 105.

An inventory of the soil-mapping units finds the following units along with the acres of each.

Map Symbol	Name of Soil	Acres	Yield (non-irrigated corn) Or SI	Capability Unit
MnA	Matapeake	20	140 (Y)	1 (I)
MnB	Matapeake	53	140 (Y)	2E (IIe)
MnC3	Matapeake	7	110 (Y)	3E (IIIe)
MtA	Mattapex	34	135 (Y)	2W (IIw)
MtC2	Mattapex	12	130 (Y)	3E (IIIe)
Bs	Bibb	32	100 (SI)	5W (Vw)
Fh	Fallsington	42	70 (Y)	4W (IVw)
Total		200		

To calculate the soil productivity of the individual mapping units:

- Put the soil's yield or highest SI as the numerator and the highest yield or SI for the county as the denominator
- Multiply that value by 40 and by the # of acres of that mapping unit
- Do it for each of the mapping units, add all points for each of the mapping units
- Divide the total by the total number of acres in the parcel

$[Yield/Maximum\ County\ Yield\ or\ Unit's\ Highest\ SI/Highest\ SI\ for\ County] \times [40(Total\ Points)] \times (Acre(s)) = Pts.\ per\ map\ unit$

Mna	$140/140 \times 40 \times 20 =$	800
MnB	$140/140 \times 40 \times 53 =$	2,120
MnC3	$110/140 \times 40 \times 7 =$	220
MtA	$135/140 \times 40 \times 34 =$	1,311
MtC2	$130/140 \times 40 \times 12 =$	446
Bs	$100/105 \times 40 \times 32 =$	1,219
Fh	$70/140 \times 40 \times 42 =$	<u>840</u>
Total		$6,956 / 200 = 34.8$

To calculate the capability class score - Attribute 40 points to class 1, 30 points to class 2, 20 points to class 3, and 10 points for class 4. If a soil mapping unit has a land capability class of 5, 6, 7, or 8 it won't earn any points in the following table.

Mapping Unit	Capability Class	Acres	Calculation	
Mna	1	20	$40 \times 20 =$	800
MnB	2	53	$30 \times 53 =$	1,590
MnC3	3	7	$20 \times 7 =$	140
MtA	2	34	$30 \times 34 =$	1,020
MtC2	3	12	$20 \times 12 =$	240
Bs	5	32	$0 \times 32 =$	0
Fh	4	42	$10 \times 42 =$	<u>420</u>
Total		200		$4,210 / 200 = 21.1$

The total LE score for this parcel is $34.8 + 21.1 = 55.9$ (of a possible 80)

Example # 2 of how to calculate a Land Evaluation (LE) score on a 200-acre farm in Washington County, Maryland

Map Unit Inventory:

Mapping Unit	Soil Series	Acres	Yield (Y)	Site Index (SI)	Capability Unit
BaD	Bagtown STX	20		85	7s
DeC	DeKalb-RO	20		50	6s
HaA	Hagerstown	35	135	95	1
HaB	Hagerstown	35	35	95	2e
HaD	Hagerstown	20	125	95	4e
HcB	Hagerstown-RO	30		95	6s
MsB	Murrill	40	120	95	2e
Total		200			

Map Unit	Capability Class	Acres	Calculation
BaD	7s	20	0 x 20 = 0
DeC	6s	20	0 x 20 = 0
HaA	1	35	40 x 35 = 1,400
HaB	2e	35	30 x 35 = 1,050
HaD	4e	20	10 x 20 = 200
HcB	6s	30	0 x 30 = 0
MsB	2e	40	30 x 40 = 1,200
Totals		200	3,850/200 = 19.2

Soil Productivity based on corn yield for Capability Classes I-IV and Site Index for Capability Classes V, VI, and VII

Map Unit	Prod. Index	Acres	Pts.
BaD	85/105 (SI) x 40	20	648
DeC	50/105 (SI) x 40	20	381
HaA	135/140 (Y) x 40	35	1,350
HaB	135/140 (Y) x 40	35	1,350
HaD	125/140 (Y) x 40	20	714
HcB	95/105 (SI) x 40	30	1,086
MsB	120/140 (Y) x 40	40	1,371
			6,900/200 = 34.5

Soil Productivity part of LE = 34.5

LE for parcel = 34.5 + 19.2 = 53.7

The Site Assessment portion is a modified version of the one used on the AD 1006. In doing the Site Assessment (SA) portion of LESA, a modified version of the questions asked on the AD 1006 will be used. The highest potential score is 110 points. There are eight questions (although you are to respond to either #4 or #5, not both). They are as follows:

1) How much land is in non-urban use² within a radius of 1.0 mile from where the easement acquisition is intended?

- More than 90 percent – 15 Points
- 90 to 20 percent – 14 to 1 point(s)
- Less than 20 percent – 0 points

2) How much of the site is being farmed (managed for a scheduled harvest) or managed as woodland with a forest management plan that emphasizes wood product production?

- More than 90 percent – 20 points
- 90 to 20 percent – 19 to 1 point(s)
- Less than 20 percent – 0 points

3) State and county policies have always emphasized the need to preserve large blocks of farmland for the continuance of agricultural operations. The points credited for proximity to permanent easements will carry three times the weight of points credited for Districts. The size of the applicant farm is given credit by including it in the easement acreage. Total points earned cannot exceed twenty-five (25).

- Easements - The combined total acreage of the applicant property and all properties subject to an easement to the Maryland Agricultural Land Preservation Foundation, the Maryland Environmental Trust, or other easement(s) with similar restrictions, which are located within one-half (1/2) of one mile of any boundary of applicant's property will be calculated. The applicant will receive one (1) point for each fifty acres, or portion of 50 acres of the total acres calculated in this subsection. Take credit for the total acreage of the easements within the ½ mile zone, even if a portion of the easement falls outside the ½ mile zone.
- Districts - The total acreage of all non-easement properties subject to a district Agreement with the MALPF which are located within one-half (1/2) of one mile of any boundary of the applicant's property will be calculated. The applicant will receive one (1) point for each 150 acres, or portion of the total acres calculated in this subsection. Take credit for the total acreage of the districts within the ½ mile zone, even if a portion of the district falls outside the ½ mile zone.

4) *If your score for # 3 exceeded 20 points and the "edge" of the urban-built-up area represents a boundary between an urban built-up area and a large extent of permanently protected agricultural land, take the following points, as appropriate:*

- The site is adjacent to an urban built-up area – 15 points
- The site is less than 1 mile from, but is not adjacent to an urban built-up area – 10 points
- The site is more than 1 mile from an urban built-up area – 5 points

² Non-urban use are those areas lacking the following characteristics:

- Having a density of more than 30 structures per 40 acres
- Lands identified as urbanized area"(UA) on the Census Bureau map
- Areas mapped with a "tint overprint" on the USGS topographical map

5) *If you didn't qualify to answer # 4* - How close is the proposed easement site (site) to an urban built-up area?

- The site is 2 miles or more from an urban built-up area – 15 points
- The site is more than 1 mile but less than 2 miles from an urban built-up area – 10 points
- The site is less than 1 mile from, but is not adjacent to an urban built-up area – 5 points
- The site is adjacent to an urban built-up area – 0 points

6) Is the proposed easement site as large as the average sized farming unit within the county? (Data are from the latest available Census of Agriculture, acreage of farm units in operation with \$1,000 or more in sales).

- As large or larger – 10 points
- Below average – deduct one point for each 5% below the average, down to 0 points if 50 percent or more below average – 9 to 0 points

7) Does the proposed easement site (site) have available an adequate supply of farm support services and markets (i.e. farm suppliers, equipment dealers, processing and storage facilities and farmer's markets)?

- All required services are available – 5 points
- Some required services are available – 4 to 1 point(s)
- No required services are available – 0 points

8) What is the relationship between the easement grantor, the farmland, and the extent of conservation planning and conservation practice installation?

- The grantor farms the easement area. The conservation plan is current and all required practices are installed and maintained. – 20 points
- The grantor farms the easement area. The conservation plan is current but not all required practices are installed. Practices are scheduled to be completed within five years. – 15 points
- The grantor does not farm the easement area but others, either on a lease, annual rent, or share basis are doing active farming. The conservation plan is current and all required practices are installed and maintained. – 15 points
- The grantor does not farm the easement area but active farming is being done by others, either on a lease, annual rent, or share basis. The conservation plan is current but not all required practices are installed. Practices are scheduled to be completed within five years. – 10 points
- No active farming (i.e. no active cropland, hayland, or pastureland) is occurring on the parcel. The woodland, if any, is not being managed for forest product production. – 5 points

An example of the SA portion of LESA follows. Only the 200-acre site in Kent County will be used.

1) How much land is in non-urban use within a radius of 1.0 mile from where the easement acquisition is intended?

- More than 90 percent – 15 Points
- 90 to 20 percent – 14 to 1 point(s)
- Less than 20 percent – 0 points

The farm lies about 4 miles northeast of Chestertown. The area is rural. More than 90% of the land within 1 mile of the parcel is undeveloped. 15 Points

2) How much of the site is being farmed (managed for a scheduled harvest) or managed as woodland with a forest management plan that emphasizes wood product production?

- More than 90 percent – 20 points
- 90 to 20 percent – 19 to 1 point(s)
- Less than 20 percent – 0 points

About 25% of the land is not tilled and is wooded. The woodland area was harvested 12 years ago and the forest area is not currently under a forest management plan and it is not being managed for timber. – 15 Points

Percent Farmed or Managed Point Allocation

89.5%+ 20 points	71.5%-75.0% 15 points	53.5%-57.0% 10 points	35.5%-39.0% 5 points
85.9%-89.4% 19 points	67.9%-71.4% 14 points	49.9%-53.4% 9 points	31.9%-35.4% 4 points
82.3%-85.8% 18 points	64.3%-67.8% 13 points	46.3%-49.8% 8 points	28.3%-31.8% 3 points
78.7%-82.2% 17 points	60.7%-64.2% 12 points	42.7%-46.2% 7 points	24.7%-28.2% 2 points
75.1%-78.6% 16 points	57.1%-60.6% 11 points	39.1%-42.6% 6 points	19.6%-24.6% 1 point

3) State and county policies have always emphasized the need to preserve large blocks of farmland for the continuance of agricultural operations. The points credited for proximity to permanent easements will carry three times the weight of points credited for Districts. The size of the applicant farm is given credit by including it in the easement acreage. Total points earned cannot exceed twenty-five (25).

- Easements - The combined total acreage of the applicant property and all properties subject to an easement to the Maryland Agricultural Land Preservation Foundation, the Maryland Environmental Trust, or other easement(s) with similar restrictions, which are located within one-half (1/2) of one mile of any boundary of applicant's property will be calculated. The applicant will receive one (1) point for each fifty acres, or portion of 50 acres of the total acres calculated in this subsection. Take credit for the total acreage of the easements within the 1/2 mile zone, even if a portion of the easement falls outside the 1/2 mile zone.
- Districts - The total acreage of all non-easement properties subject to a district Agreement with the MALPF which are located within one-half (1/2) of one mile of any boundary of the applicant's property will be calculated. The applicant will receive one (1) point for each 150 acres, or portion of the total acres calculated in this subsection. Take credit for the total acreage of the districts within the 1/2 mile zone, even if a portion of the district falls outside the 1/2 mile zone.

The proposed 200-acre easement earns 4 points. Within 1/2 mile of the proposed easement edge, there are 2 MALPF easements of 176 and 220 acres. An additional 4 points and 5 points are earned. One property of 420 acres has an agricultural district designation and it earns 3 points. The total points earned equal 16.

4) If your score for # 3 exceeded 20 points and the "edge" of the urban-built-up area represents a boundary between an urban built-up area and a large extent of permanently protected agricultural land, take the following points as appropriate:

- The site is adjacent to an urban built-up area – 15 points
- The site is less than 1 mile from, but is not adjacent to an urban built-up area – 10 points
- The site is more than 1 mile from an urban built-up area – 5 points

With 16 points, this calculation is not used.

5) If you didn't qualify to answer # 4 - How close is the proposed easement site (site) to an urban built-up area?

- The site is 2 miles or more from an urban built-up area – 15 points
- The site is more than 1 mile but less than 2 miles from an urban built-up area – 10 points
- The site is less than 1 mile from, but is not adjacent to an urban built-up area – 5 points
- The site is adjacent to an urban built-up area – 0 points

The site is more than 2 miles from the urban built-up area. – 15 Points

6) Is the proposed easement site (site) as large as the average the average sized farming unit within the county? (Data are from the latest available Census of Agriculture, acreage of farm units in operation with \$1,000 or more in sales).

- As large or larger – 10 points
- Below average – deduct one point for each 5% below the average, down to 0 points if 50 percent or more below average – 9 to 0 points

The average farm size in Kent County is 374 acres (1997 Census of Agriculture). This farm's size is 200 acres. – [200 / 374 = 0.53 (53%)] – 1 Point

Percent Range and Point Reduction Table

96-100+%	91-95%	86-90%	81-85%	76-80%	71-75%	66-70%	61-65%	56-60%	51-55%
10	9	8	7	6	5	4	3	2	1

7) Does the proposed easement site (site) have available an adequate supply of farm support services and markets (i.e. farm suppliers, equipment dealers, processing and storage facilities and farmer's markets)?

- All required services are available – 5 points
- Some required services are available – 4 to 1 point(s)
- No required services are available – 0 points

The farm operator has all the farm support services and markets within the county. – 5 Points

8) What is the relationship between the easement grantor, the farmland, and the extent of conservation planning and conservation practice installation?

- The grantor farms the easement area. The conservation plan is current and all required practices are installed and maintained. – 20 points
- The grantor farms the easement area. The conservation plan is current but not all required practices are installed. Practices are scheduled to be completed within five years. – 15 points
- The grantor does not farm the easement area but others, either on a lease, annual rent, or share basis are doing active farming. The conservation plan is current and all required practices are installed and maintained. – 15 points
- The grantor does not farm the easement area but others, either on a lease, annual rent, or share basis are doing active farming. The conservation plan is current but not all required practices are installed. Practices are scheduled to be completed within five years. – 10 points
- No active farming (i.e. no active cropland, hayland, or pastureland nor woodland under management for forest product production) is occurring on the parcel. – 5 points

The farming is done by an operator who isn't the grantor. The farm has an up-to-date conservation plan and all required practices and systems are installed and maintained. – 15 Points

SA Score – $15 + 15 + 16 + 0 + 15 + 1 + 5 + 15 = 82$ (of a possible 110 points)

LESA Ranking of the Site – $55.9 + 82 = 137.9$ (of a possible 190 points) Enter this total into the ranking spreadsheet.

Questions/Comments - Contact:

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