

An aerial photograph of a residential neighborhood. A paved road with a yellow center line runs diagonally from the top center towards the bottom right. To the left of the road, there are several houses with brown roofs and green lawns, interspersed with numerous green trees. To the right of the road, there is a dense forest of green trees. The overall scene is a mix of developed residential areas and natural wooded spaces.

Conserving Wooded Areas in Developing Communities

Best
Management
Practices
in Minnesota

***Conserving Wooded Areas in
Developing Communities
Best Management Practices in Minnesota***



USDA Forest Service



2000
Revised



Northeastern Area,
State & Private Forestry

Prepared in cooperation with the following organizations:

American Society of Landscape Architects, Minnesota Chapter
Builders Association of Minnesota
City Foresters of Eagan and Plymouth
County Forester, Sherburne County
Hennepin Parks
Institute for Agriculture and Trade Policy
Izaak Walton League, Minnesota Chapter
Minnesota Association of Realtors
Minnesota Department of Agriculture, Division of Agronomy and
Plant Protection
Minnesota Department of Natural Resources, Divisions of Forestry
and Waters
Minnesota Department of Transportation, Office of Environ-
mental Services
Minnesota Forestry Association
Minnesota Pollution Control Agency, Division of Water Quality
Minnesota Power
National Association of the Remodeling Industry
Northern States Power Company
Society of American Foresters
Tree Trust
University of Minnesota, College of Natural Resources, Depart-
ment of Forest Resources
Westwood Professional Services, Inc.

Funding for this guidebook was provided in part by the Minnesota Legislature through the Minnesota Department of Natural Resources, Division of Forestry.

Reproduction of this guidebook is encouraged.

Editing: Mary Hoff
Design and Layout: Tami Glassel, DNR Graphic Design
Drawings: Debbie Sroka
Project Coordinator: Jean Mouelle, DNR Forestry

Cover photo courtesy of the city of Eagan.

STATEMENT OF PURPOSE

This best management practices (BMPs) guidebook for conserving wooded areas in developing communities of Minnesota was developed by an advisory committee composed of a wide representation of stakeholders from public, private, and nonprofit organizations. The goals of these BMPs are:

- to provide communities with a better understanding and appreciation of economic, social, and environmental benefits of wooded areas and individual trees,
- to provide decision makers, city planners, landowners, developers, and citizens with land-use approaches to conserve the ecological integrity and functions of wooded areas, including wildlife habitat and corridors throughout the landscape,
- to help builders, utility companies, contractors, machine operators, and crews minimize impacts of construction on wooded areas and trees, and
- to provide citizens with a better place to live and work.



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INTRODUCTION

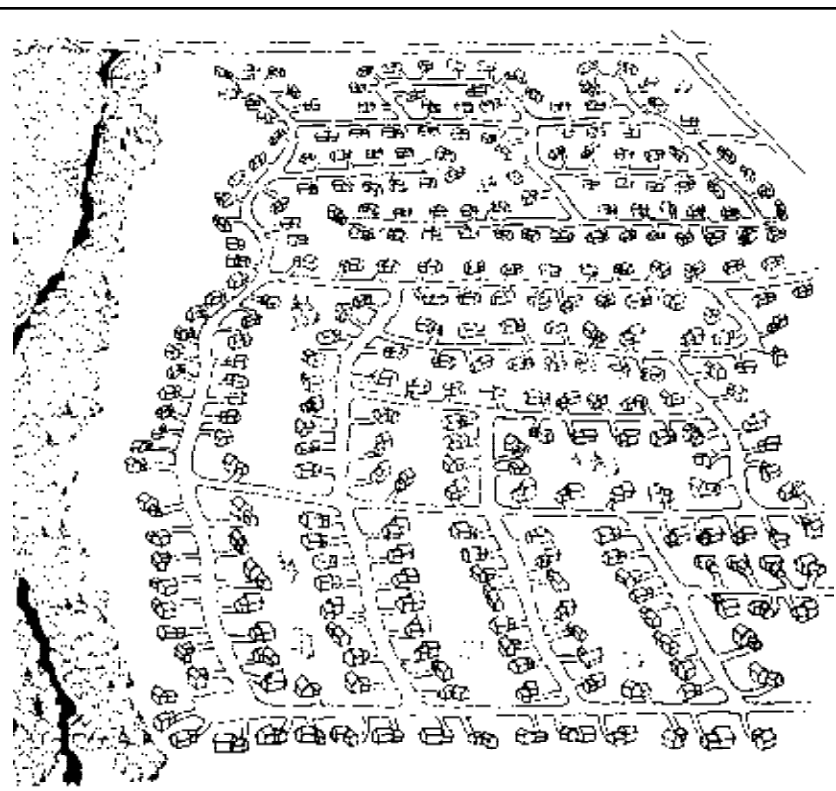
About the urban ecosystem

Urban populations will continue to grow and new residential subdivisions and commercial, industrial, and institutional centers will continue to develop. However, decision makers, natural resource managers, landowners, and citizens are increasingly concerned that the urban biosphere is at risk under current land development practices (urban sprawl). Destruction and fragmentation of wooded areas and farmlands, loss of individual trees, and loss of wildlife habitat threaten the ecological integrity and functions of natural systems and the quality of life in urbanizing areas (Figure 1, page 2).

This BMP guidebook provides communities, urban planners, developers, and builders with ideas for meeting development needs and conserving wooded areas. The guidebook is comprised of five sections. The first describes the economic, social, and environmental benefits of wooded areas and trees in urban areas. The second provides land-use approaches to promote conservation of ecosystem integrity and functions of wooded areas throughout the landscape. The third and fourth provide step-by-step, site-specific land development approaches and site options to minimize site disturbance and construction damage to trees during development at subdivision and lot levels. The fifth presents an overview and new, context-sensitive design for transportation systems and utility infrastructure that should be considered at all levels



Figure 1. A balanced development approach includes the conservation of wooded areas and other natural resources as shown on the aerial view to the left but not their complete destruction as shown on the aerial view to the right.



of development. The BMPs presented in the five sections are equally important for the conservation and protection of wooded areas and individual trees.

Current status of wooded areas in developing communities

Wooded areas are complex ecosystems in which trees are the dominant life form interacting with animals and other plants in a delicate balance. In Minnesota, wooded areas are comprised of native deciduous forests, coniferous forests, shrublands forests, and mixed hardwood-coniferous forests.

Although urban areas are covered with shade trees, existing wooded areas are being fragmented and lost at rapid rates. This is the result of inefficient land-use practices for urban development and a lack of holistic approaches to incorporate forested communities into land-use planning, as well as the lack of implementation of reasonable reforestation efforts.

The extent of this destruction and fragmentation can be seen by comparing the presettlement vegetation map with the 1977 recent vegetation map (Figure 2). The comparison shows a significant reduction of the woodlands within the corridor encompassing Rochester, the Twin Cities area, and St. Cloud.

Local and regional units of government should work cooperatively and proactively with landowners, developers, builders, nonprofit organizations, and citizens to conserve

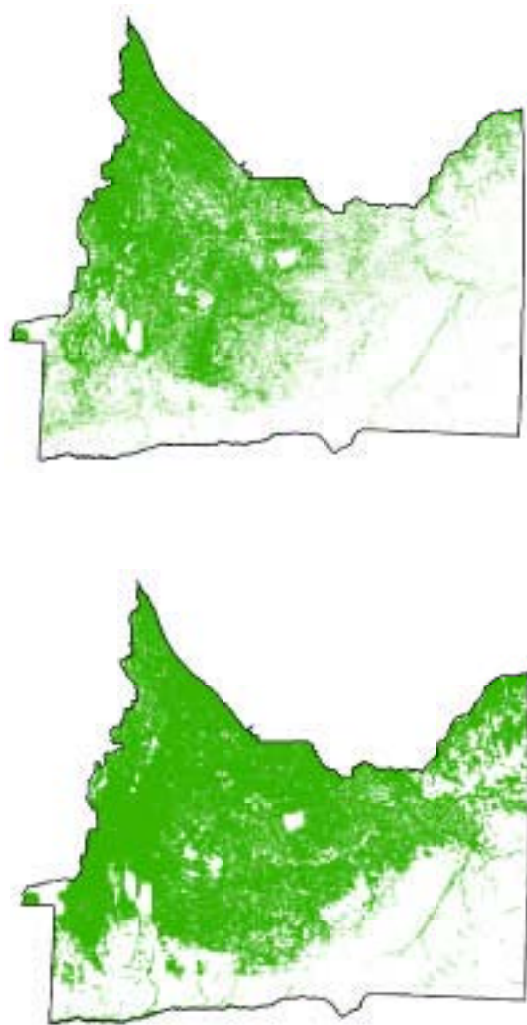


Figure 2. Complete loss and fragmentation of woodlands are demonstrated by comparing the area they once occupied, as shown in the present-day vegetation map (a), to the areas they occupied in the vegetation map of 1977 (b). Note that the 1977 vegetation map is more than 20 years old and more forest land has since been converted to development.

remaining wooded areas. Cooperation can be demonstrated when counties, cities, or townships develop their comprehensive plans and zoning ordinances and also during construction.

About the BMP guidelines

The BMPs provided in this guidebook are voluntary guidelines; they do not supersede existing local, state, and federal laws. They are designed to provide city planners, developers, builders, utilities, and contractors with a framework of action to be taken before, during, and after development to increase the protection and conservation of wooded areas.

The BMPs can be effective if they are accompanied by:

- the goodwill and right attitude of all participants involved in land development (Figure 3),
- proactive planning and use of appropriate land protection options, and
- participation of natural resource professionals (e.g., foresters, arborists).