

Commissioner's Report

Drainage District No. 1

Reclassification

Worth County, Iowa
2025


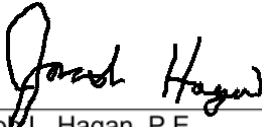
 A circular professional engineer seal for Jacob L. Hagan, License No. 25738, State of Iowa. The seal features the text "PROFESSIONAL ENGINEER" around the top and "IOWA" at the bottom, with the name and license number in the center.	<p>I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.</p> <p>10/27/25 _____ Jacob L. Hagan, P.E. (date) License No. 25738 My license renewal date is December 31, 2026. Pages or sheets covered by this seal: All</p>
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Introduction

Overview

When drainage infrastructure needs repaired or improved, landowners have the legal right to request work order repairs or to petition for major repairs or improvements. The costs of these repairs or improvements require an assessment schedule to allocate expenses fairly. Because each parcel of land may receive a different level of benefit from the district facilities, each parcel's share of the cost may vary accordingly.

Recognizing that the current assessment schedule had not been updated since its original adoption in 1905 and every parcel was assessed the same amount per acre, the Worth County Board of Supervisors serving as the trustees of the district determined that the existing schedule was not equitable. As authorized under Iowa Code §468.65, the Board appointed Jacob Hagan of AgriVia as a qualified engineer, along with Worth County resident freeholders Mike Stevens and Nathaniel Julseth, to form a Reclassification Commission. This report presents the findings and recommendations of that commission.

Location

Drainage District No. 1 (DD 1) serves approximately 1,841 acres including lands in Sections 34-35 of Hartland Township, Sections 6-7 of Kensett Township, and Sections 1-3, 10-12 of Brookfield Township in Worth County, Iowa. A Map of the DD 1 benefitted area is included in Appendix A.

Benefits of Drainage

Crop Yield Response

A 1983 ISU study found that poor drainage can reduce yields by up to 32%, but installing tile in these areas often provides strong economic returns. A table showing yield increases from that study is provided below:

Soil Drainage Class	Poor Drainage (Less than ¼" Drainage Coefficient)		High Drainage (½" Drainage Coefficient)		Percent Increase	
	Corn Yield (bu/acre)	Soybeans Yield (bu/acre)	Corn Yield (bu/acre)	Soybeans Yield (bu/acre)	Corn Yield	Soybeans Yield
Very Poorly Drained	28	12	123	48	339%	300%
Poorly Drained	80	31	121	47	51%	52%
Somewhat Poorly Drained	90	34	124	48	38%	41%

Long-term research from Ohio State University found similar benefits. Their data showed that tilled fields produced 24–39% more corn and 12–45% more soybeans compared to untilled ground. Benefit-cost ratios ranged from 1.7:1 up to 4:1, meaning a return of \$3–\$4 for every \$1 invested in tile.

Additionally, the soil ratings (CSR2) used in this report assume proper drainage is in place. This means poorly drained soils are rated based on their potential with tile, not their current condition. As a result, soils with high potential held back by poor drainage may offer some of the best economic returns when drainage is improved.

For more detail, we have included a summary of drainage benefits from Ohio State in Appendix B.

Non-Crop Benefits

Drainage districts do not just serve farmland. Acreages, conservation areas, and other rural homes depend on district infrastructure to lower the water table, keep basements dry, and manage stormwater that would otherwise pool in yards and create muddy driveways for example. These properties benefit from better growing conditions for trees, lawns, wildlife habitat, and gardens, similar to how urban properties benefit from storm sewer systems.

Public roads are another example. Modern roadways and, especially paved ones, shed water quickly. That runoff often enters the drainage system through roadside intakes. Drier roads and driveways are more durable, easier to maintain, and less prone to erosion or frost damage. Iowa Code 468.43 allows for assessing roads because they directly benefit from district facilities.

Many game animals, particularly those favored by hunters, prefer drier upland habitats over persistently wet swamp conditions. Uplands offer better cover, forage, and nesting opportunities without the risks associated with flooding or poor drainage. Likewise, many of Iowa's native upland plants and trees cannot tolerate extended flooding, as prolonged saturation leads to root rot, oxygen deprivation, and eventual death, often within 7 to 14 days of submersion. These species thrive on well-drained uplands but quickly "drown out" in swampy areas, resulting in reduced forage and cover for upland wildlife.

There are also public health benefits. In the early days, before drainage districts existed, wetlands across Iowa were breeding grounds for mosquitoes and disease. The law (Iowa Code 468.2) recognizes drainage as a tool to improve public health, safety, and overall welfare.

Landscape Considerations

District Landscape

Drainage District No. 1 serves a watershed defined by a central lowland, where the main open ditch was originally constructed. The current landscape includes a considerable number of acres not used for row crop cultivation, such as pasture, woodland, grassland, and wetland areas. Historical aerial imagery, including a photo from the 1950s provided in Appendix C, suggests that the district has consistently included large areas of non-row crop land since its establishment.

To better understand the watershed, we used publicly available LiDAR (Light Detection and Ranging) technology to map the district's surface topography. LiDAR uses laser pulses from aircraft to produce highly accurate elevation data, allowing us to identify natural drainage patterns and areas of water accumulation. Based on this analysis, we determined that 1,841 acres drain to the district's facilities. An elevation map is included in Appendix D, and a water flow paths map is included in Appendix E.

Soils

The soils in this drainage district are primarily silts and clays. Common soil types include Angus, Webster, and Le Sueuer, with slopes ranging from flat to moderately steep. Drainage classes vary across the district as shown below:

Soil Drainage Class		
Drain Class	Acres	Percentage of Watershed
Very Poorly Drained	173	9.4%
Poorly Drained	493	26.8%
Somewhat Poorly Drained	273	14.9%
Moderately Well Drained	172	9.3%
Well Drained	730	39.6%
Excessively Well Drained	0	0%

Private Drainage

The primary purpose of a drainage district is to provide a legal and reliable outlet for surface and subsurface drainage, allowing coordinated water management across multiple properties. While the district maintains shared infrastructure, such as main tile lines and open ditches, individual landowners are responsible for installing and maintaining private tile systems on their land to connect to and benefit from the district system.

Water Flow Behavior

Subsurface drainage systems collect excess water using perforated pipes or clay tiles installed below ground. As the soil becomes saturated, water moves through the soil's pores and enters the tile system through small openings. The water is then carried away to the district main. This process lowers the water table, improves soil aeration, and reduces surface runoff.

A key soil property in drainage design is saturated hydraulic conductivity (Ksat), which measures how quickly water moves through saturated soil. Sandy soils have high Ksat values and drain quickly, while clay soils, such as those common in District No. 1, have lower Ksat values and drain more slowly. Most soils in the district are classified as clay loams, with moderate to low Ksat values. These values are used to determine appropriate drainage coefficients and to guide decisions on tile spacing and depth for an effective and efficient drainage system.

In addition to managing subsurface water, it is important to consider the risk of surface erosion. This is measured by the K factor, which indicates how easily soil particles can be detached and transported by water. Soils with high K values are more prone to erosion, particularly on sloped ground or where vegetation is sparse.

Existing Infrastructure

Main Open Ditch

The district's open ditch begins in Section 2 of Hartland Township, just west of Kingfisher Avenue. From there, it flows generally east through Section 1, crossing 450th Street, then continues southeast through Section 12, crossing Mallard Avenue, and eventually flows east to its outlet into an unnamed creek near Mockingbird Avenue.

In August 2025, we conducted an elevation check of the ditch bottom between Mockingbird Avenue and 450th Street. A letter summarizing those results is on file with the County Auditor's Office.

According to district records, the ditch was last cleaned out in 2013 from Mockingbird Ave to 450th Street.

Classification Method

Rules of Classification

The classification method used in this reclassification was selected to align with the requirements of Iowa Code §468.40, incorporate accurate and publicly available data, and ensure a fair and transparent approach to assigning benefits across all parcels in the district. The methodology combines legal compliance with technical precision and is designed to produce equitable assessments for landowners.

Under Iowa law, drainage district assessments must be based on the benefits land receives from the original construction of the district's drainage infrastructure. Section 468.40 outlines three specific types of benefit that must be considered:

- Bringing the outlet nearer to the land
- Relieving the land from overflow and protecting it from erosion

- Affording the land an outlet for drainage

To determine how much a parcel benefits from the **outlet being brought nearer**, we compared the pre-district drainage outlet distance to the now shorter distance made possible by the constructed open ditch facility. Measurements were calculated using spatial data for each one-acre square within the district.

Relieving the lands from overflow and erosion protection was assessed using five soil-based indicators: drainage class, depth to the water table, saturated hydraulic conductivity (Ksat), Corn Suitability Rating (CSR2), and soil erodibility (K-factor). These values were extracted from USDA-NRCS soil surveys, allowing us to evaluate how effectively drainage can improve crop productivity, field trafficability, and soil health. They help identify where drainage will provide the most economic benefit.

Affording an outlet was addressed through a composite analysis involving average slope from each one-acre square to the open ditch, the parcel's position along the open ditch system (i.e., its share of infrastructure), and its proximity to the open ditch. This allowed for a comprehensive assessment of both physical drainage need and relative use of the system.

Land Use

It is important to understand that the classification method does not take current land use into account—except in the case of state-owned lakes. Landowners are free to manage their land as they choose, regardless of how much benefit they receive from the drainage system.

The current classification schedule has been in place for over one hundred years, and in that time, land use on many parcels has likely changed. However, the drainage district classification process is focused on providing a drainage outlet, not on how or whether each parcel is actually drained. That decision rests entirely with the landowner.

In some cases, the classification commission may recommend adjustments based on land use, but these are typically limited to permanent land retirement or large-scale industrial developments.

Procedure

Data Collection and Preparation

For each one-acre square, key physical and soil characteristics were compiled. Elevation and slope data were derived from public LiDAR datasets. Soil attributes including drainage class, depth to water table, Ksat, CSR2, and K-factor were obtained from public USDA-NRCS soil surveys. In addition, spatial measurements were made to determine each one-acre square's distance to the drainage district facility, its location along the open ditch system, and the total distance to the ultimate natural outlet.

Normalization of Inputs

To evaluate different variables on the same scale, each factor was normalized to a 0–100 range. This standardization allows for weighted averaging. For example, a square where the district facility is located would receive a proximity score of one hundred, while a square more than five thousand feet from the facility would score zero. Very poorly drained soils, which benefit most from artificial drainage, scored one hundred, while excessively well drained soils scored zero in the drainage class factor.

Similarly, shallow water tables, low Ksat values, high CSR2 values, and high erodibility (K-factor) all received higher benefit scores. Proximity to the district facility, upstream position, and greater reduction in outlet distance also promotes high values.

Component Benefit Scoring

Once normalized, the inputs were used to compute scores for the three benefit categories as defined by Iowa Code. A map of each of the three component scores is included as Appendices F, G, and H.

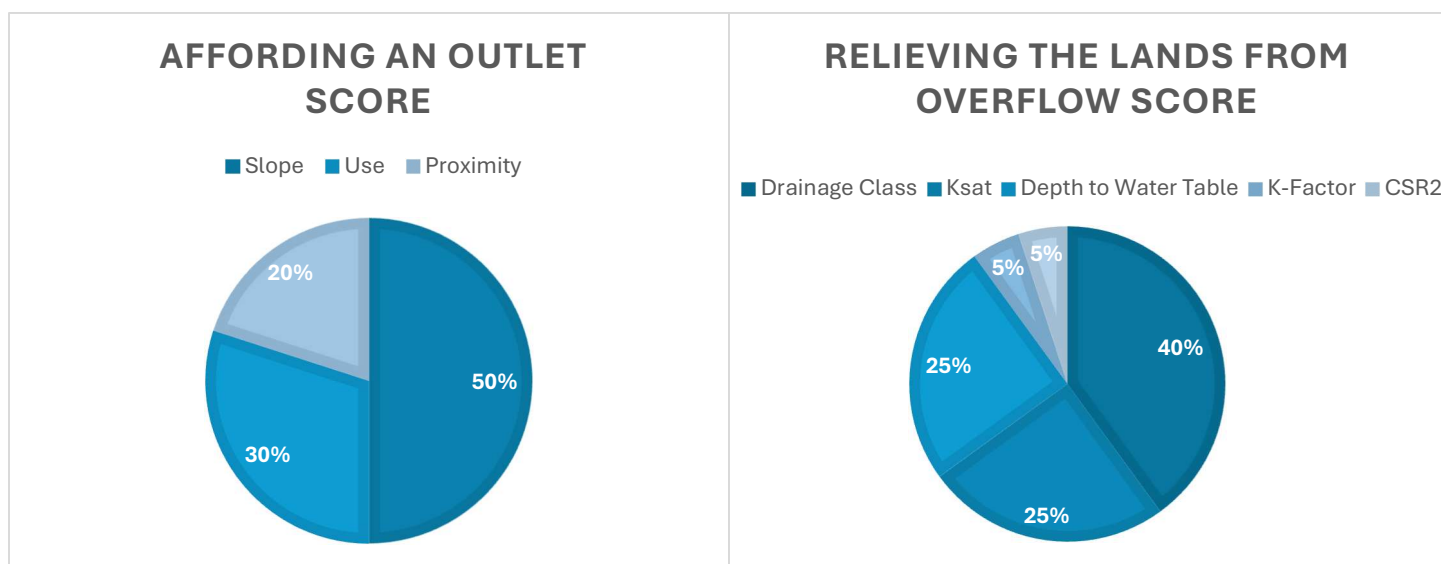
Bringing the outlet nearer is based on one score as described above.

Relieving Overflow and Erosion was based on a weighted average of the five soil characteristics:

- Drainage Class (40%)
- Ksat (25%)
- Depth to Water Table (25%)
- K-factor (5%)
- CSR2 (5%)

Affording an Outlet was calculated using a weighted average of the following factors:

- Slope (50%)
- Infrastructure Use (30%)
- Proximity to the district system (20%)



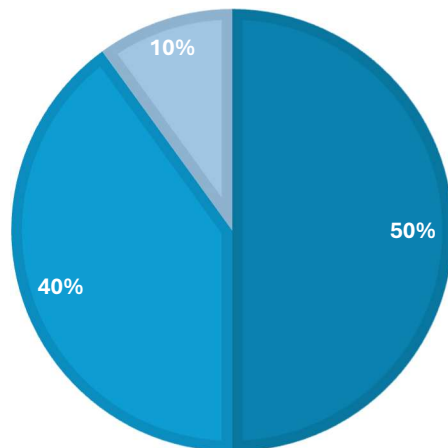
Aggregation into Final Benefit Score

We calculated each parcel's final benefit score using a weighted average of the three components:

- Fifty percent weight was given to **overflow and erosion relief**.
- Forty percent to **affording an outlet**.
- Ten percent to **bringing the outlet nearer**.

TOTAL SCORE COMPOSITION

■ Relieving the Lands of Overflow ■ Affording an Outlet ■ Bringing the Outlet Nearer



These weights were chosen to emphasize the core purpose of the drainage system, removing excess water from poorly drained soils, while also acknowledging infrastructure use and proximity benefits.

Additional Considerations

Because county road rights-of-way are constructed to shed water more quickly than typical land uses, an additional benefit factor is applied to account for the increased reliance on the drainage system. In Worth County, this results in a 20% increase in the benefit score applied to Secondary Roads within the drainage district.

It is important to note that the open ditch itself is not assessed for benefit. This is because the drainage district holds right-of-way, and as such, the facility is maintained as part of the district's infrastructure rather than assessed as a benefited parcel.

Several parcels show net acres of less than a full 40, even though the parcel itself appears to be a full 40 acres. This occurs because a portion of the parcel is listed as exempt. As a result, the assessment schedule reflects a smaller number of assessable acres including in some cases, even zero. However, these parcels are still assessed as though the parcel lies within the drainage district. Unlike property taxes, drainage district assessments are based on benefit, meaning land may be exempt from property taxes but still subject to drainage district assessments.

Landowner Considerations

Public Hearing on Report

A public hearing will be scheduled to review this reclassification report. Per Iowa Code § 468.14, all landowners in the district will be notified by mail, and notice will also be published in a local newspaper. At the hearing, we will present our findings, proposed classification schedule, and will be available to answer questions and address concerns.

The Board of Trustees will conduct the hearing and may continue it to a later date if more discussion or information is needed. No decision can be made until the hearing is held and all landowner input is considered. This report may be amended as needed in response to feedback received during the hearing.

Objections

Landowners who have concerns about the proposed classification schedule are encouraged to submit written objections either before or during the public hearing. These written objections will be included in the official record and are necessary to preserve the right to appeal the Board's final decision.

Landowners who wish to object to their assessment are strongly encouraged to provide any relevant information, such as tile maps, permanent wetland easements, or other documentation not available to us, that could assist in refining the schedule if necessary.

Recommendations

Classification Schedule

We recommend the following classification schedule for Drainage District No. 1 to be used for future maintenance and all costs to the district.

Classification Schedule	Basis Cost
Drainage District No. 1- Main Open Ditch	\$100,000

The Basis Cost shown is for illustrative purposes only and does not reflect any actual project costs. A round number of \$100,000 was selected to provide an easy reference for calculating each parcel's proportional share. This example allows landowners to see how assessments would be allocated based on percentages without implying a final or actual cost.

For each parcel listed in the assessment schedule, both the units assessed (\$) and the relative benefit percentage are shown. As required by Iowa Code, one parcel within the district is designated as the "100% benefit" parcel — meaning that parcel receives the greatest benefit from the drainage district system. All other parcels are assigned a relative percentage based on how their benefit compares to that parcel. For example, a parcel listed at 60% receives 60% of the benefit compared to the most benefited parcel.

Recommendations

We recommend that the Board accept the filing of this report and schedule a public hearing to formally present the findings and proposed schedule to all affected landowners. At the closing of the hearing, we further recommend that the Board proceed with adopting the schedule as presented.

If the Board of Trustees or landowners have any questions or concerns, please feel free to contact AgriVia at the phone number or email listed.

Sincerely,

 10.13.25

Mike Stevens **Date**
Worth County Resident Freeholder

 10/13/25

Jacob Hagan, P.E. **Date**
Professional Licensed Engineer
712-250-4318
jacob.agrivia@gmail.com

 10/17/25

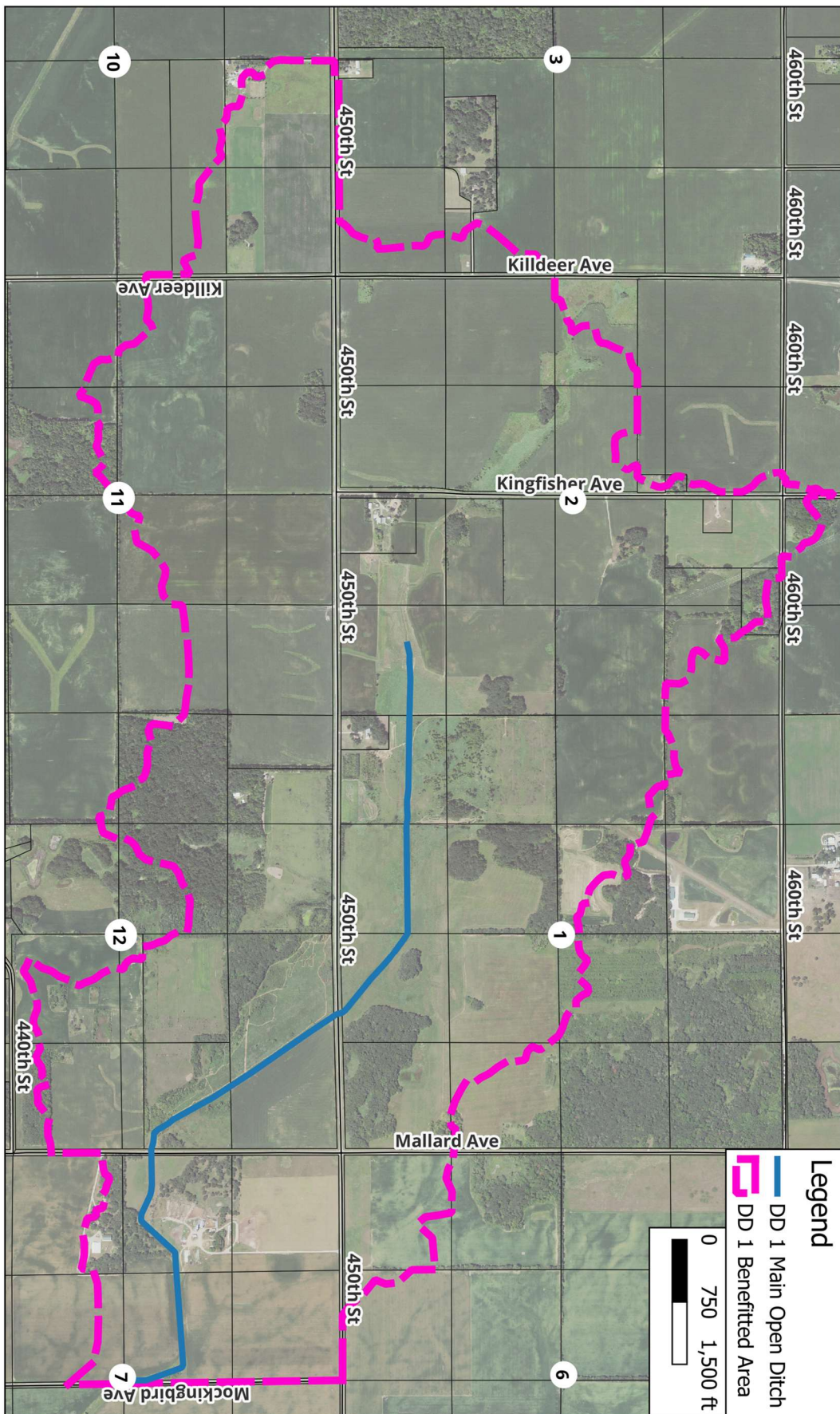
Nathaniel Julseth **Date**
Worth County Resident Freeholder

Appendix A – Benefitted Area



Drainage District No. 1
Worth County, IA

Benefitted Area



Appendix B- "Twenty Benefits of Drainage"- Ohio State Extension



SOIL AND WATER NO. 31

JULY 1982

TWENTY BENEFITS OF DRAINAGE

Many of the best soils in the United States and throughout the world have drainage problems that need to be solved before efficient agricultural production can be achieved. This discussion of drainage benefits is based on an earlier paper by the author entitled "Ten Benefits of Drainage" and several reports from other agricultural engineers in the United States, Canada, and England. Some of these drainage benefits are difficult to measure precisely, and many are interrelated, but their combined effect has been observed in numerous drainage studies.

1. Better soil aeration results from good drainage (surface water and free water in the root zone removed within 24 hours after heavy rainfall). This permits more extensive root development and a more favorable environment for beneficial soil microorganisms and earthworms. When soil aeration is reduced, the severity of soil-borne root diseases is increased.
2. Better soil moisture conditions with good drainage permit more efficient operation of tillage, planting, and harvesting equipment.
3. Better soil structure can be developed and maintained with good drainage, since there is less chance of destroying soil tilth due to compaction when working soil that is too wet.
4. Soils warm up more quickly in the spring when free water is removed by a drainage system. This results in better seed germination and an increased rate of plant growth.
5. An increased supply of nitrogen can be obtained from the soil when drainage lowers the water table in the root zone. Denitrification often occurs in soils with poor drainage.
6. Longer growing seasons can be achieved with good drainage due to earlier possible planting dates. This also permits the use of higher-yielding crop varieties or extended grazing periods for livestock.
7. Certain toxic substances and disease organisms are removed from the soil due to better drainage and soil aeration. In wet soil, roots can be injured by toxic substances produced in the reduction of iron and manganese salts and the reduction of nitrates to nitrites.
8. Winds are less liable to uproot plants growing in soils that have been properly drained, since root systems are deeper.
9. Soil erosion and sediment loss can be reduced by subsurface drainage, since drained soils have a greater capacity to absorb rainfall and the soil filters out suspended sediment.
10. Good drainage saves fuel that would be used in working around wet areas in fields

(over)

College of Agriculture and Home Economics of The Ohio State University and The United States Department of Agriculture Cooperating

that are not properly drained. Also, since drained land is easier to work, there is less need for dual wheels or four-wheel drive tractors.

11. Good drainage reduces winter crop damage such as frost heaving of alfalfa and smothering of wheat under patches of ice.
12. Good drainage promotes earlier crop maturity and earlier fall harvests when climatic conditions are better for natural drying of grain in the field, thereby saving artificial drying costs.
13. A greater variety of crops can be grown on a farm that has good drainage. Alfalfa and sweet corn are examples of those that a farmer may choose.
14. Weed control is easier with good drainage since shallow-rooted weeds and undesirable grasses often thrive in wet soil, crowding out the planted crop.
15. Well-drained grazing land supports more livestock, with less compaction damage to vegetation and soil from animal traffic.
16. Good drainage reduces diseases that thrive on wet land. These include foot rot and liver fluke that infect livestock, and diseases carried by mosquitoes to both livestock and people.
17. Valuable livestock water supplies can be obtained by draining hillside seeps and piping the water to stock water tanks.
18. Plants are better able to withstand summer droughts with good drainage, since lower water tables in the spring permit deeper root development for extraction of soil moisture and nutrients.
19. Drainage is essential for salinity control in drier regions where irrigation is needed for permanent agricultural production.
20. Overall, good drainage results in higher crop yields, improved crop quality, and reduced risk of crop loss due to waterlogged soil. Also, fewer acres are required to produce our needed food supplies.

Several years of drainage research in Ohio has compared corn and soybean yields from undrained, surface drained only, tile drained only, and combined tile plus surface drained plots. Annual benefit/cost ratios were also calculated for these alternative drainage systems. It was shown that the average annual return per \$100 invested in drainage ranged from \$120 to \$210 for soybeans, and from \$170 to \$220 for corn. Further details on this research are reported in Soil and Water No. 23 (DRAINAGE--What is it Worth on CORN Land?) and Soil and Water No. 24 (DRAINAGE--What is it Worth for SOYBEAN Land?). These leaflets are available from Extension Agricultural Engineers, 2073 Neil Avenue, Columbus, OH 43210.

Actual returns on a drainage investment for a particular farm will vary with factors such as soil type, weather conditions, cost of the drainage system, crops grown, and management. Drainage improvements may involve surface drainage, subsurface drainage, outlet ditches, or a combination of practices. Changes in soil and crop management techniques may also be desirable to improve soil structure and water movement in the soil. Almost 60 percent of Ohio's cropland and 25 percent of all U. S. cropland is in need of drainage.

Melville L. Palmer

Melville L. Palmer
Extension Agricultural Engineer

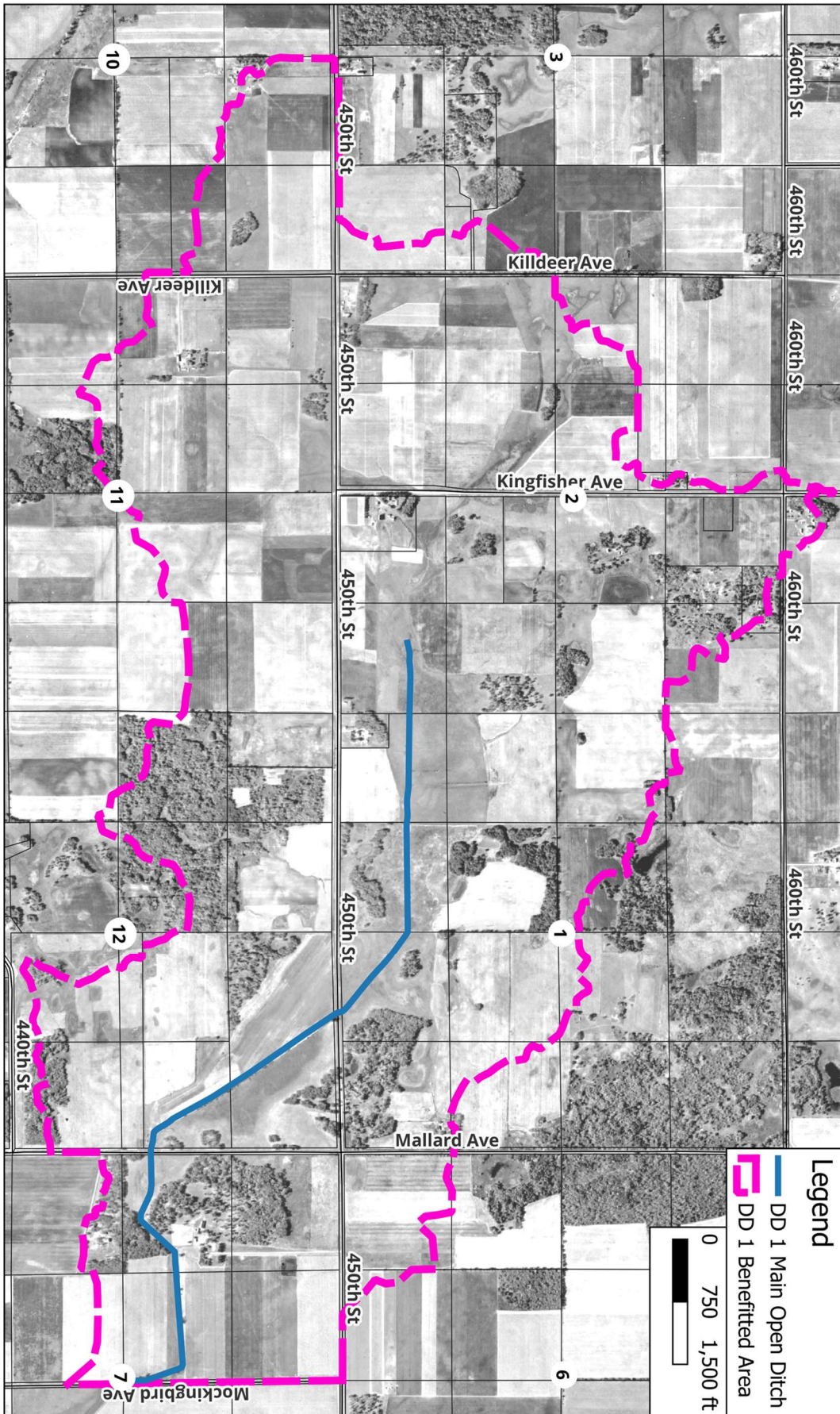
All educational programs and activities conducted by the Ohio Cooperative Extension Service are available to all potential clientele on a non-discriminatory basis without regard to race, color, national origin, sex, handicap or religious affiliation.

Appendix C – 1950's Aerial Photo



Drainage District No. 1
Worth County, IA

1950's Aerial Photo

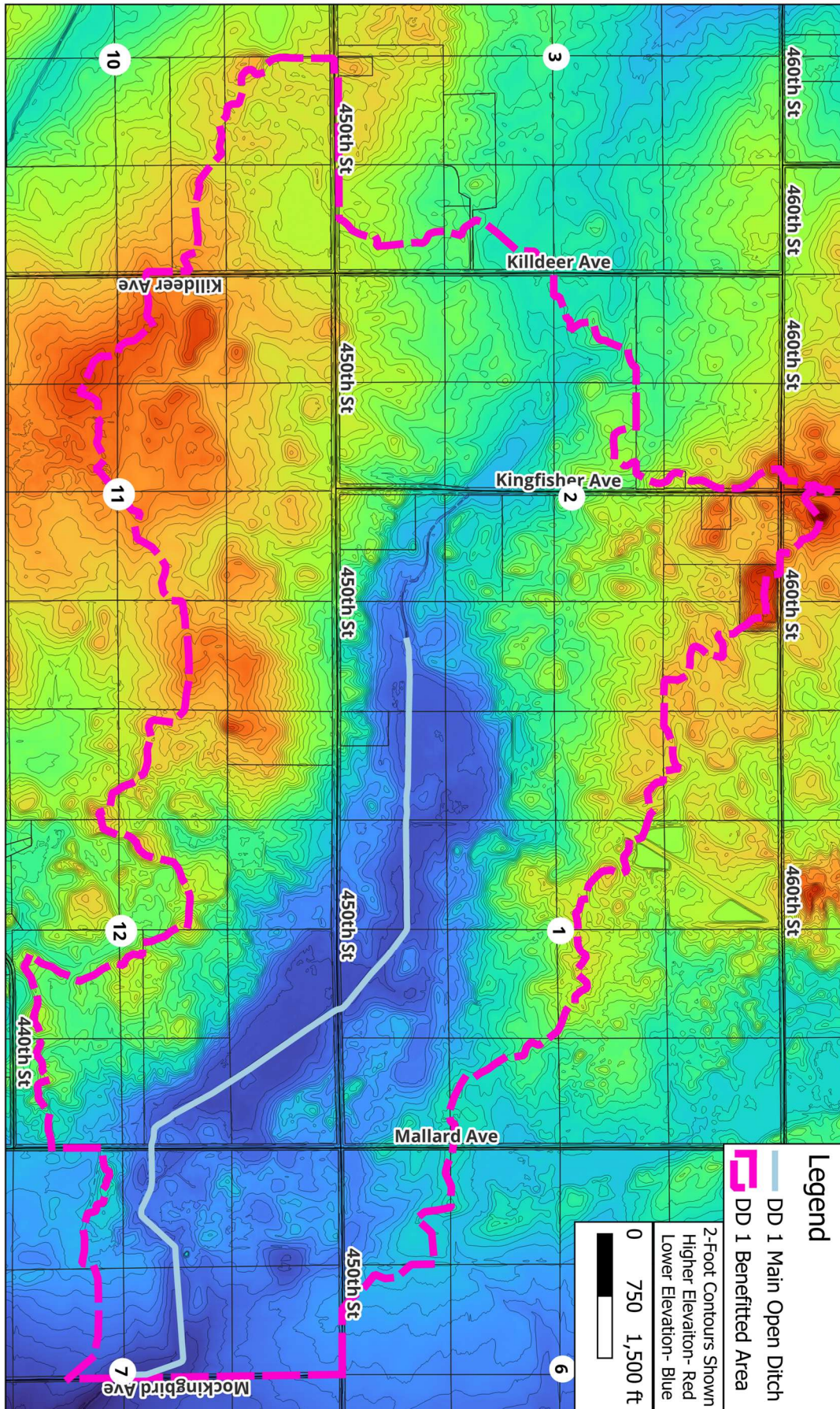


Appendix D – Elevation Map



Drainage District No. 1
Worth County, IA

Elevation

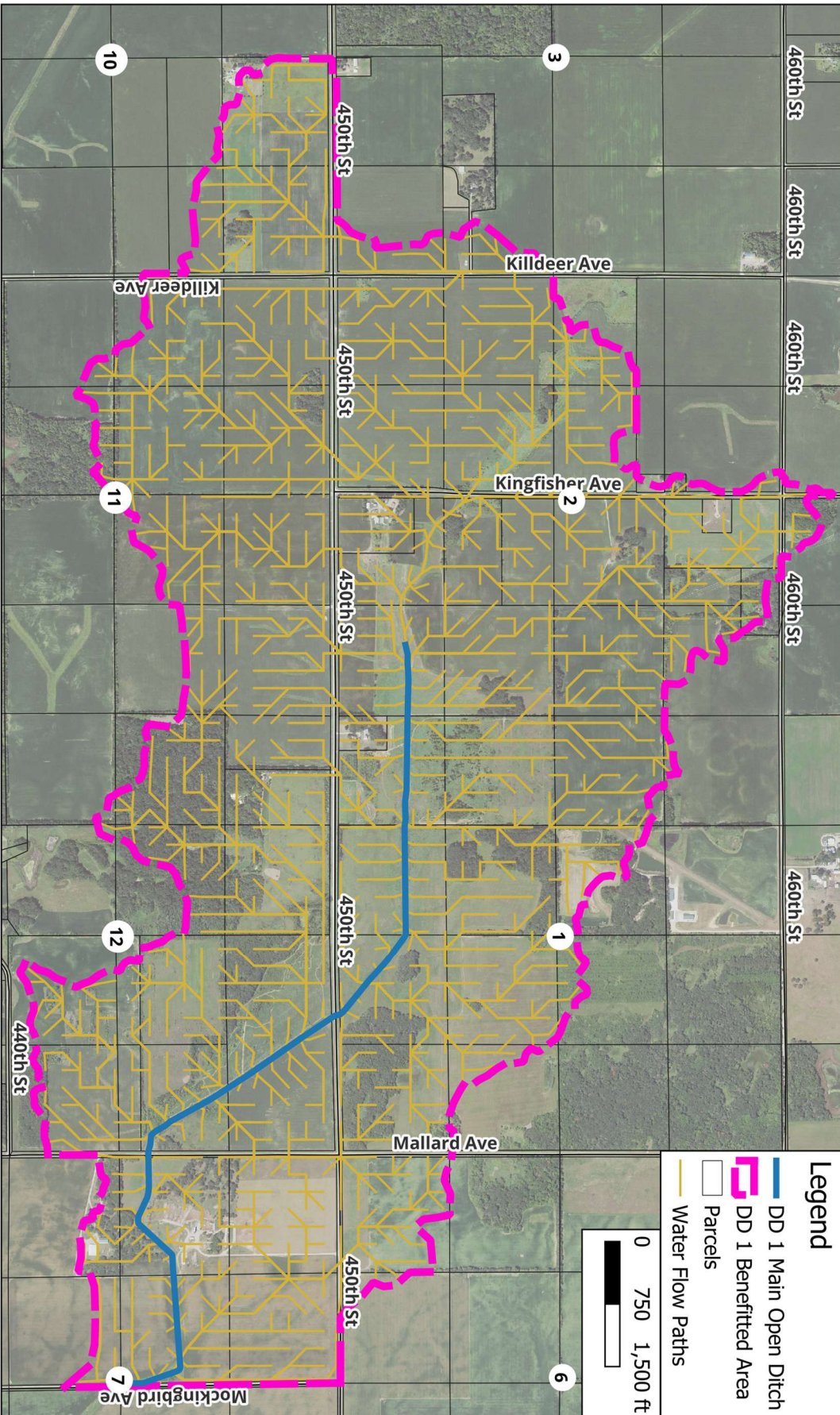


Appendix E- Water Flow Paths Map



Drainage District No. 1
Worth County, IA

Water Flow Paths

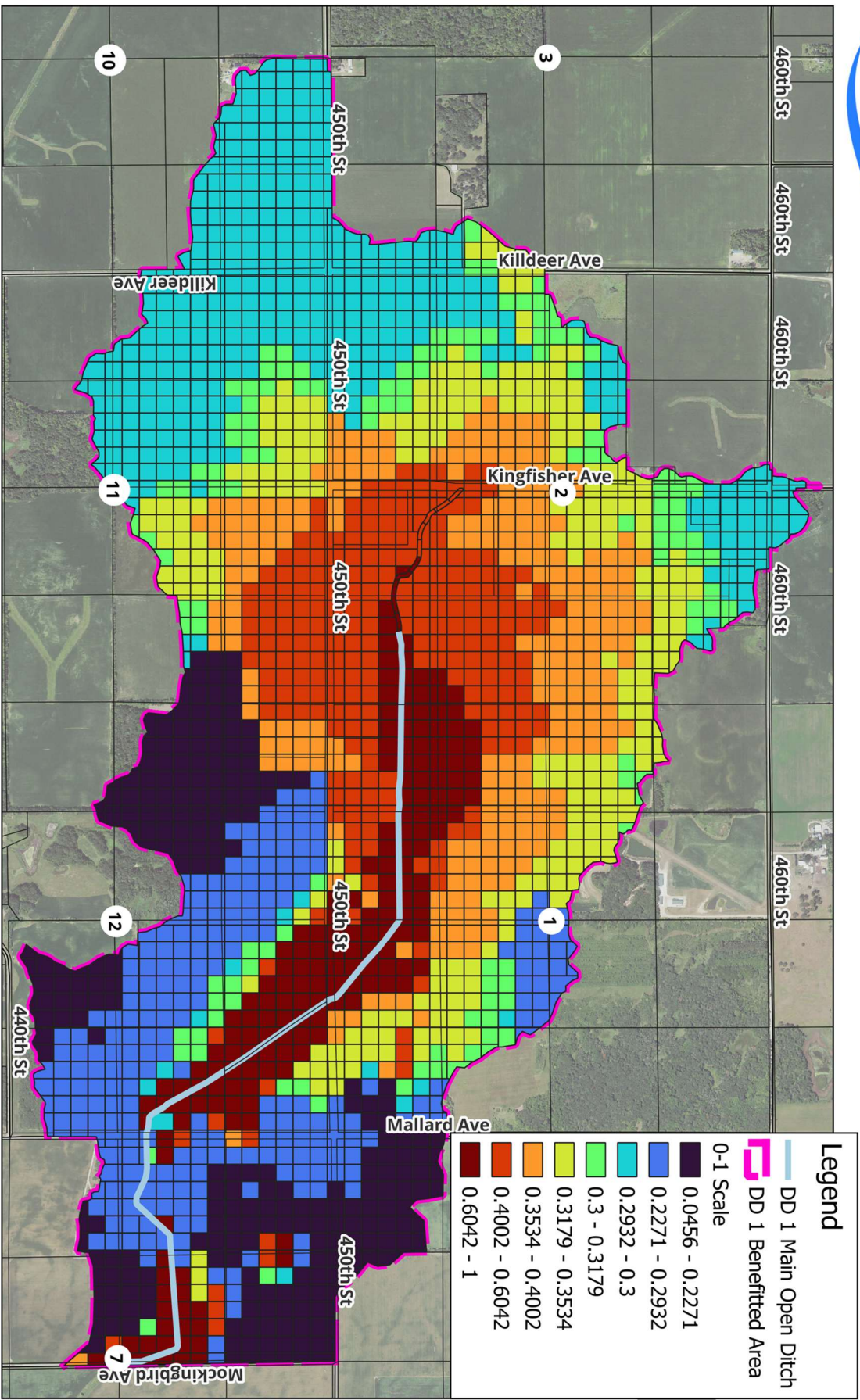


Appendix F – Affording an Outlet Score



Drainage District No. 1
Worth County, IA

Affording an Outlet

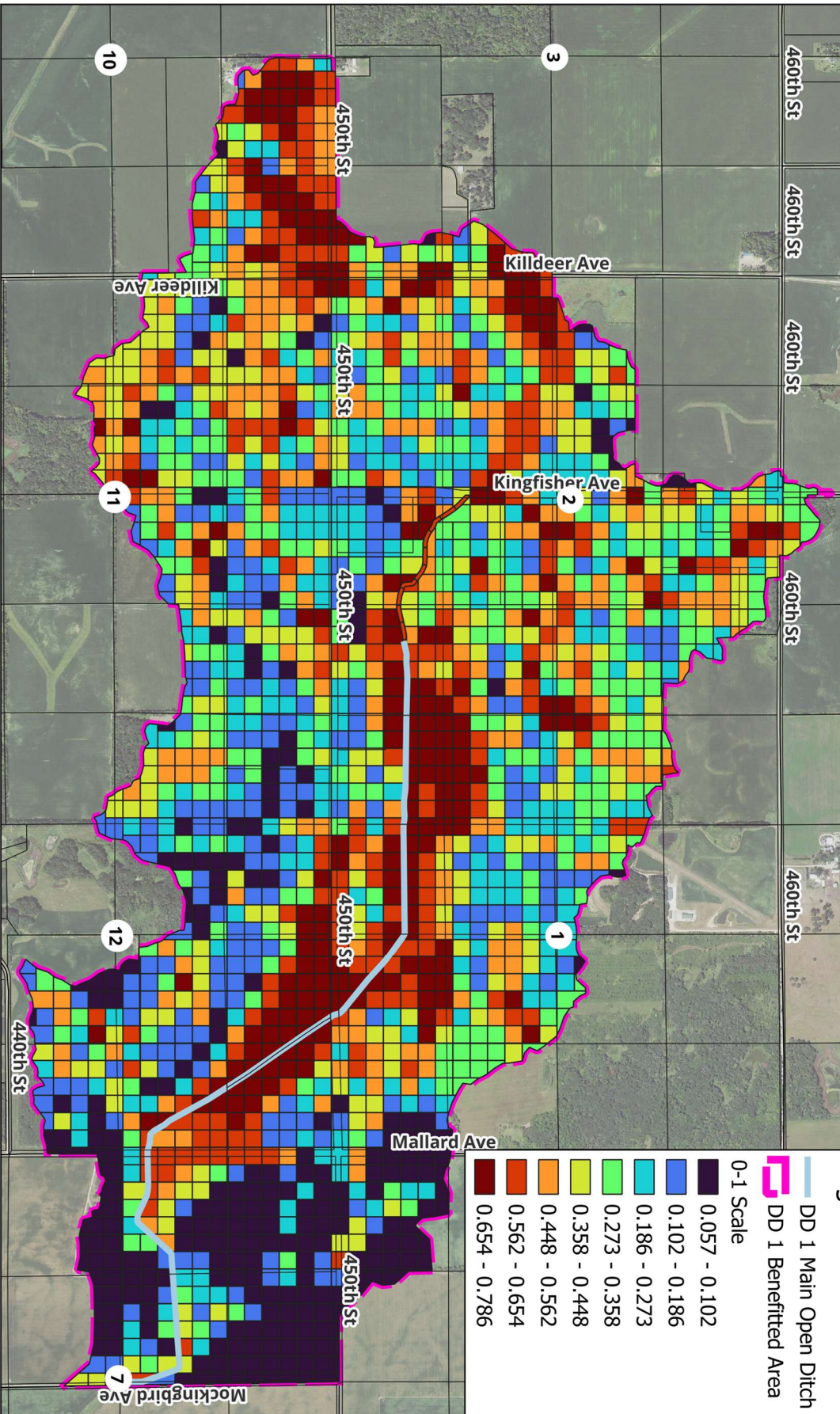


Appendix G – Relieving the Lands of Overflow Score



Drainage District No. 1
Worth County, IA

Relieving the Lands from Overflow

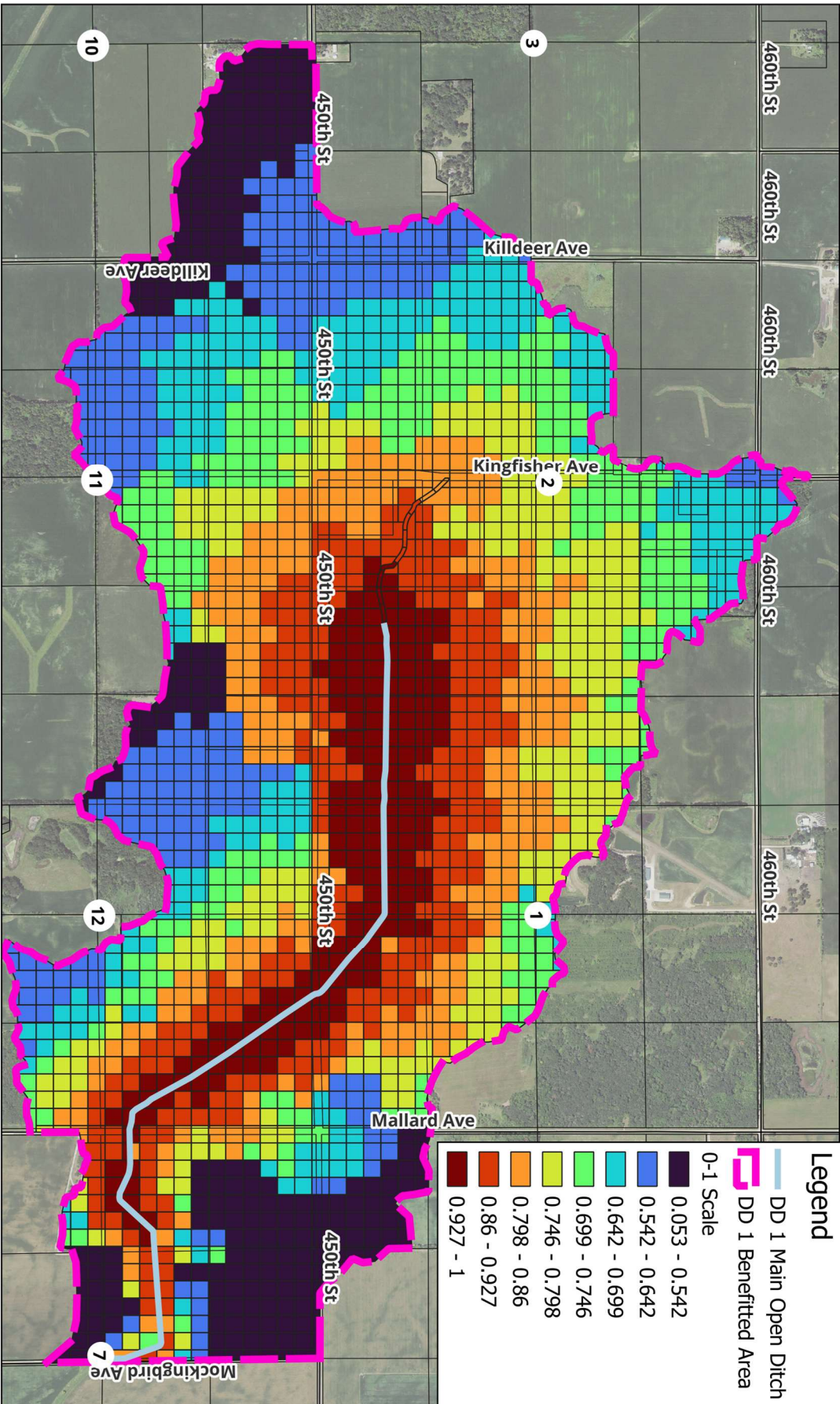


Appendix H – Bringing the Outlet Nearer Score



Drainage District No. 1
Worth County, IA

Bringing the Outlet Nearer



Drainage District No. 1- Main Open Ditch

Classification Schedule

PIN	Deedholder	S-T-R	Legal Description	Area (Acres)	Relative Benefit Percentage (%)	Units Assessed (\$)
0612300013	ADAMS-SONS TRUST	12-99-21	12-99-21 NE SW EX. PAR & EX. PARCEL "A"	0.7	0.50%	\$ 16.62
0603400008	BAKER, KYLE A & KATHRYN M	03-99-21	SECTION:03 TOWNSHIP:99 RANGE:21 PAR IN NE SE BROOKFIELD	0.4	0.52%	\$ 17.29
0602100007	BEVERLY LAND COMPANY	02-99-21	2-99-21 S 30 A. SW NW	14	23.51%	\$ 781.61
0602100008	BEVERLY LAND COMPANY	02-99-21	2-99-21 S 30 A. SE NW	26.8	38.00%	\$ 1,263.35
0602300001	BEVERLY LAND COMPANY	02-99-21	2-99-21 NW SW	39	67.95%	\$ 2,259.06
0602300002	BEVERLY LAND COMPANY	02-99-21	2-99-21 NE SW	38.61	68.87%	\$ 2,289.65
0602300003	BEVERLY LAND COMPANY	02-99-21	2-99-21 SW SW	37.85	60.63%	\$ 2,015.70
0602300004	BEVERLY LAND COMPANY	02-99-21	2-99-21 SE SW	36.4	55.40%	\$ 1,841.83
0602400006	BUTLER, KARRIE	02-99-21	SECTION:02 TOWNSHIP:99 RANGE:21 SW SE EX PAR BROOKFIELD	23.35	46.17%	\$ 1,534.97
0602400004	BUTLER, KARRIE & LYNN & STEVEN & ERIK	02-99-21	SECTION:02 TOWNSHIP:99 RANGE:21 NE SE BROOKFIELD	40	81.31%	\$ 2,703.23
0602400005	BUTLER, KARRIE & LYNN & STEVEN & ERIK	02-99-21	SECTION:02 TOWNSHIP:99 RANGE:21 SE SE BROOKFIELD	38.5	92.28%	\$ 3,067.94
0611200001	BUTLER, KARRIE & LYNN & STEVEN & ERIK	11-99-21	SECTION:11 TOWNSHIP:99 RANGE:21 NW NE BROOKFIELD	38.49	59.56%	\$ 1,980.13
0611200003	BUTLER, KARRIE & LYNN & STEVEN & ERIK	02-99-21	SECTION:11 TOWNSHIP 99 RANGE:21 SW NE BROOKFIELD	28.7	44.79%	\$ 1,489.09
0602400007	BUTLER, STEVEN	02-99-21	SECTION:02 TOWNSHIP:99 RANGE:21 PAR IN SW SE BROOKFIELD	14.65	20.52%	\$ 682.21
0601300001	CRESCENT SWAMP LODGE LLC	01-99-21	SECTION:01 TOWNSHIP:99 RANGE:21 NW SW (ALL IN WETLAND EASEMENT) BROOKFIELD	40	87.09%	\$ 2,895.39
0601300004	CRESCENT SWAMP LODGE LLC	01-99-21	SECTION:01 TOWNSHIP:99 RANGE:21 SW SW EX PAR (22.9 ACRES IN WETLAND EASEMENT) BROOKFIELD	32.97	81.48%	\$ 2,708.88
0612100002	CRESCENT SWAMP LODGE LLC	12-99-21	SECTION:12 TOWNSHIP:99 RANGE:21 E 1/2 NW NW BROOKFIELD	14.73	19.15%	\$ 636.66
0612100003	CRESCENT SWAMP LODGE LLC	12-99-21	SECTION:12 TOWNSHIP:99 RANGE:21 NE NW BROOKFIELD	30.92	52.83%	\$ 1,756.38
0612100004	CRESCENT SWAMP LODGE LLC	12-99-21	SECTION:12 TOWNSHIP:99 RANGE:21 SW NW BROOKFIELD	31.7	38.22%	\$ 1,270.66
0612100005	CRESCENT SWAMP LODGE LLC	12-99-21	SECTION:12 TOWNSHIP:99 RANGE:21 SE NW BROOKFIELD	22.8	21.00%	\$ 698.16

Drainage District No. 1- Main Open Ditch

Classification Schedule

PIN	Deedholder	S-T-R	Legal Description	Area (Acres)	Relative Benefit Percentage (%)	Units Assessed (\$)
0612200001	CRESCENT SWAMP LODGE LLC	12-99-21	SECTION:12 TOWNSHIP:99 RANGE:21 N 1/2 NE W DD1	30.13	97.89%	\$ 3,254.45
0612200002	CRESCENT SWAMP LODGE LLC	12-99-21	(31.43 ACRES IN WETLAND EASEMENT) BROOKFIELD			
			SECTION:12 TOWNSHIP:99 RANGE:21 N 32.09 A SW NE	30.4	41.30%	\$ 1,373.06
			BROOKFIELD			
0612200005	CRESCENT SWAMP LODGE LLC	12-99-21	SECTION:12 TOWNSHIP:99 RANGE:21 N 32.09 A SE NE	31	60.75%	\$ 2,019.69
			(21.98 ACRES IN WETLAND EASEMENT) BROOKFIELD			
0707100001	HARRIS, LONNIE L REVOCABLE TRUST	07-99-20	SECTION:07 TOWNSHIP:99 RANGE:20 NW FRL NW KENSETT	41	32.74%	\$ 1,088.47
0707100002	HARRIS, LONNIE L REVOCABLE TRUST	07-99-20	SECTION:07 TOWNSHIP:99 RANGE:20 NE FRL NW KENSETT	38	24.62%	\$ 818.52
0707100003	HARRIS, LONNIE L REVOCABLE TRUST	07-99-20	SECTION:07 TOWNSHIP:99 RANGE:20 SW FRL NW KENSETT	42.48	54.10%	\$ 1,798.61
0707100004	HARRIS, LONNIE L REVOCABLE TRUST	07-99-20	SECTION:07 TOWNSHIP:99 RANGE:20 SE FRL NW KENSETT	39	53.39%	\$ 1,775.00
0707300002	HARRIS, LONNIE L REVOCABLE TRUST	07-99-20	SECTION:07 TOWNSHIP:99 RANGE:20 NE SW KENSETT	10.4	7.81%	\$ 259.65
0706300003	HARRIS, MYRA L TRUST	06-99-20	6-99-20 SW SW FRL	36.7	25.58%	\$ 850.43
0601300003	HAYDEN, ZACHARY SHANE	01-99-21	1-99-21 S 627' OF W 416 SW SW	5.51	9.52%	\$ 316.50
0612300001	HELGESEN, ANDREW E & AMBER M	12-99-21	SECTION:12 TOWNSHIP:99 RANGE:21 NW SW BROOKFIELD	1.1	1.11%	\$ 36.90
0601300002	HELLER, STEVEN	01-99-21	1-99-21 NE SW	22.44	62.95%	\$ 2,092.83
0601300005	HELLER, STEVEN	01-99-21	1-99-21 SE SW	38.49	100.00%	\$ 3,324.59
0601400001	HELLER, STEVEN	01-99-21	1-99-21 NW SE	40	66.25%	\$ 2,202.54
0601400002	HELLER, STEVEN	01-99-21	1-99-21 NE SE	9	13.62%	\$ 452.81
0601400003	HELLER, STEVEN	01-99-21	1-99-21 SW SE	28.41	99.89%	\$ 3,320.94
0601400004	HELLER, STEVEN	01-99-21	1-99-21 SE SE	16.62	53.75%	\$ 1,786.97
0601100003	HENGESTEIG, STEVEN C TRUST	01-99-21	SECTION:01 TOWNSHIP:99 RANGE:21 SW NW BROOKFIELD	37.8	64.67%	\$ 2,150.01
0602200007	HENGESTEIG, STEVEN C TRUST	02-99-21	SECTION:02 TOWNSHIP:99 RANGE:21 SW NE BROOKFIELD	38.64	68.65%	\$ 2,282.33
0602200008	HENGESTEIG, STEVEN C TRUST	02-99-21	SECTION:02 TOWNSHIP:99 RANGE:21 SE NE BROOKFIELD	40	67.39%	\$ 2,240.44
0602400001	HENGESTEIG, STEVEN C TRUST	02-99-21	SECTION:02 TOWNSHIP:99 RANGE:21 N 19 A NW SE	18.34	33.46%	\$ 1,112.41
			BROOKFIELD			

Drainage District No. 1- Main Open Ditch

Classification Schedule

PIN	Deedholder	S-T-R	Legal Description	Area (Acres)	Relative Benefit Percentage (%)	Units Assessed (\$)
0601100001	HOLT FARMS LLC	01-99-21	SECTION:01 TOWNSHIP:99 RANGE:21 NW FRL NW BROOKFIELD	1.3	2.45%	\$ 81.45
0601100004	HOLT FARMS LLC	01-99-21	SECTION:01 TOWNSHIP:99 RANGE:21 SE NW BROOKFIELD	18.7	28.28%	\$ 940.20
0602200004	HOLT FARMS LLC	02-99-21	SECTION:02 TOWNSHIP:99 RANGE:21 E 14.06 A OF NW NE EXC PAR BROOKFIELD	8.98	16.22%	\$ 539.25
0602200006	HOLT FARMS LLC	02-99-21	SECTION:02 TOWNSHIP:99 RANGE:21 FRL NE NE EXC PAR BROOKFIELD	14.2	21.34%	\$ 709.47
0707300001	JOHNSON, BRET	07-99-20	7 99 20 NW SW	11.1	9.15%	\$ 304.20
0235400004	JOHNSON, MAURINE ANGELINE & MAURINE A REVOCABLE TRUST	35-100-21	SECTION:35 TOWNSHIP:100 RANGE:21 SW SE HARTLAND	5	7.61%	\$ 253.00
0602200002	JOHNSON, MAURINE ANGELINE & MAURINE A REVOCABLE TRUST	02-99-21	SECTION:02 TOWNSHIP:99 RANGE:21 BROOKFIELD W 29.08 A. NW NE EX. PAR. 445'X350'	23.74	38.35%	\$ 1,274.98
0602100002	LILED AHL, CAROL J REVOCABLE TRUST	02-99-21	2-99-21 NE NW EX. PAR.	2.2	3.20%	\$ 106.39
0603400004	LILED AHL, CAROL J REVOCABLE TRUST	03-99-21	3-99-21 SE SE	11.4	18.68%	\$ 621.03
0603400012	LILED AHL, CAROL J REVOCABLE TRUST	03-99-21	3-99-21 NE SE EX PAR & PAR "B"	10.6	18.72%	\$ 622.36
0611300001	MATHAHS, PATRICK J & NANCY L	11-99-21	11-99-21 NW SW	2.5	4.41%	\$ 146.61
0611300002	MATHAHS, PATRICK J & NANCY L	11-99-21	11-99-21 NE SW	6.8	12.22%	\$ 406.27
0235300005	NELSON, JAMES D REVOCABLE TRUST	35-100-21	SECTION:35 TOWNSHIP:100 RANGE:21 SE SW EXC PAR HARTLAND	0.7	0.99%	\$ 32.91
0602200001	NORTH WESTERN LEASING COMPANY	06-99-21	SECTION:06 TOWNSHIP:99 RANGE:21 PAR IN NW NE BROOKFIELD	0	4.38%	\$ 145.62
0611200002	PRAGOVICH TRUST, ANTHONY F	11-99-21	11 99 21 NE NE	38.48	62.27%	\$ 2,070.22
0611200004	PRAGOVICH TRUST, ANTHONY F	11-99-21	11 99 21 SE NE	14.8	18.60%	\$ 618.37
0612100001	PRAGOVICH TRUST, ANTHONY F	12-99-21	12 99 21 W 1/2 NW NW	19.24	23.80%	\$ 791.25
0602400002	SAVRE, AVIS I	02-99-21	SECTION:02 TOWNSHIP:99 RANGE:21 S 21A NW SE BROOKFIELD	16.89	36.72%	\$ 1,220.79
0612200004	SEVERSON, GENE M & JANET L	12-99-21	12 99 21 N 1/2 NE, NOF DD 1	33.28	73.56%	\$ 2,445.57
0706300004	SEVERSON, GENE M & JANET L	06-99-20	6 99 20 SE SW	3.9	1.60%	\$ 53.19
0611100001	SIME, THE ELAINE CHRISTINE GST EXEMPT TRUST	11-99-21	SECTION:11 TOWNSHIP:99 RANGE:21 NW NW BROOKFIELD	37.5	60.20%	\$ 2,001.41
0611100002	SIME, THE ELAINE CHRISTINE GST EXEMPT TRUST	11-99-21	SECTION:11 TOWNSHIP:99 RANGE:21 NE NW BROOKFIELD	38.49	65.73%	\$ 2,185.26

PIN	Deedholder	S-T-R	Legal Description	Area (Acres)	Relative Benefit Percentage (%)	Units Assessed (\$)
0611100003	SIME, THE ELAINE CHRISTINE GST EXEMPT TRUST	11-99-21	SECTION:11 TOWNSHIP:99 RANGE:21 SW NW BROOKFIELD	32.5	48.85%	\$ 1,624.06
0611100004	SIME, THE ELAINE CHRISTINE GST EXEMPT TRUST	11-99-21	SECTION:11 TOWNSHIP:99 RANGE:21 SE NW BROOKFIELD	40	59.06%	\$ 1,963.51
0602200009	STEHN, ELDORA	02-99-21	2-99-21 PAR. N 1/2 NE	5.3	7.78%	\$ 258.65
0610200006	TENOLD, DANNY	10-99-21	10-99-21 N 1/2 SW NE	0.9	1.19%	\$ 39.56
0610200007	TENOLD, DANNY	10-99-21	10-99-21 N 1/2 SE NE	10.4	14.25%	\$ 473.75
0610200001	TENOLD-MORETZ, BRENDA	10-99-21	10 99 21 NW NE	33.7	61.37%	\$ 2,040.30
0610200003	TENOLD-MORETZ, BRENDA	10-99-21	10 99 21 NE NE	37.51	69.40%	\$ 2,307.27
0602100003	WILLIAMSON, JAMES T & CYNTHIA S	02-99-21	2-99-21 PAR. IN NE NW	0.9	1.10%	\$ 36.57
0602100006	WILLIAMSON, JAMES T & CYNTHIA S	02-99-21	2-99-21 PAR. IN SE NW	0.9	1.48%	\$ 49.20
0612200003	WISTRAND, EDWIN M.	12-99-21	12 99 21 S 7.91 A. SW NE	6.3	6.90%	\$ 229.40
0612200006	WISTRAND, EDWIN M.	12-99-21	12 99 21 S 7.91 A. SE NE	7.64	11.88%	\$ 394.96
0612400001	WISTRAND, EDWIN M.	12-99-21	12 99 21 NW SE	19.7	23.33%	\$ 775.63
0612400002	WISTRAND, EDWIN M.	12-99-21	12 99 21 NE SE	27.6	32.54%	\$ 1,081.82
0601200003	WORTH COUNTY, IOWA	01-99-21	1 99 21 SW NE	6.2	7.56%	\$ 251.34
	WORTH COUNTY SECONDARY ROADS		ROAD RIGHT-OF-WAY	66.9		\$ 4,438.22
Total Acres				1762.28	Total Units Assessed	\$ 100,000.00