

# Maggie's Farm

Home to Pampered Sheep - A Handspinner's Flock  
"Where the fiber arts are a way of life."

RECEIVED

JAN 28 2008

City County Planning Office  
Lawrence, Kansas

January 24, 2008

Lawrence & Douglas County Metropolitan Planning Commission  
City Hall  
6 E. 6<sup>th</sup> Street  
Lawrence, KS 66044

RE: Proposed Chapter 15, "Place Making" Horizon 2020 (Draft dated 11/14/07)

Dear Planning Commissioners:

Let me start by introducing myself as a specialty crop and wool producer. I have been fortunate to live in Lawrence for twenty-five years and have been an active member of the Downtown Lawrence Farmers' Market for the past fifteen years. This community's support of local food producers continues to grow as consumers become more aware of the environmental, economic, and health & safety issues associated with consuming foods grown close to home. Local food systems are realizing significant growth potential and we are only at the beginning of this trend. This is why I feel it is in the best interest of Lawrence to preserve its prime farmlands.

The intent of this letter is to give objective data and methodology to the review of the soils of the Kaw River Valley north of Lawrence in Grant Township. This area is designated as G-2 in the proposed Chapter 15, "Place Making" in Horizon 2020 as shown on page 15-7 of the Lawrence SmartCode Sector Plan. This large G-2 icon perfectly overlays on a Douglas County, Kansas USDA-NRCS map showing Prime Farmland Soils. (See attached illustration #1)

These soils are Class I agricultural soils. Taxonomically they are known as the Eudora Series. They consist of very deep (up to 80"), well-drained, moderately permeable soils that formed in silty or loamy alluviums. These soils are on flood plain steps. Slopes range from 0 - 2 %. (USDA-NRCS Official Soil Series Description). These characteristics speak to the soils fertility, tilth, and because of their proximity to the Kaw River, limitless irrigation potential. The science of these soils rates them as Prime - Class 1 and they are not widespread. The Soil Extent Map (See attached illustration #2) clearly defines the extremely limited range of these High-Value Agricultural Soils.

Conversely, these High-Value Agricultural Soils have some severe limitations. I have utilized the USDA-NRCS Web Soil Survey (WSS) site to assist me in documenting these limitations. The Web Soil Survey Site is an extensive database that objectifies the attributes of various soil types. It is a relatively new, on-line tool maintained by the USDA that appears to me to be an invaluable reference in the consideration of appropriate land use scenarios.

The WSS addresses soil properties that affect the capacity of the soil to support various construction types. One option accesses the soil's capability to support small commercial buildings. These buildings are defined as structures that are less than three stories high and do not have basements. The foundation of these structures are assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth

of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Ratings given to the soils are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

All the soils in association with the SmartCode's large bull's eye G-2 designation North of North Lawrence are rated "Very limited". This rating holds consistently for small commercial buildings, houses without basements, and houses with basements. For your review I have printed the table for small commercial buildings. (See attached Table #3)

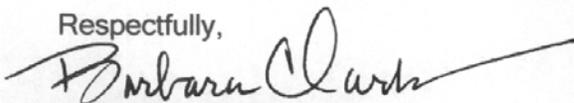
If I may return for a moment to the USDA Official Soil Series Description for the dominant Eudora Series. This description states, "Slopes range from 0 to 2 percent." This presentation of the soil on virtually flat terrain poses another serious and costly limitation to development. Urban development requires sewers and there is insufficient fall across this area for sanitary sewers without multiple, frequent, expensive lift-pump stations. Another important consideration is in the real likelihood of flooding these lift-pump stations will be prone to failure. The consequences of this failure will be extremely costly and damaging.

Examining these soils using empirical methods seems to support the reasonableness of maintaining these rare, prime farm soils for their greatest worth, our county's future agricultural needs. Anything other than agricultural zoning for these soils would seem extremely counter-productive, costly, and ill advised.

I am also keenly aware that we must also give worth to landowner's rights. I would like to propose that mechanisms such as Transferable Development Rights, Agricultural Easements, and Purchase of Development Rights Programs be investigated. Many states have models in place where these instruments have been used successfully to preserve prime farmland. Citizens for Responsible Planning is working towards a Land Summit where presenters will educate interested parties. Our hope would be that farmers and landowners, city and county officials, planning and zoning boards, economic development agencies, planners, extension educators, state and federal agencies, land trusts, and others interested in the future of Kansas agriculture would participate.

It is my hope that prime farm soils can be valued for their rare and endangered status as well as their economic development potential for our future. I would respectfully ask that the G-2 designation illustrated by the large bull's eye in Grant Township be removed. I would further request that the designation be changed to O-2. There is much work to do to understand how we best preserve and utilize these High-Value Agricultural Soils.

Respectfully,



Barbara A. Clark  
Maggie's Farm

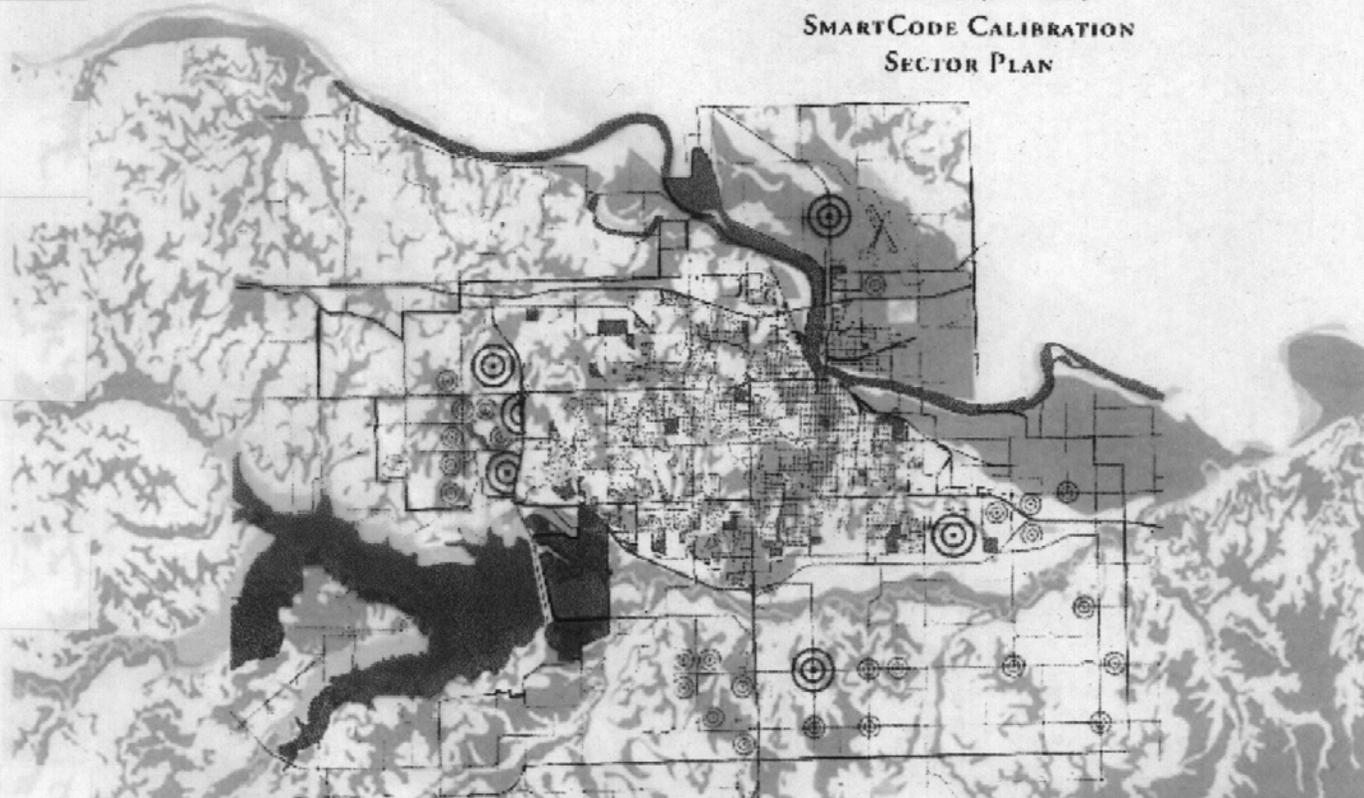
# DOUGLAS COUNTY, KANSAS

Lawrence SmartCode Sector Plan

The following Lawrence SmartCode Sector Plan is applicable only to property that has been annexed by the City of Lawrence.

## 1999 GIS Map from USDA-NRCS Soil Conservation Service

LAWRENCE, KANSAS  
SMARTCODE CALIBRATION  
SECTOR PLAN



A key issue to citizens of Lawrence is how and where growth will occur. The Sector Plan for the City addresses the most beneficial locations for growth, and also puts in place a mechanism for protecting the rolling hills, creeks and riparian wetlands and prairie.

In the SmartCode there are six specific Sectors that exist to where development is allowed. Two Sectors (G-1, G-2) are for open areas (Preserve and Reserve) and the other four (G-3, G-4, G-5, G-6) are for urban growth of varying intensity (Restricted, Controlled, and Intended Growth Sectors for new communities, and the Infill Growth sector for existing urbanized areas).

-  G-1 Preserved Open Areas that consists of areas protected from development, in perpetuity. This Sector includes areas under environmental protection by zoning regulation, as well as land acquired for conservation through purchase or by easement.
-  G-2 Reserved Open Areas that consist of open space that should be, but is not yet, protected from development.
-  G-3 Restricted Growth Areas that have as little open space that are subject to development.
-  G-4 Controlled Growth Areas where development is encouraged, as it can support in use due to its proximity to a major highway.
-  G-5 Intended Growth Areas along major roadway thoroughfares that can support a diversified commercial program.
-  G-6 Infill Growth Areas consisting of traditional neighborhoods or former commercial developments. Both subject to rezoning for infill according to Article 4.

Note: G-2 is permitted by right since a secondary Residential Commercial District is planned to coincide with Downtown Lawrence. The target size within G-2 indicates a cluster development or traditional neighborhood development.

HORIZON 2020

157  
DRAFT 11/14/07

Prime Farmland Soils

PLACE MAKING

Water

Illustration #1

USDA-NRCS PRIME FARMLAND SOILS  
DOUGLAS COUNTY, KANSAS

OVERLAY - G-2 BULL'S EYE - GRANT TOWNSHIP

Illustration #2

USDA-NRCS SOIL EXTENT MAP  
EUDORA SERIES - CLASS 1 PRIME AGRICULTURAL SOILS

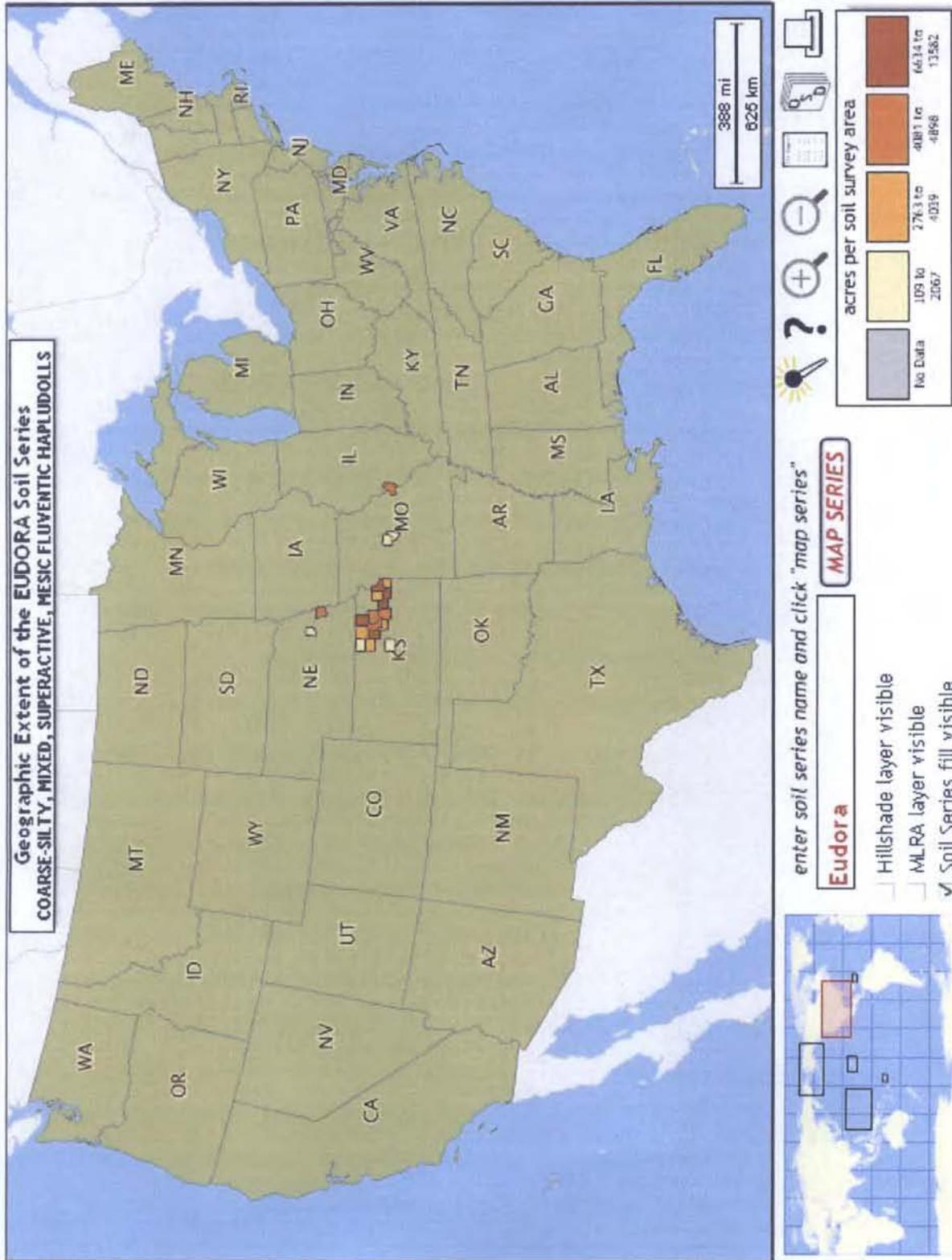
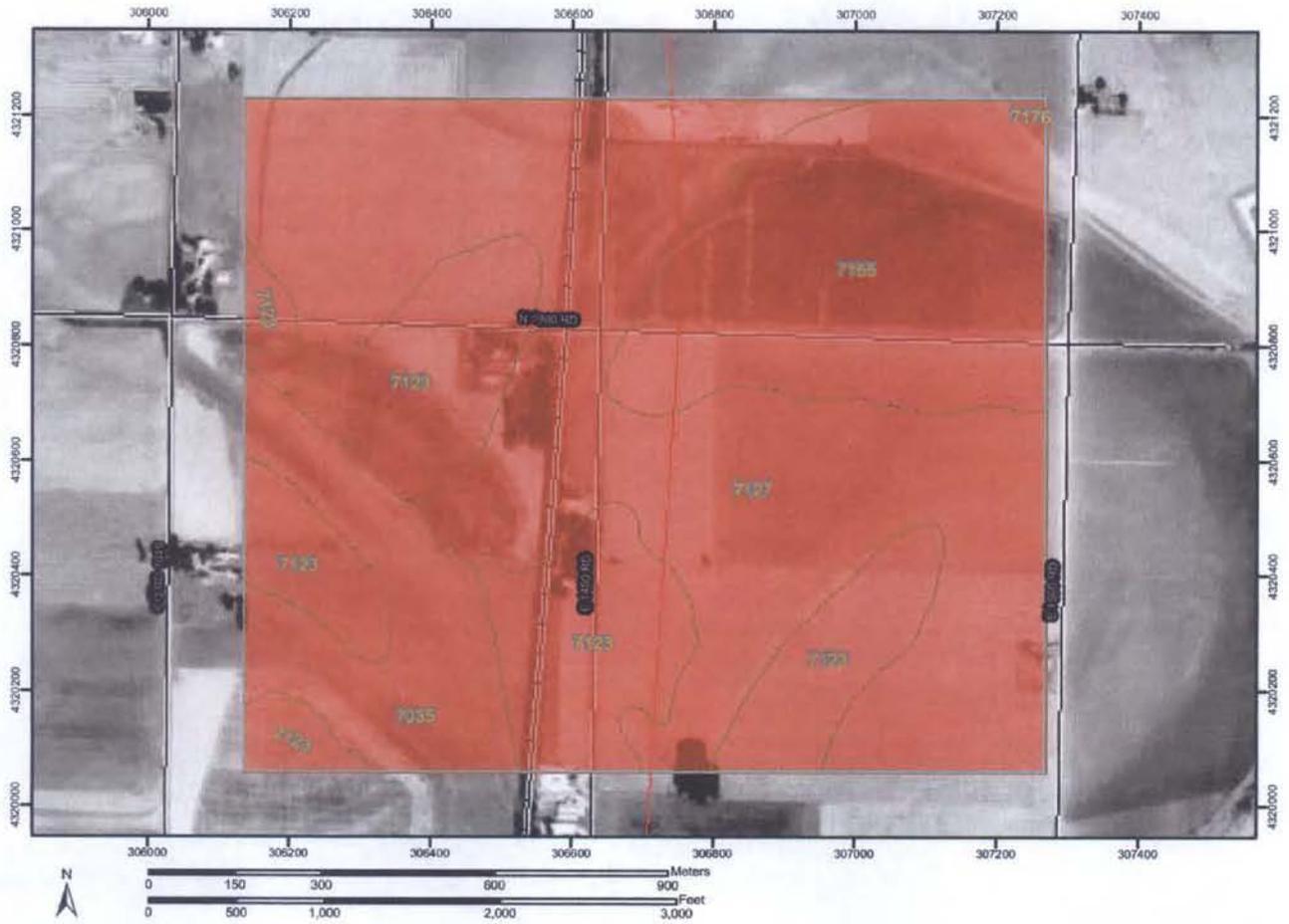


Table #3

USDA-NRCS SOIL SURVEY  
SMALL COMMERCIAL BUILDINGS

Small Commercial Buildings—Douglas County, Kansas  
(High Value Agricultural Soils)



Small Commercial Buildings—Douglas County, Kansas  
(High Value Agricultural Soils)

### MAP LEGEND

- Area of Interest (AOI)**  
 Area of Interest (AOI)
- Soils**  
 Soil Map Units
- Soil Ratings**  
 Very limited  
 Somewhat limited  
 Not limited  
 Not rated or not available
- Political Features**  
**Municipalities**  
 Cities  
 Urban Areas
- Water Features**  
 Oceans  
 Streams and Canals
- Transportation**  
 Rails
- Roads**  
 Interstate Highways  
 US Routes  
 State Highways  
 Local Roads  
 Other Roads

### MAP INFORMATION

Original soil survey map sheets were prepared at publication scale. Viewing scale and printing scale, however, may vary from the original. Please rely on the bar scale on each map sheet for proper map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
Coordinate System: UTM Zone 15N

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Douglas County, Kansas  
Survey Area Data: Version 5, Dec 21, 2007

Date(s) aerial images were photographed: 1991

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Small Commercial Buildings

Small Commercial Buildings— Summary by Map Unit — Douglas County, Kansas						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (rating values)	Acres in AOI	Percent of AOI
7035	Eudora-Bismarckgrove fine sandy loams, overwash, occasionally flooded	Very limited	Eudora (55%)	Flooding (1.00)	39.6	9.9%
			Bismarckgrove (25%)	Flooding (1.00)		
				Shrink-swell (0.11)		
			Bourbonais (10%)	Flooding (1.00)		
			Kimo (5%)	Flooding (1.00)		
Depth to saturated zone (0.39)						
Stonehouse (5%)	Flooding (1.00)					
7123	Eudora silt loam, rarely flooded	Very limited	Eudora (85%)	Flooding (1.00)	94.6	23.6%
			Bismarckgrove (10%)	Flooding (1.00)		
				Shrink-swell (0.50)		
Bourbonais (5%)	Flooding (1.00)					
7127	Eudora-Kimo complex, overwash, rarely flooded	Very limited	Eudora (60%)	Flooding (1.00)	185.6	46.3%
			Kimo (30%)	Ponding (1.00)		
				Flooding (1.00)		
				Shrink-swell (1.00)		
				Depth to saturated zone (0.39)		
			Sarpy (5%)	Flooding (1.00)		
			Wabash (5%)	Flooding (1.00)		
Depth to saturated zone (1.00)						
Shrink-swell (1.00)						

Small Commercial Buildings— Summary by Map Unit — Douglas County, Kansas											
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (rating values)	Acres in AOI	Percent of AOI					
7155	Kimo silty clay loam, rarely flooded	Very limited	Kimo (85%)	Ponding (1.00)	80.0	20.0%					
				Flooding (1.00)							
				Depth to saturated zone (0.39)							
			Kiro (5%)	Ponding (1.00)							
				Flooding (1.00)							
				Depth to saturated zone (1.00)							
			Bismarckgrove (5%)	Flooding (1.00)							
				Shrink-swell (0.50)							
			Eudora (5%)	Flooding (1.00)							
			7176	Rossville silt loam, very rarely flooded			Very limited	Rossville (85%)	Flooding (1.00)	0.8	0.2%
Shrink-swell (0.06)											
Muscotah (5%)	Flooding (1.00)										
	Shrink-swell (1.00)										
	Depth to saturated zone (0.44)										
Reading (5%)	Flooding (1.00)										
	Shrink-swell (0.50)										
Eudora (5%)	Flooding (1.00)										
Totals for Area of Interest (AOI)					400.5	100.0%					

Small Commercial Buildings— Summary by Rating Value		
Rating	Acres in AOI	Percent of AOI
Very limited	400.5	100.0%

## Description

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification of the soil). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

## Rating Options

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

# *Chestnut Charlie's*

**P.O. Box 1166, 945 Ohio St.  
Lawrence, KS 66044  
785-841-8505, nuts2sell@aol.com  
www.chestnutcharlie.com**

January 23, 2008

Lawrence and Douglas County  
Metropolitan Planning Commission  
City Hall, 6 E. 6th Street  
Lawrence, KS 66044

Re: proposed Chapter 15, Place Making (Draft 11/14/07) Horizon 2020

Dear Planning Commission members:

The focus of our interest is the agricultural bottoms north of Lawrence. My wife and I are residents of Lawrence who own and operate a nut orchard outside of Lawrence in the historic floodplains north of TeePee Junction.

Our comments to Chapter 15 pertain to the graphic SmartCode Sector Plan which classifies some of our community's best agricultural soils as G-1 instead of O-2. In addition, there are two bulls-eyes (G2, G3?) on the best agricultural soils. All of these designations for development in the North of North Lawrence area are improvident and inconsistent with the text of Chapter 15.

The proposed Chapter 15 contains at least three textual references<sup>1</sup> to protecting and preserving high value agricultural soils, a policy with which we vigorously agree.

While not all farmland must be protected, our "prime farmland" has special value for the long-term prosperity of our community. And sometimes among prime farmlands we find rare soils which are exceptional for their fertility, tillage qualities and ease of irrigation. For these lands agriculture is already the highest and best use.

I have known about the North Lawrence floodplain soils since childhood and have kept an eye out to buy some. But these excellent soils are jealously guarded by the fortunate few farm families who have mostly inherited them. Only once in my lifetime have I had an opportunity to purchase any - I jumped at it. Now, as farmer-stewards since '91 of a small 20 acre parcel north of Lawrence, my wife are puzzled by efforts to develop over this legacy farmland.

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<sup>1</sup> Under definitions of 0-2, Reserved Open Space, being, ". . . open space that should be, but is not yet, protected from development . . ." includes, at subpart "g", "Legacy Farmland and High Value Agricultural Soils." Also see Policy 1.1, subpart "c", "Limit development in areas with natural and agricultural resources." This is repeated at Policy 2.1, subpart "c". Goal 2 states, "Open lands are needed . . . to preserve natural and agricultural land."

It raises our hackles to see city planners and wana-be developers carving up this area Wyandotte-county-style as if it was just any flat land. For these soils are of such rare and beneficial quality for agriculture, the irrigation water is so cheap, shallow and plentiful, and the open space so critical for saving North Lawrence from storm-water flooding – if these qualities were known and appreciated then perhaps our far-sighted community leaders would better respect our agricultural floodplain.

I have prepared the following chart of some important soil-types, based on data from the web-based USDA soil surveys for Douglas County.<sup>2</sup>

Table 1

<i>Soil name) parent material)</i>	<i>Class</i>	<i>Typical depth to water table</i>	<i>Available water capacity</i>	<i>Drainage classification</i>	<i>Permiability (Ksat)</i>
<b>Kansas River bottoms soils—descending order from best soils</b>					
Rossville (Judson) <sup>3</sup> silt loam, (fine silty alluvium)	1	> 80 in	very high 13.0 in	well drained	moderately high 0.60 - 2.00 in/hr
Eudora silt loam (coarse silty alluvium)	1	> 80 in	high 11.8 in	well drained	moderately high to high 0.60 - 2.00 in/hr
Eudora-Kimo complex		<i>(60% Eudora, 30% Kimo, 10% minor components)</i>			
Eudora- Bismarkgrove silt loam		<i>(55% Eudora, 30 % Bismarkgrove, 15% minor components)</i>			
Bismarkgrove-Kimo complex		<i>(55% Bismarkgrove, 20% Kimo, 20% minor components)</i>			
Bismarkgrove (silty alluvium)	2w	> 80 in	high 11.2 in	well drained	moderately high 0.20 – 0.60
Kimo silty clay loam (clayey over loamy alluvium)	2w	22 – 26 in	high 11.4	somewhat poorly drained	moderately low to moderately high 0.06 – 0.20 in/hr
<b>Wakarusa River gumbo soil (for comparison)</b>					
Wabash silty clay loam (clayey alluvium)	3w	2-9 in	moderate 8.2 in	poorly drained	very low to moderately low 0.00 – 0.06

The major soils within the river bend north of Lawrence, the Eudora-Kimo association, are typically over 80 inches deep, over 80 inches to the water table, and well drained—a characteristic critical for reducing flooding in North Lawrence. You can see that the Rossville and Eudora types have very high available water capacity and high permeability. An exception is Kimo silty clay, which has more clayey material overlaying its parent soil of more permeable silt and sand. Kimo represents the tightest soil particles of the alluvial plain of the Kansas River,

<sup>2</sup>From USDA NCRS Web Soil Survey, an interactive internet soil survey database, collecting and updating previously printed soil survey publications.

<sup>3</sup> Large areas formerly classified as Judson silt loam have been reclassified in more recent surveys as Rossville silt loam. Rossville (Judson) soil is found on the higher terraces in the floodplain in the area of the Airport, including most of the Pine family farms, and also areas to the west of the airport.



of the prime farmlands above are (beige) G-1,<sup>5</sup> plus loaded under two G-2 or G-3 bullseyes in the SmartCode Sector Plan.

We perceive an intent to protect the lower areas near the FEMA 100-year or regulatory floodplain areas, which, by reasons explained by geology and soil science, also happen to be areas of poorer and less-well drained soil (Kimo silty clay) and smaller economic (agricultural) potential. Conversely, the higher, better agricultural soils in the Kansas River bottoms, the well drained category 1 soils such as Rossville and Eudora and Eudora-Kimo complex, are made to appear ripe for urban development. We disagree .

To carry the problem to an example south of the river, large swaths of Wakarusa bottomlands are restricted to development under the green O-2 coding when, in fact, the Wabash soils which predominate are not prime agricultural soils. A review of the soil surveys of the K-10 area between Lawrence and Eudora would disclose an irregular line around Hwy K-10 where the well-drained soils of the Kansas River bottoms give way to the sticky soils of the Wakarusa, where the sandy/silty soils give way to clays. The planners, evidenced by the SmartGrowth Sector Plan, target some poor soils for protection and some of the same excellent soils for development.

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<sup>5</sup> The designation G-1 is for, “areas that have value as open space but nevertheless are subject to development, either because the zoning has already been granted or because there is no legally defensible reason, in the long term, to deny it.” In G-1, “Clustered Land Developments shall be permitted by Right.” We do not have in front of us zoning maps but we are unaware of development zoning existing in most areas of prime farmland which are to be converted to G-1 in the SmartGrowth Sector Plan. We would find sufficient and “legally defensible reason” to deny zoning based either on 1) high-value farmland preservation or 2) storm water/flood drainage needs of the community. Only by ignoring the farmland and flood prone lands protections can you arrive at G-1, G-2 or G-3 for these lands.



We are of the opinion that if any of the Wabash soils of east and south Lawrence are suitable for preservation as valuable farm land, then most of the really excellent Eudora-Kimo association soils of the north bottoms are a magnitude more valuable and more deserving of protection.

On the subject of flooding and storm water management, you will see from my Table 1 above that different soils have a different capacity to absorb and hold and transmit water. Rossville and Eudora have a very high ability to capture and absorb water compared to Kimo soils. From working at our own farm, which is largely Eudora-Kimo complex, we know that these soils will not allow us to build a pond without a liner—all water quickly drains into the soil. But some parts of our land drain more quickly than others after heavy rainfall. Why then do we see standing water in the north bottoms? Standing water occurs where the Kimo silt clay predominates, often in or near the FEMA 100-year floodplains and some disconnected low old riverbed areas.<sup>6</sup> By no coincidence, the standing water areas appear to be described also by the red areas of Table 1.

It is our experience that when it comes to flood protection and storm water management, the Rossville and Eudora soils are like sponges. When managed properly, these soils can absorb two inches of rainfall every hour until saturated throughout its 80 inches plus depth and down to the water table, at which point the water begins to move out to the river through the underground sand. The high available water capacity shown in Table 1 is an indication of the large amounts of water that our soil-sponge can absorb and hold. The high Ksat figure shows how fast the water can move through the soil. It is only the soils which lie in the lower areas, the Kimo soils, which actually resist percolation in their more clayey layer, as demonstrated by the data in Table 1.

For this reason, preservation of the Kimo soil areas will not prevent or reduce flooding or storm-water management problems in the north floodplain—it will only get the buildings up and out of the way of the worst floodwaters. The only way to actually reduce the flooding and storm-water burden is to maintain, or even enhance, the permeability of the better Eudora association soils that are, not surprisingly, the best prime farmlands of the area.

To this, we ought to add that although we are not K-State farmers, we own and participate in farming other nearby parcels which contain USDA prime farmlands, and we have experience and interests outside of Kansas as well. Our experience with the tree farm has been going on 17 years and at close and personal, hands-on, hand-tools level. If our experience is any guide, the North of North Lawrence bottoms is the best farm dirt anywhere. If ever there is an agricultural area that should be treasured and preserved for the future, this is it.

Therefore, we recommend that City-County Planning Staff prepare a map-study identifying all USDA prime-farmland soils for all the area north of the Kansas River, that a separate map-study set forth all Category 1 soils, and that the SmartGrowth map plans be amended to conform all such areas to O-2 protection.

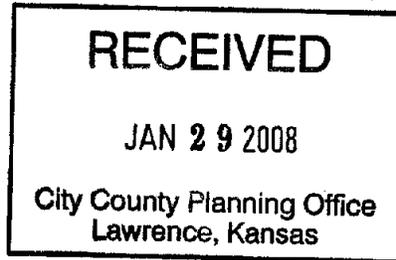
Yours truly,

Charles NovoGradac

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<sup>6</sup> We also see standing water where an artificial construction, such as a driveway, reduces drainage and contributes to local ponding.

1982 E. 100 Rd.  
Lecompton, KS 66050  
January 25, 2008



Planning Commission  
City Hall  
6 E. 6<sup>th</sup> Street  
Lawrence, KS 66044

Dear Planners:

We note that on the 2020 Smart Code Sector Plan and the 2030 Land Use Scenarios map, the flood prone, prime agricultural land in the airport vicinity is projected as an area for growth and development.

Please, let us bring intelligence to this process. By all reasonable standards, this area qualifies as O2 (reserved open sector).

Thank you for your work and public service.

Respectfully,

  
Doug and Shirley Hitt