Stream Classification
Sawyer Creek
Nekimi S.D. #1
5-13-82
Tim Doelger

Introduction

In order to establish effluent limits for a proposed discharge from the Nekimi Sanitary District #1 to Sawyer Creek the LMD conducted a stream classification survey.

Two sites were evaluated. They are at W. Ripple Road approximately 1 mile below the proposed discharge and CTH YY approximately 2 miles below. It was aniticipated that the discharge would affect the stream for about two miles.

No fisheries information is available as there is no fishery in this stretch.

Methods

The habitat rating form along with professional judgement and experience were used to determine the classification. One form was completed at each location by both evaluators. (Doelger & Weisensel) The forms are attached and should be referred to for more detail.

Discussion

The portion of Sawyer Creek addressed in this report flows through an area of Winnebago County characterized by intense agricultural activity. There are large corporate farms and their activities are consistant with that type of operation.

At its headwaters and for most of the stretch surveyed Sawyer Creek is little more than a drainage way and was dry except for pools at the time of the survey.

From the CTH YY site downstream to where it enters the Fox River in the City of Oshkosh it changes gradually, finally assuming the character of a true stream, although throughout its length it is strongly influenced by agriculture.

At the time of the survey little residential development was observed and I question the necessity of a treatment facility in this area.

Conclusion

Sawyer Creek, in the supposed impact area, provides habitat for aquatic organisms only seasonally and in pools. Downstream from the impact area habitat is more varied. Therefore the classification found in the recommendation section applies only to that section of creek lying between the proposed discharge site and CTH X.

The possibility exists that a discharge at the proposed location could cause flooding of private property. It is also possible that it could create a permanent stream. Both possibilities would certainly cause problems for the sanitary district and should be carefully examined.

Recommendation

Due to poor habitat and low or no flow I recommend that Sawyer Creek from the proposed discharge location downstream to CTH X be classified as non-continuous marginal.

CORRESPONDENCE/MEMORANDUM

STATE OF WISCONSIN

Date: April 28, 1982 File Ref: 3200

To: Charles Higgs, Director, Lake Michigan District - Green Bay

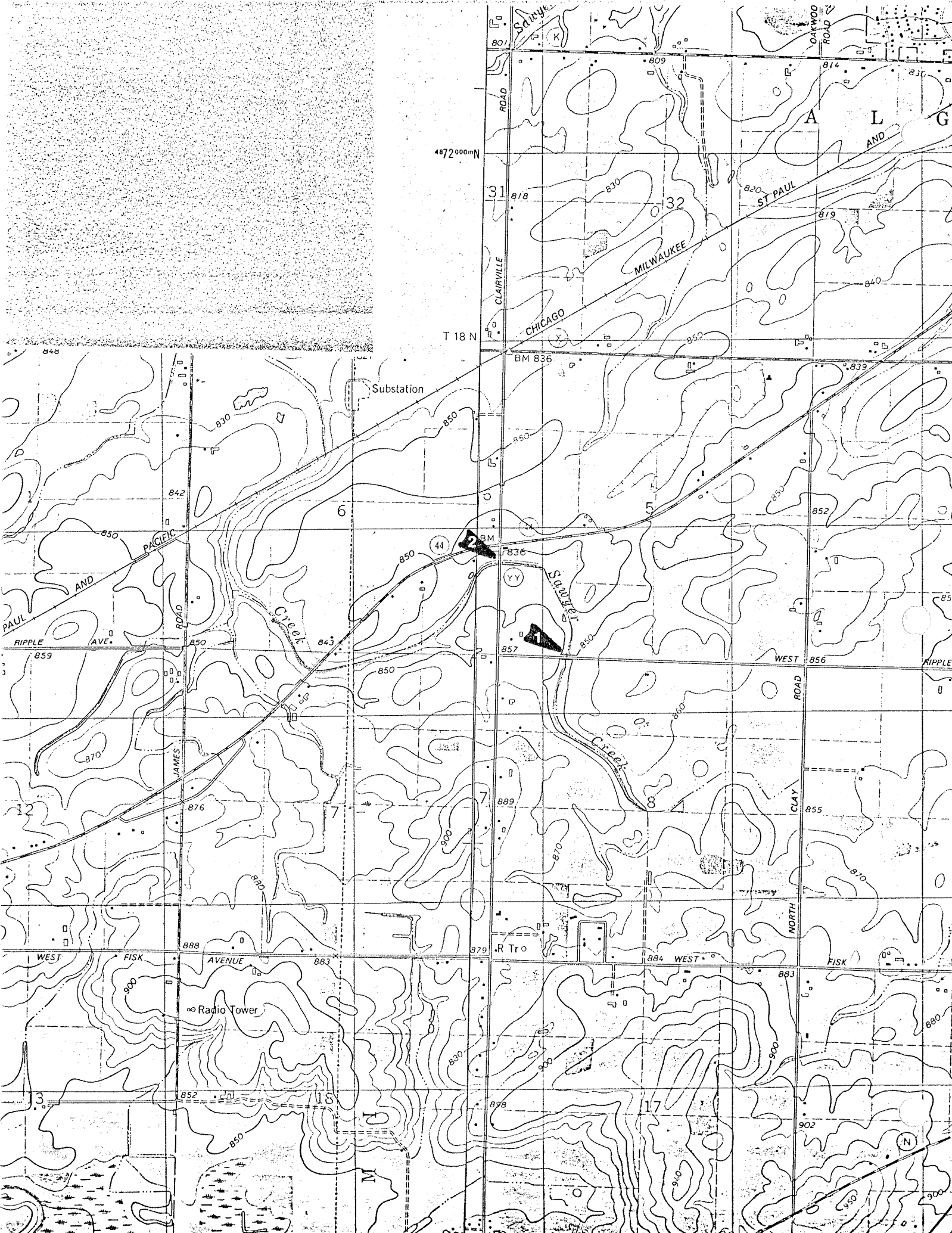
From: Lyman Wible - ADM/5 Lyman Wible

REC'D DNR
MAY 6 1982
GREEN BAY

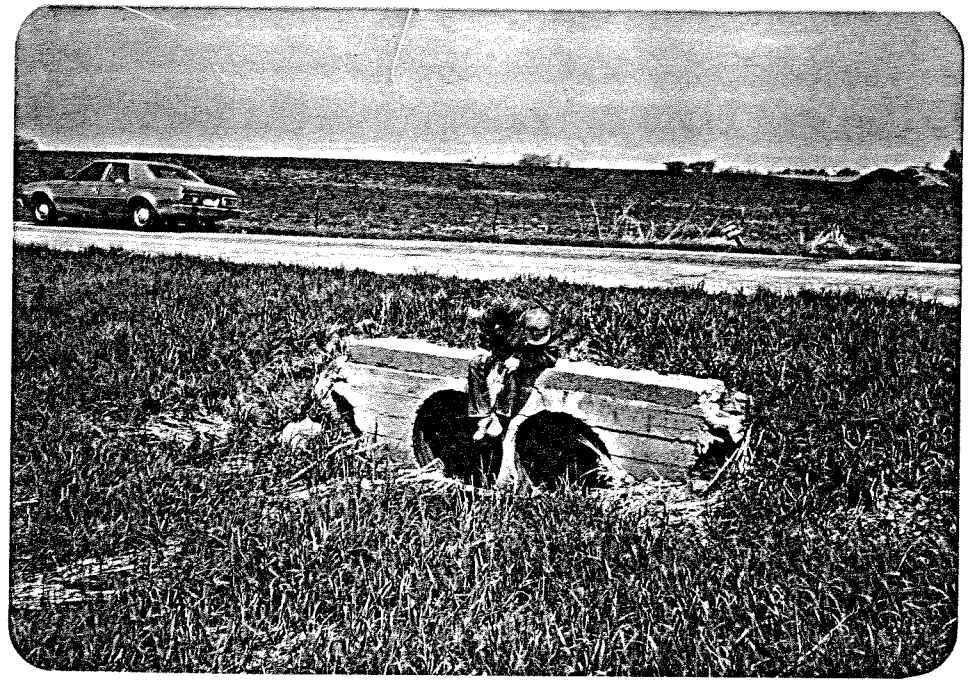
Subject: Stream Classification Study to be Conducted on Sawyer Creek in Winnebago County

The Nekimi Sanitary District #1 is currently proposing to discharge their effluent to Sawyer Creek. In order to establish effluent limits for this proposed discharge, a stream classification study will have to be performed in accordance with the new stream classification guidelines. This study is requested to be conducted by your staff. It is anticipated that about two miles could be affected by this discharge. This will require about three man days of staff time. The discharge location on Sawyer Creek is in the center of Section 8, T17N, R16E.

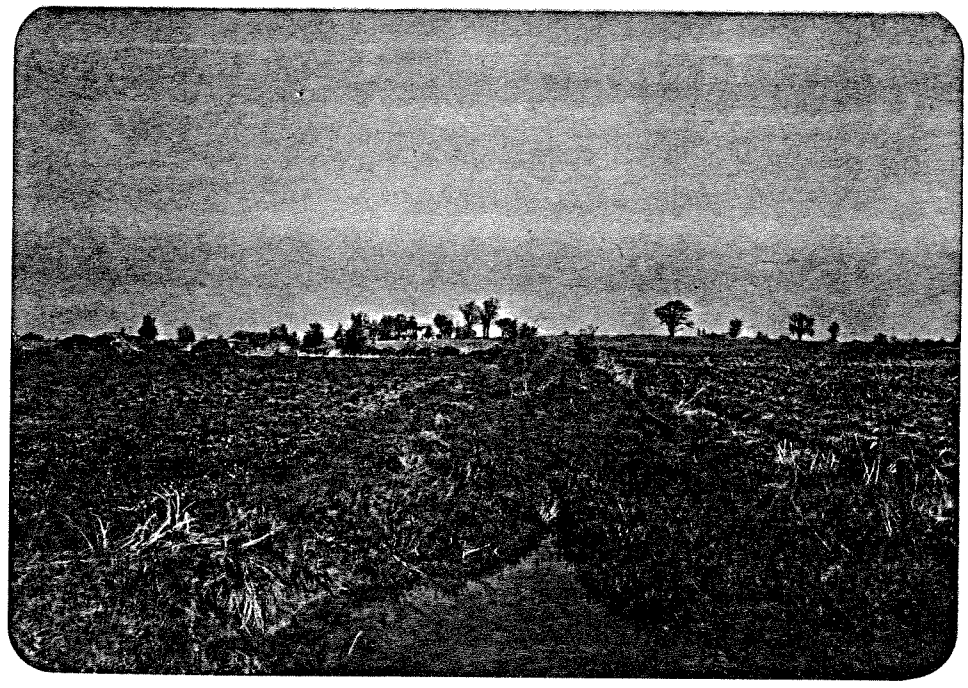
Please have results sent to Tom Bennwitz of the Water Quality Evaluation Section.


4872000mN
T 18 N
BM 836
Substation
CHICAGO
MILWAUKEE
ST PAUL
AND
PACIFIC
RIPPLE AVE.
WEST
FISK
AVENUE
Radio Tower
CLAIRVILLE ROAD
JAMES ROAD
CLAY ROAD
NORTH
OAKWOOD ROAD
Sawyer Creek
1
2

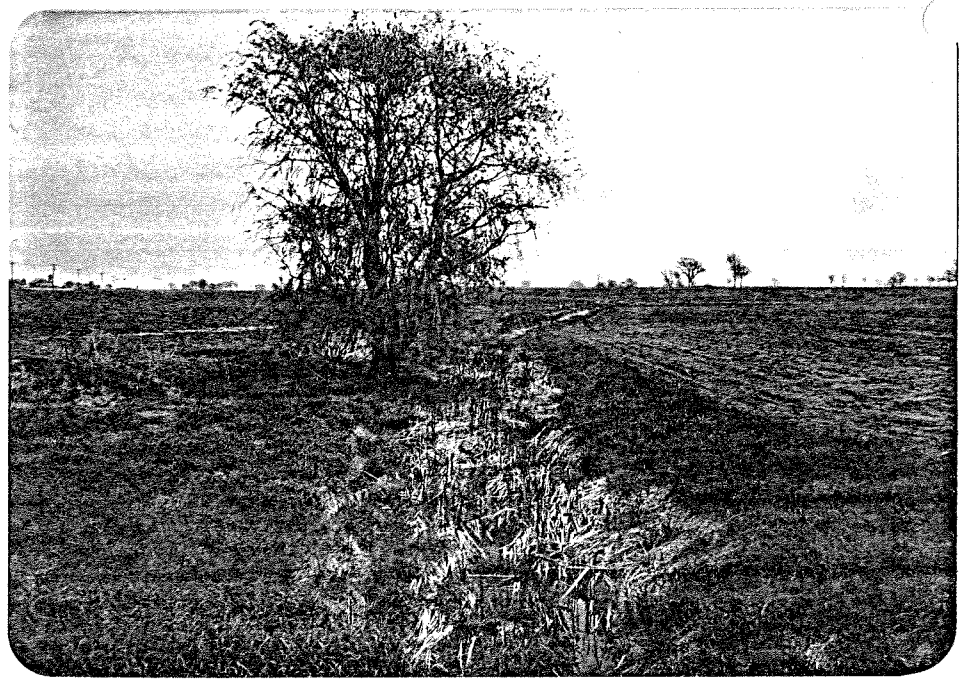
SAWYER CR.
W. RIPPLE RD.
UPSTREAM



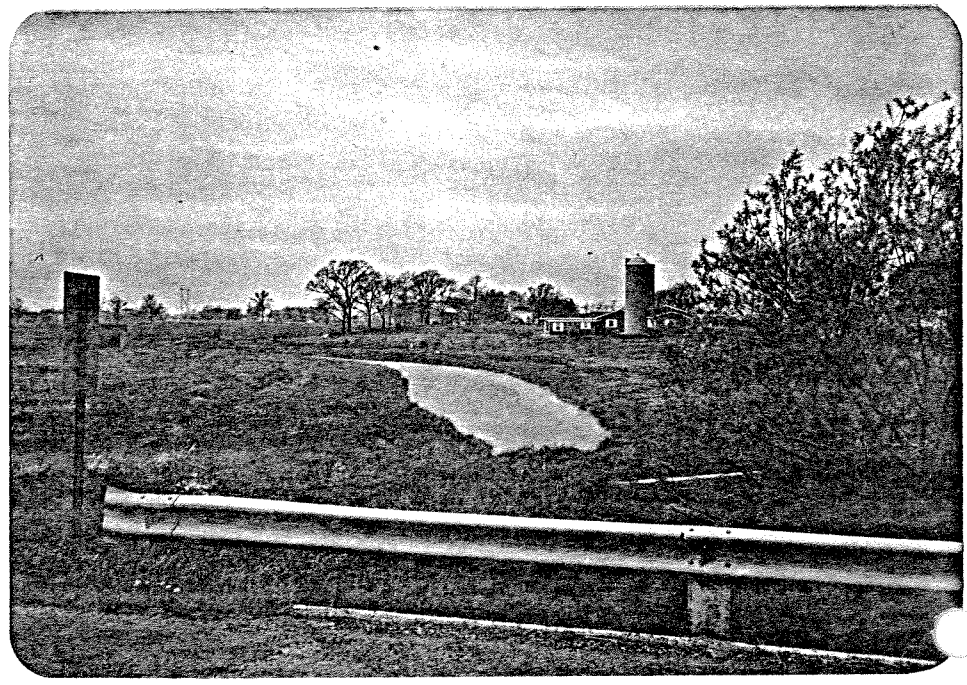
SAWYER CR.
W. RIPPLE RD.
DOWNSTREAM

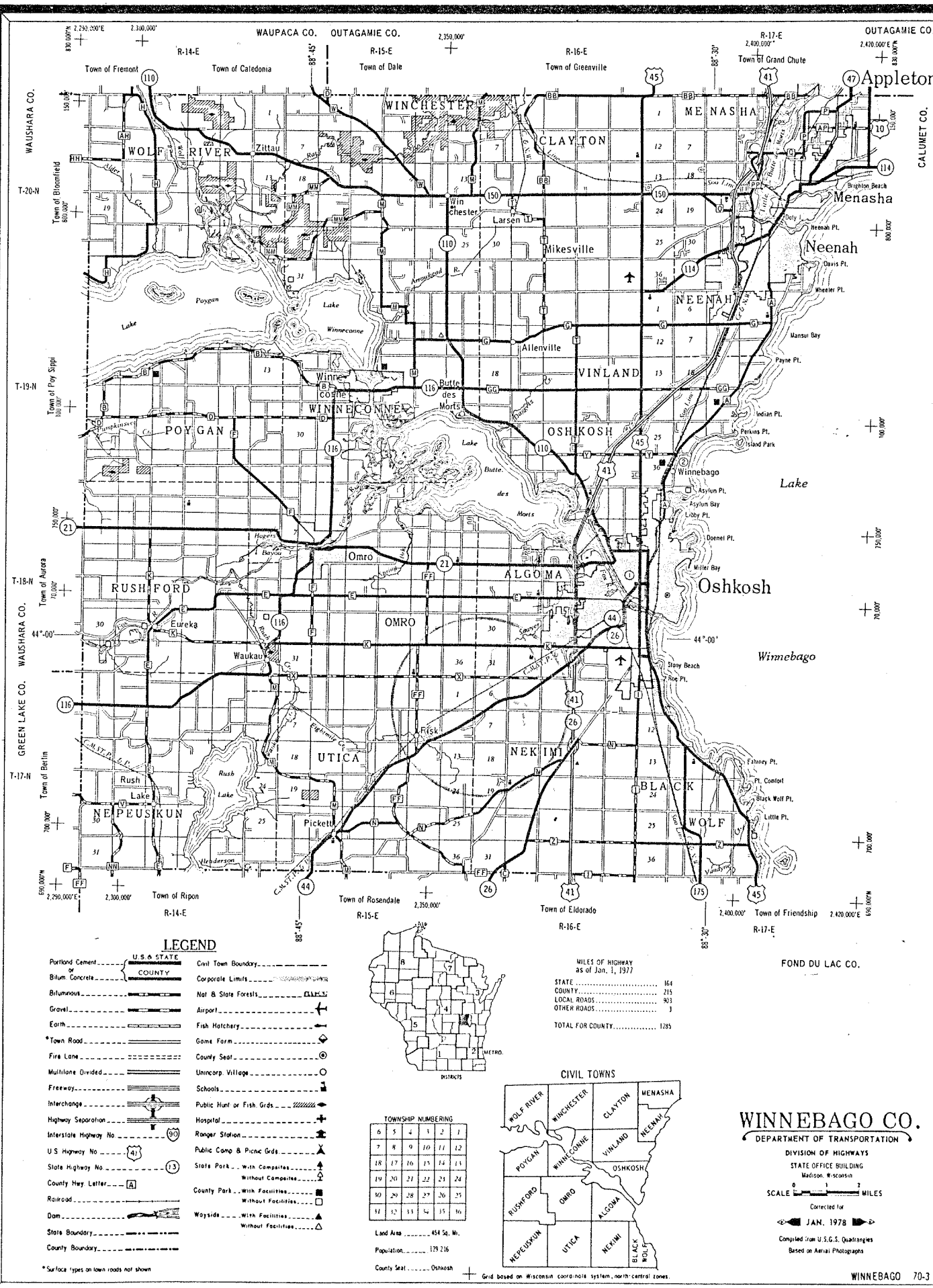


SAWYER CR.
CTH YY
UPSTREAM



SAWYER CR.
CTH YY
DOWNSTREAM





LEGEND

- Portland Cement or Bitum. Concrete — U.S. & STATE / COUNTY
- Bituminous
- Gravel
- Earth
- *Town Road
- Fire Lane
- Multilane Divided
- Freeway
- Interchange
- Highway Separation
- Interstate Highway No. 90
- U.S. Highway No. 41
- State Highway No. 13
- County Hwy. Letter A
- Railroad
- Dam
- State Boundary
- County Boundary
- Civil Town Boundary
- Corporate Limits
- Nat. & State Forests
- Airport
- Fish Hatchery
- Game Farm
- County Seat
- Unincorp. Village
- Schools
- Public Hunt. or Fish. Grds.
- Hospital
- Ranger Station
- Public Camp & Picnic Grds.
- State Park — With Campsites / Without Campsites
- County Park — With Facilities / Without Facilities
- Wayside — With Facilities / Without Facilities

*Surface types on town roads not shown

DISTRICTS: 1 METRO, 2, 3, 4, 5, 6, 7, 8

MILES OF HIGHWAY as of Jan. 1, 1977

STATE	164
COUNTY	215
LOCAL ROADS	903
OTHER ROADS	3
TOTAL FOR COUNTY	1285

CIVIL TOWNS

TOWNSHIP NUMBERING

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Land Area ..... 454 Sq. Mi.
Population 129,216
County Seat ..... Oshkosh

WINNEBAGO CO.

DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STATE OFFICE BUILDING
Madison, Wisconsin

SCALE 0 1 2 MILES

Corrected for
JAN. 1978

Compiled from U.S.G.S. Quadrangles
Based on Aerial Photographs

WINNEBAGO 70-3

STREAM SYSTEM HABITAT RATING FORM

NE¼, NE¼ Sec 8 T17N

Stream Sawyer Cr. Reach Location 500' Above West Ripple Rd. Reach Score/Rating 203 — Poor

County Winnebago Date 5-13-82 Evaluator Dennis C. Weisensel Classification Non Cont. - Mdrg.

	Rating Item	Excellent		Good		Fair		Poor	
Watershed	1. Erosion	No evidence of significant erosion. Stable forest or grass land. Little potential for future erosion.	8	Some erosion evident. No significant "raw" areas. Good land mgmt. practices in area. Low potential for significant erosion.	10	Moderate erosion evident. Erosion from heavy storm events obvious. Some "raw" areas. Potential for significant erosion.	(14)	Heavy erosion evident. Probable erosion from any runoff.	16
Watershed	2. Nonpoint Source	No evidence of significant source. Little potential for future problem.	4	Some potential sources. (roads, urban area, farm fields).	8	Moderate sources. (Small wetlands, tile fields, urban area, intense agriculture). up-to BANKS	(16)	Obvious sources. (Major wetland drainage, high use urban or industrial area, feed lots, impoundment).	20
Upper Bank	3. Erosion, Failure	No evidence of significant erosion or bank failure. Little potential for future problem.	6	Infrequent, small areas, mostly healed over. Some potential in extreme floods.	9	Moderate frequency and size. Some "raw" spots. Erosion potential during high flow.	(15)	Many eroded areas. "Raw" areas frequent along straight sections and bends.	18
Upper Bank	4. Vegetative Protection	90% plant density. Diverse trees, shrubs, grass. Plants healthy with apparently good root system.	6	70-90% density. Fewer plant species. A few barren or thin areas. Vegetation appears generally healthy.	9	50-70% density. Dominated by grass, sparse trees and shrubs. Plant types and conditions suggest poorer soil binding.	(15)	<50% density. Many raw areas. Thin grass, few if any trees and shrubs.	18
Lower Bank	5. Channel Capacity	Ample for present plus some increase. Peak flows contained. W/D ratio ≤7.	8	Adequate. Overbank flows rare. W/D ratio 8-15.	(10)	Barely contains present peaks. Occasional overbank flow. W/D ratio 15 to 25.	14	Inadequate, overbank flow common. W/D ratio >25.	16
Lower Bank	6. Deposition	Little or no enlargement of channel or point bars.	6	Some new increase in bar formation, mostly from course gravel.	(9)	Moderate deposition of new gravel and course sand on old and some new bars.	15	Heavy deposits of fine material, increased bar development.	18
Bottom	7. Scouring and Deposition	Less than 5% of the bottom affected by scouring and deposition.	4	5 to 30% affected. Scour at constrictions and where grades steepen. Some deposition in pools.	8	30 to 50% affected. Deposits and scour at obstructions, constrictions and bends. Some filling of pools.	16	More than 50% of the bottom changing nearly year long. Pools almost absent due to deposition.	(20)

	Rating Item	Category: Excellent		Good		Fair		Poor	
Bottom	8. Substrate	Greater than 50% rubble, gravel or other stable habitat.	2	30 to 50% rubble, gravel or other stable habitat. Adequate habitat.	7	10 to 30% rubble, gravel or other stable habitat. Habitat availability less than desirable.	17	Less than 10% rubble, gravel or other stable habitat. Lack of habitat is obvious.	22
	9. Average Depth Q7,2	Greater than 24".	0	12" to 24".	6	6" to 12".	18	Less than 6".	24
	10. Flow Q7,2	Warm water, >5 cfs. Cold water, greater than 2 cfs.	0	Warm water, 2 to 5 cfs. Cold water, 1 to 2 cfs.	6	Warm water, .5 to 2 cfs. Cold water, .5 to 1 cfs. Continuous flow.	18	Less than .5 cfs. Stream may cease to flow in very dry years.	24
Stream	11. Pool/Riffle, Pool/Bend Ratio	5 to 7. Variety of habitat. Deep riffles and pools.	4	7 to 15. Adequate depth in pools and riffles. Bends provide habitat.	8	15 to 25. Occassional riffle or bend. Bottom contours provide some habitat.	16	Greater than 25. Essentially a straight stream. Generally all "flat water" or shallow riffle. Poor habitat.	20
	12. Aesthetics	Wilderness characteristics, outstanding natural beauty. Usually wooded or unpastured corridor.	8	High natural beauty. Trees, historic site. Some development may be visible.	10	Common setting, not offensive. Developed but uncluttered area.	14	Stream does not inhance aesthetics. Condition of stream is offensive.	16

Column Total --

Add column scores E ____ + G 19 + F 74 + P 110 Total Reach Score

154
19
203

≤ 70 = Excellent, 71-129 = Good, 130-200 = Fair, >200 Poor

Ascellus and SNAILS Observed At Reach

STREAM SYSTEM HABITAT RATING FORM

Stream SAWYER CR Reach Location W. RIPPLE RD Reach Score/Rating 202 / POOR

County WINNEBAGO Date 5-13-82 Evaluator DOELGER Classification NON CONTIN / MARG.

	Rating Item	Category							
		Excellent		Good		Fair		Poor	
Watershed	1. Erosion	No evidence of significant erosion. Stable forest or grass land. Little potential for future erosion.	8	Some erosion evident. No significant "raw" areas. Good land mgmt. practices in area. Low potential for significant erosion.	10	Moderate erosion evident. Erosion from heavy storm events obvious. Some "raw" areas. Potential for significant erosion.	(14)	Heavy erosion evident. Probable erosion from any runoff.	16
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Drainage Ditch Trees growing in ditch / not seen many catfish

Minnows
Snails
Asellus
Beetles

STREAM SYSTEM HABITAT RATING FORM

Stream *Sawyer Cr.* Reach Location *Co Tyy ... NW1/4 SW1/4 Sec 5* Reach Score/Rating *203 - Poor*

County *Winn* Date *5-13-82* Evaluator *D. Carlson* Classification *Non-Continuous Marginal*

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STREAM SYSTEM HABITAT RATING FORM

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County WINNEB. Date 5-13 Evaluator DOELGER Classification NON-CONT MARG.

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Column Total --

Add column scores E ____ + G 10 + F 90 + P 108 Total Reach Score 208

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