

Cass County Soil Conservation District

Long Range Plan: updated 2025

Recognizing the Cass County Soil Conservation District is a governmental subdivision of the State Of North Dakota organized under law to exercise public powers in the conservation of soil and water resources, and to carry out the powers conferred upon the District Supervisors under the provisions of North Dakota Laws, the Supervisors hereby adopt this Long Range Plan for the prevention and control of soil erosion, soil and water conservation and land use covering all land within the Cass County Soil Conservation District at a meeting date August 19, 2025.

Chairman Warren Solberg



Vice Chairman Terry Hoffmann



Brad Kellerman



Jan Russell



Tyler Zimmerman



PURPOSE

The purpose of this plan is to provide long-range considerations to be used for the development of annual plans of work, which will result in the wise use of resources within Cass County. The plan was developed to provide guidance to the following:

- Natural Resources Conservation Service
- Farm Service Agency
- Cooperative Extension Service
- North Dakota State Soil Conservation Committee
- North Dakota State Health Department
- North Dakota Game and Fish Department
- Cass County Commission
- Cass County Park Board
- Cass County Joint Water Resource District
- State Water Commission
- River Keepers
- United Prairie Foundation

All township Boards within Cass County and all other agencies and groups interested in the conservation of soil, water and related resources within the Cass County Soil Conservation District.

This plan is intended to coordinate conservation efforts within the District and to avoid duplication of conservation activities for increased efficiency and accomplishments.

FORWARD

The Cass County Soil Conservation District Long Range Plan is a guide to assist the District Supervisors and other interested parties with the overall conservation of natural resources within the county. This Long-Range Plan was prepared by the Board of Supervisors with the assistance from numerous individuals, groups, local, state, and federal agencies. Special assistance and input were provided by personnel from the Natural Resources Conservation Service, Cass County Extension Service, Farm Service Agency, and the North Dakota Department of Game and Fish.

Section I: Describes the responsibilities, purpose, authorization, and overall operation of the District programs by the governing body.

Section II: General description of the county.

Section III: Outlines the land use and ownership pattern existing in the county.

Section IV: Identifies the resources in the county that are affected by conservation activities.

Section V: Identifies conservation needs, including erosion and sediment control, water resource management, and prime and important agricultural land retention.

Section VI: Outlines the policies, goals, and objectives as adopted by the District Board. These statements provide direction for the development of resources within the District and are listed in priority order.

SECTION I

Responsibilities, purpose, authorization and overall operation:

The Cass County Soil Conservation District is a legal subdivision of the State of North Dakota. Cass County was originally organized into four soil conservation Districts authorized by the North Dakota Soil Conservation District Law enacted in 1937 and as later amended.

The Southeast Cass District was organized February 24, 1944

The Rush River Cass District on February 25, 1944

The Northwest Cass District on December 2, 1946

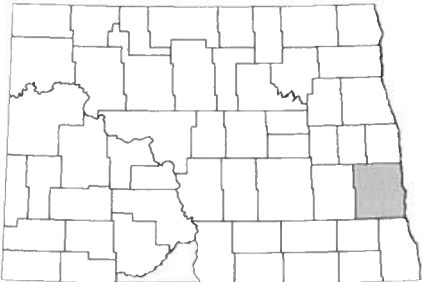
The Maple River Cass District on December 3, 1946

The Maple River and Northwest Cass Districts were combined to form the West Cass District. The Southeast Cass and Rush River Districts were combined to form the East Cass District. The East and West Cass Districts were combined to form the present Cass County Soil Conservation District on October 22, 1974.

The Cass County District includes all land area within Cass County. The District was organized by a vote of the people within the District and is managed by a Board of five Supervisors: of these, three are elected and two appointed.

The Cass County Soil Conservation District is responsible for carrying out programs of soil and water conservation on all lands within the District boundaries. This provides a means for all interested parties to work together in the conservation of natural resources.

Cass County, North Dakota

			Common Land Unit Statistics			
			Farms in County			
			Tracts in County	6,328		
			Farm Operators and Other Tenants	989		
			Tract Owners	3,592		
			All Customers	4,056		
			Cropland Acres	962,348		
			Other Digitized Acres	55,744		
			Polygons in CLU	17,054		
			Common Land Unit data last updated September 26, 2024			
Conservation Data			Base Acres			
Number of Farms with CRP			311	Farms with Base Acres		2,384
Number of CRP Contracts			581	Farms with Bases Reduced to 0		36
CRP Contract Acres			17,349	Fully Based Farms		374
			Total Base Acres		872,366	
Expiration Year	Expiring Contracts	Expiring Acres	Crop	Farms	Acres	Average Yield
2024	49	1,791	SOYBEANS	2,278	454,897	34
2025	43	735	CORN	1,982	282,775	128
2026	40	1,649	WHEAT	1,341	114,623	54
2027	10	352	BARLEY	297	10,912	64
2028	16	315	SUNFLOWERS	239	8,489	1,577
Conservation data current as of January 10, 2025			OATS	67	493	80
Compliance Data			CANOLA	4	105	1,428
Highly Erodible Acres			14,499	PEAS	8	42
Non-Highly Erodible Acres			948,614	SORGHUM	2	16
Wetlands in County			15,609	FLAX	2	14
			14,780	Base data current as of January 10, 2025		
			748	ARC/PLC Participation Summary		
			81	Farms with ARC/PLC Elections		2,399
Top 10 Commodities Reported to FSA			ARC-CO Farms		1,872	
Crop	Farms	Acres	ARC-CO Default Farms		2	
Soybeans	1,491	399,382	ARC-IC Farms		16	
Corn	1,224	320,981	ARC-IC Default Farms		0	
Wheat	421	82,015	PLC Farms		104	
Beans	73	21,039	PLC Default Farms		1	
Honey	1	17,306	Farms with ARC-CO and PLC		404	
Sugar Beets	90	15,851				
Idle	391	12,575				
Sunflowers	63	10,034				
Grass	114	9,076				
Mixed Forage	314	8,865				
CRP acres are not included in reported commodities						
Crops reported for the 2024 Crop Year as of October 07, 2024						

SECTION II

General Description: Cass County is located in the southeastern portion of the state of North Dakota. Fargo, the largest city in North Dakota, is located in Cass County, as are the towns of Casselton, Page, Leonard and numerous smaller communities. Cass County borders Traill, Steele, Barnes, Ransom and Richland counties in North Dakota and Clay and Norman Counties in Minnesota. The 2020 Census showed the population of Cass County to be 184,525, with an estimated growth of 8.9% by 2024 to 200,945.

Topography: The eastern half of the District is in the Red River Valley and is nearly level. The land slopes to the north and east with slopes ranging from a few inches per mile near the Red River to a few feet per mile in the western portion of the valley. The beach lines left by the receding ancient Lake Agassiz are located west of the valley. They form a rather sharp demarcation line between the flat land of the valley and the undulating rolling land predominant in the western part of the District. Natural drainage is provided by Buffalo Creek, Swan Creek, the Maple, Elm, Rush, Sheyenne, Wild Rice, and Red Rivers, and the natural tributaries of these creeks and rivers.

Climate: The District has a sub-humid climate characterized by long, cold winters and short cool summers. The onsets of winter generally occur around the middle of November and below freezing temperatures prevail until April. The average length of the growing season is 128 days. This period extends from May 17 through September 22. Temperature extremes include a low temperature of 42 degrees below zero and a high temperature of 107 degrees. The average annual precipitation is from 19 to 21 inches. Normally 65 to 70% of this total or about 13 to 14 inches, falls as rain during the period of April 1st to August 31st. An average of 30 inches of snow falls in the area during winter months. Occasionally snowfall is accompanied by strong winds resulting in blizzard conditions. Prevailing winds in the District are from the north-northwest.

SECTION III

Land Use and Ownership: The District has a total area of 1,131,520 acres. Of this total, cropland accounts for 1,044,517 acres: 2% is in pasture and hayland, 10% rangeland, and the remaining acres are in urban build-up, rural transportation, railroads, small water areas and sewage lagoons.

According to FSA records, there are 989 farm operators in the District. Approximately 20% of the land is owner-operated. There has been a decline in the livestock numbers in the District, with a majority of the operations being cash-grain enterprises. Irrigation is currently being used on approximately 9292 acres. Principal crops being raised are soybeans, corn, wheat, barley, sugar beets, sunflowers, dry edible beans and oats.

SECTION IV

RESOURCES:

SOILS: The soils in the District were derived from glacial drift. This material was weathered in place where it was left by the retreating ice in the till plain. Melt water also transported and deposited some of the material to the beds of glacial lakes, deltas, or on terraces along glacial streams. It was then sorted to create shoreline deposits and continues to add to deposits on the flood plains of existing water courses. These soils may be classified into four main groups: till soils, lacustrine soils, lake and river terrace soils and river floodplain soils.

The soils in the eastern part of the District are very deep, heavy textured soils that are dominated by clays. They are nearly level to gently sloping and their surface drainage ranges from good to very poor. Centrally located in

the District rare medium to light textured upland soils found in deltas, shoreline beach deposits, and terraces. The soils of the western part of the District range from very deep, medium textured permeable upland and terrace.

The soils of the District were mapped by detailed soil surveys in two parts. The first part, the Tri-County Soil Survey, primarily deals with the beach line and delta area of the District and was completed in 1958. The remainder of the District is included in the Soil Survey of Cass County and was completed in 1982. These two surveys were combined into one survey area in 2005. Any further inquiry about soils should be directed to the Web Soil Survey (<http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>).

WATER: The water concerns in Cass County are drainage of the surface water and water quality. The flat topography of the Red River Valley creates a situation of very slow natural water flow. The practice of constructing drainage ditches to speed the rate of flow has greatly influenced the agricultural production of Cass County. The majority of the large legal drains were constructed during the period of 1900 through 1920. During the 1950's and 1960's, countless group drains were built with federal conservation cost-sharing funds as well as innumerable individual field drains.

Tile drainage is becoming a common choice of field drainage. Tile is a series of pipes that are placed underground in problem areas of the field, such as: heavy saline areas and wet depressions, not including wetlands. The discharge water shall be monitored to protect natural resources downstream of the discharge.

The construction and maintenance of field drains continue today. The regulation of drainage through a permit system administered by the North Dakota State Water Commission, as well as Swampbuster Provisions, has reduced construction of field drains.

Maintenance of these drains is of primary concern at the present time. Silt deposition of these drains by wind and water erosion restricts the water flow and can render drainage ditches useless. Reconstruction is a costly cure to this problem and prevention of wind erosion is the ultimate drain management practice.

Another drain management problem can be the inappropriate discharge of water into the natural and man-made drainage ways of the county. In many instances, the water flow has caused high amounts of erosion and siltation of the streams and rivers. Critical Treatment Areas, including waterways and drop structures, have been used to solve such problems, but many sites needing treatment remain.

Irrigation of field crops, through the use of ground water by center-pivot systems is practiced primarily in Page, ND area. Some irrigation is being done by pumping river water through center-pivot systems, but the majority of irrigation is aquifer water. For further information regarding ground water, contact the NDSU Extension Service, State Water Commission, and the State Health Department.

WILDLIFE: Wildlife in the District includes deer, Hungarian partridge, pheasant, ducks, geese, and many non-game species of birds and mammals, and fish in the rivers, creeks, and reservoirs. Moose have also been spotted within the District but are not considered substantial species in the area. Small numbers of coyotes are in the District, including in the urban areas. The coyotes are drawn to the abundance of prey in the area. Furbearing animals include red fox, raccoon, mink, beaver, and river otter. Key habitat for deer is the riparian and woodland areas along the rivers and streams, the field and farmstead windbreaks scattered throughout the county, the wildlife management areas, CRP and standing crops. Key habitat for upland birds is the undisturbed grass areas throughout the county, CRP and cropland. Migratory waterfowl benefit from temporary and permanent wetlands, primarily in the western half of the county.

MINERALS: Gravel is the primary mineral found in the District. Natural gas and oil exploration has been conducted but the abundance and potential for these items are unknown at this time.

RECREATION: Many opportunities for recreation exist in the District. There are numerous golf courses and city parks within the cities and towns of the county. The rivers and reservoirs in the county provide opportunities for fishing. Hunting takes place throughout the rural areas.

SECTION V

RESOURCE NEEDS:

EROSION AND SEDIMENT CONTROL: The loss of valuable topsoil through the process of wind and water erosion is a major concern to the people of Cass County. Erosion has many detrimental effects. Soil health and productivity are jeopardized by sustained erosion. Transported topsoil damage areas by covering existing vegetation, plugging field and legal surface water drains, and lowering water quality. Human safety can also be affected due to blocked vision to rural roads. Removal of field windbreaks is resulting in larger field sizes, thus resulting in a greater potential for wind erosion.

WATER RESOURCE MANAGEMENT:

Surface Water and Flooding: One of the water resource management concerns in the District is the safe and equitable disposal of the seasonal surface water. A very large portion of the District is characterized by nearly level to level topography with little or no land slope. The soils in this area are predominately heavy-textured and have very low permeability. Therefore, when stream channels are blocked by ice and snow in the spring, snow-melt water remains on the surface of field for extended periods. Also, if heavy precipitation occurs during the growing season, the numbers of field drains are inadequate to remove the water. In either case, the agricultural production of the area is affected due to shortened growing season or crop damage. Seasonal flooding in cities and building sites also occurs in the District.

Water Quality: Maintaining good water quality is a concern of the District. Ground water and surface water contamination from point and non-point sources should be identified. Alternatives will be given, and measures will be taken to correct the problems.

PRIME AND IMPORTANT FARMLAND RETENTION: The majority of the District is either Prime Agricultural Land, Additional Farmland of State-Wide importance, or Additional Farmland of Local Importance. Due to the food and fiber production capability of this land, potential conversion of these soils must be well planned to avoid taking areas out of production.

PUBLIC INFORMATION AND EDUCATION: It is imperative that the public has an understanding of the conservation needs and conservation projects accomplished within the District. Such an understanding is needed to support a well-rounded conservation program.

WILDLIFE RESOURCE NEEDS: The kind and abundance of wildlife within Cass County largely depends on the amount and destruction of food, cover, shelter, and water. Wildlife needs are steadily increasing due to declining wildlife habitat. Some reasons for this decline in habitat include: urban sprawl, declining farmsteads, loss of grassland habitats, and loss of multi-row field windbreaks.

1. Urban Sprawl: With the increased growth of Fargo and West Fargo, habitat along the Red River, Sheyenne River and Rose Coulee is steadily deteriorating, thus forcing wildlife out of the riparian corridor.
2. Declining Farmsteads: Abandoned farmsteads, along with associated farmstead windbreaks are being converted to cropland.

3. Loss of Multi-Row field windbreaks: Numerous field windbreaks are being removed because of disease, maturity and intensified high residue cropping rotation. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

RECREATION RESOURCE NEEDS: Recreational needs will continue to grow within the county due to an increasing population. Because of limited access, there is a need to establish parks and greenways along the Red River, Sheyenne River and rural communities within the county.

SECTION VI

AGRICULTURAL LAND USE:

Policy: Agricultural land capabilities, potential and limitations are dependent on the soils and soil related resources. Conservation plans and soil surveys identify these capabilities and limitations and therefore, should be the basis for wise agriculture land use.

Goal: To provide for new planning or the revision of existing plans.

CROPLAND OBJECTIVES:

1. Encourages all operators to use the Web Soil Survey as a basis for determining potential cropland usage. Also, to provide educational opportunities in the use of the soil surveys.
2. Encourage operators to plant field windbreaks to provide adequate protection for cropland and to renovate existing field windbreaks.
3. Encourage all operators to seed marginal and sub-marginal cropland to permanent vegetation.
4. Encourage all operators to use the best management practices available to decrease non-point source pollution and increase water quality.

RETENTION OF PRIME AND IMPORTANT FARMLAND

Policy: Encroachment of agricultural land should be monitored for efficient use during urban expansion.

Goal: To provide soils information on prime and important farmland to city and township planners for the use in making development and/or zoning decisions.

OBJECTIVES:

1. Encourage land developers to use Web Soil Survey for the location of development areas.
2. Assist developers to efficiently use all space within the boundaries of development.
3. Assist city and township planners in developing their zoning ordinances as requested.

GRASSLAND OBJECTIVES:

1. Encourage all operators who use pastures to maintain the grasses for sustained land protection as well as sustained production.
2. Encourage livestock operators to establish sufficient pastures to carry their planned livestock amounts.

OTHER LAND OBJECTIVES:

1. Encourage operators to plan and establish farmstead/feedlot windbreaks to provide adequate protection for headquarters areas.
2. Encourage all operators to use the best management conservation practices available to decrease non-point pollution and increase water quality.

WATER MANAGEMENT:

Policy: The Cass County Soil Conservation District, through the Cooperative Working Agreement with the Natural Resources Conservation Service, will provide technical assistance, within capability, to all individuals and/or groups with special emphasis on small projects for the Water Resource districts in the county for wise water management.

Goal: To ensure equitable surface and ground water management within the bounds of the North Dakota Rules and Regulations governing water.

OBJECTIVES:

1. Assist individuals and/or groups to develop and maintain field, group and legal drains for safe water disposal.
2. Encourage all irrigators to operate their systems at the highest efficiency possible.
3. Assist individuals and/or groups to plan and establish a Critical Treatment Area for non-erosive surface water management.
4. Promote and encourage the installation of conservation buffers.

EDUCATION AND INFORMATION:

Policy: Cass County Soil Conservation District supports educational and informational programs that conveys a basic understanding of the need for natural resource conservation.

Goal: Develop educational and informational programs through various parts of the District's programs.

OBJECTIVES:

1. Meet with local news media and outline an informational program to be carried regularly for the widest distribution possible.
2. Meet with school administrations to discuss the possibility of outdoor classrooms and conservation education curriculum.
3. Coordinate informational programs with all cooperating agencies.
4. Sponsor meetings on subjects of immediate importance to local people.
5. Discuss District happenings with commissioners, planning boards, and other local groups.
6. Develop educational programs to be used with groups such as 4-H Clubs, Boy Scouts, Girl Scouts, wildlife clubs, and community service clubs.
7. Keep Cass County residents informed of District activities.

RECREATION AND WILDLIFE

Policy: Assist the citizens of Cass County in the preservation of our soils, water, recreation, and wildlife resources: thereby ensuring the quality of the environment and economic base of the county.

Goal: To provide information and technical assistance to all parties interested in establishing, improving or maintaining recreation and wildlife areas.

OBJECTIVES:

1. Promote recreation and wildlife development during normal follow-up meetings with operators, groups and organizations.
2. Assist ND game & Fish Department to promote their Habitat Establishment Programs.
3. Make tree stock available to park boards, youth organizations and interested groups for recreation and wildlife development.

CONSERVATION RESEARCH

Policy: The District supports research projects for the advancement of conservation technology.

Goal: To provide additional knowledge and up-to-date technical information to all landowners and operators within the District for increased protection of the soil and related resources of the District.

OBJECTIVES:

1. Promote high residue crop research.
2. Keep informed of new conservation technology.
3. Support research concerning new tree species for conservation purposes.
4. Support research efforts related to bank stability, such as bioengineering.

URBAN, INDUSTRIAL AND NEWLY DEVELOPED AREAS:

Policy: Support natural resource protection on all urban, industrial and newly developed areas.

Goal: To ensure adequate protection of resources in these areas through the use and promotion of soil, water, and related resource protection techniques.

OBJECTIVES:

1. Educate landowners, residents, and organizational partners of local resource issues and mitigation techniques.
2. Inform developers, landowners, and residents of the potential and limitations of our soils and other resource issues affecting development areas.
3. Support the efficient use of agricultural land as it is converted to urban and commercial use.
4. Support programs and services aimed at improving the quality of life for inhabitants of the District.