Critical Areas

- Areas where implementation can remediate nonpoint sources to:
  - Improve water quality
  - Protect water quality by mitigating the impacts of future sources
- What they cannot be:
  - The entire project area
  - A grouping which results in the entire project area
  - A source of land use which cover 100% of the project area
  - Every stream within the project area
- What they should be:
  - 12-digit watershed (Little Deer Creek) or smaller area where a particular pollutant needs to be addressed
    - *Little Deer Creek is listed as impaired for E. coli and is therefore a critical area.*
  - A specific region within at 12-digit watershed or smaller area where a particular source contributes to a problem
    - *Flora is targeted for CSO reductions and is therefore a critical area.*
  - Specific sources anywhere in the watershed
    - *Livestock have access to streams throughout the watershed and all of those areas are targeted as critical areas.*

Item	051201011401 Enyeart	051201011402 Stone-Treaty	051201011403 Burr	051201011404 Ridgeway	051201011405 Kentner	051201011406 Gilbert	051201011407 Daniel
Watershed (Acres)	13,848.7	19,267.6	11,245.7	10,324.6	18,634.9	11,224.0	16,314.1
Watershed (sq mi)	21.6	30.1	17.6	16.1	29.1	17.5	25.5
Stream (miles)	54.6	51.7	41.6	20.3	45.9	36.8	46.1
Impaired Cat 5	3.0	0.0	3.6	13.0	4.8	3.8	3.9
Impaired Cat 4A	3.0	0.0	3.6	0.0	4.8	3.8	3.9
HES (acres)	5,599.6	2,914.8	4,578.5	955.3	2,263.1	1,832.0	3,388.8
HES (%)	40%	15%	41%	9%	12%	16%	21%
PHES (acres)	3,310.8	3,564.6	1,508.6	863.8	3,738.6	1,197.3	455.3
PHES (%)	24%	19%	13%	8%	20%	11%	3%
Wetland Loss (acres)	77%	96%	73%	99%	95%	96%	86%
NWI Current (acres)	274.6	162.7	276.1	53.9	191.6	116.4	314.3
NWI Current (%)	2%	1%	2%	1%	1%	1%	2%
Hydric (acres)	1,180.5	4,324.0	1,030.4	3,703.0	4,048.1	2,679.7	2,201.0
Hydric (%)	9%	22%	9%	36%	22%	24%	13%
Septic-VeryLimited	13,616.1	18,906.1	5,867.2	9,984.1	17,781.0	7,778.7	15,784.1
Septic-VL (%)	98%	98%	52%	97%	95%	69%	97%
Animal estimate (NASS)	940.6	1,308.6	763.8	701.2	1,265.7	762.3	578.2
CFO (count)	4.0	6.0	3.0	3.0	7.0	1.0	4.0
CFO (animals)	13,719.0	24,033.0	4,239.0	3,986.0	11,282.0	1,200.0	23,020.0
CFO Manure app (acres)	589.2	1,381.7			521.2	109.1	
Sludge (acres)		1,898.9	171.7	813.1	873.1	475.9	271.6
Hobby Farm (count)	12.0	18.0	8.0	4.0	2.0	7.0	12.0
Hobby Farm (animals)	218.0	81.0	40.0	24.0	24.0	76.0	105.0
Manure estimate (tons)	58,245.1	133,818.0	46,202.0	16,848.0	56,134.0	5,917.0	94,849.0
Manure N estimate (lb)	158,225.6	292,927.0	37,546.0	49,291.0	139,039.0	16,038.0	276,762.0
Manure P estimate (lb)	117,566.4	216,037.0	23,315.0	37,202.0	102,239.0	12,041.0	211,277.0
MS4 area					City of Wabash		
Livestock Access (miles)					0.8		1.4
Streambank Erosion (miles)	11.1	9.4	4.8		3.4	4.5	11.2
Narrow Buffer (miles)	3.4	8.3	3.2	3.1	5.8	13.8	6.6
Gully Erosion (miles)							

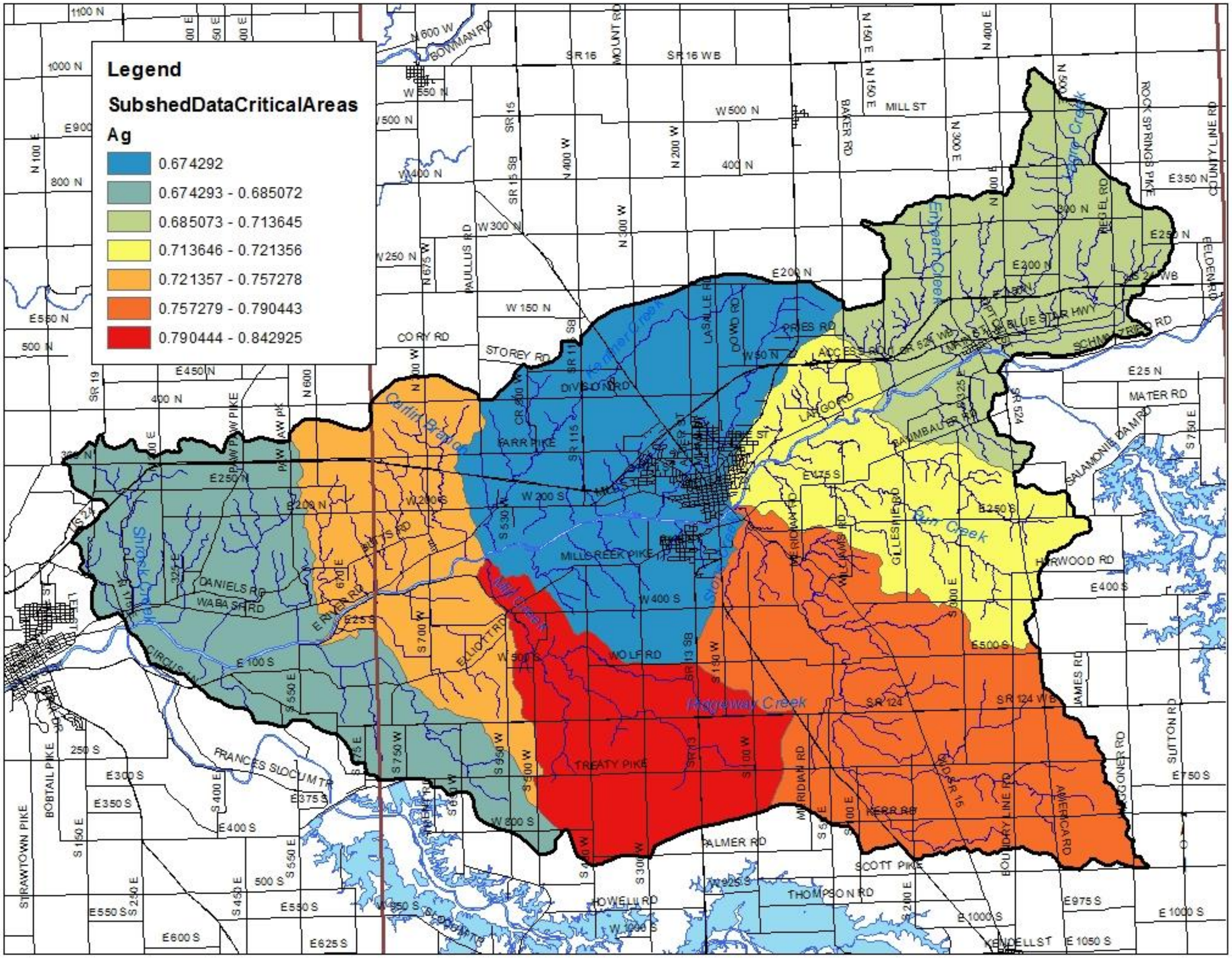
Item	051201011401 Enyeart	051201011402 Stone-Treaty	051201011403 Burr	051201011404 Ridgeway	051201011405 Kentner	051201011406 Gilbert	051201011407 Daniel
Land Use (acres)							
Ag - Row +Pasture	9,888.1	15,238.0	8,116.4	8,707.8	12,572.5	8,504.8	11,183.2
Forest	2,569.1	2,207.3	1,863.2	913.2	1,583.3	1,590.7	2,924.4
Wetland + Open water + grass	384.8	381.5	386.1	161.9	446.1	360.5	936.3
Urban	1,013.8	1,451.0	885.9	547.6	4,043.6	774.8	1,280.3
Land Use (%)							
Ag - Row +Pasture	71%	79%	72%	84%	67%	76%	69%
Forest	19%	11%	17%	9%	8%	14%	18%
Wetland + Open water + grass	3%	2%	3%	2%	2%	3%	6%
Urban	7.32%	7.53%	7.87%	5.30%	21.69%	6.90%	7.84%

Site		DO (mg/L)	Temp (deg C)	pH	Cond (mg/L)	Turb (NTU)	NO_3_N (mg/L)	TP (mg/L)	Ecoli (col/100 mL)	TSS (mg/L)
1	Median	7	16.2	7.675	572.5	5.525	1.415	0.086	310	7.75
	Max	11.11	21.24	8.41	662	51.3	4.69	0.279	620	45
	Min	5.92	1.64	5.98	353	1.76	0.546	0.02	90	3
	#Samples	7	16	16	16	16	18	18	17	14
	#Exceed	0	0	1	0	1	9	10	11	1
2	Median	7	14.94	7.36	572	1.76	3.19	0.0805	520	5.375
	Max	13.68	19.03	8.2	668	36.2	7.58	2.85	2550	12.25
	Min	4.05	3.13	5.93	200	0.39	1.14	0.011	150	1.75
	#Samples	9	17	17	17	17	18	18	17	14
	#Exceed	1	0	1	0	1	13	10	15	0
3	Median	7	16.17	7.42	559	2.5	2.69	0.063	820	15.125
	Max	12.41	21.3	8.24	596	44.3	6.18	0.423	1670	25.5
	Min	3.6	1.93	5.97	200	1.21	0.752	0.02	220	4
	#Samples	9	17	17	17	17	18	18	17	14
	#Exceed	2	0	2	0	1	12	7	15	0
4	Median	7.8	4.23	7.61	435	6.44	3.055	0.041	720	25.25
	Max	11.67	15.81	8.41	560	112	3.62	0.432	1950	40.5
	Min	3.8	0.24	7.5	272	2.58	1.81	0.02	240	20.25
	#Samples	5	5	5	5	5	6	6	5	3
	#Exceed	1	0	0	0	1	6	2	5	1
5	Median	7.42	15.88	7.53	497	3.6	1.64	0.0725	550	16.375
	Max	70.23	21.78	8.35	545	70.7	5.76	0.284	3150	57
	Min	4.04	1.25	5.93	310	1.38	0.399	0.02	140	1
	#Samples	9	17	17	17	17	18	18	17	14
	#Exceed	1	0	2	0	4	9	10	14	2
6	Median	7.55	16.07	7.46	520	4.02	1.9	0.029	620	18.75
	Max	12.22	22.5	8.35	574	38	6.74	0.528	3750	54.5
	Min	4.18	3.29	5.81	382	1.12	0.92	0.02	240	2.25
	#Samples	9	17	17	17	17	18	18	17	14
	#Exceed	1	0	2	0	3	12	3	17	5

Site		DO (mg/L)	Temp (deg C)	pH	Cond (mg/L)	Turb (NTU)	NO_3_N (mg/L)	TP (mg/L)	Ecoli (col/100 mL)	TSS (mg/L)
7	Median	7.83	16.9	7.52	512	5.915	1.545	0.094	370	18
	Max	11.43	21.17	8.23	637	87.2	9.52	0.826	4500	56
	Min	4.38	2.4	5.85	360	1.36	0.553	0.02	100	10.25
	#Samples	9	17	17	17	17	18	18	17	14
	#Exceed	0	0	2	0	2	9	11	14	4
8	Median	7.3	16.27	7.29	492	9.48	1.14	0.121	810	19.875
	Max	10.82	21.06	8.15	616	295	11.4	1.66	2700	68.5
	Min	4.14	2.14	5.7	260	2.62	0.117	0.02	300	5.5
	#Samples	9	17	17	17	17	18	18	17	14
	#Exceed	0	0	2	0	5	7	11	17	2
8	Median	7.86	17.62	7.47	531	4.93	1.195	0.0815	640	13.5
	Max	12.36	23.83	8.28	688	267	4.31	1.13	1050	70.5
	Min	4.27	2.54	5.8	286	1.46	0.475	0.02	150	3.5
	#Samples	9	17	17	17	17	18	18	17	14
	#Exceed	1	0	2	0	4	7	9	16	4
10	Median	7.17	16.42	7.24	541	10.8	2.695	0.065	560	16.25
	Max	10.82	21.04	8.11	623	77.4	5.76	0.615	1950	69.25
	Min	2.85	2.95	5.72	330	2.57	1.22	0.011	320	1.25
	#Samples	9	17	17	17	17	18	18	17	14
	#Exceed	1	0	2	0	2	16	8	17	3
11	Median	8.15	16.885	7.575	511.5	2.38	1.535	0.077	880	18.125
	Max	12.01	21.29	8.41	604	186	7.77	2.99	2550	60
	Min	4.88	2.74	5.78	127	0.75	0.144	0.015	340	4.5
	#Samples	8	16	16	16	16	16	16	15	14
	#Exceed	1	0	2	0	3	8	8	15	4
12	Median	8	16.14	7.59	569	2.62	1.28	0.0225	620	11.25
	Max	11.24	20.97	8.45	625	231	2.54	1.91	810	33.5
	Min	4.86	2.95	5.64	114	0.79	0.588	0.001	130	3
	#Samples	9	17	17	17	17	18	18	17	14
	#Exceed	0	0	2	0	3	8	7	15	1

Nutrients (Nitrogen and Phosphorus):

- Conventional tillage cropping practice
- Wastewater treatment discharges
- Agricultural and residential fertilizer
- Poor riparian buffers
- Limited natural cover
- Streambank and bed erosion
- Animal waste (livestock in streams, poor manure management, domestic and wildlife runoff)
- Confined feeding operations and hobby farms
- Human waste (failing septic systems, package plants, inadequately treated wastewater)
- Stormwater and flooding impacts, MS4 areas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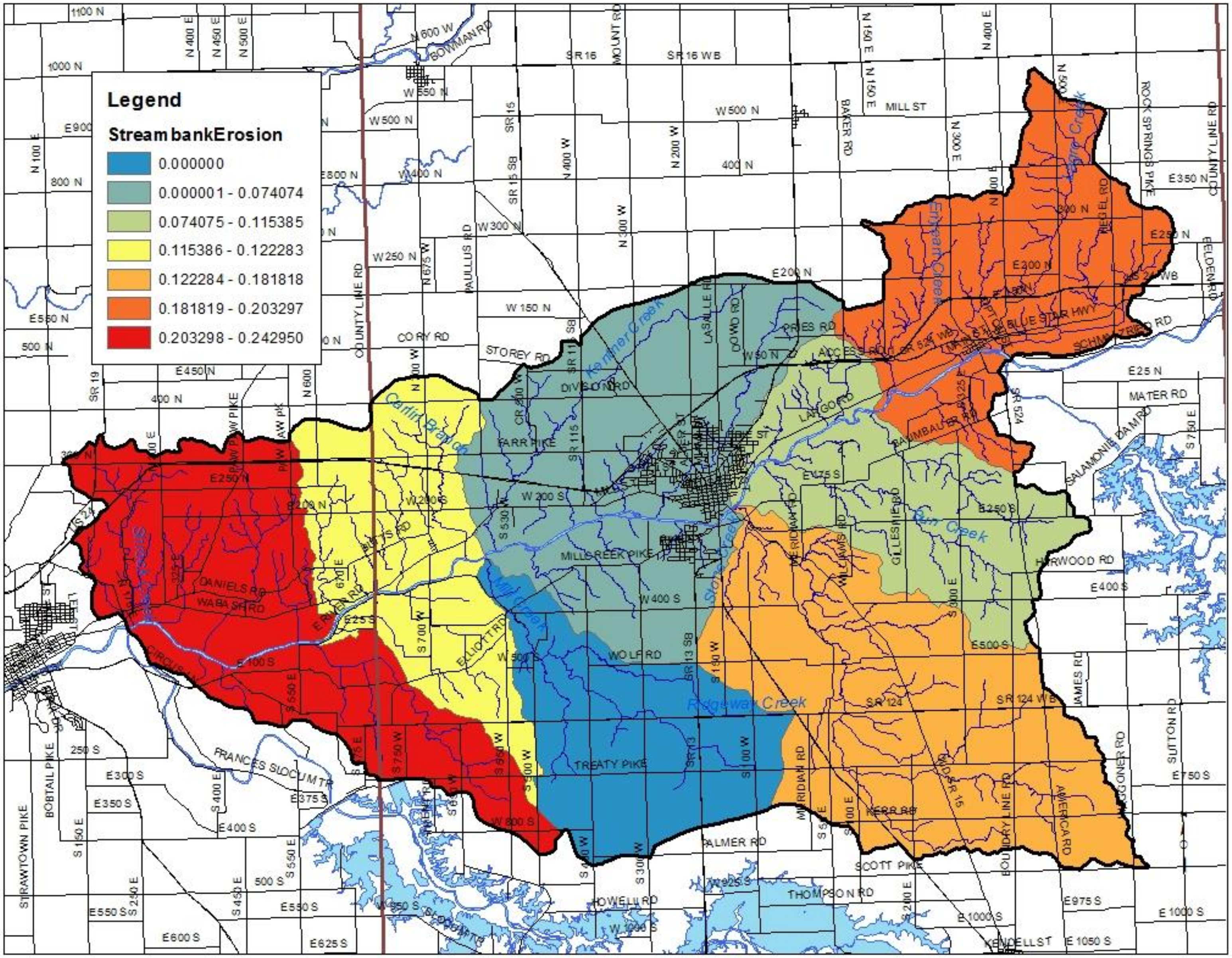
0.713646 - 0.721356
0.721357 - 0.757278
0.757279 - 0.790443
0.790444 - 0.842925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StreambankErosion
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0.074075 - 0.115385
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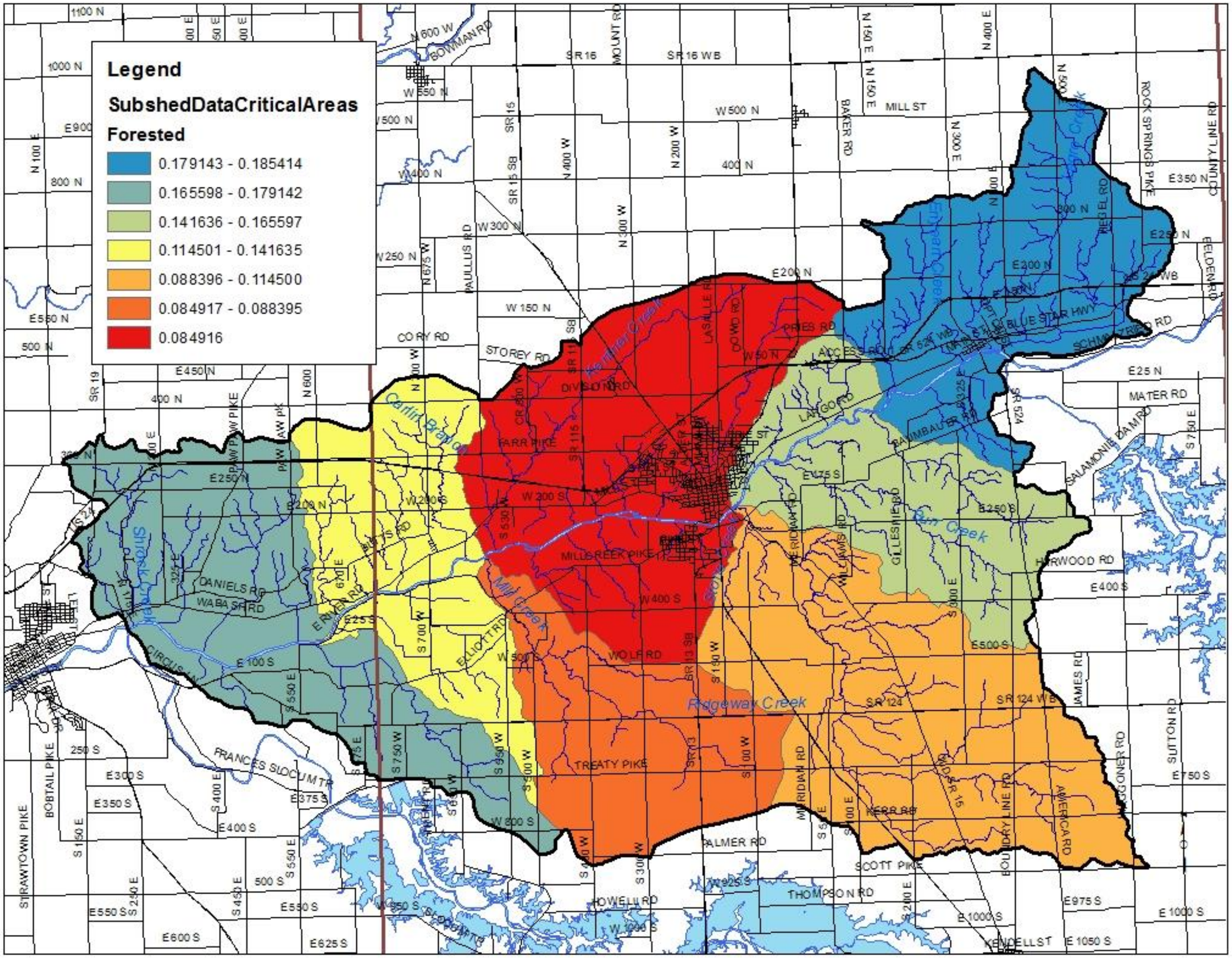
0.122284 - 0.181818
0.181819 - 0.203297
0.203298 - 0.242950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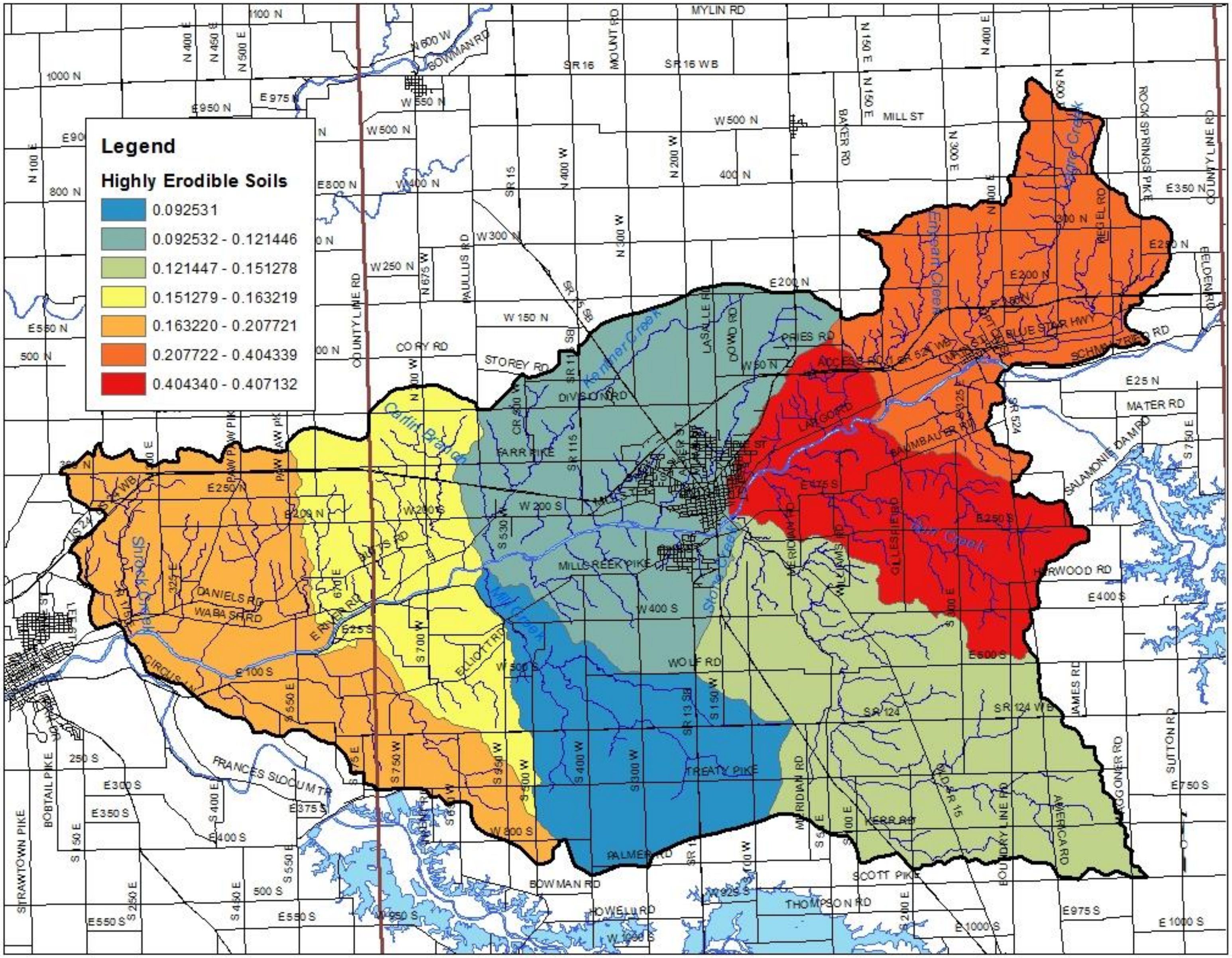
SubshedDataCriticalAreas
Forested
0.179143 - 0.185414
0.165598 - 0.179142
0.141636 - 0.165597
0.114501 - 0.141635
0.088396 - 0.114500
0.084917 - 0.088395
0.084916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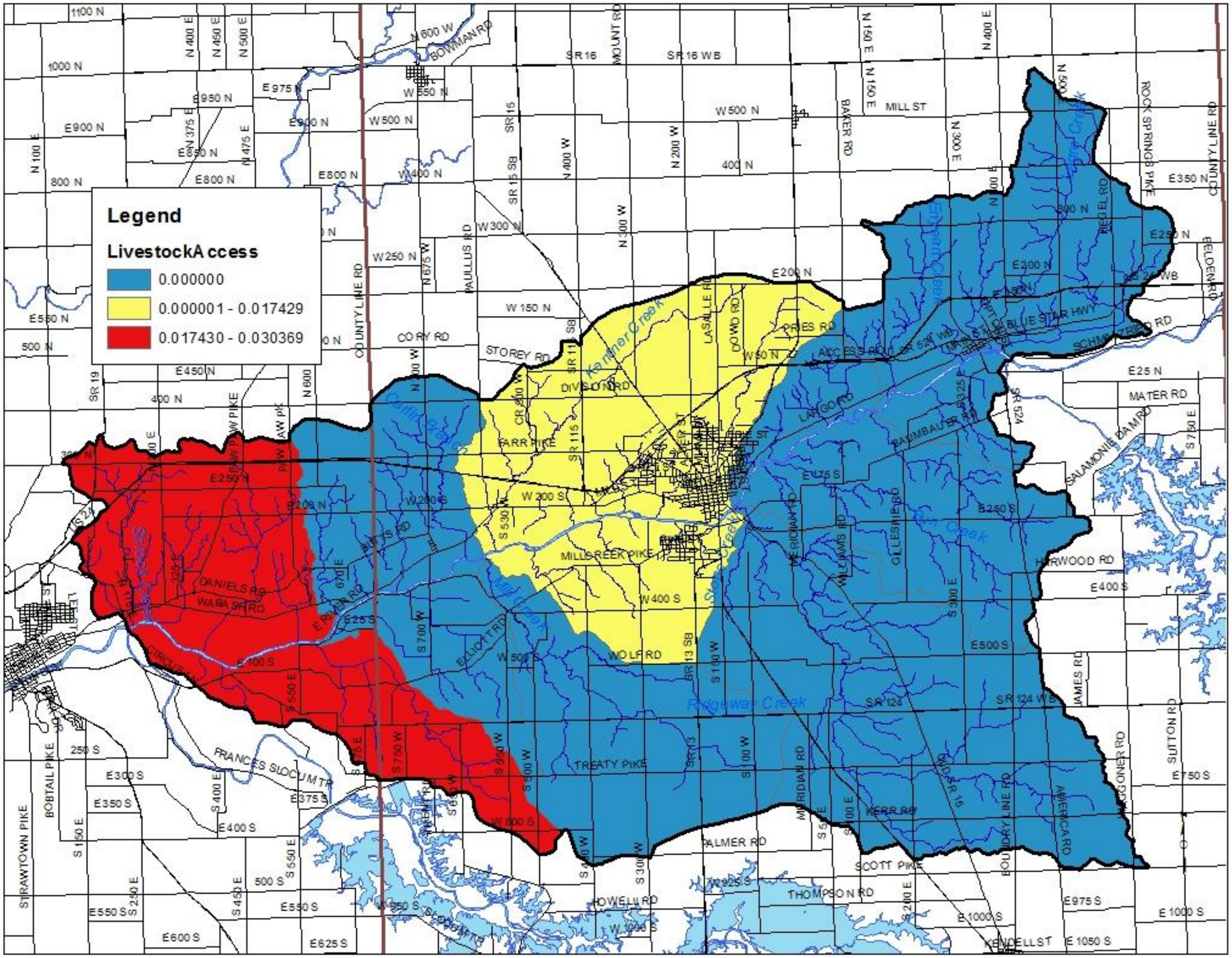
Highly Erodible Soils
0.092531
0.092532 - 0.121446
0.121447 - 0.151278
0.151279 - 0.163219
0.163220 - 0.207721
0.207722 - 0.404339
0.404340 - 0.407132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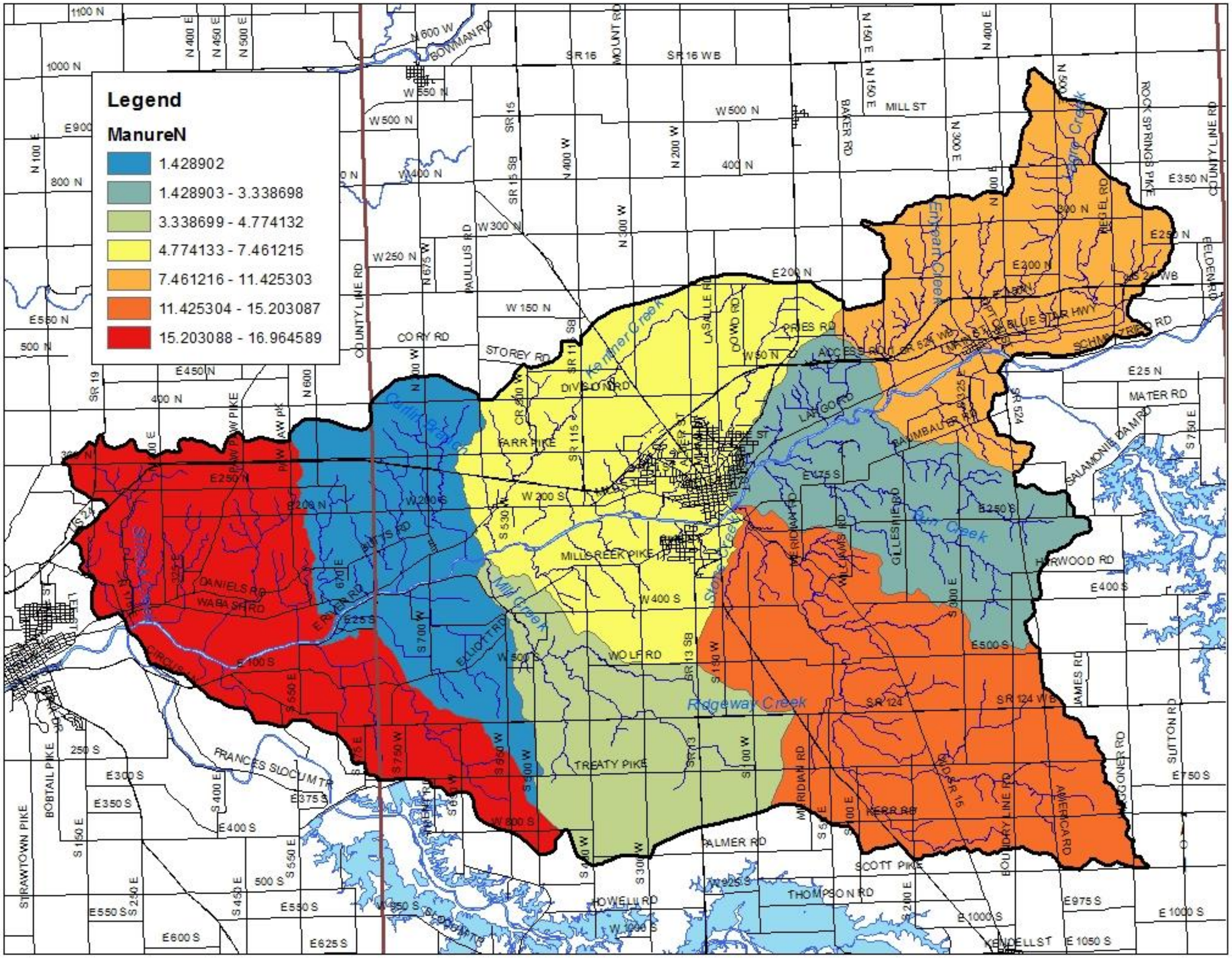
0.017430 - 0.030369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ManureN
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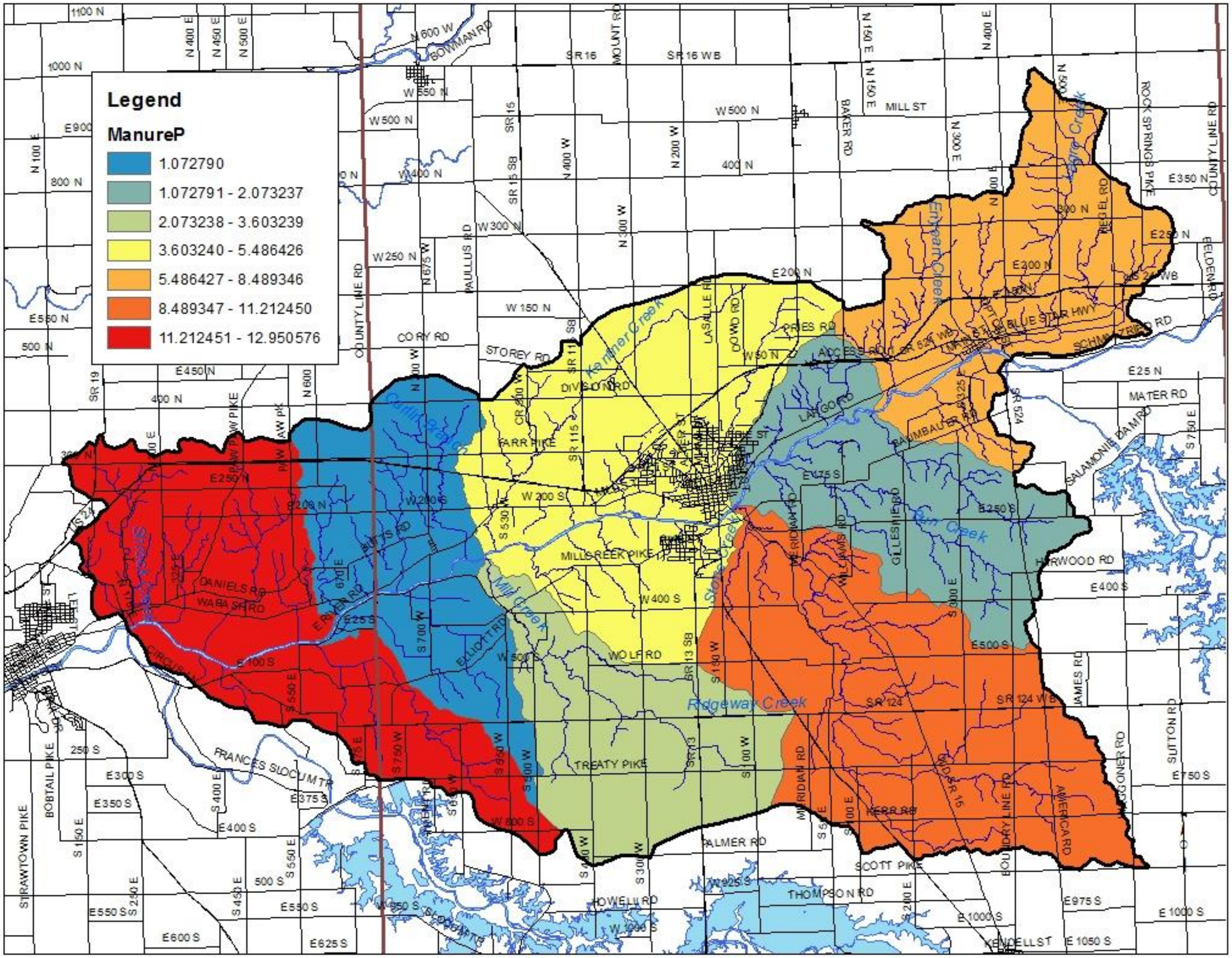
3.338699 - 4.774132
4.774133 - 7.461215
7.461216 - 11.425303
11.425304 - 15.203087
15.203088 - 16.964589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ManureP
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1.072791 - 2.073237
2.073238 - 3.603239
3.603240 - 5.486426
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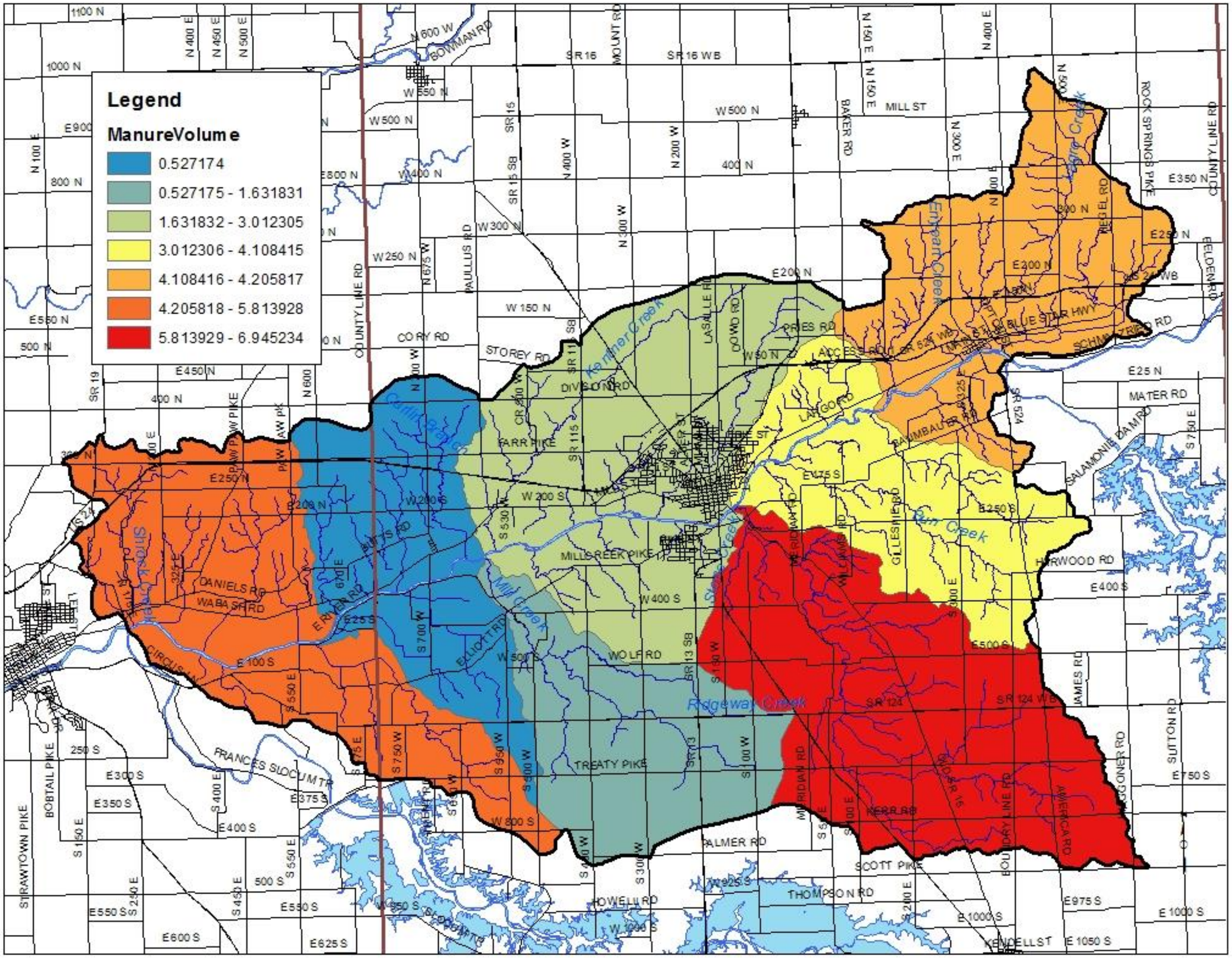
Ridgeway Creek
Mill Creek
Kentner Creek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ManureVolume
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0.527175 - 1.631831
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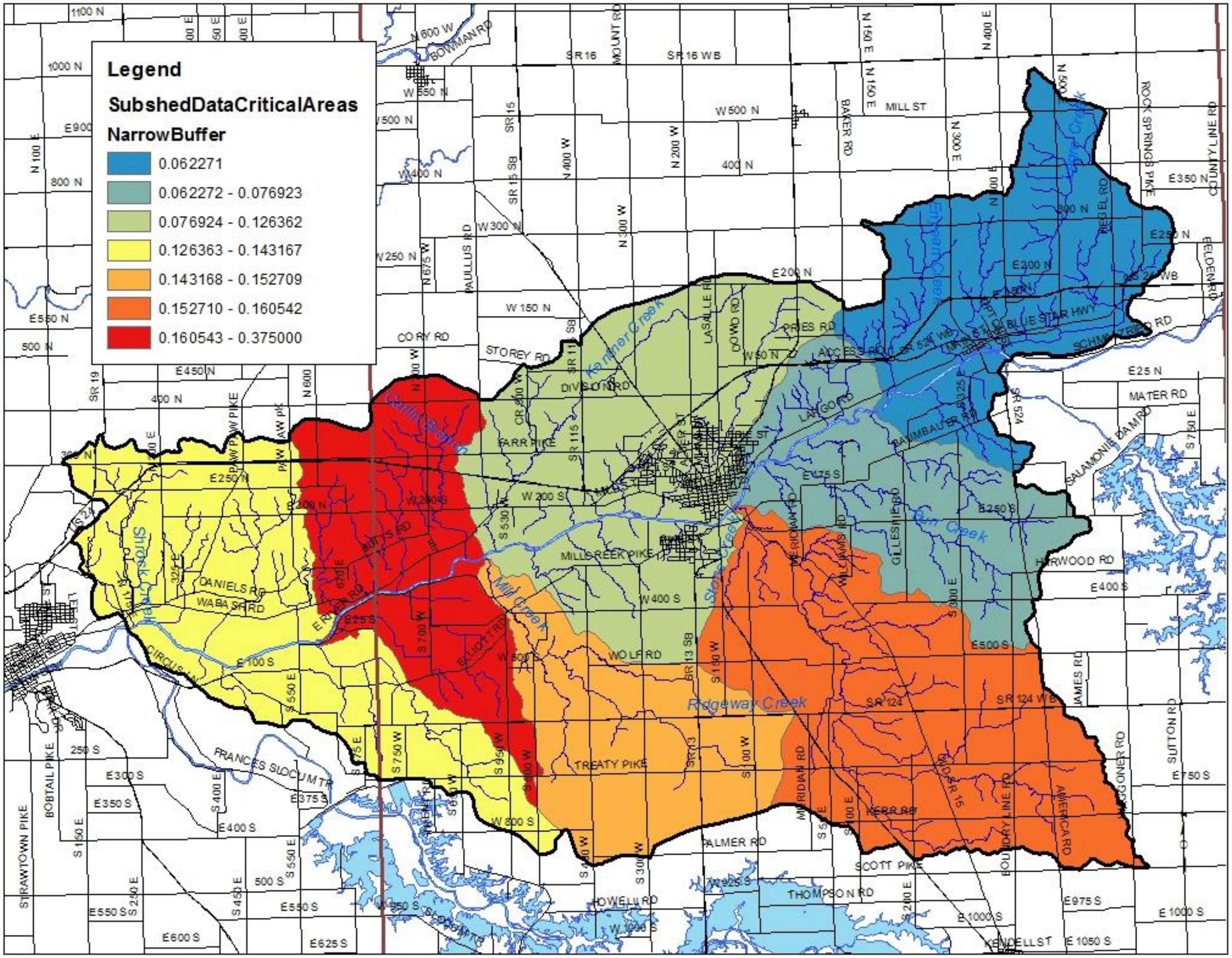
3.012306 - 4.108415
4.108416 - 4.205817
4.205818 - 5.813928
5.813929 - 6.945234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NarrowBuffer
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0.062272 - 0.076923
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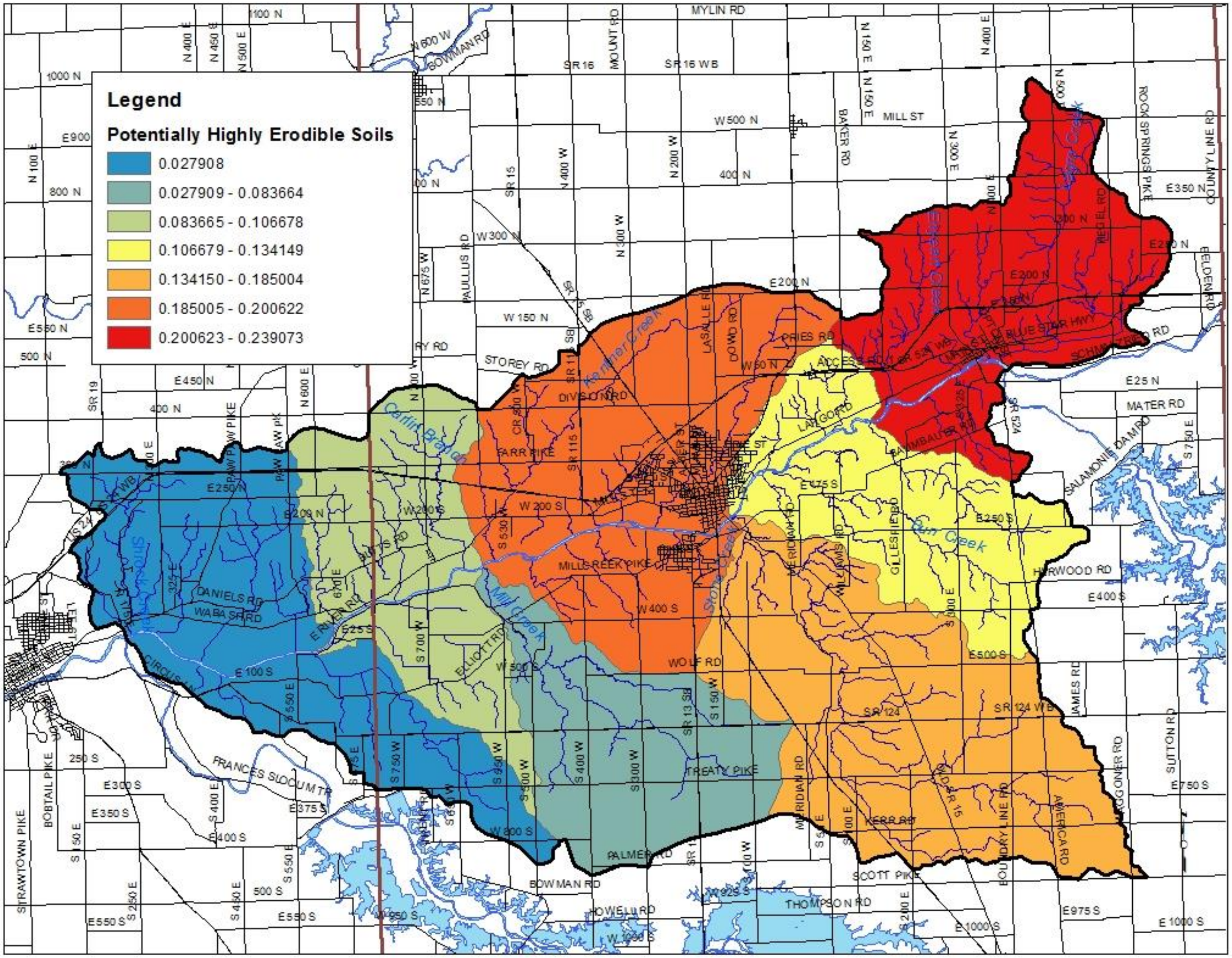
0.126363 - 0.143167
0.143168 - 0.152709
0.152710 - 0.160542
0.160543 - 0.375000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Potentially Highly Erodible Soils
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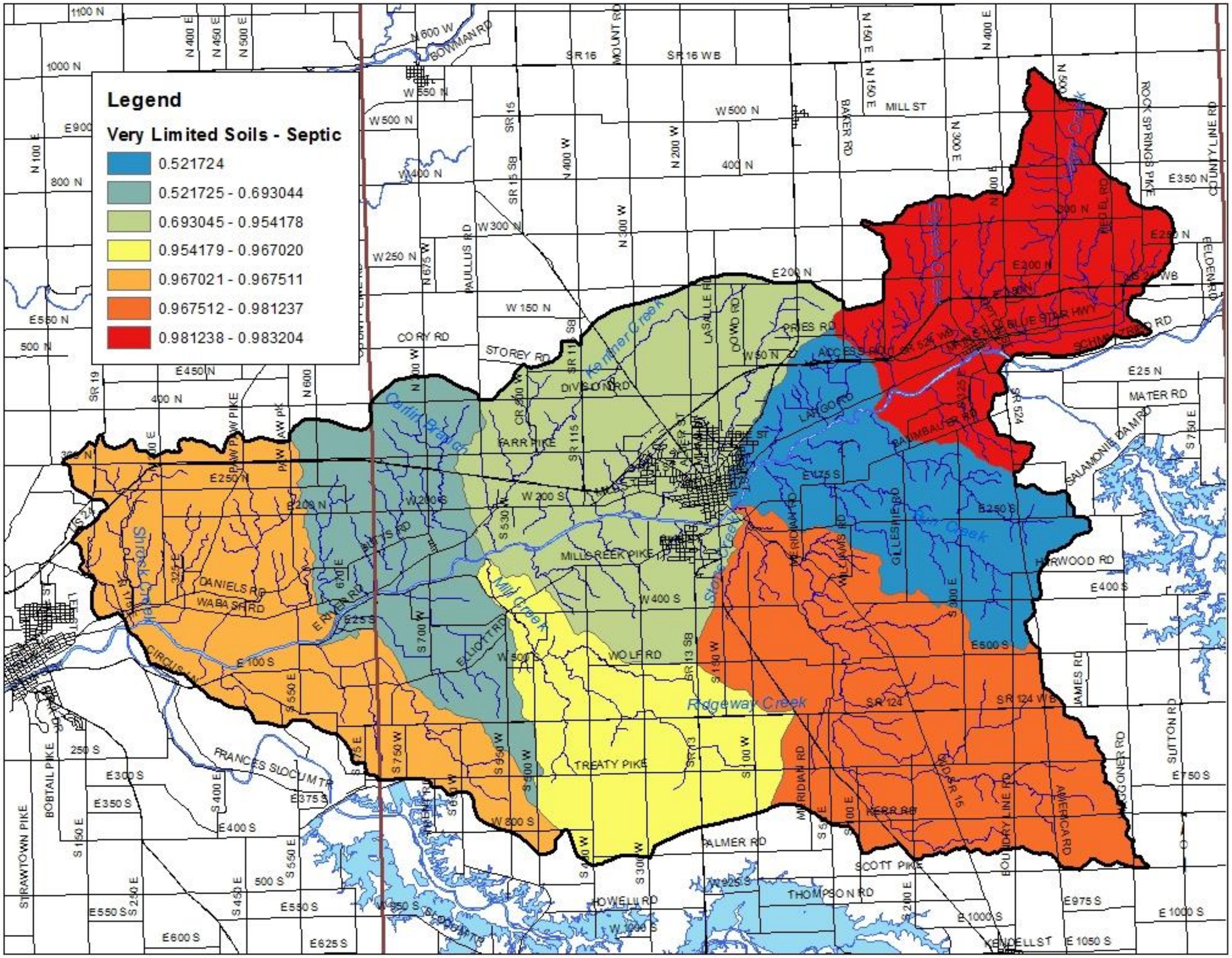
0.134150 - 0.185004
0.185005 - 0.200622
0.200623 - 0.239073



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Very Limited Soils - Septic
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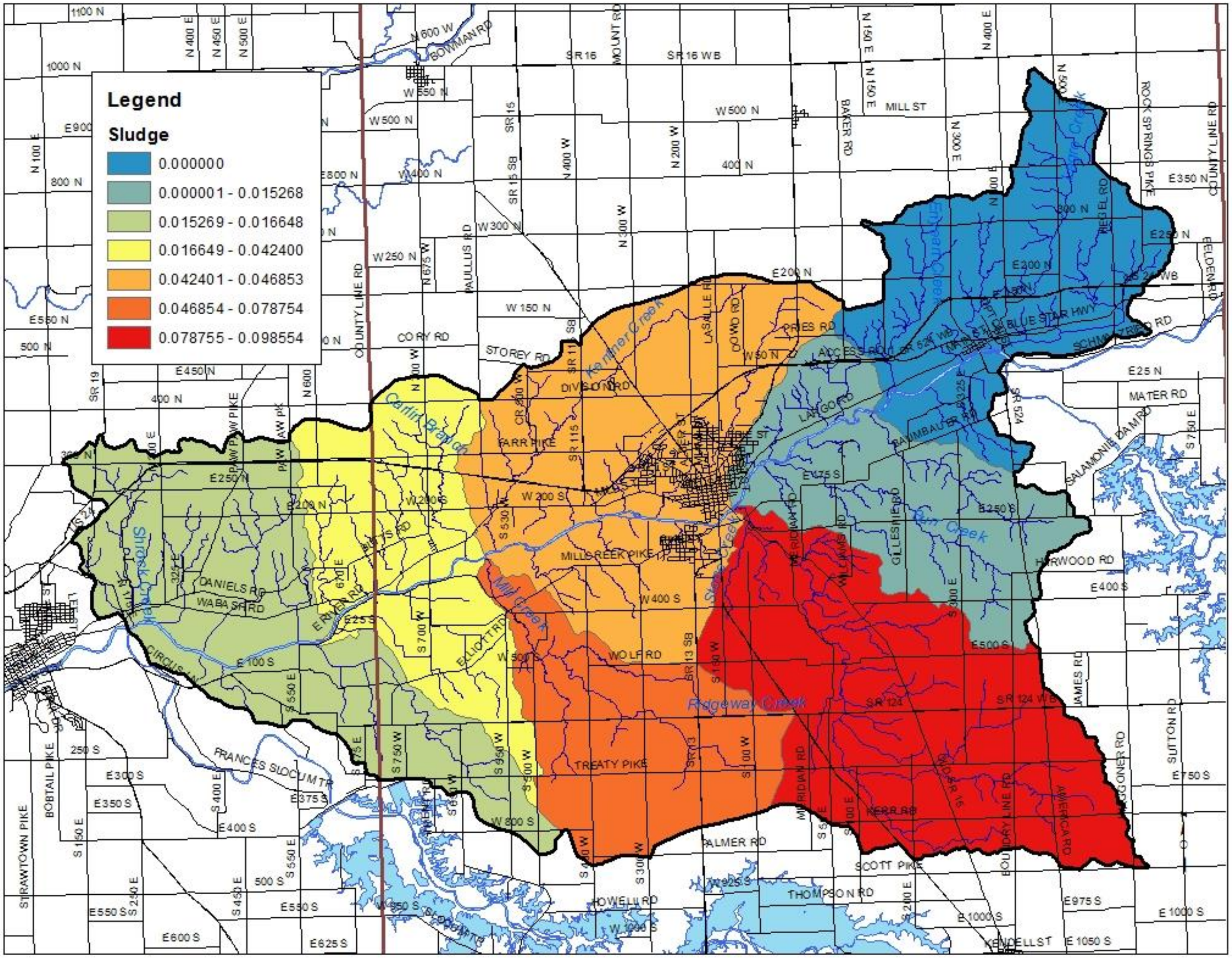
0.693045 - 0.954178
0.954179 - 0.967020
0.967021 - 0.967511
0.967512 - 0.981237
0.981238 - 0.983204
Carlin Branch
Mill Creek
Ridgeway Creek
TREATY PIKE
MILLS CREEK PIKE
WOLF RD
PALMER RD
SCOTT PIKE
THOMPSON RD
HOWELL RD
FRANCES SLOCUM TR
CIRCUS LN
DANIELS RD
WABASH RD
ELLIOTT RD
FARR PIKE
STOREY RD
CORY RD
DIVISION RD
LARGO RD
BAUMBAUER RD
GILLESPIE RD
WILLIAMS RD
MERIDIAN RD
KERR RD
AMERICA RD
BOUNDARY LINE RD
HARWOOD RD
SALAMONIE DAM RD
MATER RD
JAMES RD
SUTTON RD
ROCK SPRINGS PIKE
COUNTY LINE RD
BAKER RD
MILL ST
BOWMAN RD
PAULLUS RD
STRAWTOWN PIKE
BOBTAIL PIKE
KENDELL ST
SR 16
SR 16 WB
SR 15
SR 15 SB
SR 19
SR 124
SR 124 WB
SR 524
SR 13
SR 13 SB
PAW PAW PIKE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Sludge
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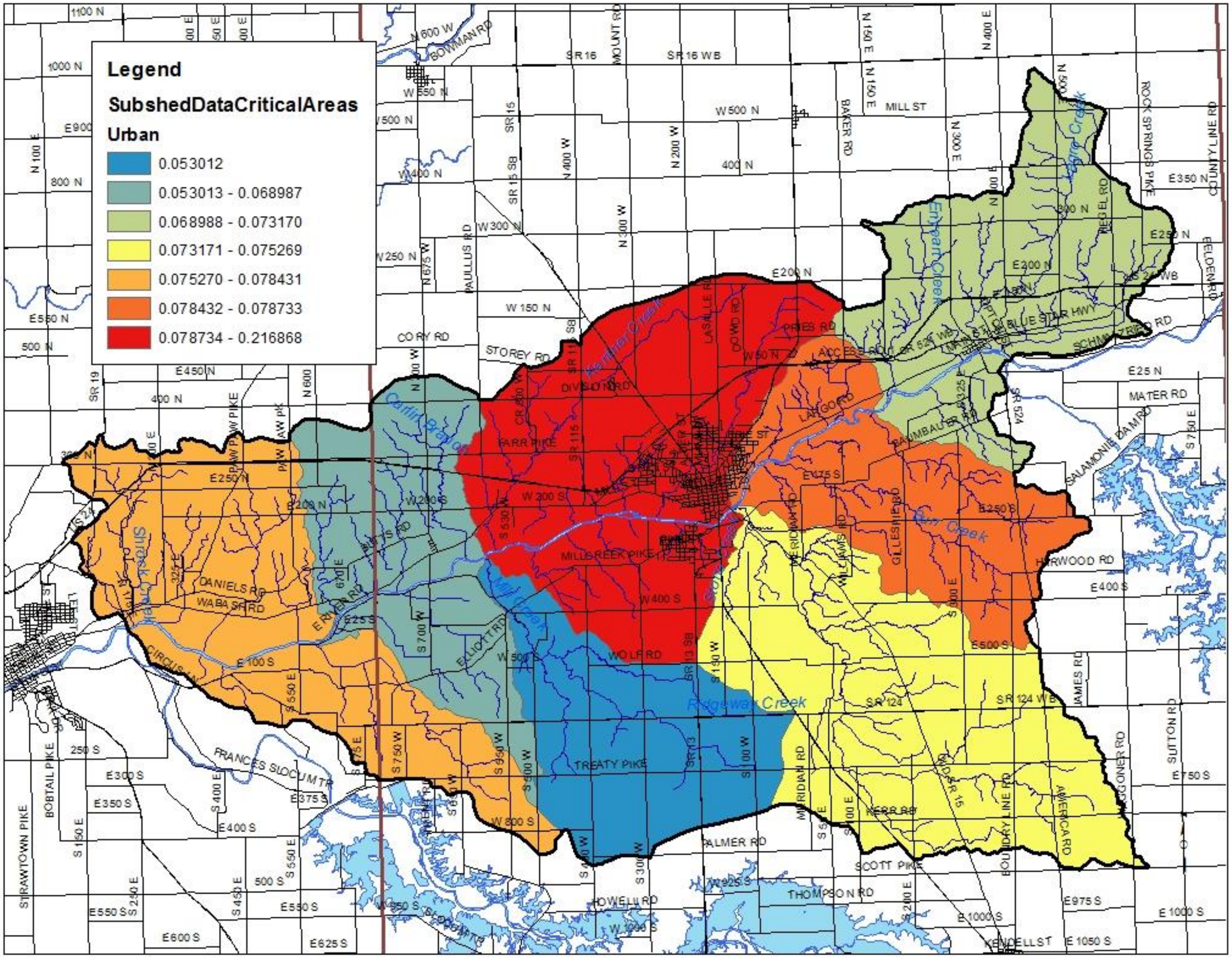
0.042401 - 0.046853
0.046854 - 0.078754
0.078755 - 0.098554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Urban
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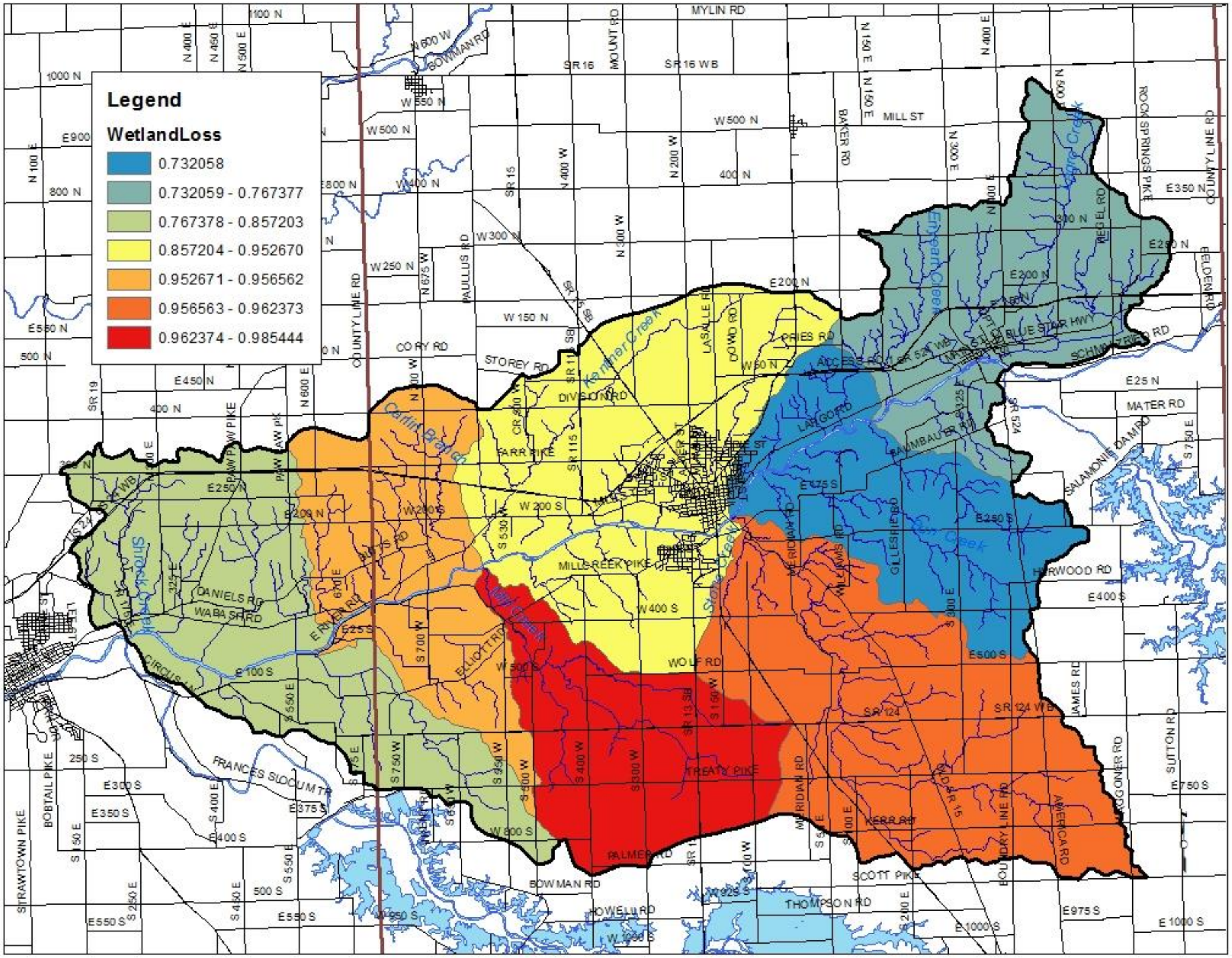
0.073171 - 0.075269
0.075270 - 0.078431
0.078432 - 0.078733
0.078734 - 0.216868
Ridgeway Creek
Treaty Pike
Palmer Rd
Scott Pike
Frances Slocum Tr
Salamonie Dam Rd
Daniels Rd
Wabash Rd
Mill Creek Pike
Wolf Rd
Harwood Rd
Storey Rd
Cory Rd
Farr Pike
Dividon Rd
Largo Rd
Baker Rd
Mill St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WetlandLoss
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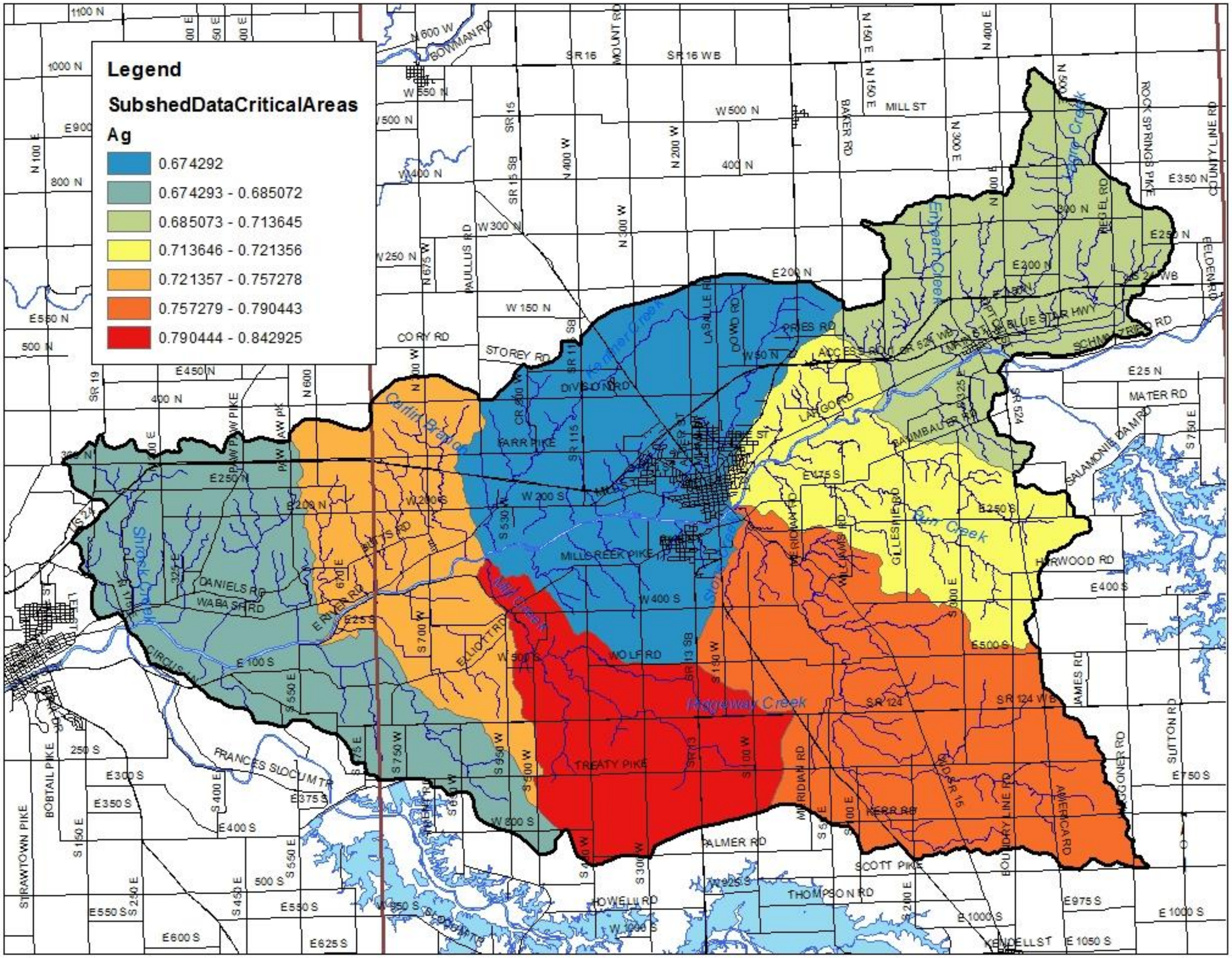
0.952671 - 0.956562
0.956563 - 0.962373
0.962374 - 0.985444

Sediment:

- Conventional tillage cropping practice
- Streambank and bed erosion
- Poor riparian buffers
- Gully or ephemeral erosion
- Cropped floodplains
- Livestock access to streams
- Altered hydrology (ditching and draining, altered stream courses)
- Stormwater and flooding impacts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SubshedDataCriticalAreas
Ag
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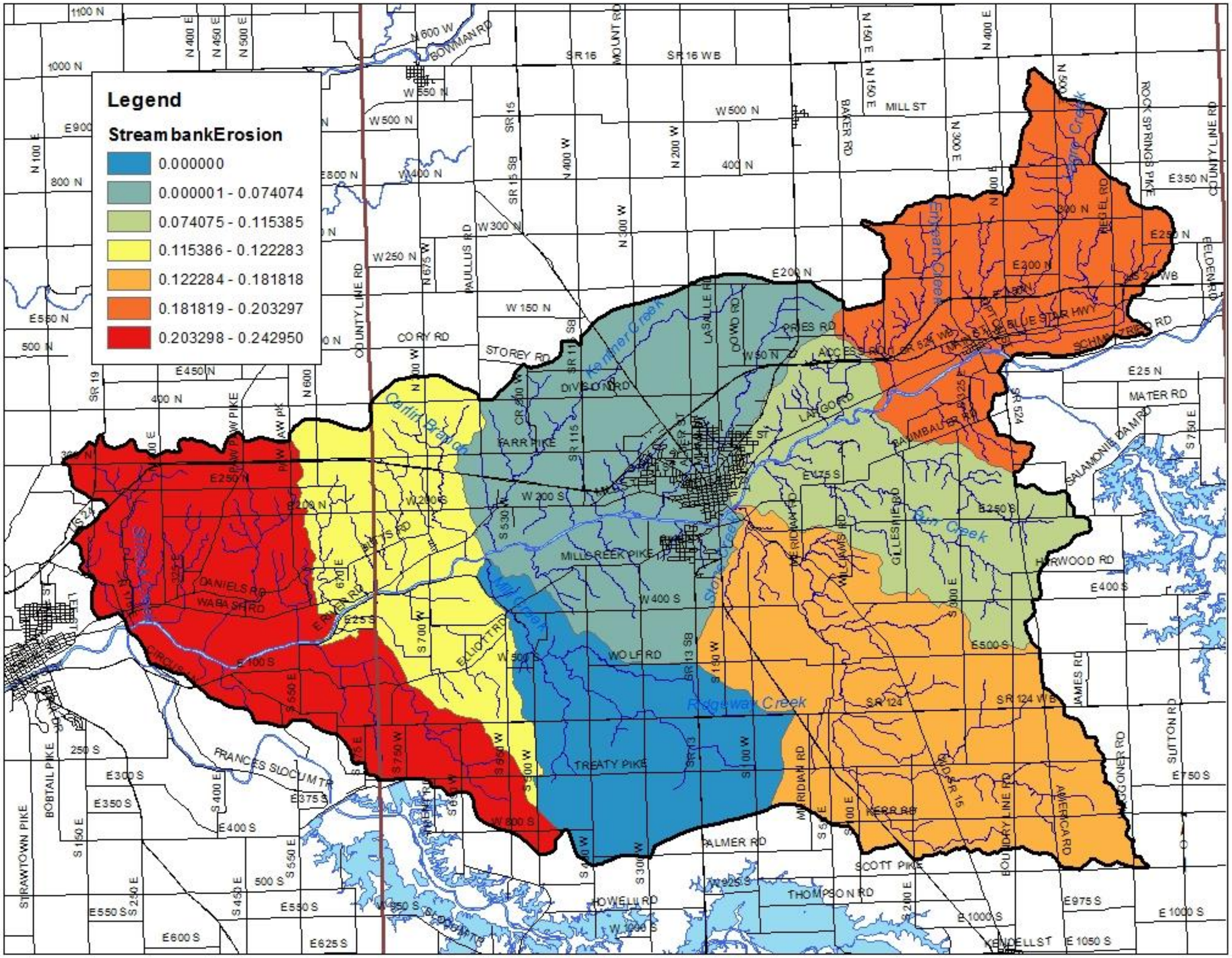
0.674293 - 0.685072
0.685073 - 0.713645
0.713646 - 0.721356
0.721357 - 0.757278
0.757279 - 0.790443
0.790444 - 0.842925
Riggeway Creek
Treaty Pike
Millcreek Pike
Wolf Rd
Palmer Rd
Scott Pike
Thompson Rd
Frances Slocum Tr
Daniels Rd
Wabash Rd
Harwood Rd
Mater Rd
Salamonie Dam Rd
Rock Springs Pike
County Line Rd
Strawtown Pike
Bobtail Pike
Storey Rd
Cory Rd
Mill St
Baker Rd
Dowd Rd
Kerr Rd
Kendell St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StreambankErosion
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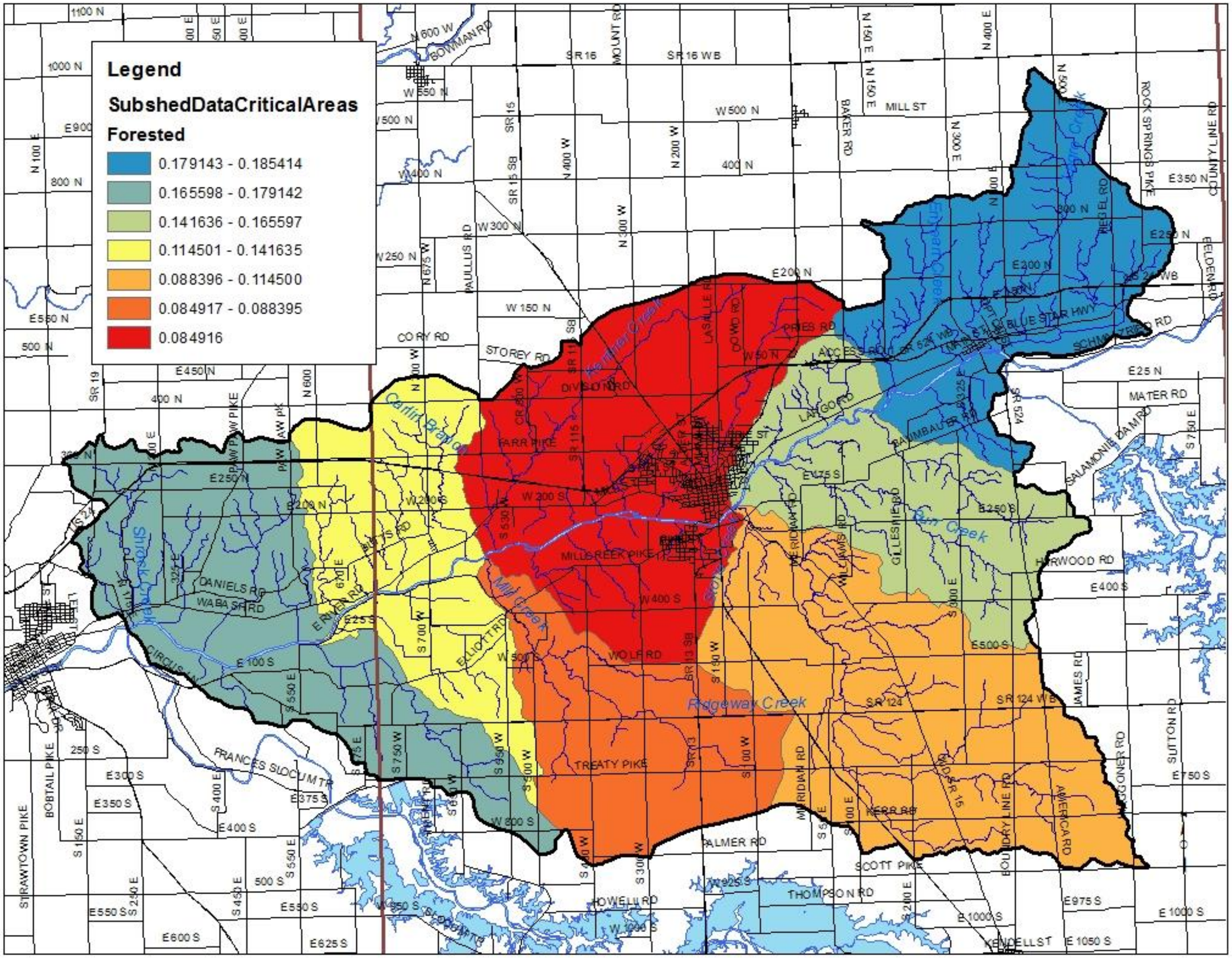
0.181819 - 0.203297
0.203298 - 0.242950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SubshedDataCriticalAreas
Forested
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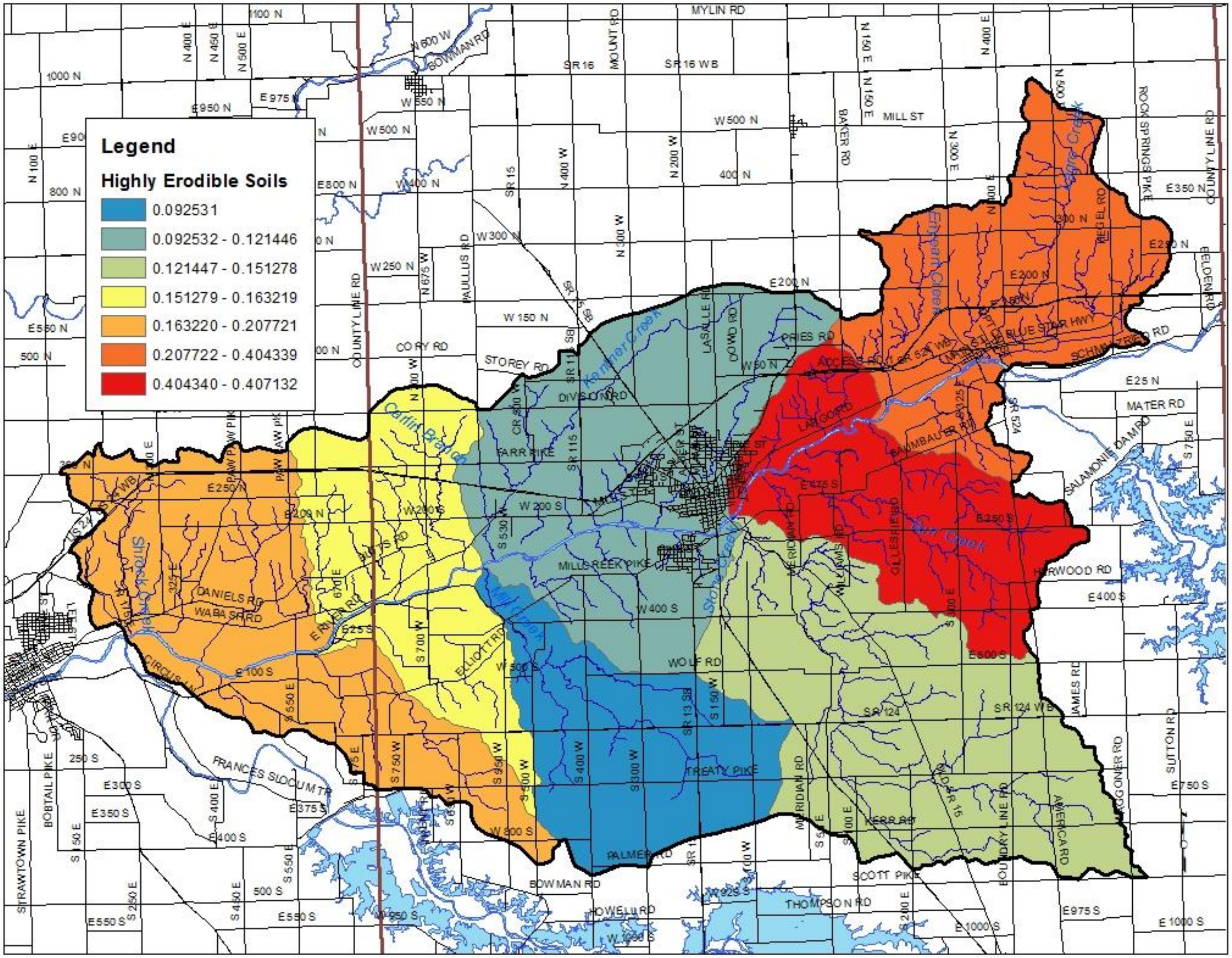
0.165598 - 0.179142
0.141636 - 0.165597
0.114501 - 0.141635
0.088396 - 0.114500
0.084917 - 0.088395
0.084916
Ridgeway Creek
Mill Creek
Treaty Pike
Wolf Rd
Millcreek Pike
Farr Pike
Storey Rd
Cory Rd
Palmer Rd
Scott Pike
Thompson Rd
Frances Slocum Tr
Daniels Rd
Wabash Rd
Circus Rd
Blue Star Hwy
Bowman Rd
Mill St
Baker Rd
Largo Rd
Harwood Rd
Mater Rd
Salamonie Dam Rd
Rock Springs Pike
County Line Rd
Strawtown Pike
Bobtail Pike
Kendell St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Highly Erodible Soils
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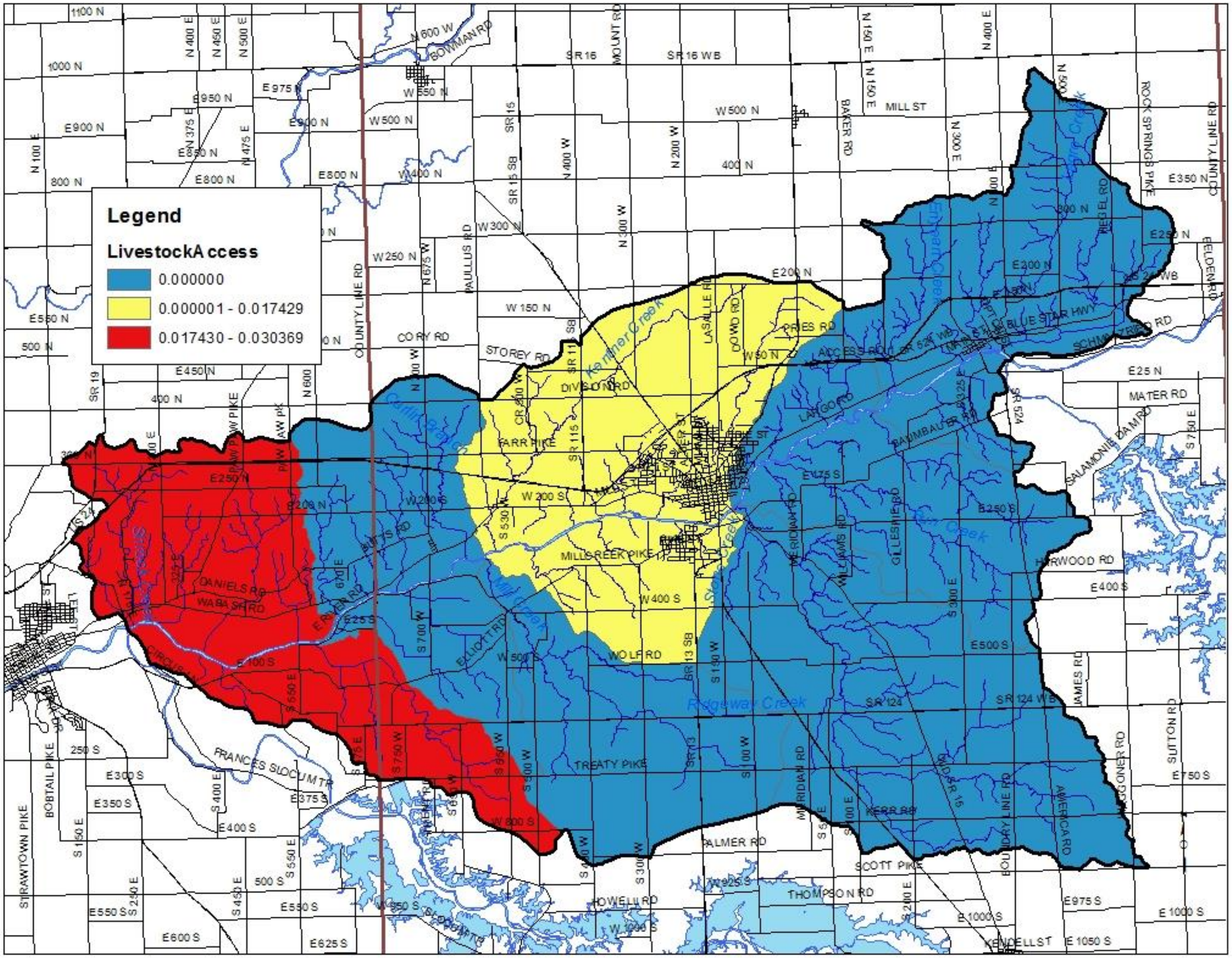
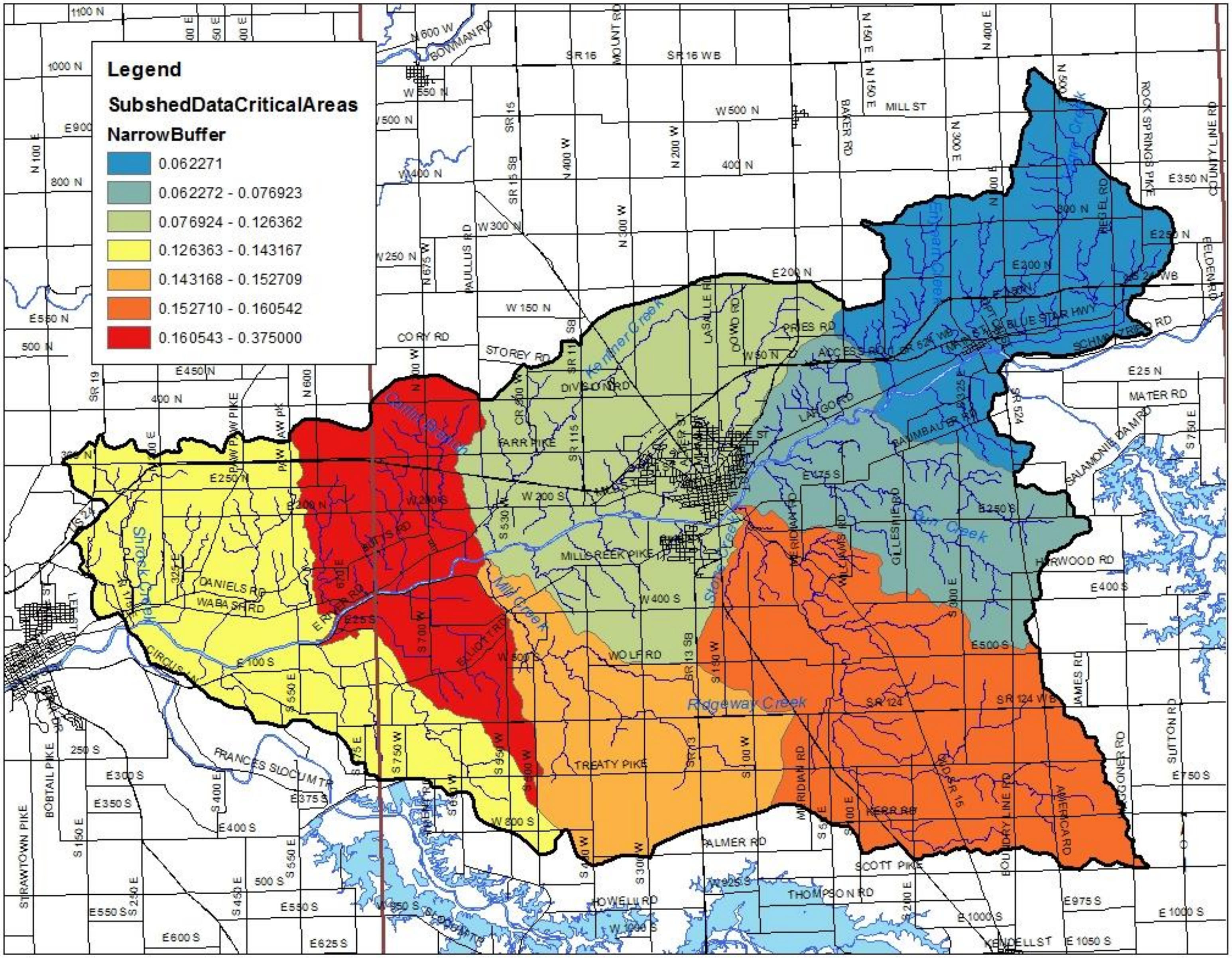
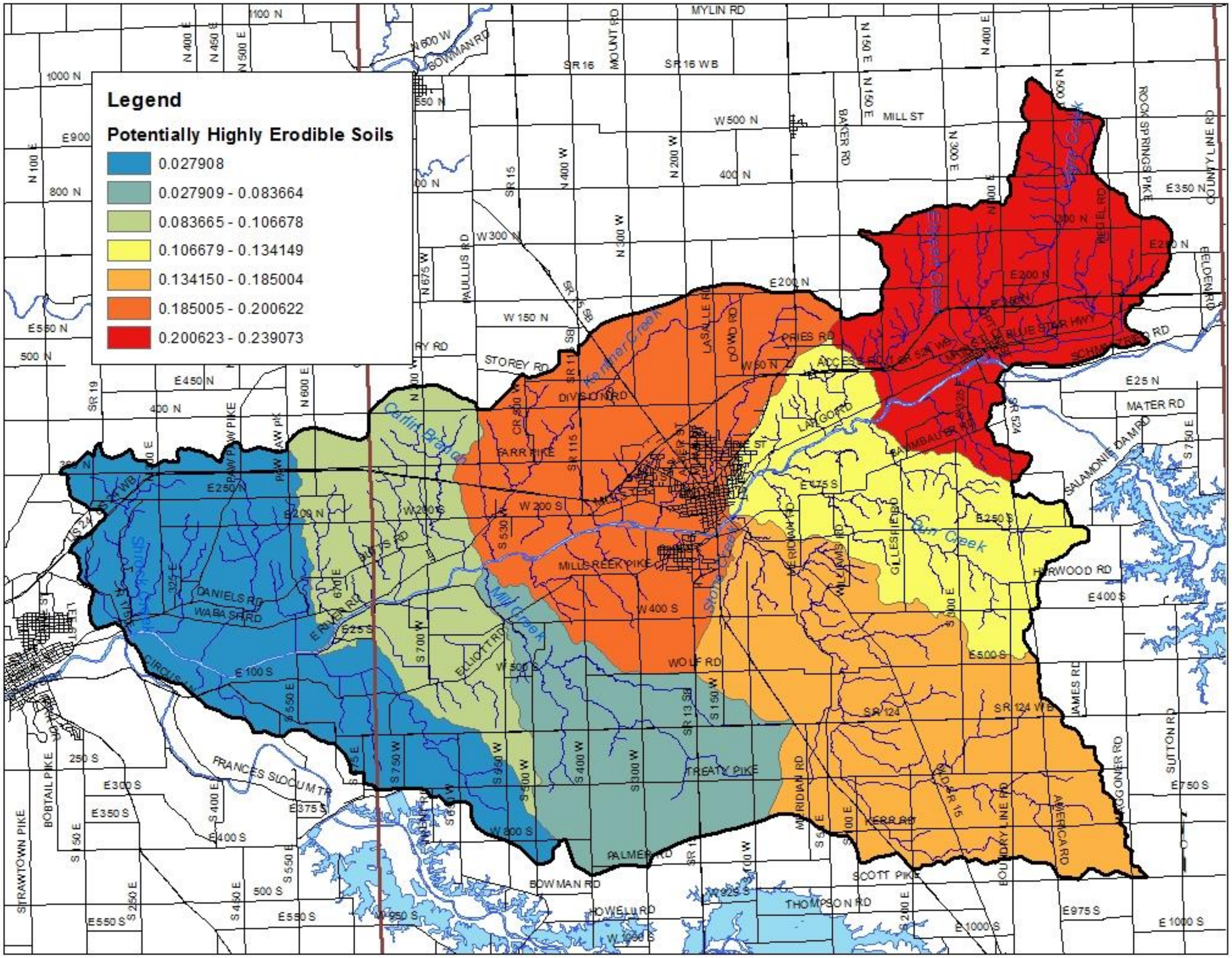
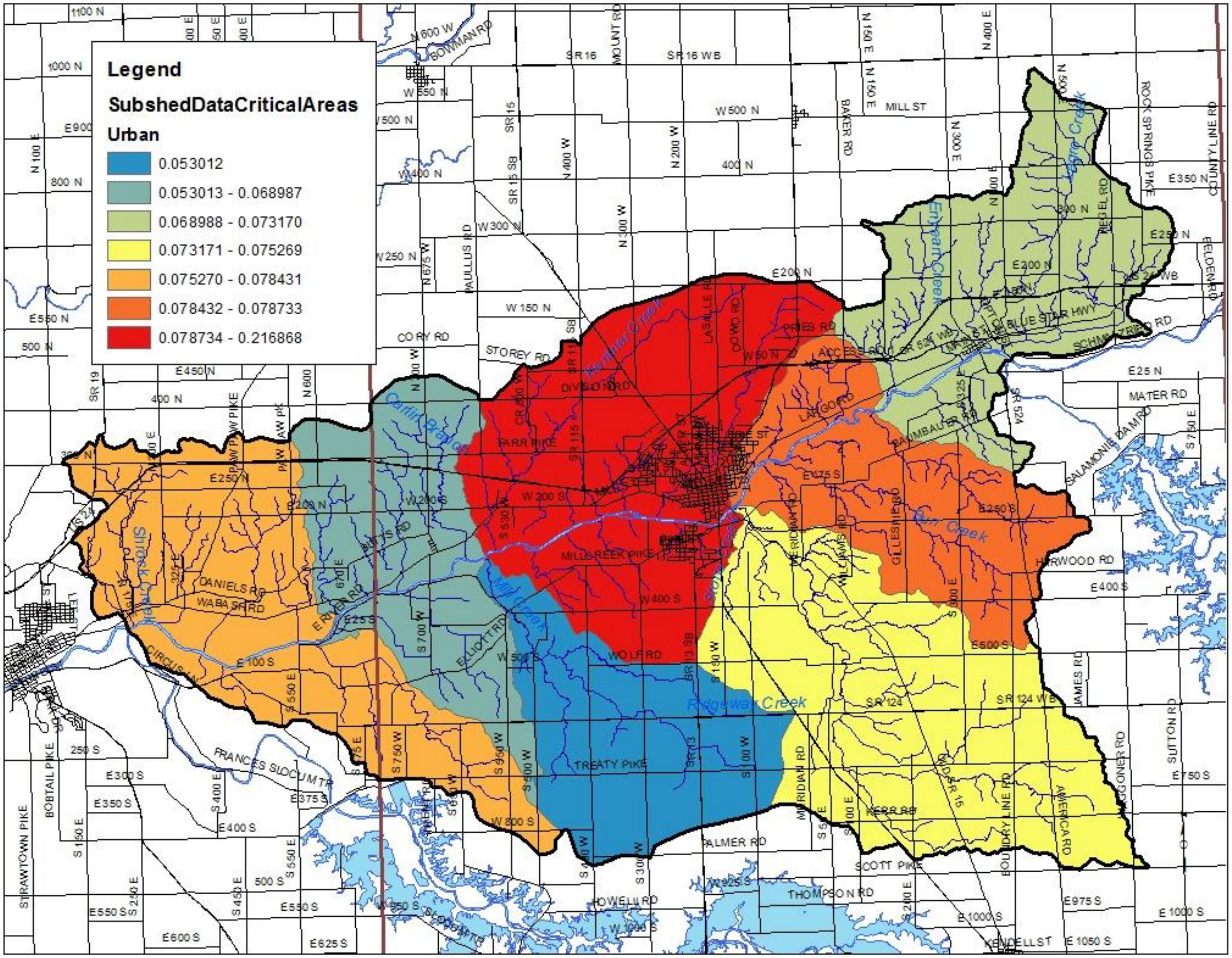
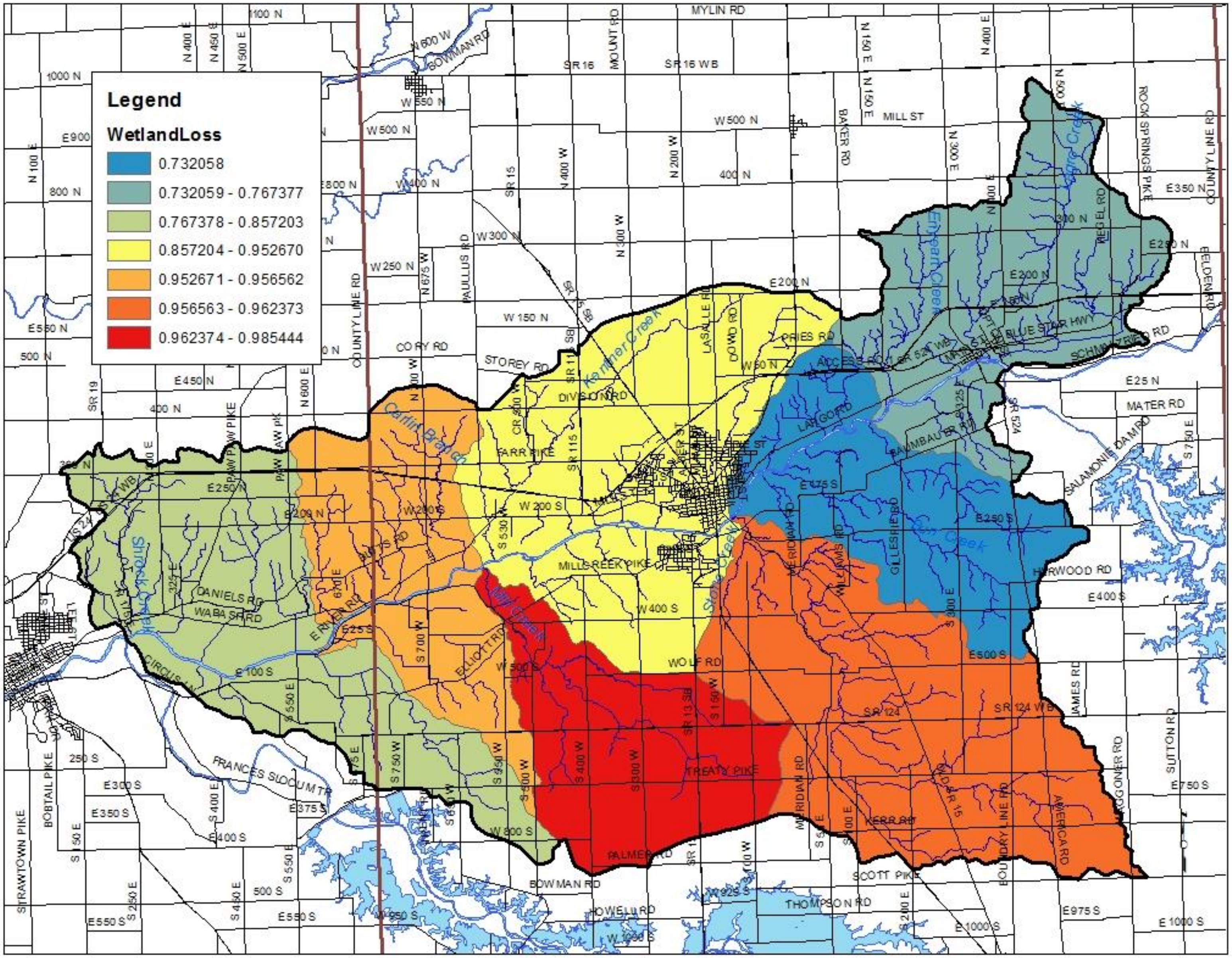
0.151279 - 0.163219
0.163220 - 0.207721
0.207722 - 0.404339
0.404340 - 0.407132


Legend
LivestockA ccess
0.000000
0.000001 - 0.017429
0.017430 - 0.030369


Legend
SubshedDataCriticalAreas
NarrowBuffer
0.062271
0.062272 - 0.076923
0.076924 - 0.126362
0.126363 - 0.143167
0.143168 - 0.152709
0.152710 - 0.160542
0.160543 - 0.375000
Ridgeway Creek
Mill Creek
Treaty Pike
Wolf Rd
Mill Creek Pike

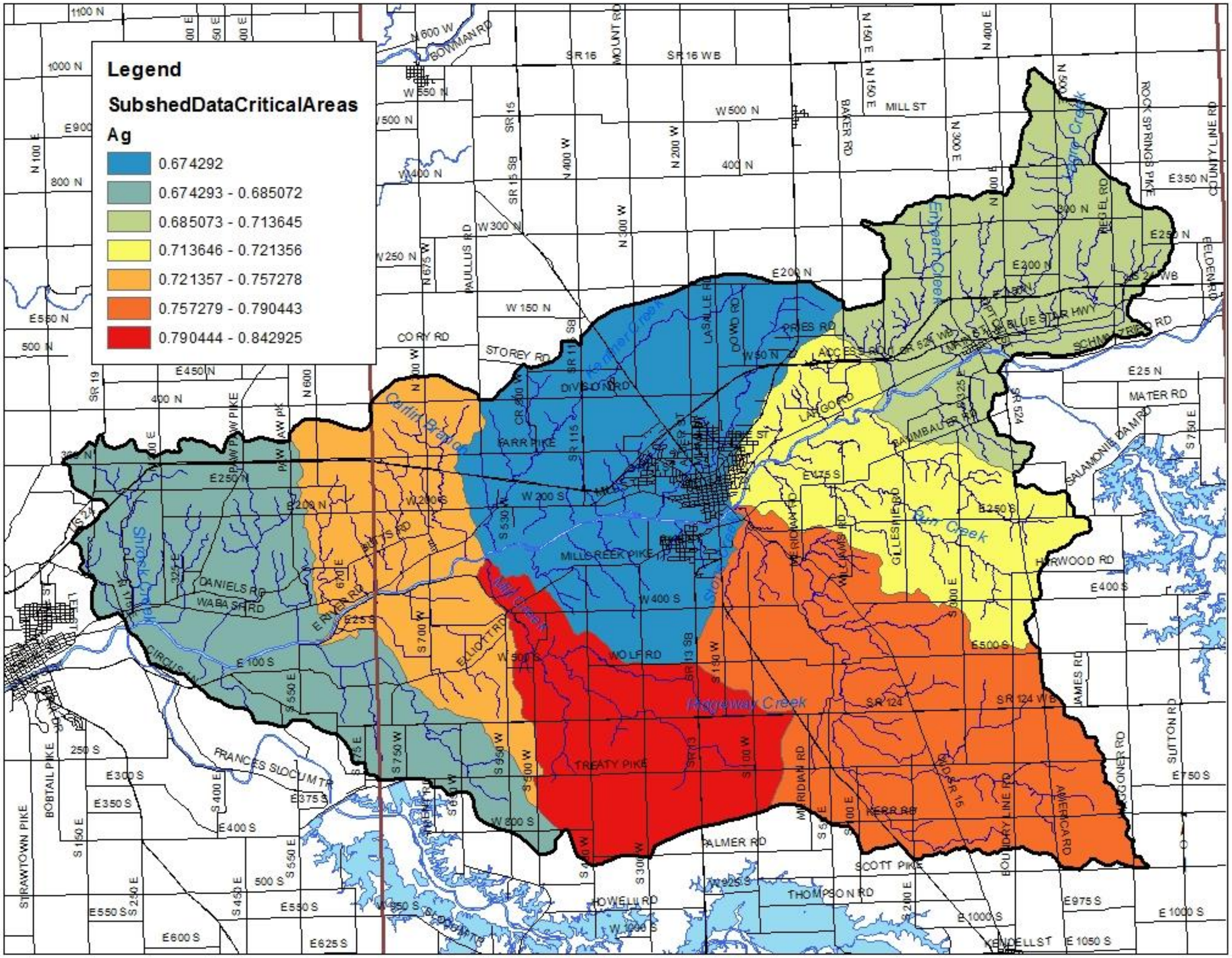

Legend
Potentially Highly Erodible Soils
0.027908
0.027909 - 0.083664
0.083665 - 0.106678
0.106679 - 0.134149
0.134150 - 0.185004
0.185005 - 0.200622
0.200623 - 0.239073

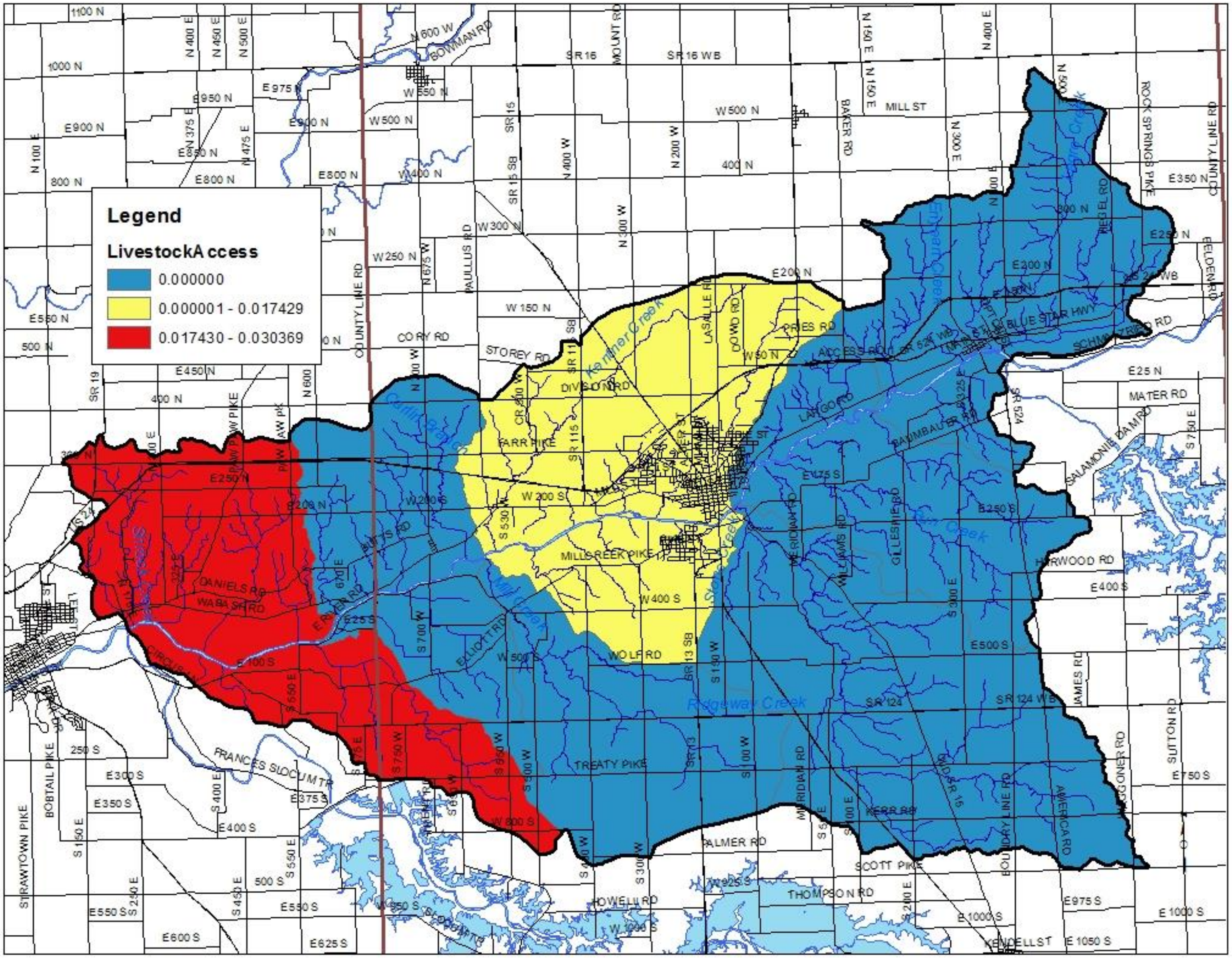

Legend
SubshedDataCriticalAreas
Urban
0.053012
0.053013 - 0.068987
0.068988 - 0.073170
0.073171 - 0.075269
0.075270 - 0.078431
0.078432 - 0.078733
0.078734 - 0.216868

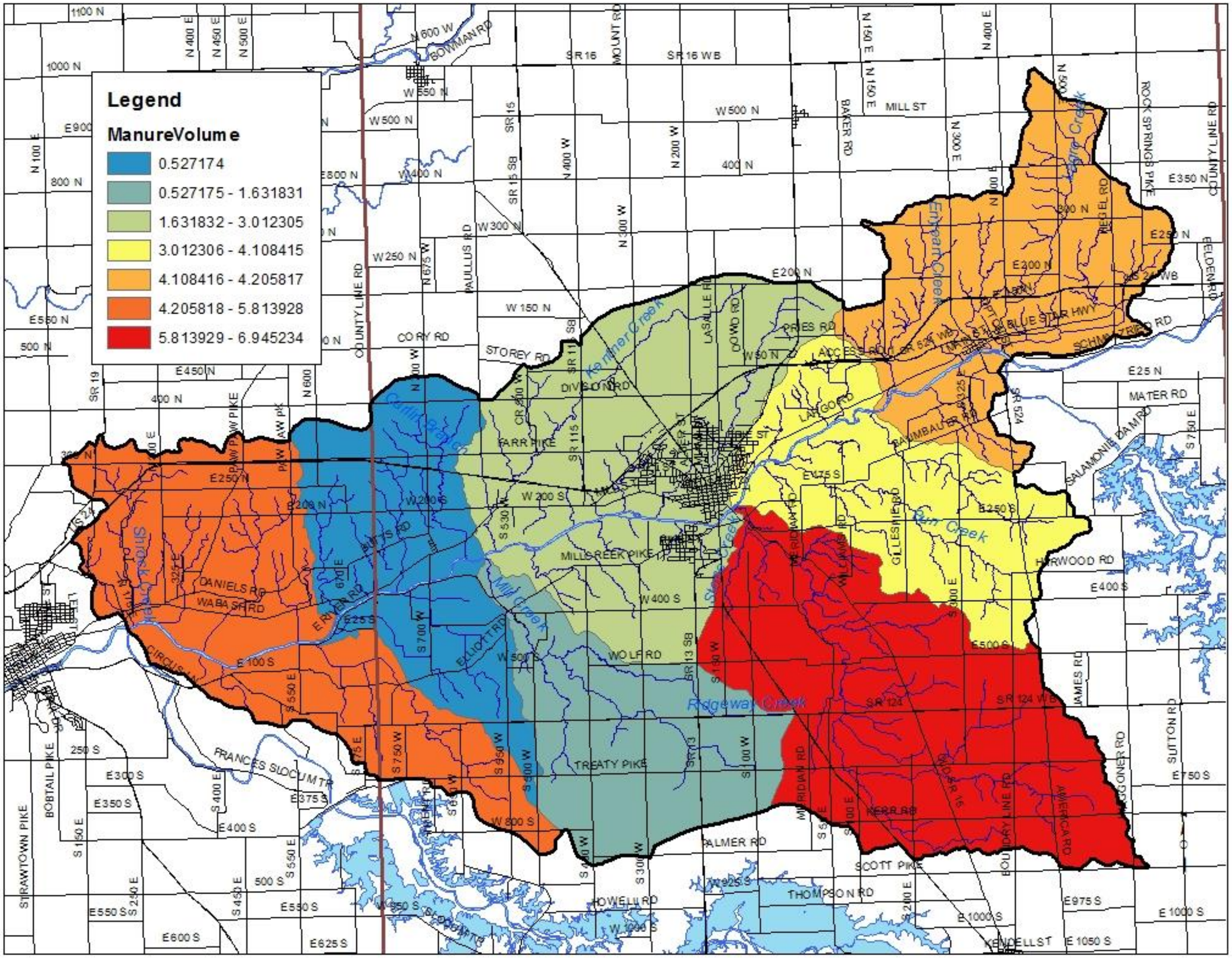

Legend
WetlandLoss
0.732058
0.732059 - 0.767377
0.767378 - 0.857203
0.857204 - 0.952670
0.952671 - 0.956562
0.956563 - 0.962373
0.962374 - 0.985444

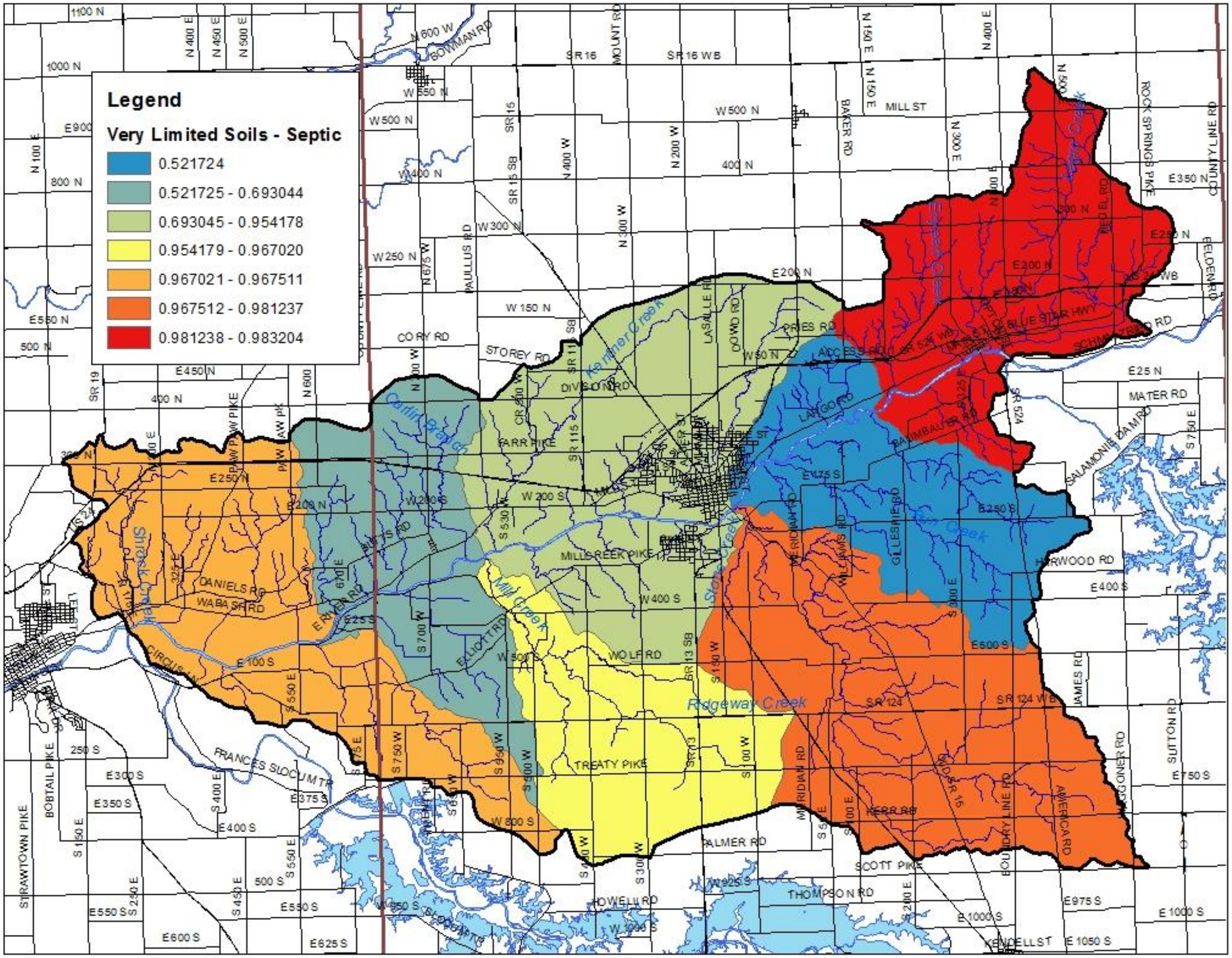
E. coli:

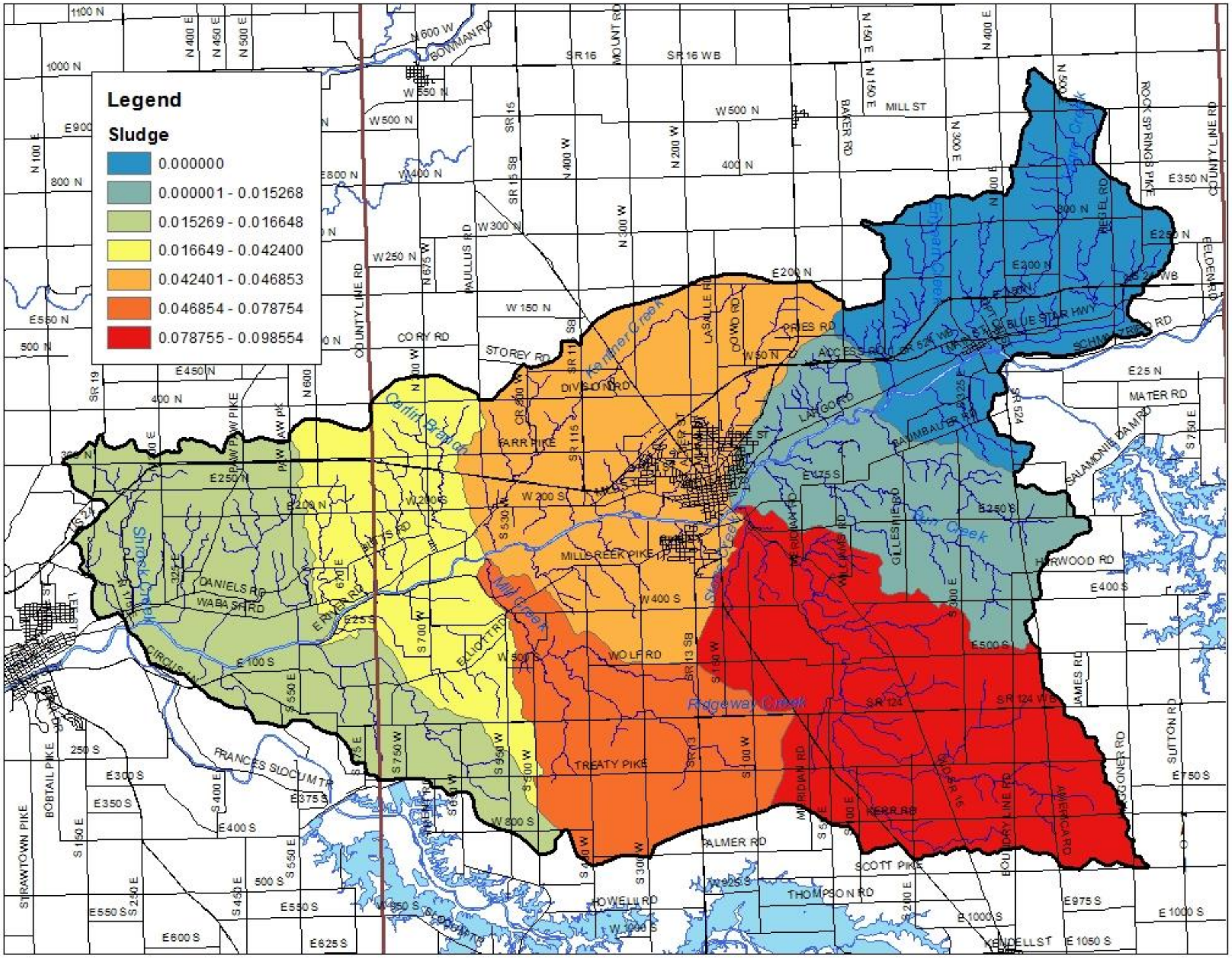
- Human waste (failing septic systems, package plants, inadequately treated wastewater)
- Animal waste (livestock in streams, poor manure management, domestic and wildlife runoff)
- Stormwater and flooding impacts

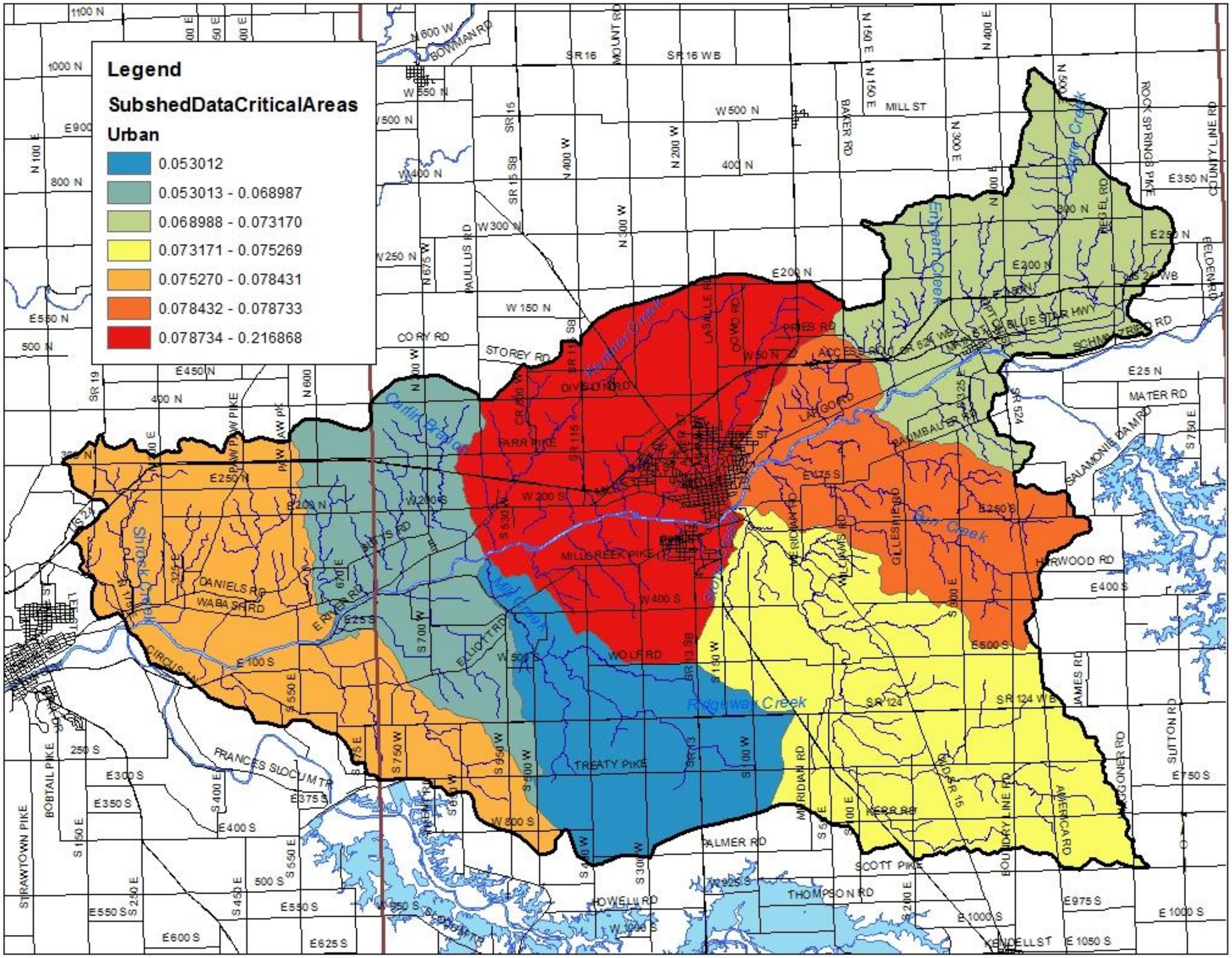

Legend
SubshedDataCriticalAreas
Ag
0.674292
0.674293 - 0.685072
0.685073 - 0.713645
0.713646 - 0.721356
0.721357 - 0.757278
0.757279 - 0.790443
0.790444 - 0.842925


Legend
LivestockA ccess
0.000000
0.000001 - 0.017429
0.017430 - 0.030369


Legend
ManureVolume
0.527174
0.527175 - 1.631831
1.631832 - 3.012305
3.012306 - 4.108415
4.108416 - 4.205817
4.205818 - 5.813928
5.813929 - 6.945234
Ridgeway Creek
Mill Creek
Pipe Creek
Treaty Pike
Mills Creek Pike


Legend
Very Limited Soils - Septic
0.521724
0.521725 - 0.693044
0.693045 - 0.954178
0.954179 - 0.967020
0.967021 - 0.967511
0.967512 - 0.981237
0.981238 - 0.983204
Ridgeway Creek
Mill Creek
Carlin Branch
TREATY PIKE
MILLCREEK PIKE
WOLF RD
PALMER RD
SCOTT PIKE
THOMPSON RD
KERR RD
AMERICA RD
BOUNDARY LINE RD
HARWOOD RD
SALAMONIE DAM RD
BAMBAUER RD
LARGO RD
DIVISION RD
FARR PIKE
STOREY RD
CORY RD
BOWMAN RD
ROCK SPRINGS PIKE
COUNTY LINE RD
SUTTON RD
JAMES RD
DANIELS RD
WABASH RD
CIRCUS LN
FRANCES SLOCUM TR
BOBTAIL PIKE
STRAWTOWN PIKE
ELLIOTT RD
MERIDIAN RD
GILLESPIE RD
WILLIAMS RD
PRIES RD
MILL ST
BAKER RD
MATER RD
KENDELL ST


Legend
Sludge
0.000000
0.000001 - 0.015268
0.015269 - 0.016648
0.016649 - 0.042400
0.042401 - 0.046853
0.046854 - 0.078754
0.078755 - 0.098554


Legend
SubshedDataCriticalAreas
Urban
0.053012
0.053013 - 0.068987
0.068988 - 0.073170
0.073171 - 0.075269
0.075270 - 0.078431
0.078432 - 0.078733
0.078734 - 0.216868