



**OTTER TAIL COUNTY
HIGHWAY DEPARTMENT**
PUBLIC WORKS DIVISION
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June 16, 2015

COUNTY DITCH #44 DITCH VIEWERS REPORT

On February 3, 2015, the Otter Tail County Ditch Authority (Board of Commissioners) appointed Mike Johnson, Kevin Brennan, and Sheldon (Tiny) Holm as Ditch Viewers for the purpose of re-determining the benefits for County Ditch #44 pursuant to Minnesota Statute 103E.351. The same Ditch Viewers were sworn in on February 17, 2015. Otter Tail County Ditch #44 was originally established in 1911 and has not had benefits re-determined since that time.

As Ditch Viewers we are certified by the Minnesota Association of Ditch Viewers and have been involved in and attended this Associations training for several years.

Our report is based upon information we received from aerial photos, soil maps, and topographical maps from Geographic Information Systems (GIS) as well as LIDAR (High Accuracy Elevation Model), Minnesota Storm Water Manual and local crop purchasing entities. We have also received information from Farm Services Agency (FSA). Every forty acre parcel and lake lot was viewed using the same criteria. We have made several trips to the watershed area which includes:

Sections: 14, 15, 16, 17, 19, 20, 21, 22, 23, 27, 28, 29, 30, 31, 32, 33 and 34 of Rush Lake Township,
Sections 24 and 25 of Dead Lake Township

This area covers 19 sections in 2 Townships within this watershed. We attended the initial public information meeting held on January 26, 2015, have met and talked with a number property owners and received information from the county offices of Land & Resource, Assessors, Recorders and Auditors. As the ditch viewers viewed this system we have determined by our on-site visits that the main problem with this system is debris (trees, cattail growth and silt build-up), interfering with the flow of water in this system as the design was intended to accomplish.

The land use was determined from Aerial photography (2011-2013), on ground inspections and soil saturation mean value from SSURGO (Certified Soil Data Survey of Otter Tail County). This data was entered by the GIS department to build a computer data base for our information.

We began the determination of benefits by classifying each 40 acre parcel of land based on highest and best use. The land use was based on data provided by the State of Minnesota (2011 to 2013) land soil saturation mean value from SSURGO (Certified Soil and Data Survey of Otter Tail County) LIDAR (High Accuracy Elevation Model) and the Minnesota Storm water Manual.

The aforementioned data was used by the GIS Department to build a computer program for our information.

- A – Land = Land that has been muck soil, which may be standing water, unable to farm without the ditch. **Maximum Benefit.**
- B – Land = Soil types that are slow to drain, can be farmed most years. **Medium Benefit – No lands within this Benefit Class occurred in the County Ditch #44 watershed area.**
- C – Land = Soil types that are slow to drain, can be farmed every year. **Minimum Benefit.**
- D – Land = Soil types that are well drained, always farmed, does contribute silt and run off to the system. **Least Benefit**

On June 12, 2015 the Ditch Viewers along with George Meyer from GIS used a pontoon to view all 82 shoreline properties on Round Lakes. In addition on that same date 25 shoreline properties on Head Lake were viewed from various points around the lake. The Viewers used a variety of sources of information of sources of information to determine benefit values including USGS Topographic Maps, LIDAR Maps (High Accuracy Elevation Model), Minnesota Storm Water Manual Curve Numbers and elevations above the lake level for all shoreline properties around Round and Head Lakes. The chart below showing elevations provides general estimates of benefit assignments which were also influenced by the observed lake level, slope of lots running away from the shoreline, eroded and/or rip-rapped shorelines, vegetation conditions [i.e. drowned trees], and structure locations among other observations. Based on these observations the Ditch viewers assigned an estimated range of benefits from 10% to 50% for properties with shoreline on Round and Head Lakes.

<u>Estimated Elevation Above Lake Level</u>	<u>Benefit</u>
0 feet to 2 feet	50%
2.1 feet to 4 feet	40%
4.1 feet to 6 feet	30%
6.1 feet to 8 feet	20%
8.1 feet to more	10%

The Ditch Viewers recommend the Professional Negotiator in the County Highway Department negotiate easements from landowners for the required 50 foot buffer strips. This value should be based on prevailing land values/sales/rents of comparable properties in the immediate area.

As Ditch Viewers appointed by the Ditch Authority, it is our opinion that this is a fair and equitable determination of benefits for proposed extension to County Ditch #44

Watershed area.



Mike Johnson

7-7-15
Date



Kevin Brennah

7-7-15
Date



Sheldon (Tiny) Holm

7-7-15
Date

INCREASE IN AGRICULTURAL PRODUCTION

(Under Best Management Practices)

PRODUCTION INCOME

Crop	Yield	Irrigated	Value	Income	Irrigated Income	Percent	Adj. Value of Production	Irrigated Adj. Value of Production
Corn	142	200	335	476.00	670.00	30%	143.00	201.00
Wheat	47	60	5.50	259.00	330.00	5%	13.00	17.00
Beans	37	50	9.00	333.00	450.00	25%	83.00	113.00
Oats	--	--	--	--	--	--	--	--
Hay	3 Ton	6 Ton	100	300.00	600.00	40%	120.00	240.00
TOTAL							359.00	571.00

COST

Crop	Seed And Fertilizer	Irrigated Seed & Fertilizer	Equip and Labor	Misc.	Irrigated Misc.	Percent	Adj. Value of Production	Irrigated Adj. Value of Production
Corn	325	350	30	16.50	33.00	30%	111.00	124.00
Wheat	250	330	25	11.25	20.25	5%	14.00	19.00
Beans	110	120	25	11.25	20.25	25%	37.00	41.00
Oats	--	--	--	--	--	--	--	--
Hay	100	140	30	11.25	15.00	40%	57.00	74.00
TOTAL							219.00	258.00

BENEFIT VALUE

	A-Acres	Irrig. A	B-Acres	Irrig. B	C-Acres	Irrig. C	D-Acres	Irrig. D
Percent of Normal Crop	70%	70%	85%	85%	100%	100%	100%	100%
Dollars of Crop Production	277.00	450.00	336.00	547.00	395.00	643.00	395.00	643.00
Minus Production cost	153.00	181.00	186.00	219.00	219.00	258.00	219.00	258.00
Gross Net (potential Profit/acre)	124.00	269.00	150.00	328.00	176.00	385.00	176.00	385.00
Minus Previous Net (Before Ditch)	0	0	No B Acres in System	No B Acres in System	85% 150.00	85% 327.00	95% 167.00	95% 366.00
Increase Production Value	124.00	269.00	0	0	26.00	58.00	9.00	19.00
Estimated Cost To Get Water From Land To Ditch	1,000 per Ac	1,000 per Ac	--	--	--	--	--	--
Annual Cost Per Year For 25 Year Life	40.00	40.00	--	--	--	--	--	--
Annual Benefit	84.00	229.00	--	--	26.00	58.00	9.00	19.00
Capitalized For 25 Yrs @ ___ Percent	1384.45	3774.00	--	--	429.00	956.00	148.00	313.15
Rounded Off	1385.00	3774.00	--	--	429.00	956.00	148.00	313.00

**AGRICULTURE PRODUCTION
BENEFIT CHART PER ACRE
COUNTY DITCH # 44**

LAND TYPE	DOLLARS PER ACRE	LAND TYPE	DOLLARS PER ACRE
A LAND	1385.00	A IRRIGATED	3774.00
B LAND	NONE IN SYSTEM	B IRRIGATED	NONE IN SYSTEM
C LAND	429.00	C IRRIGATED	956.00
D LAND	148.00	D IRRIGATED	313.00

	DOLLARS PER ACRE
TREES	28.00
GRASS	30.00
BUILDING SITE	51.00
ROADS (STATE & COUNTY)	69.00
RAIL ROAD	45.00
TOWNSHIP ROADS	61.00