

Department of Natural Resources

INTRA-DEPARTMENT

MEMORANDUM

.....  
Spooner

.....  
Station

Date..... November 22, 1976

IN REPLY REFER TO: 3200

TO: Anthony S. Earl

FROM: Lowell G. Hansen

SUBJECT: Surface Water Classification (NR 104) - Butternut, Ashland County

The Village of Butternut, located in southern Ashland County, discharges treated wastewater to Butternut Creek. The Butternut treatment system consists of a clarigester (primary clarifier stacked above an anerobic digester) and a two-cell stabilization lagoon. Effluent from the lagoon is discharged to Butternut Creek, via a 220 foot constructed ditch, approximately 1.5 stream miles above Butternut Lake.

The portion of Butternut Creek between the Village of Butternut and Butternut Lake supports a warmwater fish population. The creek receives heavy use by waterfowl and is also used by beaver and muskrat. The projected low flow (7 day Q<sub>10</sub>) of Butternut Creek is 3.7 cubic feet per second.

Butternut Lake is a eutrophic lake plagued by dense algae and aquatic weed growths. The Village of Butternut wastewater is a primary source of nutrients, contributing 34% of the phosphorus load to the lake (U.S. E.P.A. National Eutrophic Survey, Working Paper No. 34). The lake supports a fish population of muskellunge, northern pike, walleye, perch, largemouth bass, smallmouth bass and panfish. The lake receives fishing, boating, and contact recreation use and the shoreline is approximately 70% developed.

A map is attached.

RECOMMENDATION

The "wastewater effluent channel" (NR 104.02 (1)(d)), from the Butternut waste stabilization lagoon to Butternut Creek, shall be classified as "marginal surface waters" (NR 104.02 (3)(b)).

Butternut Creek, a "continuous stream" (NR 104.02 (1)(f)), shall meet fish and aquatic life standards (NR 102.02).

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In addition, effluent characteristics shall be based upon an evaluation of water quality and nutrient removal criteria necessary to protect Butternut Lake (NR 104.02 (4)(b)) or alternate disposal shall be required. Butternut Lake is "significant to the environmental integrity of the region" (NR 104.02 (4)(a)).

By Ted R. Smith  
Ted R. Smith

APPROVED:

Danny J. Ryan 12/1/76  
Danny J. Ryan Date

Attach.

NOTED:

\_\_\_\_\_  
Date

BUTERNUT

BUTERNUT CREEK

□ STP

■ SEWAGE  
LAGOONS

BUTERNUT LAKE

SCHNUR LAKE

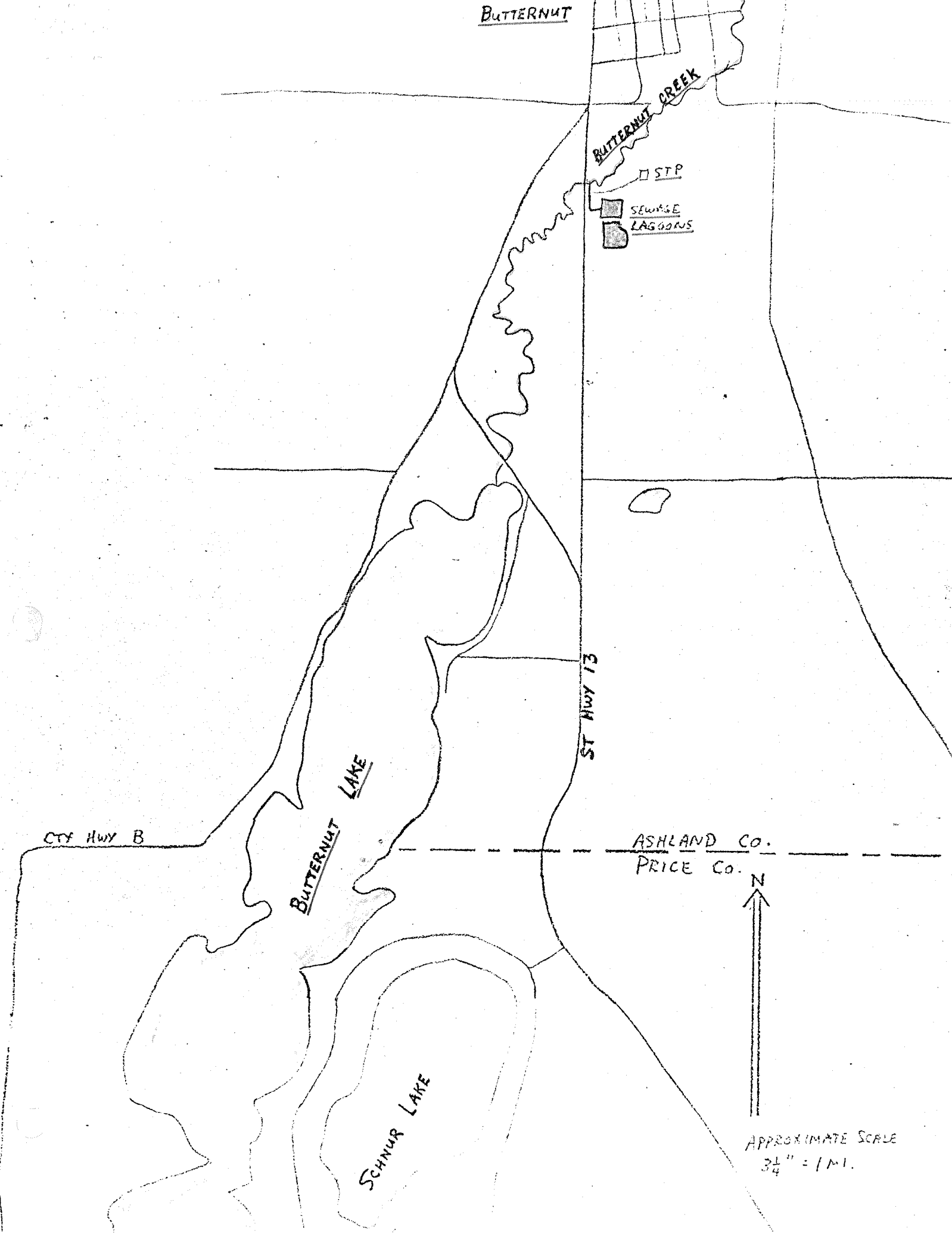
CTY HWY B

ST HWY 13

ASHLAND Co.  
PRICE Co.



APPROXIMATE SCALE  
3/4" = 1 MI.



BUTTERNUT, ASHLAND COUNTY

Wastewater Receiving Stream Classification

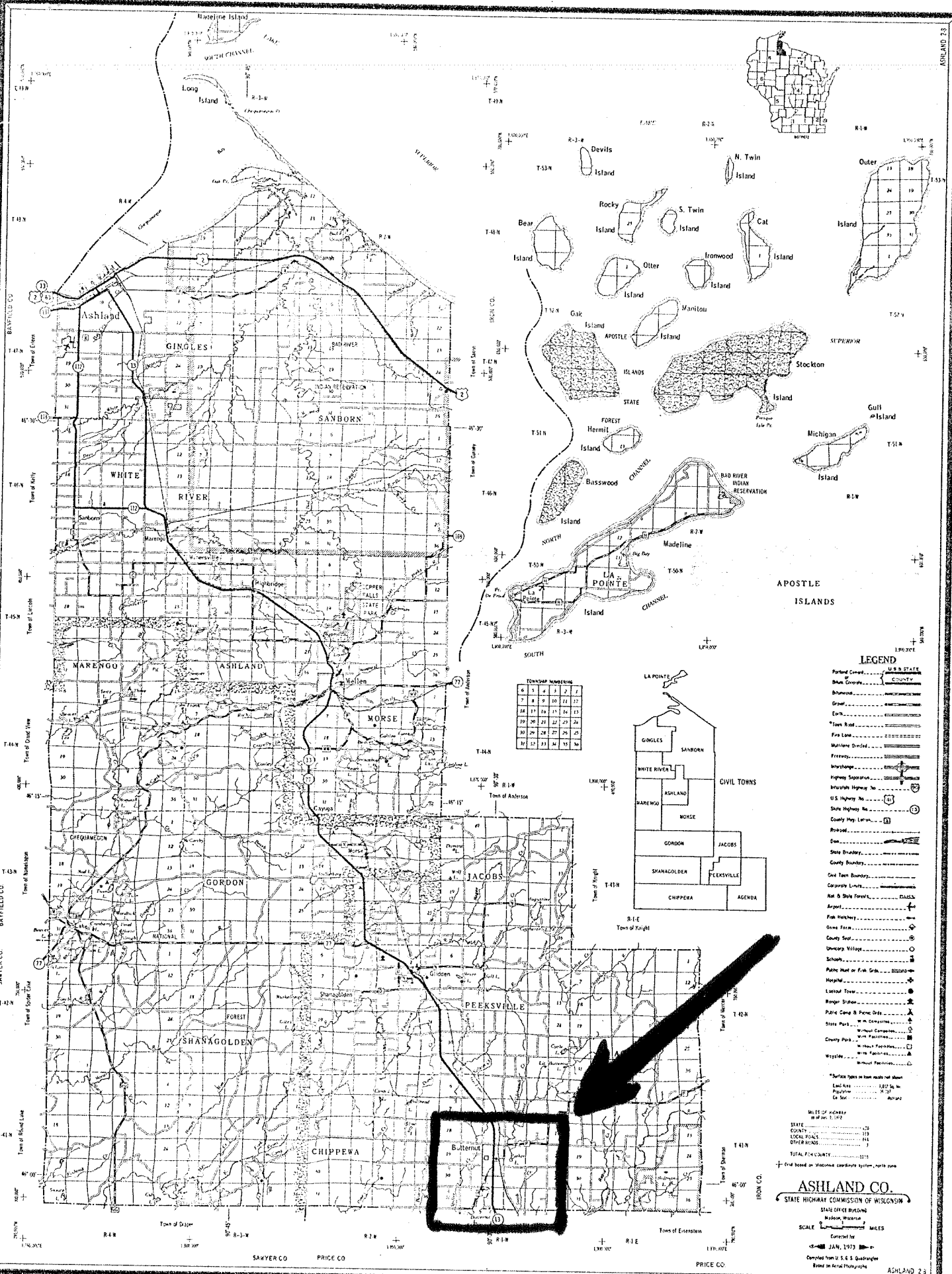
The Village of Butternut presently discharges treated wastewater from a two cell lagoon system to a constructed effluent channel. This ditch extends approximately 200 feet and empties into Butternut Creek at a point just upstream from State Highway 13. Butternut Creek at this location has a projected low flow ( $7_{10}^Q$ ) of 3.7 cfs. Approximately one mile downstream from this point the creek enters Butternut Lake.

Butternut Creek is adjudged a Class III trout stream from Highway F upstream to Little Butternut Lake. From Highway F downstream the creek is classified as warm water and supports a forage minnow and warm water fish population. The Butternut effluent channel outfall is located approximately in the middle of the lower warm water stream segment.

RECOMMENDATION:

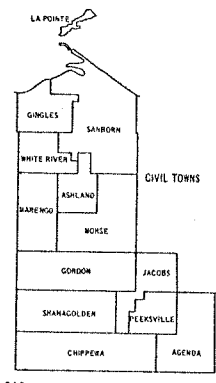
The 200 ft. channel from the Butternut treatment lagoon to the creek shall be classified as an effluent ditch. Butternut Creek at this point shall be classified as a continuous stream with the "fish and aquatic life" subcategory imposed.

The presence of Butternut Lake on this drainage system dictates that the effluent criteria on the Butternut wastewater discharge be further limited. Because of already significant impairment of water quality in Butternut Lake due to eutrophication, the restriction of nutritional removal and/or land disposal shall be imposed on the Butternut wastewater effluent.



TOWNSHIP NUMBERS

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60



- LEGEND**
- Partial County
  - Blue County
  - Blunstone
  - Gravel
  - Earth
  - Town Road
  - Fire Lane
  - Multiple Divided
  - Freeway
  - Interchange
  - Highway Separation
  - Interstate Highway No.
  - U.S. Highway No.
  - State Highway No.
  - County Hwy. Letter
  - Proposed
  - Dam
  - State Boundary
  - County Boundary
  - Old Town Boundary
  - Corporate Limits
  - Rail & State Forest
  - Airport
  - Fish Hatchery
  - Game Farm
  - County Seat
  - University Village
  - Schools
  - Public Heat or Fish Gr. Station
  - Hospital
  - Lumber Elevator
  - Regular Station
  - Public Care & Home Order
  - State Park
  - Without Compensation
  - With Compensation
  - County Park
  - Without Compensation
  - With Compensation
- Surface types in blue made not shown  
 Land Area 1,827 Sq. Mi.  
 Population 10,720  
 Co. Seat Ashland

SALES OF INCHES  
 1" = 10 MILES  
 1" = 20 MILES  
 1" = 30 MILES  
 1" = 40 MILES  
 1" = 50 MILES  
 1" = 60 MILES  
 1" = 70 MILES  
 1" = 80 MILES  
 1" = 90 MILES  
 1" = 100 MILES

STATE 100  
 COUNTY 100  
 LOCAL PAVES 100  
 OTHER BONDS 100  
 TOTAL FIDELITY 100

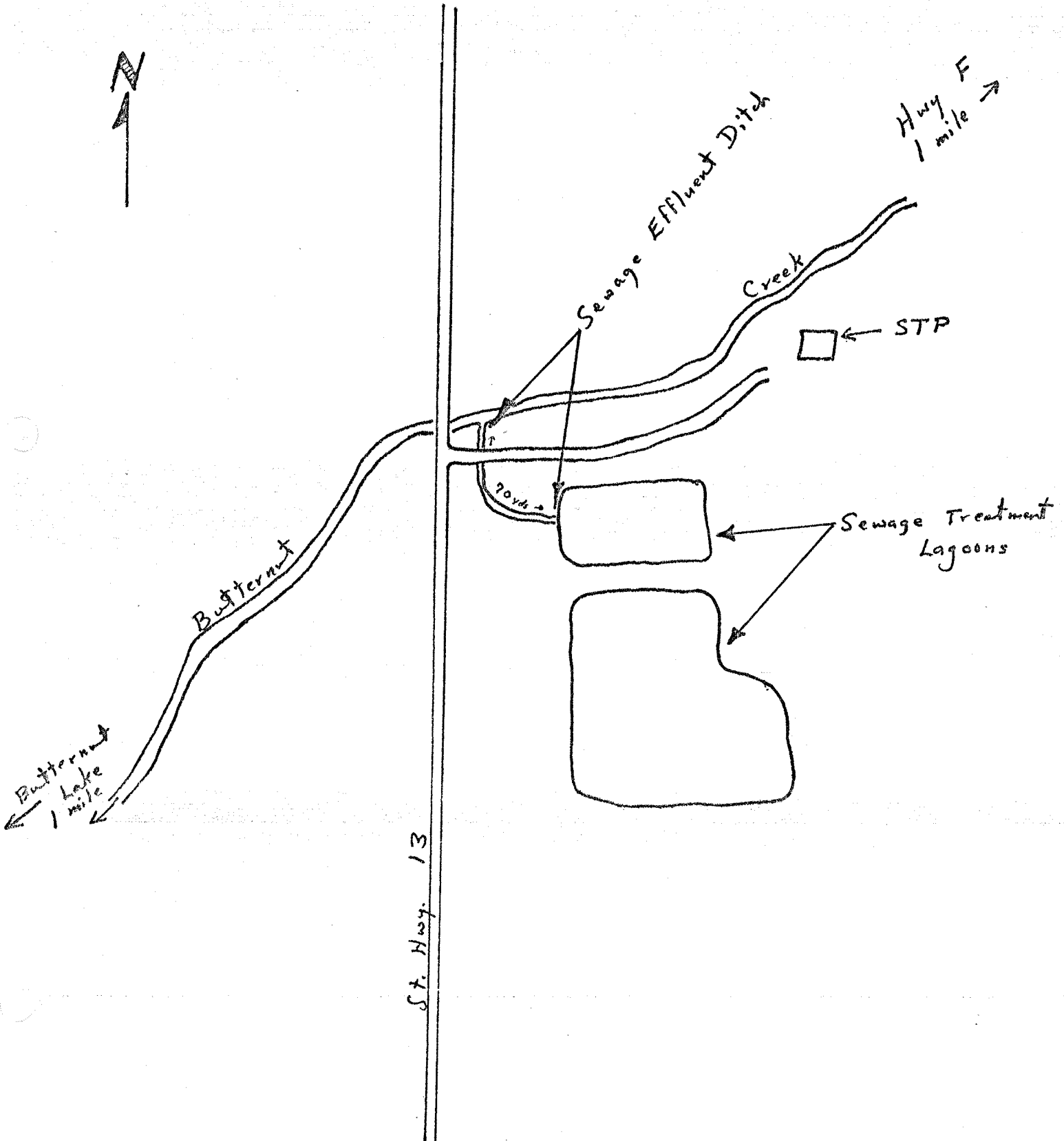
End based on Wisconsin coordinate system, north zone

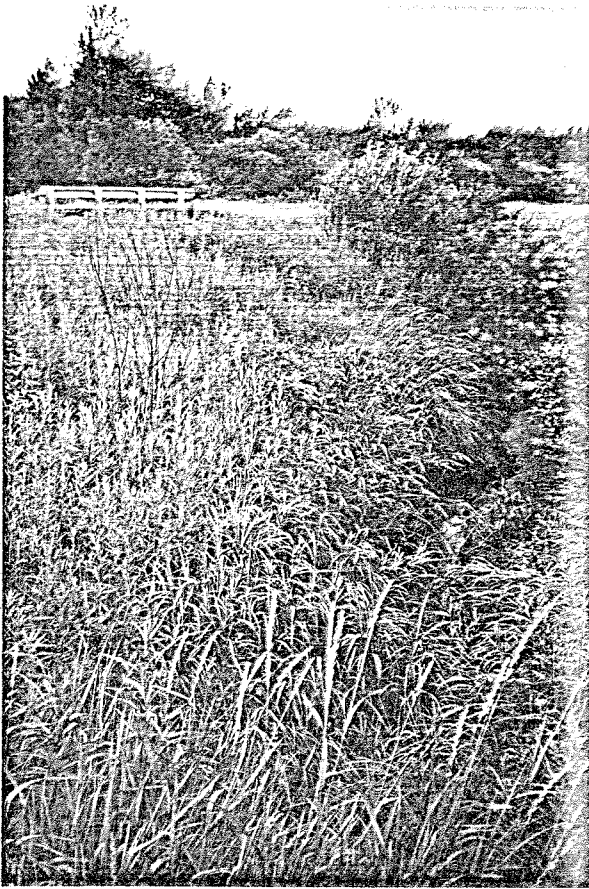
**ASHLAND CO.**  
 STATE HIGHWAY COMMISSION OF WISCONSIN  
 STATE OFFICE BUILDING  
 MADISON, WISCONSIN

SCALE 1" = 10 MILES  
 Corrected for  
 JAN. 1973  
 Compiled from U. S. S. S. Quilley  
 Based on Aerial Photography

ASHLAND 23

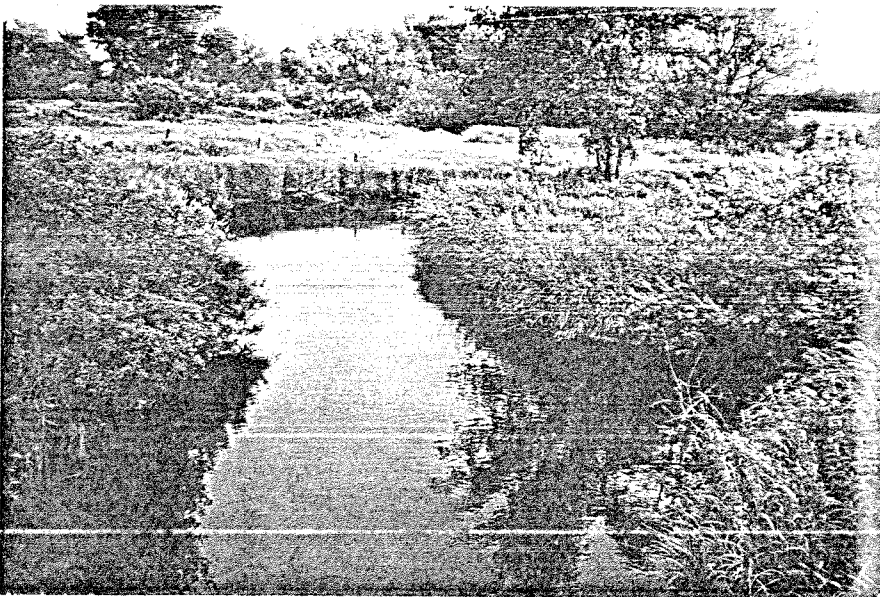
VILLAGE OF BUTTERNUT





BUTTERNUT

• Effluent channel just  
• before entering Butternut  
• Creek. Hwy. 13 bridge in  
background



BUTTERNUT

Butternut Creek looking  
upstream from Hwy. 13.  
Sewage effluent channel  
enters at right.