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Pursuant to 1991 Laws, Chapter 254
 - Article 2, Section 20-22
 Report #1 of two reports

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 Sec 20-22

Minnesota ReLeaf Program Implementation Plan

February 1992

In Accordance with Laws of Minnesota 1991, chapter 254, article 2, sections 20-22

Funding for this project approved by the Minnesota Legislature as recommended by the Legislative Commission on Minnesota Resources from Oil Overcharge Money.

Prepared by

The Minnesota Department of Natural Resources

Division of Forestry

Executive Summary

The Minnesota ReLeaf (MN ReLeaf) program was established to encourage the planting, maintenance, and improvement of trees in communities and rural areas of this state to reduce atmospheric carbon dioxide levels, promote energy conservation, and provide multiple aesthetic and environmental benefits to Minnesota's natural environment.

 This report recognizes that tree planting and improved forest management are not necessarily the most cost-effective measures in battling global warming or in addressing energy conservation. However, these practices should be viewed as a complementary approach to other energy conservation measures intended to reduce global warming. Also, many additional benefits to society and the environment will result from tree planting and improved forest management that do not result from other energy conservation strategies.

The 1991 legislature directed the Department of Natural Resources (DNR) to develop this Program Implementation Plan. This plan details specific recommendations to achieve annual goals of planting 150,000 trees in Minnesota's 870 communities, and providing reforestation and improved forest management on 30,000-50,000 acres in rural Minnesota. Accomplishing these goals will result in the creation of new jobs in the nursery and landscape professions, and provide continued employment opportunities in rural Minnesota.

Following are specific strategies and recommendations for implementation of the MN ReLeaf program:

- The MN ReLeaf program will be delivered in large and small communities throughout Minnesota and on private and public land in rural areas.
- Involvement of citizens and professionals will be integrated into organizational, educational, planning, and implementation strategies at the state and local level.
- The MN ReLeaf program delivery system will, whenever possible, use delivery networks that are already in place, and coordinate tree planting and forest management with existing programs.
- Legislative appropriations, along with other revenues from federal, state and private sources, will determine actual program funding levels for MN ReLeaf.

- A statewide steering committee will be established for MN ReLeaf. This committee will recommend activities, practices, targets, priorities, cost-share rates and industry offsets for the program. The committee will also recommend distribution of funds, administrative processes, and serve to promote, monitor and evaluate the MN ReLeaf program.
- Six regional steering committees will be established to make recommendations to the statewide steering committee for allocation of funds to communities in their particular regions.
- Although MN ReLeaf emphasizes tree planting and improved forest management, critical habitats will not be converted to forest, and biological diversity will be enhanced.
- MN ReLeaf activities will strongly encourage industry involvement through an offset program and emphasize partnerships with communities, nonprofit organizations and volunteers.
- MN ReLeaf funds will also support critical research and educational needs in order to optimize forestry practices, discover better methods for planting and sustaining trees, and share information effectively with people throughout the state.

MN ReLeaf will bring many benefits to the people and the environment of Minnesota. An increase in the quantity and vigor of trees in Minnesota's communities and rural areas means more carbon dioxide will be sequestered and more energy conserved. Tree planting and improved forest management have multiple benefits such as enhanced wildlife habitat, increased recreational opportunities, improved biodiversity, better storm water and erosion control, and greater ecological stability for Minnesota's environment.

The planting and care of many thousands of trees in communities throughout the state will create new nursery and landscape jobs. Reforestation in rural areas will produce economic benefits through continued employment in forest development and long term benefits to users of forest products. Another less measurable benefit will be the community and state pride generated by a tree-planting and reforestation program in which government agencies, communities, corporations and nonprofit groups work together to improve Minnesotans' quality of life.

Table of Contents

Introduction	1	Nonprofit Partnerships	
Purpose of the Plan		Research and Educational Needs	
Legislative History			
Background	2	The Proposal for A Program Delivery System	14
Tree Planting—Part of the Solution to Global Warming		General Administrative Structure	
Global Impacts of Atmospheric CO ₂		Regional Steering Committee	
Relationship of Trees and Other Vegetation to CO ₂		Targets	
Planting for Energy Conservation		Program Activities	
Tree Planting and Management Provide Multiple Benefits			
Funding History			
General Strategies for Implementation	7	Program Evaluation and Monitoring	18
Urban and Rural Participation		Conclusion	18
Grass Roots Decision Making		References Cited	19
Use of Existing Delivery Systems		ReLeaf Plan Appendix	20
Protection of Critical Habitats		Legislation Authorizing This Report	
Corporate, Public and		Research Projects That Would Benefit the Minnesota ReLeaf Program	
		DNR Regional Boundaries Proposed for Minnesota ReLeaf Administration	
		Minnesota ReLeaf Advisory Committee and Work Group Members	
		Proposed Implementation Legislation	

LIST OF FIGURES

1. Minnesota counties with substantial tax-forfeited acreage managed by land departments under a land commissioner	5
2. Tree planting and seeding in Minnesota on non-federal lands (1987-1991)	6
3. Minnesota ReLeaf program proposed administration	13

LIST OF TABLES

1. Comparison of cost-share programs for planting on rural private lands	8
2. Comparison of cost-share programs for communities	9
3. Potential program activities and related cost-share programs for communities	14
4. Potential program activities for state lands	15
5. Potential program activities for county lands	15
6. Potential program activities and related cost-share programs for private lands	16

Introduction

Purpose of the Plan

The Minnesota ReLeaf (MN ReLeaf) Program was established to encourage the planting, maintenance, and improvement of trees in this state to reduce atmospheric carbon dioxide levels, promote energy conservation, and provide multiple aesthetic and environmental benefits to Minnesota's natural environment. This plan makes recommendations concerning the scope of the program and how it should be applied. It also develops proposals for an administrative structure for MN ReLeaf, identifies targets and outlines potential program activities.

Legislative History

The Department of Natural Resources (DNR) was directed by the 1990 Legislature (MS 1990, Chapter 587, Section 2) to conduct a study and prepare a legislative report describing how carbon dioxide emissions could be reduced through tree planting.

To accomplish this task, a CO₂ work group was established. Its members included representatives of state agencies, utility companies, the University of Minnesota, the Legislature, and others. This work group prepared the report entitled *Carbon Dioxide Budgets in Minnesota and Recommendations on Reducing Net Emissions with Trees*. The report, which was presented to the Legislature in January 1991, included a recommendation that a \$13.5 million annual tree-planting and forest development program be established.

The report also recommended that a surcharge of 15 cents per ton of CO₂ emitted should be levied on each of the primary fuel use sectors to support the \$13.5 million funding level. Specifically, transportation and electric utilities would each contribute about one-third of the total funding, with the balance to be collected from residential, industrial, commercial, and agricultural sectors.

The 1991 legislature directed the Minnesota Pollution Control Agency (MPCA) to study and prepare implementation recommendations for applying a fee on CO₂ emissions and submit its report to the DNR by December 1, 1991 (in the report, the MPCA recommended a carbon content fee rather than a fee on CO₂ emissions). In addition, the DNR was directed to prepare this strategic implementation plan and present it to the Legislature by February 1, 1992 (1991 Minnesota Laws, chapter 254, article 2, sections 20-22).

Background

Tree Planting—Part of the Solution to Global Warming

Planting trees as a response to the threat of global warming (the greenhouse effect) and for energy conservation is gaining more and more national and international support from governments and the scientific community.

The most prominent endorsement of the concept of tree planting to date is the 1989 Noordwijk Declaration, in which environmental ministers from 68 countries adopted a goal of attaining an annual 30-million acre net increase in forest cover (currently 30-50 million acres of forest are lost annually). Large scale tropical reforestation is one way to approach this goal, but the United States and other developed countries could also pursue forestry options that would make a global difference.

Responding to the mounting public concerns about the buildup of atmospheric CO₂, President Bush, in 1990, proposed a major new initiative to enhance existing natural and recreational resources. That initiative, called "America the Beautiful", began in fiscal year 1991. A major component of the initiative is the National Tree Program, a nationwide program of tree planting, tree maintenance, and forest improvement. This program calls for a public and private sector cooperative approach with a goal of planting, improving, and maintaining nearly 1 billion additional trees per year in communities and rural areas nationwide. A recent United States Department of Agriculture publication, *America The Beautiful National Tree Program, Questions and Answers About Trees, August, 1991*, stated the following:

"Will planting and caring for an additional 1 billion trees per year make a difference in atmospheric carbon dioxide?"

Based on an estimated current annual U.S.

net emissions of carbon (in the form of CO₂) of 1.4 billion short tons per year, a tree planting and management program limited to marginal agricultural and forest land could achieve as much as a 56.4 percent decrease in net emissions. The potential for a combination of planting and caring for trees is much greater: fully two-thirds of U.S. carbon dioxide emissions could be offset if all private forest land currently in poor condition and all marginal and sensitive agricultural lands were planted or improved."

A number of other significant public and private tree-planting initiatives are also underway. Congress has recently appropriated \$20 million to the "National Tree Trust". The America Forestry Association (AFA) has implemented a "Global ReLeaf" program and a new initiative entitled "Energy ReLeaf" will encourage homeowners and utilities to become more involved in tree-planting efforts. American Public Power Association's "Tree Power Program" is an attempt to get their member utilities to plant a tree for every one of their customers. Finally, state and local tree-planting efforts, primarily spearheaded by utilities, have enjoyed great success in other U.S. states in large part because of cooperative effort between government, business and nonprofit sectors.

Despite its increasing popularity, even strong proponents of tree planting and reforestation agree that tree planting is not necessarily the most cost-effective measure in battling global warming or in addressing the issue of energy conservation. Planting trees is only a part of the overall solution to these global problems. However, tree-planting can alter long term energy use patterns and provides socio-economic values far beyond energy conservation.

Large-scale strategic tree planting should be viewed as a complement to other energy measures to fight global warming, such as significantly reducing carbon dioxide emissions, implementing

¹ The original source for the information in the above quote was from a USDA Forest Service Publication, *Costs of Sequestering Carbon Through Tree Planting and Forest Management in the United States, (General Technical Report WO-58), December 1990.*

more pervasive energy conservation measures, and increasing societal reliance on renewable energy systems.

Global Impacts of Atmospheric CO₂

Much of the current scientific opinion supports the view that air pollution is causing atmospheric temperatures to rise. Carbon dioxide emissions have been estimated to cause half of the total global warming or greenhouse effect (Rodhe 1990); the remainder is caused by methane, freon, and other gases.

Prior to industrialization, carbon was continuously exchanged between the major carbon reservoirs of the earth, but with little or no observable change in atmospheric levels. With industrialization and use of fossil fuels, carbon long stored within the earth and out of circulation for millions of years was burned and converted to CO₂. This led to large accumulations of atmospheric carbon. The carbon balance on land has been upset by deforesting large areas. Some of the carbon that was formerly removed from the atmosphere and stored in forests is currently being added to the atmosphere.

At least two-thirds of the carbon dioxide that human activities produce comes from burning fossil fuels. The remaining one-third is produced by deforestation and other land-use changes. At the present time the earth's carbon dioxide cycle or budget is out of balance and the solution is the same as with any budget that is not balanced: spend less and save more, or in this case, emit less and sequester more carbon dioxide.

The oceans are major assimilators of CO₂ currently taking up slightly more than they release. This absorption amounts to only about one-half of the CO₂ released into the atmosphere by human activity. The result of these activities is, therefore, a net increase in atmospheric CO₂ of about three billion tons each year.

Some studies estimate that the effects of atmospheric warming will be long-term, global in

magnitude, and largely irreversible (Davies 1990). The concentration of CO₂ in the earth's atmosphere has increased about 30% over preindustrial levels (Post et. al. 1989). If current CO₂ emissions trends continue, the concentration of CO₂ in the earth's atmosphere is expected to double by late in the 21st century (Abrahamson 1989, Schneider 1989). This could result in mean global air temperature increases of 2.5 to 8.0 degrees fahrenheit (Hanson et. al. 1988, Manabe and Wetherald 1987, Schlesinger and Zhao 1989, Washington and Meehl 1989, Wilson and Mitchell 1987). Once in the atmosphere, CO₂ is removed very slowly. If all CO₂ emissions caused by human activity were suddenly stopped, it would take 200 to 300 years before concentrations returned to pre-industrial levels (Gradel and Crutzen 1989). Existing climate models cannot predict climate change by region. However, current thinking is that the temperature will increase more in interior continental areas, such as Minnesota, than in the world as a whole (Manabe and Wetherald 1987).

Relationship of Trees and Other Vegetation to CO₂

Newly planted rural forests accumulate carbon for most of their life spans. Accumulation is rapid for several decades, and then the annual increase of sequestered carbon declines. When forests reach the old-growth stage, the amount of carbon released into the atmosphere from the decay of dying trees each year equals the amount sequestered by new growth. These forests act as a carbon storage area. Total carbon storage on a per-acre basis remains at an equilibrium until the forest is harvested or trees are killed by a wind-storm, fire, or other cause.

In recent years, trees have been offered as part of the solution to counteracting the rise in the level of atmospheric CO₂. Trees reduce CO₂ levels in the atmosphere in two ways. The first way is directly through the incorporation of carbon into biomass. By planting trees in rural and urban

settings it is possible to directly sequester atmospheric carbon. The second way to reduce CO₂ levels is by planting trees for energy conservation thereby reducing CO₂ emissions from the combustion of fossil fuels.

Planting for Energy Conservation

Trees reduce energy use when they provide summer shade for homes and other buildings, act as windbreaks, and reduce the summer temperatures of city heat islands.

Trees and other vegetation shade and shelter buildings and reduce the consumption of fuel for heating and cooling. The main effect of solar radiation on building energy use is the solar gain which directly enters through windows and, to a lesser extent, through insulated walls and roofs. Trees block solar radiation and reduce solar gain through building windows and on air conditioning units. Strategic planting is needed since shade in the winter can actually increase the demand for energy.

Trees also impact energy use and conservation by reducing wind speed. Research indicates that rows of trees can reduce wind speed and lower annual energy costs for home heating. Reduction in wind velocity reduces air exchange in buildings and, thus can reduce heat loss.

Wind was measured in Pennsylvania neighborhoods with similar density of homes with a range of tree canopy cover. (Tree canopy cover is the amount of land, including roads and buildings, covered by primarily deciduous trees when viewed from the air.) The measurements found that a neighborhood with a 77 percent tree cover had winter wind speeds 41 percent less than an open neighborhood (Heisler 1990a). If these wind reductions were applied to Madison, Wisconsin, they were predicted to save 9 percent of annual energy costs (Heisler 1990b).

One study which simulated energy savings for a two story home in Toronto found that a 30%

increase in deciduous trees (urban tree cover) throughout the city would reduce wind speeds sufficiently to save 7 percent on the home heating bill (a reduction of 18.5 GJ/yr out of 263.4 GJ/yr) (Akbaril and Taha 1991).

Another study simulating how a row of tall, densely planted evergreens north and west of a home would act as a windbreak, found that a home in the Twin Cities area would save 13.5 percent (\$82) from a heating bill of \$560, and a home in Minot, North Dakota would save 19 percent (\$133) from a heating bill of \$680 (Heisler 1991).

Because fuels are being burned to heat and cool a large number of structures, the air temperature in a metropolitan area will typically be higher than in the surrounding countryside, causing the "urban heat island." In cities, solar radiation increases the air temperature and warms buildings and road surfaces, thus adding to the "urban heat island."

The heat island effect in the Twin Cities in July amounts to a five degree fahrenheit temperature differential between the heart of the city and the countryside. The heat island effect is reduced by trees and other vegetation through the process of evapotranspiration (water evaporating from leaf surfaces). As this water evaporates into the atmosphere, it absorbs heat energy, thus cooling the air. If large numbers of trees were planted in urban areas, the summer air temperature might decrease, thus reducing the effects of the urban heat island.

Tree Planting and Management Provide Multiple Benefits

Many additional natural resource benefits may result from tree planting and forest management, including enhanced wildlife habitat, increased recreational opportunities, and improved forest biodiversity.

Additional benefits to society that come from tree planting and management that are perhaps not as obvious as the ones listed above were identified

by the Shade Tree Advisory Committee in its report to the legislature, *Minnesota's Community and Urban Forests, Opportunities and Recommendations*.

The following is a partial listing:

- *Storm Water and Erosion Control.* Trees play an important role in controlling erosion by filtering rainfall, holding soil in place, and increasing soil moisture. Soil erosion in Minnesota communities is becoming increasingly severe. Urban soils are exposed to erosive forces in the environment due to construction, lack of vegetation, and compaction on public recreation. Buildings, streets, and parking lots are impervious to water infiltration and the resulting runoff flows across exposed soil. Because tree crowns intercept rainfall, they reduce the rate of runoff into storm sewer systems, allow more water to percolate into the ground, and help replenish ground water supplies.
- *Reduction in Air Pollution.* Most efforts to improve air quality have focused on controlling emissions. An under-recognized strategy is the use of vegetation to remove air pollutants from the atmosphere. Most forms of air pollution are absorbed by vegetation and soil (no effort is made here to imply this is the total solution to air quality problems).
- *Ecological Stability.* Trees are a dominant feature of forested ecosystems essential to the continued well-being of natural environments in Minnesota communities. As wooded areas disappear, suitable areas for wildlife become smaller and smaller. This process, called forest fragmentation, is an ecological problem that needs to be addressed.

Funding History

State Forest Lands

During the 1980's, the DNR reforested recently harvested state lands and a large backlog of deforested lands in large part with the dedicated Forest Management Fund (state) established in the 1982 Forest Resources Management Act, and Boundary Waters Canoe Area (BWCA) funds (federal).

In 1989, the legislature consolidated the Forest Management Fund (and several other dedicated funds) with the state general fund. General funds are now appropriated each biennium to replace

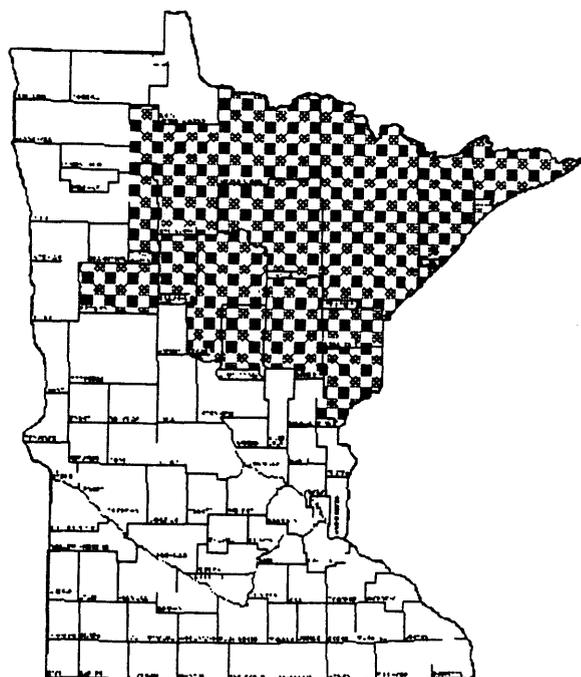


FIGURE 1
Minnesota Counties with substantial tax-forfeited acreage managed by land departments under a land commissioner.

those previously dedicated through the Forest Management Fund.

BWCA funds, which supported over one-half of the artificial regeneration on state lands during the 1980's, ended in 1991. The purpose of this grant was to intensify management of softwood tree species on lands outside the BWCA and up to 3 million federal dollars were appropriated annually for management on state, county, and private lands. These funds were directed toward improving current timber supply and investing in long-term softwood production within the geographic area most directly impacted by creation of the Wilderness Area.

Reforestation needs for state lands will be about \$2 million per year throughout the 1990s. In FY 1992, the DNR will use the last of the BWCA funds to plant or seed approximately 9,500 acres of state land. Funding in FY 1993 and FY 1994 to meet regeneration needs is uncertain.

County Forest Lands

During the decade of the 1980s there has been financial support for forest management on approximately 2.7 million acres of tax-forfeited land administered by Minnesota's counties. This support has come from sources both internal and external to the counties themselves.

External financial support of county forest management was not new to the 1980s, but there has been a significant change in the kind and amount of support over the last ten years. An earlier focus upon technical assistance supplied by state personnel has largely changed to emphasize direct state or federal payments to counties for forest development projects.

These payments have been almost exclusively for the 14 forested counties with substantial tax-forfeited land acreage managed by a Land Department (see figure 1). As with state lands, the ability of counties to adequately reforest their lands has been adversely affected by loss of the BWCA Wilderness Act Grants and County Forestry Assistance Grants.

Private Forest Lands

Approximately 5.6 million acres (41 percent of Minnesota's commercial forest land) is in private ownership. The 1990 federal farm bill continued

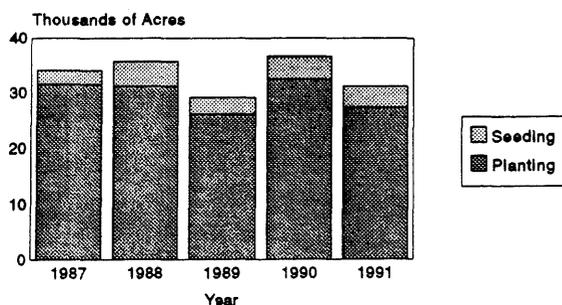


FIGURE 2
Tree Planting and Seeding in Minnesota on Rural Non-federal Public and Private Lands (1987-1991)

programs which were originally authorized in 1985 to idle the nation's marginally productive or highly erodible farm lands. In contrast to the general trend of declining federal support, federal funding for private forest land management has actually increased. Table 1 (page 8) shows existing programs for cost-sharing forestry practices on rural private lands.

Communities

Previous state initiatives such as the Shade Tree Program of the Department of Agriculture funded tree planting on public property. In the late 1970s and early 1980s, communities participating in this program were eligible for a reimbursement of up to 50 percent of their tree-planting costs, with a maximum reimbursement of \$50 per tree. In 1980, a total of 144,535 trees were planted at a cost of \$4.9 million, an average cost of \$33.77 per tree.

Since about 1982, minimal state supported tree-planting programs have been available for communities. The support that has been provided, has been in the form of technical and educational assistance rather than cost sharing for the purchase and planting of trees.

Total Tree-planting Effort

The total tree-planting effort on all Minnesota non-federal rural public and private forest lands (as shown in figure 2) has been approximately 30,000 acres per year over the last five years. It is much more difficult to estimate the total number of trees planted in Minnesota communities. However, based on DNR surveys, Minnesota communities could easily plant an additional 150,000 trees per year.

The intent of MN ReLeaf will be to maintain a 1980s level of tree planting and reforestation in rural areas throughout the 1990s in spite of reduced funding levels from traditional sources, and to increase community tree planting by 150,000 trees per year.

General Strategies for Implementation

The following general strategies will be used as a framework for making specific program recommendations.

Urban and Rural Participation

Energy can be conserved and CO₂ can be sequestered by various methods of tree planting and forest management in both urban and rural areas.

The program in urban areas will cover large and small communities throughout Minnesota. Caledonia's (pop. 2,846) tree program is a good example of small town participation. Their program started as a beautification effort and has evolved to include tree planting to improve air quality as well as reduce energy consumption. Over the past ten years, 200 to 400 trees have been planted each year by residents. The city takes orders from residents and then provides trees at a discount price. During 1991 and 1992, the community is emphasizing tree planting to reduce summer peak electric use by offering a home energy checkup, discounts on trees, and a brochure on where to locate trees to reduce air conditioning use. Caladonia's program is a model effort which could be duplicated in virtually every community in the state under the MN ReLeaf banner.

The program in the rural areas would include both private and public land. Farmstead shelterbelts and field windbreaks are good examples of the types of plantings that could save energy and store carbon in rural areas. The primary function of a farmstead shelterbelt is to stop drifting snow and protect humans, livestock, and wildlife from chilling winter winds. A field windbreak is an important tool for reducing soil erosion and managing snow deposition. Also, forest productivity and the ability to assimilate CO₂ on private and public forest lands is far below its biological potential. Forest management measures such as artificial regeneration can significantly increase growth rates and carbon storage on some forest lands.

Grass Roots Decision Making

The involvement of citizens and professionals that are knowledgeable about community forestry, energy conservation, and forest management at both the state and local levels is critical to the success of the program.

The involvement of local community and neighborhood groups is important to the expansion and improvement of tree-planting and tree-care programs. There are numerous active community and neighborhood associations that have strong volunteer networks associated with them.

Essential to this effort would be the support of professional foresters, arborists, urban foresters, wildlife managers, landscape architects, and nursery professionals whose expertise must be integrated into organizational, educational, planning, and implementation strategies at the state and local level.

Use of Existing Delivery Systems

Whenever possible, the MN ReLeaf Program will identify and use delivery networks that are already in place.

Several programs with established administrative procedures already provide cost-sharing to non-industrial private forest landowners. The various administrative elements and agency responsibilities of these existing programs can be followed or adapted for MN ReLeaf.

An example of a model for distributing a MN ReLeaf legislative appropriation to rural, non-public participants would be the state funded Minnesota Forest Improvement Program. It provides a structure for allocating funds to non-industrial private forest landowners. The Board of Water and Soil Resources, Soil and Water Conservation Districts, and the DNR share responsibilities in this program.

Table 1 shows the existing cost share programs for rural, private lands that would be complemented by MN ReLeaf. The Minnesota Forestry Incentives Program provides cost-sharing for forestry related practices not covered by other state and federal programs such as pest control, firebreak establishment, forest road construction, etc. The Agricul-

tural Conservation Program provides cost-sharing to farmers who carry out conservation and environmental protection practices on agricultural land that result in long-term public benefits. The Forestry Incentives Program encourages landowners to plant trees on suitable open lands or cutover areas, and to perform timber stand improvement

TABLE 1. Comparison of Cost-Share Programs for Planting on Rural Private Lands

	State	Federal			
Program	MFIP MN Forest Improvement Program	ACP Agricultural Conservation Program	FIP Forestry Incentives Program	SIP Stewardship Incentives Program	CRP Conservation Reserve Program
Administration	Administered by the local SWCD with DNR technical agency	Administered by the ASCS with SCS and DNR technical agencies	Administered by the ASCS with DNR Forestry as technical agency	Administered by the state forester and assisted by ASCS and others	Administered by ASCS with SCS and DNR technical agencies
Type	Percent cost-share dependent upon the practice ranges from 50-65 percent.	75 percent cost-share	65 percent cost-share	75 percent cost-share	Annual payment program based on bids submitted by the landowner. 50 percent cost-share for cover establishment.
Purpose	Forest Management not covered by Federal Programs	Conservation	Timber Production	Forest Stewardship	Soil Erosion Control
FY91 Funding	\$120,000	\$240,000	\$80,000	\$400,000 (expected)	\$300,000 for cost shares
Maximum Annual Payment	Maximum cost-shares earned determined by dollar availability in each county	Maximum cost-shares earned set by federal government-currently \$3,500 per year per applicant	Maximum cost-shares earned set by federal government-currently \$10,000 per year per applicant	Maximum cost-shares earned set by federal government-currently \$10,000 per year per applicant	Maximum annual payment established for not farming not for cost-shares received. \$50,000 per applicant
Eligible Projects	<ul style="list-style-type: none"> • Roads • Gopher control • Fencing • Special practices 	<ul style="list-style-type: none"> • Tree planting • Timber stand improvement • Erosion control (on agricultural land) 	<ul style="list-style-type: none"> • Tree planting • Timber stand improvement • Site prep for natural regeneration 	<ul style="list-style-type: none"> • Plan preparation • Tree planting • Timber stand improvement • Wildlife practices • Erosion control (on forest land) • Fisheries practices • Fencing • Prescribed burning • Buffer establishment • Recreation area mgt. 	<ul style="list-style-type: none"> • Temporary cover • Tree planting • Wildlife planting • Grass establishment • Erosion control

TABLE 2. Comparison of Cost-Share Programs for Communities

	State	Federal	
Program	TPEC Tree planting for energy conservation	SBA Small Business Administration - Natural Resources Development Program	ATB America the Beautiful - Challenge Grant
Administration	DNR Division of Forestry	SBA and DNR Division of Forestry	U.S. Forest Service; DNR Division of Forestry
Type	Cost-share (rates to be determined)	Grants to communities (50% of total cost - up to \$5,000)	Grants to communities
Funding	\$959,250 (1992/1993) LCMR \$80,000 (1991/1992) matching funds from U.S. Forest Service and NSP (\$40,000)	\$127,155 (FY 91) \$128,000 (FY 92)	\$65,000 (FY 92)
Eligible Practices	• Tree and shrub planting	• Tree planting	• Tree planting • local government program development • non-profit program development • demonstration projects • informational and educational projects

work for production of timber and other related forest resources. The Stewardship Incentive Program provides cost-sharing for a wide variety of forestry, wildlife, and fisheries practices. The Conservation Reserve Program pays farmers, based on bids, to discontinue growing crops on highly erodible cropland and plant it to grass or trees. Ten-year contracts are developed on the enrolled acres with annual payments to the landowner.

Table 2 shows the existing cost share programs for communities that would be complemented by MN ReLeaf. The Small Business Administration Natural Resources Development Program has funding available for the purpose of expanding opportunities for small business involvement in planting trees on local government (community) land. The America the Beautiful—Challenge

Grant Program has funds available for eligible communities and organizations on a competitive basis for urban forestry projects. The Legislative Commission on Minnesota Resources (LCMR) sponsored a program entitled “Tree and Shrub Planting for Energy in Minnesota Communities” that will provide funds for planting projects in Fall 1992 and Spring 1993. The Tree Planting for Energy Conservation Program provides funds to communities that have demonstrated the ability to match funds from local sources and have a prepared plan for energy conservation planting.

Protection of Critical Habitats

Attention to the environmental and social impacts of public land management practices has increased since the early 1970s. Various federal and

state laws were enacted during this decade relating to environmental and natural resources protection. In Minnesota, the Forest Resource Management Act of 1982 includes a multiple use mandate that requires integrated management of fish, wildlife, timber, and other resources on DNR administered forest lands. Under this mandate, the Wildlife/Forestry Coordination Policy (DNR Policy #8, rev. 5/3/82) and the *Forestry-Wildlife Guidelines to Habitat Management* (MDNR, rev. 1985) were developed to further improve integration of forestry practices and wildlife management.

Although tree planting and forest management is the emphasis of the MN ReLeaf Program, habitats such as native prairies, fens, and other critical types of wetlands would not be converted to forest. A special effort would be made to ensure that the tree-planting efforts associated with this program are coordinated between forest and wildlife managers.

MN ReLeaf will strive to meet the challenge of managing for biological diversity by maintaining a mosaic of forest age classes, diversity of indigenous forest tree species (including disease and drought resistant tree species), wildlife corridors, and special habitat areas over a relatively large area (this is commonly called "the landscape level").

Corporate, Public and Nonprofit Partnerships

As noted above, extensive tree-planting efforts are occurring in numerous other states and communities throughout the country. In almost every case, industry has not only been an active participant, but has offered strong leadership and support. For this reason, the MN ReLeaf program will strongly encourage industry involvement.

In addition to the extensive public forester network in Minnesota, the state has a large and active forest products industry which has broad expertise in the area of tree planting and reforestation. Also, a number of companies outside the forest products

arena, who see the positive benefits of MN ReLeaf, have expressed an interest in being involved in the program. This interest will no doubt increase in future years of the program as MN ReLeaf becomes better known and its benefits are realized.

At the request of the legislature, the MPCA recommended an offset program (against a proposed carbon fee) for companies who voluntarily participated in the MN ReLeaf program. The offset program, along with the carbon fee itself, is theoretically an incentive for industry either to reduce CO₂ emissions or to become part of the MN ReLeaf tree-planting effort.

In part, the MPCA proposal allows a "dollar for dollar" offset against a company's carbon fee liability. This offset will be based on the number of trees directly planted, in-kind contributions for tree planting, or direct contributions to a program, organization or community that has an active reforestation program in place. An offset will be allowed up to the total amount of carbon fee liability for each company and would be granted for the company participating in an "approved" Minnesota ReLeaf tree-planting program. A number of approved tree-planting practices are suggested within this document, however, the final approval of recommended program activities and practices would be the responsibility of the Statewide Steering Committee (See IV. A.).

Under the plan, utilities would be given the ability to pass the cost of a carbon fee along to their customers. An affected company would then be allowed to claim offsets with a special tax filing for tree-planting efforts up to the amount of its utility bill increase.

Industry's contribution to MN ReLeaf should be, wherever possible, a "challenge grant" to communities or organizations who participate in approved tree-growing efforts. Furthermore, approved tree-growing efforts which might be cost-shared may include but not be limited to planning, project development, purchase and planting trees

and both short and long term maintenance. No matter what the final funding mechanism for MN ReLeaf, incentives for industry to participate in the program should continue to remain in place. Also, just as non-industrial programs within MN ReLeaf encourage cost-sharing, so, too, should industry efforts include this cost-sharing mechanism.

Many utilities nationally have successfully executed cost-sharing in regards to a tree-planting program in their communities or states. Obvious exceptions to this practice would be for those tree-growing practices conducted on a company's own property.

Volunteerism should be an integral part of the MN ReLeaf program. Since most tree-planting activities are skills that can be easily learned, they can involve volunteers of many ages and experiences. In fact, these activities present an ideal opportunity for companies, working with the expertise of DNR or private foresters, to incorporate youth development and employment training activities for tree planting.

For example, in 1990, a collaboration of the Minnesota-based National Youth Leadership Council, Celebrate 1990, Minnesota Department of Education, Minnesota Forestry Association and the Minnesota Arbor Month Committee planted one million trees. Much of this was accomplished through local youth efforts. This type of program, perhaps spearheaded in many cases by companies, could be duplicated throughout the state under the banner of MN ReLeaf.

Although the state does have a history of using youths to plant on rural state and public lands, (e.g., Minnesota Youth Conservation Corps), greater emphasis would be in urban and community settings. Nonprofit organizations such as the Twin Cities Tree Trust can be expanded in both the Twin Cities metropolitan area and Greater Minnesota to help achieve some of these tree-planting goals. The Tree Trust is a nationally recognized, model program which provides employment opportunities for youth and disadvantaged young adults.

Since the vast majority of planting opportunities exist on private and residential properties, all Minnesotans will need to understand their responsibility in the overall effort and know how they can contribute. Community tree care programs, nonprofit, service, and other community-based citizen action organizations — working closely with sponsoring industries and the DNR technical expertise — would provide a vital link in rallying individual participation and instilling a sense of ownership. These groups could organize, help financially, and carry out neighborhood and community planting and care projects.

Another key management tool in the implementation of MN ReLeaf would be coordinating this substantial volunteer effort. The state's Community Forestry Volunteer Coordinator in the Department of Natural Resources would be a logical choice to organize volunteers. In addition, much of the necessary structure for linking local communities to the MN ReLeaf program exists in the Minnesota Shade Tree Advisory Committee. Since 1974, this group, representing over 50 state agencies, professional and citizen organizations, and local governments, has served to coordinate statewide efforts to preserve, expand, and maintain Minnesota's community forests. In order to accomplish these tree-planting goals with volunteers, these groups will need to expand existing programs to train volunteers, update technical information, supply adequate supervision, and recognize them for their efforts.

Research and Educational Needs

Trees sequester carbon dioxide most efficiently when they are growing vigorously. When strategically located they save more energy. If inappropriate tree-planting and forest-management techniques are used or if trees are seriously impacted by disease and insect problems, the success of MN ReLeaf efforts would be compromised. To avoid such problems, Minnesotans need to know "state-of-the-art" tree planting and forest management methods.

Rural and urban forestry practices in Minnesota are among the best in the nation, but significant gaps still exist between current methods and more optimal ones. Minnesota needs to discover better methods for planting and sustaining trees. Also, information about the best methods needs to be shared effectively with people throughout the state. Therefore, the greatest MN ReLeaf benefits would be achieved, if a portion of MN ReLeaf funds support critical research and education needs.

Each biennium a limited number of special MN ReLeaf research and education projects should be targeted which are most crucial and timely to increase the effectiveness of Minnesota ReLeaf planting and tree management programs.

A list of research and education projects that would benefit the MN ReLeaf program is included in the appendix..

The Proposal for A Program Delivery System

Legislative appropriations and others sources of funds will determine actual program funding levels. Recommendations for actual program activities, targets, and costs will be made by statewide and regional steering committees.

General Administrative Structure

Statewide Steering Committee

A statewide steering committee will be established for the MN ReLeaf program. This committee will consist of one representative from the following twelve organizations:

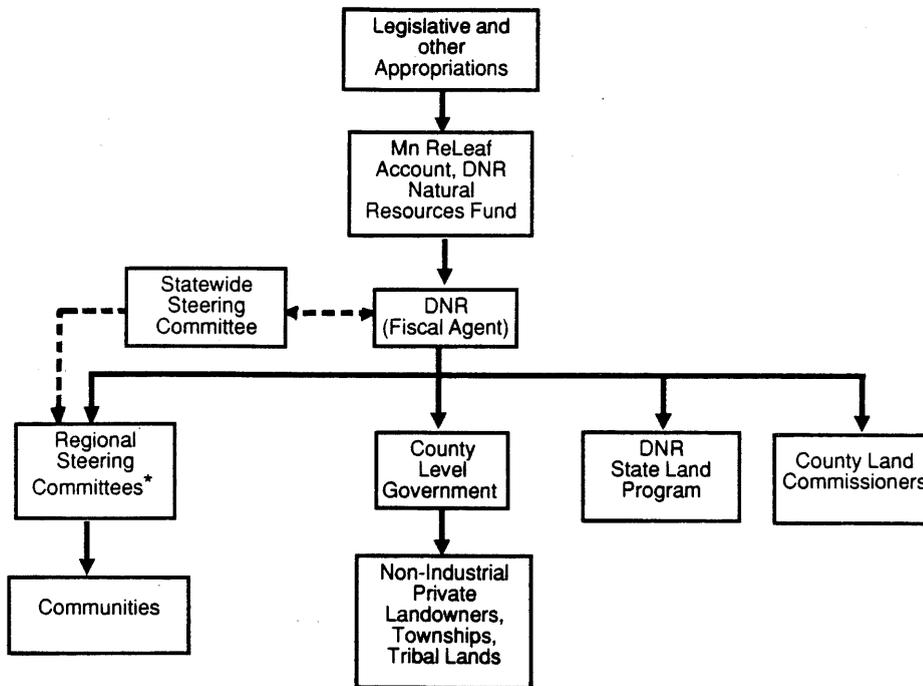
- DNR (Chair)
- Board of Water and Soil Resources
- Statewide environmental organization
- League of Minnesota Cities
- Utilities
- Minnesota Shade Tree Advisory Committee
- Minnesota Forest Industries
- University of Minnesota

- Nursery industry
- Philanthropic foundation
- Industry (non-forestry)
- Minnesota Association of County Land Commissioners

The primary responsibilities of the statewide steering committee are as follows:

- Recommend program activities and practices that result in energy conservation and carbon sequestration.
- Recommend priorities for program activities and practices eligible for cost-sharing, and establish corresponding cost-share rates.
- Recommend the distribution of funds to communities, rural private lands, state and county forest lands and related educational and research needs (see figure 3).
- Identify and recommend implementation for offsets
- Recommend administrative processes.
- Establish a technical advisory sub-committee.
- Promote the program and look for new opportunities to make the program successful.
- Monitor and evaluate program accomplishments and recommend changes.

FIGURE 3
Minnesota ReLeaf Program Proposed Administration



*DNR will act as fiscal agent for the regional steering committees

For community forestry activities, the statewide steering committee would recommend to the DNR the allocation of funds to six regional steering committees. The boundaries of these regions would correspond to the DNR regional boundaries (appendix D). The DNR regional offices will act as fiscal agents for the regional steering committees. The regional steering committees will then recommend the allocation of funds to communities.

Regional Steering Committee

The regional steering committee will consist of seven members representing (but not limited to) the following groups or interests:

- DNR (Chair)
- Community Forester
- Regional Development Commission
- Horticultural Extension
- Citizen
- Private/nonprofit volunteer organizations

The primary responsibilities of the regional steering committees are as follows:

- Recommend program practices and activities within the guidelines set by the statewide steering committee.
- Recommend regional priorities.
- Solicit project proposals from communities.
- Evaluate and rank proposals based on state and regional guidelines, priorities, and criteria.
- Submit total funding request to state steering committee.
- Recommend projects to be funded to the DNR based on regional priorities.
- Monitor and evaluate accomplishments and recommend changes as necessary.

Targets

Recommended annual targets for the MN ReLeaf program are to plant and maintain:

- an additional 150,000 trees in Minnesota's 870 communities with a long term goal of increasing forest cover in communities from approximately 30% (estimated present level) to 50%.
- 30,000 to 50,000 acres of trees in rural areas.

TABLE 3. Potential Program Activities and Related Cost Share Programs for Communities

	Activities	Related Cost Share Programs
1	Plant trees strategically around buildings to provide shade for energy conservation.	TPEC
2	Increase tree cover in communities to reduce wind, to shade pavement, or to reduce local summer temperatures.	TPEC, SBA
3	Plant community windbreaks.	TPEC, SBA
4	Purchase land or easements for tree planting sites, tree nursery production, or preservation of existing tree cover.	TPEC
5	Increase prevention and control of damage by insects and diseases to maintain tree health and vigor.	ATB

Program Activities

Program activities for MN ReLeaf can be carried out by communities, private landowners and state and county land management programs. The potential exists to make available MN ReLeaf program funding to accomplish more through cost-sharing with communities and private landowners. Cost-sharing may include, but not be limited to, planning, project development, purchase and planting of trees and both short and long term maintenance.

Because the MN ReLeaf program will often be complementing other state and federal programs, the specific role of this program in accomplishing

resource objectives in both rural and urban areas should be defined. The proposed role of the MN ReLeaf Program is stated in this section for each of the program categories, along with tables showing program activities and the other cost-share programs that would be coordinated with MN ReLeaf.

Communities (rural and urban)

The role of the MN ReLeaf Program in communities will be to plant, preserve, and maintain trees to maximize energy conservation potential. Eligible projects for cost-sharing might include development of planting plans, purchase and planting of trees, maintenance, pest management and tree preservation practices.

Table 3 shows the potential program activities and related cost share programs for the community portion of MN ReLeaf.

Rural Ownerships

State Forest Lands

The role of MN ReLeaf on state forest lands will be to conduct reforestation, silvicultural practices, and harvesting to improve the health and vigorous growth of state forest land in order to sequester more carbon. Priorities will be given to reforesting all harvested sites.

The 1982 Forest Resource Management Act (M.S. 89.002) requires reforestation on an acreage at least equal to the acreage harvested on DNR-administered lands each year. This is to assure that commitments to manage the state's forest re-

sources for multiple-uses on a sustained-yield basis are fulfilled.

Table 4 lists potential program activities that will increase the sequestration of carbon on state lands.

County Forest Lands

As with state lands, county land managers are also required to ensure that all harvested sites are reforested. Therefore, reforestation again will be a high priority. But many other opportunities also exist to improve the carbon sequestration potential on county lands and all these options should be pursued.

Table 5 shows the potential program activities for county forest lands.

1	Plant trees on commercial forest land where appropriate.
2	Perform silvicultural practices that ensure survival of planted stands.
3	Perform silvicultural practices that increase the growth and vigor of established forest stands.

1	Prepare forested sites for natural regeneration
2	Plant tree seedlings or seed on non-forested or recently harvested sites.
3	Underplant selected stands with long-lived tree species.
4	Conduct timber stand improvement and release to insure survival and growth of forest stands.

TABLE 6. Potential Program Activities and Related Cost Share Programs for Private Lands

Potential Program Activities		Related Cost Share Programs
1	Renovate deteriorating and inadequate rural farmstead shelterbelts and field windbreaks.	ACP
2	Plant new farmstead shelterbelts and field windbreaks.	ACP,CRP
3	Plant fast-growing tree species for production of liquid fuel (ethanol) or solid fuel from wood.	
4	Increase prevention and control of damage by insects and diseases to maintain the health and vigor of trees.	
5	Establish annual land rental payments to landowners as an incentive to convert open land to tree cover.	CRP
6	Prepare forested sites for natural regeneration.	ACP,FIP,SIP
7	Plant tree seedlings or seed on non-forested or recently harvested sites.	ACP,FIP,SIP
8	Expand timber stand improvement, release, and protection of forest stands (e.g., thinning, weed control, gopher control, fuelbreaks, and prevention of pest outbreaks) to insure tree survival and increase tree growth rates.	MFIP,ACP,FIP,SIP
9	Establish living snow fences along roads.	RIM

Private (NIPF, industrial, tribal, etc.)

MN ReLeaf's role on private lands will be to work with non-industrial private forest landowners, tribal governments, and other private ownerships to improve carbon sequestration potential on their lands. In addition, energy conservation measures such as windbreaks and shelter belts on rural farms and homesteads and efforts which complement other federal and state cost share programs will also be encouraged.

Table 6 shows the potential program activities and related cost-share programs for private lands.

Program Evaluation and Monitoring

Monitoring of program implementation will be necessary to determine how goals are being met as well as to evaluate the effectiveness and efficiency of the program. Monitoring of the Minnesota ReLeaf program will be the responsibility of the statewide steering committee and the responsible state agencies. Annual accomplishment reports will be compiled at the end of each fiscal year with recommendations for program improvements.

Two important purposes for monitoring and evaluating Minnesota ReLeaf are:

- To demonstrate what has been accomplished under this program, and
- To capture and document what is learned about the impact of trees on the environment.

This second purpose encompasses areas such as the impact the program has on carbon dioxide levels in the atmosphere, energy conservation, as well as other aesthetic and environmental effects on the Minnesota environment.

A data base and reporting system will be developed and maintained to record the number of trees planted, maintained, and improved in communities and rural areas; numbers of communities, companies and organizations participating in the program; and numbers of rural landowners participating.

Conclusion

MN ReLeaf will bring many benefits to the people and to the environment of Minnesota. Some of these benefits are tangible and some are not. An obvious benefit will be more trees in Minnesota's communities and rural areas. This means that more carbon dioxide will be sequestered and communities will have increased their energy conservation efforts. Large scale strategic tree planting and reforestation will also have other multiple benefits such as enhanced wildlife habitat, increased recreational opportunities, improved biodiversity, better storm water and erosion control, and greater ecological stability for Minnesota's environment.

Other results will be more difficult to quantify, but are just as important. One such benefit will be the community and state pride generated by a tree-planting and reforestation program in which government agencies, communities, corporations and nonprofit groups are working together to improve the quality of life for all Minnesotans.

This plan has described the goals of MN ReLeaf, the major components of program organization and how the program will be strengthened by other programs to which it is linked. MN ReLeaf will also document the measurable results of more aggressive tree-planting and reforestation efforts in order to continue to improve the program in the future.

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ReLeaf Plan Appendix

Legislation Authorizing This Report

867

LAWS of MINNESOTA for 1991 Ch. 254, Art. 2

Sec. 20. [88.82] MINNESOTA RELEAF PROGRAM.

The Minnesota releaf program is established in the department of natural resources to encourage, promote, and fund the planting, maintenance, and improvement of trees in this state to reduce atmospheric carbon dioxide levels and promote energy conservation.

Sec. 21. IMPLEMENTATION PLAN.

Subdivision 1. DESCRIPTION. (a) The commissioner of natural resources in cooperation with the commissioners of the pollution control agency and department of agriculture shall prepare and submit to the legislative commission on Minnesota resources an implementation plan for the Minnesota releaf program containing the following elements:

(1) primary and secondary criteria for selecting projects for funding under the Minnesota releaf program; and

(2) recommended procedures for processing grant applications and allocating funds.

(b) The primary criteria developed under paragraph (a), clause (1), must include, but are not limited to:

(1) reduction and mitigation of adverse environmental impacts of atmospheric carbon dioxide; and

(2) promotion of energy conservation.

(c) The secondary criteria developed under paragraph (a), clause (1), must include, but are not limited to:

(1) balancing of urban and rural needs;

(2) preservation of existing trees in urban areas;

(3) promotion of biodiversity, including development of disease-resistant and drought-resistant tree species;

(4) erosion control;

(5) enhancement of wildlife habitat;

(6) encouragement of cost sharing with public and private entities;

(7) enhancement of recreational opportunities in urban and rural areas;

(8) coordination with existing state and federal programs;

(9) acceleration of the planting of harvestable timber;

(10) creation of employment opportunities for disadvantaged youth; and

(11) maximization of the use of volunteers.

Subd. 2. DUTIES OF THE COMMISSIONER OF NATURAL RESOURCES. By February 1, 1992, the commissioner of natural resources shall transmit to the legislature the implementation plan prepared under subdivision 1, and the recommendations prepared under subdivision 3, together with all recommended legislation to implement the Minnesota releaf program and the supporting fee structure.

Subd. 3. DUTIES OF THE POLLUTION CONTROL AGENCY. (a) The pollution control agency, in consultation with potentially affected parties, shall prepare implementation recommendations for applying a fee on carbon dioxide emissions for the Minnesota releaf program. The agency's analysis must include:

(1) a review of the carbon dioxide sources and proposed fee base identified in the study prepared in accordance with Laws 1990, chapter 587, section 2;

(2) recommendations regarding exemptions, if any, that should be granted;

(3) a recommended method for measuring the amount of carbon dioxide emitted by various sources;

(4) a recommended procedure for administering and collecting the fees from the sources described in clause (3); and

(5) an estimate of revenue that would be generated by the fees.

(b) The agency shall submit implementation recommendations to the commissioner of natural resources by December 1, 1991.

Sec. 22. LEGISLATIVE COMMISSION ON MINNESOTA RESOURCES PARTICIPATION.

The commissioners of natural resources and pollution control agency shall include the preparation of the plans required for the implementation of the Minnesota releaf program as part of the tree and shrub planting project funded in article 1, section 14. In compliance with article 1, section 14, an amended work plan for the tree and shrub planting project including the Minnesota releaf plans shall be submitted to the legislative commission on Minnesota resources for approval.

New language is indicated by underline. deletions by ~~strikethrough~~.

Research Projects That Would Benefit the Minnesota ReLeaf Program

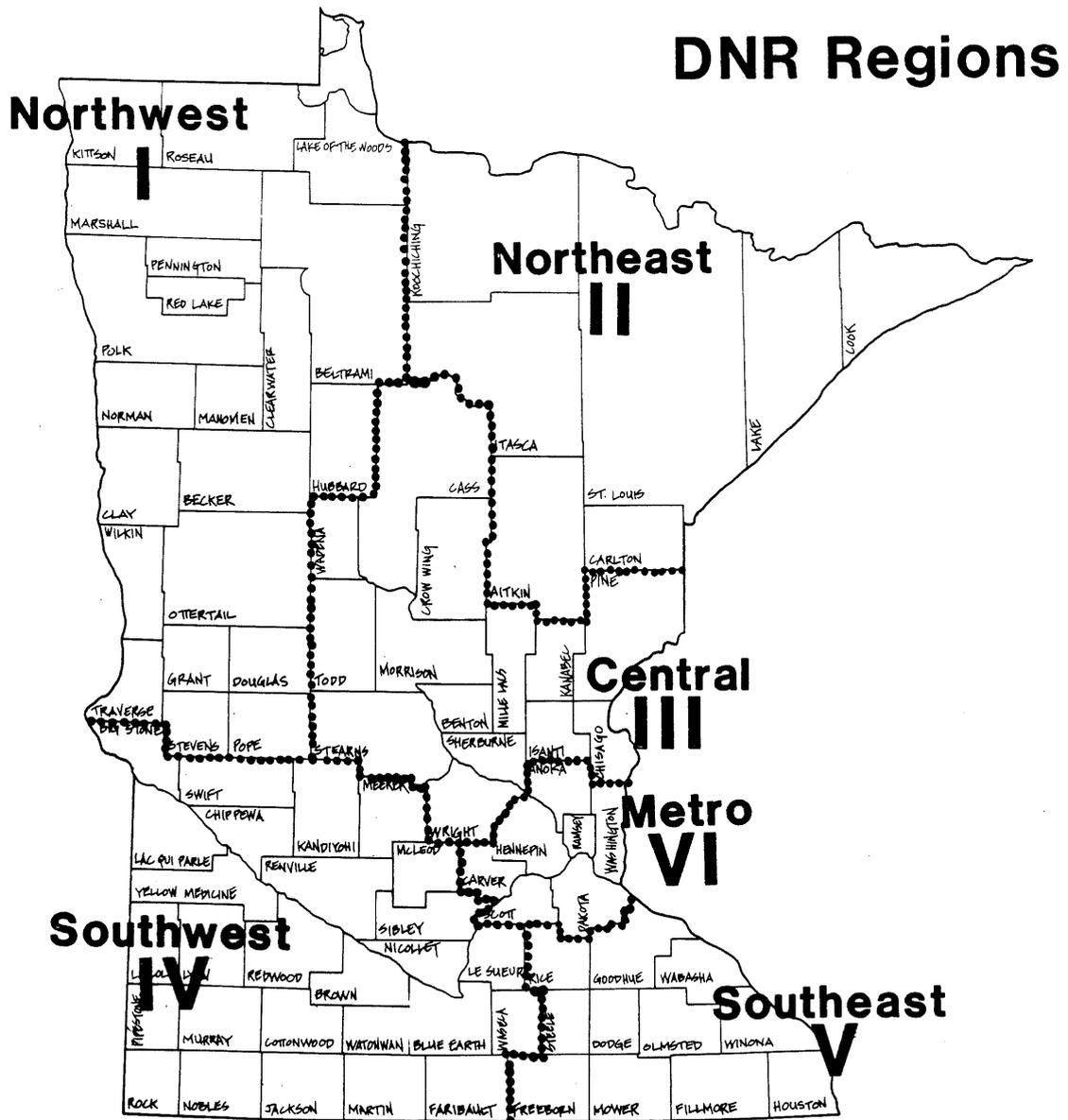
Research and Educational Needs

Identify and/or develop tree species and cultivars which are particularly effective for energy conservation and carbon dioxide reductions in various locations and on different sites.

Develop improved methods of tree propagation, tree maintenance (pruning, fertilizing, protection), and forest management to improve tree survival, sustain tree vigor, and increase the utility of trees in energy conservation and carbon dioxide reduction.

- Improve urban and rural tree pest management techniques.
- Develop and test alternative means of controlling weeds and brush that suppress growth of young trees.
- Develop better management systems for stimulating natural regeneration of desirable trees on rural lands.
- Determine the amount of existing and potential tree cover in Minnesota communities.
- Determine how different types of tree plantings and tree cover in a range of community settings affect wind velocity, summer air temperature and ventilation, and related energy use.
- Develop educational materials and programs that enable community leaders, land use planners, landowners, natural resource managers, volunteers, and other appropriate individuals to make use of current research-based knowledge about growing trees for energy conservation and carbon dioxide reduction.
- Develop educational materials and programs that inform community leaders about how to organize community forestry programs including policies and guidelines for protecting trees and forest lands.

**DNR Regional Boundaries Proposed for
Minnesota ReLeaf Administration**



Minnesota Releaf Advisory Committee

The Honorable Gregory L. Dahl, State Senator*

The Honorable Phyllis Kahn, State Representative*

Lisa Thorvig, Director, PCA Air Quality Division

Richard Skok, Dean, College of Natural Resources

D'Wayne Deziel, MN Association of SWCD

Jim Roberts, Minnesota Power and Light

Arthur Mason, Director, Department of Agriculture-Plant Industry

Vern Peterson, Association of Metropolitan Municipalities

Ron Harnack, Director, Board of Water and Soil Resources

Wayne Brandt, Minnesota Forest Industries

Janet Anderson, Northern States Power

Paul Hanson, Director, Izaak Walton League-Midwest Office

David Fricke, Executive Director, Minnesota Association of Townships

G. Rolf Svensen, MN Shade Tree Advisory Committee

John Velin, Director, Legislative Commission on MN Resources

Don Dinndorf, Minnesota Conservation Federation*

Garrett Ous, Chair, MN Association of County Land Commissioners

Jim & Gen McCarthy, Executive Directors, MN Nursery and Landscape Association

Kirk Brown, Twin Cities Tree Trust

Ms. Jan Green, MN Audubon Society

*Did not formally participate in meetings held 11-7-91, 12-10-91, and 1-10-92.

Minnesota ReLeaf Work Group

Bruce Barker, Minnesota Forest Industries

Mel Baughman, University of Minnesota, Forest Resources Extension Service

Kirk M. Brown, Twin Cities Tree Trust

Bill Grant, Pollution Control Agency

Dwight Robinson, Department of Agriculture

Peggy Sand, University of Minnesota, Department of Landscape Architecture

Bob Tomlinson, Department of Natural Resources

Lloyd Wagner, Department of Natural Resources

Maryanna Harstad, Department of Natural Resources

Proposed Implementation Legislation

1 A bill for an act
2 relating to forestry and the environment; providing
3 for the Minnesota releaf program; creating a steering
4 committee and regional committees; assessing a fee on
5 certain carbon content; providing for offsets from
6 fees; proposing coding for new law in Minnesota
7 Statutes, chapters 88 and 116.

8 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MINNESOTA:
9 Section 1. [88.86] [MINNESOTA RELEAF PROGRAM.]
10 Subdivision 1. [ESTABLISHMENT.] The Minnesota releaf
11 program is established in the department of natural resources to
12 encourage, promote, and fund the planting, maintenance, and
13 improvement of trees in this state to reduce atmospheric carbon
14 dioxide levels and promote energy conservation.

15 Subd. 2. [ROLE IN COMMUNITIES.] The role of the releaf
16 program in rural and urban communities is to plant, preserve and
17 maintain trees to maximize the potential for energy conservation.

18 Subd. 3. [ROLE IN PUBLIC FOREST LANDS.] The role of the
19 releaf program in state and county forest lands is to conduct
20 silvicultural practices and harvesting to improve the health and
21 vigorous growth of state and county forest land to sequester
22 carbon dioxide.

23 Subd. 4. [ROLE IN PRIVATE FOREST LANDS.] The role of the
24 releaf program on private lands is to work with nonindustrial
25 private forests, tribal and other private ownerships to create
26 more healthy and vigorous forests, increase energy conservation

1 of rural farm areas, and reduce fossil fuel burning through
2 expanded management of private lands in a cost-effective manner
3 that compliments other federal and state cost share programs.

4 Sec. 2. [88.87] [MINNESOTA RELEAF STEERING COMMITTEE.]
5 Subdivision 1. [CREATION.] The Minnesota releaf steering
6 committee consists of 12 members. The members must be appointed
7 by the commissioner of natural resources and must include one of
8 each of the following:

9 (1) the commissioner of natural resources or a designee;
10 (2) a representative of the League of Minnesota Cities;
11 (3) a representative of a philanthropic foundation;
12 (4) a representative of the Minnesota Association of County
13 Land Commissioners;

14 (5) a representative of the board of water and soil
15 resources;

16 (6) a representative of the Minnesota shade tree advisory
17 committee;

18 (7) a representative of the nursery industry;
19 (8) a representative of the forestry industry;
20 (9) a representative of Minnesota utilities;
21 (10) a representative of a statewide environmental
22 organization;

23 (11) a representative of the University of Minnesota; and
24 (12) a representative of a nonforestry industry.

25 Subd. 2. [DUTIES.] The steering committee must recommend
26 to the commissioner of natural resources the distribution of
27 available program funds under section 6, subdivision 5, to the
28 following:

29 (1) regional steering committees for fund allocation to
30 rural and urban communities;

31 (2) local units of government for fund allocation to
32 nonindustrial forest landowners, tribal lands and townships; and
33 (3) commissioner of natural resources for fund allocation
34 to state and county forestlands.

35 Subd. 3. [FUNDING CRITERIA.] The steering committee must
36 develop and recommend to the commissioner of natural resources

1 primary and secondary funding criteria for the Minnesota releaf
2 program that includes, but is not limited to:
3 (a) Primary criteria are:
4 (1) reduction and mitigation of adverse environmental
5 impacts of atmospheric carbon dioxide; and
6 (2) promotion of energy conservation.
7 (b) Secondary criteria are:
8 (1) balancing of urban and rural needs;
9 (2) preservation of existing trees in urban areas;
10 (3) promotion of biodiversity, including development of
11 disease-resistant and drought-resistant tree species;
12 (4) erosion control;
13 (5) enhancement of wildlife habitat;
14 (6) encouragement of cost sharing with public and private
15 entities;
16 (7) enhancement of recreational opportunities in urban and
17 rural areas;
18 (8) coordination with existing state and federal programs;
19 (9) acceleration of the planting of harvestable timber;
20 (10) creation of employment opportunities for disadvantaged
21 youth; and
22 (11) maximization of the use of volunteers.
23 Subd. 4. [OTHER RESPONSIBILITIES.] The steering committee
24 must:
25 (1) recommend program activities and practices that result
26 in energy conservation and carbon sequestration;
27 (2) recommend priorities for program activities and
28 practices eligible for cost-sharing, and establish corresponding
29 cost-share rates;
30 (3) recommend the distribution of funds to communities,
31 rural private lands, state and county forest lands and related
32 educational and research needs;
33 (4) identify and recommend implementation for offsets;
34 (5) recommend administrative processes;
35 (6) establish a technical advisory subcommittee;
36 (7) promote the program and look for new opportunities to

3

1 make the program successful; and
2 (8) monitor and evaluate program accomplishment and
3 recommend changes.
4 Sec. 3. [88.88] [MINNESOTA RELEAF REGIONAL COMMITTEES.]
5 Subdivision 1. [ESTABLISHMENT.] The commissioner of
6 natural resources must establish regional committees in each
7 department of natural resource region for the purpose of
8 establishing priorities and determining eligible projects in
9 rural and urban communities approved for funding.
10 Subd. 2. [MEMBERSHIP.] (a) A regional committee shall
11 consist of seven representatives from the following groups or
12 sectors:
13 (1) urban conservation
14 (2) department of natural resources
15 (3) nonprofit volunteer organization
16 (4) regional development commission
17 (5) horticultural
18 (6) extension service, and
19 (7) rural forestry.
20 (b) The steering committee created in section 2 shall
21 recommend to the commissioner of natural resources the regional
22 committee members.
23 Subd. 3. [DUTIES.] The primary duties of the regional
24 steering committees are as follows:
25 (1) recommend program practices and activities within the
26 guidelines set by the statewide steering committee;
27 (2) recommend regional priorities;
28 (3) solicit project proposals from communities;
29 (4) evaluate and rank proposals based on state and regional
30 guidelines, priorities, and criteria;
31 (5) submit total funding request to state steering
32 committee;
33 (6) recommend projects to be funded by the commissioner of
34 natural resources based on regional priorities; and
35 (7) monitor and evaluate accomplishments and recommend
36 changes as necessary.

4

1 Sec. 4. [88.89] [MINNESOTA RELEAF ACCOUNT.]

2 (a) A Minnesota releaf program account is established in
3 the natural resources fund in the state treasury.

4 (b) The account consists of assessments collected under
5 section 6.

6 (c) Gifts and donations, including land or interests in
7 land, may be made to the commissioner of natural resources for
8 the purposes of the Minnesota releaf program, and credited to
9 the account created by paragraph (a).

10 Sec. 5. [116.87] [DEFINITIONS.]

11 Subdivision 1. [TERMS.] For purposes of this chapter, the
12 following terms have the meaning given them.

13 Subd. 2. [COAL.] "Coal" means bituminous coal,
14 subbituminous coal, lignite, and coke.

15 Subd. 3. [COMMISSIONER.] "Commissioner" means the
16 commissioner of revenue.

17 Subd. 4. [LIQUID FUELS.] "Liquid fuels" means gasoline,
18 propane, aviation gasoline, fuel oil, and diesel fuel.
19 "Gasoline," "aviation gasoline," "fuel oil," and "diesel fuel"
20 have the meanings given to them in section 296.01.

21 Subd. 5. [MINNESOTA RELEAF.] "Minnesota releaf" means the
22 tree planting program established in section 1.

23 Subd. 6. [NATURAL GAS.] "Natural gas" means a naturally
24 occurring mixture of hydrocarbons and nonhydrocarbon gases found
25 in porous geologic formations beneath the earth's surface, the
26 principal constituent of which is methane.

27 Subd. 7. [PERSON.] "Person" means an individual,
28 partnership, corporation, association, governmental unit or
29 agency, or public or private organization of any kind, under a
30 duty to comply with state law because of its character or
31 position.

32 Subd. 8. [PRIMARY CARBON-BASED FUELS.] "Primary
33 carbon-based fuels" means coal, mixed municipal solid waste and
34 refuse-derived fuel, natural gas, and liquid fuels.

35 Subd. 9. [PROPANE.] "Propane" means the chemical C3 HB in
36 its commercial forms, including propane butane mixes in which

1 propane constitutes greater than ten percent of the mixture by
2 weight.

3 Sec. 6. [116.88] [ASSESSMENT IMPOSED.]

4 Subdivision 1. [IMPOSITION.] An assessment program is
5 created to fund the Minnesota releaf program established in
6 section 1. The assessment program shall be administered by the
7 commissioner. The commissioner of the pollution control agency
8 must adopt rules in accordance with the procedures in section
9 16A.128 that will result in the collection each year, in the
10 aggregate, from the sources listed in subdivision 2, of the
11 amount appropriated by the legislature from the natural
12 resources fund for the Minnesota releaf program and any
13 additional amounts permitted by section 16A.128, subdivision 1a.

14 Subd. 2. [LIABILITY.] The liability for the assessment and
15 the responsibility for payment is incurred at the times and by
16 the persons specified in this subdivision.

17 (a) The carbon content of coal is assessed upon the first
18 receipt of coal in the state for burning. Liability for the
19 assessment is on persons who receive coal for burning. Any
20 person who receives coal shipped or brought into Minnesota has
21 the burden of proving that the coal was not received for burning
22 in Minnesota.

23 (b) The carbon content of natural gas is assessed upon the
24 first receipt of natural gas in the state. Liability for the
25 assessment is on persons in the state who first receive natural
26 gas from outside of the state. Any person who receives natural
27 gas piped, shipped, or otherwise brought into Minnesota has the
28 burden of proving that the natural gas was not received for
29 consumption in Minnesota.

30 (c) The carbon content of mixed municipal solid waste and
31 refuse-derived fuel is assessed upon incineration of the fuel in
32 the state. Liability for the assessment is on persons who burn
33 mixed municipal solid waste and refuse-derived fuel in the state.

34 (d) The carbon content of liquid fuels is assessed upon the
35 first sale of liquid fuels in the state. As used in this
36 subdivision, "first sale" means the transaction to which the

1 motor fuels tax imposed in chapter 296 attaches. Liability for
2 the assessment is on persons who are liable for the motor fuels
3 tax on the same transaction. For any liquid fuel not taxable
4 under chapter 296, "first sale" means "received" in this state
5 as that term is defined in section 296.01, subdivision 13, and
6 liability for the assessment is on those persons who "received"
7 the fuel. Any person who has title to or possession of liquid
8 fuel containing carbon upon which the assessment has not been
9 paid and who knows that it has not been paid, is liable for
10 payment of the assessment.

11 Subd. 3. [ASSESSED FUELS.] Only the carbon-based fuels
12 specifically mentioned in subdivision 2 are subject to the
13 assessment. Fuels not assessed under this chapter include, but
14 are not limited to: ethanol, methanol, wood, wood wastes,
15 agricultural crops, crop residues, sludge, solvents, waste oil,
16 kerosene, hazardous waste, and medical waste.

17 Subd. 4. [CALCULATION OF ASSESSMENT.] The assessment
18 applies to the amount of carbon contained in the fuel prior to
19 burning. Calculation of the amount of carbon shall be based on
20 the estimated carbon content of the fuel according to fuel type
21 or subtype. The pollution control agency must adopt rules to
22 set the estimates of carbon content to be used in the
23 calculation.

24 Subd. 5. [FUND DISPOSITION.] All funds collected under
25 this chapter shall be deposited in the natural resources fund
26 for appropriation to the Minnesota releaf program. Not less
27 than 80 percent of the funds deposited shall be used for
28 cost-share grants under the releaf program. Of the amount not
29 used for cost-share grants, a portion shall be appropriated for
30 administration and collection of the assessment as follows: ..
31 percent to the department of revenue, .. percent to the
32 Minnesota pollution control agency, and .. percent to the
33 department of public safety. The remaining amount is
34 appropriated to the department of natural resources for
35 administration of the releaf program.

36 Sec. 7. [116.89] [OFFSETS AND DNR REFUNDS.]

1 Subdivision 1. [QUALIFIED REFORESTATION PROGRAMS.] The
2 assessment imposed under section 6 may be offset by the amount
3 spent on a qualified reforestation program. For purposes of
4 this section, "qualified reforestation program" means a program
5 designed to implement or support tree planting or forest
6 management in this state in accordance with specifications
7 established by the commissioner of natural resources.

8 Subd. 2. [CLAIM FOR OFFSET; CERTIFICATES.] The offset must
9 be claimed at the time an annual return under section 8 is filed
10 with the commissioner. All claims for offset must be
11 accompanied by a certificate, in a form prescribed by the
12 commissioner of natural resources, which certifies the amount of
13 offset to be allowed by the claimant. Claims for offset may not
14 exceed the claimants fee liability incurred under this chapter.
15 In no event may the commissioner of revenue issue a refund under
16 this section.

17 Subd. 3. [DNR REFUNDS.] If a person spends an amount on a
18 qualified reforestation program in excess of their liability
19 under section 6, they shall be paid a refund upon making a claim
20 for refund, in a form prescribed by the commissioner of natural
21 resources, up to the amount of their acquired liability, as
22 described in subdivision 4.

23 Subd. 4. [ACQUIRED LIABILITY.] "Acquired liability" means
24 the liability acquired by a person in the form of increased
25 utility costs attributable to utilities passing their liability
26 under section 6 onto their customers. Each utility serving
27 persons within this state must, upon request by a person seeking
28 to offset its acquired liability, inform that person in writing
29 of the amount of the utility's liability that it has passed onto
30 that person. For each year in which a utility has received such
31 a request, it must file a report with the pollution control
32 agency which summarizes the information provided to the
33 requesters and the data it relied on to compile that information.

34 Sec. 8. [116.90] [ADMINISTRATION AND ENFORCEMENT.]

35 Subdivision 1. [ANNUAL RETURNS.] Every person subject to
36 the assessment under section 6 must file a return relating to

1 the assessment due for the preceding calendar year with the
2 commissioner by April 15 each year, in the form prescribed by
3 the commissioner. Payment of the assessment to the extent not
4 paid in full under subdivision 3, shall be submitted with the
5 return.

6 Subd. 2. [DECLARATION OF ESTIMATED ASSESSMENT.] (a) Every
7 person required to pay an assessment under section 6 must make a
8 declaration of estimated assessment due for the calendar year if
9 it can reasonably be expected to be in excess of \$1,000. The
10 declaration of estimated assessment must be filed by March 15 of
11 the current year. The amount of estimated assessment with
12 respect to which a declaration is required must be paid in four
13 equal installments on or before the 15th day of March, June,
14 September, and December.

15 (b) An amendment of a declaration may be filed in any
16 interval between installment dates prescribed above but only one
17 amendment may be filed in each interval. If an amendment of a
18 declaration is filed, the amount of each remaining installment
19 shall be the amount which would have been payable if the new
20 estimate had been made when the first estimate for the calendar
21 year was made, increased or decreased, as the case may be, by
22 the amount computed by dividing:

23 (1) the difference between (A) the amount of estimated
24 assessment required to be paid before the date on which the
25 amendment was made, and (B) the amount of estimated assessment
26 which would have been required to be paid before that date if
27 the new estimate had been made when the first estimate was
28 made, by

29 (2) the number of installments remaining to be paid on or
30 after the date on which the amendment is made.

31 (c) The commissioner of revenue may grant a reasonable
32 extension of time for filing any declaration, but the extension
33 shall not be for more than six months.

34 Subd. 3. [FAILURE TO PAY ESTIMATED ASSESSMENT.] The
35 provisions of section 115B.24, subdivision 3 apply to failure of
36 a person to pay estimated assessment due under this chapter.

9

1 Subd. 4. [REFUNDS.] The provisions of section 289A.50
2 apply to the refunds claimed and made under this chapter.
3 Refunds of overpayments of estimated assessment shall be made as
4 provided in section 289A.56, subdivision 2.

5 Subd. 5. [INFORMATION RETURNS.] Pipeline companies that
6 transport natural gas or propane into Minnesota must file with
7 the commissioner an annual information report on a form
8 prescribed by the commissioner. No payment is required to be
9 remitted with this report. The report must be filed on or
10 before April 15 each year. Any person required to file an
11 informational report that fails to do so by the time period
12 established by law will be assessed a \$25 penalty for each month
13 the return remains unfiled.

14 Subd. 6. [EXCHANGE OF INFORMATION.] Notwithstanding the
15 provisions of sections 13.68 and 116.075, the department of
16 public service and the pollution control agency may provide the
17 commissioner with the information necessary for the enforcement
18 of this chapter. The information disclosed must retain its
19 nonpublic nature to the extent that it was so classified prior
20 to disclosure to the commissioner. Information obtained in the
21 course of an audit of the taxpayer by the commissioner shall be
22 nonpublic for private data to the extent that it is not directly
23 divulged in a return.

24 Subd. 7. [DUTIES OF THE AGENCIES.] The department of
25 public service and the pollution control agency must provide to
26 the commissioner the names and addresses of all persons known to
27 them who are subject to the assessment under this chapter,
28 together with any information which they possess concerning the
29 amount of carbon to be assessed. Upon request by the
30 commissioner, those agencies must examine returns and reports
31 filed with the commissioner and notify the commissioner of any
32 suspected inaccurate or fraudulent declaration or return. An
33 agency may assist in auditing any person subject to the
34 assessment under this chapter when requested by the commissioner.

35 Subd. 8. [RULES.] The commissioner may adopt rules
36 necessary to administer this chapter.

10

1 Subd. 9. [ENFORCEMENT.] The following audit, penalty, and
2 enforcement provisions apply to the assessment imposed in this
3 chapter; sections 289A.35 to 289A.37; 289A.38, subdivisions 1,
4 2, 5 and 6; 289A.40, subdivision 1; 289A.41; 289A.42,
5 subdivision 1; 289A.55; 289A.60, subdivisions 1 to 10, 13, 18,
6 and 19; 289A.63, subdivisions 1, 2, and 7 to 10; and 289A.65.

7 Sec. 9. [APPROPRIATION.]

8 (a) \$..... is appropriated from the general fund to the
9 commissioner of natural resources to implement sections 3 and 7.

10 (b) \$..... is appropriated from the general fund to the
11 commissioner of the pollution control agency to implement
12 section 6.

13 (c) \$..... is appropriated from the general fund to the
14 commissioner of revenue to implement section 8.

15 Sec. 10. [EFFECTIVE DATE.]

16 This act is effective July 1, 1992.

DNR INFORMATION CENTER PHONE NUMBERS

TWIN CITIES: (612) 296-6157

MN TOLL FREE: 1-800-766-6000

TELECOMMUNICATION DEVICE FOR THE DEAF: (612) 296-5424 OR 1-800-657-3929

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