Minnesota Forest Resources Council

FOREST RESOURCE MANAGEMENT IN EAST CENTRAL MINNESOTA

A LANDSCAPE PERSPECTIVE

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FOREST RESOURCE MANAGEMENT IN EAST CENTRAL MINNESOTA

A LANDSCAPE PERSPECTIVE

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EXECUTIVE SUMMARY

The Minnesota Forest Resources Council was established in 1995 by the Minnesota Legislature to provide advice to public and private organizations on forest sustainability issues. As used in this report, an issue is a concern based on current information and people's values that relate to a problem or focus area addressed by forest resource reports. A vision refers to a future desired condition for an area 100 years or more in the future. Goals are specific benchmarks to strive towards in addressing visions and resolving issues. Goals are detailed and assist in developing strategies, which are specific tools and techniques to accomplish goals and move toward achieving visions.

This Landscape Perspective report was developed from a compilation of existing planning documents from stakeholder groups in East-Central Minnesota. Local units of government, agencies, and groups were contacted by mail and telephone in order to collect forest resource planning documents. Twenty-one documents were received and reviewed. References in each document concerning forest resource issues, visions, goals and strategies were summarized. Eight prominent vision themes were identified from the summaries, and are presented with their respective goals and strategies.

Based on the similar visions, goals, and strategies, a set of common themes was developed as a template to provide guidance to agencies and individuals utilizing this report. The information in this report can be used to assist groups in coordinated landscape management of forest resources. The ideas presented are meant as a preliminary guide for developing specific goals and strategies to implement landscape planning in the East Central region of Minnesota. The ideas will be modified and refined as implementation and coordination occurs.

The next section gives an introduction to the focus area, then the methods used to collect the data, followed by the landscape perspective summary of the data. Lastly, the summaries of the individual reports are presented.

1. Balance Growth with Resource Protection
2. Improved Water Quality
3. Coordination of Efforts for Management and Enforcement
4. Enhanced Wildlife Habitat and Wildlife Populations
5. Assist landowner and the general public in making informed management decisions through education and incentive program
6. Forest Stand Improvement and Health
7. Improved Forest Productivity and Regeneration
8. Diversities of Forests, Plants and Ecosystems

INTRODUCTION

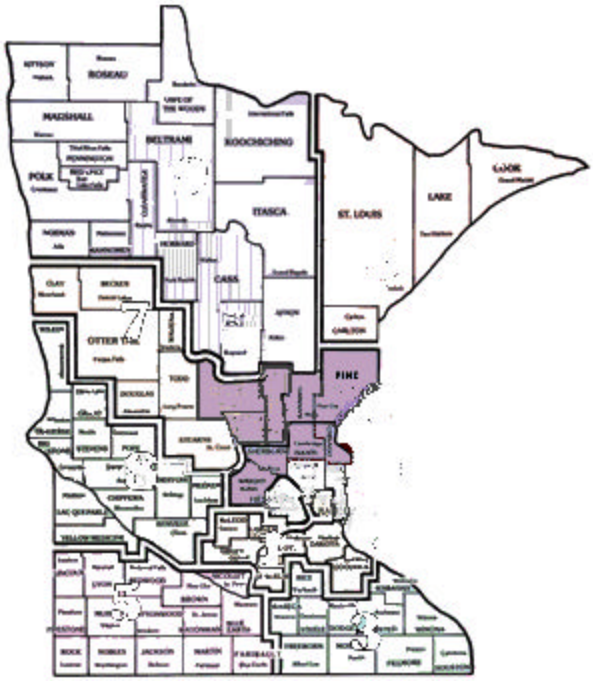
In 1995, the Minnesota Legislature enacted the Sustainable Forest Resources Act (89A). Out of this Act, the Minnesota Forest Resources Council was established to provide advice to the Governor, Legislature and management agencies on forest sustainability issues. Under the Council's direction, the Act established the Landscape Program to "enable long-range strategic planning and coordination to occur, to the extent possible, across all forested regions of the state and across all ownerships" (Minnesota Statutes Chapter 89A.06). This is a voluntary program designed to develop a broad vision of forest sustainability along with goals and strategies to help move in that direction. The planning must recognize existing planning processes and identify a general process that fits with other landscape-based forest resource plans.

At the beginning of 2004, work began in formulating a broad statement of desired future conditions (visions), key issues, goals, and strategies for the East Central region of Minnesota (Figure 1). That effort started with the formation of a landscape committee with a diverse representation of the area that met to identify and discuss issues and opportunities. The Council is contributing to and complementing this work by developing this Landscape Perspective report that provides issues, visions, goals, and strategies for the East Central region.

SETTING

The region covers the nine counties that lie just north of the metro area. The area is easily accessible from the Twin Cities with its framework of major highways and Interstate 35 running through the landscape. The counties included are Benton, Morrison, Mille Lacs, Kanabec, Pine, Sherburne, Wright, Isanti, and Chisago. Four of the counties listed above are among the top 100 fastest growing counties in the nation, according to the Census Bureau's list that was recently released.

Figure 1. Map of MN Forest Resources Council's east central landscape



METHODS AND DEFINITIONS

The main objective of this report is to highlight the landscape issues, visions, goals, and strategies presented in forest resource management and planning documents for Eastern Central Minnesota. As this is a qualitative summary that involves a great deal of categorization, the authors used the following definitions to minimize bias in classifying the data into these four components.

- Issues

An issue is a concern based on current information and peoples' values. It relates to a problem or focus area that the forest resources report addresses. It may be a general idea, "there is not enough wildlife", or very specific, "native tree species in this county are ten times below their historic range". Issues assist in developing a vision.

- Visions

A vision is a look into the future. In landscape planning, a vision refers to future conditions of an area in 100 years or greater. It often is very vague, yet helps managers and stakeholders come to agreement and begin to develop goals. To continue from the examples above, some visions might be to "conserve biodiversity" and "promote regeneration of forestlands."

- Goals

Goals are specific benchmarks that strive toward addressing the vision and resolving the issues. Goals often look in the near future, 10 to 20 years from now. Goals are detailed and assist in developing strategies that address the vision. Given the example above, some goals may be to "limit development within environmental corridors to promote biodiversity" and "increase occurrence of native tree species by 30 percent"

- Strategies

Strategies are methods to accomplish goals and move toward achieving a vision. They provide land managers with tools and techniques to accomplish goals. Landowners often use only strategies that apply to their land. Examples of strategies would be "use direct seeding methods on sites suitable for native plant species" and "reduce high grading of trees and if possible increase natural regeneration through appropriate silvicultural methods". It is important to note that not all strategies apply to all land managers because of their specific nature. Strategies may require particular site characteristics, resources, or land manager objectives in order for implementation to be successful.

In order to fulfill the objectives of the study, forest and related resource management and planning documents were gathered from stakeholder groups in the region. Appendix A is a copy of the memo sent to numerous agencies and groups requesting plans relating to forest resources. Groups who did not reply to the memo were also contacted via phone. Twenty-one documents were reviewed and summarized for this draft perspective.

Each document was reviewed and summarized according to the four categories defined above. These summaries are presented at the end of the next chapter in the section, Management and Planning Report Summaries. After all twenty-one documents were reviewed and summarized, they were examined for common visions and issues. Eight main visions were identified based on their presence in multiple reports. Following these visions were the corresponding goals taken from the

individual summaries. In many cases, goals apply to more than one vision theme, and thus were included under multiple visions. Lastly, strategies presented in the various documents were listed under the goal in which they were most closely related to.

It is important to note that the focus of this study was on forest resources. As defined in Minnesota statute, forest resources are those natural assets of forest lands, including timber and other forest crops; biological diversity; recreation; fish and wildlife habitat; wilderness; rare and distinctive flora and fauna; air; water; soil; and educational, aesthetic, and historic values. Dominant themes in many of the documents were related to agriculture and water resources. However, only those references relating to forest resources were used in developing the landscape perspective.

The contents of this report are meant to serve as a preliminary guide for landscape planning and coordination. As planning and implementation progresses, many of the components present will likely be refined and regrouped as is seen fit.

LANDSCAPE PERSPECTIVE SUMMARY

The management and planning documents that were reviewed and summarized are numbered below. Under each vision theme, documents are referenced based upon their number in this list. The main issues that were emphasized in these documents have been compiled below in random order. The visions, goals, and strategies discussed later relate to these core issues. A comprehensive common theme statement was prepared as a template to provide guidance to agencies and individuals utilizing this report. The common theme statement is merely an example based upon the authors' interpretations of the summarized reports.

DOCUMENTS SUMMARIZED

1. The Forest Legacy Program in Minnesota, Statewide Assessment of Need, 1999
2. The Mille Lacs Uplands, Glacial Lake Superior Plain, and St. Croix Moraines Ecological Classification System Subsections in Minnesota, Subsection Forest Resource Management Plan, Step 3—Draft, 2003
3. Upper Mississippi River Basin Water Quality Plan, Headwaters to the Rum River-Anoka Draft,
4. Nongame Wildlife Program, 10-Year Strategy, June 2002-July 2012
5. Prairie-Forest Border Ecoregion: A Conservation Plan
6. Wetlands Guidance for the Anoka Sand Plain, 2000
7. Camp Ripley Forest Management Plan, 2002
8. A Management Plan for Lake Maria State Park, 1979
9. A Management Plan for Interstate State Park, 1979
10. Isanti County Comprehensive Local Water Plan, 2000
11. Isanti County Comprehensive Plan, 1998
12. Morrison County Water Plan, 2002
13. Kanabec County Comprehensive Local Water Plan, 2001
14. County of Mille Lacs Comprehensive Plan, 1990
15. Benton County Comprehensive Plan, 1999
16. Wright County Land Use Plan, 1988
17. Sherburne County Comprehensive Water Management Plan, 2001
18. Sherburne County Comprehensive Land Use Plan, 1992
19. Chisago County Comprehensive Guide Plan, 1995
20. Plan for the Management of Pine County Tax-Forfeited Lands, 1994
21. Pine County Comprehensive Plan, 1993

ISSUES

1. Impacted water quality
2. Forest regeneration
3. Soil erosion and sedimentation
4. Growth management
5. Native vegetation
6. Need for coordinated management and enforcement efforts
7. Timber stand improvement
8. Habitat loss and fragmentation
9. Loss of wildlife and vegetation biodiversity
10. Exotic species, diseases and pest outbreaks
11. Environmental awareness and public participation
12. Wildlife populations

COMMON THEMES

Much development has occurred in the East Central region of Minnesota. Protection of forest resources, open spaces and water resources will become more of a challenge as residential, commercial, agricultural and industrial development continues. Growth planning should emphasize proactive growth that minimizes the impact on these valuable resources.

Along with growth, there comes an increasing demand for water resources that meet the quality and quantity needs of the region's residents. The presence of vegetative cover along riparian areas assists in preventing erosion and sedimentation into surface waters. Buffer zones are present to aid in reducing contamination by runoff. Forestry operations implement measures to prevent impacts on water quality.

A variety of programs exist to assist landowners and managers in protecting forestlands and associated resources, through easements, incentives and cost-share programs. Programs with an education element assist landowners in making the best management decisions for their lands when conducting harvest practices or conservation practices. Many opportunities are available for people to get involved and become aware of the value of lands and how to monitor and identify when issues arise, as well as what action steps to pursue.

When efforts are combined; education, management and restoration efforts become more efficient. This ensures a diverse information and strategy base to reference when making decisions or enforcing regulations. In addition, this ensures no duplication of efforts.

Wildlife populations and habitat are enhanced through proper management of forestland and wetlands. A productive, healthy forest contains increased biological and structural diversity. The benefits of regeneration, especially of natural communities that are free from invasive species and diseases are maximized.

The following is a list of the eight themes that were derived from the inventory and synthesis:

1. Balance Growth with Resource Protection
2. Improved Water Quality
3. Coordination of Efforts for Management and Enforcement
4. Enhanced Wildlife Habitat and Wildlife Populations
5. Assist landowner and the general public in making informed management decisions through education and incentive program
6. Forest Stand Improvement and Health
7. Improved Forest Productivity and Regeneration
8. Diversities of Forests, Plants and Ecosystems

VISIONS, GOALS, AND STRATEGIES

In this section the eight prominent vision themes are highlighted, followed by numbers of the corresponding documents that dealt with each vision. The visions are presented in order based upon the number of documents that referenced each particular theme i.e. the first vision was referenced by the greatest number of documents. Below each vision are specific goals from the document summaries that concern this topic. The goals are listed in random order, with specific strategies immediately following each goal. The documents that contained each specific goal are referred to in parentheses.

1 BALANCE GROWTH WITH RESOURCE PROTECTION

(1,5,6,10,11,12,14,15,16,18,19,21)

Goal: Establish strategies for growth management (10,11,14,15,16,18,19)

¨ **Strategies**

- ✓ Work with the cities of Cambridge and Isanti to create a plan for an urban transition area between the cities' boundaries for facilitating future transportation corridors, open spaces and preservation of natural resources
- ✓ Review all ordinances to ensure that they promote orderly and efficient growth
- ✓ The county will maintain separation of incompatible land uses using the County Land Use and Zoning Maps
- ✓ The county will enforce the County Land Use Plan in a clear and consistent manner
- ✓ Avoid duplication of services and facilities at the government levels of schools, cities, townships, county and state
- ✓ The density of rural development will be kept low in order to protect groundwater from septic tank pollution, and protect woodlands, wetlands and other natural features
- ✓ Woodlands, steep slopes, and other environmentally sensitive areas will be protected. Development in these areas may require setbacks or larger lot sizes.
- ✓ Establish overlay districts with additional restrictions for development in areas such as rivers, lakes, wetlands, state forests and areas near Carlos Avery Wildlife Management Area.
- ✓ Prohibit new development on floodplains, steep slopes, wetlands and other sensitive areas
- ✓ Commercial and industrial development is encouraged on appropriate sites but not to the extent of causing adverse effects to the county's economic or environmental resources
- ✓ Encourage Planned Unit Developments (PUD) (clustered housing) as part of the strategy to conserve farm and forest lands; they are more energy efficient and require less services and roadways

Goal: Preserve rural areas (8,11)/Goal: Protect large intact forest areas that are threatened from conversion to non-forest uses. (1)

¨ **Strategies**

- ✓ Concentrate protection of large blocks of forest where there is rapid population growth (12 or more percent between 1990 and 1996)
- ✓ Focus on priority areas such as locations in the state where large (500+ acres) continuous blocks of forest remain

- ✓ Focus on priority areas containing high biodiversity or existing protected areas.
- ✓ Activate these candidate areas so that Forest Legacy projects can be undertaken
- ✓ Work with landowners to protect large tracts of land by transferring them to another tract of land with the Transfer of Development Rights (TDR) option
- ✓ Support the development of land use policies and implementation tools that discourage undesirable fragmented property ownership patterns

Goal: To rely on organizations which have experience with protection programs and easements (1)

¨ **Strategies**

- ✓ Focus the combined resources of groups that have a general interest in preventing the loss of forests and fragmentation in Minnesota due to the spread of development.
- ✓ The Forest Stewardship Committee will provide oversight by helping to establish the priority of individual tracts of land and by providing guidance.

1. **Improved Water Quality** (3,6,8,9,10,12,13,15,17,18,19)

Goal: Minimize impact to water quality from forest operations (2)

¨ **Strategies**

- ✓ Observe the forestry Best Management Practices to reduce pollution and erosion, and increase wildlife habitat and forest production
- ✓ Establish regulations restricting the clear cutting of woodland areas
- ✓ Access routes and landings should be specified and pre-approved on the permit before sale
- ✓ Publish the terms and conditions of timber sales explaining the time limits for removal and post harvest treatment

Goal: Reduce erosion and sedimentation (8,9)

¨ **Strategies**

- ✓ Minimize erosion through riprap placed in the stream channel, less frequent mowings of the former campground, replacement of dead trees that are removed and maintaining vegetative ground cover.
- ✓ Prohibit new development on floodplains, steep slopes, wetlands and other sensitive areas
- ✓ The county may require an erosion control plan that provides preventive measures for erosion and sedimentation on proposed developments
- ✓ County to encourage farmers to use Best Management Practices to reduce erosion and groundwater contamination
- ✓ Where possible, implement streambank and shoreline protection where accelerated erosion is occurring.

Goal: Control runoff and manage stormwater (3)

¨ **Strategies**

- ✓ New development shall not cause an increase in predevelopment runoff levels
- ✓ Educate landowners on implementation of fertilizer BMPs where their runoff might affect lakes and streams
- ✓ Before allowing runoff to enter a wetland, require ponds and "pretreatment wetlands" designed for stormwater management
- ✓ Upon adoption of the Federal Storm Water Program, work with local units of government to develop programs and timelines

Goal: Advise the public on management actions and programs for improving water quality (13)

¨ **Strategies**

- ✓ Assist small lot landowners in establishing native vegetation buffer strips on lakeshore and streambanks
- ✓ Increase participation in the Conservation Reserve Program and Reinvest in Minnesota (RIM) for riparian land and on highly erodible soils
- ✓ Develop individual management plans for landowners in riparian areas
- ✓ Work with landowners to implement BMPs that reduce erosion such as vegetated cover, conservation tillage, water diversions and sedimentation basins.

- ✓ Provide technical and financial assistance to landowners with high priority water resource impact sites to help them better design, construct, and maintain improvements on their property

Goal: Increase protection of water quality through vegetated cover and riparian buffers (17)

¨ **Strategies**

- ✓ Implement the shoreland vegetation program on an annual basis. Establish enforcement mechanisms to ensure the retaining and maintaining of vegetation on the awarded sites
- ✓ Recommend and provide assistance on the preservation or installation of buffers along surface water features through applicable conservation programs
- ✓ Enforce drainage codes which require vegetative cover in ditch right of ways.

3. Coordination of Efforts for Management and Enforcement
(3,10,12,13,20,21)

Goal: To work with goals identified by other land managers, agencies, organizations, etc. so as to avoid duplication and create mutual benefits. (2)

¨ **Strategies**

- ✓ The boundaries of each urban expansion area shall be determined by joint agreement of the affected city and townships, otherwise the county will set them
- ✓ Continue cooperative wetland mitigation projects with the highway department
- ✓ Develop and maintain partnerships with wildlife resource specialists to implement goals and plans that benefit wildlife and habitats
- ✓ Encourage farmers who operate feedlots to use Minnesota Pollution Control Agency (MPCA) guidelines to control pollutant hazards
- ✓ County to seek advice from the S.W.C.D. on soil suitability for development proposals
- ✓ Utilize the Snake River Watershed Management Board, the Citizen Advisory Committee and the Technical Advisory Committee for coordination of water plan implementation activities whenever possible
- ✓ Work cooperatively with Chamber of Commerce in promoting environmentally sound business practices

Goal: To create a structure of administrators to implement plans in a comprehensive manner (12,13)

¨ **Strategies**

- ✓ MPCA should increase financial and technical assistance to local areas for implementation and monitoring of surface water
- ✓ DNR should increase financial and technical assistance to local areas to improve shoreland zoning enforcement
- ✓ Continue to support and enhance a coordinated and comprehensive program with partnering agencies for administering and implementing Best Management Practices for forestland in the County including timber harvesting, woodland stewardship and forest legacy programs (MN DNR), farmstead and field windbreaks, hybrid poplar plantations and others as appropriate.
- ✓ In conjunction with the local units of government and environmental groups, establish monitoring sites in high priority watersheds identified that discharge to the Mississippi River directly

Goal: To rely on organizations which have experience with protection programs and easements (1)

¨ **Strategies**

- ✓ Focus the combined resources of groups that have a general interest in preventing the loss of forests and fragmentation in Minnesota due to the spread of development.
- ✓ The Forest Stewardship Committee will provide oversight by helping to establish the priority of individual tracts of land for protection and by providing guidance.
- ✓ Develop cooperative relations with conservation organizations and local school systems.

4. Enhanced Wildlife Habitat and Wildlife Populations (1,4,5,8,9)

Goal: To benefit the wildlife, fish and biodiversity of the area through protection of larger blocks of forest, i. e. prevent fragmentation. (1)

¨ **Strategies**

(See strategies of vision 1 above)

Goal: Monitor and promote increased populations of fish and wildlife (8,9)

¨ **Strategies**

- ✓ Monitor fish populations of the river and stock near the Taylors Falls dam with muskellunge to improve fishing conditions
- ✓ Develop and maintain partnerships with wildlife resource specialists to implement goals and plans that benefit wildlife and habitats
- ✓ Continue monitoring Bjorklund Lake for winterkill and fishing levels and stock it accordingly
- ✓ Protect listed species and priority native nongame resources within the context of natural systems and ecological functions
- ✓ Restore certain listed species through propagation, habitat enhancement and protection programs
- ✓ Support decisions affecting listed wildlife species that arise out of collecting biological and ecological information

Goal: Improve habitat through vegetation management (4,9,17)

¨ **Strategies**

- ✓ Practice selective cutting to open up areas for wildlife and game species habitat and to create more diversity in forest age stands
- ✓ Develop corridors of unbroken habitats
- ✓ Develop programs that support the increase of wildlife habitat on private lands in the County
- ✓ Encourage planting of tree windbreaks and a variety of grasses for habitats
- ✓ In the northern hardwoods area, create 5 wildlife openings that are 1 to 2 acres in size. Sanitation cutting is the only cutting allowed
- ✓ Larger logs should be left on the ground for grouse, dead trees should be left to provide habitat for small animals.
- ✓ Leave most dead trees by marshes to provide habitat for wood ducks and raptors
- ✓ Assess landscape-level habitat conditions and patterns to facilitate conservation
- ✓ Improve the quality and quantity of corridors

5. Assist landowner and the general public in making informed management decisions through education and incentive programs (1,4,2,6)

Goal: To encourage public participation in programs which protect or assist in restoration (6)

¨ **Strategies**

- ✓ Encourage farmers who operate feedlots to use Minnesota Pollution Control Agency (MPCA) guidelines to control pollutant hazards
- ✓ County should insure that residents have access to financial programs and where necessary, adopt those programs that would help achieve this
- ✓ Promote the proper enforcement of wetland mitigation legislation, and landowner efforts in the re-establishment of pre-existing wetlands by utilizing the wetland banking system
- ✓ Encourage resident participation in local decision-making processes
- ✓ Advocate for state-wide or regional funding for land acquisition and tax incentive programs for landowners who take appropriate steps to conserve their property
- ✓ Provide educational opportunities to the public in order for them to make sound nongame wildlife resource decisions and become effective advocates for listed species
- ✓ Assist local groups in conducting prescribed impaired water management practices on the streams, rivers and lakes in the Basin to restore them to standard

Goal: To provide education opportunities for landowners, developers, etc (6,21)

¨ **Strategies**

- ✓ Establish recycling and education programs in Pine Co. along with the East Central Solid Waste Commission
- ✓ Develop and carry out education and information programs on easement programs like CRP and PWP
- ✓ Develop information and education programs to inform public on the value of wetlands

6. Forest Stand Improvement and health (2,7,8,21)

Goal: To achieve an adequate distribution of age classes across the landscape (2,7)

¨ **Strategies**

- ✓ To increase the age class diversity of forest types by harvesting and regenerating some acres of birch, jack pine and oak cover
- ✓ Identify aspen stands for conversion that are high risk due to disease
- ✓ Regeneration harvest of oak cover type composed of long-lived species will be by shelterwood, group selection or patch clearcutting to favor shade-tolerant or long-lived species
- ✓ Increase the proportion of long-lived species types by allowing only small group selection harvests in stands of shorter life species that have shade tolerant longer life specie understories (allowing the understory to take over gradually and harvesting the long-lived species when regeneration of these is expected)

Goal: To move forests to a more ideal patch size distribution (2)

¨ **Strategies**

- ✓ Achieve a more desirable patch size by increasing the proportion of state forestland managed according to uneven-aged management standards.
- ✓ Work to achieve the following distribution of patch sizes: 640+ acres as 10% of lands, 250-639 acres as 15% of land, 100-249 acres as 40% of land, 40-99 acres as 25% of land and <40 acres as 10% of land

Goal: To treat and prevent disease, pest and exotic specie infestations (9)

¨ **Strategies**

- ✓ Foresters should conduct regular field checks for oak wilt
- ✓ To treat the Dutch elm disease, remove all elms and replace with hackberry, oak, maple, basswood and pine, dogwood, sumac, elderberry and raspberry
- ✓ If oak wilt infestation occurs, remove those infected and prevent spread with chemical treatment
- ✓ To provide special permits to the military public for salvage of dead or down trees on an annual basis
- ✓ Assist in monitoring the spread of exotic species and assist in control
- ✓ Research biological control of garlic mustard

Goal: To manage northern hardwood and other cover types for purpose of forest health and habitat (8,9)

¨ **Strategies**

- ✓ Implementing silvicultural techniques for conversion of some aspen, birch and jack pine to communities of long-lived types
- ✓ Maintain long-lived types of cover where disturbances caused a conversion to aspen type
- ✓ Perform passive management i.e. fire suppression and natural selection in open woods, open conifer areas and regions with northern hardwoods
- ✓ Retain red and white pine within oak and the northern hardwoods
- ✓ Regeneration harvest of oak cover type composed of long-lived species will be by shelterwood, group selection or patch clearcutting (1-5 acres) to favor shade-tolerant or long-lived species

7. Improved Forest Productivity and Regeneration (2,7,20,21)

Goal: Encourage sound harvesting practices (2,20)

♦ **Strategies**

- ✓ Observe the forestry Best Management Practices to reduce pollution and erosion, and increase wildlife habitat and forest production
- ✓ Communication between the loggers, timber industry and timber resource managers on safety issues in harvesting operations during adverse weather conditions
- ✓ Schedule timber sales to coincide with seasonal stumpage needs and demands of market
- ✓ Manage forests according to the principles of multiple use and sustained yield
- ✓ Create an inventory of all field operations including site-specific treatment of unique features, or wildlife habitats along with timber sales data.
- ✓ Clearly communicate the procedures and constraints for timber sales and firewood permits, controlled by Camp Ripley and administered by the MN DNR.

Goal: Maximize benefits of regeneration efforts (2)

¨ **Strategies**

- ✓ Document successes and failures in regeneration efforts to avoid duplication
- ✓ Protect grassland/prairies through research into grazing, burning, seeding and tree plantings
- ✓ Practice shelterwood cutting in Big Woods to regenerate oak
- ✓ Lengthen forest stand rotation to allow for better seed production in coniferous stands

Goal: To maintain forestry operations that continue to benefit the local economy for future generations (21)

¨ **Strategies**

- ✓ Seek out and promote expansion of the forest products market
- ✓ Identifying trends in the demand for timber resources

8. Diversity of forests, plants, ecosystems (2,5,6)

Goal: Protecting and enhancing biological and structural diversity (2)

¨ **Strategies**

- ✓ Generate guidelines to ensure the production of oak stands through more intensive improvement cuts, harvest and regeneration practices
- ✓ Put land in wildlife preservation programs to protect endangered or threatened species
- ✓ Balance the forest diversity by maintaining forest composition that was present historically

Goal: To restore areas to native prairie and wetlands (6,8)

¨ **Strategies**

- ✓ Protect grassland/prairies through research into grazing, burning, seeding and tree plantings
- ✓ Protect local rare wetland types: sedge meadows, wet prairies, deep marshes and discharge wetlands like fens and forested wetlands such as northern cedar swamps, black ash swamps and tamarack swamps by discouraging practices such as conversion to deeper wetlands types
- ✓ Conduct research to properly manage hardwoods and prairies
- ✓ Establish native seed farms for use in restoration
- ✓ Discourage trade-offs of draining or filling a wetland in one location and then creating one in another location
- ✓ Identify areas in watersheds where drained wetlands can be restored
- ✓ Promote policies of the Minnesota Wetland Conservation Act
- ✓ Re-grade and landscape Lake Maria State Park using native plant materials if possible
- ✓ When restoring vegetation, collect seeds from the same region, the option is also available to use a "donor" seed bank to obtain seeds, roots, plant parts and nutrients
- ✓ Manage native nongame resources by removing exotic species and disrupting disease and contaminant situations

Goal: To benefit the wildlife, fish and biodiversity of the area through protection of larger blocks of forest (1)

¨ **Strategies**

(See strategies of vision 1 above)

1. THE FOREST LEGACY PROGRAM IN MINNESOTA

Report Source

Source Name	Source Address	Date	Title
Minnesota Department of Natural Resources, Forestry Office U.S.D.A. Forest Service Minnesota Forest Stewardship Committee	St. Paul, MN	1999	The Forest Legacy Program in Minnesota Statewide Assessment of Need

Specific References in Report

Issues

1. Threat of conversion to non-forest uses
2. Benefit to landowner for participation
3. Forest fragmentation
4. Threatened diversity
5. Poor management
6. Unrestrained growth or development

Visions

1. Large intact forest areas are protected.
2. Minnesota's forests will provide for solitude, recreation, sport and relaxation
3. Landowners will continue to have the ability of using their forests in traditional ways while preventing the conversion of the forests to agriculture or residential areas through easements.
4. Forests will contain a variety of forest cover types and animal habitats
5. Forest Legacy areas will be protected from development through cooperative effort of various organizations and the state.

Goals (numbers link to Visions)

1. To protect large threatened areas from conversion to non-forest uses. (1,5)
2. To represent the forest ecosystem's old growth characteristics that were present in the past. (1,4)
3. To have conservation easements and the Forest Legacy Program offer an alternative to outright government ownership of lands. (3)
4. To make the most efficient use of limited dollars by protecting more acres with less effort. (1)
5. Expect that these Legacy areas will still be reasonably priced and that commercial forestry can still be practiced within reason. (3)
6. Recognize opportunity to protect large forest tracts that are threatened by second-home development. (1,3)
7. To rely on organizations which have experience with easements, to focus on donations and bargain sales and to garner federal dollars in order for the FLP to run more efficiently. (5)

8. To prevent all forms of development through easements except those associated with sound management practices. (3)
9. To benefit the wildlife, fish and biodiversity of the FLP area through protection of larger blocks of forest. (4)
10. To follow a process for identifying forests that meet requirements. (1,5)

Strategies (numbers link to Goals)

1. Focus the combined resources of groups that have a general interest in preventing the loss of forests and fragmentation in Minnesota due to the spread of development. (7)
2. The Forest Stewardship Committee will provide oversight by helping to establish the priority of individual tracts of land and by providing guidance. (7,10)
3. Concentrate protection of large blocks of forest where there is rapid population growth (12 or more percent between 1990 and 1996). (1,6,10)
4. Identify threatened areas that meet criteria. (10)
5. Describe and map candidate areas. (1,6,10)
6. Activate these candidate areas so that Forest Legacy projects can be undertaken. (3)
7. The Minnesota Division of Forestry will
    a. Solicit and document public input
    b. Refine the candidate Forest Legacy Area's boundaries
    c. Make formal requests for activation as an official Forest Legacy Area to the Forest Service Northeastern Area Director. (10)
8. Focus on priority areas such as locations in the state where large (500+ acres) continuous blocks of forest remain. (1,4,10)
9. Focus on priority areas containing high biodiversity or existing protected areas. (9,10)
10. Easements purchased with Forest Legacy funds can only be held by the state or another government agency, however, a qualified conservation organization can negotiate the purchase or donation of the easement with the private landowner. (3,7)
11. In any easement of the FLP :
    a. mineral rights will be restricted if they pose a threat to forest values
    b. a Forest Stewardship Plan or similar plan must be completed
    c. the best science and information should be used in management techniques. (3)
12. The FLP will not select candidate areas based on the issues of scenic resources, recreation, threatened or endangered species, riparian areas, cultural resources, economic uses which are non-harvest related or mineral resources. (10)
13. Minnesota will use the statewide Assessment of Need to highlight forestland in danger of being converted to non-forest land uses in the next decade. (10)
14. Conservation organizations will be provided funding from the FLP to pay for activities related to the donation of easements or acquiring interest in land. (7)
15. A higher priority for funding will be available for large tracts for which easements are donated or acquired at a bargain price. (1,7)
16. In the legacy areas of the Lower St. Croix River, Upper St. Croix River, Sherburne County, Mille Lacs Lake and Pine-Carlton County existing development will be excluded from easement. (8)

2. THE MILLE LACS UPLANDS, GLACIAL LAKE SUPERIOR PLAIN, AND ST. CROIX MORAINES, SUBSECTION FOREST RESOURCE MANAGEMENT PLAN

Report Source

Source Name	Source Address	Date	Title
MN Department of Natural Resources Division of Forestry	500 Lafayette Rd. St. Paul, MN 55155	2003	The Mille Lacs Uplands, Glacial Lake Superior Plain, and St. Croix Moraines, Ecological Classification System Subsections in Minnesota, Subsection Forest Resource Management Plan Step 3--Draft

Specific References in Report

Issues

1. Increasing forest productivity
2. Exotic Species
3. Vegetation diversity
4. Age-class imbalance in aspen
5. Use of traditional, (thought of as questionable) vegetation management techniques
6. Concern over most appropriate locations chosen to be managed as (ERF) extended rotation forest versus normal-rotation- harvest age is increased beyond the economic harvest age
7. Concern over most appropriate percentage of forest in the subsection to be managed as (ERF).
8. Old growth forest management
9. Forest regeneration
10. Native vegetation and tree improvement programs
11. Concern over inclusion of native plant community information
12. Current wildlife population management goals as they relate to forest management
13. Insect and disease outbreaks on forest health
14. Fragmented habitat
15. Undesirable road density due to improper coordination and/or planning
16. Balancing preservation and utilization
17. Identifying trends in the demand for timber resources
18. Consistency and/or integration with other agencies' plans in region or past plans of area
19. Incorporating aesthetic concerns outside the realm of (BMP's) Best Management Practices
20. Urban-Forestland interface
21. Integration of plan for MLU with Forest Stewardship Plans for private, non-industrial landowners

Visions

1. Protecting and enhancing biological and structural diversity
2. Adequate distribution of age classes across the landscape.
3. Improving forest productivity.
4. Maintaining forest management options for the future.
5. Participation by the public.
6. Diversity in age and structure with younger and older regenerating forests.
7. Extended Rotation Forests will be located where they will provide the desired timber quality and be maintained as old growth forests.
8. Native plants that were abundant in the past will remain so today.

9. To benefit old forests by maintaining a percentage of state forestland in extended rotation that is appropriate to the landscape.
10. To maximize benefits of forest regeneration efforts.
11. Protection of healthy butternut trees pending the development of resistance to butternut canker.
12. Maintain open landscapes needed for populations of species of management concern.
13. By 2051, composition of forest types will incur a small decrease of Ash and Aspen, with a small increase in Oak and White Cedar and a larger increase in Birch.

Goals (numbers link to Visions)

1. To employ a full range of management options for resource managers to have the tools necessary to choose the most appropriate strategy for a given site. (4)
2. To ensure that ERF's are located in areas to maximize benefits to wildlife, old forests and timber quality. (7)
3. 10% of lands administered by the Divisions of Forestry and Wildlife in the planning area will be managed as older forest. (9)
4. To maintain the area's biological diversity, including a diversity of wildlife habitats by identifying and maintaining native plant communities. (1,6,8)
5. To maintain connections between forested areas. (12)
6. To maximize benefits derived from regeneration efforts. (3, 10)
7. To avoid fragmentation of forested habitats, the introduction of exotic species, and damage to forest roads due to unplanned use. (8,12)
8. To preserve natural areas and old growth forest while maintaining stable harvest levels. (3)
9. To enhance timber productivity and quality and maximize the benefits from inputs. (3)
10. To move forests to a more ideal patch size distribution. (2,6)
11. To manage state forestlands in a manner that minimizes conflicts among landowners and the public while maintaining management options. (4)
12. To reduce the preparation time for Forest Stewardship Plans by displaying information to landowners and planners in a form they can easily use. (5)
13. To work with goals identified by other land managers so as to avoid duplication and create mutual benefits.
14. Realize an increase of White Pine in the subsection by 100% over levels in 2002. (2,3,10,13)
15. Reduction in Aspen cover type by 5% from levels in 2002 through various methods. (2,6,13)
16. Improved regeneration success in White Cedar to realize an increase from levels in 2002. (2,6,10,13,)
17. Increase in Birch cover type by 100 % over levels in 2002 and improved age-class structure. (2,6,10,13)

Strategies (numbers link to Goals)

1. Use native plant community keys for forest management (Field staff will participate in training in the use of native plant community keys beginning 2002). (4)
2. Document successes and failures in regeneration efforts to avoid duplication. (6,13)
3. Follow the DNR Forest Development Manual guidelines for harvesting, site preparation, and artificial regeneration. (6,7,8,13)
4. Use Ecosystem Classification System (ECS) field guides for artificial regeneration projects. (6,13)
5. Focus regeneration efforts on areas that have White Cedar. (6,16)
6. Implement policies within the DNR's White Pine Management Policy. (13,14)
7. Identify native plant species that support the growth of White Cedar. (4,16)
8. Ensure that Birch inclusions are managed for regeneration. (6, 17)
9. Identify aspen stands for conversion that are high risk due to disease. (9,15)
10. Continue the implementation of the butternut harvest moratorium on state lands. (8)
11. Maintain long-lived conifer in hardwood stands as winter cover for wildlife. (4)
12. Work with the Divisions of Ecological Services and Wildlife to identify areas of high biological diversity that are not already protected and work to conserve them. (4,13)
13. Consider including high diversity areas in ERF management areas as appropriate. (2)
14. Identify and maintain connections between large blocks of forestland. (5)
15. Conserve large blocks of mature forest to provide critical habitat such as the red-shouldered hawk nest sites. (4,5,7)
16. Achieve a more desirable patch size by increasing the proportion of state forestland managed according to uneven-aged management standards. (10)
17. Work to achieve the following distribution of patch sizes:
    640+ acres as 10% of lands, 250-639 acres as 15% of land, 100-249 acres as 40% of land, 40-99 acres as 25% of land and <40 acres as 10% of land. (10)
18. Notify DNR resource managers with any changes in wood and non-timber forest product markets. (9,13)
19. Use opportunities as they arise to communicate to the public the risks and benefits about management options.
20. Monitor before and after treatments and use as a learning tool in justifying choices and outcomes. (6)
21. Document management decisions and prescriptions as they are made. (6)
22. Use ECS to identify stands fit for conversion to mixed hardwoods and manage using selective harvest and thinning techniques. (14,15,16,17)
23. Use ECS to identify appropriate sites for introduction of long-lived conifer species. (2,14,15,16,17)
24. Inform adjacent landowners of insect or disease problems on state land and assist them in making informed decisions for the trees on their property. (11,13)
25. Follow the guidelines from forest health specialists with the Division of Forestry in regard to insect and disease outbreaks. (13)
26. Designate stands as ERF that have a variety of age classes. (2)
27. Concentrate ERF in areas that have supported higher proportions of older forests in the past. These areas have experienced disturbances that allow for the development of old-growth. (2,3)
28. Identify highly productive forestlands as ERF to achieve high levels of quality. (2)

3. UPPER MISSISSIPPI WATER QUALITY PLAN-HEADWATERS TO THE RUM RIVER

Report Source

Source Name	Source Address	Date	Title
Minnesota Pollution Control Agency	St. Paul, MN	2003	Upper Mississippi Rive Basin Water Quality Plan-Headwaters to the Rum River-Anoka DRAFT

Specific References in Report

Issues

1. Reduction of flow
2. Removal of vegetation resulting in sedimentation
3. Nutrient rich wastewater
4. Over fertilization on farm lands or other agricultural impacts on water quality
5. Untreated stormwater discharge from urban areas
6. Need for more and better access to monitoring data in order to make land and water management decisions
7. Rapid growth and development in the area: impervious surfaces, runoff, construction

Visions

1. Protect all ORVW's (outstanding resource value waters) in the Upper Mississippi River Basin to protect their unique characteristics.
2. Initiate efforts to restore waters to meet water quality standards resulting in the removal from the impaired waters designation
3. Identify and classify surface waters that need additional protection in the Upper Mississippi River Basin.
4. Establish a long-term Basin monitoring program to provide data on the quality of streams, river, lakes and groundwater in the Upper Mississippi River Basin
5. Quantify the levels of nutrient loading in the River Basin
6. A coordinated monitoring network of federal, state, and local government as well as local environmental groups working towards making informed management decisions.
7. A network for tracking impacts of water use on groundwater levels and associated base flow.
8. Protect, restore and manage the quality of groundwater in the Sand Plains recharge zones.
9. Protect, restore and manage water flowing from Minnesota to the Gulf of Mexico to ensure that nitrate and nutrients are limited to the hypoxic zone.
10. Nutrient values of phosphorus and nitrogen are within values identified in the watershed planning unit.
11. Meet MN stream use standards for turbidity and sediment levels, as well as oxygen levels of each water body in the Basin.
12. Minimize impacts of improper storm water management, runoff and impervious surfaces of the Basin through implementation of the Federal Storm Water Program.
13. Provide adequate wastewater treatment to the residents of the Basin while at the same time minimizing the impacts of wastewater treatment system discharge on water quality and the environment.

Goals (numbers link to Visions)

1. Maintain the unique features of the ORVWs. (1)

2. When possible, identify waters for consideration as an ORVW according to identified requirements. (1,3)
3. Encourage cooperation among agencies and special interest groups to restore waters that are listed with the Impaired Waters program, and upon completion remove them from the Impaired Waters list. (2,3)
4. Monitor and determine if certain water bodies in the Basin can be included in the Impaired water program. (3)
5. Identify waters that require additional protection in the Basin. (3)
6. Establish a background of information of the water quality of the watersheds of the Upper Mississippi River. (4,5,6,7)
7. Develop nutrient and sediment loading parameters for the Upper Mississippi River.
8. Establish a monitoring network. (5,6)
9. Establish nitrogen ranges for streams and rivers. (5,9,10)
10. Assess the source of phosphorus and nitrogen in the rivers, lakes and streams. (10)
11. Assess whether waters meet the standard for turbidity and dissolved oxygen. (10)
12. Implement the Phase II Storm Water Program-goal of 1.2 million tons per year sediment reduction at construction sites. (11)
13. Limit impervious surfaces to less than 25% without storm water or runoff mitigation for all new development. (12,13)
14. Manage municipal and industrial wastewater discharges to limit impacts on the Basin waters. (12)
15. Monitor nitrogen concentrations in surface waters to determine impacts or links to the hypoxic zone. (10)

Strategies (numbers link to Goals)

1. Prohibit and restrict discharges to ORVWs. (1)
2. Assist local groups in identifying ORVWs. (1)
3. Assess and classify, when appropriate, water bodies for consideration as an ORVW. (1)
4. Assist local groups in conducting prescribed impaired waters management practices on the streams, rivers and lakes in the Basin to restore them to standards. (2)
5. Coordinate monitoring to identify impaired water bodies or waters that require further management. (2,3)
6. As water bodies meet standards, petition the U.S. EPA for the removal from the Impaired Waters listing. (2)
7. Classify surface waters requiring additional protection by the update of the next Basin Plan. (3)
8. In conjunction with the local units of government and environmental groups, establish monitoring sites in high priority watersheds identified that discharge to the Mississippi River directly. (8)
9. Develop nutrient loading parameters for the priority watersheds that discharge directly to the river. (7)
10. For those waters not meeting phosphorus and nitrogen standards, mitigate impacts to achieve set values. (9,10)
11. If the standard of 25 NT units or less for turbidity is not met, quantify the source and seek corrective action and required listing and violations. (11)
12. If the standard of dissolved oxygen concentrations is not at or above 5.0 (for Class 2B/2C waters) to 7.0 mg/L (Class 2A) as a daily minimum average, quantify the source and seek corrective actions and listings. (11)
13. Upon adoption of the Federal Storm Water Program, work with local units of government to develop programs and timelines. (12)
14. All municipal and industrial wastewater dischargers will be evaluated as part of the permit reinsurance process and the Phosphorus strategy. (14,16)

15. All permitted municipal and industrial wastewater dischargers must be within rules and limits of permit. (14)
16. As part of the nutrient management strategy, implement programs to reverse the increasing trend of nitrate-nitrogen in the Basin. (9,15)

4. NONGAME WILDLIFE PROGRAM, 10 -YEAR STRATEGIC PLAN, JULY 2002-JUNE 2012

Report Source

Source Name	Source Address	Date	Title
MN Department of Natural Resources	500 Lafayette Rd. St. Paul, MN 55155	2002	Nongame Wildlife Program, 10-Year Strategic Plan, July 2002-June 2012

Specific References in Report

Issues

1. Habitat loss and fragmentation
2. Degraded habitat quality
3. Decline of some species
4. Lack of management knowledge
5. Local decisions that don't support nongame wildlife resources
6. Urban-wildlife interface
7. Lack of understanding

Visions

1. All native nongame wildlife species populations and their habitats are sustained
2. The public will appreciate and understand the nongame wildlife species populations and their habitats
3. Fragmentation and loss of habitat is restored and ecological systems are protected

Goals (numbers link to Visions)

1. For listed species and their habitats to recover in 2012. (1,2)
2. For priority species and their habitats to be sustained in 2012. (1,2)
3. To have opportunities for understanding and appreciating nongame wildlife widely available in 2012. (2)
4. For Minnesotans to take action on behalf of nongame wildlife in 2012. (2)
5. To incorporate nongame wildlife needs into public/private land management in 2012. (1,2,3)
6. A better understanding and better maintenance of natural processes, ecological systems and biological diversity to guide land use decisions in 2012. (2)

Strategies (numbers link to Goals)

1. Protect listed species and priority native nongame resources within the context of natural systems and ecological functions. (1,2,5)
2. Support decisions affecting listed species that arise out of collecting biological and ecological information. (1,3,5)
3. Provide educational opportunities to the public in order for them to make sound nongame wildlife resource decisions and become effective advocates for listed species.(1,3,4,5)
4. Encourage development and distribution of best management practices information to the public. (3,6)
5. Promote cooperation and join efforts across many agencies and disciplines.
6. Assess landscape-level habitat conditions and patterns to facilitate conservation. (1,2,6)

7. Restore certain listed species through propagation, habitat enhancement and protection programs. (2)
8. Increase contributions to the Nongame Wildlife Program. (4)
9. Support research on nongame management issues and incorporate findings in management plans. (3,5,6)
10. Manage native nongame resources by removing exotic species and disrupting disease and contaminant situations. (5,6)
11. Provide hunting opportunities through regulations and technical assistance. (3)
12. Improve the quality and quantity of corridors. (1,2)
13. Maintain integrity within harvested forests. (1,2,5,6)
14. Maintain prescribed fire in coniferous forest as a tool. (5,6)
15. Maintain large patches of hardwood forest and mature coniferous forest. (5,6)
16. Lengthen forest stand rotation to allow for better seed production in coniferous stands. (5,6)
17. Improve private forestland habitat. (1,2,5,6)
18. Protect grassland/prairies through research into grazing, burning, seeding and tree plantings. (5,6)
19. Restore and protect wetland functions, lakeshore and buffer zones and river and riparian areas. (5,6)

5. THE PRAIRIE-FOREST BORDER ECOREGION: A CONSERVATION PLAN

Report Source

Source Name	Source Address	Date	Title
The Nature Conservancy			The Prairie-Forest Border Ecoregion: A Conservation Plan

Specific References in Report

Issues

1. Loss of habitat due to unplanned residential and commercial development
2. Incompatible agricultural management/incompatible forestry practices
3. Exotic species/overabundance of certain native species
4. Fire exclusion
5. Lack of contiguity among protected areas/insufficient size and buffering of protected areas
6. Altered hydrological regimes

Visions

1. Utilize plant community, aquatic system, and species targets to identify and implement restoration and conservation management
2. Restore occurrences of matrix communities (i.e. north-central bur oak and central mesic tall grass prairie)
3. Use identified Ecologically Significant Areas as means to develop conservation strategies and achieve conservation targets for plant communities, aquatic systems, and species

Goals (numbers link to Visions)

1. Minimize threat from unplanned residential and commercial development (1,3)
2. Minimize incompatible agricultural management (1,3)
3. Minimize threat of exotic species (1,2,3)
4. Increase appropriate use of fire in conservation management (2)
5. Increase habitat available through increased use of proper restoration techniques (1,2,3)
6. Minimize threat from water management practices (1,3)

Strategies (numbers link to Goals)

1. Advocate for state-wide or regional funding for land acquisition and tax incentive programs for landowners who take appropriate steps to conserve their property (1)
2. Pursue multi-state funding opportunities for conservation work (1)
3. Collaborate with local governments and conservation organizations to develop sound land use plans (1)
4. Advocate for funding for the Environmental Quality Improvement Program (EQIP), Wildlife Habitat Improvement Program (WHIP), Conservation Reserve Program (CRP), and the Conservation Reserve Enhancement Program (CREP) (2)
5. Find Federal funds for Natural Heritage programs to use in advising management/conservation programs (2)
6. Pursue funding for and emphasize exotic control as a management tool on public and private lands (3)
7. Research biological control of garlic mustard (3)
8. Develop communications strategy for sharing successful control methods (3)

9. Partner with Minnesota Department of Transportation (MNDOT) on right-of-way management (3)
10. Outreach on fire methodology/training for partners (4)
11. Increase use of prescribed burns on public and private lands (4)
12. Public education on need for prescribed burns (4)
13. Advocate and find funding for improved restoration and management of public lands (5)
14. Develop a template for restoration to use in education and outreach (5)
15. Educate local land managers and public officials about the need for restoration and about appropriate restoration techniques (5)
16. Identify restoration success as models for other groups (5)
17. Establish native seed farms for use in restoration (5)
18. Build a relationship with the Army Corps of Engineers (6)
19. Work with United States Fish and Wildlife Service (USFWS) on management of refuges along Mississippi River (6)
20. Outreach on impact of dams to aquatic resources (6)
21. Share results of ecoregional planning with state fisheries staff (6)

6. WETLANDS GUIDANCE FOR THE ANOKA SAND PLAIN

Report Source

Source Name	Source Address	Date	Title
Minnesota Department of Natural Resources	St. Paul, MN	2000	Wetlands Guidance for the Anoka Sand Plain

Issues

1. Nutrient loading
2. Invasive species or exotics
3. Altering of hydrologic processes
4. Development and growth near wetlands
5. Fragmentation
6. Poor management and water quality of some wetlands
7. Loss of diversity of vegetation and wildlife

Visions

1. To preserve and restore wetland functions and sustainability where needed.
2. To avoid degradation and maintain natural stable wetlands in rural areas.
3. To protect the remaining integrity and sustainability of wetlands, restore degraded wetlands to a higher level of function and to be flexible with regulation pertaining to land uses and growth management plans when dealing with urban settings.

Goals (numbers link to Visions)

1. To maintain, enhance and restore wetlands to a natural, stable state. (1,2,3)
2. To plan for the future use of land with priority on wetlands guidance. (3)
3. To protect rare types of wetlands. (1,2,3)
4. To maintain large areas of wetlands to buffer impacts. (1,2,3)
5. To protect wildlife in the Anoka Sand Plain which are dependent on wetlands. (1,2,3)
6. To protect and enhance water quality of wetlands and related waters. (1,2,3)
7. To educate and involve landowners and developers and encourage cooperation with government and planners. (1,2,3)
8. To encourage participation in programs which protect or assist in restoration. (1,2,3)

Strategies (numbers link to Goals)

1. Maintain large areas by preventing fragmentation (1,2,4,8)
2. Protect local rare wetland types: sedge meadows, wet prairies, deep marshes and discharge wetlands like fens and forested wetlands such as northern cedar swamps, black ash swamps and tamarack swamps by discouraging practices such as conversion to deeper wetlands types. (3,5,8)
3. Maintain wetland areas near streams. (5,6,7)
4. Maintain corridors and greenways between isolated areas. (4,5)
5. Protect high priority wetland areas, (wetlands in growth areas), through land acquisition. (2,4,7,8)

6. Work with landowners to protect large tracts of land by transferring them to another tract of land with the Transfer of Development Rights (TDR) option. (1,4,7,8)
7. Require developers to maintain landscape's hydrologic functions at the same levels that existed before the development took place, called performance zoning. (1,2,7)
8. Encourage governmental units to work together to manage watersheds across boundaries and ecosystems. (7,8)
9. Include an education element for promoting awareness of functions and values of wetlands and sustainability, e.g. MN Extension Service provides information relating to wetland sustainability such as tips on agriculture, lawn care and gardening practices. (7)
10. Minimize impervious surfaces by using conservation development, i.e. less paved roads, shorter driveways, cluster housing. (2,6,7)
11. Establish wetland buffer zones to stabilize soils, filter solids, provide wildlife habitat and lessen human impacts. (1,6)
12. Before allowing runoff to enter a wetland, require ponds and "pretreatment wetlands" designed for stormwater management. (1,6)
13. Use infiltration basins and swales to maintain the natural hydrologic processes, however, more research on design methods in the Anoka Sand Plain needs to be done because of the threat of polluting the shallow aquifer there. (1,6,7)
14. Roads should not be placed in wetland buffer zones. (1,2,6)
15. Recognize and promote benefits of curbless roads. (1,2,6,7)
16. Restore wetland hydrology by plugging ditch outlets and/or removing tile lines. (1,6)
17. Promote low or gentle slopes when restoring wetlands, however a variety of depths can be beneficial. (1,5,6)
18. Follow agricultural BMPs, use fertilizers and pesticides sparingly. (1,6,7)
19. Work with DNR wildlife manager for best time to conduct water level manipulations, i.e. drawdowns to allow germination of plant seeds. (1,6,7)
20. When restoring vegetation, collect seeds from the same region, the option is also available to use a "donor" seed bank to obtain seeds, roots, plant parts and nutrients. (1,3,6,7)
21. Control exotic or invasive species through mowing then flooding or digging. Others can be controlled through various methods of seeding with a cover crop or pulling, if the invasive species has become established, spot treating with an herbicide or fire may be necessary with some types of species invasions. (1,3,7)
22. Participate in regulatory or non-regulatory protection or restoration programs such as the Clean Water Act, MN Endangered Species Act, MN Wetlands Conservation Act, Water Appropriation Permits or the Wetland Reserve Program. (7,8)
23. Replace degraded wetlands with little chance of successful restoration thereby improving lost functions of a watershed because of sedimentation or loss of habitat. (1,6)

7. CAMP RIPLEY FOREST MANAGEMENT PLAN

Report Source

Source Name	Source Address	Date	Title
2002 Camp Ripley Environmental Office		2002	Camp Ripley Forest Management Plan

Specific References in Report

Issues

1. Harvest of mature forests
2. Fuel wood availability following timber cuts
3. Terms and conditions of timber sales on Camp Ripley
4. Lack of equipment desired for ideal logging operations
5. Negative view of timber harvesting
6. Decline of White Pine and Jack Pine

Visions

1. Attain and maintain healthy, vigorous, quality trees for the future.
2. The aspen forest should always be present as a resource for products and as a game refuge.
3. Plan regeneration harvest to extend and balance age classes.
4. Forests with long-lived cover types.

Goals (numbers link to Visions)

1. To sustain adequate mature forest conditions (high canopy for concealment). (1,3,4)
2. To minimize the amount of regeneration harvesting while sustaining multiple resources outputs. (3)
3. To maintain a continual and diverse output of timber commodities. (2,5)
4. To identify an area of medium or better quality oak forest (at least 1000 acres) in areas of lower military usage. (1,4)
5. Complete a revised forest vegetation inventory for multiple use planning of the implementation of natural resource programs. (2)
6. To prescribe sound silvicultural techniques which are favorable to military use. (1,2)
7. The aspen forest can be present as a resource but can be reduced to a level that is more favorable for military training use. (2)
8. Emphasize planning goals that favor long-lived cover types. (4)

Strategies (numbers link to Goals)

1. Establish interim policy guidelines until completion and testing of the U of M's Tactical Vehicle Impact and Vegetation Management study. (6)
2. To provide special permits to the military public for salvage of dead or downed trees on an annual basis. (6)
3. Remove hazard trees (large, standing dead trees) every five years, one fifth every year to improve safety. (6)

4. To calculate allowable annual harvest acreage in management units using the following extended rotation age factors: (6,8)

Aspen	75	Oak	150
Birch	50	Northern Hardwoods	140
Jack Pine	90	Lowland Hardwoods	140
Norway/White Pine	150	Tamarack	90

5. Increase the proportion of long-lived species types within 20 years through allowing only small group selection harvests in stands of shorter life species that have shade tolerant longer life specie understories (allowing the understory to take over gradually and harvesting the long-lived species when regeneration of these is expected). (8)
6. Implementing silvicultural techniques for conversion of some aspen, birch and jack pine to communities of long-lived types. (6,8)
7. Maintain long-lived types of cover where disturbances caused a conversion to an aspen type. (7,8)
8. To increase the age class diversity of forest types by harvesting and regenerating some acres of Birch, Jack Pine and Oak cover. (3,6)
9. Establish a minimum harvest age below the extended rotation age for forests that are excluded from the Extended Rotation Guidelines for Camp Ripley. (8)
10. Designate oak as a high priority species for management. (3,4)
11. Generate guidelines to ensure the production of oak stands through more intensive improvement cuts, harvest and regeneration practices. (3,4,6)
12. Develop a written procedure for the inventory alterations to Camp Ripley.
13. Develop rules for consistent updates and alterations to the inventory that will improve analysis and reduce errors.
14. Apply technologies to young conifer and aspen regenerations to develop a concealment area for the future.
15. Explore new reforestation techniques such as seeding or drilling of jack pine. (3,6)
16. Retain red and white pine within oak and the northern hardwoods. (1,3)
17. Balance the forest diversity by maintaining forest composition that was present historically. (1,3)
18. Maintain a partnership with the Nature Conservancy.
19. Clearly communicate the procedures and constraints for timber sales and firewood permits, controlled by Camp Ripley and administered by the MN DNR. (6)
20. Publish the terms and conditions of timber sales explaining the time limits for removal and post harvest treatment. (6)
21. Conduct an annual review of the Forest Management Plan's accomplishments and future proposals with MN DNR and military training staff. (5)
22. Access routes and landings should be specified and pre-approved on the permit before sale. (6)
23. Regeneration harvest of oak cover type composed of long-lived species will be by shelterwood, group selection or patch clearcutting (1-5 acres) to favor shade-tolerant or long-lived species. (6)

8. MANAGEMENT PLAN FOR LAKE MARIA STATE PARK

Report Source

Source Name	Source Address	Date	Title
MN Department of Natural Resources	500 Lafayette Rd. St. Paul, MN 55155	1979	A Management Plan for Lake Maria State Park

Specific References in Report

Issues

1. Erosion
2. Endangered or threatened wildlife species
3. Degraded water resources
4. Oak regeneration
5. Biodiversity

Visions

1. An expanded park which includes all of Lake Maria to protect its natural resources from adverse development.
2. Provide the public with opportunities to enjoy the Big Woods Landscape region with its wooded hills and marshes.
3. To continue to remain an example of the region's original landscape.
4. To enhance wildlife habitat and populations.
5. To protect the water resources which play an important role in the park.

Goals (numbers link to Visions)

1. To protect or enhance groundwater and wetlands or other surface waters. (1,2,3,4,5)
2. To correct present soil erosion and prevent future erosion. (5)
3. To restore areas to native prairie and wet meadows. (2,3,4)
4. To reestablish fish and wildlife populations of concern on Maria Lake, while controlling overpopulation of deer and beavers. (4)
5. To create a zoning system that recognizes the various natural features of the park and identifies appropriate non-destructive uses. (1,3,5)
6. To manage northern hardwoods and other cover types for purpose of forest health and habitat. (2,3,4)
7. Acquire additional land in order to include all of Lake Maria (1)

Strategies (numbers link to Goals)

1. To protect the groundwater from degradation by carefully managing porous soils which leach contaminants into the underlying aquifer. (1)
2. To restore drained wetlands by filling in ditch outlets. (1,3)
3. Continue monitoring Bjorklund Lake for winterkill and fishing levels and stock it accordingly. (4)
4. Control rough fish populations through migration barriers and poisoning. (4)
5. A detailed site analysis must be completed before any development occurs. (1,2,3,5)

6. Soil problems exist on trails, to correct this the strategy is to reroute the trail and if necessary to place culverts or bridges. (2)
7. Re-grade and landscape Lake Maria State Park using native plant materials if possible. (2, 3)
8. Foresters should conduct regular field checks for oak wilt.
9. Diseased oak shall be cut if found in an area which will be harvested, if found in a passive management area diseased trees should be treated chemically.
10. Conduct research to properly manage hardwoods and prairies. (6)
11. Burn all wet meadow areas and prairies in the early spring for two consecutive years and every three to four years thereafter. (1)
12. Passively manage the alder-willow as beaver activity will maintain the stand. (6)
13. Practice shelterwood cutting in Big Woods to regenerate oak. (6)
14. Practice fire suppression in passively managed forest areas. (6)
15. In the northern hardwoods area, create 5 wildlife openings that are 1 to 2 acres in size. Sanitation cutting is the only cutting allowed. (5,6)
16. Larger logs should be left on the ground for grouse, dead trees should be left to provide habitat for small animals. (4,6)
17. Leave most dead trees by marshes to provide habitat for wood ducks and raptors. (4,6)
18. Live trap beaver and move them outside the area. If no area is suitable nearby to move them, they will be kill trapped. (4)
19. Consult wildlife manager for recommendations on white-tailed deer control measures. (4)
20. To acquire parcel east of township road as an expansion of park boundaries. This will guarantee future control of all of Lake Maria and preservation of it natural resources. (7)

9. MANAGEMENT PLAN FOR INTERSTATE STATE PARK

Report Source

Source Name	Source Address	Date	Title
MN Department of Natural Resources	500 Lafayette Rd. St. Paul, MN 55155	1979	A Management Plan for Interstate State Park

Specific References in Report

Issues

1. Erosion and pollution of groundwater
2. Quality of the St. Croix River
3. Vegetative cover
4. Vegetation diseases or problems
5. Wildlife populations
6. Development
7. Forest diversity
8. Balancing land use with resource protection

Visions

1. Increased wildlife populations.
2. Abundant high quality groundwater
3. To prevent erosion
4. To prevent pollution of water resources
5. To restore some of the original vegetation of the park such as Pine and Northern Hardwoods
6. To maintain vegetative cover

Goals (numbers link to Visions)

To prevent degradation of the St. Croix River. (1,4)

1. To correct the present and prevent any future erosion problems. (3,6)
2. To maintain a sturdy cover that can withstand heavy use. (6)
3. To treat and prevent disease infestation.
4. Enhanced wildlife populations in the area especially songbirds and small mammals. (1)
5. To provide facilities which will allow the park goers to observe wildlife without disturbance. (1)
6. Form the recreational development plan to be complementary to Wisconsin's Interstate State Park.
7. To maintain an abundance of high quality groundwater. (2)
8. To protect unique features.

Strategies (numbers link to Visions)

1. Improve habitat through vegetation management (5)
2. Management to include some fire suppression and some brush cutting in rock formation areas. (9)

3. Reforestation in regions with private homes to include mixtures of hardwood tree and shrub species which serve as buffers, white oak, red maple, basswood, apple, wild plum, staghorn sumac, nannyberry, chokecherry, and wild rose. (6)
4. All facilities near the aquifer shall not adversely affect the groundwater. (8)
5. Monitor fish populations of the river and stock near the Taylors Falls dam with muskellunge to improve fishing conditions. (5)
6. Minimize erosion through riprap placed in the stream channel, less frequent mowings of the former campground, replacement of dead trees that are removed and maintaining vegetative ground cover. (2,3)
7. Perform passive management i.e. fire suppression and natural selection in open woods, open conifer areas and regions with northern hardwoods.
8. To treat the Dutch elm disease, remove all elms and replace with hackberry, oak, maple, basswood and pine, dogwood, sumac, elderberry and raspberry. (4)
9. If oak wilt infestation occurs, remove those infected and prevent spread with chemical treatment. (4)
10. Protect migration routes from adjacent agricultural areas. (5)
11. Remove all asphalt surfaces that are not needed and restore to a natural condition. (3)
12. Use commercially grown plant materials that can withstand heavy use when re-vegetating the picnic area. (3)

10. ISANTI COUNTY COMPREHENSIVE LOCAL WATER PLAN

Report Source

Source Name	Source Address	Date	Title
Isanti County SWCD		2000	Isanti County 2000 Comprehensive Local Water Plan

Specific References in Report

Issues

1. Changes in environment, development and land use
2. Decreasing surface water and groundwater quantities
3. Pollution of surface, groundwater and land uses
4. Erosion and sedimentation
5. Declining surface and groundwater quality
6. Lack of monitoring or maintenance of public and private ditches
7. Loss or contamination of wetlands
8. Adequacy of fish and wildlife habitats
9. Unique features or environmentally sensitive areas
10. Incompatible land uses that impact water and wetland resources.

Visions

1. Protection and enhancement of surface and groundwater quality in Isanti County.
2. Assure the long term protection of water resources through coordinated and efficient efforts
3. Improved recreational resources, population growth that has no negative impact on water quality and presence of environmentally sound commercial and industrial development.
4. To ensure adequate quantities of surface and groundwater for present and future needs.
5. To have an administrative structure which carries out water planning and implementation in an effective and efficient manner.

Goals (numbers link to Visions)

1. Undertake appropriate field inventories to identify sources of surface and groundwater quality issues. (1,2)
2. Develop public participation in the improvement of water quality. (2)
3. Utilize surface water data to create mitigation plans. (1,2,5)
4. Implement appropriate land uses and BMPs to protect surface and groundwater quality. (1,2,3,5)
5. To form education programs on Best Management Practices. (2,3)
6. Preserve wildlife and their habitats. (3)
7. Protect important and natural features. (1,3)
8. Attract environmentally sound commercial and industrial development to Isanti. (6)
9. Improve the availability of data related to water quality and water distribution. (1,2,5)
10. Ensure administrative capacity to implement the water plan. (5)

Strategies (numbers link to Goals)

1. Obtain samples of groundwater in areas where nitrates and bacteria appear to be present and analyze to identify the source. (1)
2. Promote wetland restoration in high priority areas. (2,7)
3. Continue to develop an information/education program on BMPs. (2,4,5)
4. Identify and correct contamination sources of groundwater and land uses in the County. (1)
5. Update soil surveys. (7,9)
6. Encourage planting of tree windbreaks and a variety of grasses for habitats. (6)
7. Provide educational assistance to feedlot owners to lessen negative impacts on water quality. (2)
8. Assist in monitoring the spread of exotic species and assist in control. (1)
9. Identify sensitive areas such as erodible cropland or hazardous waste generating uses near existing ditches, lakes, rivers and wetlands. (1)
10. Test the runoff in ditches for nitrates, phosphorus, coliform, pesticides, fertilizers and sediments. (1,3)
11. Enforce drainage codes which require vegetative cover in ditch right of ways.
12. Assist in updating storage tank inventories. (7,9)
13. Develop criteria and a review process for proposed commercial development. (8)
14. Work cooperatively with Chamber of Commerce in promoting environmentally sound business practices. (8)
15. Coordinate the water plan with the comprehensive plan and zoning ordinances. (9)
16. Expand the existing county rainfall observation network to include St. Croix and Snake River Watershed gauging. (1,3)
17. Obtain grants and funds to implement the water plan. (10)

11. ISANTI COUNTY COMPREHENSIVE PLAN

Report Source

Source Name	Source Address	Date	Title
Isanti County Planning Commission	555 18th Ave SW Cambridge, MN 55008	1998	Isanti County 1998 Comprehensive Plan

Specific References in Report

Issues

1. Residential growth within the urban service area
2. Growing commercial and industrial development
3. Rural sprawl
4. Lakes, rivers, wetlands, woodlands
5. Difficulty in administering, enforcing and tracking plan regulations
6. Wildlife diversity

Visions

1. Maintain the rural character of the county
2. Thoughtful, careful planning
3. Balance of agricultural land uses and new residential, commercial or industrial development
4. Better enforcement of county plans and regulations
5. A cooperative resource management effort between all levels of government.

Goals (numbers link to Visions)

1. To plan for the extension of infrastructure prior to new development. (2,3,4)
2. Preserve farmland and related natural resources, in order to maintain the agricultural economy of the county. (1,3)
3. Preserve and protect the rural character of the county. (1)
4. Establish a comprehensive growth management strategy. (2,3)
5. Establish open communication among public all units of government in planning and enforcement matters. (5)
6. Provide for limited commercial and industrial development in rural centers with no available public utilities. (2,3,4)
7. Provide an adequate amount of recreational opportunities and open spaces to meet the needs of the county. (1)

Strategies (numbers link to Goals)

1. Limit non-agricultural uses in the agricultural district through density control. (2)
2. Encourage smaller residential lots and support the clustering of development. (1,4)
3. Update the county's Park Land Acquisition and Improvement Plan to meet future needs. (7)
4. Maintain large tracts of farmland through the Transfer of Development Rights (TDR) program; transferring ownership of land to nearby larger tracts. (2)
5. Promote policies of the Minnesota Wetland Conservation Act. (7)

6. Promote enrollment of farmland in the Green Acres program to protect agricultural lands. (2)
7. Review all ordinances to ensure that they promote orderly and efficient growth. (1,4,5)
8. Work with the cities of Cambridge and Isanti to create a plan for an urban transition area between the cities' boundaries for facilitating future transportation corridors, open spaces and preservation of natural resources. (4)
9. Encourage resident participation in local decision-making processes. (5)
10. Encourage collaboration of units of government to avoid duplication of efforts. (5)
11. Permit only commercial activity that is currently needed in the area. (6)
12. Identify and promote certain open spaces and public or private lands for recreational opportunities in areas which will not cause conflicts with adjacent landowners. (3,7)

12. MORRISON COUNTY WATER PLAN

Report Source

Source Name	Source Address	Date	Title
Morrison County Water Plan Task Force		2002	Morrison County Water Plan

Specific References in Report

Issues
1. Land Use and Development
2. Surface Water Quality and Quantity
3. Wetlands
4. Erosion and Sedimentation
5. Fish and Wildlife Habitat

Visions
1. "Our mission is to protect, preserve, and enhance water and land related resources for the use and enjoyment by the citizens and visitors of Morrison County."

Goals(numbers link to Visions)
1. Protect and enhance surface water resources in Morrison County.
2. Maintain, protect, and preserve wetlands within Morrison County.
3. Promote orderly growth and development throughout Morrison County that is consistent with sound water resource protection principles and practices.
4. Protect sensitive groundwater and surface water resources from land uses that have the potential for causing significant impacts on quality and quantity.
5. Promote and sustain quality water-based recreation and conservation lands with a range of uses from minimal to greater impact in Morrison County. Advocate water conservation and habitat protection through private and public land stewardship, while minimizing the need for government regulation.

Strategies (numbers link to goals)
1. Advocate and support the use of Best Management Practices (BMPs) relating to surface water for all land uses and activities in the County. (1)
2. Continue to support and enhance a coordinated and comprehensive program with partnering agencies for administering and implementing Best Management Practices for forestland in the County including timber harvesting, woodland stewardship and forest legacy programs (MN DNR), farmstead and field windbreaks, hybrid poplar plantations and others as appropriate. (1)
3. Continue to support and enhance a coordinated and comprehensive program to implement Best Management Practices in shoreland areas including lakes, rivers, and streams through planning and zoning permits and other governmental approvals. The use of BMPs should also be encouraged around wetlands and drainage ditches. (1)
4. Provide municipalities with ongoing technical assistance in applying Best Management Practices for stormwater management on road construction and land development projects. Consider

using MN DOT environmental staff resources to assist on developing road designs and construction practices that minimize erosion and sedimentation. (1)

5. Continue to support and administer the shoreland vegetation program. (1)
6. Implement the shoreland vegetation program on an annual basis. Establish enforcement mechanisms to ensure the retaining and maintaining of vegetation on the awarded sites. (1)
7. Develop a digital wetland mapping system using the composite overlay maps prepared by the SWCD. (2)
8. Develop an inventory of drained wetlands in the County and prioritize the restorable wetlands on a subwatershed basis. (2)
9. Support the updating of the County's Comprehensive Plan. (3)
10. Support the development of land use policies and implementation tools that discourage undesirable fragmented property ownership patterns. (3)
11. Develop and/or update land use regulations in ways that minimize degradation to water resources associated with development. (3)
12. Inventory land resources in the County and prioritize lands uses and activities that have the potential to cause impacts to surface and groundwater resources. (4)
13. Provide technical and financial assistance to landowners with high priority water resource impact sites to help them better design, construct, and maintain improvements on their property. (4)
14. Develop programs that support the increase of wildlife habitat on private lands in the County. (5)
15. Recommend and provide assistance on the preservation or installation of buffers along surface water features through applicable conservation programs. (5)
16. Provide support for the improving of facilities and habitat on publicly owned water-based recreation lands. (5)
17. Support the improving and maintaining of facilities at the state park and wildlife management lands in the County for increasing opportunities for public access to water resources. (5)
18. Support the development of corridors or areas that provide fish and wildlife protection while at the same time protecting and enhancing water resources in the County. (5)

13. KANABEC COUNTY COMPREHENSIVE LOCAL WATER PLAN

Report Source

Source Name	Source Address	Date	Title
Kanabec County Board of Commissioners	18 N. Vine St. Mora, MN 55051	2001	Kanabec County Comprehensive Local Water Plan

Specific References in Report

Issues

1. Lake and stream bank erosion
2. Importance of public education
3. Nonconforming septic systems around the lakes
4. Need for county wide zoning
5. Feedlots and manure management
6. Floodplain regulations
7. Protecting the Sand Plain aquifer
8. Eurasion Milfoil

Visions

1. Surface water, ground water and related land resources shall be monitored and assessed.
2. To minimize special land uses which have the potential of negatively impacting ground water or surface water resources
3. To create a structure of administrators to plan and implement in an effective and comprehensive manner
4. To maintain and enhance the quality of surface water to be of the quantity and quality to meet needs of the future

Goals (numbers link to Visions)

1. Undertake inventories and evaluations to determine the causes of surface water quality problems as well as ground water quality problems (1, 4)
2. Initiate programs that will improve the surface water quality to enhance recreational value (1)
3. Establish a database for surface water quality and a database for ground water quality (1)
4. Institute a surface water quantity monitoring program (1)
5. Determine the condition of structures in surface water (2,4)
6. Institute appropriate land uses to protect ground water quality (2,3)
7. Institute measures that minimize adverse impacts on surface and/or groundwater resources. (1,2,3,4)
8. Increase local enforcement of environmental regulations. (3)
9. Enable landowners to make best management decisions for their property relating to water quality. (3)
10. Reorganization of state agencies that deal with natural resource concerns and decentralize the work force so that they will be available at the local level to address the concerns of those they are supposed to serve. (3)

Strategies (numbers link to Goals)

1. Apply appropriate land uses to protect quality of surface water (1)
2. Properly manage through ordinances those land uses that have the potential of impacting on surface and ground water resources (6,7)
3. Continue to make lake improvements and management programs to enhance fish habitat. (2)
4. Develop aquatic vegetation control programs with lake associations (2,7)
5. Continue to analyze the Southfork of the Groundhouse River to determine extent and cause of exceptionally poor water quality. (1)
6. Continue a water quality monitoring program for lakes with a public access. (1)
7. Apply for a Clean Water Partnership Phase II Implementation Grant for Knife Lake, (Phase I Diagnostic Study has been executed). (2,8)
8. Establish a monitoring program for the water quality of public ditches and determine impact to receiving waters. (1)
9. Continue to maintain rainfall reporting coverage and expand to include hydrology of a watershed (4)
10. Inspect and assess dams and control structures to determine impact (erosion or flooding) of downstream water quality should failure of these structures occur (5)
11. Continue to enforce the Kanabec County Septic Ordinance and add that during point of sale, when wells are tested, the results on the deed shall be enforced with the ordinance (6,7)
12. Require well testing of nitrates and total coliform upon sale of property and recording results on deed. (7)
13. Obtain ground water monitoring wells to identify current conditions or changes in quality or quantity (1,2)
14. Incorporate all data from water quality monitoring into a centralized database (4)
15. Establish a cost share program to seal abandoned wells or upgrade (within shorelands) noncompliant systems (2,7)
16. The County Environmental Services Department will review applications on shoreland areas for risk of erosion or sedimentation (7)
17. Develop and carry out education and information programs on easement programs like CRP and PWP. (2,9)
18. Develop information and education programs to inform public on the value of wetlands. (2,9)
19. Complete a county-wide soil survey. (1)
20. Identify areas in watersheds where drained wetlands can be restored. (1)
21. Utilize the Snake River Watershed Management Board, the Citizen Advisory Committee and the Technical Advisory Committee for coordination of water plan implementation activities whenever possible. (8)
22. MPCA should increase financial and technical assistance to local areas for implementation and monitoring of surface water. (10)
23. DNR should increase financial and technical assistance to local areas to improve shoreland zoning enforcement. (10)

14. MILLE LACS COUNTY COMPREHENSIVE PLAN

Report Source

Source Name	Source Address	Date	Title
Mille Lacs Planning Commission		1990	County of Mille Lacs Comprehensive Plan

Specific References in Report

Issues
1. Development, especially growth of non-farming populations into the region
2. Habitat for wildlife and rare plants
3. Poorly drained mineral and peat soils
4. Decline of agricultural lands
5. Recreational opportunities and aesthetic value lent by forests

Visions
1. Preserve valuable resources
2. Strengthen the economy
3. Encourage the community to work together toward common goals
4. Preserve agricultural lands.
5. Manage growth while preserving rural character.

Goals (numbers link to Visions)
1. Preserve agricultural lands to maintain the farm-related nature and economy of the county. (2,4)
2. Preserve and protect rural lifestyle. (1,5)
3. Develop a growth management plan in cooperation with townships and cities that will contribute to the health and welfare of the county by restricting development of non-compatible uses, those that cause undue strain on community resources and promoting developments that contribute to overall quality of life. (3,5)
4. Exercise land use practices which conserve and protect natural resources. (5)
5. Satisfy recreational needs of residents and tourists. (1)
6. Encourage economic development in the growth centers of the county. (2,5)
7. Mille Lacs County shall work with cities to restrain urban sprawl and minimize adverse costs of the growth that impacts the county taxpayers. (5)
8. Provide for habitat need of wildlife. (1)

Strategies (numbers link to Goals)
1. Limit non-agricultural growth in the prime agriculture lands. (1)
2. Promote regulatory controls that support agriculture. (1)
3. Keep the county rural and protect open spaces, woodlands, wetlands, lakes and the Rum River in all planning efforts. (2)
4. Review land development in areas such as floodplains, or with soil instability; development in these areas with constraints shall be engineered so as to reduce negative impacts. (2,3)
5. The county shall continue to endorse existing quality statutes with respect to the quality of air, water and land. (4)
6. Encourage the development of stocking programs for wildlife and fish. (8)

7. Cooperate with local, state and federal agencies in conserving and protecting wildlife, open spaces, aesthetic and scenic values including environmentally sensitive areas. (2,5)
8. Encourage development to occur on areas of land within existing roads rather than un-serviced areas. (3,4,6,7)
9. Encourage Planned Unit Developments (PUD) as part of the strategy to conserve farm and forest lands; they are more energy efficient and require less services and roadways. (1,2,3,4,7)
10. Mille Lacs County shall require compliance with shoreland and floodplain ordinances for all developments in these areas. (3,4)
11. The county shall discourage land development that diminishes the capacity or resources of the county's ecosystem. (4)
12. The county shall provide a growth of recreational opportunities in proportion to the population growth. (5)
13. Encourage developing new commercial, retail and tourism industries to diversify the economy. (6)
14. Discourage a trade drain where money earned locally is not spent outside the area. (6)
15. Select land parcels that are appropriate for commercial and industrial development. (6)
16. The county shall work with cities to restrain urban sprawl and minimize adverse impacts on county taxpayers, i.e. "cost of growth". (7)

15. BENTON COUNTY COMPREHENSIVE PLAN

Report Source

Source Name	Source Address	Date	Title
Benton County Planning & Zoning	Foley, MN	1999	Benton County 1999 Comprehensive Plan

Specific References in Report

Issues

1. Need to protect agricultural land from sprawl
2. Need for growth management to contain sprawl
3. Need for protection of high quality natural areas and open spaces
4. Need for protection of surface and groundwater from pollution
5. Need to promote economic development

Visions

1. Maintain a strong agricultural base
2. Controlled growth
3. Strong economy in the form of more diversification
4. Strong government to envision and enforce
5. Preservation of natural resources
6. Improved water quality
7. Preserve rural character qualities

Goals (numbers link to Visions)

1. To maximize the opportunities for agriculture, business, and recreation (1,3)
2. To maintain the rural qualities of the County by enforcing standards for development that enhance public health (2,4,7)
3. To maximize efficiency of public services at the local level through effective planning and management (2)
4. To support the long-term protection of agriculture (1)
5. To plan for efficient growth of commercial and industrial development (2,3,4)
6. To plan for orderly and efficient growth of residential development (2,4)
7. To preserve high quality natural areas and open spaces (5,6,7)
8. To promote environmental stewardship in the county (5,6,7)

Strategies (numbers link to Goals)

1. Promote the recycling of hazardous waste in a cost-effective manner. (2,8)
2. Cooperate with watershed management organizations to develop strategies for the protection of Little Rock Lake, Mayhew Lake and the Mississippi River. (7)
3. Explore the possibilities of working with agencies to promote wildlife preserves. (7)
4. Promote the proper enforcement of wetland mitigation legislation, and landowner efforts in the re-establishment of pre-existing wetlands by utilizing the wetland banking system. (2,7)

5. Before issuing a permit for placement of individual sewage treatment systems, use careful consideration of the site's soil suitability. (7)
6. Develop a comprehensive plan that allows for agricultural protection, transportation, community facilities, economic development, environmental protection and housing for Benton County.
7. Review the comprehensive plan annually and amend as needed to keep as a guide for future development. (3)
8. Ensure that development is in accordance with the comprehensive plan. (3)
9. Zone agriculture areas as such (A-1 or A-2) and create an A-3 Agricultural District for large lot development (5 acres). (4)
10. Work closely with the Soil and Water Conservation Board when identifying prime agricultural areas for preservation. (4)
11. Strengthen the county's land use ordinances related to feedlots to reduce adverse effects and protect groundwater resources. (7)
12. Explore the use of new zoning techniques to keep agricultural areas intact, (i.e. Transfer of Development Rights, and cluster development). (1,4)
13. Encourage enrollment of prime agricultural areas in conservation programs such as County Conservation Credit Program or Green Acres Program. (9)
14. Encourage the majority of new commercial and industrial developments to locate within the cities of Sauk Rapids, Sartell, St. Cloud, Rice and Foley as stated in their Comprehensive Plans. (5)
15. Allow small-lot, clustered development in and around rural areas and in a limited number of areas that are non-tillable or marginal agricultural lands. (4,6)
16. Work to create conceptual land use plans for urban growth areas that will identify future transportation corridors and areas for open spaces. (3)
17. Identify major tracts of woodland, wetland areas and other environmentally sensitive areas within the County. (7)
18. Control urban development so that it doesn't encroach upon environmentally sensitive areas. (2,7)
19. Develop a park and open space plan that incorporates strategies for the long-term protection of natural areas. (2,7)
20. Promote cooperation among agencies in developing facilities so as to provide an efficient level of service and to avoid duplication. (3)
21. Require that properties needing public utilities be located in an urban area. (3)
22. Focus the location of new parks in areas identified for their natural beauty and for their environmental or historical features. (2,7)
23. Recognize the need to expand the existing infrastructure of the County to support the continued growth that is occurring. (3,5,6)
24. Market the County more aggressively to attract and expand diversified businesses. (1)

16. WRIGHT COUNTY LAND USE PLAN

Report Source

Source Name	Source Address	Date	Title
Wright County Zoning & Planning Office		1988	Wright County Land Use Plan

Specific References in Report

Issues
1. Growth area
2. Housing needs
3. Agricultural lands

Visions
1. Protected agricultural areas
2. Efficiently planned growth
4. A stable natural environment

Goals (numbers link to Visions)
1. To make the most efficient and economical use of public funds and investments eg. For the economical and most efficient placement of new schools, sewer routes, etc. (2,3)
2. To provide a wide range of opportunity for urban and rural development through proactive growth planning. (2,3)
3. To protect agricultural lands from encroachment by incompatible uses, farmland also being pasture, vineyards, woodlots and wetlands. (1)
4. To protect, preserve and enhance the quality of the natural environment, and require development to take place in a manner that makes wise use of Wright county's resources without degradation. (1,3)

Strategies (numbers link to Goals)
1. Uneconomical levels of urban services will not be provided outside incorporated areas unless necessary for public health or safety. (1,2)
2. Land uses which are set-up with a high level of urban services, will be encouraged to locate within cities or growth areas and prohibited in rural areas or farmlands. (1,4)
3. Land subdivisions in major growth areas should be developed with the possibility of re-divisions, annexation or additional future service provisions in mind. (2)
4. All new lots created shall have access to public roads as determined by the subdivision and zoning ordinances. (1,2)
5. The county will encourage cities and townships to cooperate on development plans for the growth areas and encourage urban and suburban development of these areas. (2)
6. The County will not adopt ordinances that pose restrictions on farm practices in agriculture areas. (3)
7. In agriculture areas, maintain an overall density of one residence per 40 acres. (2)
8. Enact a Farmland Preservation Property Tax Credit program according to the Minnesota Agricultural Land Preservation Policy Act. (1,3)
9. Scattered residential developments will not be allowed in agriculture areas. (2,3)

10. The County will promote soil conservation management by landowners. (4)
11. Steep slopes, wetlands, unstable soils and other environmentally sensitive areas will be protected; all development near these areas will need special conditions such as setbacks or larger lot sizes. (4)
12. Development activity should exist in harmony with the natural environment, and adapt to suit the landscape rather than alter it. (4)
13. Provide stability to the county by restricting development according to the Land Use Plan. (2)

17. SHERBURNE COUNTY COMPREHENSIVE WATER MANAGEMENT PLAN

Report Source

Source Name	Source Address	Date	Title
Sherburne SWCD		2001	Sherburne County Comprehensive Water Management Plan

Specific References in Report

Issues

1. Agricultural and Lawn fertilizers
2. Failed septic systems
3. Urban stormwater runoff
4. Compliance with ordinances protecting riparian land and lakeshore
5. Drainage ditches
6. Algae blooms due to nutrient issues
7. Rural development
8. Erosion and sedimentation
9. Contamination of surface and groundwater
10. Water quality and quantity data collection

Visions

1. Reduce pollutant levels for impacted lakes and streams and maintain water quality.
2. Implement land use practices that minimize contamination of aquifers.
3. Ensure that land uses recognize environmental concerns in the county.
4. Protect and restore wetlands.
5. Protect and create buffers of native vegetation to enhance habitat along streams, ditches, lakes and wetlands.
6. Ensure that the quality of water-based recreation meets the needs of the growing county.

Goals (numbers link to Visions)

1. To establish vegetated buffers in ditches, lakeshores, streams and wetlands. (5)
2. Implement land use practices that reduce nutrient loading. (1,2,3)
3. Practice stormwater BMPs in urban and residential areas. (5)
4. Identify areas to improve water quality and quantity.
5. Correct water quality problems caused by problem feedlots and poorly managed pastures. ((1,3)
6. Use water quality data when determining priority spots for implementing BMPs for lakes and streams. (1)
7. Work with landowners to increase implementation of fertilizer and irrigation BMPs. (2)
8. Protect groundwater from contamination of leaking storage tanks. (2)
9. Use water quality data and county soil surveys in land use planning. (2,3)
10. Maintain the existing levels of wetland functions. (4)
11. Restore wetlands in high priority watersheds. (4)
12. Create, preserve and restore fish and wildlife habitats. (5)
13. Increase water based recreational opportunities. (6)

Strategies (numbers link to Goals)

1. Recommend an ordinance limiting the uses of phosphate fertilizers for turf in residential and urban areas. (7)
2. Educate landowners on implementation of fertilizer BMPs where their runoff might affect lakes and streams. (6,7)
3. Educate the public on proper care and maintenance of their septic systems.
4. Reduce nutrient loading caused by goose populations. (4)
5. Where possible, implement streambank and shoreline protection where accelerated erosion is occurring.
6. Work with landowners to implement BMPs that reduce erosion such as vegetated cover, conservation tillage, water diversions and sedimentation basins. (1)
7. Apply for funding to assist homeowners in upgrading septic systems. (4)
8. Develop individual management plans for landowners in riparian areas.
9. Increase participation in the Conservation Reserve Program and Reinvest in Minnesota (RIM) for riparian land and on highly erodible soils.
10. Assist small lot landowners in establishing native vegetation buffer strips on lakeshore and streambanks. (1)
11. New development shall not cause an increase in predevelopment runoff levels. (2,3)
12. Require erosion control BMPs for construction sites. (2,3)
13. Inventory conditions or sensitive areas of the county ditch system. (4)
14. Advise on opportunities for enhancing water quality and quantity related to county ditches such as wetland restoration. (1,4,10,11)
15. Establish a program for composting manure and yard waste.
16. Assist landowners with implementing feedlot and manure management plans. (5,6)
17. Develop and implement pest and nutrient management plans for agricultural and urban areas. (2)
18. Improve soil quality through the increased use of cover crops and conservation tillage.
19. Map and classify storage tanks listed on the MPCA's tank list. (8)
20. Work with state and federal agencies to conduct long-term groundwater monitoring in agricultural and residential areas to determine trends and the effects of change in land use. (6,9)
21. Establish a county site assessment committee to review all plats to identify resource issues. (6,9)
22. Discourage trade-offs of draining or filling a wetland in one location and creating one in another location. (10)
23. Minimize the threat of spread of exotic species. (12)
24. Put land in wildlife preservation programs to protect endangered or threatened species. (12)
25. Develop corridors of unbroken habitats. (12)
26. Promote proper disposal of household hazardous waste such as paint or oil through the Tri-County Solid Waste Commissions waste program.
27. Continue recycling programs and educate on their importance to water quality.

18. SHERBURNE COUNTY COMPREHENSIVE LAND USE PLAN

Report Source

Source Name	Source Address	Date	Title
Sherburne County Board of Commissioners		1992	Sherburne County Comprehensive Land Use Plan

Specific References in Report

Issues

1. Water quality
2. Agriculture preservation
3. Growth management
4. Natural resources/Parks
5. Economic development

Visions

1. Preserve important farmland
2. Quality economic development
3. Protection of water quality
4. Preserving rural character

Goals (numbers link to Visions)

1. To Preserve the agricultural use of soils (1)
2. To Achieve steady urban growth while protecting rural areas (2,3)
3. To Use public funds and investments efficiently (2)
4. To Minimize land use conflicts (1)
5. To Promote the proper management of the County's natural resources and historic resources (4)
6. To Consider acquiring lands for the creation of new parks (4)
7. To Promote responsible economic development through proper land use planning (2)
8. To keep cities and townships healthy during growth (2,4)

Strategies (numbers link to Goals)

1. Sherburne County will designate an area of the county that will be primarily agricultural based on the land's farming productivity. (1,4)
2. Any commercial or industrial development shall not take place in agricultural areas unless specified. (1,4)
3. Discourage subdivision of the best farmlands for non-farm uses. (1,4)
4. Avoid duplication of services and facilities at the government levels of schools, cities, townships, county and state. (3,7)
5. Avoid unneeded replacement or enlargement of public facilities. (3,7)
6. Conform to the land use plan for all developments. (4)
7. The county will enforce the County Land Use Plan in a clear and consistent manner. (4)
8. Sherburne County will designate plan areas that are suitable for agriculture, rural uses, expansion, commercial/industrial uses, riverfront protection, parks and natural protection areas. (2,6)

9. Allow one dwelling per 40 acres in the agricultural area; if the site is wooded the minimum lot size may be reduced to 2.5 acres. (4)
10. Allow agricultural, residential development and suitable commercial or industrial development in the rural area. Suitable development would not require city sewer, would not require widening of roads and would not adversely effect nearby housing or farming. (4,7,8)
11. In the rural area, one house per half of a quarter-quarter section will be allowed (20 acres) (4,8)
12. The boundaries of each urban expansion area shall be determined by joint agreement of the affected city and townships, otherwise the county will set them. (8)
13. Sherburne County will continue to enforce the zoning regulations previously adopted along the Mississippi and Rum Rivers. The minimum residential lot size in these areas is 4 acres for scenic areas and 2 acres for recreational areas. (4,8)
14. The county will maintain separation of incompatible land uses using the County Land Use and Zoning Maps. (4)
15. The county will adopt and enforce a shoreland management ordinance that meets or exceeds the Shoreland Management Program through the MN DNR.
16. The density of rural development will be kept low in order to protect groundwater from septic tank pollution, and protect woodlands, wetlands and other natural features. (5)
17. Development or agriculture will not be allowed in wetland areas where they would diminish the quality of the wetlands except as allowed by state or federal regulations. (5)
18. Woodlands, steep slopes, and other environmentally sensitive areas will be protected. Development in these areas may require setbacks or larger lot sizes. (5)
19. The county will perform proper siting and design and proper maintenance and transfer of all septic systems, following MPCA regulations. (5)

19. CHISAGO COUNTY COMPREHENSIVE GUIDE PLAN

Report Source

Source Name	Source Address	Date	Title
Chisago County Planning Commission		1995	Chisago County Comprehensive Guide Plan

Specific References in Report

Issues

1. Controlled growth
2. Urban sprawl
3. Environmental preservation
4. Quality of water
5. Agricultural preservation
6. Land use conflicts
7. Bureaucracy/red tape

Visions

1. Desire to promote economic development and employment opportunities
2. Appropriately planned growth and development
3. Ability to provide adequate public services
4. Protection of natural features and environmental systems
5. Long-term preservation of agricultural land with a strong commercial farming element

Goals (numbers link to visions)

1. Protect long-term agriculture as a vital element in the county's economy. (2,5)
2. Prevent the conversion of prime agricultural land to non-farm uses. (2,4,5)
3. Prevent incompatible uses in agricultural areas. (2,5)
4. Provide for orderly and efficient development. (2, 3)
5. Provide a variety of housing opportunities that are consistent with the natural amenities in the county and protection of environmental systems. (2,3,4)
6. Protect the natural environment as an asset to economic development. (1,4)
7. Provide for a range of economic diversity and development. (1)
8. Provide convenient park and recreation opportunities to the public. (3,4)
9. Maintain and enhance the natural qualities of the county for future generations. (4)
10. Protect surface waters and wetlands to promote groundwater recharge and natural habitat areas. (4)
11. Protect the woodland resources of the county. (4)
12. Protect environmental areas from impacts of future growth. (2,4)

Strategies (numbers link to Goals)

1. Direct non-farm uses away from agricultural land. (1,2,3)
2. Establish residential densities and lot sizes in the agricultural areas that minimize loss of prime farming land. (1,2,3,5,6)
3. Support tax strategies that provide incentives to commercial agriculture. (1,7)
4. Encourage rural housing in areas where a support structure already exists. (4)
5. Encourage low density, small lot developments in prime farmland areas. (1,2,3,5)

6. Establish development standards for business to prevent conversion of agricultural land uses. (1,2,3)
7. Welcome land gifts and forfeitures in areas with potential recreational use. (8)
8. Coordinate recreation opportunities with federal, state and local units of government. (8)
9. Prohibit new development on floodplains, steep slopes, wetlands and other sensitive areas. (4,9,10,12)
10. Establish overlay districts with additional restrictions for development in areas such as rivers, lakes, wetlands, state forests and areas near Carlos Avery Wildlife Management Area. (4,9,10,12)
11. Promote the protection of wetlands. (9,10,12)
12. Establish regulations restricting the clear cutting of woodland areas. (9,11)
13. The county may require an erosion control plan that provides preventive measures for erosion and sedimentation on proposed developments. (10,12)
14. Pre-settling of runoff will be required prior to discharging into wetlands. (9,10)
15. Development proposals and activities on wet soils, slopes or high water table areas will be strictly regulated with the zoning ordinance. (10,12)

20. PLAN FOR THE MANAGEMENT OF PINE COUNTY TAX-FORFEITED LANDS

Report Source

SOURCE NAME	Source Address	Date	Title
Pine County Land Department	910 North Highway 61 Sandstone, MN 55972	1994	Plan for the Management of Pine County Tax-Forfeited Lands

Specific References in Report

Issues

1. Public Involvement
2. Resource Management
3. Threatened species

Visions

1. Establish a sustained-yield of forest products over time
2. Strong economic and cultural ties to the management and utilization of natural resources as the timber industry evolves and productivity is enhanced
3. Provide recreational opportunities
4. Success of resource management on tax-forfeited lands
5. Public involvement and multi-agency and group coordination in managing lands

Goals (numbers link to Visions)

1. Identify resource management opportunities and provide direction in the management of tax-forfeited lands. (1,2,3,4,5)
2. Establishment of a systematic method to determine which lands to manage and which to dispose of. (1, 2, 5)
3. Manage timber-harvesting operations that enhance the quality of recreational activities. (3)
4. To recognize the full potential of forests on tax-forfeited lands. (1,2,3,4)
5. To develop and maintain a simplistic timber sale procedure. (1,2,4)
6. Participation and cooperation of the township, loggers and timber industry, sportsmen, resource management planners and those from the tourism and recreation fields. (5)

Strategies (numbers link to Goals)

1. Schedule timber sales to coincide with seasonal stumpage needs and demands of market. (5)
2. Communication between the loggers, timber industry and timber resource managers on safety issues in harvesting operations during adverse weather conditions. (5,6)
3. Manage forests according to the principles of multiple use and sustained yield. (1,3,4)
4. Seek out and promote expansion of the forest products market. (1,4)
5. Practice selective cutting to open up areas for wildlife and game species habitat and to create more diversity in forest age stands. (3,4)
6. Develop cooperative relations with conservation organizations and local school systems. (6)
7. The county board should investigate the sources of outside funds for financing and should attain funds for capital improvement projects to improve value of tax-forfeited lands. (1,4)
8. Follow comprehensive timber sale guidelines. (5)

9. Create an inventory of all field operations including site-specific treatment of unique features, or wildlife habitats along with timber sale data. (4,5)
10. Continue cooperative wetland mitigation projects with the highway department. (1,3)
11. Notify public as timber harvesting and wildlife projects are completed, of the availability of tax-forfeited lands through publications and maps. (5,6)
12. Enter into easements when feasible. (1)
13. Pine County should identify one or more sites which will be undisturbed by timber management practices. (3)
14. Dispose of county lands within state parks or forests, wherein such cases an exchange is preferred. (2)
15. Develop and maintain partnerships with wildlife resource specialists to implement goals and plans that benefit wildlife and habitats. (1,6)

21. PINE COUNTY COMPREHENSIVE PLAN

Report Source

Source Name	Source Address	Date	Title
Pine County Planning Commission	1610 Highway 23 Sandstone, MN 55072	1993	Pine County Comprehensive Plan

Specific References in Report

Issues

1. Population growth conflicts in urban and rural areas, especially along rivers and lakes
2. Conflict between cities, townships, counties and the state where development control is concerned
3. Economic development issues
4. Lack of defined work program for future implementation
5. Need for new development controls or ordinances (i.e. county-wide zoning ordinance, a sanitation ordinance, a well and septic ordinance)
6. Lack of enforcement by townships of some regulations
7. Damage to aesthetic value of area due to violations

Visions

1. Maintain existing agricultural land and forestland as a permanent and vital part of Pine County to benefit future generations
2. To maintain farming and forestry operations that continue to benefit the local economy for future generations
3. To implement long-term management of agricultural land and forestland regardless of ownership
4. Maintain aesthetic value of the land
5. Maintain and protect natural resource areas and recreational areas to benefit future generations and the local economy
6. Work with state agencies, county land department and townships to manage and enhance natural and recreational areas
7. Provide safe and healthful recreational/residential development
8. Establish better working relationships between county, township and city

Goals (numbers link to Visions)

1. County-wide soil survey could be used to identify prime agricultural lands (1,2)
2. More restrictive zoning to discourage non-farm development on prime agricultural land (1,2,3)
3. Initiate a countywide rating system for evaluating conversion to farmland.
4. Consider implementing an Agricultural Land Preservation Program (1,2,3)
5. Protect rural farm areas and natural resource areas from high density residential development (1,2,3,4,5,6)
6. Encourage the Pine Co. S.W.C.D. to develop a Comprehensive Water Plan and attain the necessary education needed
7. The County should lead townships in development and land use control and environmental issues (9)
8. Minimize conflict between commercial/industrial uses and forestry, residential, recreational or agricultural uses.

Strategies (numbers link to Goals)

1. County Recorder would use a checklist to ensure that township officials review newly created lots and ensure those lots meet township zoning standards. (2,5)
2. Initiate a Farmland Conversion Impact Rating System whereby one building site could be evaluated against one or more alternative sites. (3)
3. County to encourage farmers to use Best Management Practices to reduce erosion and groundwater contamination.
4. County to establish recycling and education programs in Pine Co. along with the East Central Solid Waste Commission. (7)
5. Encourage farmers who operate feedlots to use Minnesota Pollution Control Agency (MPCA) guidelines to control pollutant hazards.
6. Control location of new feedlots to minimize nuisance problems and pollution. (2)
7. Control development in areas where soils present severe limitations –slope exceeding 12%, high water table, wetlands, low permeability (5)
8. For shoreland areas, the county will require a forty-thousand square foot minimum lot size to control development density (5)
9. Observe the forestry Best Management Practices to reduce pollution and erosion, and increase wildlife habitat and forest production
10. Establish density limits for lot sizes ranging from 1-10 acres to reduce rural development and establish a 1 acre minimum lot size in urban areas. (2,5)
11. County to seek advice from the S.W.C.D. on soil suitability for development proposals.(6)
12. Establishing new and preserving existing tree, shrub or vegetative row barriers along all roadways in all land use areas where possible
13. Development in remote areas will be allowed on lots that are 5 acres or more so that the remote character is maintained. (2,5)
14. County should ensure that residents have access to financial programs and where necessary, adopt those programs that would help achieve this. (7)
15. Commercial and industrial development is encouraged on appropriate sites but not to the extent of causing adverse effects to the county's economic or environmental resources. (8)

April 2, 2004

Re: Request for Local Plans, Policies and Ordinances
East Central Landscape Program

Dear Local and Agency Officials in the East Central Region:

In 1995, the Minnesota Legislature enacted the Sustainable Forest Resources Act. The Act established the Minnesota Forest Resources Council (MFRC), which provides advice to the Governor, Legislature and management agencies on forest sustainability issues.

The MFRC has recently organized a committee consisting of citizens, landowners, agencies and organizations interested in forest sustainability in the East Central landscape. The committee would like to utilize the work of the local units of government, agencies and groups in developing the landscape vision, goals and strategies for the East Central Landscape.

We would appreciate it if you could send us any documents you or the entity you represent have developed that contain information that relate to forest resource issues. The types of documents that will be helpful include comprehensive plans, land use plans and policies, county water plans, watershed district plans, zoning ordinances, subdivision regulations, tree protection ordinances, and any other related forest management document. The committee will summarize this information and develop common issues and themes across the East Central landscape.

The committee is just beginning their work and welcomes additional people interested in this topic. If you are interested in participating or would like to have more information about this request, please contact me at (320) 256-2112 or ekola.mfrc@charter.net.

Please send any information you may have by April 20th . Thank you in advance for helping us with our work.

Sincerely,

Lindberg S. Ekola
East Central Landscape Planner
MN Forest Resources Council