

BWSR MN Public Drainage Manual Engineers Outreach Workshop

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MPDM Chapter 4: Viewing and Appraising



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Chapter 4 Structure

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- I. Introduction to Chapter 4
- II. Procedures Requiring Viewing
- III. Appointment of Viewers
- IV. Assessment of Drainage Benefits
 - A. Determining Benefits for Tribal, Government, or Public Lands
 - B. Market-Value Based Benefits
 - C. Charge-Based Benefits
 - D. Protection Benefits
 - E. Benefit Considerations for Certain Projects and Proceedings
- V. Extent of Damages
- VI. Viewers' Report/Property Owners' Report
- VII. Maintaining Benefits Records

Players: Viewers

- Four types of drainage projects require viewers
 - Establishment of new drainage systems
 - Improvements of drainage systems
 - Improvements of outlets; and
 - Establishment of laterals
- Six types of drainage proceedings may also require viewers
 - Redetermination of benefits and damages
 - Repair by resloping ditches, incorporating multistage ditch cross-section, leveling spoil banks, installing erosion controls, or removing trees;
 - Inclusion of property that has not been assessed benefits in a repair;
 - Abandonment of a drainage system
 - Incremental acquisition of grass buffers; and
 - Drainage system transfers
- Viewers also commonly used to recommend an outlet fee under Minn. Stat. § 103E.401 when a person petitions for an outlet

Coordination w/Engineers (Section II)

- Benefits & damages determinations for new drainage systems are covered extensively in Section IV
- Improvement of drainage system (Section II, 2)
 - Viewers and the engineer should discuss benefits that could be received if the existing drainage system would be repaired versus benefits created by the drainage system improvement
 - Benefits associated with the repair are referred to as “separable maintenance” and may be assessed to all benefited lands in the system, while the improvement costs are assessed only to the lands benefited by the improvement
 - The engineer should assist the viewers in identifying the damages that were awarded when the existing drainage system was established and determine the damages beyond those already awarded that will be caused by the improvement
 - With the engineer’s assistance, the viewers determine a value to only the area damaged over and above the damage caused and awarded when the system was originally established

Coordination w/Engineers (Section II)

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- Improvement of outlets (Section II, 3)
 - Remedial proceeding available to landowners downstream of existing or proposed public or private drainage system that is using or will use an existing public drainage system, watercourse, or body of water as its outlet that is causing or will cause overflow
 - Improvement proceedings are limited to one mile downstream; while there is no limit to improvement of outlet proceedings
 - Viewers determine and report benefits to all property benefitting from the improved outlet, including property drained by the existing system or to be drained by a proposed drainage project
 - Key: independent determination of benefits as it is conceivable that lands lying in the upper reaches of the existing or proposed system contributing to the outlet improvement will not benefit from the outlet improvement in the same proportion as they benefit from the establishment of the outletting system

Coordination w/Engineers (Section II)

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- Laterals (Section II, 4)
 - Key: If the area to be drained by the proposed lateral contains land previously assessed benefits to the main system, then the benefit for the lateral can only reflect the improved drainage associated with the lateral
 - If areas benefited by the lateral were not originally assessed, then an outlet fee needs to be determined in addition to the benefits
 - Recommended to redetermine benefits in conjunction with establishment of the lateral so that the lateral is not paying a disproportionate share of future repair costs to the system

Repair Proceedings (Section II)

- Repair by resloping ditches, incorporating multistage ditch cross-sections, leveling spoil banks, installing erosion control, or removing trees (Section II, 6)
 - Engineer defines the area and nature of additional damages outside the area originally damaged or occupied by construction or subsequent improvement of the drainage system
 - Viewers determine damages to the additional area not damaged and awarded compensation in the prior construction
- Inclusion of property not assessed benefits (Section II, 7)
 - If the engineer determines in repair proceedings that property not assessed for benefits has been drained into the system or has otherwise benefited, the engineer shall submit a map with the repair report showing all public and private main ditches and drains that drain into the system, all property affected or otherwise benefited, and the name of the property owners
 - A hearing is held to confirm the engineer's report
 - If confirmed, viewers are appointed to determine benefits

Appointment of Viewers (Section III)

- Procedure (Section III, A) “[T]he drainage authority shall, by order, appoint viewers consisting of three disinterested residents of the state qualified to assess benefits and damages. The drainage authority may establish qualifications for viewers.” Minn. Stat. § 103E.305, subd. 1.
- Viewers commonly appointed after the preliminary hearing, when the detailed survey report is ordered
- Due to the time consuming process, viewers desire to begin duties immediately after appointment
- Strict reading of the drainage code specifies that viewers’ first meeting does not take place until after the engineer’s detailed survey report is filed and that viewers do not begin duties until after first meeting (Minn. Stat. § 103E.305, subds. 2 & 3).
- Viewers should consult frequently with the engineer and determine benefits and damages based on the conditions described in the final survey report, not the conditions anticipated

Public Lands Benefits & Damages (Section IV, A)

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- Federal or Tribal Lands (Section IV, A.1)
 - States and municipalities cannot levy a tax against the federal government or its property without express authorization from Congress
- State Lands or Water Areas Used for Conservation (Section IV, A.2)
 - Requires proper consideration of the value of the area for the purpose it is held or used by the state
 - Minnesota Supreme Court has held that the state may be assessed benefits in an order establishing a system that incorporates a control structure to stabilize the water level of a lake and permit drainage of that portion of the lake when desired by the state for conservation and ecological purposes
- Other State Lands (Section IV, A.3)
 - State owned properties (e.g. state university lands or forfeited lands) must have benefits reported in the same manner as other taxable lands

Public Lands Benefits & Damages ([Section IV, A](#))

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- Consolidated Conservation (Con-Con) Lands ([Section IV, A.4](#))
 - Aitkin, Beltrami, Koochiching, Lake of the Woods, Mahnomen, Marshall, and Roseau counties - state-owned through tax forfeiture
 - Governed by Minn. Stat., ch. 84A; control & administration by DNR
 - If DNR Commissioner finds the proposed project will benefit Con-Con lands for purposes held, DNR may make necessary investigations, surveys, undertake projects for drainage, and cooperate in construction, repair, or improvement undertaken by a county or other public agency
 - DNR Commissioner holds almost total discretion in deciding how much should be paid for assessment of Con-Con lands
- Municipalities ([Section IV, A.5](#))
 - Benefits to property in a municipality must bear burden of cost of a drainage project in the same proportion as other benefited property
 - Benefits may be charged against individual parcels or as a lump sum to the municipality
 - Benefits to a water management authority awarded similar to a municipality ([Section IV, A.6](#))

Public Lands Benefits & Damages (Section IV, A)

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- Public roads (Section IV, A.7)
 - Improved drainage and stability of the road embankment and reduced flooding reduces road maintenance and improves road usability
 - General consensus is that there is a lack of uniformity across the state on how to determine benefits to roads
 - May consider the improvement or betterment of the highway by reason of the construction of bridges provided in the engineer's plans and specifications as a benefit
 - Damages may be awarded for the cost of construction and maintenance of bridges required by the engineer's plans
- Railways and other utilities (Section IV, A.8)
 - Similar considerations for railways as for roads

Public Lands Benefits & Damages (Section IV, A)

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Market-Value Based Benefits (Section IV, B)

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- Chapter 103E provides little textual guidance in how benefits are determined
- Market-Value Based methods justify assessments based on an increase in the market value of property caused by the project
 - An increase in the current market value of property;
 - An increase in the potential for agricultural production; or
 - An increased value of property as a result of a different land use
- Flat-rate assessments violated 103E.315, subd. 5(a) and state and federal constitutional provisions
- Market-Value Based Benefits require a determination greater than that the land is in the watershed of the drain - Seidlitz
- Wetlands and conservation lands may also provide a limitation to determining an increase in the market value of land

Charge Based Benefits (Section IV, C)

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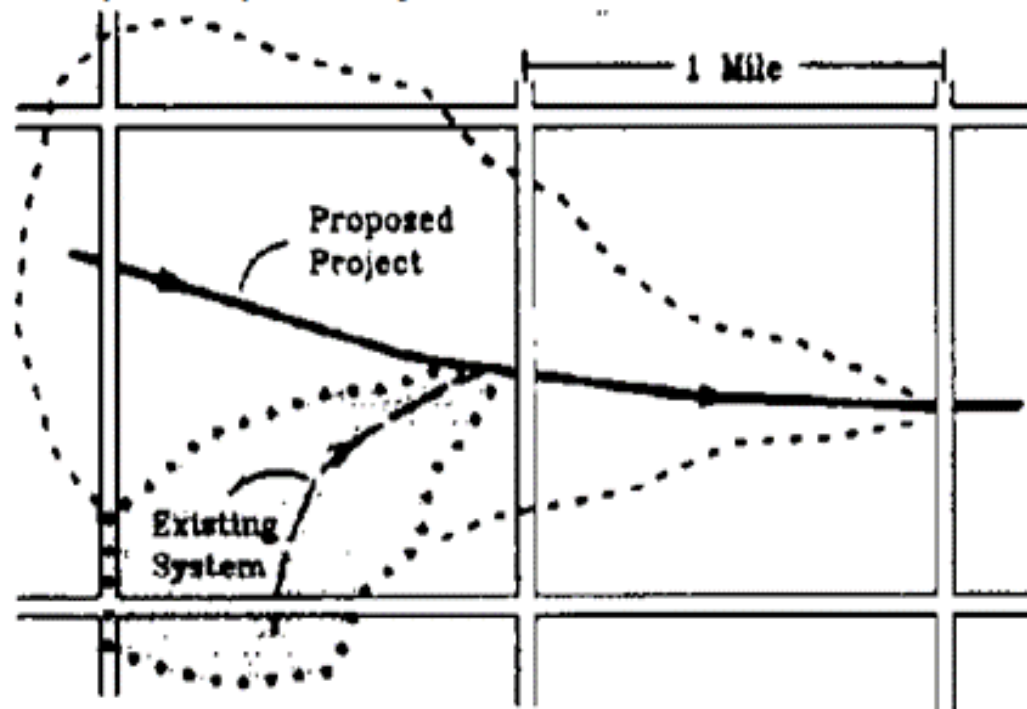
- Authority for charge-based benefits found in 103E.315, subds. 6 & 7
- Historically assessed based upon calculation of a charge to the upstream system based on the burden that the upstream system placed on the drainage system downstream
- These benefits are not limited by an incremental increase in market value
- Applicable situation must be for “increased sedimentation” or “because the natural drainage on the property has been altered or modified to accelerate the drainage of water from the property”
- Because Charge-Based authority requires a finding of use or benefit from increased sedimentation or accelerated water caused by altered or modified drainage, viewers and drainage authorities using this authority should seek consultation from an engineer and a lawyer
- Example: landowner improved her property with drain tile and cast those waters as burden upon downstream landowners in the watershed. After the private drainage, a drainage system is constructed through the watershed. Private tile increased the rate and volume of water flow from their land toward the drainage system, and the drainage system now serves as an outlet for those waters that previously caused damage to downstream landowners.

Charge Based Benefits (Section IV, C)

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- Benefits to proposed drainage system as an outlet (Section IV, C.1)

Example: Sample County Ditch Number 3



Total Project Length	2 miles
Length of Proposed Project Used as Outlet	1 mile
Total Watershed	1,000 acres
Existing System Watershed	250 acres
Benefit Determination:	
Existing/Proposed Drainage Area Ratio	$250/1000 = 25\%$
Percent of Proposed Used as Outlet	$1 \text{ mile}/2 \text{ miles} = 50\%$

Charge Based Benefits (Section IV, C)

Soil Loss	5 tons/acre/year
Soil Weight	125 lbs/ ft. ³
Percent of Sediment Retained in System	5%
Project Life	25 years
Step One:	
5 tons/acre/year x 2,000 lbs/ton =	10,000 lbs/acre/year
10,000 lbs/acre/year =	80 ft. ³ /acre/year
Step Two:	
80 ft. ³ /acre/year x 5% =	4 ft. ³ /acre/year
4 ft.³ per acre, per year of eroded soil is retained in the system.	
Step Three:	
4 ft. ³ /acre/year x 25 years =	100 ft. ³ /acre
100 ft. ³ /acre + 27 ft. ³ / yds. ³ =	3.7 yds. ³
Step Four:	
3.7 yds. ³ at an estimated removal cost of \$2.00/ yd. ³ amounts to \$7.40 per acre of cost.	

- Benefits for existing system that increases sedimentation in downstream areas of the watershed (Section IV, C.2)

Charge Based Benefits (Section IV, C)

Redetermination of Benefits:	
Watershed is 1,000 acres with a 100 acre water management area (WMA) that is comprised of 30 acres of wetlands and 70 acres of native prairie grassland.	
Watershed Size	1,000 acres
Wetlands Assessed in Previous Proceeding	270 acres
Design Rainfall	3 inches
Ditch Length	1 mile
"Without" Accelerated Drainage Discharge	163 ft. ³ /second
"With" Accelerated Drainage (Full row crops on 900 acres within watershed)	260 ft. ³ /second
Step One - Design the Ditch for "Without" Accelerated Drainage Condition:	
163 ft. ³ /second	
4 ft. bottom	
2:1 side slopes	
5.2 ft. depth required	
14,670 yd. ³ @ \$1.50/yd. ³	\$22,005
Step Two - Design the Ditch for "With" Accelerated Drainage Condition:	
260 ft. ³ /second	
4 ft. bottom	
2:1 side slopes	
6.2 ft. depth required	
20,730 yd. ³ @ \$1.50/yd. ³	\$31,095
Step Three - Determine the Added Ditch Cost for Accelerated Drainage Condition:	
\$31,095 - \$22,005 =	\$9,090
"Step Four - Determine the Cost per Acre for the 900 Acres in the Watershed that have been Altered to Accelerate Drainage:"	
\$9,090 / 900 acres =	\$10.10/acre

- Benefits for existing system that accelerates natural drainage (Section IV, C.3)

Protection Benefits (Section IV, D)

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- Diversion of flood waters away from property can also be deemed a benefit to a drainage system project
- Property protected from a flood risk is valued higher in the marketplace than property subject to flooding damages
- Drainage authorities have the power and corresponding responsibility to control flood waters
- Court of Appeals has held that the diversion of flood waters is within the plain meaning of the word "benefit" - City of Olivia v. Renville Cnty. Bd. of Comm'rs (Minn. Ct. App. 2006)

Questions / Panel Discussion

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