

CASE NO. 710-AT-12

SUPPLEMENTAL MEMORANDUM
June 14, 2012

Champaign
County
Department of

PLANNING &
ZONING

Petitioner: **Zoning Administrator**

Prepared by: **John Hall**, Zoning Administrator
Andrew Kass, Associate Planner

Request: **Amend the Champaign County Zoning Ordinance by amending the Champaign County Land Evaluation and Site Assessment (LESA) System that is referred to in Section 3; and Footnote 13 in Section 5.3; and subsection 5.4, as follows* :**

Part A. Revise the Land Evaluation (LE) part as follows:

1. **Revise all soil information to match the corresponding information in the *Soil Survey of Champaign County, Illinois* 2003 edition.**
2. **Revise all existing soil productivity information and replace with information from *Bulletin 811 Optimum Crop Productivity Ratings for Illinois Soils* updated January 15, 2011, by the University of Illinois College of Agricultural, Consumer and Environmental Sciences Office of Research.**
3. **Delete the 9 existing Agriculture Value Groups and existing Relative Values ranging from 100 to 0 and add 18 Agriculture Value Groups with Relative LE ranging from 100 to 0.**

Part B. Revise the Site Assessment (SA) part as follows:

1. **Add definitions for "agriculture"; "agricultural production"; "animal units"; "best prime farmland"; "farm dwelling"; "livestock management facility"; "non-farm dwelling"; "principal use"; and "subject site".**
2. **Delete SA Factors A.2.; A.3.; B.2.; B.3.; C.2; D.2.; D.3.; E.1.; E.2.; E.3.; E.4.; F.1.; F.2.; F.3.; F.4.; and F.5.**
3. **Revise SA Factor A.1. to be new Factor 8. ; Factor B.1. to be new Factor 7.; Factor C.1. to be new Factor 5.; Factor D.1. to be new Factor 1.; and revise scoring guidance for each revised Factor, as described in the legal advertisement.**
4. **Add new SA Factors 2a; 2b; 2c; 3; 4; 6; 9; 10; and add scoring guidance for each new Factor, as described in the legal advertisement.**

Part C. Revise the Ratings for Protection, as described in the legal advertisement.

Part D. Revise the general text and reformat.

*** NOTE: the description of the Request has been simplified from the actual legal advertisement. See the attached legal advertisement**

STATUS

This is the first public hearing for this case. Two more documents from the LESA Update Committee are provided for review and Draft evidence is proposed for the Finding of Fact.

Case 710-AT-12
Supplemental Memorandum
June 14, 2012

ATTACHMENTS (*= attachments available on the County website)

- A Description of Case from Legal Advertisement
- *B Memorandum to LESA Update Committee dated 10/04/11(only includes Attachment B)
- *C LE Calculation Recommendation to LESA Update Committee by Kevin Donoho dated 10/26/11
- D Draft Evidence Regarding the Recommended Update to Land Evaluation Factors

Attachment A. Case Description from Legal Advertisement

Case 710-AT-12

JUNE 8, 2012

Amend the Champaign County Zoning Ordinance by amending the Champaign County Land Evaluation and Site Assessment (LESA) System that is referred to in Section 3; and Footnote 13 in Section 5.3; and subsection 5.4, as follows:

Part A. Revise the Land Evaluation (LE) part as follows:

1. Revise the existing soil map symbols; soil series names; slope; acreage and proportionate extent; land capability classification; and farmland classification to match the corresponding information in the *Soil Survey of Champaign County, Illinois* 2003 edition.
2. Delete the existing Productivity Index Local and add Adjusted Soil Productivity Index based on the Crop productivity index for optimum management that is published in *Bulletin 811 Optimum Crop Productivity Ratings for Illinois Soils* updated January 15, 2011, by the University of Illinois College of Agricultural, Consumer and Environmental Sciences Office of Research.
3. Delete the 9 existing Agriculture Value Groups and existing Relative Values ranging from 100 to 0 and add 18 Agriculture Value Groups with Relative LE ranging from 100 to 0.

Part B. Revise the Site Assessment (SA) part as follows:

1. Add definitions for “agriculture”; “agricultural production”; “animal units”; “best prime farmland”; “farm dwelling”; “livestock management facility”; “non-farm dwelling”; “principal use”; and “subject site”.
2. Delete SA Factors A.3.; B.2.; B.3.; D.2.; D.3.; E.1.; E.2.; E.3.; E.4.; F.1.; F.2.; F.3.; F.4.; and F.5.
3. Revise SA Factor A.1. by renumbering to SA Factor 8; and changing 1.5 miles to 1.0 mile; and changing “in agricultural uses” to “with a principal use of agriculture”; and for a subject site that is Best Prime Farmland or at least 51% Prime Farmland limit the consideration to parcels and land use that existed on April 12, 2011; and increase the total points from 18 to 20; and change the assignment of points to 2 points for each 10% change from 0 to 100%; and add scoring guidance.
4. Delete SA Factor A.2. “Land Use Adjacent to Site” and replace with SA Factor 4. “Amount of the perimeter of a subject site that is adjacent to parcels with a principal use of agriculture”; and for a subject site that is Best Prime Farmland or at least 51% Prime Farmland limit the consideration to parcels and land use that existed on April 12, 2011; and increase the total points from 18 to 20; ; and change the assignment of points to 2 points for each 10% change from 0 to 100%; and add scoring guidance.
5. Revise SA Factor B.1. by renumbering to SA Factor 7; and by changing 1.5 miles to 1.0 mile; and change the assignment of points to 1 point for each 10% change from 0 to 100%; and add scoring guidance.
6. Revise SA Factor C.1. by renumbering to SA Factor 5; and increase the total points from 10 to 15; and by changing the assignment of points; and add scoring guidance.

Attachment A. Case Description from Legal Advertisement

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7. **Revise SA Factor D.1. by renumbering to SA Factor 1; and increase the total points from 8 to 10; and reduce the largest site from 100 acres to 25 acres; and change the assignment of points; and add scoring guidance.**
 8. **Add SA Factor 2a “Is the subject site Best Prime Farmland?” and assign 30 points if “yes ; and add scoring guidance.**
 9. **Add SA Factor 2b to assess for a subject site that is Best Prime Farmland, if the subject site is more than 15% of a larger parcel that existed on January 1, 2004, or if the subject site is 25 acres or more in area; and assign 10 points if “yes” ; and add scoring guidance.**
 10. **Add SA Factor 2c to assess if the subject site is not Best Prime Farmland but is at least 51% Prime Farmland; and if the subject site is larger than 25 acres or if the subject site is part of a larger parcel that existed on April 11, 2011, with a total area for the subject site and all other portions of the larger parcel converted to non-agricultural use, of more than 25 acres; and assign 10 points if “yes” ; and add scoring guidance.**
 11. **Add SA Factor 3 to assess if the subject site is located within the Contiguous Urban Growth Area identified in the Champaign County Land Resource Management Plan; and assign 40 points if “no” ; and if “yes” skip the remaining SA Factors and indicate a total SA score for only SA Factors 1,2, and 3; and add scoring guidance.**
 - *12. **Add new SA Factor 6 to assess the highest percentage of the subject site in agricultural production in any of the last 5 years; and assign 15 points for 80% or more and fewer points for a lesser amount; and add scoring guidance.**
 - *13. **Add new SA Factor 9 to assess the distance from the subject site to the nearest 10 non-farm dwellings and assign 20 points if more than a mile and fewer points if less than a mile; and add scoring guidance.**
 - *14. **Add new SA Factor 10 to assess the distance from the subject site to the nearest known livestock management facility of 400 or more animal units and assign 10 points if adjacent and fewer points if there is more distance; or, if more than a mile, assess the distance to the nearest known facility with 200 to 399 animal units and assign 7 points if adjacent and fewer points if there is more distance; or, if more than a mile, assess the distance to the nearest known facility of 50 to 199 animal units, and assign 4 points if adjacent and fewer points if there is more distance and 0 points if more than a mile distant; and add scoring guidance.**
 - *15. **Delete existing SA Factor C.2.**

Part C Revise the Ratings for Protection as follows:

1. **Change the scoring range for a low rating for protection from “179 or below” to “150 or below”.**
2. **Change the scoring range for a moderate rating for protection from “180 to 199” to “151 to 225”.**
3. **Change the scoring range for a high rating for protection from “200 to 219” to “226 to 250”.**

Attachment A. Case Description from Legal Advertisement

Case 710-AT-12

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- 4. Change the scoring range for a very high rating for protection from “220 to 300” to “251 to 300”.**

***Part D. Revise the general text and reformat.**

***These parts were added in a second legal advertisement**

Date: October 4, 2011
To: LESA Update Committee
From: Susan Monte, Committee Facilitator
Regarding: Land Evaluation Update

Soil Productivity Index Used by the Champaign County Assessor

Committee members requested to consider the option of using the same soil productivity index used by the Champaign County Assessor Office (CCAO) for farmland assessment. The CCAO uses the Soil Productivity Index from Bulletin 810. Attachment A describes the CCAO farmland assessment process.

Differences between Soil Productivity Indices of Bulletin 810 and Bulletin 811

K.R. Olson, (one of the Bulletin 810 and Bulletin 811 authors) summarized the differences between Bulletin 810 and Bulletin 811 Soil Productivity Indices (PI's) as follows:

"Almost all of the optimum management PI's and crop yields shown in Bulletin 811 are 13% higher than the ones for average management in Bulletin 810.

The values in Bulletin 810 represent the 10-year average crop yields for a soil with 50% of the farmers in the state with that soil getting higher crop yields and 50% lower crop yields. Tax assessors use these values. (underline added for emphasis)

The crop yields in Bulletin 811 is the 10-year average crop yields that the top 16% of farmers get (which is one standard deviation above the mean value) with the other 84% getting lower yields. Land appraisers, real estate agents and some regulatory agencies use these values." (underline added for emphasis)

Dr. Olson clarified that soils productivity data for both Bulletin 810 and 811 are updated periodically and not annually. Soils productivity data for both Bulletins was recently amended in 2010 and published in January, 2011, to indicate crop yields that reflect year 2000 – 2009 growing conditions. Attachment B is a comparison of the 'goals' of average management levels and optimum management levels (based on Bulletins 810 and 811 data published in 2000).

Land Evaluation Update Options

This memorandum provides two additional Land Evaluation update options for Committee review:

- 1) Relative Values for Champaign County soils based on the Bulletin 810 Soil Productivity Index
- 2) Relative Values for Champaign County soils based on the Bulletin 811 Soil Productivity Index

Attachment C contains the worksheet with the conversion of the Soil Productivity Index to Relative Values based on a 0 – 100 scale, and proposed 'Agricultural Value Groups' for each option.

Land Evaluation Update Options (continued)

Earlier options (Versions A and Version B) provided for Committee review include:

- 3) 'Version A' Relative Values for Champaign County soils based on:
 - Slope;
 - Farmland Classification; and
 - Bulletin 811 Soil Productivity Index

- 4) 'Version B' Relative Values for Champaign County soils based on:
 - Land Capability Classification;
 - Farmland Classification; and
 - Bulletin 811 Soil Productivity Index

Attachment D further describes the data used in each of the above options.

Attachment E indicates the LE score for each option as applied to the four previous hypothetical test sites.

Attachment F compares the proposed 'Agricultural Value Groups' based on the Relative Values in each option.

Selecting an LE Option

The Committee needs to select a Land Evaluation update option. Some points to consider are:

- LE Option 1 uses the same Bulletin 810 Soils Productivity Index that the CCAO uses.
- Either LE Option 1 or 2 would be simpler to apply, with fewer inputs and less potential redundancy than LE Options 3 or 4.

In the separate memo regarding updating SA Factors, staff will suggest that the Committee consider two related variables used by the CCAO in farmland assessment: 'Property Code' and 'Land Use Type' as the basis for an additional Site Assessment Factor in the SA portion of updated LESA.

Attachments

- A Adjusted Soil Productivity Index Used by CCAO and CCAO Farmland Assessment Process
- B Comparison of Goals of Average and Optimum Management Levels
- C Options 1 and 2 Worksheets
- D Description of Data Used in Each LE Option
- E LE Score for Each Option Applied to Test Sites
- F Comparing the LE Options

Comparison of Goals of Average (Bulletin 810) and Optimum (Bulletin 811) Management Levels

Management Factor	Bulletin 810 Average Management¹	Bulletin 811 Optimum Management²
Drainage	sufficient	parallel or herringbone pattern with closer than recommended spacing and adequate outlets
Soil pH	5.8 to 6.2 for grain; 6.0 to 6.9 for alfalfa and clover	at or above 6.2 for grain; at or above 6.9 for alfalfa and clover
Available phosphorus (P-1 test)	based on soil test and depending on yield goal, 40-50 pounds per acre	based on soil test and depending on yield goal, at or above 50 pounds per acre
Available potassium	based on soil test and depending on yield goal, 240-300 pounds per acre	based on soil test and depending on yield goal, at or above 300 pounds per acre
Nitrogen rates per year for corn (or legume equivalent)	based on soil test and depending on yield goal, 90-175 pounds per acre	based on soil test and depending on yield goal, at or above 175 pounds per acre
Plant population (corn)	plant population (corn) 22,000 to 30,000 plants per acre	at or above 30,000 plants per acre
Crop residues	returned to soil	returned to soil with additional organic materials added as needed
Weed and insect control	timely	timely, using an integrated pest management approach
Tillage, planting operations	moldboard plow or conservation tillage <2% slopes; conservation tillage including no-tillage for 2% to 10% slopes	moldboard plow or conservation tillage <2% slopes; conservation tillage including no-tillage for 2% to 10% slopes
Soil erosion	Within soil tolerances using conservation practices as needed	reduced to below soil tolerances using conservation practices as required

Notes:

1. as defined in Table 1, Goals of Average Management Level, Bulletin 810, published 2000.
2. as defined in Table S1, Goals of Optimum Management Level, Bulletin 811, published 2000.

LE Calculation Recommendation to LESA Update Committee

By: Kevin Donoho

District Conservationist – USDA-NRCS – Champaign Field Office

(2011 LESA Update Committee Member)

Whereas: Champaign County is one of the most progressive agricultural counties in Illinois

Whereas: Bulletin 811 (Aug. 2000) was developed for “Optimum Crop Productivity” ratings for Illinois Soils.

Whereas: Over 60% of Champaign County is comprised of Prime Farmland with a proposed ag value in the HIGHEST CATEGORY (Ag Value Group 1) with both Bulletin 810 and Bulletin 811

Whereas: Champaign County ranks 6th in Illinois corn production (NASS Data 2007 county averages)

Whereas: The best of the best soils in Champaign County, (Drummer) comprise nearly 40% of the entire land area (254,484 acres)

Whereas: Drummer composes such a large portion of the county all on its own, that it should be given special attention and importance in the LE process.

Whereas: More detailed soils information is available and accessible with the use of current technology, that a more “fine tuned” approach to arriving at an LE score should be enlisted.

Whereas: Certain soils by their very location on the landscape, lend themselves to high productivity in normal to dryer years, but are flooded or very wet all other times during the growing season, should remain in Ag Land / Production. (For example, Sawmill 3107A doesn’t need to be weighted additionally through the LE process, in “Ag Group 1”, to protect it from development.)

Whereas: This document is intended to provide a basis for favoring 1 (one) “Option” over all other options, under review by the LESA Update Committee.

Whereas: Current information available for determining the relative LE is still being discussed and contemplated by this LESA Update Committee, I respectfully submit that my preference of LE options is “Option 4”

Whereas: An LE system which includes the ability to evaluate 3 soils classification systems simultaneously, including Bulletin 811, Land Capability Classification and Farmland Classification can provide the most comprehensive assessment of LE when completed, while remaining simple once developed/implemented.

Therefore be it proposed that: The LESA Update Committee should consider the above and all previously discussed items, materials, documents, data and information, for the purpose of adopting a mechanism by which to calculate the “LE” portion of the new LESA system in Champaign County.

October 26, 2011

Attachment D. Draft Evidence Regarding the Recommended Update to Land Evaluation Factors

Case 710-AT-12

JUNE 14, 2012

No Draft Finding of Fact has yet been prepared. The following evidence summarizes the most salient information regarding the proposed update of Land Evaluation Factors:

1. Regarding the proposed update to the Land Evaluation Factors:
 - a. *Land Evaluation and Site Assessment: A Guidebook for Rating Agricultural Lands, Second Edition* (referred to as *LESA Guidebook*) is the most recent available guidance for establishing a LESA system. Regarding guidance for establishing LE Factors:
 - (1) Chapter 4 of the *LESA Guidebook* describes four classification systems that may be used to rate soil based qualities which are as follows:
 - (a) The Soil Potential Ratings classification system requires the most information regarding yield potential and management costs. Soil Potential Ratings are not available for Champaign County soils.
 - (b) The other three classification systems are Soil Productivity Ratings; Land Capability Classes; and Important Farmland Classes and all are available for Champaign County soils.
 - b. The Land Evaluation Factors in the existing Champaign County LESA System were classified using Soil Productivity Ratings, Land Capability Classes, and Important Farmland Classes.
 - c. The *Soil Survey of Champaign County, Illinois* 2003 edition, provides current land capability classes (Table 8) and prime farmland (Table 9). (Att. F & G in the Prelim. Memo).
 - d. Regarding soil productivity ratings for Illinois soils:
 - (1) The productivity index in the existing LESA is from *Soil Productivity in Illinois*, Circular 1156, published in 1978 by the University of Illinois Cooperative Extension Service. Circular 1156 is no longer in publication and has been replaced by later bulletins.
 - (2) As explained on the Illinois Department of Revenue website (see Attachment N to the Prelim. Memo.), there are two types of soil productivity index ratings for Illinois soils which are as follows:
 - (a) *Average Crop, Pasture, and Forestry Productivity Ratings for Illinois Soils*, Bulletin 810, August 2000, published by the University of Illinois at Urbana-Champaign College of Agricultural, Consumer, and Environmental Sciences Office of Research. Regarding Bulletin 810:
 - i. Bulletin 810 contains the crop yields and productivity indices for crops under the average level of management used by all Illinois farmers for the 10 year period in the 1990's.

Attachment D. Draft Evidence Regarding the Recommended Update to Land Evaluation Factors

Case 710-AT-12

JUNE 14, 2012

- e. The LESA Update Committee considered four options (alternative soil classification systems) for classifying Land Evaluation factors and those options were reviewed in the 10/04/11 LESA Update Committee memorandum. Attachments I, J, and K to the Preliminary Memorandum for Case 710-AT-11 are the principal documentation of those alternatives. The alternative classification systems were as follows:
- (1) Option 1, using only the Bulletin 810 Soils Productivity Index.
 - (2) Option 2, using only the Bulletin 811 Soils Productivity Index.
 - (3) Option 3, using the Bulletin 811 Soils Productivity Index in addition to Slope classifications and Important Farmland Classifications.
 - (4) Option 4, using the Bulletin 811 Soils Productivity Index in addition to the USDA Land Capability Classifications and Important Farmland Classifications.
- f. At their 11/02/11 meeting the LESA Update Committee reviewed a recommendation by Committee member Kevin Donoho, District Conservationist with the USDA-NRCS Champaign Field Office. Mr. Donoho submitted an LE Calculation Recommendation (see Attachment C to the Supplemental Memorandum for Case 710-AT-12 dated 6/14/12) which can be summarized as follows:
- (1) Mr. Donoho stated his preference for the proposed "Option 4".
 - (2) Mr. Donoho stated that an LE system that includes the ability to evaluate 3 soils classification systems simultaneously, including Bulletin 811, Land Capability Classification, and Farmland Classification, can provide the most comprehensive assessment of LE when completed, while remaining simple once developed and implemented.
 - (3) As reported in the minutes of the 11/02/11 LESA Update Committee meeting Mr. Donoho stated he had consulted with the NRCS area soil scientist with regard to the LE options under review, and that the soil scientist concurred with his recommendation.
- g. The final LE Factors Update recommendation of the LE Update Committee was a Revised Option 4 Proposal 11/15/11 that was a handout at the 11/16/11 LESA Update Committee Meeting. See Attachment O to the Preliminary Memorandum of Case 710-AT-11. The Revised Option 4 was based on the recommendation of Mr. Donoho but included 18 Agriculture Value Groups to ensure that there was not too broad of a range in productivity of soils included in any one AVG.