

ELKHART RIVER WATERSHED MANAGEMENT PLAN



Cover photos courtesy
of Stuart Meade
and the Elkhart County
SWCD

03/6/08

Elkhart, Kosciusko, LaGrange, and Noble Counties, Indiana

PREPARED BY:
V3 COMPANIES



PREPARED FOR:
ELKHART RIVER RESTORATION ASSOCIATION
and the ELKHART RIVER ALLIANCE



Elkhart River Watershed Plan

EXECUTIVE SUMMARY

The Elkhart River Watershed occupies portions of Elkhart, LaGrange, Noble, and Kosciusko counties. The headwaters begin with the North Branch of the Elkhart River in south-central LaGrange County and the South Branch of the Elkhart River in central Noble County. The Elkhart River then flows northwest into Elkhart County, forming the Goshen Dam Pond in Goshen, and finally draining into the St. Joseph River in the City of Elkhart.

The Watershed is approximately 447,000 acres of mixed landuse consisting mainly of row crop agriculture and pasture. In recent years the Watershed has experienced rapid urban growth. Most of the growth is occurring in the Elkhart-Goshen area in Elkhart County. However, other areas in Noble and Kosciusko Counties are also experiencing growth, such as the area around Albion in Noble County.

The Elkhart River Alliance (ERA) was formed as a committee of the Elkhart River Restoration Association, Inc. (ERRA) to address concerns regarding sediment in the Goshen Dam Pond and pollution in the Elkhart River Watershed. With assistance from the Elkhart County Soil and Water Conservation District (SWCD), the ERRA obtained funding from an Environmental Protection Agency (EPA) 319 grant through the Indiana Department of Environmental Management (IDEM) for the development and implementation of a Watershed Management Plan (WMP) for the Elkhart River Watershed. A Steering Committee of ERA members was organized to work with the watershed coordinator to develop and implement the WMP.

The Elkhart River WMP is intended as a guide for the protection and enhancement of the environment and quality of the Elkhart River Watershed while balancing the different uses and demands of the community on this natural resource. These goals address items such as:

- education and outreach;
- reducing the amount of pollution and sediment entering the aquatic systems;
- increasing preservation, restoration, and protection of this vital system;
- increasing cooperation, coordination, and collaboration among all stakeholders in the Watershed; and
- building and maintaining a solid organization to look to the welfare of this important natural resource.

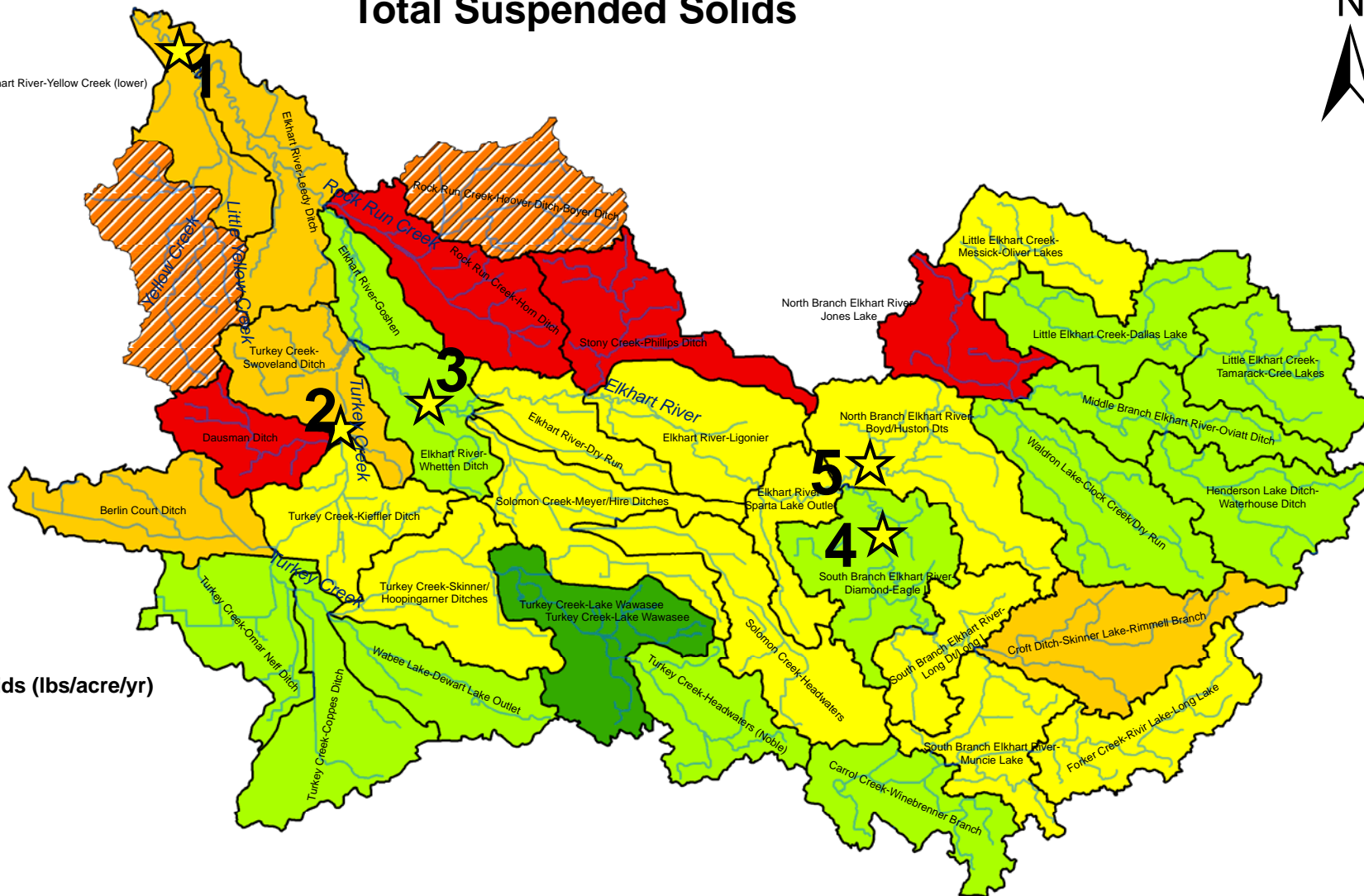
At a meeting on November 28, 2007, the Steering Committee studied the original stakeholder concern list, the windshield survey data, and the historical data presented by V3 Companies (V3). The Steering Committee identified the three most critical water quality components of degradation to the Elkhart River Watershed as sediment, *E. coli* and nutrients. The Steering Committee then developed the following list of problems and causes identified in the Watershed:

- There is a problem with excessive sediment loading which is causing silt deposits and accelerated eutrophication in the Watershed, especially in the Goshen Dam Pond area. For the purposes of this WMP sediment will be discussed in terms of total suspended solids (TSS) with a concentration target of 80 mg/L as decided by the Steering Committee. Additional problems identified by the Stakeholders include stream bank erosion, fertilizers and pesticides entering the water through agricultural and urban erosion and runoff. The St. Joseph River WMP indicated that the Elkhart River is a critical area for sediment in that watershed. The data collected by V3 for this WMP supports that conclusion as shown in Exhibit 29. Sedimentation is the cause of this water quality problem.
- *E. coli* levels are problematic. There is a public concern that the river is not suitable for recreational use because of poor water quality. According to IDEM data studies, almost every site tested in the Watershed violated the state water quality standard for *E. coli*, which is 235 colony forming units per 100 milliliters (235 cfu/100mL). In response to this, many streams in the Elkhart River Watershed are listed on IDEM's 303(d) list of impaired waters. Pathogens (*E. coli*) are the cause of the water quality problem.
- There is a problem with excessive nutrient loading which is causing accelerated eutrophication in the Watershed, especially in the Goshen Dam Pond area. Exhibits 22 and 28 show exceedances of nutrient limits in several subwatersheds of the Elkhart River Watershed, and the windshield survey data confirmed there are sources of excess nutrient loading in the Watershed. Nutrient loading is the cause of the water quality problem.
- There is a problem with rapid landuse changes which are causing degradation in the Watershed including: hydrologic modification; loss of wetlands and floodplains; loss of wildlife habitat; spread of invasive species; and conflicts over drainage and recreational uses. Historical and current data shows that the Watershed is undergoing urban development at a more rapid rate than the state average. Landuse planning can result in sustainable growth and development.
- There is a problem with protecting valuable open space and wildlife habitat; protecting threatened and endangered species and their habitat; managing nuisance species; and stopping the introduction and spread of invasive species. State lists, the windshield survey, and public input confirm these concerns. Educating landusers to assist them with proper management can increase preservation, restoration, and appreciation of open space and maintain a proper balance between diverse landuses.
- There are several problems regarding fish populations in the rivers, lakes, and tributaries: degraded fish ladders; fear of eating fish; and fish kills. Many streams in the Elkhart River Watershed are listed on IDEM's 303(d) list of impaired waters, with a fish consumption advisory due to mercury and PCBs. Windshield survey data and public input confirm these other concerns. Habitat degradation and some pollutant concerns will be addressed by the Elkhart River WMP. It is beyond the scope of the Elkhart River WMP to address mercury and PCBs; however, we support additional research into these concerns.

Total Suspended Solids



Elkhart River-Yellow Creek (lower)



Legend

Total Suspended Solids (lbs/acre/yr)

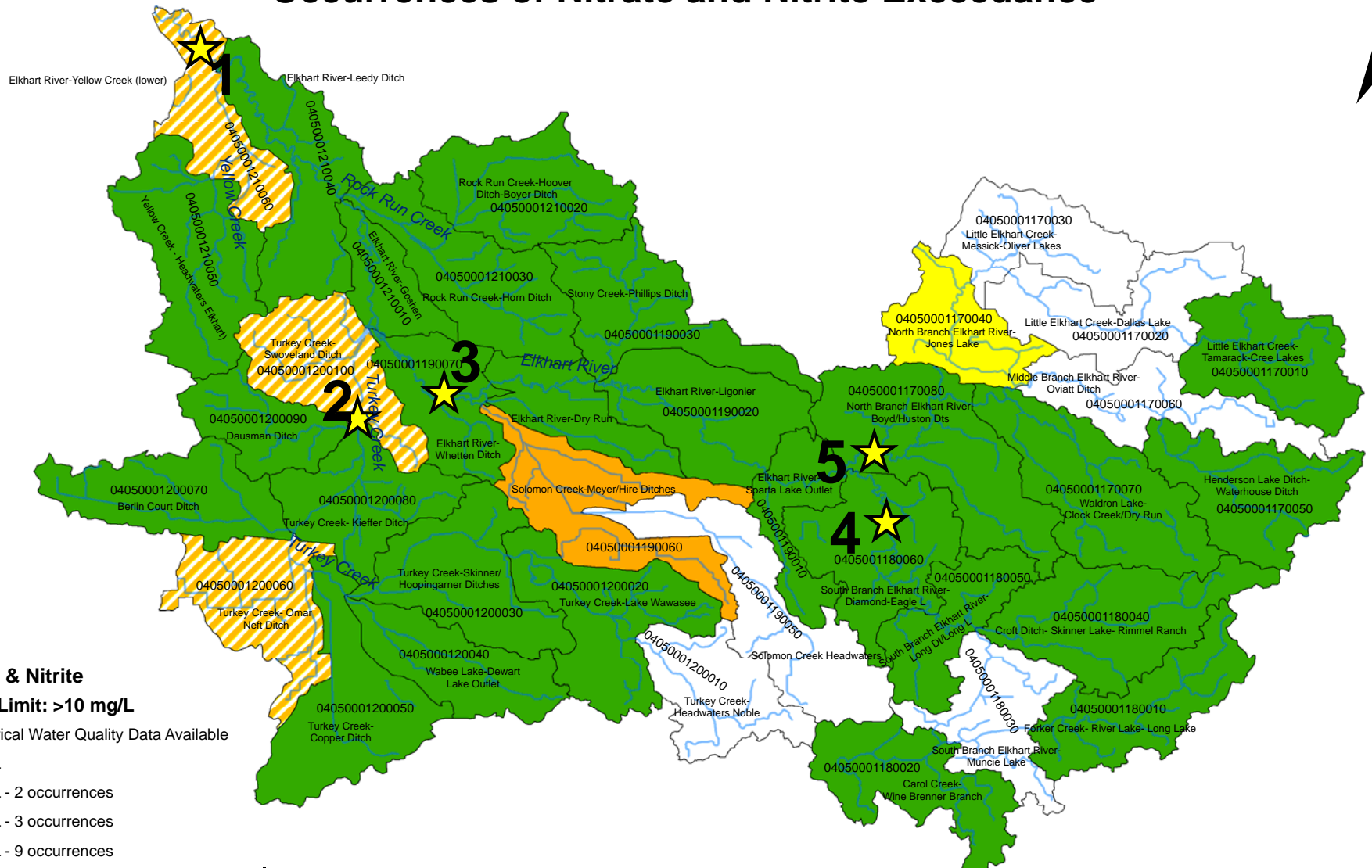
- 299 - 400
- 401 - 502
- 503 - 570
- 571 - 630
- 631 - 700
- 701 - 831
- Streams



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www.v3co.com

TITLE:	Total Suspended Solids		PROJECT: Elkhart River Watershed Management Plan & Implementation		
BASE LAYER:	N/A		PROJECT NO.:	EXHIBIT:	SHEET: 1 OF 1
CLIENT:	Elkhart River Restoration Association 305 Carter Road Goshen, Indiana 46526		07041	29	
			QUADRANGLE:	DATE:	SCALE:
			N/A	11/15/07	1"=27,500'

Occurrences of Nitrate and Nitrite Exceedance



Legend

Streams

Total Nitrate & Nitrite

Exceedance Limit: >10 mg/L

No Historical Water Quality Data Available

<10 mg/L

>10 mg/L - 2 occurrences

>10 mg/L - 3 occurrences

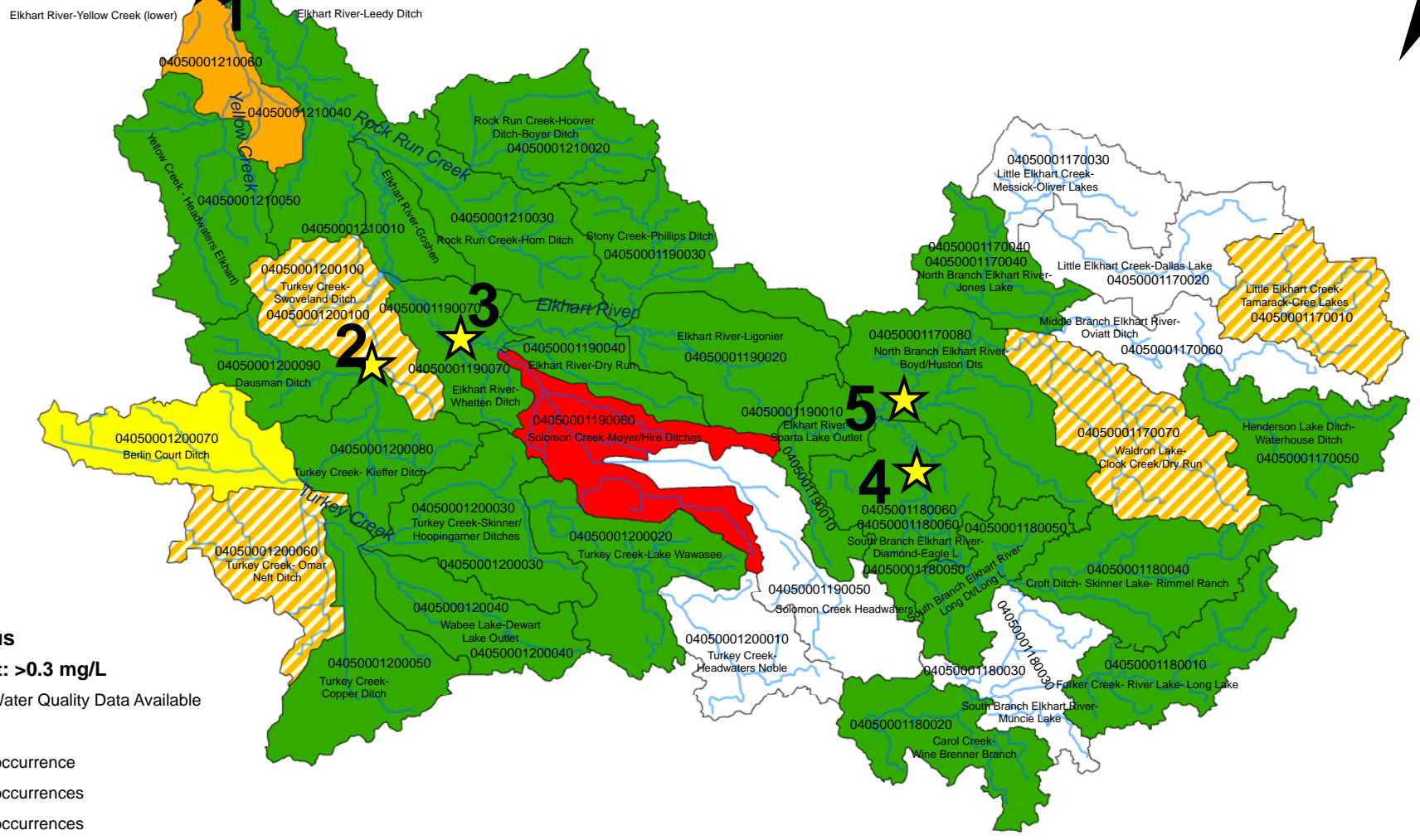
>10 mg/L - 9 occurrences



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TITLE: Occurrences of Nitrate and Nitrite Exceedance	PROJECT: Elkhart River Watershed Management Plan & Implementation		
BASE LAYER: N/A	PROJECT NO.: 07041	EXHIBIT: 22	SHEET: 1 OF: 1
CLIENT: Elkhart River Restoration Association 305 Carter Road Goshen, Indiana 46526	QUADRANGLE: N/A	DATE: 11/15/07	SCALE: 1"=27,500'

Occurrences of Phosphorus Exceedance



Legend

Streams

Total Phosphorus

Exceedance Limit: >0.3 mg/L

- No Historical Water Quality Data Available
- <0.3 mg/L
- >0.3 mg/L - 1 occurrence
- >0.3 mg/L - 3 occurrences
- >0.3 mg/L - 4 occurrences
- >0.3 mg/L - 9 occurrences



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TITLE: <h3 style="text-align: center;">Occurrences of Phosphorus Exceedance</h3>	PROJECT: Elkhart River Watershed Management Plan & Implementation		
BASE LAYER: N/A	PROJECT NO.: 07041	EXHIBIT: 28	SHEET: OF: 1 1
CLIENT: Elkhart River Restoration Association 305 Carter Road Goshen, Indiana 46526	QUADRANGLE: N/A	DATE: 11/15/07	SCALE: 1"=27,500'

- There are several problems related to lake management, including: herbicide distribution within lakes to control nuisance weeds; responsible vegetation management; boat issues such as wakes, illegal dumping, and transportation of invasive species; and septic systems around lakes. Many lake associations in the Watershed are addressing these concerns in their subwatersheds. The ERA supports their efforts to improve water quality and address lake issues.

On November 28, 2007, January 3, January 8, January 10, and January 17, 2008, the ERA Steering Committee discussed the designation of critical areas in light of the three pollutants of concern: sediment, *E. coli*, and nutrients. V3 presented a summary of the existing water quality data and loading models and the Elkhart County SWCD presented the findings of the windshield survey.

The ERA Steering Committee members located specific sites within the Watershed that would function as the critical areas of the Elkhart River WMP. These 26 critical areas, identified from all four of the Elkhart River Watershed's counties, are listed in Table 43 and depicted in Exhibit 34. They account for approximately 297,450 acres (golf courses and septic densities did not contribute acreages) or 66% of the Watershed by area. Each critical area is discussed below.

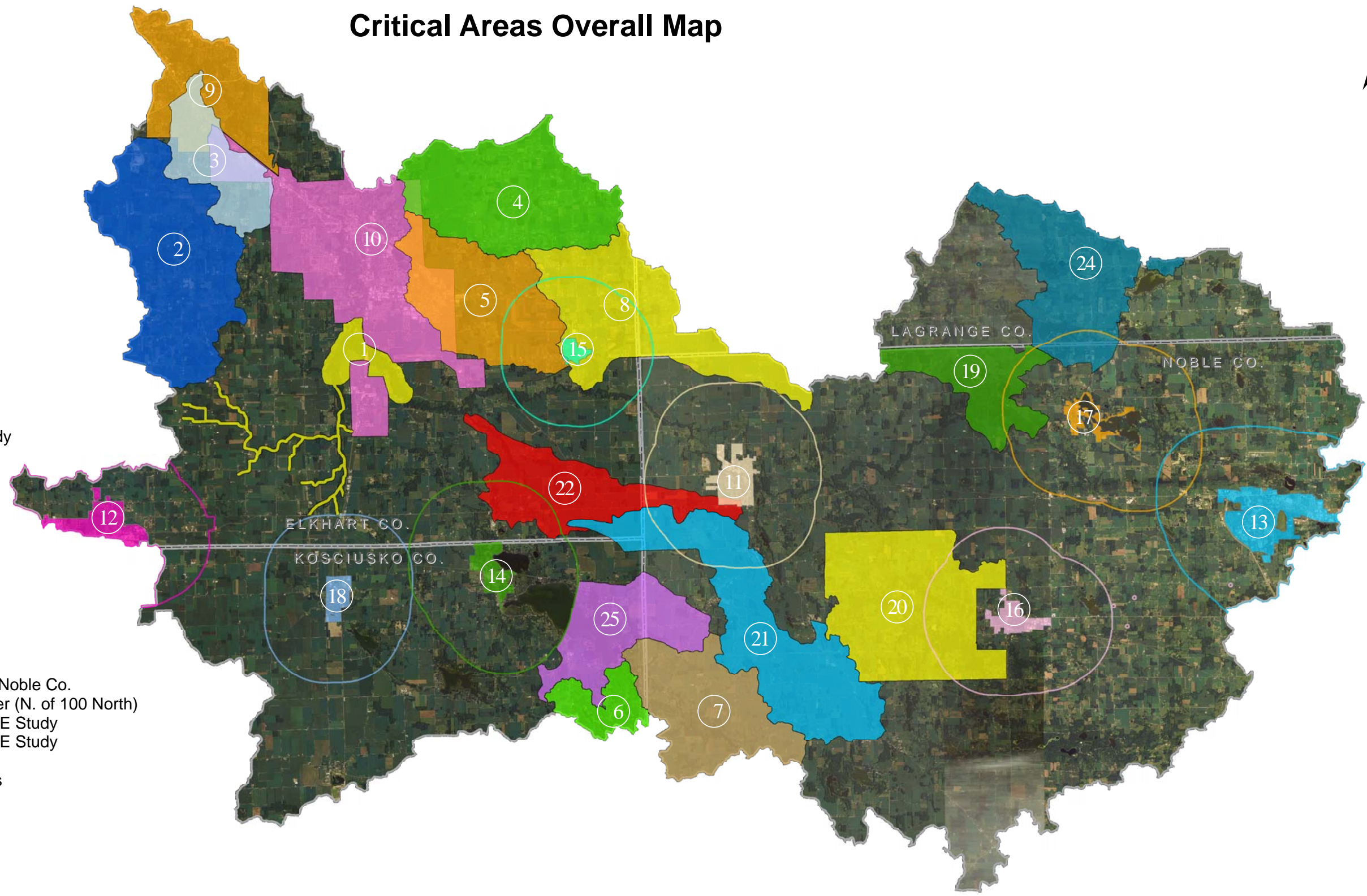
Critical Area #1, shown on Exhibit K-1 (Appendix K), is the Turkey Creek critical area. It contributes to the problems of sediment loading, *E. coli*, and nutrient loading. Addressing these concerns will also impact concerns regarding hydrologic modification, degradation of open space, and degradation of fish populations. This area contains a Great Blue Heron rookery and a large wetland complex worthy of preservation for wildlife habitat and water quality improvement. The area south of Goshen Dam Pond is identified as having a sediment loading problem, which emanates in part from streambank erosion, and agricultural and residential erosional sources. The flow velocity of the Elkhart River slows down when it reaches the impoundment of the Goshen Dam Pond and suspended silts and clays that were being carried in the water column settle out as sediment deposits. There are 3,684 acres of critical area where the implementation of Best Management Practices (BMPs) would improve the condition of the Watershed.

Critical Area #2, shown on Exhibit K-2, is the Upper Yellow Creek critical area. It contributes to the problems of sediment loading, *E. coli*, and nutrient loading. Addressing these concerns will also impact concerns regarding hydrologic modification, loss of open space, degradation of fish populations, and degradation of lakes. The Steering Committee indicated problems with livestock entering the stream, log jams, streambank erosion, septic system failure, obvious sediment deposits, and concern regarding over-fertilization in agricultural, urban, and rural residential areas. There are 15,941 acres of critical area where the implementation of BMPs would improve the condition of the Watershed.

Critical Area #3, shown on Exhibit K-3, is the Lower Yellow Creek critical area. It contributes to the problems of sediment loading, *E. coli*, and nutrient loading. Addressing these concerns will also impact concerns regarding hydrologic modification, loss of open space, and degradation of fish populations. The Steering Committee indicated problems with livestock entering the stream, septic system failure, obvious sediment deposits, streambank erosion, and concern regarding over-fertilization in agricultural, urban, and rural residential areas. There are 5,920 acres of critical area where the implementation of BMPs would improve the condition of the Watershed.

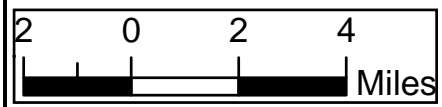
Table 43: Summary of Critical Area Locations within the Elkhart River Watershed								
Critical Area #	Exhibit #	Name	County(s)	Township(s)	E.Coli	Sediment	Nutrient	Critical Area Acreage
1	38	Turkey Creek	Elkhart	Elkhart, Jackson, and Union	X	X	X	3,684
2	39	Upper Yellow Creek	Elkhart	Concord, Harrison, Olive, and Union	X	X	X	15,941
3	40	Lower Yellow Creek	Elkhart	Concord, Elkhart, and Harrison	X	X	X	5,920
4	41	Upper Rock Run Creek	Elkhart	Clinton, Elkhart, Jefferson, and Middlebury	X	X	X	13,665
5	42	Horn Ditch	Elkhart	Benton, Clinton, and Elkhart	X	X	X	11,099
6	43	Papakeechee Subwatershed & LARE Study	Kosciusko and Noble	Sparta, Tippecanoe, Turkey Creek, and Washington	X	X	X	2,957
7	44	Knapp Lake Chain & LARE Study	Kosciusko and Noble	Sparta, Turkey Creek, and Washington	X	X	X	10,167
8	45	Stony Creek	Elkhart, LaGrange, and Noble	Benton, Clinton, Eden, and Perry	X	X	X	13,014
9	46	Urban BMPs within Elkhart	Elkhart	Concord and Jefferson	X	X	X	8,779
10	47	Urban BMPs within Goshen	Elkhart	Benton, Concord, Elkhart, Jackson, and Jefferson	X	X	X	20,925
11	48	Urban BMPs within Ligonier	Noble	Perry and Sparta	X	X	X	18,412
12	49	Urban BMPs within Nappanee	Elkhart and Kosciusko	Jefferson, Locke, and Union	X	X	X	9,742
13	50	Urban BMPs within Kendallville	Noble	Allen, Jefferson, Orange, and Wayne	X	X	X	18,077
14	51	Urban BMPs within Syracuse & LARE Study	Elkhart, Kosciusko, and Noble	Benton, Jackson, Turkey Creek, and Van Buren	X	X	X	17,537
15	52	Urban BMPs within Millersburg	Elkhart, LaGrange, and Noble	Benton, Clinton, Eden, and Perry	X	X	X	12,506
16	53	Urban BMPs within Albion & LARE Study	Noble	Albion, Allen, Jefferson, and York	X	X	X	16,970
17	54	Urban BMPs within Rome City	LaGrange and Noble	Johnson, Orange, and Wayne	X	X	X	19,692
18	55	Urban BMPs within Milford	Elkhart and Kosciusko	Jackson, Jefferson, Union, and Van Buren	X	X	X	14,459
19	56	Jones Lake & surrounding area within Noble County	Noble	Elkhart and Orange	X	X	X	5,885
20	57	North)	Noble	York	X	X	X	15,422
21	58	Solomon Creek Upper Watershed & LARE Study	Elkhart, Kosciusko, and Noble	and York	X	X	X	15,156
22	59	Solomon Creek Lower Watershed & LARE Study	Elkhart and Noble	Benton and Perry	X	X	X	8,524
23	60	Golf Courses	Elkhart, Kosciusko, and Noble	(various)	-	-	X	N/A
24	61	LaGrange County Lakes & LARE Studies	LaGrange and Noble	Clearspring, Johnson, Milford, and Orange	X	X	X	11,321
25	62	Wawasee Area & LARE Study	Kosciusko and Noble	Sparta and Turkey Creek	X	X	X	7,596
26	n/a	Septic Clusters	N/A	N/A	X	-	-	N/A
TOTALS:					25	24	25	297,450


Critical Areas Overall Map



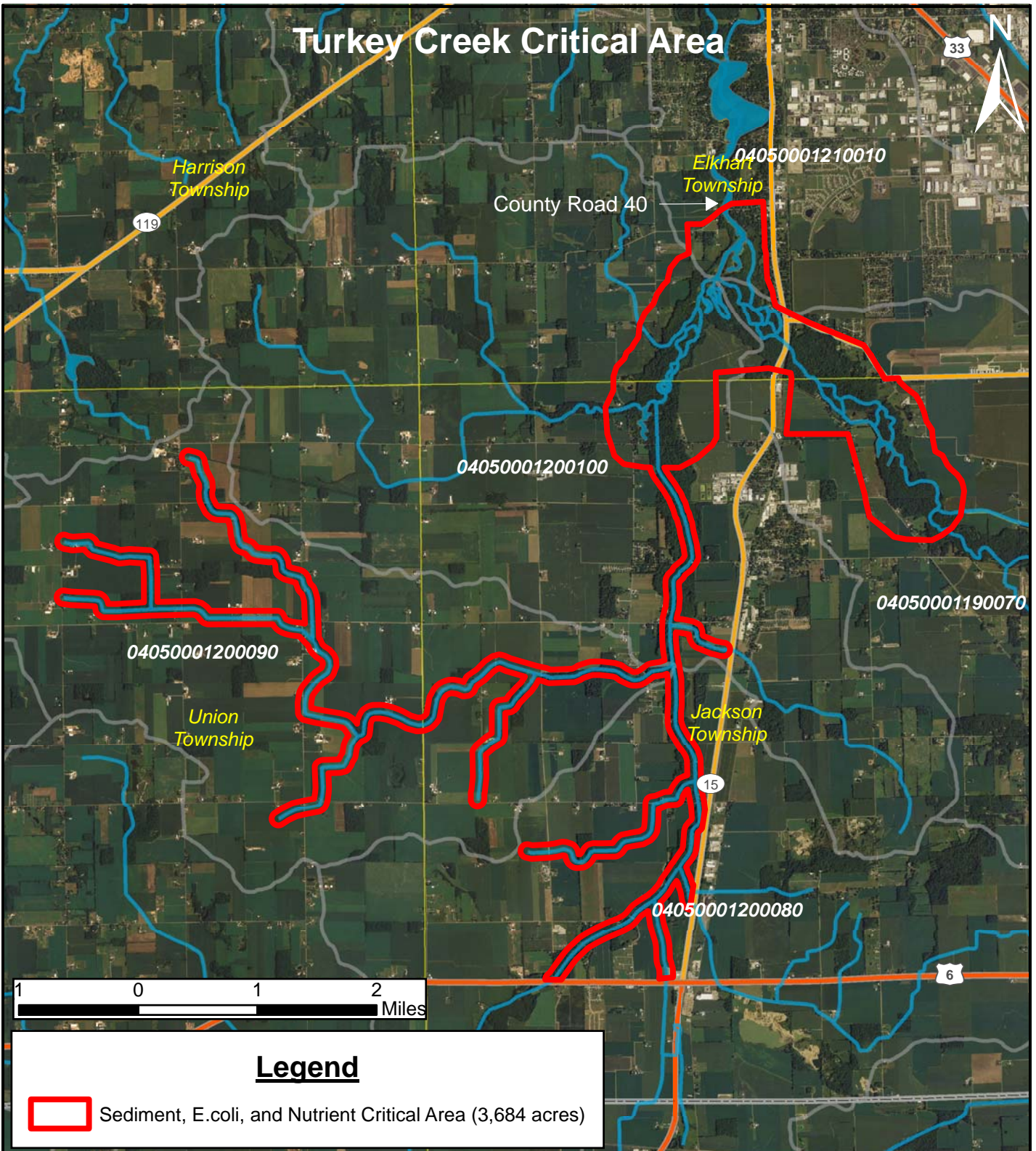
Critical Areas:

1. Turkey Creek
2. Upper Yellow Creek
3. Lower Yellow Creek
4. Upper Rock Run Creek
5. Horn Ditch
6. Papakeeche Subwatershed & LARE Study
7. Knapp Lake Chain & LARE Study
8. Stony Creek
9. Elkhart Urban
10. Goshen Urban
11. Ligonier Urban
12. Nappanee Urban
13. Kendallville Urban
14. Syracuse Urban & LARE Study
15. Millersburg Urban
16. Albion Urban & LARE Study
17. Rome City Urban
18. Milford Urban
19. Jones Lake and surrounding area within Noble Co.
20. Upper Reaches of S. Branch Elkhart River (N. of 100 North)
21. Solomon Creek Upper Watershed & LARE Study
22. Solomon Creek Lower Watershed & LARE Study
23. Golf Courses (See Exhibit 60)
24. LaGrange County Lakes & LARE Studies
25. Wawasee Area & LARE Study
26. Septic Clusters (no exhibit)





 <p>V3 Companies 7325 Janes Avenue Woodridge, IL 60517 630.724.9200 phone 630.724.9202 fax www.v3co.com</p>	<p>CLIENT: Elkhart River Restoration Association</p>	<p>TITLE: Critical Areas Overall Map</p>	<p>PROJECT: Elkhart River Watershed Management Plan and Implementation</p>			<p>SHEET: 1 OF: 1</p>
	<p>Address: 305 Carter Road Goshen, Indiana 46526</p>	<p>BASE LAYER: 2006 Aerial Indiana University Spatial Data Portal</p>	<p>PROJECT No.: 07041</p>	<p>QUADRANGLE: N/A</p>	<p>DATE: 1/28/08</p>	<p>SCALE: NTS</p>

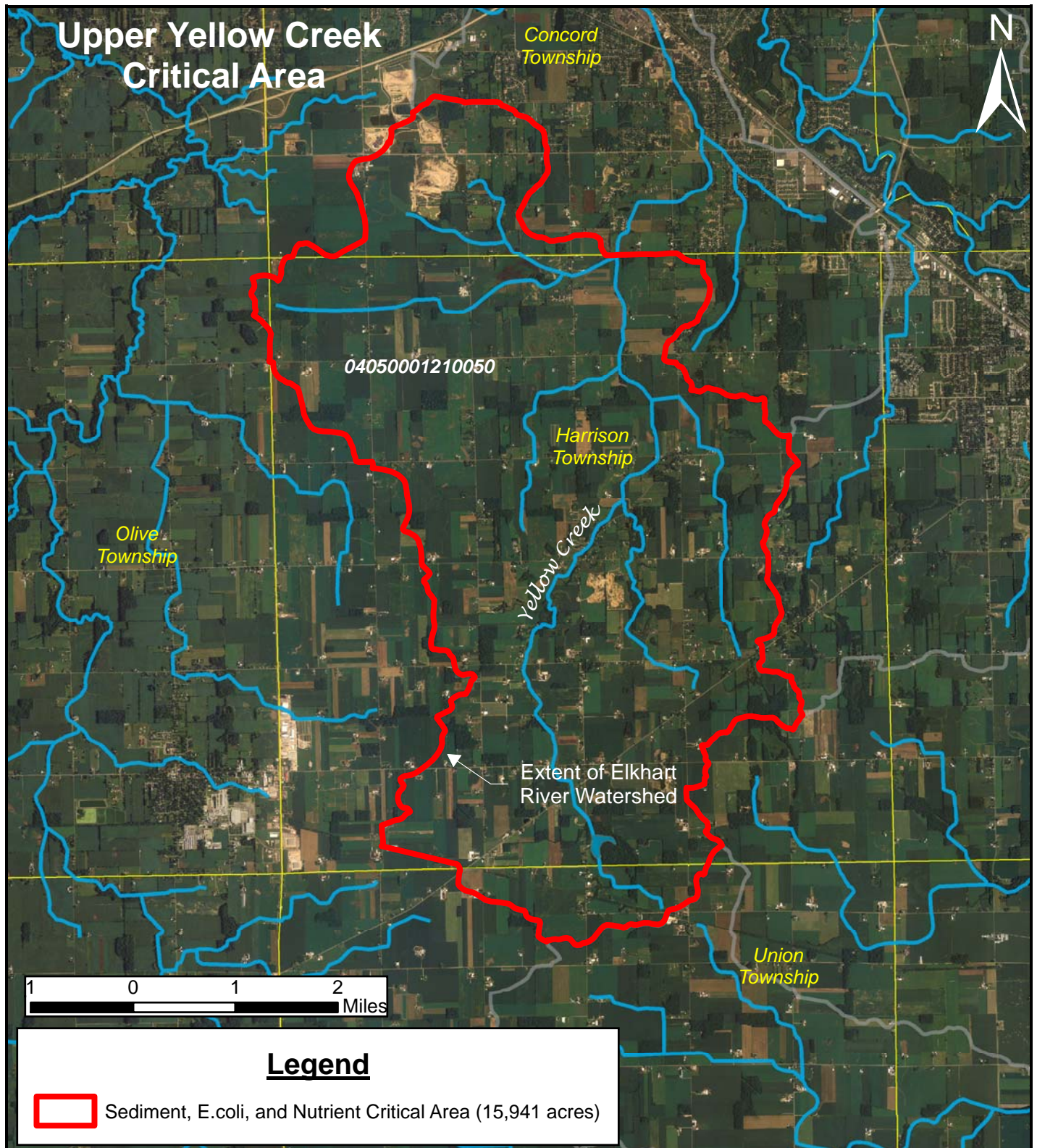
Turkey Creek Critical Area



Legend


 Sediment, E.coli, and Nutrient Critical Area (3,684 acres)

 <p>V3 Companies 7325 Janes Avenue Woodridge, IL 60517 630.724.9200 phone 630.724.9202 fax www.v3co.com</p>	<p>TITLE: Turkey Creek Critical Area</p>	<p>PROJECT: Elkhart River Watershed Management Plan and Implementation</p>		
	<p>BASE LAYER: 2006 Aerial Indiana University Spatial Data Portal</p>	<p>PROJECT NO. 07041</p>	<p>EXHIBIT: K-1</p>	<p>SHEET: 1 OF: 1</p>
	<p>CLIENT: Elkhart River Restoration Association 305 Carter Road Goshen, Indiana 46526</p>	<p>QUADRANGLE: N/A</p>	<p>DATE: 1/8/08</p>	<p>SCALE: NTS</p>



Legend

Sediment, E.coli, and Nutrient Critical Area (15,941 acres)

 <p>V3 Companies 7325 Janes Avenue Woodridge, IL 60517 630.724.9200 phone 630.724.9202 fax www.v3co.com</p>	TITLE: Upper Yellow Creek Critical Area ②		PROJECT: Elkhart River Watershed Management Plan and Implementation		
	BASE LAYER: 2006 Aerial Indiana University Spatial Data Portal		PROJECT NO. 07041	EXHIBIT: K-2	SHEET: 1 OF: 1
	CLIENT: Elkhart River Restoration Association 305 Carter Road Goshen, Indiana 46526		QUADRANGLE: N/A	DATE: 1/8/08	SCALE: NTS

Lower Yellow Creek Critical Area

Extent of Elkhart River Watershed



Concord Township

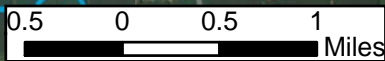
Jefferson Township

Yellow Creek


04050001210060

Harrison Township

Elkhart Township



Legend

 Sediment, E.coli, and Nutrient Critical Area (5,920 acres)



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TITLE: **Lower Yellow Creek Critical Area**

BASE LAYER: 2006 Aerial
Indiana University Spatial Data Portal

CLIENT:
Elkhart River Restoration Association
305 Carter Road
Goshen, Indiana 46526

PROJECT: **Elkhart River Watershed Management Plan and Implementation**

PROJECT NO. 07041	EXHIBIT: K-3	SHEET: 1 OF: 1
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QUADRANGLE: N/A	DATE: 1/8/08	SCALE: NTS
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Critical Area #4, shown on Exhibit K-4, is the Upper Rock Run Creek critical area. It contributes to the problems of sediment loading, *E. coli*, and nutrient loading. Addressing these problems will also impact concerns regarding hydrologic modification, loss of open space, and degradation of fish populations. The Steering Committee mentioned problems with lack of filter strips; lack of conservation tillage practices; livestock entering the stream; log jams; septic system failure; obvious sediment deposits caused by severe streambank, agricultural and urban erosion; and concern regarding over-fertilization in agricultural, urban, and rural residential areas. There are 13,665 acres of critical area where the implementation of BMPs would improve the condition of the Watershed.

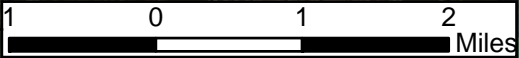
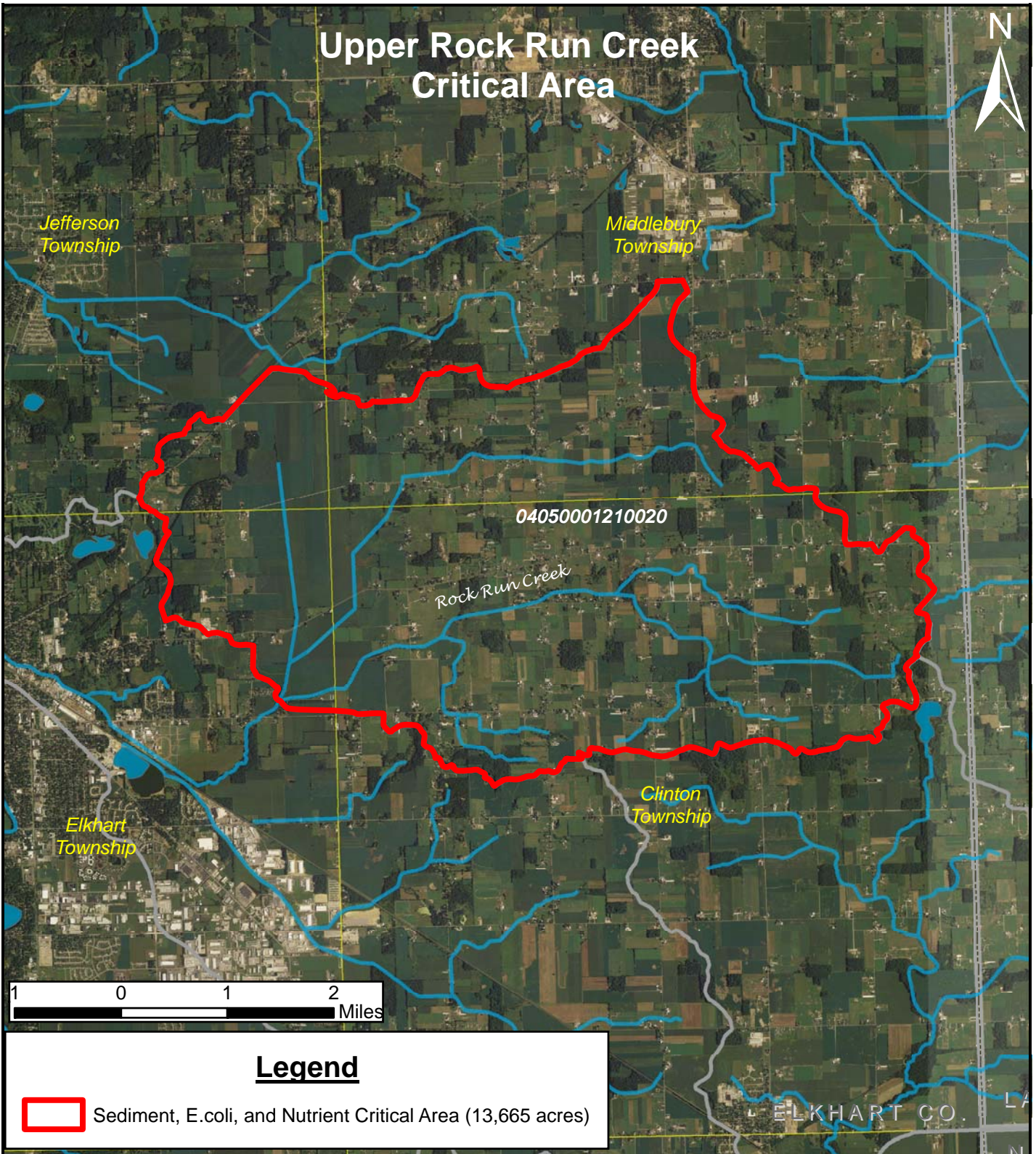
Critical Area #5, shown on Exhibit K-5, is the Horn Ditch critical area. It contributes to the problems of sediment loading, *E. coli*, and nutrient loading. Addressing these problems will also impact concerns regarding hydrologic modification, loss of open space, and degradation of fish populations. The Steering Committee mentioned problems with lack of filter strips, lack of conservation tillage practices, livestock entering the stream, log jams, streambank erosion, septic system failure, obvious sediment deposits caused by severe erosion, and concern regarding over-fertilization in agricultural, urban, and rural residential areas. There are 11,099 acres of critical area where the implementation of BMPs would improve the condition of the Watershed.

Critical Area #6, shown on Exhibit K-6, is the Papakeeche Subwatershed & Lake and River Enhancement (LARE) Study critical area. It contributes to the problems of sediment loading, *E. coli*, and nutrient loading. Addressing these concerns will also impact concerns regarding hydrologic modification, loss of open space, degradation of fish populations, and degradation of lakes. Included in this critical area are Allen Lake, Rothenbeger Lake, Barrel-and-a-Half Lake, and Spear Lake, which are all tributaries to Papakeeche Lake. Also included in this critical area are the areas identified in The Wawasee Area WMP. There are 2,957 acres of critical area where the implementation of BMPs would improve the condition of the Watershed.

Critical Area #7, shown on Exhibit K-7, is the Knapp Lake Chain & LARE Study critical area. It contributes to the problems of sediment loading, *E. coli*, and nutrient loading. Addressing these concerns will also impact concerns regarding hydrologic modification, loss of open space, degradation of fish populations, and degradation of lakes. Lakes along the Knapp Lake Chain include Harper Lake, Little Bause Lake, Little Knapp Lake, Knapp Lake, Moss Lake, Hindman Lake, Neal Lake, Gordy Lake, Rider Lake, Duely Lake, and Village Lake, which are all tributaries to Lake Wawasee. Also included in this critical area are the areas identified in The Wawasee Area WMP. There are 10,167 acres of critical area where the implementation of BMPs would improve the condition of the Watershed.


Critical Area #8, shown on Exhibit K-8, is the Stony Creek critical area. It contributes to the problems of sediment loading, *E. coli*, and nutrient loading. Addressing these concerns will also impact concerns regarding hydrologic modification, loss of open space, and degradation of fish populations. The Steering Committee indicated problems with livestock entering the stream, log jams, streambank erosion, septic system failure, obvious sediment deposits, and concern regarding over-fertilization in agricultural, urban, and rural residential areas. There are 13,014 acres of critical area where the implementation of BMPs would improve the condition of the Watershed.

Upper Rock Run Creek Critical Area

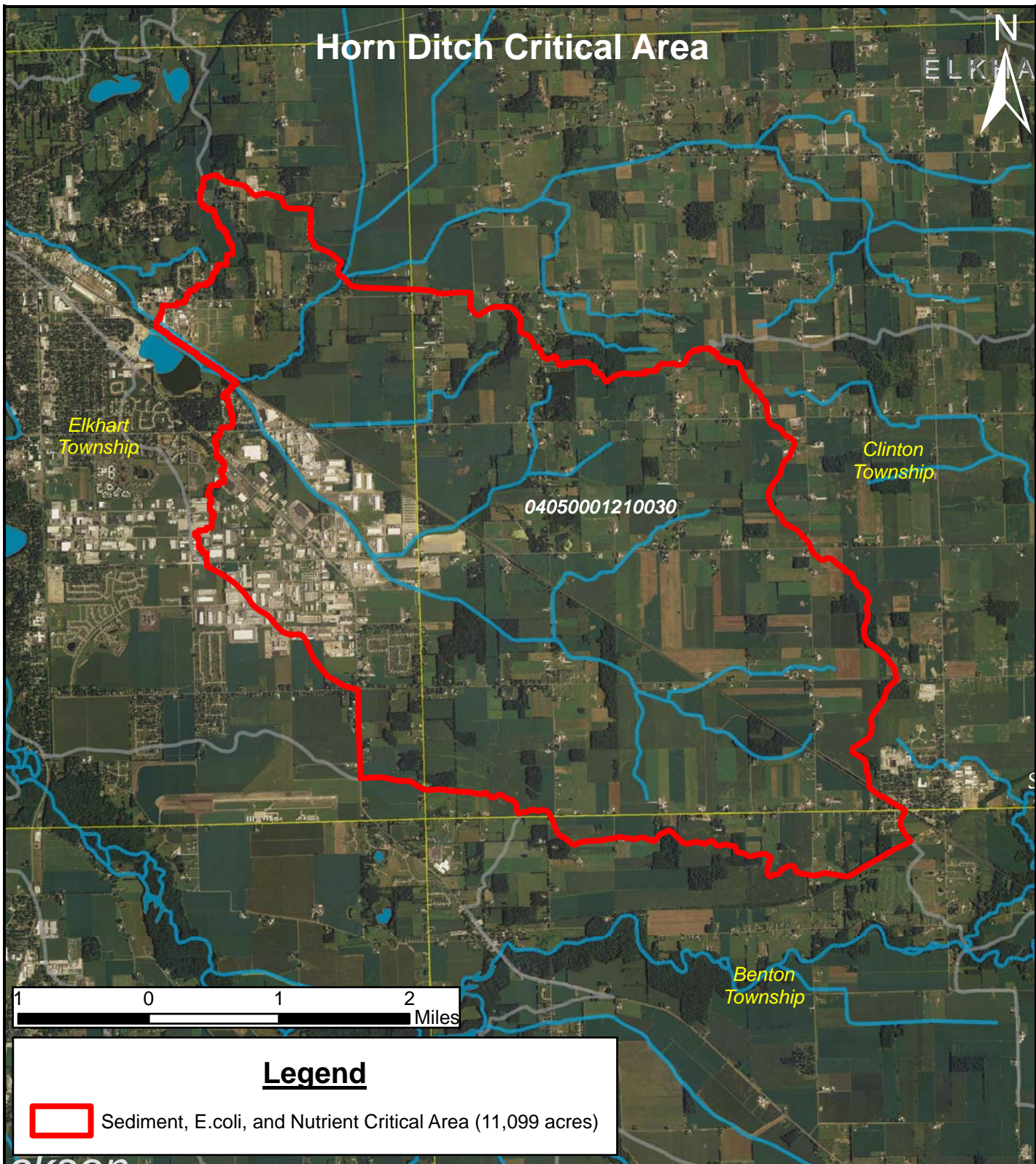


Legend


 Sediment, E.coli, and Nutrient Critical Area (13,665 acres)


 <p>V3 Companies 7325 Janes Avenue Woodridge, IL 60517 630.724.9200 phone 630.724.9202 fax www.v3co.com</p>	TITLE: Upper Rock Run Creek Critical Area ④		PROJECT: Elkhart River Watershed Management Plan and Implementation		
	BASE LAYER: 2006 Aerial Indiana University Spatial Data Portal		PROJECT NO. 07041	EXHIBIT: K-4	SHEET: 1 OF: 1
	CLIENT: Elkhart River Restoration Association 305 Carter Road Goshen, Indiana 46526		QUADRANGLE: N/A	DATE: 1/8/08	SCALE: NTS

Horn Ditch Critical Area



Legend

 Sediment, E.coli, and Nutrient Critical Area (11,099 acres)

 <p>V3 Companies 7325 Janes Avenue Woodridge, IL 60517 630.724.9200 phone 630.724.9202 fax www.v3co.com</p>	TITLE: Horn Ditch Critical Area (5)		PROJECT: Elkhart River Watershed Management Plan and Implementation		
	BASE LAYER: 2006 Aerial Indiana University Spatial Data Portal		PROJECT NO. 07041	EXHIBIT: K-5	SHEET: 1 OF: 1
	CLIENT: Elkhart River Restoration Association 305 Carter Road Goshen, Indiana 46526		QUADRANGLE: N/A	DATE: 1/8/08	SCALE: NTS

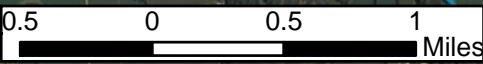
Papakeeche Subwatershed & LARE Study Critical Area

KOSCIUSKO CO. NOBLE CO.




04050001200020

Extent of Elkhart River Watershed



Legend

 Sediment, E.coli, and Nutrient Critical Area (2,957 acres)

Source: The Wawasee Area Watershed Management Plan
Elkhart, Kosciusko, and Noble Counties, Indiana
April 2007, J.F. New



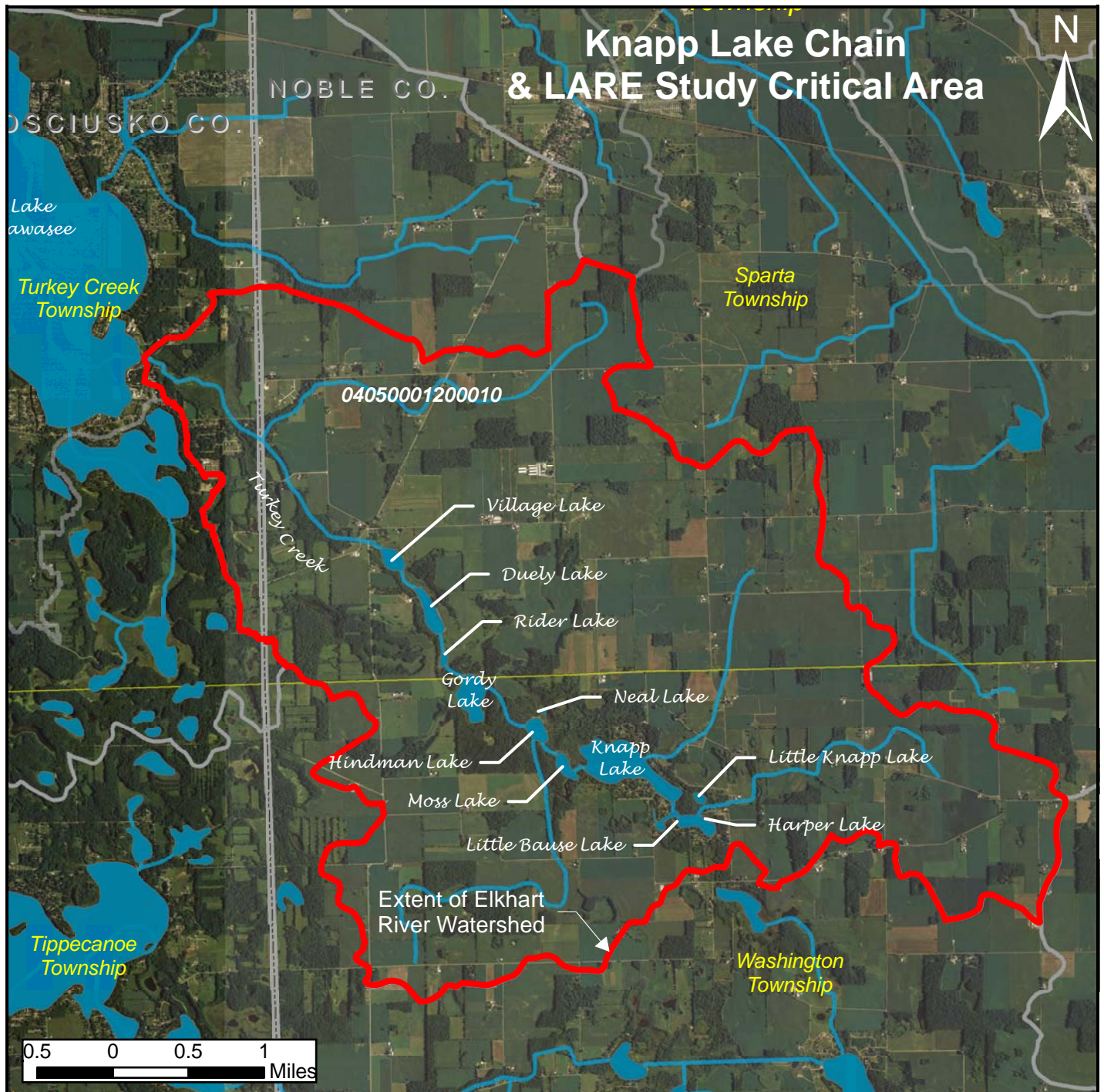
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TITLE:
⑥ **Papakeeche Subwatershed & LARE Study Critical Area**

BASE LAYER: 2006 Aerial
Indiana University Spatial Data Portal

CLIENT:
Elkhart River Restoration Association
305 Carter Road
Goshen, Indiana 46526


PROJECT: Elkhart River Watershed Management Plan and Implementation		
PROJECT NO. 07041	EXHIBIT: K-6	SHEET: 1 OF: 1
QUADRANGLE: N/A	DATE: 1/8/08	SCALE: NTS



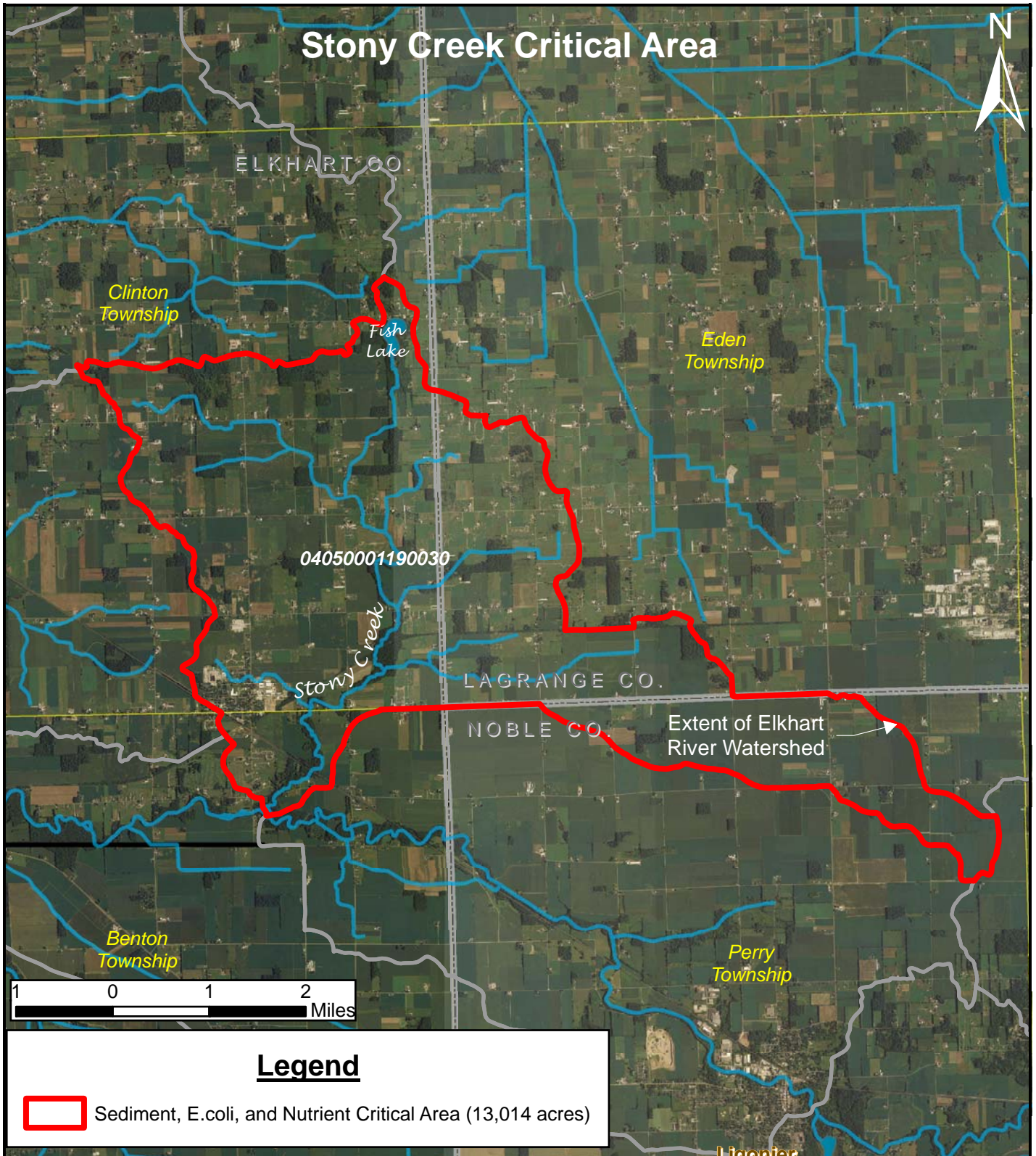
Legend

 Sediment, E.coli, and Nutrient Critical Area (10,167 acres)


Source: The Wawasee Area Watershed Management Plan
Elkhart, Kosciusko, and Noble Counties, Indiana
April 2007, J.F. New

 <p>V3 Companies 7325 Janes Avenue Woodridge, IL 60517 630.724.9200 phone 630.724.9202 fax www.v3co.com</p>	<p>TITLE: ⑦ Knapp Lake Chain & LARE Study Critical Area</p>		<p>PROJECT: Elkhart River Watershed Management Plan and Implementation</p>		
	<p>BASE LAYER: 2006 Aerial Indiana University Spatial Data Portal</p>		<p>PROJECT NO. 07041</p>	<p>EXHIBIT: K-7</p>	<p>SHEET: 1 OF: 1</p>
	<p>CLIENT: Elkhart River Restoration Association 305 Carter Road Goshen, Indiana 46526</p>		<p>QUADRANGLE: N/A</p>	<p>DATE: 1/8/08</p>	<p>SCALE: NTS</p>

Stony Creek Critical Area



Legend

 Sediment, E.coli, and Nutrient Critical Area (13,014 acres)



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TITLE: **Stony Creek Critical Area**
 (8)
 BASE LAYER: 2006 Aerial
 Indiana University Spatial Data Portal
 CLIENT: Elkhart River Restoration Association
 305 Carter Road
 Goshen, Indiana 46526

PROJECT: **Elkhart River Watershed Management Plan and Implementation**

PROJECT NO. 07041	EXHIBIT: K-8	SHEET: 1 OF: 1
QUADRANGLE: N/A	DATE: 1/8/08	SCALE: NTS

Critical Area #9, shown on Exhibit K-9, is the Elkhart urban critical area. It contributes to the problems of sediment loading, *E. coli*, and nutrient loading. Addressing these concerns will also impact concerns regarding hydrologic modification, loss of open space, and degradation of fish populations. The Steering Committee identified urban sources including: sedimentation from construction sites; pollutants from impervious surfaces; and nutrients and *E. coli* from combined sewer overflows (CSOs), pet waste, and wildlife. This area was also identified in the St. Joseph River WMP as a critical area for urban stormwater management. There are 8,779 acres of critical area where the implementation of BMPs would improve the condition of the Watershed.

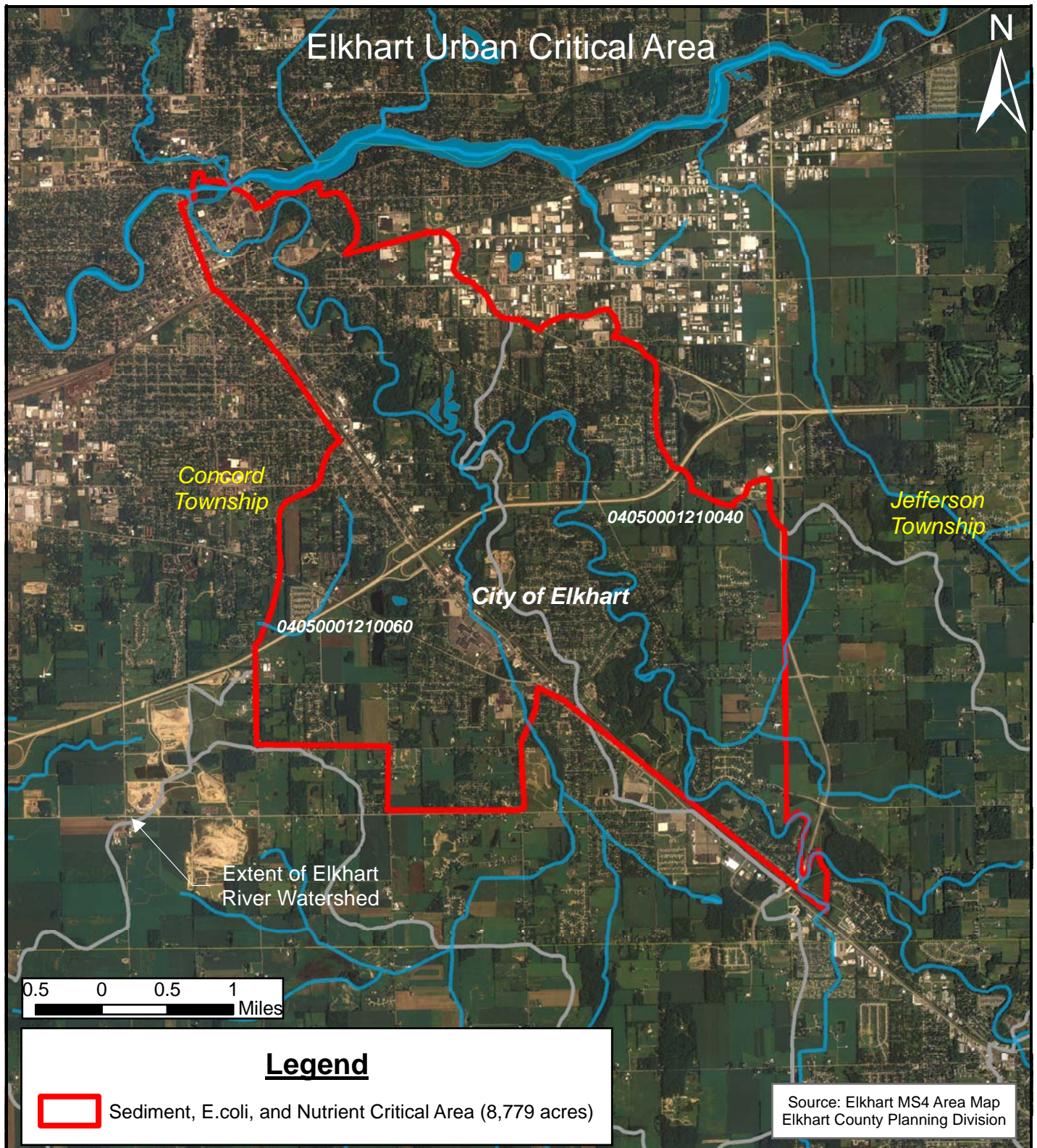
Critical Area #10, shown on Exhibit K-10, is the Goshen urban critical area. It contributes to the problems of sediment loading, *E. coli*, and nutrient loading. Addressing these concerns will also impact concerns regarding hydrologic modification, loss of open space, and degradation of fish populations. The Steering Committee identified urban sources including: sedimentation from construction sites; pollutants from impervious surfaces; and nutrients and *E. coli* from CSOs, pet waste, and wildlife. This area was also identified in the St. Joseph River WMP as a critical area for urban stormwater management. There are 20,925 acres of critical area where the implementation of BMPs would improve the condition of the Watershed.

Critical Area #11, shown on Exhibit K-11, is the Ligonier urban critical area. It contributes to the problems of *E. coli*, sediment loading, and nutrient loading. Addressing these problems will also impact concerns regarding hydrologic modification, loss of open space, and degradation of fish populations. The Steering Committee identified urban sources including: sedimentation from construction sites; pollutants from impervious surfaces; and nutrients and *E. coli* from CSOs, pet waste, and wildlife. There are 18,412 acres of critical area where the implementation of BMPs would improve the condition of the Watershed.

Critical Area #12, shown on Exhibit K-12, is the Nappanee urban critical area. It contributes to the problems of sediment loading, *E. coli*, and nutrient loading. Addressing these concerns will also impact concerns regarding hydrologic modification, loss of open space, and degradation of fish populations. The Steering Committee identified urban sources including: sedimentation from construction sites; pollutants from impervious surfaces; and nutrients and *E. coli* from CSOs, pet waste, and wildlife. There are 9,742 acres of critical area where the implementation of BMPs would improve the condition of the Watershed.

Critical Area #13, shown on Exhibit K-13, is the Kendallville urban critical area. It contributes to the problems of sediment loading, *E. coli*, and nutrient loading. Addressing these concerns will also impact concerns regarding hydrologic modification, loss of open space, and degradation of fish populations. The Steering Committee identified urban sources including: sedimentation from construction sites; pollutants from impervious surfaces; and nutrients and *E. coli* from CSOs, pet waste, and wildlife. There are 18,077 acres of critical area where the implementation of BMPs would improve the condition of the Watershed.

Critical Area #14, shown on Exhibit K-14, is the Syracuse urban & LARE Study critical area. It contributes to the problems of sediment loading, *E. coli*, and nutrient loading. Addressing these concerns will also impact concerns regarding hydrologic modification, loss of open space, degradation of fish populations, and degradation of lakes. The Steering Committee identified urban sources including: sedimentation from construction sites; pollutants from impervious surfaces;




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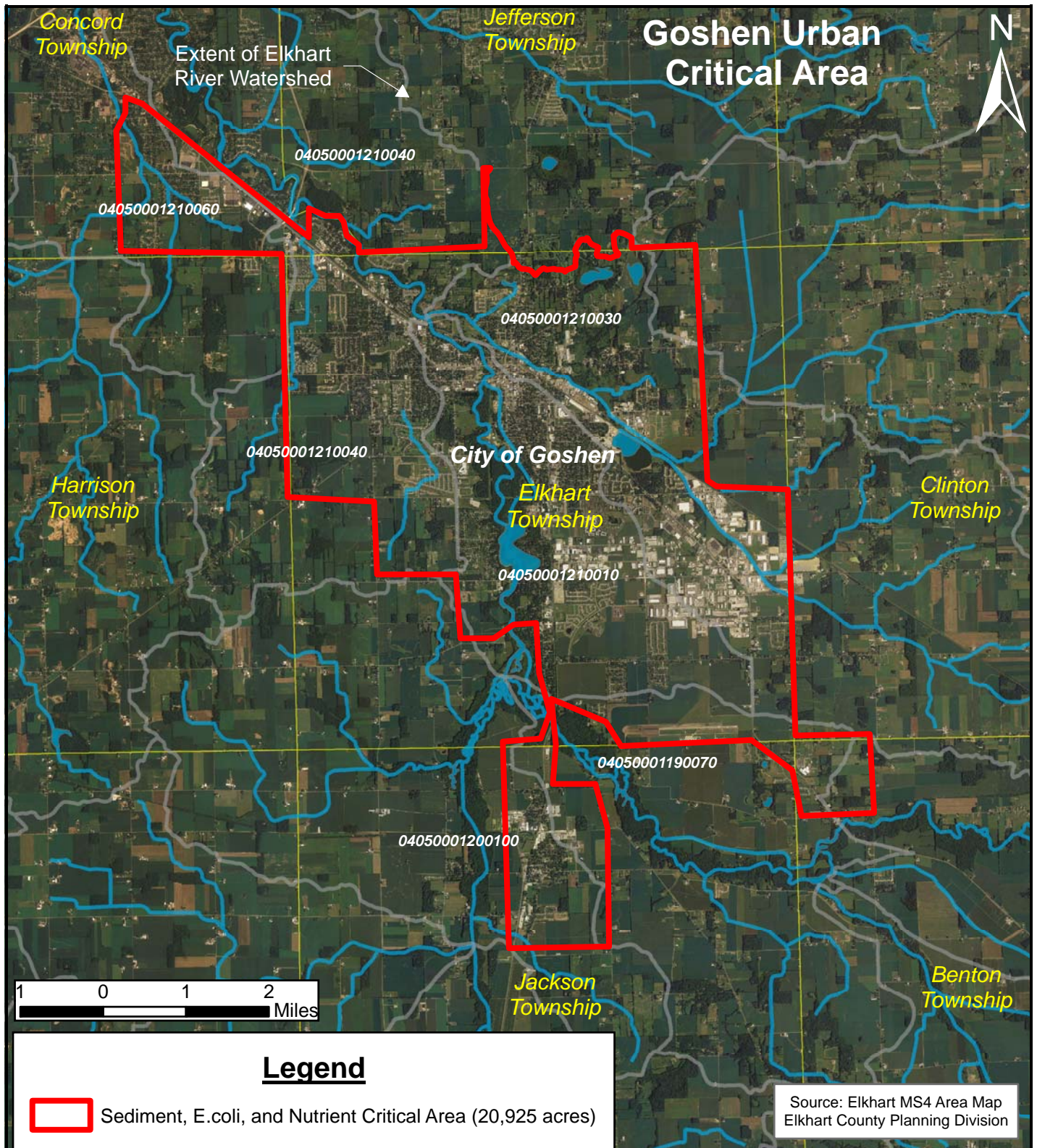
TITLE: **Elkhart Urban Critical Area**

BASE LAYER: 2006 Aerial
Indiana University Spatial Data Portal

CLIENT:
Elkhart River Restoration Association
305 Carter Road
Goshen, Indiana 46526

PROJECT: **Elkhart River Watershed Management Plan and Implementation**


PROJECT NO. 07041	EXHIBIT: K-9	SHEET: 1 OF: 1
QUADRANGLE: N/A	DATE: 1/8/08	SCALE: NTS



Legend

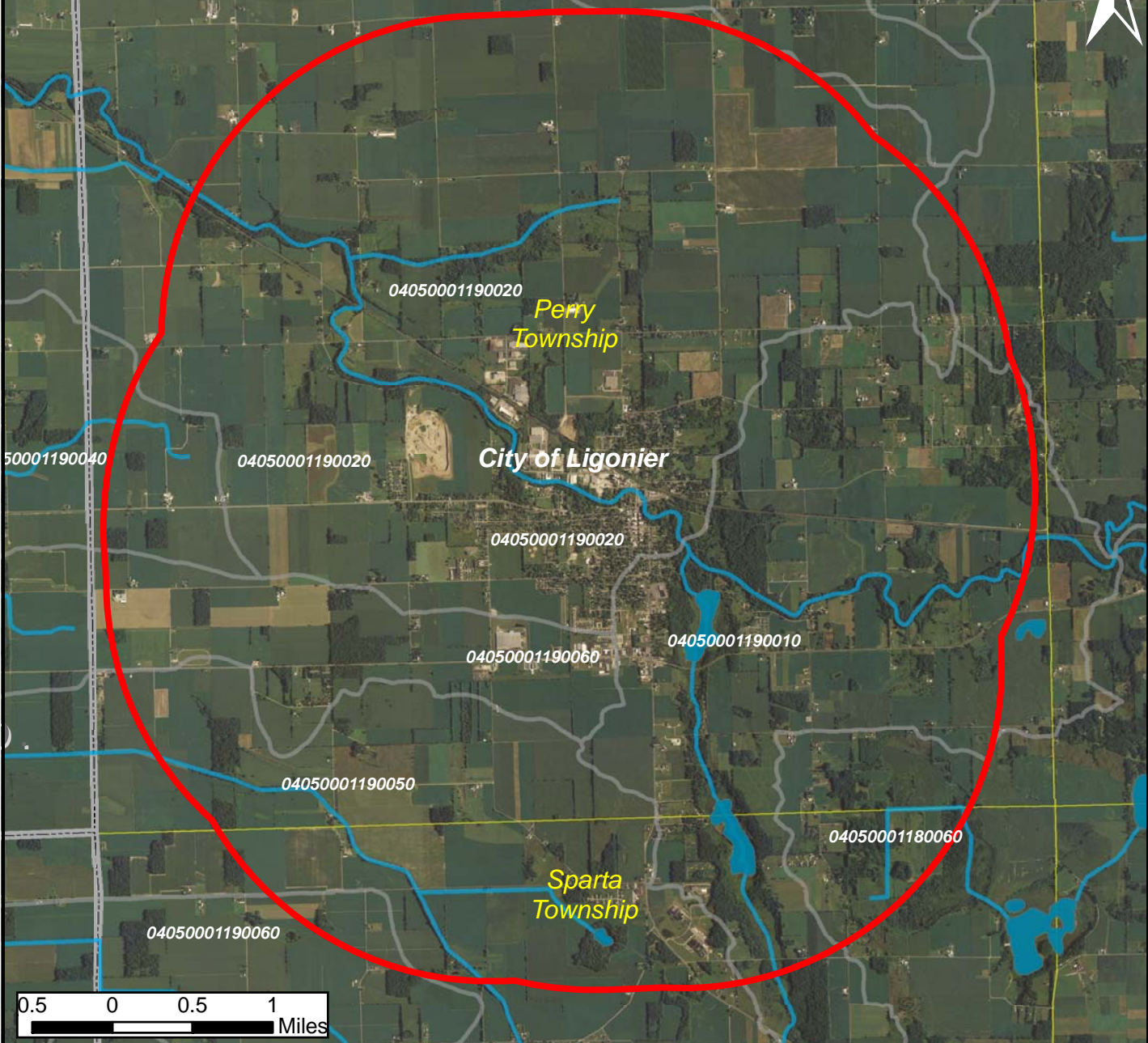
 Sediment, E.coli, and Nutrient Critical Area (20,925 acres)

Source: Elkhart MS4 Area Map
Elkhart County Planning Division

 <p>V3 Companies 7325 Janes Avenue Woodridge, IL 60517 630.724.9200 phone 630.724.9202 fax www.v3co.com</p>	<p>TITLE: Goshen Urban Critical Area</p> <p>(10)</p>	<p>PROJECT: Elkhart River Watershed Management Plan and Implementation</p>		
	<p>BASE LAYER: 2006 Aerial Indiana University Spatial Data Portal</p>	<p>PROJECT NO. 07041</p>	<p>EXHIBIT: K-10</p>	<p>SHEET: 1 OF: 1</p>
	<p>CLIENT: Elkhart River Restoration Association 305 Carter Road Goshen, Indiana 46526</p>	<p>QUADRANGLE: N/A</p>	<p>DATE: 1/8/08</p>	<p>SCALE: NTS</p>

NOBLE CO.

Ligonier Urban Critical Area



Legend

 Sediment, E.coli, and Nutrient Critical Area (18,412 acres)

* Source of city/town boundary: Street Map USA



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TITLE:
 (11) **Ligonier Urban Critical Area**

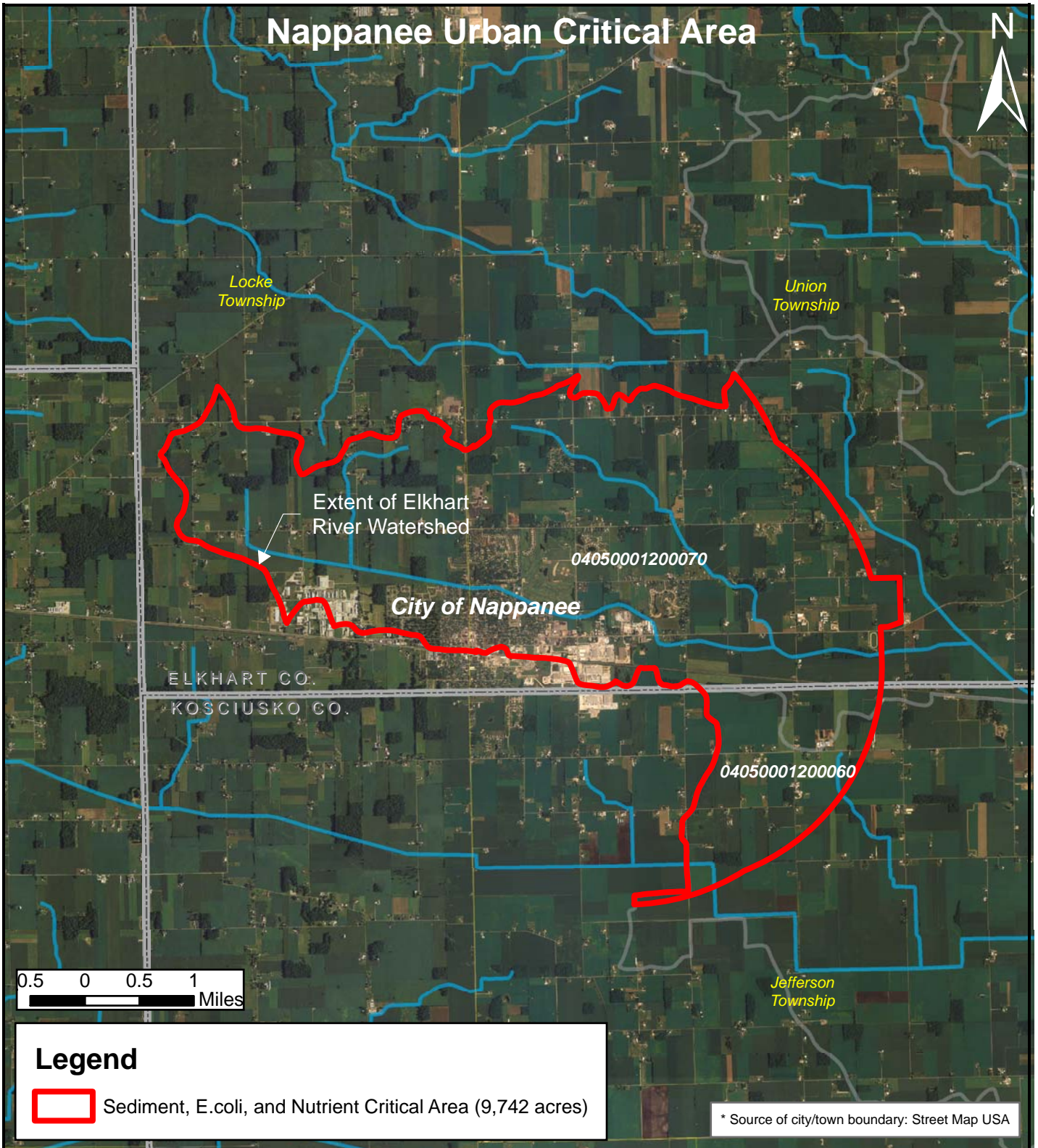
BASE LAYER: 2006 Aerial
 Indiana University Spatial Data Portal

CLIENT:
 Elkhart River Restoration Association
 305 Carter Road
 Goshen, Indiana 46526

PROJECT:
Elkhart River Watershed Management Plan and Implementation

PROJECT NO. 07041	EXHIBIT: K-11	SHEET: 1 OF: 1
QUADRANGLE: N/A	DATE: 1/8/08	SCALE: NTS

Nappanee Urban Critical Area



Legend

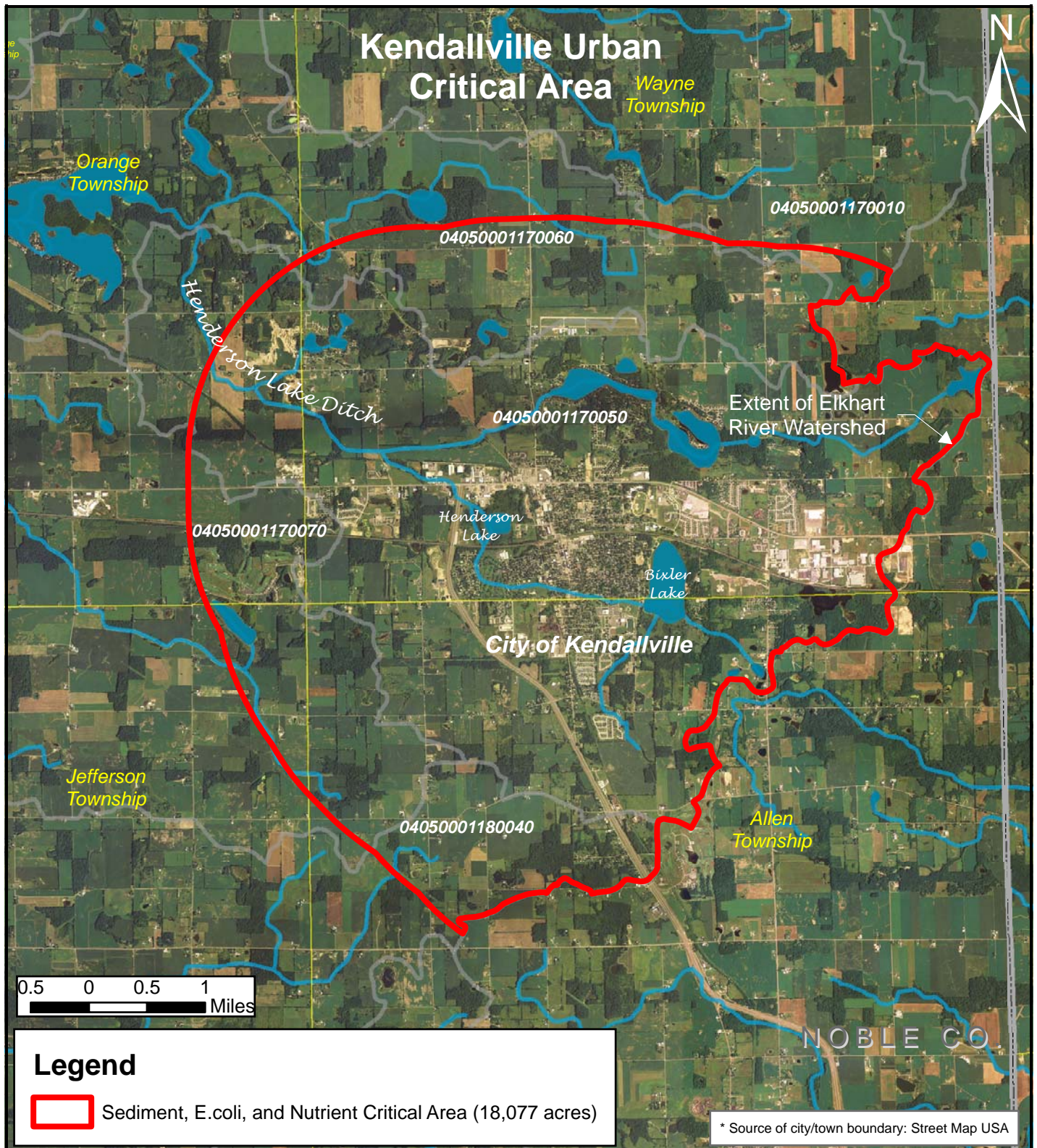
Sediment, E.coli, and Nutrient Critical Area (9,742 acres)

* Source of city/town boundary: Street Map USA



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TITLE: Nappanee Urban Critical Area 12		PROJECT: Elkhart River Watershed Management Plan and Implementation		
BASE LAYER: 2006 Aerial Indiana University Spatial Data Portal		PROJECT NO. 07041	EXHIBIT: K-12	SHEET: 1 OF: 1
CLIENT: Elkhart River Restoration Association 305 Carter Road Goshen, Indiana 46526		QUADRANGLE: N/A	DATE: 1/8/08	SCALE: NTS

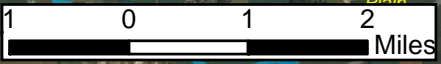
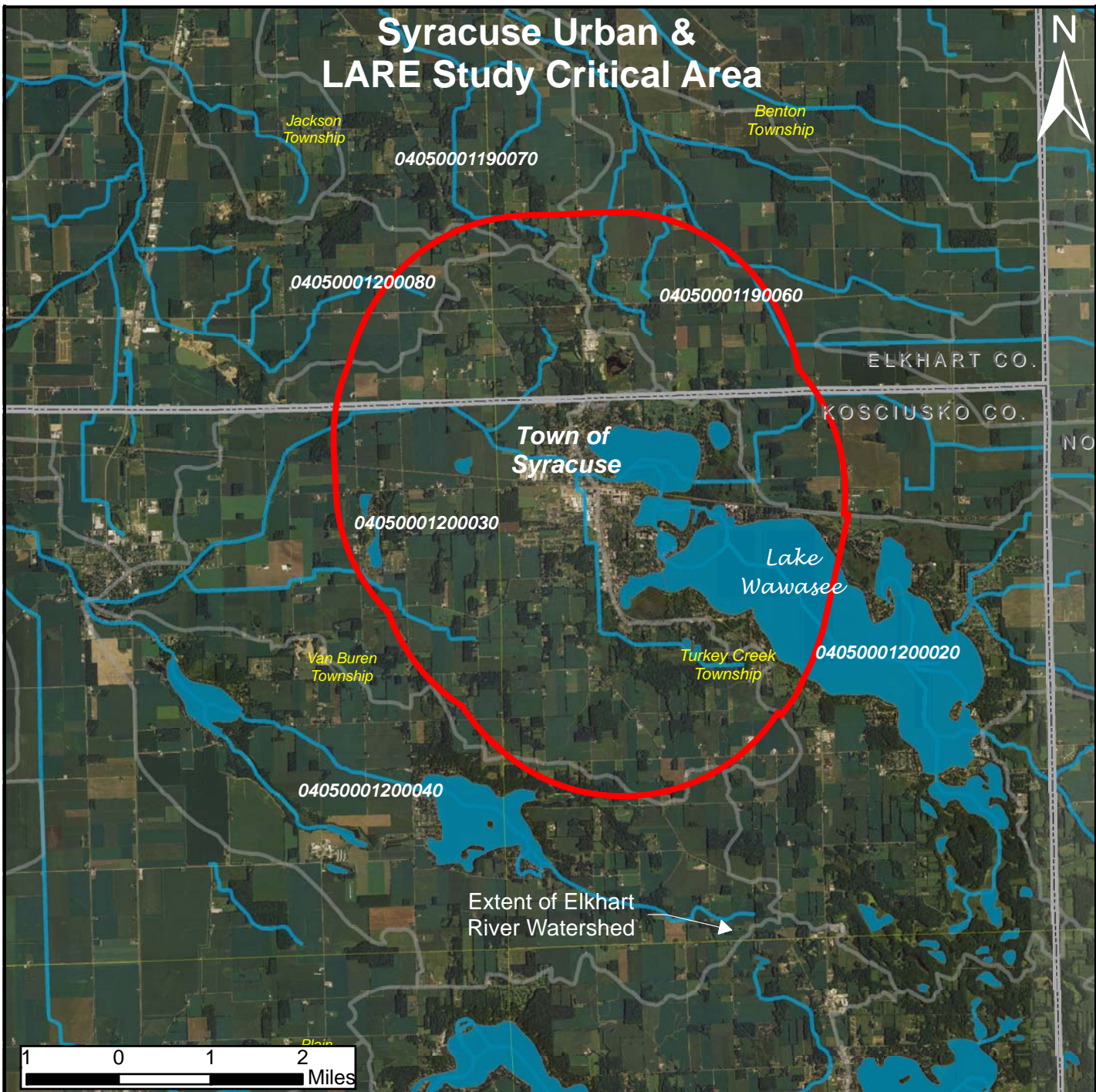



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TITLE:	Kendallville Urban Critical Area
BASE LAYER:	2006 Aerial Indiana University Spatial Data Portal
CLIENT:	Elkhart River Restoration Association 305 Carter Road Goshen, Indiana 46526

PROJECT: Elkhart River Watershed Management Plan and Implementation		
PROJECT NO. 07041	EXHIBIT: K-13	SHEET: 1 OF: 1
QUADRANGLE: N/A	DATE: 1/8/08	SCALE: NTS


Syracuse Urban & LARE Study Critical Area



Legend

 Sediment, E.coli, and Nutrient Critical Area (17,537 acres)

* Sources: Street Map USA and The Wawasee Area Watershed Management Plan Elkhart, Kosciusko, and Noble Counties, Indiana April 2007, J.F. New

 <p>V3 Companies 7325 Janes Avenue Woodridge, IL 60517 630.724.9200 phone 630.724.9202 fax www.v3co.com</p>	<p>TITLE: Syracuse Urban & LARE Study Critical Area</p>	<p>PROJECT: Elkhart River Watershed Management Plan and Implementation</p>		
	<p>BASE LAYER: 2006 Aerial Indiana University Spatial Data Portal</p>	<p>PROJECT NO. 07041</p>	<p>EXHIBIT: K-14</p>	<p>SHEET: 1 OF: 1</p>
	<p>CLIENT: Elkhart River Restoration Association 305 Carter Road Goshen, Indiana 46526</p>	<p>QUADRANGLE: N/A</p>	<p>DATE: 1/8/08</p>	<p>SCALE: NTS</p>

and nutrients and *E. coli* from pet waste and wildlife. Included in this critical area are the areas identified in The Wawasee Area WMP. There are 17,537 acres of critical area where the implementation of BMPs would improve the condition of the Watershed.

Critical Area #15, shown on Exhibit K-15, is the Millersburg urban critical area. It contributes to the problems of sediment loading, *E. coli*, and nutrient loading. Addressing these problems will also impact concerns regarding hydrologic modification, loss of open space, and degradation of fish populations. The Steering Committee identified urban sources including: sedimentation from construction sites; pollutants from impervious surfaces; and nutrients and *E. coli* from pet waste and wildlife. There are 12,506 acres of critical area where the implementation of BMPs would improve the condition of the Watershed.

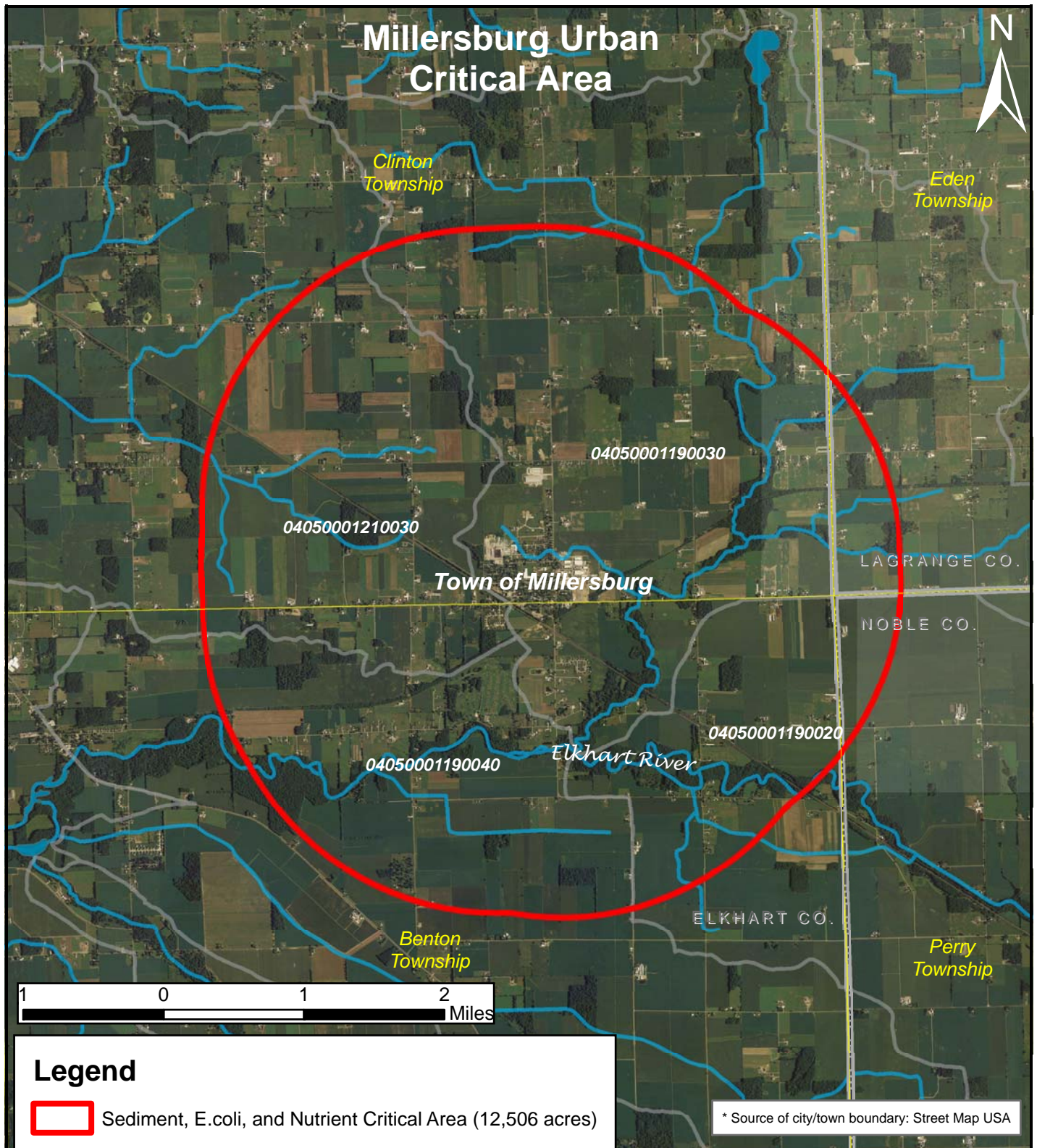
Critical Area #16, shown on Exhibit K-16, is the Albion urban & LARE Study critical area. It contributes to the problems of sediment, *E. coli*, and nutrient loading. Addressing these problems will also impact concerns regarding hydrologic modification, loss of open space, and degradation of fish populations. The Steering Committee identified urban sources including: sedimentation from construction sites; pollutants from impervious surfaces; and nutrients and *E. coli* from pet waste and wildlife. Also included in this critical area are the areas identified in the Skinner Lake Engineering Feasibility Study. There are 16,970 acres of critical area where the implementation of BMPs would improve the condition of the Watershed.

Critical Area #17, shown on Exhibit K-17, is the Rome City urban critical area. It contributes to the problems of sediment loading, *E. coli*, and nutrient loading. Addressing these problems will also impact concerns regarding hydrologic modification, loss of open space, degradation of fish populations, and degradation of lakes. The Steering Committee identified urban sources including: sedimentation from construction sites; pollutants from impervious surfaces; and nutrients and *E. coli* from pet waste and wildlife. There are 19,692 acres of critical area where the implementation of BMPs would improve the condition of the Watershed.


Critical Area #18, shown on Exhibit K-18, is the Milford urban critical area. It contributes to the problems of sediment loading, *E. coli*, and nutrient loading. Addressing these concerns will also impact concerns regarding hydrologic modification, loss of open space, and degradation of fish populations. The Steering Committee identified urban sources including: sedimentation from construction sites; pollutants from impervious surfaces; and nutrients and *E. coli* from pet waste and wildlife. There are 14,459 acres of critical area where the implementation of BMPs would improve the condition of the Watershed.

Critical Area #19, shown on Exhibit K-19, is the Jones Lake critical area. Jones Lake and the surrounding areas within Noble County contribute to the problems of sediment loading, *E. coli*, and nutrient loading. Addressing these problems from agricultural landuse practices will also impact concerns regarding hydrologic modification, loss of open space, degradation of fish populations, and degradation of lakes. There are 5,885 acres of critical area where the implementation of BMPs would improve the condition of the Watershed.


Critical Area #20, shown on Exhibit K-20, is the South Branch Upper Reaches critical area. The Upper Reaches of the South Branch of the Elkhart River within York Township contribute to the problems of sediment loading, *E. coli*, and nutrient loading. Addressing these concerns will also



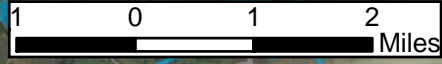
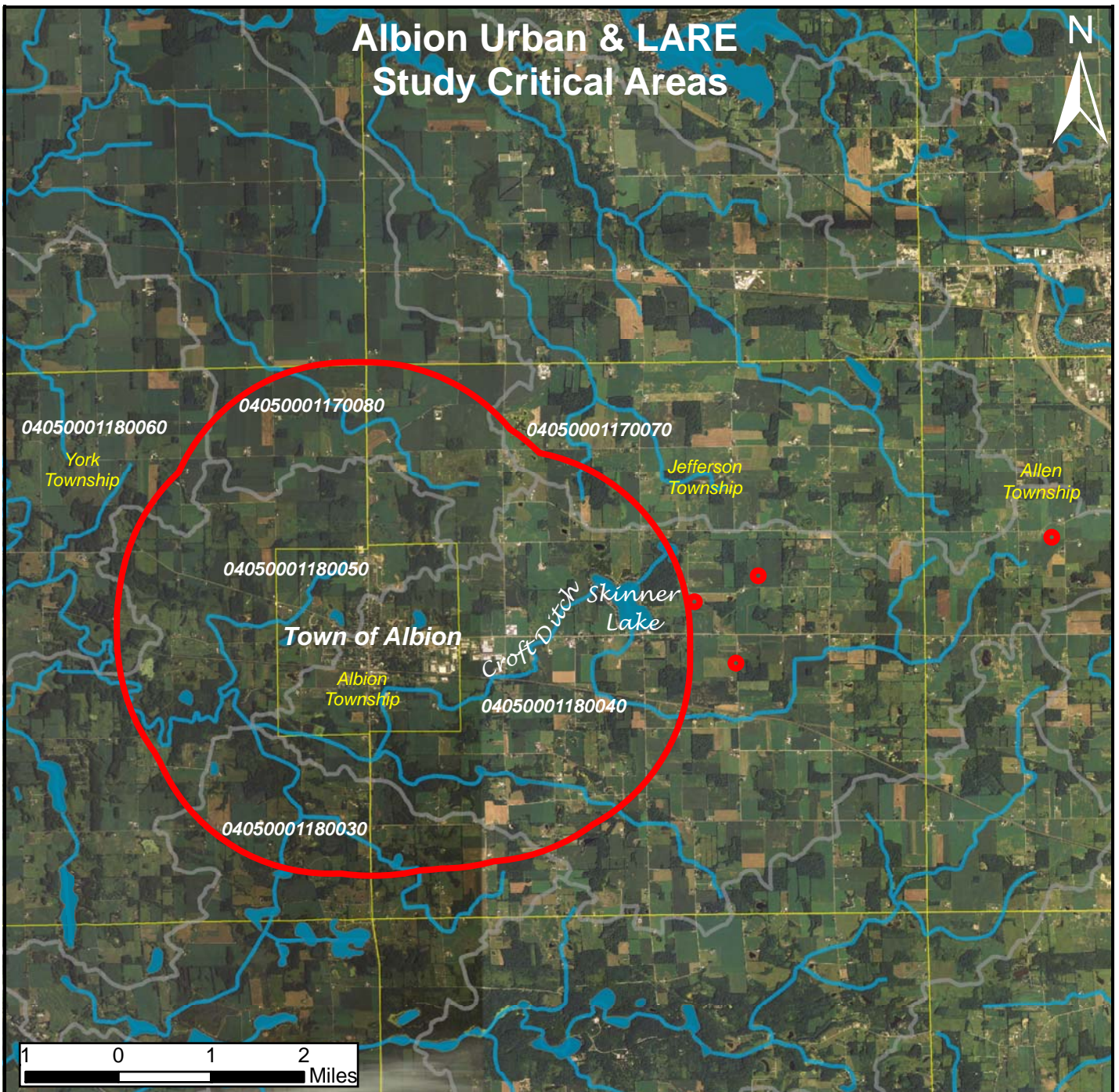
Legend

 Sediment, E.coli, and Nutrient Critical Area (12,506 acres)


* Source of city/town boundary: Street Map USA

 <p>V3 Companies 7325 Janes Avenue Woodridge, IL 60517 630.724.9200 phone 630.724.9202 fax www.v3co.com</p>	<p>TITLE: Millersburg Urban Critical Area</p> <p>(15)</p>	<p>PROJECT: Elkhart River Watershed Management Plan and Implementation</p>		
	<p>BASE LAYER: 2006 Aerial Indiana University Spatial Data Portal</p>	<p>PROJECT NO. 07041</p>	<p>EXHIBIT: K-15</p>	<p>SHEET: 1 OF: 1</p>
	<p>CLIENT: Elkhart River Restoration Association 305 Carter Road Goshen, Indiana 46526</p>	<p>QUADRANGLE: N/A</p>	<p>DATE: 1/8/08</p>	<p>SCALE: NTS</p>


Albion Urban & LARE Study Critical Areas



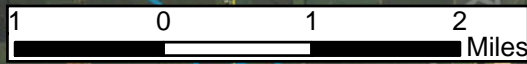
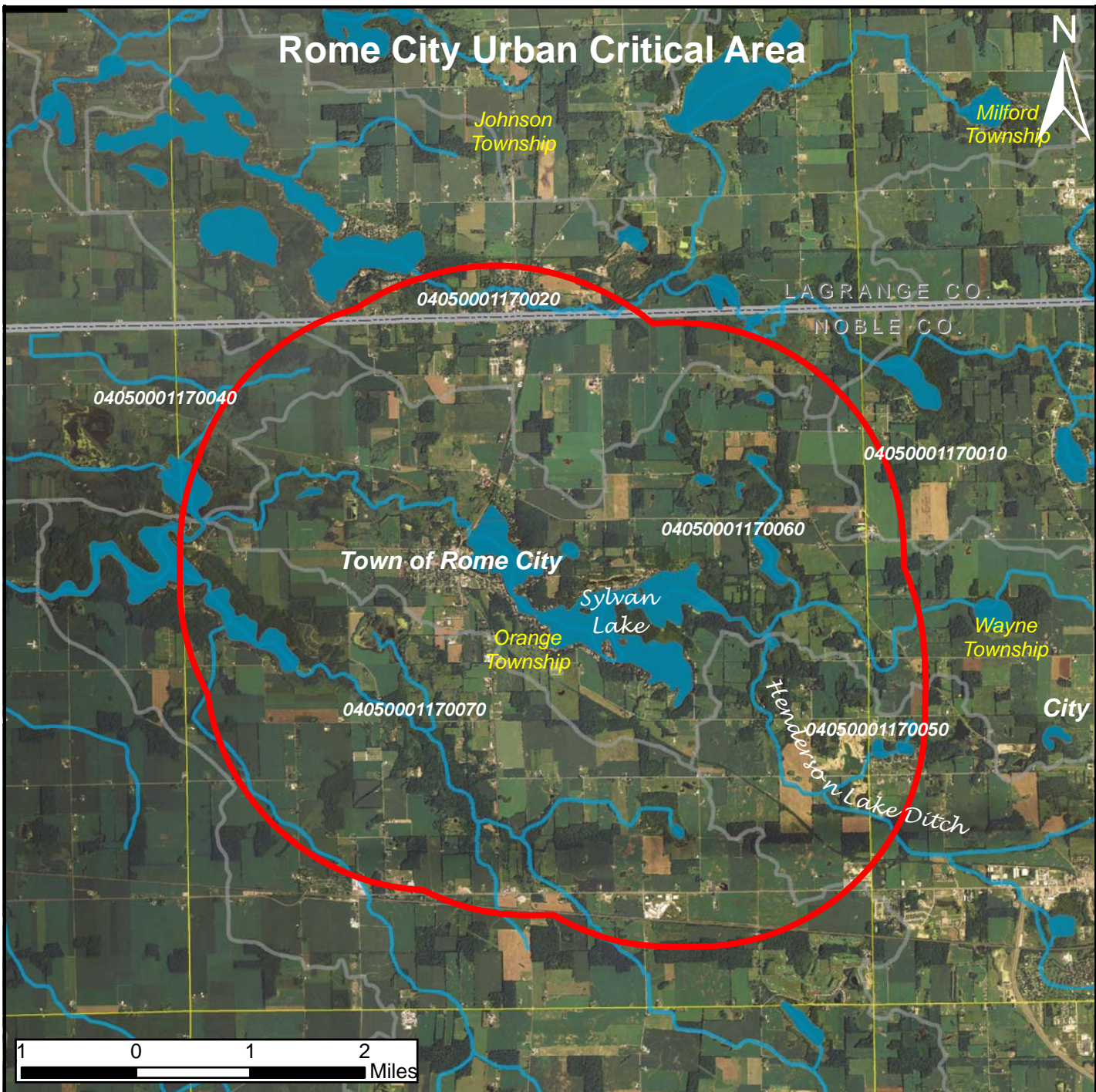
Legend

 Sediment, E.coli, and Nutrient Critical Area and LARE Study Critical Areas (16,970 acres)

*Sources: Street Map USA
 Skinner Lake Engineering Feasibility Study
 Noble County, Indiana
 April 2007, J.F. New

 <p>V3 Companies 7325 Janes Avenue Woodridge, IL 60517 630.724.9200 phone 630.724.9202 fax www.v3co.com</p>	TITLE: Albion Urban & LARE Study Critical Areas (16)		PROJECT: Elkhart River Watershed Management Plan and Implementation		
	BASE LAYER: 2006 Aerial Indiana University Spatial Data Portal		PROJECT NO. 07041	EXHIBIT: K-16	SHEET: 1 OF: 1
	CLIENT: Elkhart River Restoration Association 305 Carter Road Goshen, Indiana 46526		QUADRANGLE: N/A	DATE: 1/8/08	SCALE: NTS


Rome City Urban Critical Area

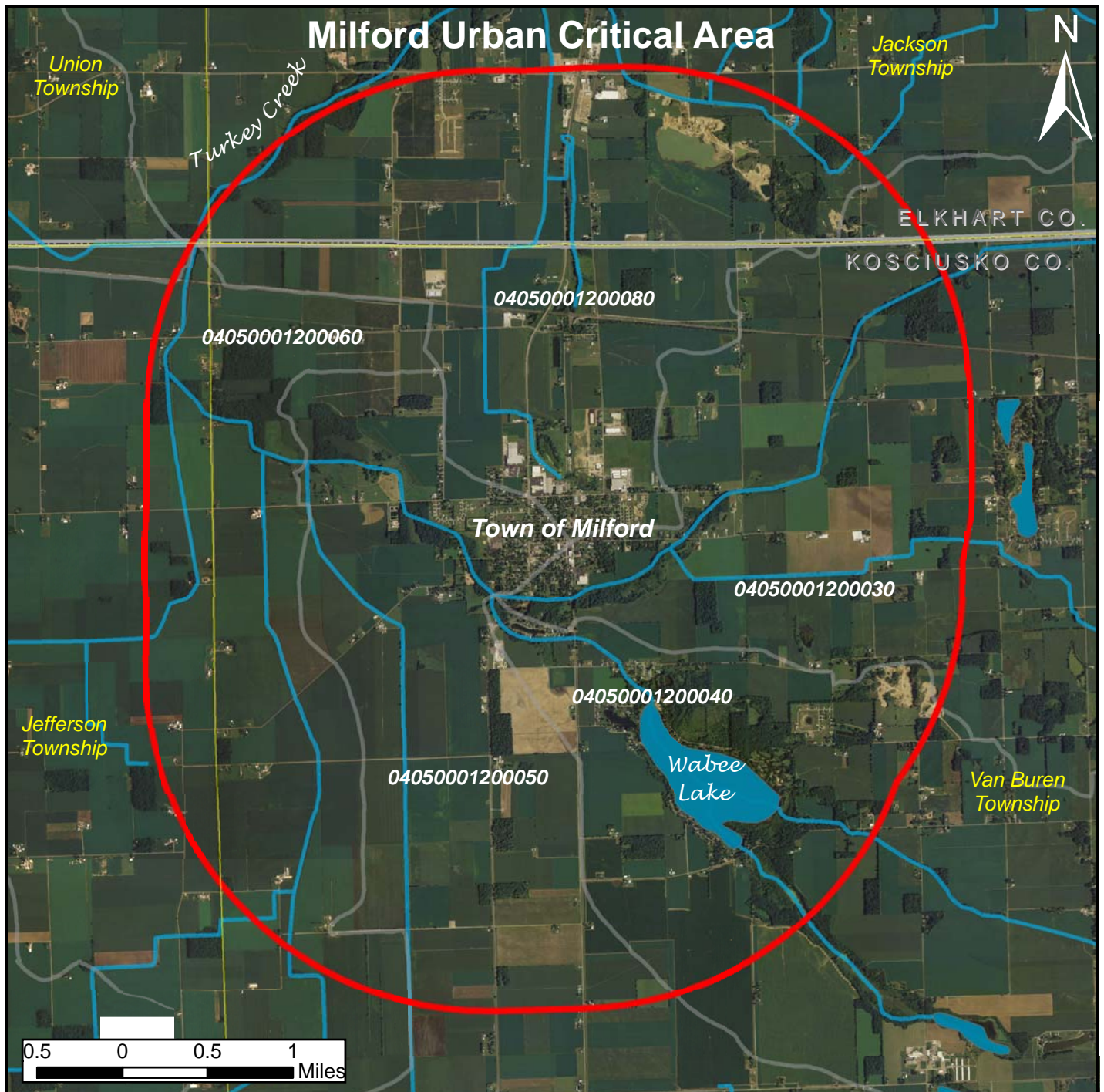


Legend

Sediment, E.coli, and Nutrient Critical Area (19,692 acres)

* Source of city/town boundary: Street Map USA

 <p>V3 Companies 7325 Janes Avenue Woodridge, IL 60517 630.724.9200 phone 630.724.9202 fax www.v3co.com</p>	TITLE: Rome City Urban Critical Area (17)		PROJECT: Elkhart River Watershed Management Plan and Implementation		
	BASE LAYER: 2006 Aerial Indiana University Spatial Data Portal		PROJECT NO. 07041	EXHIBIT: K-17	SHEET: 1 OF: 1
	CLIENT: Elkhart River Restoration Association 305 Carter Road Goshen, Indiana 46526		QUADRANGLE: N/A	DATE: 1/8/08	SCALE: NTS




Legend

 Sediment, E.coli, and Nutrient Critical Area (14,459 acres)

Source: The Wawasee Area Watershed Management Plan
Elkhart, Kosciusko, and Noble Counties, Indiana
April 2007, J.F. New

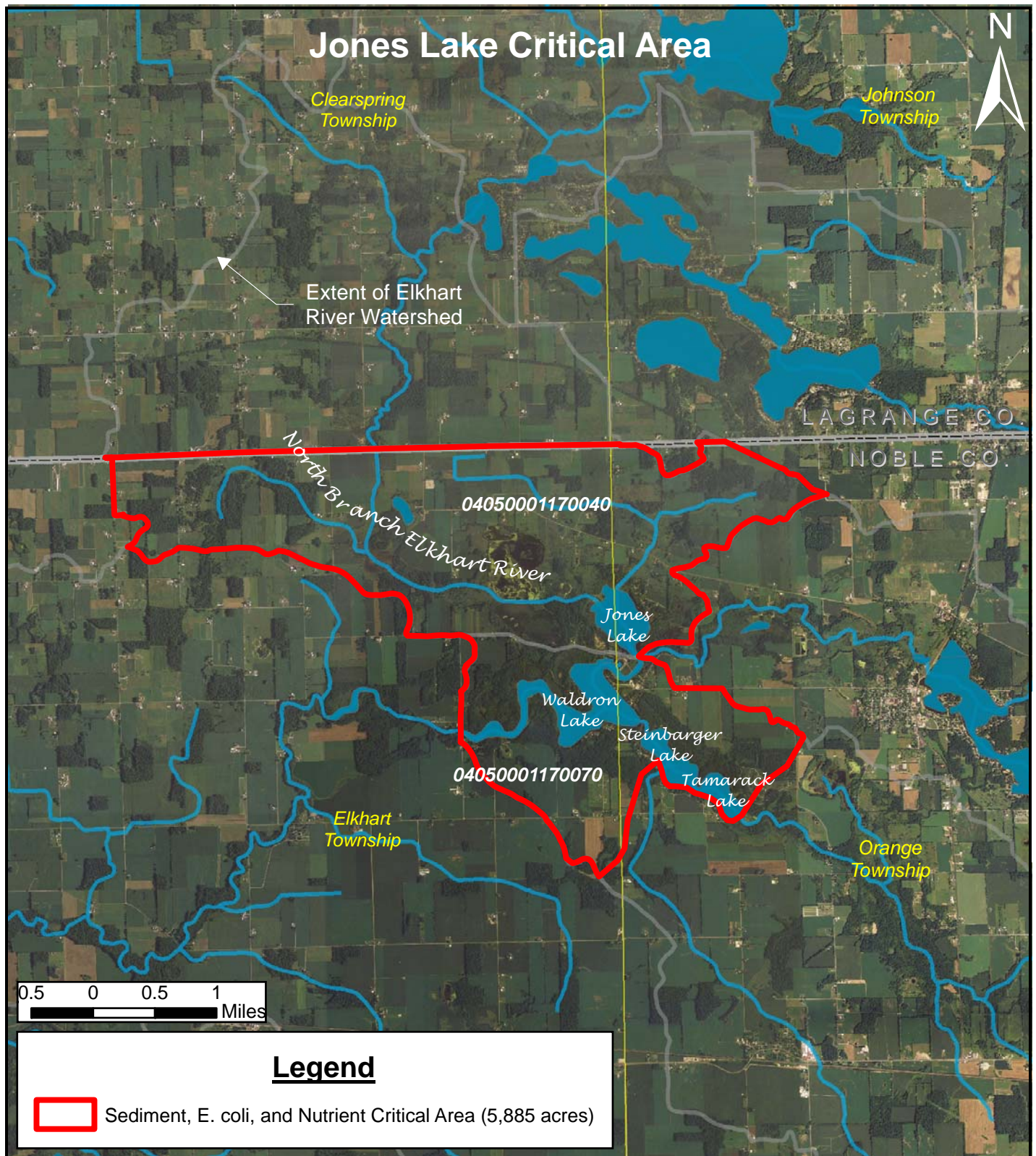


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TITLE: **Milford Urban Critical Area**

 BASE LAYER: 2006 Aerial
 Indiana University Spatial Data Portal
 CLIENT: Elkhart River Restoration Association
 305 Carter Road
 Goshen, Indiana 46526


PROJECT: **Elkhart River Watershed Management Plan and Implementation**

PROJECT NO. 07041	EXHIBIT: K-18	SHEET: 1 OF: 1
QUADRANGLE: N/A	DATE: 1/8/08	SCALE: NTS

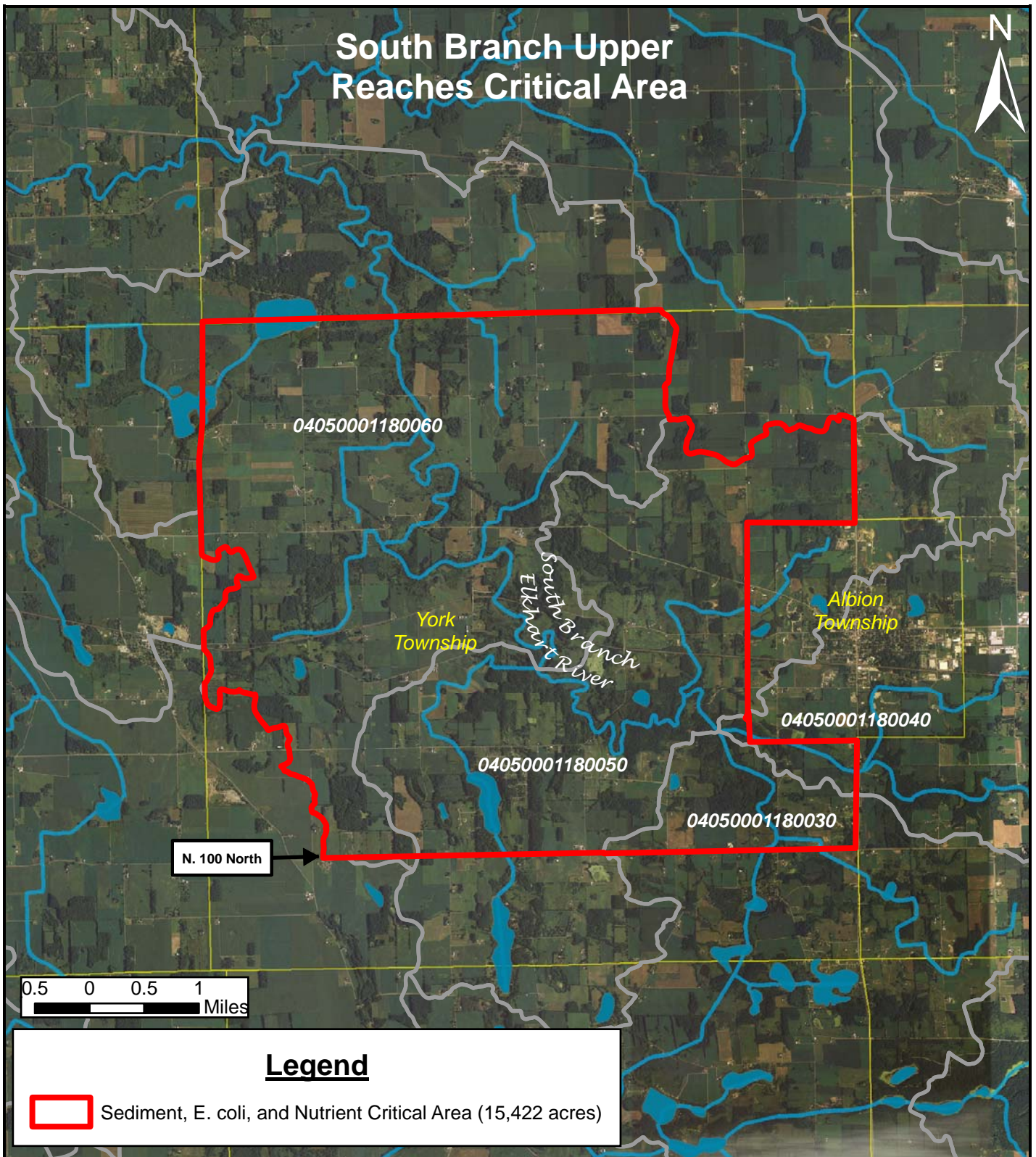


Legend

 Sediment, E. coli, and Nutrient Critical Area (5,885 acres)

 <p>V3 Companies 7325 Janes Avenue Woodridge, IL 60517 630.724.9200 phone 630.724.9202 fax www.v3co.com</p>	<p>TITLE: 19 Jones Lake Critical Area</p>	<p>PROJECT: Elkhart River Watershed Management Plan and Implementation</p>		
	<p>BASE LAYER: 2006 Aerial Indiana University Spatial Data Portal</p>	<p>PROJECT NO. 07041</p>	<p>EXHIBIT: K-19</p>	<p>SHEET: 1 OF: 1</p>
	<p>CLIENT: Elkhart River Restoration Association 305 Carter Road Goshen, Indiana 46526</p>	<p>QUADRANGLE: N/A</p>	<p>DATE: 1/8/08</p>	<p>SCALE: NTS</p>

South Branch Upper Reaches Critical Area



Legend

 Sediment, E. coli, and Nutrient Critical Area (15,422 acres)



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TITLE:
South Branch Upper Reaches Critical Area
BASE LAYER: 2006 Aerial
Indiana University Spatial Data Portal
CLIENT:
Elkhart River Restoration Association
305 Carter Road
Goshen, Indiana 46526

PROJECT: Elkhart River Watershed Management Plan and Implementation		
PROJECT NO. 07041	EXHIBIT: K-20	SHEET: 1 OF: 1
QUADRANGLE: N/A	DATE: 1/8/08	SCALE: NTS

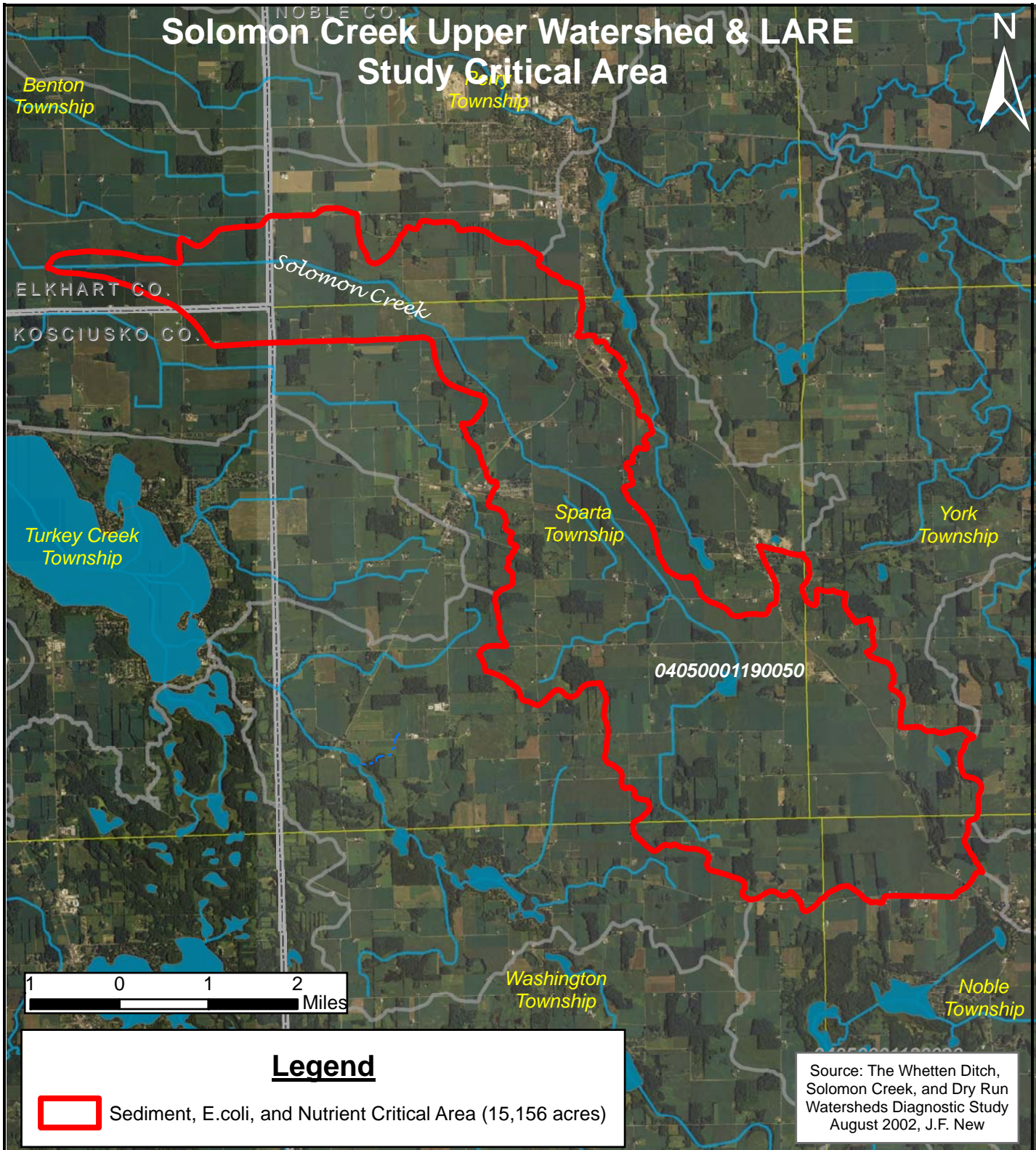
impact concerns regarding hydrologic modification, loss of open space, and degradation of fish populations. The Steering Committee mentioned problems with lack of filter strips, lack of conservation tillage practices, livestock entering the stream, log jams, streambank erosion, septic system failure, obvious sediment deposits caused by severe bank and overland erosion, and concern regarding over-fertilization in agricultural, urban, and rural residential areas. There are 15,422 acres of critical area where the implementation of BMPs would improve the condition of the Watershed.

Critical Area #21, shown on Exhibit K-21, is the Solomon Creek Upper Watershed & LARE Study critical area. It contributes to the problems of sediment loading, *E. coli*, and nutrient loading. Addressing these concerns will also impact concerns regarding hydrologic modification, loss of open space, and degradation of fish populations. Included in this critical area are the areas identified in the Whetten Ditch, Solomon Creek, and Dry Run Watersheds LARE Diagnostic Study. The Steering Committee identified that areas along Solomon Creek have limited canopy cover, instream habitat problems, and poor dissolved oxygen (DO) levels. The Steering Committee indicated problems with livestock entering the stream, log jams, streambank erosion, septic system failure, obvious sediment deposits, and concern regarding over-fertilization in agricultural, urban, and rural residential areas. There are 15,156 acres of critical area where the implementation of BMPs would improve the condition of the Watershed.

Critical Area #22, shown on Exhibit K-22, is the Solomon Creek Lower Watershed & LARE Study critical area. It contributes to the problems of sediment loading, *E. coli*, and nutrient loading. Addressing these concerns will also impact concerns regarding hydrologic modification, loss of open space, and degradation of fish populations. Included in this critical area are the areas identified in the Whetten Ditch, Solomon Creek, and Dry Run Watersheds LARE Diagnostic Study. The Steering Committee identified that areas along Solomon Creek have limited canopy cover, instream habitat problems and poor DO levels. The Steering Committee indicated problems with livestock entering the stream, log jams, streambank erosion, septic system failure, obvious sediment deposits, and concern regarding over-fertilization in agricultural, urban, and rural residential areas. There are 8,524 acres of critical area where the implementation of BMPs would improve the condition of the Watershed.

Critical Area #23, shown on Exhibit K-23, is the Golf Courses critical area. They contribute to the problems of nutrient loading. Addressing these problems will also impact concerns regarding hydrologic modification, loss of open space, degradation of fish populations, and (in some instances) degradation of lakes. Eleven golf courses were identified which are adjacent to or near waterways within the Elkhart River Watershed. These golf courses include: Old Orchard Golf Course, Black Squirrel Golf Club, McCormick Creek Golf Course, Timber Ridge Golf Course, Big Boulder Golf Course, Maxwellton Golf Course, Wawasee Country Club, South Shore Country Club, Augusta Hills Golf Course, Limber Lost Golf Course and Cobblestone Golf Course. The implementation of BMPs and responsible use of fertilizers would improve the condition of the Watershed.

Critical Area #24, shown on Exhibit K-24, is the LaGrange County Lakes & LARE Study critical area. Addressing these problems will also impact concerns regarding hydrologic modification, loss of open space, degradation of fish populations, and degradation of lakes. It contributes to the problems of sediment loading, *E. coli*, and nutrient loading. The Steering Committee mentioned problems including sediment in tributary ditches, lack of filter strips, and the need to



Solomon Creek Upper Watershed & LARE Study Critical Area



Benton Township

Township

ELKHART CO.
KOSCIUSKO CO.

Solomon Creek

Turkey Creek Township

Sparta Township

York Township

04050001190050



Washington Township

Noble Township

Legend

Sediment, E.coli, and Nutrient Critical Area (15,156 acres)

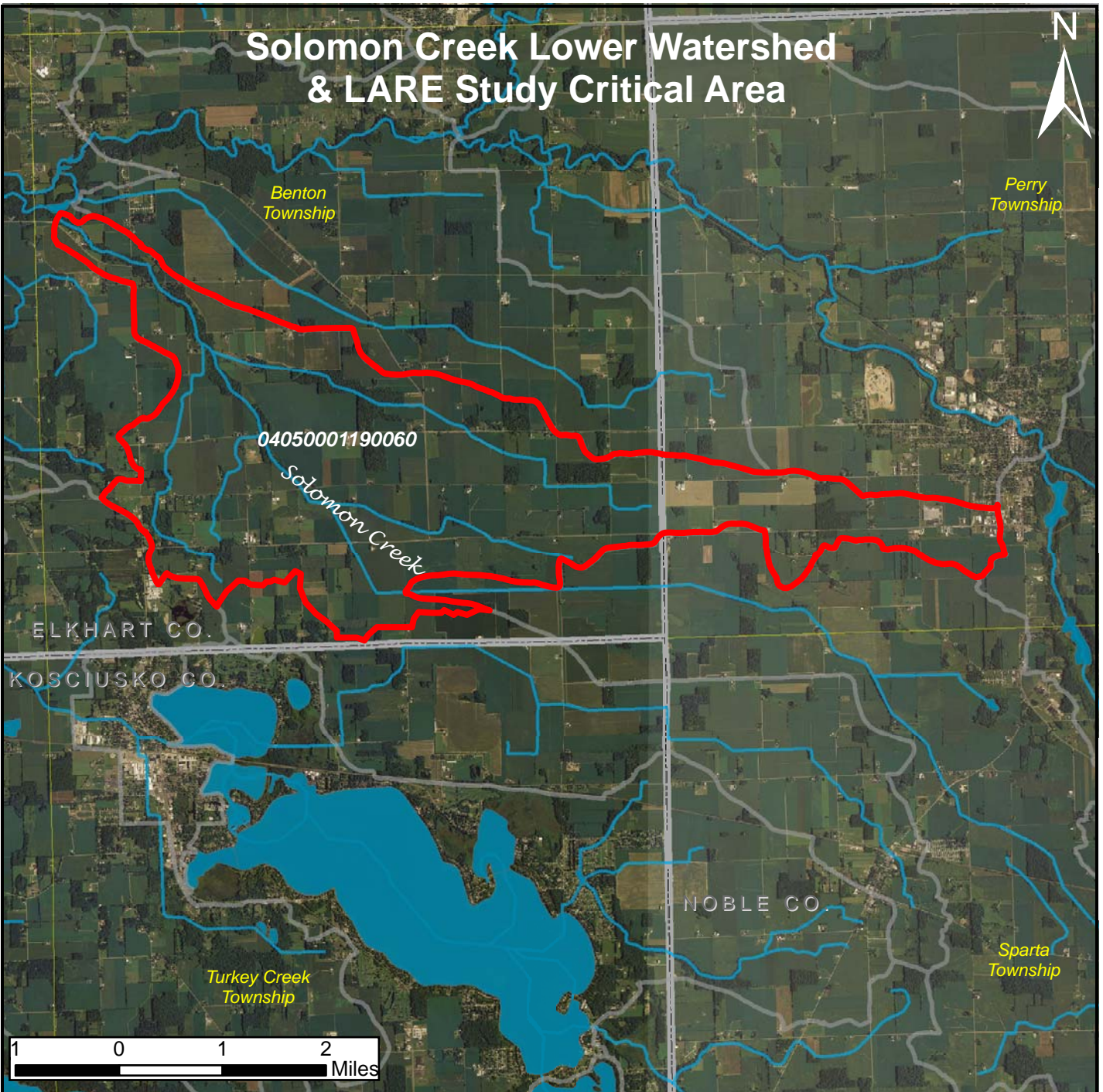
Source: The Whetten Ditch, Solomon Creek, and Dry Run Watersheds Diagnostic Study August 2002, J.F. New

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TITLE: Solomon Creek Upper Watershed & LARE Study Critical Area (21)	
BASE LAYER: 2006 Aerial Indiana University Spatial Data Portal	
CLIENT: Elkhart River Restoration Association 305 Carter Road Goshen, Indiana 46526	

PROJECT: Elkhart River Watershed Management Plan and Implementation		
PROJECT NO. 07041	EXHIBIT: K-21	SHEET: 1 OF: 1
QUADRANGLE: N/A	DATE: 1/8/08	SCALE: NTS

Solomon Creek Lower Watershed & LARE Study Critical Area




Legend

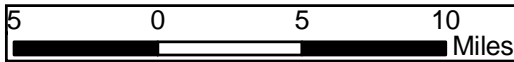
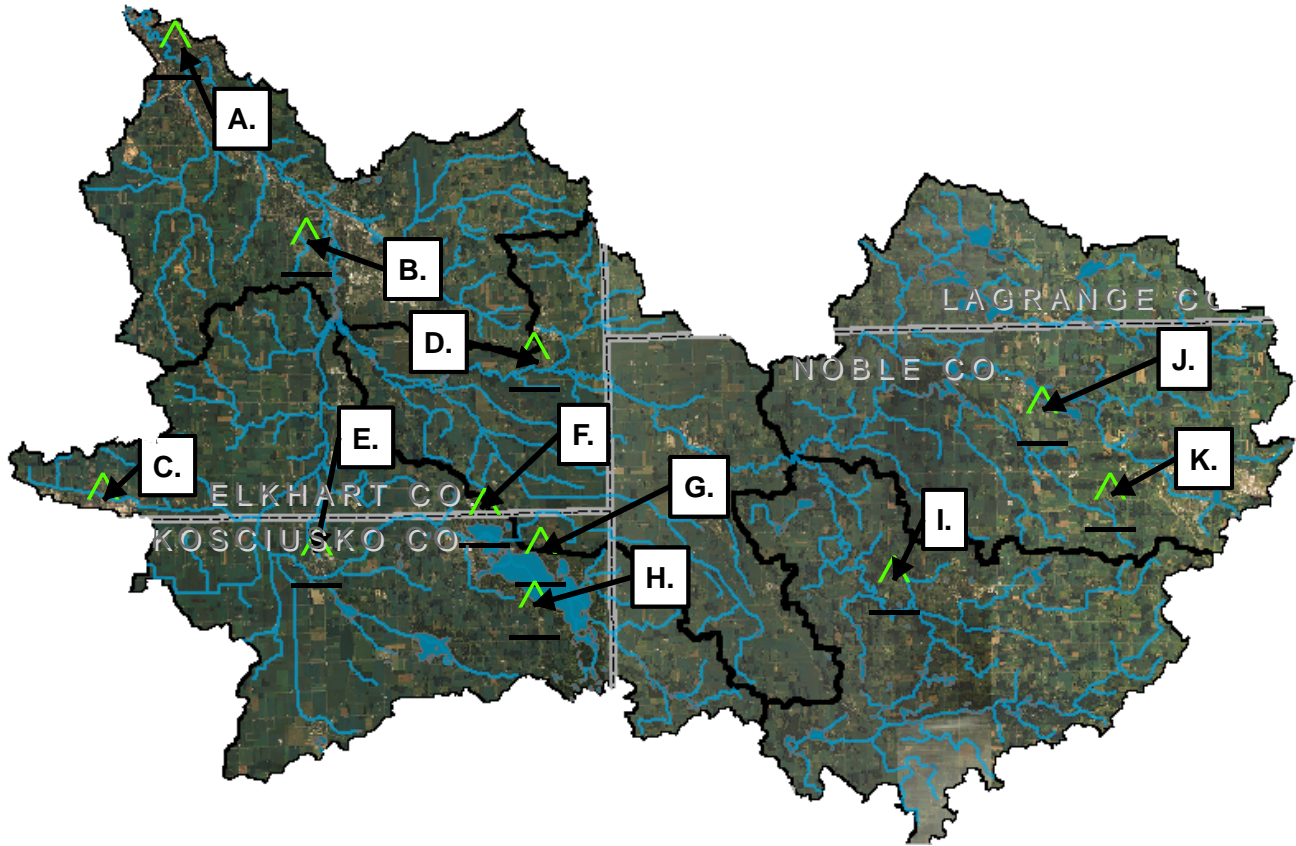


Sediment, E.coli, and Nutrient Critical Area (8,524 acres)

Source: The Whetten Ditch, Solomon Creek, and Dry Run Watersheds Diagnostic Study August 2002, J.F. New

 <p>V3 Companies 7325 Janes Avenue Woodridge, IL 60517 630.724.9200 phone 630.724.9202 fax www.v3co.com</p>	<p>TITLE: Solomon Creek Lower Watershed & LARE Study Critical Area</p>	<p>PROJECT: Elkhart River Watershed Management Plan and Implementation</p>		
	<p>BASE LAYER: 2006 Aerial Indiana University Spatial Data Portal</p>	<p>PROJECT NO. 07041</p>	<p>EXHIBIT: K-22</p>	<p>SHEET: 1 OF: 1</p>
	<p>CLIENT: Elkhart River Restoration Association 305 Carter Road Goshen, Indiana 46526</p>	<p>QUADRANGLE: N/A</p>	<p>DATE: 1/8/08</p>	<p>SCALE: NTS</p>

Golf Courses Critical Area



Golf Courses Critical Area

Nutrient Critical Area

ID	Name	Address	City	County
A.	Old Orchard Golf Course	24682 County Rd 16 East	Elkhart	Elkhart
B.	Black Squirrel Golf Club	1017 Larimer Dr	Goshen	Elkhart
C.	McCormick Creek Golf Course	Clubhouse Dr	Nappanee	Elkhart
D.	Timber Ridge Golf Course	12507 County Road 44	Millersburg	Elkhart
E.	Big Boulder Golf Course	610 N Higbee St	Milford	Kosciusko
F.	Maxwelton Golf Course	PO Box 306	Syracuse	Kosciusko
G.	Wawasee Country Club	7654 E. Eli Lilly Road	Syracuse	Kosciusko
H.	South Shore Country Club	10601 North State Road 13	Syracuse	Kosciusko
I.	Augusta Hills Golf Course	2080 W 300 North	Albion	Noble
J.	Limber Lost Golf Course	County Rd 900 North	Rome City	Noble
K.	Cobblestone Golf Course	RR 3, Drake Road	Kendallville	Noble



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TITLE: **Golf Courses Critical Area**

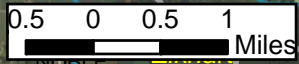
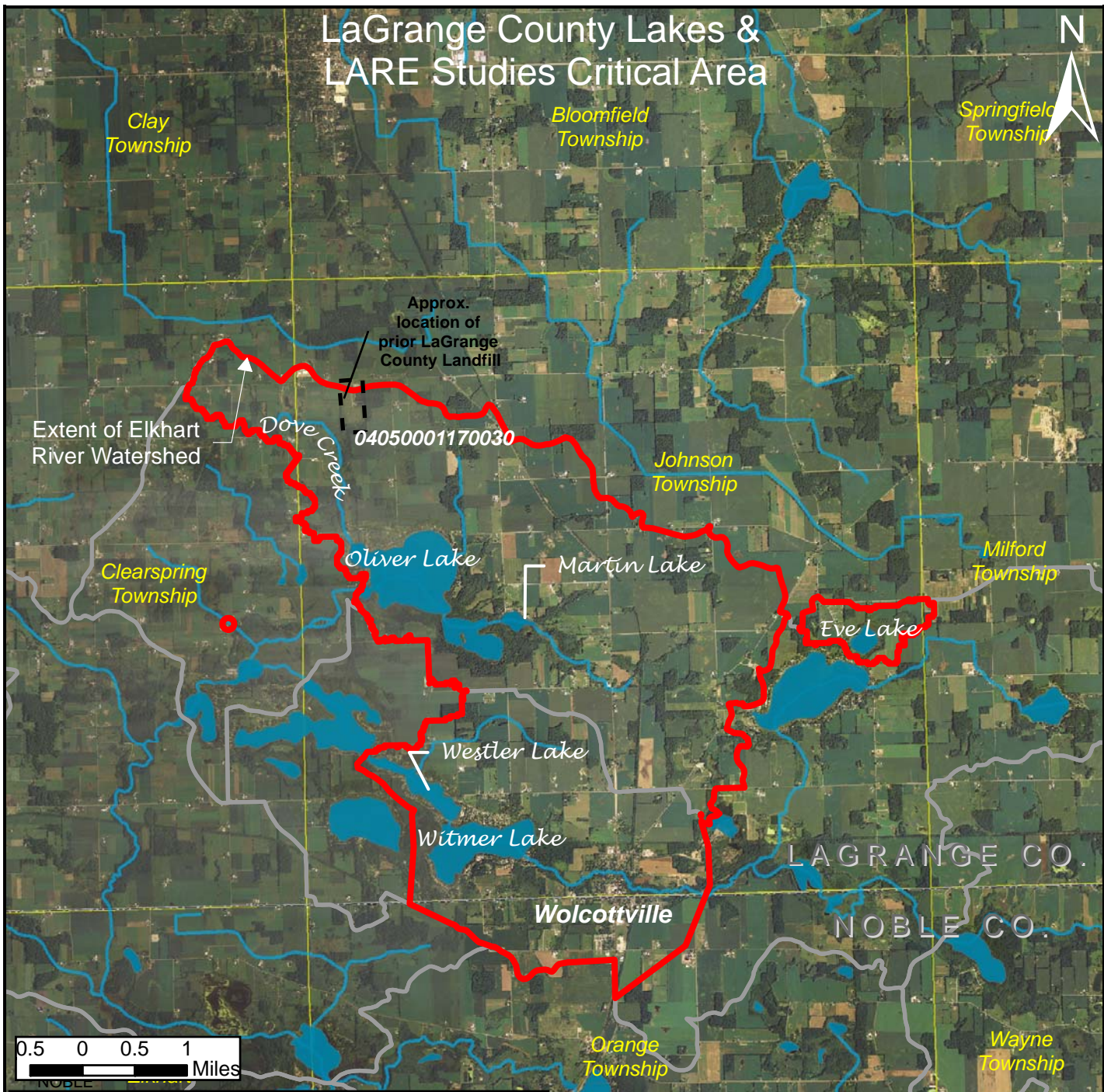
BASE LAYER: 2006 Aerial
 Indiana University Spatial Data Portal

CLIENT:
 Elkhart River Restoration Association
 305 Carter Road
 Goshen, Indiana 46526


PROJECT: **Elkhart River Watershed Management Plan and Implementation**

PROJECT NO. 07041	EXHIBIT: K-23	SHEET: 1 OF: 1
QUADRANGLE: N/A	DATE: 1/8/08	SCALE: NTS

LaGrange County Lakes & LARE Studies Critical Area



Legend

 Sediment, E.coli, and Nutrient Critical Area and LARE Studies Critical Area (11,321 acres)

Sources: Five Lakes Engineering Feasibility Study
LaGrange and Noble Counties, Indiana
July 2004, J.F. New

Pettit Mill Pond Sediment Control Project Design Report
LaGrange County, Indiana
July 2004, J.F. New



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Woodridge, IL 60517
630.724.9200 phone
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TITLE:
24 LaGrange County Lakes & LARE Studies Critical Area
BASE LAYER: 2006 Aerial
Indiana University Spatial Data Portal
CLIENT:
Elkhart River Restoration Association
305 Carter Road
Goshen, Indiana 46526

PROJECT:
**Elkhart River Watershed
Management Plan and Implementation**

PROJECT NO. 07041	EXHIBIT: K-24	SHEET: 1 OF: 1
QUADRANGLE: N/A	DATE: 1/8/08	SCALE: NTS

maintain sediment basins. Also included in this critical area are the areas identified in the Five Lakes Engineering Feasibility Study and Pettit Mill Pond Sediment Control Project Design Report. There are 11,321 acres of critical area where the implementation of BMPs would improve the condition of the Watershed.

Critical Area #25, shown on Exhibit K-25, is the Wawasee Area & LARE Study critical area. It contributes to the problems of sediment loading, *E. coli*, and nutrient loading. Addressing these concerns will also impact concerns regarding hydrologic modification, loss of open space, degradation of fish populations, and degradation of lakes. Also included in this critical area are the areas identified in The Wawasee Area WMP. There are 7,596 acres of critical area where the implementation of BMPs would improve the condition of the Watershed.

Critical Area #26, not shown on an exhibit, is the Septic Density critical area. Areas in the Watershed that have more than one on-site wastewater disposal system per one-half acre are identified as being a critical area as they contribute to the problems of *E. coli* and nutrient loading. Addressing these concerns will also impact concerns regarding hydrologic modification, loss of open space, degradation of fish populations, and (in some instances) degradation of lakes. The implementation of BMPs would improve the condition of the Watershed.

The Steering Committee evaluated the priority resource concerns that were gathered from stakeholders throughout the Elkhart River Watershed, reviewed the goals and objectives of the greater St. Joseph River WMP, and examined the mission statement of the Elkhart River Alliance. With this information in mind, six goals were developed, which the committee hopes to achieve through the implementation of the Elkhart River WMP. The complete listing of the Elkhart River WMP's goals is as follows:

Goal #1: Sustain the financial and institutional capacity of a stakeholder group. Increase the collaboration of both urban and agricultural stakeholders to eliminate program duplication, reduce costs, and identify effective solutions.

Objectives:

- maintain Steering Committee,
- address financial sustainability,
- address agricultural issues and concerns,
- address urban issues and concerns,
- address rural residential issues and concerns,
- educate all stakeholders,
- involve and mobilize citizen stakeholders,
- identify and establish collaborative relationships with entities within the Watershed that have potential influence on water quality in order to promote protection and improvement of the Watershed,
- communicate and participate in ongoing water quality research activities within the Watershed and identify research needs that are not being addressed,
- hire a full-time watershed coordinator, and

Wawsee Area & LARE Study Critical Area



ELKHART CO.

KOSCIUSKO CO.

NOBLE CO.

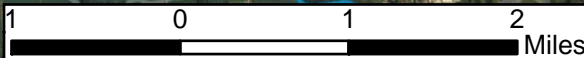
Lake Wawasee

Turkey Creek Township


04050001200020

Sparta Township

Extent of Elkhart River Watershed



Legend

 Sediment, E.coli, and Nutrient Critical Area (7,596 acres)

* Sources: Street Map USA and The Wawasee Area Watershed Management Plan Elkhart, Kosciusko, and Noble Counties, Indiana April 2007, J.F. New



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TITLE: **Wawsee Area & LARE Study Critical Area**

BASE LAYER: 2006 Aerial
Indiana University Spatial Data Portal

CLIENT: Elkhart River Restoration Association
305 Carter Road
Goshen, Indiana 46526

PROJECT: **Elkhart River Watershed Management Plan and Implementation**

PROJECT NO.
07041

EXHIBIT:
K-25

SHEET: 1
OF: 1

QUADRANGLE:
N/A

DATE:
1/8/08

SCALE:
NTS

- establish a permanent location for activities of the Watershed.

Goal #2: Reduce soil erosion and sedimentation so that surface water functions and aesthetics are improved and protected. By the year 2027, surface waters within the Elkhart River Watershed will comply with the Steering Committee's target based on the recommended water quality threshold of 80 mg/L total suspended solids.

Objectives:

- reduce soil erosion and sedimentation from agricultural lands,
- reduce soil erosion and sedimentation from urban lands,
- reduce soil erosion and sedimentation from rural residential lands,
- reduce erosion and sedimentation from the banks of surface waterbodies and conveyance systems, and
- provide education to boaters on the shoreline impact of wakes.

Goal #3: Reduce the concentration levels of *E. coli* so the primary and secondary contact waters within the Watershed do not pose an adverse human health impact. By the year 2027, surface waters within the Elkhart River Watershed will comply with the Indiana State water quality standard of 235 colony forming units per 100 ml of *E. coli*.

Objectives:

- reduce *E. coli* levels from agricultural lands,
- reduce *E. coli* from urban lands,
- reduce *E. coli* from rural residential lands,
- provide education on how to deal with nuisance wildlife,
- provide education to boaters on proper disposal of wastes, and
- reduce *E. coli* from failing or non-existent septic systems.

Goal #4: Reduce the amount of nutrient loading (phosphorus and nitrogen) so that surface water functions and aesthetics are improved and protected. By the year 2027, surface waters within the Elkhart River Watershed will comply with the Steering Committee's target based on the recommended water quality threshold of 10 mg/L of nitrate/nitrite and 0.3 mg/L of phosphorus.

Objectives:

- reduce nutrient levels from agricultural lands,
- reduce nutrient levels from urban lands,
- reduce nutrient levels from rural residential lands,
- provide education on how to deal with nuisance wildlife,
- provide education to boaters on proper disposal of wastes,
- reduce phosphate contribution from detergents, and
- reduce nutrient contribution from golf courses.

Goal #5: Increase preservation, restoration, and appreciation of open space, and maintain a proper balance between the many diverse landuses in the Elkhart River Watershed.

Objectives:

- increase amount of open spaces in permanent protection status,
- increase and improve open space through restoration, and
- increase appreciation of open space through education.

Goal # 6: Develop an outreach and education program that keeps stakeholders involved in issues in the Watershed, and coordinate volunteer activities that benefit the health of the Elkhart River Watershed.

Objectives:

- establish an educational subcommittee that will provide education to the stakeholders,
- establish a recreation subcommittee to improve and facilitate citizen access to the waterways of the Elkhart River Watershed,
- participate in national events that coincide with our goals,
- establish a volunteer coordination subcommittee,
- establish a local advocacy subcommittee to work with government and private organizations and to identify current local issues that impact the river/watershed,
- establish a legislative subcommittee,
- establish a research subcommittee to network with local universities and others doing water quality research in the Elkhart River Watershed,
- effectively use the print media to share and communicate past, current, and future activities of the ERA with the media, public, and current and potential ERA and ERRA members,
- effectively use electronic forms of media (TV and radio) to share and communicate past, current, and future activities of the ERA with the media, public, and current and potential ERA and ERRA members,
- create and maintain an ERA website as a clearinghouse for ERA/Elkhart River Watershed information,
- assist watershed coordinator in sampling biological, chemical, and physical data as monitoring efforts occur,
- recruit and train volunteers to monitor at a minimum, each of the 37 subwatersheds, obtaining both wet and dry weather data at each site at least twice each year, and provide continuing education opportunities for volunteer monitors, and
- promote sustainable drainage practices.

Based on what is practical for this Watershed and what BMPs will provide the most cost effective pollutant reduction, the Steering Committee has chosen eleven agricultural BMPs and ten urban BMPs to help achieve the Watershed goals and objectives by decreasing the concentrations of sediment, *E. coli*, and nutrient loads.

Agricultural Best Management Practices:

1. Exclusion Fencing
2. Rotational Grazing
3. Nutrient Management Plan
4. Manure Management Plan
5. Alternative Watering System
6. No-till/Reduced Till (Conservation Tillage)
7. Grassed Waterways
8. Buffers/Filter Strips
9. Grade-Stabilization Structures
10. Cover Crop
11. Wetland Restoration

Urban Best Management Practices:

1. Rain Barrel/Rain Garden
2. Naturalized Wet-bottom Detention Basin
3. Filtration Basin
4. Green Roof
5. Pervious Paving Options
6. Soil Infiltration Trench
7. Sand Filter
8. Bioretention Practices
9. Natural Stream Buffer
10. Wetland Restoration

Based on the aforementioned potential BMPs to implement within the Elkhart River Watershed, load reduction calculations were estimated for both sediment and nutrients. Sediment loading estimates used measures in terms of Total Suspended Solids (TSS), and nutrient loading estimates used measures in terms of total nitrogen and total phosphorus. Pollution load reductions were estimated for sediment and nutrients. Load reduction calculations were not applied for *E. coli*, as its practice is not technically sound or readily applied in the industry. Therefore, the Elkhart River WMP will only present pollutant load reductions for sediment and nutrients.

The Steering Committee established both an implementation plan and measurable milestones for the goals of the WMP. The implementation plan identifies the objectives and action items, assigns a priority order ranking using a low/medium/high system, identifies the responsible party or parties involved with the implementation of the actions, and outlines both the technical and financial assistance needs for each action item (see Section 5 of this report). Tables 55a-55f in Appendix A lists the measurable milestones for each of the six goals identified by the Steering Committee. Each goal is divided into three categories consisting of: Short Term Milestones and Measurable Goals, Medium Range Milestones and Measurable Goals, and Long Term Milestones and Measurable Goals. These milestones have been suggested in order to help track the process of implementing action items within the Elkhart River Watershed.

Table 55a: Milestones

Goal 1: Sustain the financial and institutional capacity of a stakeholder group. Increase the collaboration of both urban and agricultural stakeholders to eliminate program duplication, reduce costs, and identify effective solutions.

	Short Term Milestone and Measurable Goals (through 2012)	Medium Range Milestone and Measurable Goals (through 2017)	Long Term Milestones and Measurable Goals (through 2027)
Objective 1: Maintain steering committee.			
	Hold 20 meetings by Dec. 2012.	Hold 40 meetings by Dec. 2017.	Hold 80 meetings by Dec. 2027.
	Retain a minimum of 15 active steering committee members.	Retain a minimum of 15 active steering committee members.	Retain a minimum of 15 active steering committee members.
Objective 2: Address financial sustainability.			
	Establish a financial subcommittee who will coordinate with the ERRA on funding issues.	Work with the financial subcommittee to coordinate with the ERRA on funding issues.	Work with the financial subcommittee to coordinate with the ERRA on funding issues.
	Apply for two additional grants by 2012.	Apply for two additional grants by 2017; Identify five potential fund-raising events by 2017; and Identify ten potential corporate sponsors by 2017.	Apply for three additional grants by 2027; hold one fundraising event by 2027; and have two corporate sponsors by 2027.
	Increase ERRA membership by 10% by 2012.	Increase ERRA membership by an additional 10% by 2017.	Increase ERRA membership by an additional 10% by 2027.
Objective 3: Address agricultural issues and concerns.			
	Establish an agricultural subcommittee with representation from all four counties by 2009.	Retain an active agricultural subcommittee.	Retain an active agricultural subcommittee.
Objective 4: Address urban issues and concerns.			
	Establish an urban subcommittee with representation from all four counties by 2009.	Retain an active urban subcommittee.	Retain an active urban subcommittee.
Objective 5: Address rural residential issues and concerns.			
	Establish a rural residential task force made up of the urban, agricultural, and educational subcommittees by 2010.	Retain an active urban, agricultural, and educational subcommittee.	Retain an active urban, agricultural, and educational subcommittee.
Objective 6: Educate all stakeholders.			
	Establish an education subcommittee with representatives from all four counties by 2009.	Retain an active education subcommittee.	Retain an active education subcommittee.
Objective 7: Involve and mobilize citizen stakeholders.			
	Establish a monitoring subcommittee with representation from all four counties by 2009.	Retain an active monitoring subcommittee.	Retain an active monitoring subcommittee.
	Establish a media, marketing, and website subcommittee with representation from all four counties by 2009.	Retain an active media, marketing, and website subcommittee.	Retain an active media, marketing, and website subcommittee.
	Establish a recreation subcommittee with representation from all four counties by 2009.	Retain an active recreation subcommittee.	Retain an active recreation subcommittee.
	Establish a volunteer coordination subcommittee to assist other subcommittees with representation from all four counties by 2009.	Retain an active volunteer coordination subcommittee.	Retain an active volunteer coordination subcommittee.
Objective 8: Identify and establish collaborative relationships with entities within the Elkhart River Watershed that have potential influence on water quality in order to promote protection and improvement of the Elkhart River Watershed.			
	Establish a plan to initialize a local advocacy subcommittee with representation from all four counties by 2009.	Retain an active local advocacy subcommittee.	Retain an active local advocacy subcommittee.
	Establish a plan to initialize a legislative subcommittee with representation from all four counties by 2009.	Retain an active legislative subcommittee.	Retain an active legislative subcommittee.
Objective 9: Communicate and participate in ongoing water quality research activities within the Elkhart River Watershed and identify research needs that are not being addressed.			
	Establish a plan to initialize a research subcommittee with representation from all four counties by 2009.	Retain an active research subcommittee.	Retain an active research subcommittee.
	Establish a plan to initialize a monitoring and research subcommittee with representation from all four counties by 2009.	Retain an active monitoring and research subcommittee.	Retain an active monitoring and research subcommittee.
Objective 10: Hire a full time Elkhart River Watershed coordinator.			
	Prepare a written job description by 2012.	Secure funding for a full-time position by 2017.	Continue to secure funding for a full-time position through 2027.
Objective 11: Establish a permanent location for activities of the Elkhart River Watershed.			
	Prepare to list desired criteria for site by 2012.	List of desired criteria for site established by 2017.	Site selected and operational by 2027.

Table 55b: Milestones

Goal 2: Reduce soil erosion and sedimentation so that surface water functions and aesthetics are improved and protected. By the year 2027, surface waters within the Elkhart River Watershed will comply with the Steering Committee's target based on the recommended water quality threshold of 80 mg/L total suspended solids.

Programmatic Action Plan No.	Short Term Milestone and Measurable Goals (through 2012)	Medium Range Milestone and Measurable Goals (through 2017)	Long Term Milestones and Measurable Goals (through 2027)
Objective 1: Reduce soil erosion and sedimentation from Agricultural lands.			
	Promote and provide technical assistance to install appropriate BMPs.	Continue to promote and provide technical assistance to install appropriate BMPs.	Continue to promote and provide technical assistance to install appropriate BMPs.
	Identify and install demonstration sites. Identify one site where BMPs are needed by 2008. Install one demonstration projects by fall 2009. Research need for additional demonstration site(s) in other counties.	Identify one opportunity for an additional demonstration site by 2017.	Install the practice identified by 2020.
	Host one field day at the demonstration site by fall 2009. Host second field day at an appropriate site by fall 2011.	Host at least one field day every other year, highlighting a variety of BMPs, rotating throughout the four counties.	Host at least five more field days by 2027.
	Establish a cost-share program for BMP installation. Materials outlining the cost-share program will be available at each SWCD in the Elkhart River Watershed by summer 2008.	Review and modify the cost-share program, if necessary, in 2013.	Continue to promote cost-share program for BMP installation. Review and modify the cost-share program, if necessary, in 2018 and 2023.
Objective 2: Reduce soil erosion and sedimentation from Urban lands.			
	Promote and provide technical assistance to install appropriate BMPs.	Continue to promote and provide technical assistance to install appropriate BMPs.	Continue to promote and provide technical assistance to install appropriate BMPs.
	Identify and install demonstration sites. Identify one site where BMPs are needed by spring 2008. Install one demonstration projects by fall 2009. Research need for additional demonstration site(s) in other counties.	Identify one opportunity for an additional demonstration site by 2017.	Install the practice identified by 2020.
	Host one field day at the demonstration site by fall 2008. Host second field day at an appropriate site by fall 2010.	Host at least one field day every other year, highlighting a variety of BMPs, rotating throughout the four counties.	Host at least five more field days by 2027.
	Establish a cost-share program for BMP installation. Materials outlining the cost-share program will be available at each SWCD in the Elkhart River Watershed by summer 2008.	Review and modify the cost-share program, if necessary, in 2013.	Continue to promote cost-share program for BMP installation. Review and modify the cost-share program, if necessary, in 2018 and 2023.
	Co-sponsor one workshop for contractors on construction site erosion and sediment control by 2012.	Sponsor a workshop highlighting green stormwater practices in subdivisions.	Support a workshop highlighting green stormwater practices in subdivisions.
Objective 3: Reduce soil erosion and sedimentation from Rural Residential lands.			
	List causes of soil erosion and sedimentation and suggest BMPs suitable to rural residential lands by 2012.	Host a field day to address soil erosion on rural residential lands by 2017.	In 2018, evaluate the need for futher field days.
Objective 4: Reduce erosion and sedimentation from banks of surface waterbodies and			
	Connect people with the programs and agencies to address these issues.	Continue to connect people with the programs and agencies to address these issues.	Continue to connect people with the programs and agencies to address these issues.
Objective 5: Provide education to boaters on the shoreline impact of wakes.			
	Identify programs or agencies that provide boater education by end of 2008. Offer boater education courses through those agencies beginning in 2009, increasing courses by 2012. Contact one marina by 2009 to increase enrollment in the IDNR Clean Vessel Pumpout Program by 10% through 2010.	Make clean boating brochures/educational materials available at 8 public access sites (at least one in each county) by 2017. Contact one additional marina each year to increase enrollment in the IDNR Clean Vessel Pumpout Program through 2017.	Continue to connect people with the programs and agencies to address these issues. Work with each lake association in the watershed and the DNR to place signage related to the shoreline impact of wakes at 5 public access sites.

Table 55c: Milestones

Goal 3: Reduce the concentration levels of *E. coli* so the primary and secondary contact waters within the watershed do not pose an adverse human health impact. By the year 2027, surface waters within the Elkhart River Watershed will comply with the Indiana State water quality standard of 235 colony forming units per 100 ml of *E. coli*.

Programmatic Action Plan No.	Short Term Milestone and Measurable Goals (through 2012)	Medium Range Milestone and Measurable Goals (through 2017)	Long Term Milestones and Measurable Goals (through 2027)
Objective 1: Reduce <i>E. coli</i> levels from Agricultural lands.			
	Promote and provide technical assistance to install appropriate BMPs.	Continue to promote and provide technical assistance to install appropriate BMPs.	Continue to promote and provide technical assistance to install appropriate BMPs.
	Identify and install demonstration sites. Identify one site where BMPs are needed by 2008. Install one demonstration projects by fall 2009. Research need for additional demonstration site(s) in other counties.	Identify one opportunity for an additional demonstration site by 2017.	Install the practice identified by 2020.
	Host one field day at the demonstration site by fall 2009. Host second field day at an appropriate site by fall 2011.	Host at least one field day every other year, highlighting a variety of BMPs, rotating throughout the four counties.	Host at least five more field days by 2027.
	Establish a cost-share program for BMP installation. Materials outlining the cost-share program will be available at each SWCD in the Elkhart River Watershed by summer 2008.	Review and modify the cost-share program, if necessary, in 2013.	Continue to promote cost-share program for BMP installation. Review and modify the cost-share program, if necessary, in 2018 and 2023.
Objective 2: Reduce <i>E. coli</i> from Urban lands.			
	Promote and provide technical assistance to install appropriate BMPs.	Continue to promote and provide technical assistance to install appropriate BMPs.	Continue to promote and provide technical assistance to install appropriate BMPs.
	Identify and install demonstration sites. Identify one site where BMPs are needed by spring 2008. Install one demonstration projects by fall 2009. Research need for additional demonstration site(s) in other counties.	Identify one opportunity for an additional demonstration site by 2017.	Install the practice identified by 2020.
	Host one field day at the demonstration site by fall 2008. Host second field day at an appropriate site by fall 2010.	Host at least one field day every other year, highlighting a variety of BMPs, rotating throughout the four counties.	Host at least five more field days by 2027.
	Establish a cost-share program for BMP installation. Materials outlining the cost-share program will be available at each SWCD in the Elkhart River Watershed by summer 2008.	Review and modify the cost-share program, if necessary, in 2013.	Continue to promote cost-share program for BMP installation. Review and modify the cost-share program, if necessary, in 2018 and 2023.
	Investigate additional opportunities (funding and educational) to further reduce <i>E. coli</i> levels from point sources including CSOs and other Urban lands.	Continue to investigate additional opportunities (funding and educational) to further reduce <i>E. coli</i> levels from point sources including CSOs and other Urban lands.	Continue to investigate additional opportunities (funding and educational) to further reduce <i>E. coli</i> levels from point sources including CSOs and other Urban lands.
	Educate pet owners on the impacts from and appropriate disposal of pet waste through hosting educational seminars at pet stores and providing educational materials on the ERA website by 2010.	Continue to educate pet owners on the impacts from and appropriate disposal of pet waste by providing educational materials to pet owners within critical areas identified in the WMP.	Continue to educate pet owners on the impacts from and appropriate disposal of pet waste by continuing to provide educational materials to pet owners within the Elkhart River Watershed.
Objective 3: Reduce <i>E. coli</i> from Rural Residential lands.			
	Contact Health Departments in Elkhart, Kosciusko, LaGrange, and Noble Counties offering to assist in educating the populace on the dangers of failed septic systems or non-existent treatment systems, how to maintain septic systems, what constitutes illicit discharge, and what to do if you find one by 2008. Continue to contact and start education program with County Health Departments who have agreed to participate by 2009. Revise education program and circulate to new parts of the Elkhart River Watershed 2010 through 2012.	Be in a working relationship with all willing Health Departments. Continue to revise education program and circulate to new parts of the Elkhart River Watershed.	Be in a working relationship with all willing Health Departments. Continue to revise education program and circulate to new parts of the Elkhart River Watershed.
Objective 4: Provide education on how to deal with nuisance wildlife.			
	Identify key nuisance species.	Develop methods to deal with nuisance wildlife in a species specific methodology.	Connect people with the programs and agencies to address these issues.
Objective 5: Provide education to boaters on proper disposal of wastes.			
	Identify most common wastes disposed by boaters.	Develop methods for proper disposal of most common wastes	Connect people with the programs and agencies to address these issues.
Objective 6: Reduce <i>E. coli</i> from failing or non-existent septic systems.			
	Identify residents with problematic septic systems.	Develop educational materials on septic systems.	Educate residents about proper maintenance and effectiveness of septic systems.

Table 55d: Milestones

Goal 4: Reduce the amount of nutrient loading (phosphorus and nitrogen) so that surface water functions and aesthetics are improved and protected. By the year 2027, surface waters within the Elkhart River Watershed will comply with the Steering Committee's target based on the recommended water quality threshold of 10 mg/L of nitrate/nitrite and 0.3 mg/L of phosphorus.

Programmatic Action Plan No.	Short Term Milestone and Measurable Goals (through 2012)	Medium Range Milestone and Measurable Goals (through 2017)	Long Term Milestones and Measurable Goals (through 2027)
Objective 1: Reduce nutrient levels from Agricultural lands.			
	Promote and provide technical assistance to install appropriate BMPs.	Continue to promote and provide technical assistance to install appropriate BMPs.	Continue to promote and provide technical assistance to install appropriate BMPs.
	Identify and install demonstration sites. Identify one site where BMPs are needed by 2008. Install one demonstration projects by fall 2009. Research need for additional demonstration site(s) in other counties.	Identify one opportunity for an additional demonstration site by 2017.	Install the practice identified by 2020.
	Host one field day at the demonstration site by fall 2009. Host second field day at an appropriate site by fall 2011.	Host at least one field day every other year, highlighting a variety of BMPs, rotating throughout the four counties.	Host at least five more field days by 2027.
	Establish a cost-share program for BMP installation. Materials outlining the cost-share program will be available at each SWCD in the Elkhart River Watershed by summer 2008.	Review and modify the cost-share program, if necessary, in 2013.	Continue to promote cost-share program for BMP installation. Review and modify the cost-share program, if necessary, in 2018 and 2023.
Objective 2: Reduce nutrient levels from Urban lands.			
	Promote and provide technical assistance to install appropriate BMPs.	Continue to promote and provide technical assistance to install appropriate BMPs.	Continue to promote and provide technical assistance to install appropriate BMPs.
	Identify and install demonstration sites. Identify one site where BMPs are needed by spring 2008. Install one demonstration projects by fall 2009. Research need for additional demonstration site(s) in other counties.	Identify one opportunity for an additional demonstration site by 2017.	Install the practice identified by 2020.
	Host one field day at the demonstration site by fall 2008. Host second field day at an appropriate site by fall 2010.	Host at least one field day every other year, highlighting a variety of BMPs, rotating throughout the four counties.	Host at least five more field days by 2027.
	Establish a cost-share program for BMP installation. Materials outlining the cost-share program will be available at each SWCD in the Elkhart River Watershed by summer 2008.	Review and modify the cost-share program, if necessary, in 2013.	Continue to promote cost-share program for BMP installation. Review and modify the cost-share program, if necessary, in 2018 and 2023.
	Investigate additional opportunities (funding and educational) to further reduce nutrient levels from point sources including CSOs and other Urban lands.	Continue to investigate additional opportunities (funding and educational) to further reduce nutrient levels from point sources including CSOs and other Urban lands.	Continue to investigate additional opportunities (funding and educational) to further reduce nutrient levels from point sources including CSOs and other Urban lands.
	Educate pet owners on the impacts from and appropriate disposal of pet waste through hosting educational seminars at pet stores and providing educational materials on the ERA website by 2010.	Continue to educate pet owners on the impacts from and appropriate disposal of pet waste by providing educational materials to pet owners within critical areas identified in the WMP.	Continue to educate pet owners on the impacts from and appropriate disposal of pet waste by continuing to provide educational materials to pet owners within the Elkhart River Watershed.
	Educate residents and landscaping companies about the proper application of lawn fertilizers by distributing educational materials to those landscaping companies and residents within larger subdivisions located in the Elkhart River Watershed.	Continue to educate residents and landscaping companies, by distributing educational materials to those landscaping companies and residents who work or live in or near a critical area identified in the WMP, about the proper application of lawn fertilizers.	Continue to educate residents and landscaping companies about the proper application of lawn fertilizers by distributing educational materials to those landscaping companies and residents within the Elkhart River Watershed.
Objective 3: Reduce nutrient levels from Rural Residential lands.			
	Contact Health Departments in Elkhart, Kosciusko, LaGrange, and Noble Counties offering to assist in educating the populace on the dangers of failed septic systems or non-existent treatment systems, how to maintain septic systems, what constitutes illicit discharge, and what to do if you find one by 2008. Continue to contact and start education program with County Health Departments who have agreed to participate by 2009. Revise education program and circulate to new parts of the Elkhart River Watershed 2010 through 2012.	Be in a working relationship with all willing Health Departments. Continue to revise education program and circulate to new parts of the Elkhart River Watershed.	Be in a working relationship with all willing Health Departments. Continue to revise education program and circulate to new parts of the Elkhart River Watershed.

Goal 4: Reduce the amount of nutrient loading (phosphorus and nitrogen) so that surface water functions and aesthetics are improved and protected. By the year 2027, surface waters within the Elkhart River Watershed will comply with the Steering Committee's target based on the recommended water quality threshold of 10 mg/L of nitrate/nitrite and 0.3 mg/L of phosphorus.

Programmatic Action Plan No.	Short Term Milestone and Measurable Goals (through 2012)	Medium Range Milestone and Measurable Goals (through 2017)	Long Term Milestones and Measurable Goals (through 2027)
	Educate residents and landscaping companies about the proper application of lawn fertilizers by distributing educational materials to those landscaping companies and residents within larger subdivisions located in the Elkhart River Watershed. Approach WACF and LaGrange County Lake Association by 2008. Develop outreach material and begin communicating with companies offering these services by 2009. Begin education of residents 2010 through 2012.	Revise education program and materials as needed and circulate to two new parts of the Elkhart River Watershed.	Revise education program and materials as needed and circulate to two new parts of the Elkhart River Watershed.
Objective 4: Provide education on how to deal with nuisance wildlife.			
	Identify key nuisance species.	Develop methods to deal with nuisance wildlife in a species specific methodology.	Connect people with the programs and agencies to address these issues.
Objective 5: Provide education to boaters on proper disposal of wastes.			
	Identify most common wastes disposed by boaters.	Develop methods for proper disposal of most common wastes	Connect people with the programs and agencies to address these issues.
Objective 6: Reduce phosphate contribution from detergents.			
	Identify brands of low phosphate detergents	Advocate local stores to carry phosphate free detergents.	Continue to advocate local stores to carry phosphate free detergents.
	Collect information on phosphate detergents.	Develop educational materials on phosphate detergents.	Provide education on the hazards of using phosphate containing detergents.
Objective 7: Reduce nutrient contribution from golf courses.			
	Research methods and incentives to promote the use of native vegetation in the rough and turf management BMPs by corresponding with head greens-keepers and educating golfers at two golf courses within the Elkhart River Watershed by 2009. Contact three golf courses each year 2010 through 2012 to implement this program.	Continue with program until all golf courses within the Elkhart River Watershed are using proper management measures.	Continue with program until all golf courses within the Elkhart River Watershed are using proper management measures.

Table 55e: Milestones

Goal 5: Increase preservation, restoration, and appreciation of open space, and maintain a proper balance between the many diverse landuses in the Elkhart River Watershed.

Programmatic Action Plan No.	Short Term Milestone and Measurable Goals (through 2012)	Medium Range Milestone and Measurable Goals (through 2017)	Long Term Milestones and Measurable Goals (through 2027)
Objective 1: Increase amount of open spaces in permanent protection status.			
	Connect with land trusts and other relevant groups to promote conservation easement opportunities within critical areas identified in the WMP by spring of 2009. Develop outreach for realtors, municipalities and homeowners by 2010. Focus work on identified properties as critical by 2012.	Continue work and look for opportunities to connect existing easements.	Continue work and look for opportunities to connect existing easements.
	Locate all existing greenways and plans for future greenways within critical areas by 2010. Focus work on land identified by 2012.	Continue work and look for opportunities to connect existing greenways.	Continue work and look for opportunities to connect existing greenways.
	Promote park expansion and use of public land within critical areas identified in the WMP.	Continue to promote park expansion and use of public land within or adjacent to critical areas identified in the WMP.	Continue to promote park expansion and use of public land within the Elkhart River Watershed. Specifically, expansion of existing parks within the Elkhart River Watershed, and the promotion of new park facilities within proposed subdivision development projects.
	Identify natural resources, ecological areas, unique habitats to be preserved and protected within nine subwatersheds by 2008; nine additional subwatersheds by 2009; nine additional subwatersheds by 2010; and the remaining ten subwatersheds by 2011.	Use this list to support milestones for working in greenways and park expansion.	Use this list to support milestones for working in greenways and park expansion.
	Identify and collaborate with other groups interested in invasive species control by 2009. Target outreach at significant locations by 2011.	Continue to work with partners until all significant locations have been addressed.	Continue to work with partners until all significant locations have been addressed.
	Identify and collaborate with other groups interested in threatened and endangered species and educate the public on protection methods by 2009. Target outreach at applicable locations by 2011.	Continue to work with partners until all applicable locations have been addressed.	Continue to work with partners until all applicable locations have been addressed.
Objective 2: Increase and improve open space through restoration.			
	Identify areas of potential restoration within critical areas identified in the WMP.	Wetland, prairie, woodland restoration.	Continue to restore wetland, prairie, and woodland areas within the Elkhart River Watershed.
	Identify brownfield areas within critical areas identified in the WMP.	Reclamation of brownfields within critical areas identified in the WMP.	Continue the reclamation of brownfields within the Elkhart River Watershed.
	Identify floodplain areas that have been abandoned within critical areas identified in the WMP.	Assess floodplain development abandonment within critical areas identified in the WMP.	Continue floodplain development abandonment within the Elkhart River Watershed.
	Identify open areas with the most invasive species within critical areas identified in the WMP.	Manage current open spaces for invasives within critical areas identified in the WMP.	Continue to manage current open spaces for invasives within the Elkhart River Watershed.
Objective 3: Increase appreciation of open space through education.			
	Identify organizations for potential sponsorship.	Determine the best way to sponsor.	Sponsor Indiana Master Naturalist courses, Hoosier Riverwatch, and other opportunities.
	Identify outdoor recreation activities to promote.	Create methods to promote outdoor recreation.	Promote outdoor recreation within the Elkhart River Watershed.

Table 55f: Milestones

Goal 6: Develop an outreach and education program that keeps stakeholders involved in issues in the watershed, and coordinate volunteer activities that benefit the health of the Elkhart River Watershed.

Programmatic Action Plan No.	Short Term Milestone and Measurable Goals (through 2012)	Medium Range Milestone and Measurable Goals (through 2017)	Long Term Milestones and Measurable Goals (through 2027)
Objective 1: Establish an educational subcommittee that will provide education to the stakeholders.			
	Will research and provide or create educational materials.	Continue to research and provide or create educational materials.	Continue to research and provide or create educational materials.
	Assist with the design of presentations and display materials.	Continue to assist with the design of presentations and display materials.	Continue to assist with the design of presentations and display materials.
	Coordinate field days and other educational events.	Continue to coordinate field days and other educational events.	Continue to Coordinate field days and other educational events.
	Assist the media, marketing, and website subcommittee with the development of promotional materials.	Continue to assist the media, marketing, and website subcommittee with the development of promotional materials.	Continue to assist the media, marketing, and website subcommittee with the development of promotional materials.
	Educate pet owners on the impacts from and appropriate disposal of pet waste through hosting educational seminars at pet stores and providing educational materials on the Steering Committee website.	Continue to educate pet owners on the impacts from and appropriate disposal of pet waste by providing educational materials to pet owners within critical areas identified in the WMP.	Continue to educate pet owners on the impacts from and appropriate disposal of pet waste by continuing to provide educational materials to pet owners within the Elkhart River Watershed.
	Offer to assist the Elkhart, Kosciusko, LaGrange, and Noble Counties Health Departments in educating the populace on the dangers of failed septic systems or non-existent treatment systems, how to maintain septic systems, what constitutes illicit discharge, and what to do if you find one	Continue to offer to assist the Elkhart, Kosciusko, LaGrange, and Noble Counties Health Departments in educating the populace, living in or near a critical area identified in the WMP, on the dangers of failed septic systems or non-existent treatment systems, how to maintain septic systems, what constitutes illicit discharge, and what to do if you find one.	Continue to offer to assist the Elkhart, Kosciusko, LaGrange, and Noble Counties Health Departments in educating the populace, who live in or near problematic areas within the Elkhart River Watershed, on the dangers of failed septic systems or non-existent treatment systems, how to maintain septic systems, what constitutes illicit discharge, and what to do if you find one.
	Provide education on how to deal with nuisance wildlife.	Continue to provide education on how to deal with nuisance wildlife.	Continue to provide education on how to deal with nuisance wildlife.
	Identify programs or agencies that provide boater education. Build relationships with boating community to encourage participation in educational programs such as Boater Education Courses offered by the IDNR and enrollment in the Clean Vessel Pumpout Program also sponsored by the IDNR. Visit marina's within the Elkhart River Watershed and encourage the enforcement of No Wake Zones by use of sign postings and buoys.	Holding sponsored field days at the IDNR office in Syracuse located on the south shore of Lake Wawasee.	Continue to educate boat owners on topics of lake management within the Elkhart River Watershed.
	Educate residents and landscaping companies about the proper application of lawn fertilizers by distributing educational materials to those landscaping companies and residents within larger subdivisions located in the Elkhart River Watershed.	Continue to educate residents and landscaping companies, by distributing educational materials to those landscaping companies and residents who work or live in or near a critical area identified in the WMP, about the proper application of lawn fertilizers.	Continue to educate residents and landscaping companies about the proper application of lawn fertilizers by distributing educational materials to those landscaping companies and residents within the Elkhart River Watershed.
	Provide education on the hazards of using phosphate containing detergents.	Continue to provide education on the hazards of using phosphate containing	Continue to provide education on the hazards of using phosphate containing
	Providing education to golf courses on "green" management.	Continue to provide education to golf courses on "green" management.	Continue to provide education to golf courses on "green" management.
	Assist urban subcommittee in promotion of BMPs.	Continue to assist urban subcommittee in promotion of BMPs.	Continue to assist urban subcommittee in promotion of BMPs.
	Assist agriculture subcommittee in promotion of BMPs.	Continue to assist agriculture subcommittee in promotion of BMPs.	Continue to assist agriculture subcommittee in promotion of BMPs.
	Work with local school corporations to assist with water quality education.	Continue to work with local school corporations to assist with water quality	Continue to work with local school corporations to assist with water quality
Objective 2: Establish a recreation subcommittee to improve and facilitate citizen access to the waterways of the Elkhart River Watershed.			
	Organize a method for bi-annual trash removal within the streams. Implement a method of soliciting volunteers by 2008. Identify areas for trash removal by 2009. Maintain trash removal activities on those areas bi-annually through 2012.	Sustain activities and increase the river miles that have a bi-annual clean-up.	Sustain activities and continue to increase the river miles that have a bi-annual clean-up.
	Organize a method for improving access for small watercraft to the Elkhart River. Implement a method of soliciting volunteers by 2008. Identify areas that can provide access for small watercraft to the Elkhart River by 2009. Maintain access on those area annually by 2012.	Sustain activities and increase the river miles that provide access for small watercraft.	Sustain activities and continue to increase the river miles that provide access for small watercraft.
	Create recreational opportunities for youth on the Elkhart River.	Continue to create recreational opportunities for youth on the Elkhart River.	Continue to create recreational opportunities for youth on the Elkhart River.
Objective 3: Participate in national events that coincide with our goals.			
	Participate in river clean up events within critical areas identified by the WMP.	Continue to participate in river clean up events within and adjacent to critical areas identified by the WMP.	Continue to participate in river clean up events within the Elkhart River Watershed.
	Participate in water monitoring events within critical areas identified by the WMP.	Continue to participate in water monitoring events within and adjacent to critical areas identified by the WMP.	Continue to participate in water monitoring events within the Elkhart River Watershed.
	Participate in other related events within critical areas identified by the WMP.	Continue to participate in other related events within and adjacent to critical areas identified by the WMP.	Continue to participate in other related events within the Elkhart River Watershed.

Goal 6: Develop an outreach and education program that keeps stakeholders involved in issues in the watershed, and coordinate volunteer activities that benefit the health of the Elkhart River Watershed.			
Programmatic Action Plan No.	Short Term Milestone and Measurable Goals (through 2012)	Medium Range Milestone and Measurable Goals (through 2017)	Long Term Milestones and Measurable Goals (through 2027)
Objective 4: Establish a volunteer coordination subcommittee.			
	Assist other committees in obtaining volunteers.	Continue to assist other committees in obtaining volunteers.	Continue to assist other committees in obtaining volunteers.
Objective 5: Establish a local advocacy subcommittee to work with government and private organizations and to identify current local issues that impact the river/watershed.			
	Identify individuals that will participate in a subcommittee for the Elkhart River Watershed.	Identify and establish collaborative relationships with entities within the watershed that have potential influence on water quality in order to promote protection and improvement of the Elkhart River Watershed.	Continue to establish collaborative relationships with entities within the watershed that have potential influence on water quality in order to promote protection and improvement of the Elkhart River Watershed.
Objective 6: Establish a legislative subcommittee.			
	Identify individuals that will participate in a legislative subcommittee for the Elkhart River Watershed.	Identify legislators that would be most likely to be lobbied for Elkhart River Watershed Activities.	Contact legislators and keep them informed of Elkhart River Watershed activities.
Objective 7: Establish a research subcommittee to network with local universities and others doing water quality research in the Elkhart River Watershed.			
	Identify individuals that will participate in a research subcommittee for the Elkhart River Watershed.	Identify local universities and other educational institutions that would be most likely to be involved in Elkhart River Watershed Activities.	Communicate and participate in ongoing water quality research activities within the Elkhart River Watershed and identify research needs that are not being addressed.
Objective 8: To effectively use the print media to share and communicate past, current and future activities of the ERA with the media, public and current and potential ERA and ERRA members.			
	Assist other committees with information strategies including new tri-folds, flyers and brochures. Develop relationships with local media and individual reporters.	Continue to assist other committees with information strategies including new tri-folds, flyers and brochures. Develop relationships with local media and individual reporters.	Continue to assist other committees with information strategies including new tri-folds, flyers and brochures. Develop relationships with local media and individual reporters.
	Quarterly newspaper articles about the river, testing results and pollution trends.	Continue to publish quarterly newspaper articles about the river, testing results and pollution trends.	Continue to publish quarterly newspaper articles about the river, testing results and pollution trends.
	Speaking engagements (Power Point) and at clubs, school or other groups.	Continue to organize speaking engagements (Power Point) and at clubs, school or other groups.	Continue to organize speaking engagements (Power Point) and at clubs, school or other groups.
	Develop relationships with local media and individual reporters.	Continue to develop relationships with local media and individual reporters.	Continue to develop relationships with local media and individual reporters.
Objective 9: To effectively use electronic forms of media (TV and radio) to share and communicate past, current and future activities of the ERA with the media, public and current and potential ERA and ERRA members.			
	Identify local media and individual reporters that would be influential within the Elkhart River Watershed.	Develop relationships with local media and individual reporters.	Assist other committees with information strategies by developing relationships with local electronic media and individual reporters.
Objective 10: Create and maintain an ERA website as a clearinghouse for ERA/Elkhart River Watershed information			
	This website includes: 1) an overview of who the ERA is 2) an introduction to what a watershed is and the Elkhart River Watershed 3) space for subcommittees to report on their activities, goals, and visions 4) calendar of events 5) an ftp site for efficient file sharing among members and subcommittees 6) an e-mail link for questions 7) question and answer section 8) speakers bureau.	Continue to maintain ERA website.	Continue to maintain and update ERA website.
Objective 11: Assist Elkhart River Watershed coordinator in sampling biological, chemical, and physical data as monitoring efforts occur.			
	Work with local agencies to provide new water quality data as they collect it.	Continue to work with local agencies to provide water quality data.	Continue to work with local agencies to provide water quality data.
Objective 12: Recruit and train volunteers to monitor at a minimum, each of the 37 subwatersheds, obtaining both wet and dry weather data at each site at least twice each year, and provide continuing education opportunities for volunteer monitors.			
	Provide information to the general public on the Hoosier Riverwatch volunteer monitoring program, and recruit volunteers to monitor various sites throughout the Elkhart River Watershed.	Continue to provide information to the general public on the Hoosier Riverwatch volunteer monitoring program, and recruit volunteers to monitor various sites throughout the Elkhart River Watershed.	Continue to provide information to the general public on the Hoosier Riverwatch volunteer monitoring program, and recruit volunteers to monitor various sites throughout the Elkhart River Watershed.
	Host Hoosier Riverwatch trainings in the Elkhart River Watershed at least twice a year.	Continue to host Hoosier Riverwatch trainings in the Elkhart River Watershed at least twice a year.	Continue to host Hoosier Riverwatch trainings in the Elkhart River Watershed at least twice a year.
	Physical Site Assessment: once per year, Macroinvertebrate Assessment: twice per year, Chemical Assessment: wet and dry weather, at least twice per year.	Continue physical Site Assessment: once per year, Macroinvertebrate Assessment: twice per year, Chemical Assessment: wet and dry weather, at least twice per year.	Continue physical Site Assessment: once per year, Macroinvertebrate Assessment: twice per year, Chemical Assessment: wet and dry weather, at least twice per year.
	Host additional training sessions for volunteers: advanced training and review sessions	Continue to host additional training sessions for volunteers: advanced training and review sessions	Continue to host additional training sessions for volunteers: advanced training and review sessions.
Objective 13: Promote sustainable drainage practices.			
	Collect contact information of Surveyor's offices and Drainage Boards	Correspond with Surveyor's offices and Drainage Boards.	Continue to correspond with Surveyor's offices and Drainage Boards.
	Collect contact information of individual land owners.	Communicate with individual land owners.	Continue to communicate with individual land owners.

A monitoring plan is needed to track the indicators and evaluate the effectiveness of the implementation efforts over time. Indicators of success are listed for each of the six goals.

Goal #1: Research done by V3 indicates that approximately \$18.2 million is needed to accomplish the pollutant reduction goals over the next 20 years.

Indicators of Success:

- Ratio of dollars obtained to dollars needed
- Increase in ERA members/supporters
- Procuring other grants
- Quarterly Steering Committee meetings
- An active subcommittee for each high priority concern

Goal #2: The selected water quality indicator for accomplishing goal #2 is based on the measurable improvements to the pollutant concentrations in the TSS load reduction modeling. As the implementation of agricultural and urban BMPs takes place within the Watershed, improvements to the TSS loads can be projected.

Indicators of Success:

- Number of Agricultural BMPs
- Number of Urban BMPs
- Model reflects TSS load reduction

Goal #3: The reduction of *E. coli* levels are not based on modeling of water quality, so indicators for this goal can be expanded to evaluate the implementation of BMPs to reach goals #2 and #4. Successfully accomplishing outreach and education components of goal #6 will also indicate reductions of *E. coli* levels in agricultural lands, urban lands, and from rural residential lands.

Indicators of Success:

- Number of Agricultural BMPs
- Number of Urban BMPs
- Monitoring samples collected without exceedances of 235 colony forming units per 100 ml of water for concentrations of *E. coli*

Goal #4: The selected water quality indicator for accomplishing goal #4 is based on the measurable improvements to the pollutant concentrations for total nitrogen and total phosphorus load reduction modeling. As the implementation of agricultural and urban BMPs takes place within the Watershed, improvements to the nitrogen and phosphorus loads can be projected.

Indicators of Success:

- Number of Agricultural BMPs
- Number of Urban BMPs
- Model reflects nitrogen and phosphorus load reduction

Goal #5: An indicator of accomplishing goal #5 can involve the general inventory of lands held within preservation and open space landuses. Indicators of successful restoration of uplands, wetlands, shoreline, and stream channels are all positive indicators of reaching this goal. An increase in appreciation of open space is difficult to quantify, so focus should be on areas providing opportunities for diverse user groups

Indicators of Success:

- Acres protected by land trust organizations
- Acres of wetlands restored
- Acres of public open space protected
- Number of programs providing opportunities to appreciate open space

Goal # 6: Indicators for achieving goal #6 can be identified by the successful accomplishment of the high priority action items for this goal, which include:

Indicators of Success:

- Number of programs and people in attendance
- Number of individuals accessing the ERRA and ERA websites
- Number of volunteers
- Number of volunteer hours dedicated to the goals of the Elkhart River WMP
- Number of printed materials distributed

This Management Plan is meant to be a flexible tool to achieve water quality improvements within the Elkhart River Watershed. The Watershed Management Plan will be evaluated by assessing the progress made on each of the six goals identified. The evaluation and adaptation of the plan will be the responsibility of the ERA Steering Committee.

The plan should be evaluated every five years to assess the progress made as well as to revise the plan, if appropriate, based on the progress achieved. The plan will also have a comprehensive review every 15 years. Amendments and changes may be made more frequently as laws change or new information becomes available that will assist in providing a better outlook for the Elkhart River Watershed. As goals are accomplished and additional information is gathered, efforts may need to be shifted to watershed issues of higher priority.

INFORMATION AND OBJECTIVES

Elkhart River Alliance

The Elkhart River Alliance (ERA) was formed as a committee of the Elkhart River Restoration Association, Inc. (ERRA) to address concerns regarding sediment in the Goshen Dam Pond and pollution in the Elkhart River Watershed. With assistance from the Elkhart County Soil and Water Conservation District (SWCD), the ERRA obtained funding from an Environmental Protection Agency (EPA) 319 grant through the Indiana Department of Environmental Management (IDEM) for the development and implementation of a Watershed Management Plan (WMP) for the Elkhart River Watershed. A Steering Committee of ERA members was organized to work with the watershed coordinator to develop and implement the WMP.

ELKHART RIVER ALLIANCE MISSION STATEMENT

The Elkhart River Alliance is a group of concerned citizens, landowners, organizations, businesses, and governments, who promote good stewardship to improve, preserve and protect the environmental, recreational and economic benefits of the Elkhart River Watershed, through education, proper landuse practices, and by showing respect and care for this valuable resource.

History of Elkhart River Alliance

To fully understand the background of the ERA it is necessary to briefly look at the history of the ERRA and some of its goals, objectives, and history.

The ERRA was founded in 1983 to study the needs of the Elkhart River and its Watershed. The original officers were Harold Weaver, President and Director, and Frank Yoder, Secretary and Director. Other Directors were James Siegmann, Frank Kummeth, J. Lawrence Burkholder, Larry Beachy, Max Chiddister, Max Kercher, and Daniel Sherman. Presently, the Board of Directors include: President, David Troup; Vice President, Milt Thomas; Treasurer, Nelson Bushong; and Secretary, Tim Cataldo. Other Directors are Stuart Meade, George Buckingham, Nancy Brown, Harold Weaver, Dr. Ray Swanson, and Leo Seltenright.

As a not-for-profit corporation the association works with IDEM, the Indiana Department of Natural Resources (IDNR), the Army Corps of Engineers (USACE), the Soil and Water Conservation Districts, local officials, and others to improve and protect the Elkhart River. The Association works to identify the various needs along the river, informs officials of concerns and needs related to the river and its Watershed, seeks to make the river a public priority, and assists in the planning of cleanup and other enhancement projects. Membership is open to anyone with an interest in the river for fishing, boating, and its natural wildlife and beauty.

The mission of the ERRA is “to provide a clean environment for wildlife and community recreation within the Elkhart River and the Goshen Dam Pond Watershed”.

The original focus of the group was on the Goshen area. Work was done to clean up the Goshen Dam Pond and the Elkhart River in the vicinity of Goshen and to repair the Goshen Dam Pond. As

the membership of the organization grew, so did its vision. The ERRA began to study the water quality not only of the Goshen Dam Pond, but the Elkhart River itself. They began to meet with various governmental agencies and tackled issues such as clearing and snagging of the river.

By 1992, they had completed a water-quality study for the Goshen Dam Pond, completed a clean up of the north and south branches of the Elkhart River, and had built a new dam. They continued to work along areas of the Elkhart River, conducting riverbank clean-ups, clearing of snags, and they began to seek funding for repair of riverbanks and other improvement projects.

As their work within the Elkhart River continued to grow and they began to gain knowledge of the workings of this natural system, the ERRA saw the need to look beyond the borders of the River itself and to the Watershed as a whole. It was realized that in order to protect, preserve, and enhance this valuable river, it must be studied in the context of its watershed. To broaden the focus of the ERRA to this level it was determined that a broader stakeholder group needed to be developed to tackle such a large and complex system. The ERRA, along with the Elkhart County SWCD and support from an IDEM Watershed Specialist, created the ERA. This alliance would be tasked with evaluating the Watershed and proposing solutions to identified problems. The ERRA, at the request of the ERA, applied for an EPA 319 grant through IDEM in 2005 to develop and begin implementation of a WMP. The grant was awarded in late 2006, and in February 2007, ERRA contracted with V3 Companies, Ltd. to create a WMP for the Elkhart River and to begin implementation of practices to address problems within the Watershed.

For information about the ERRA, visit www.elkhartriver.org. Please visit www.elkhartriveralliance.org to learn more about the ERA and this Watershed Management Plan process.