1997 Project Abstract for the Period ending June 30, 1999
This Project was supported by MN Future Resources Fund

TITLE: Minnesota ReLeaf Tree Planting and Preservation Grant Program
PROJECT MANAGER: Ken Holman
ORGANIZATION: Department of Natural Resources, Division of Forestry
ADDRESS: 1200 Warner Road, Saint Paul, Minnesota 55106
LEGAL CITATION: ML 1997, Ch. 216, Sec. 15, Subd. 19(a)
APPROPRIATION AMOUNT: $300,000

Statement of Objectives

This project provided matching grants to local communities to plant predominantly native trees and to protect community forests from oak wilt and other insect and disease pests.

Overall Project Results

130 grants to communities were matched by more than 2:1 to plant over 7,000 predominantly native trees, treat 237 Oak Wilt infection centers and protect 760 acres of community forests from spruce budworm and forest tent caterpillar. Not all grantees reported on the local workshops they had planned to hold, but based on application information and known events, an estimated 65 workshops and hands on field training sessions were conducted, reaching some 1,800 volunteers and community staff. These include two statewide and one NE regional Minnesota Greening Conferences, presented in cooperation with the Minnesota State Horticultural Society, MnDOT and the U of M Landscape Arboretum, attended by 465 greening enthusiasts and nearly 200 Extension-trained Tree Care Advisors / Master Gardeners statewide.

Project Results Use and Dissemination

Before the end of the 1997 to 1999 biennium, planning had begun to develop a Minnesota ReLeaf web page on the DNR web site. Brief descriptions of the best managed projects will be added to provide examples for potential grant applicants. The booklet, *Energy Conservation Through Community Forestry*, describes 22 of the best landscaping for energy conservation projects and continues to be widely distributed. For the 1999 to 2001 ReLeaf Program, all promotional information and grant forms will be available on the DNR site and in various word processing formats.

DNR Forestry's Community Forestry Database is being reformatted and updated to reflect improvements in local tree management programs and the expanded involvement of citizen volunteers and tree board members. Most of the increase in local tree planting and care activities and local program improvements are the direct result of Minnesota ReLeaf projects. This DNR database will include information about local contacts and tree program components (e.g. types of ordinances, inventories and management plans). It is being coordinated with numerous environmental organizations and agencies involved in community natural resources management, including the Horticultural Society, Minnesota Extension Service, MnDOT, MN Department of Agriculture, Minnesota Society of Arboriculture and Tree Trust. It will be easily accessible by all these organizations in an effort to more effectively target technical assistance to communities and citizens, and publicity about future educational and grant opportunities.

Date of Report: July 1, 1999
LCMR Final Work Program Update Report

Date of Workprogram Approval: June 23, 1997
Project Completion Date: June 30, 1999

LCMR Work Program 1997

I. PROJECT TITLE

MINNESOTA RELEAF TREE PLANTING & PRESERVATION GRANT PROGRAM
Number O1

Program Manager: Ken Holman
Affiliation: Department of Natural Resources, Division of Forestry
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Total Biennial Project Budget:

$ LCMR:	$300,000
- **$ LCMR Amount Spent:**	$300,000
= **$ LCMR Balance:**	$0
$ General Fund	$450,000
- **$ General Fund Spent:**	$431,390
= **$ General Fund Balance:**	$ 18,610

A. Legal Citation: ML1997, Chp. 216, Sec. 15, Subd.19(a).

Appropriation Language: This appropriation is from the future resources fund to the commissioner of natural resources for the third biennium for matching grants to local communities to plant predominantly native trees and protect native oak forests from oak wilt.

B. Status of Match Requirement:

Match Required: $ N/A (Note: the programmatic intent is attain an overall match, including both cash and inkind contribution value, averaging two local dollars per state dollar.)

II. PROJECT SUMMARY & RESULTS:

130 matching grants to local communities planted predominantly native trees and protected community forests from oak wilt and other insect and disease pests.

III. PROGRESS SUMMARY:

Planting Program.

The publicity and application process were completed as proposed. Application packets included a dozen educational brochures including new fact sheets on "What's Native? - Commonly Asked Questions for Minnesota ReLeaf" . Several thousand each of the brochures on Species Native to Minnesota, How to Plant and How to Care for Your Tree were reproduced and distributed. Also educational programs were held cooperatively with the Tree Trust, Horticultural Society, and local project sponsors. The remaining educational funds were used to reproduce and distribute more brochures. All the planting grant funds ($210,000 LCMR and $200,000 general fund) have been allocated as noted below.

Mn ReLeaf Tree Planting Funds (LCMR & general fund)

DNR Region	Fund Allocation		$s Requested	Projects Funded	
	$ allocated	%	$	#	$ granted
1-NW	85,800	21	102,882	21	85,800
2-NE	42,300	10	40,300	5	40,300*
3-Central	5,400	13	124,677	13	59,000*
4/5-SW/SE	115,100	28	231,467	30	112,100*
6-Metro	112,800	28	326,308	19	112,800
TOTAL	410,000	--	825,634	88	410,000

* $5,000 reallocated from Region 2 ($2,000) and Region 4/5 ($3,000) to Region 3 to fund windstorm replacement planting in City of Big Lake.

Oak Forest Preservation (& Forest Health)

Initial publicity and distribution of applications were completed as proposed using a continuous application acceptance and review process. LCMR approved funds were distributed as shown below. The legislature added an additional $250,000 of general funds to a broader Mn ReLeaf Forest Ecosystem Health matching grant fund.

Minnesota ReLeaf - Community Forest Health (LCMR & General Fund)

DNR Region	Fund Allocation		Funds Requested	Grants Funded		Remaining Funds*
	$ allocated	%	$	#	$ granted	$
1-NW	25,000	8	5,000	1	5,000	20,000
2-NE	25,000	8	0	---	0	25,000
3-Central	57,500	17	62,576	8	62,576	-5,076
4/5-SW/SE	77,500	23	45,854	**4	45,854	31,646
6-Metro	70,000	21	197,960	29	197,960	-127,960
Statewd Contingency	75,000	23	-------	—	-------	75,000

TOTAL	255,000	---	311,390	42	311,432	***18,610

* Remaining funds were reallocated to meet Regional requests.
** Region 4/5 oak wilt grants were with Goodhue, Olmstead, Wabasha and Winona County SWCD's who were fiscal agents for local projects.
*** $18,610 balance of general fund $'s

IV. OUTLINE OF PROJECT RESULTS

Result 1. Planting Program

Step A. Publicity & Application Process. The Minnesota ReLeaf Community Forestry Advisory Committee was convened to advise MnDNR on implementing the planting and oak wilt/forest health programs for the combined use of LCMR-approved and general funds during FY 98-99. Based upon their advice a coordinated statewide publicity and application process was developed and implemented. Communities (local units of government and 501c3 non-profits) throughout the state was eligible to apply for planting grants. Funding was allocated to the DNR Regions so that the combined dollars each region receives for planting and oak wilt (where applicable) generally followed the guidelines in the LCMR-approved 1992 Minnesota ReLeaf Implementation Plan. During summer-fall 1997, each Regional Steering Committee refined regional priorities, received applications, and selected projects to fund which best meet program objectives. An on-site Needs Determinations was conducted before any project was funded.

Budget:	LCMR	Other Funding	
publicity & program administration	$00	DNR/coop	$15,000

Completion Date: December 1997

Step B. Educational Program. At least 9 publications (on developing an appropriate project, effectively planting and caring for trees, trees native to Minnesota, and achieving environmental benefits) were distributed; this included reprinting publications as needed and developing 1 new publication. Approximately 30 or more educational programs were held between January and April 1998 through many cooperating organizations, targeted to local participants as well as the general public.

Budget:	LCMR	Other Funding	
educational programs & materials	$10,000	DNR/coop	$10,000

Completion Date: April 1998

Step C. Tree Planting Activities. Grant agreements were signed for 88 approved projects. The state funds leveraged $895,000 in investments by local units of government, non-profit organizations, and their participating constituents. The program built on the experience gained in previous LCMR-funded Mn ReLeaf initiatives. Applicants could request cash advances for certain activities not to exceed 75% of their grant. Over 7000 predominately native trees were planted in communities throughout Minnesota to restore habitats, save energy, benefit wildlife, reduce erosion, and facilitate educational opportunities. Most of the projects were completed during spring and fall 1998. Following project completion and submission of a Final Report by the local applicant, DNR conducted an on site Compliance Check of each project. Then, each Grantee received their final payment.

Budget:	LCMR	Other Funding	
technical assistance & admin.	$00	DNR/coop	$ 15,000
		General Fund	$200,000
matching grants to local			

communities		$210,000	Local Match	$894,878
Completion Date:	May 1999			

Result 2. Oak Forest Preservation

Step A. Publicity & Application Process. Based upon the advice of the Mn ReLeaf Community Forestry Advisory Committee, a coordinated statewide publicity and application process was developed and implemented. Special attention was given to increasing local awareness and organizational capacity to co-sponsor oak wilt programs in oak-wilt infected areas undergoing development which have had no previous programs. LCMR-approved funding for matching grants were allocated with 50% to southeastern Minnesota (DNR Regions 4-5), 25% to central Minnesota (Region 3) and 25% to the metropolitan area (Region 6). Communities (local units of government and 501c3 non-profits) where oak wilt is found within these DNR regions were eligible to apply for oak wilt grants. Generally, priority was given to communities who had not been eligible for oak wilt funding under the past federal program. During summer 1997, each Regional Steering Committee refined regional priorities, publicized the program, received applications, and selected the projects to fund. Needs Determinations were conducted by on site inspection and/or use of aerial photos before any project was funded.

Budget:	LCMR	Other Funding	
publicity & program administration	$00	DNR/coop	$ 10,000
Completion Date: March 1998			

Step B. Community Forest Health Activities. Grant agreements were signed with about 42 local project sponsors. The state funds leveraged $610,000 in investments by local units of government, non-profit organizations, and their participating constituents. Projects funded for oak wilt control used treatment methods of root disruption and spore tree removal whose effectiveness has been proven in the Cooperative Oak Wilt Suppression program. Applicants could request cash advances for certain activities not to exceed 75% of their grant. 237 oak wilt infection centers will be treated in order to protect thousands of acres of native oak forests. Some projects were done in fall 1997, with most projects completed during summer and fall 1998. Following project completion and submission of a Final Report by the local applicant, DNR conducted selected on site Compliance Checks for each local sponsor. Then, each Grantee received their final payment.

Budget:	LCMR	Other Funding	
technical assistance & admin.	$00	DNR/coop	$ 10,000
		General fund	$250,000
matching grants to local communities	$80,000	Local match	$610,000
Completion Date: March 1999			

VI. CONTEXT

A. Significance: Research has demonstrated that communities benefit environmentally (through energy conservation, carbon sequestration, heat island reduction, reduced stormwater runoff, erosion control, and wildlife habitat) in direct proportion to the number of healthy trees and tree canopy cover within the community. Yet, too many communities are not able to keep up with losses of trees (whether due to natural causes such as severe storms, through disease, or as a result of harsh, unnatural conditions). A most serious decline in trees in some communities is the thousands of acres of oak forests being needlessly lost to development-related oak wilt. Furthermore, many communities are not planting trees to most effectively provide environmental benefits or are planting mostly

exotic species. Matching grant programs offer proven incentives to encourage planting of the right trees in the right places, to preserve native oak forests, and to replant native species. **Planting Program.** In 1991-93 and in 1995-97 Minnesota ReLeaf leveraged contributions equaling two local dollars for every state dollar to plant trees strategically for energy conservation, involve volunteers, provide research-based educational programs, and in 1995-97 plant native trees. Presently, the state's ability to encourage local improvements is limited because no other sources of federal or state funds are available for tree planting. **Oak Forest Preservation.** When the oak wilt suppression program began in 1991, over 80% of the oak forests in the 7-county target area (Anoka, Chisago, Dakota, Isanti, Ramsey, Sherburne, and Washington Counties) were seriously threatened by existing oak wilt infections. By the end of the federal program in 1997, over 3,300 infection centers had been treated, thereby protecting 75% of the remaining oak forests. However, outside of the federal treatment area over 200 more infection centers have been identified in developing areas of 6 southeastern Minnesota counties (Fillmore, Goodhue, Houston, Olmsted, Wabasha, and Winona Counties), plus a survey was completed to document the location of infection centers in Benton, Mille Lacs, Stearns, and Wright counties. With sufficient state support, the threat of oak wilt in much of Minnesota could be eliminated.

B. Time: All components were completed by June 1999.

C. Budget Context:

	June 1995-July 1997 Prior expenditures on this project	July 1997-June 1999 Proposed expenditures on this project	July 1999-June 2001 Anticipated future expenditures on this project[a]
1. LCMR	$400,000	$300,000	$1,000,000
2. General Fund[b]		$450,000	
3. Other state[c]	$140,000	$100,000	$130,000
4. Federal[d]	$250,000		
5. Local match& inkind[e]	$1,100,000	$1,125,000	$1,500,000
Total	**$1,890,000**	**$1,975,000**	**$2,630,000**

[a] No work in 1997-99 was dependent on any future funding; instead the figures for 1999-2001 are for future LCMR funding request & supporting funds & contributions.

[b] This includes 2 appropriations made in Chap.216, Sec. 5, Subd. 4, lines 13.4-13.18 ($250,000 for grants to local community forest ecosystem health programs) and lines 13.24-13.30 ($200,000 for the Mn ReLeaf program ... matching grants to local communities to plant predominantly native trees). A coordinated program for these monies & the LCMR allocation was developed.

[c] Other state" is estimate of inkind state agency staff time for program administration, technical assistance, and educational materials/programs etc of all community forestry grant programs.

[d] "Federal" is only for oak wilt, which was not available in 1998 -1999.

[e] "Local match & inkind" are grouped together because for the current MnRL planting program specific figures on which is inkind and which is cash werel not known until the projects were complete; this includes match for general fund $s.

BUDGET:

Personnel	$0	
Equipment	$0	
Acquisition	$0	
Development	$0	
Other:		
Grants	$290,000	pass through $s to local communities
Prof. Services	$3,000	educational materials & programs
Printing	$7,000	educational materials
Total	**$300,000**	

VII. COOPERATION:

The following staff contributions will be made at no cost to the project:

* within DNR the following staff are expected to be part of the project team:
  - Program Manager — Ken Holman — 15%
  - Oak Wilt Advisors — Tom Eiber, Ed Hayes, Jana Albers — 5% each
  - Region's U&CF & Forest Health Program Leaders (J. Edmonds, M. Albers, D. Mueller, E. Hayes, M. Carroll, J. Albers, T. Eiber) — 5% each
  - Area/Region staff conducting needs determinations & compliance checks — 30% total
* four MnRL Regional Steering Committees — <1%
  (with representatives of educational organizations - e.g. Mn Extension Service, utility companies, non-profit organizations or volunteer organizations, Minnesota Shade Tree Advisory Committees and other forestry professionals)
* cooperators conducting educational programs — 10% total
  (e.g. Mn Dept of Transportation, Mn Horticultural Society, Tree Trust)

VIII. LOCATION

Planting Program: communities in <u>all</u> ECS subsections were eligible.

Oak Forest Preservation: targeted at ECS subsections: P, S, W, and X; with some projects in selected areas of subsections R and V.

MINNESTOA ReLEAF 1998-1999

Grant Recipient & Budget
(Table A)

Region 1

Location	Project Name	App elg	Grantee Name	Cash	In-Kind	ReLeaf	Total
Warren	Island Park Restoration	M	City of Warren	$100.00	$5,050.00	$4,000.00	$9,150.00
Perham	Perham City Planting	M	City of Perham	$596.50	$590.08	$1,032.55	$2,219.13
Perham	Perham/Dent Public Schools	S	Perham/Dent Public Schools	$1,676.00	$266.00	$1,904.00	$3,846.00
Hendrum	Hendrum Releaf 98	M	City of Hendrum	$1,600.00	$6,350.00	$3,608.00	$11,558.00
Breckenridge	Park Forests Recovery Project	M	City of Breckenridge	$9,999.99	$9,236.30	$9,998.99	$29,235.28
Barrett	Barrett Civic and Commerce	M	Alveda Rhude	$3,000.00	$2,447.60	$4,500.00	$9,947.60
Alexandria	Listening Ear Tree Project	N	Listening Ear Crisis Center	$506.50	$105.00	$506.50	$1,118.00
Hawley	Boulevard Renewal	M	City of Hawley		$1,046.38	$1,046.38	$2,092.76
Hendrum	Central Square Tree Project	N	Central Square Inc	$322.88	$66.00	$322.88	$711.76
Park Rapids	Community Tree Planting	N	City of Park Rapids	$7,747.00	$4,871.00	$6,000.00	$18,618.00
Stephen	Stephen ReLeaf	M	City of Stephen	$1,900.00	$5,100.00	$5,000.00	$12,000.00
Warroad	Warroad Tree Beautification	M	City of Warroad	$3,274.80	$1,725.20	$5,000.00	$10,000.00
Wolverton	City Reforestation	M	City of Wolverton	$2,000.00	$1,770.00	$3,770.00	$7,540.00
Morris	Park and Boulevard ReLeaf	M	City of Morris	$2,500.00	$7,500.00	$8,000.00	$18,000.00
Greenbush	Greenbush Racepark Sound Barrier	M	City of Greenbush	$319.60	$7,940.00	$2,613.00	$10,872.60
Hawley	Community Windbreak	M	City of Hawley	$3,320.90	$4,265.00	$6,586.19	$14,172.09
Bemidgi	CSC Parking Area	M	City of Bemidji	$4,670.00	$500.00	$3,670.00	$8,840.00
Alvardo	ReLeaf	M	City of Alvardo	$2,000.00	$2,000.00	$3,500.00	$7,500.00
TOTALS				**$45,534.17**	**$60,828.56**	**$71,058.49**	**$177,421.22**

Region 2

Location	Project Name	App elg	Grantee Name	Cash	In-Kind	ReLeaf	Total
Proctor	Proctor ReLeaf	M	Proctor Beautification Committee	$1,800.00	$6,940.00	$6,478.00	$15,218.00
Cloquet	Birch Street Reconstruction	M	Cloquet Public Works	$20,087.50	$450.00	$7,137.50	$27,675.00
Grand Marais	Cook County Art Center	S	Cook County Schools	$8,000.00	$2,117.00	$9,795.00	$19,912.00
Grand Marais	Cook County Schools	O	Cook County Schools	$5,915.00	$3,027.00	$8,000.00	$16,942.00
Aurora	Aurora Tree Planting	M	City of Aurora	$4,522.34	$4,125.00	$8,400.00	$17,047.34
TOTALS				**$40,324.84**	**$16,659.00**	**$39,810.50**	**$96,794.34**

Region 3

Location	Project Name	App elg	Grantee Name	Cash	In-Kind	ReLeaf	Total
Crosby	H. S . Energy Conservation	S	Long Prairie FFA	$583.00	$4,863.00	$3,785.00	$9,231.00
Big Lake	Cuyuna Range Cmmnty Arboretum	S	Crosby/Ironton Public Schools		$418.00	$418.00	$836.00
Sauk Rapids	Bob Cross Park ReLeaf	M	City of Sauk Rapids	$1,472.00	$7,017.00	$8,133.00	$16,622.00
Buffalo	Buffalo Resident Tree Program	M	City of Buffalo	$20,685.00	$19,060.00	$5,000.00	$44,745.00
Royalton	City of Royalton	M	City of Royalton	$517.00	$1,696.00	$602.00	$2,815.00
Chisago County	Sunrise Prairie Trail	C	Chisago County Parks/Trails	$250.00	$17,250.00	$7,000.00	$24,500.00
Big Lake	City of Big Lake	M	City of Big Lake		$5,686.00	$4,829.00	$10,515.00
Aitkin	Aitkin ReLeaf	M	City of Aitkin		$3,150.00	$1,998.00	$5,148.00
Cambridge	Trees For Teens	S	Cambridge-Isanti Community	$5,379.00	$17,060.00	$9,000.00	$31,439.00
Isanti	Boulevard and Park Trees	M	City of Isanti	$1,971.00	$18,120.00	$3,000.00	$23,091.00
Monticello	Monticello Park Reforestation	M	City of Monticello	$7,014.00	$17,859.00	$5,000.00	$29,873.00
North Branch	Sherburne County Voucher	N	Sherburne County Tree Board	$4,500.00	$5,550.00	$5,000.00	$15,050.00
Big Lake	Reforest Big Lake	M	City of Big Lake		$12,900.00	$5,000.00	$17,900.00
Sauk Rapids	Minnesota ReLeaf Collection	N	Paul Bunyan Arboretum	$10,000.00	$20,000.00	$3,500.00	$33,500.00
Isanti	Boulevard and Park Trees	M	City of Isanti	$4,804.00		$3,000.00	$7,804.00
TOTALS				**$57,175.00**	**$150,629.00**	**$65,265.00**	**$273,069.00**

Region 4

Location	Project Name	App elg	Grantee Name	Cash	In-Kind	ReLeaf	Total
Winthrop	Winthrop ReLeaf	M	City of Winthrop		$1,880.50	$1,640.00	$3,520.50
Hutchinson	River Prairie Town Reforestation	M	City of Hutchinson	$19,495.72	$3,587.27	$10,000.00	$33,082.99
Montevideo	Evans Park	M	City of Montevideo	$585.00	$2,083.00	$2,200.00	$4,868.00
Blue Earth	Blue Earth ReLeaf	S	Blue Earth Light and Water	$1,083.21	$5,226.00	$6,103.42	$12,412.63
Henderson	Hederson ReLeaf	M	City of Henderson	$9,891.44	$8,612.90	$10,000.00	$28,504.34
Gaylord	Gaylord Shade Trees Program	M	City of Gaylord	$2,089.00	$1,780.00	$3,560.00	$7,429.00
Mapleton	Heritage Park Nature Area	M	City of Mapleton	$275.75	$6,100.00	$1,977.80	$8,353.55
St. Peter	St Peter ReLeaf	M	City of St Peter	$102.84	$6,012.26	$1,516.59	$7,631.69
St. James	1st Ave Tree Planting	M	City of St James	$871.44		$871.43	$1,742.87
Pipestone	Pipestone Planting for Progress	M	City of Pipestone			$2,562.00	$2,562.00
Blue Earth	Blue Earth ReLeaf	M	City of Blue Earth	$6,000.00	$6,424.00	$6,103.42	$18,527.42
Lewiston	Energy Efficient Tree Planting	M	City of Lewiston	$4,200.00	$1,347.00	$3,600.00	$9,147.00
TOTALS				**$44,594.40**	**$43,052.93**	**$50,134.66**	**$137,781.99**

Region 5

Location	Project Name	App elg	Grantee Name	Cash	In-Kind	ReLeaf	Total
Preston	Preston fill-up Fillmore	M	City of Preston	$2,256.76	$1,982.75	$2,000.00	$6,239.51
New Richland	North Broadway Project	M	City of New Richland	$1,342.00	$2,150.00	$2,800.00	$6,292.00
Red Wing	1998 Street Tree Project	M	City of Red Wing	$4,765.00	$7,260.00	$5,000.00	$17,025.00
Houston	1998 Street Tree Project	M	City of Houston	$1,206.00	$3,660.00	$2,800.00	$7,666.00
Spring Valley	Spring Valley Tree Planting	M	City of Spring Valley	$5,621.46	$3,256.00	$3,000.00	$11,877.46
Austin	Cedar River Valley Corridor Tr Repl	M	City of Austin	$2,181.04		$4,500.00	$6,681.04
Chatfield	Chatfield ReLeaf	M	City of Chatfield	$300.00	$1,087.50	$1,275.00	$2,662.50
Dovray	City of Dovray	M	City of Dovray	$1,211.53	$800.00	$841.25	$2,852.78
Eagle Bluff	Eagle Bluff Tree Up	S	Southland Highschool	$246.00	$4,470.00	$2,717.91	$7,433.91
Mantorville	Mantorville Restoration Assoc.	N	Tom Ferry	$700.00	$558.00	$750.00	$2,008.00
Lynd	Community Restoration	M	City of Lind	$968.70	$738.75	$777.75	$2,485.20
Lake City	1998 Planting Projects	M	City of Lake City	$464.21	$845.00	$905.67	$2,214.88
Le Sueur	Downtown Tree Planting	M	City of Le Sueur		$9,604.86	$9,576.50	$19,181.36
Lewiston	Lewiston Community Tree Planting	M	City of Lewiston	$2,000.00	$2,392.00	$1,950.00	$6,342.00
Dexter	Dexter Tree Planting Project	O	Mower SWCD	$120.00	$9,735.00	$4,501.75	$14,356.75
Lewiston	Energy Efficient Tree Planting	M	City of Lewiston Tree Board	$8,041.80	$1,270.00	$2,727.46	$12,039.26
TOTALS				**$31,424.50**	**$49,809.86**	**$46,123.29**	**$127,357.65**

Region 6

Location	Project Name	App elg	Grantee Name	Cash	In-Kind	ReLeaf	Total
Minneapolis	Elliot Park Neighborhoods Greening	N	Elliot Park Neighborhood	$180.40	$7,407.00	$4,052.00	$11,639.40
Chanhassen	Chanhassen Undercover	M	City of Chanhassen	$12,860.00	$840.00	$5,000.00	$18,700.00
Eagan	Tree and Landscape Package Sale	M	City of Eagan	$13,774.78	$2,048.00	$7,000.00	$22,822.78
Robbinsdale	RLIS Green Team	S	Language Immersion School	$1,770.00	$9,071.30	$4,309.01	$15,150.31
Inver Grove Hts.	Rich Valley Athletic Complex	M	City of Inver Grove Heights	$9,500.00	$6,650.00	$7,500.00	$23,650.00
Medina	Community Forest	M	City of Medina	$5,000.00	$6,700.00	$2,500.00	$14,200.00
Little Canada	Community Tree Planting	M	City of Little Canada	$4,719.00	$4,400.00	$4,719.00	$13,838.00
St. Paul	Green St Paul	M	St Paul Energy Consortium	$8,650.28	$9,920.25	$10,000.00	$28,570.53
St. Louis Park	Tree Trust School Envrnmnt Prgrm	N	Tree Trust	$26,750.00	$43,450.00	$5,000.00	$75,200.00
Plymouth	Beat the Heat II	M	City of Plymouth	$24,360.00	$8,925.00	$7,000.00	$40,285.00
Minneapolis	Nokomis Neighborhood Tree Plntng	M	Nokomis E Neighborhood Assoc	$4,000.00	$12,665.00	$10,000.00	$26,665.00
St. Paul	GGRP 1998	N	GGRP	$17,190.00	$4,147.00	$10,000.00	$31,337.00
Coon Rapids	LO. Jacob Outdoor Classroom	S	LO. Jacob Elementary	$20,000.00	$6,170.00	$3,900.00	$30,070.00
St. Paul	Green St Paul	N	St Paul Enery Consortium	$5,000.00	$11,427.00	$10,000.00	$26,427.00
Minneapolis	Como Thoroughfare Greening Prject	N	Southeast Como Imprvmnt Assoc	$3,000.00	$1,920.00	$2,000.00	$6,920.00
St. Louis Park	Hall Community School Park	M	Tree Trust/MPRB		$11,428.00	$5,000.00	$16,428.00
St. Louis Park	Tree Trust School Envrnmnt Prgrm	N	Tree Trust		$50,924.70	$5,000.00	$55,924.70
TOTALS				**$156,754.46**	**$198,093.25**	**$102,980.01**	**$457,827.72**

KEY APP ELG: Applicant Eligibility; M: Municipality; S: School District; NP: Non-Profit;

MINNESTOA ReLEAF

Forest Health Grant Recipient Summary
FY1997-1999

Region 1

Location	Project Name / Grantee	Accomplishments / Centers Treated	App Elg	Cash	In-Kind	ReLeaf	Total
Glenwood	Cilchrist / Scandinain Forest Health	500 Acres Sprayed for FTC	N	$5,000.00	$0.00	$5,000.00	$10,000.00
TOTALS				**$5,000.00**	**$0.00**	**$5,000.00**	**$10,000.00**

Region 3

Location	Project Name / Grantee	Accomplishments / Centers Treated	App Elg	Cash	In-Kind	ReLeaf	Total
Big Lake	Sherburne County Oak Wilt Suppression		N	$9,535.53	$4,864.00	$10,000.00	$24,399.53
North Branch	Chisago County Oak Wilt	33 Infection Centers	C	$5,560.00	$6,000.00	$7,500.00	$19,060.00
Isanti County	Isanti County Oak Wilt	22 Infection Centers	C	$6,215.00	$8,250.00	$7,500.00	$21,965.00
St. Cloud	Oak Wilt City of St Cloud	3 Infection Centers	M		$1,080.00	$1,250.00	$2,330.00
St. Cloud	Oak Wilt Erradication	2 Infection Centers	M	$37,650.93		$10,000.00	$47,650.93
Isanti County	Oak Wilt Control		C	$2,500.00	$7,500.00	$10,000.00	$20,000.00
Big Lake	Sherburne County Oak Wilt Suppression	33 Infection Centers	C	$6,350.00	$2,433.00	$6,326.00	$15,109.00
Stearns County	Stearns County SWCD		O	$0.00	$10,000.00	$10,000.00	$20,000.00
TOTALS				**$67,811.46**	**$40,127.00**	**$62,576.00**	**$170,514.46**

Region 4 & 5

Location	Project Name / Grantee	Accomplishments / Centers Treated	App Elg	Cash	In-Kind	ReLeaf	Total
Olmstead County	Olmstead County SWCD	28 Centers Treated	O	$8,205.75	$2,945.00	$8,403.75	$19,554.50
Winona County	Winona County SWCD		O	$5,250.00	$1,200.00	$5,250.00	$11,700.00
Benson	Benson Tree Removal	DED Control	M	$3,500.00	$1,600.00	$3,500.00	$8,600.00
Goodhue County	Goodhue County SWCD		O	$9,900.00	$2,160.00	$9,900.00	$21,960.00
Wabasha County	Wabasha County SWCD		O	$8,800.00	$1,920.00	$8,800.00	$19,520.00
Granite Falls Ded.	Granite Falls		O		$10,000.00	$10,000.00	$20,000.00
TOTALS				**$35,655.75**	**$19,825.00**	**$45,853.75**	**$101,334.50**

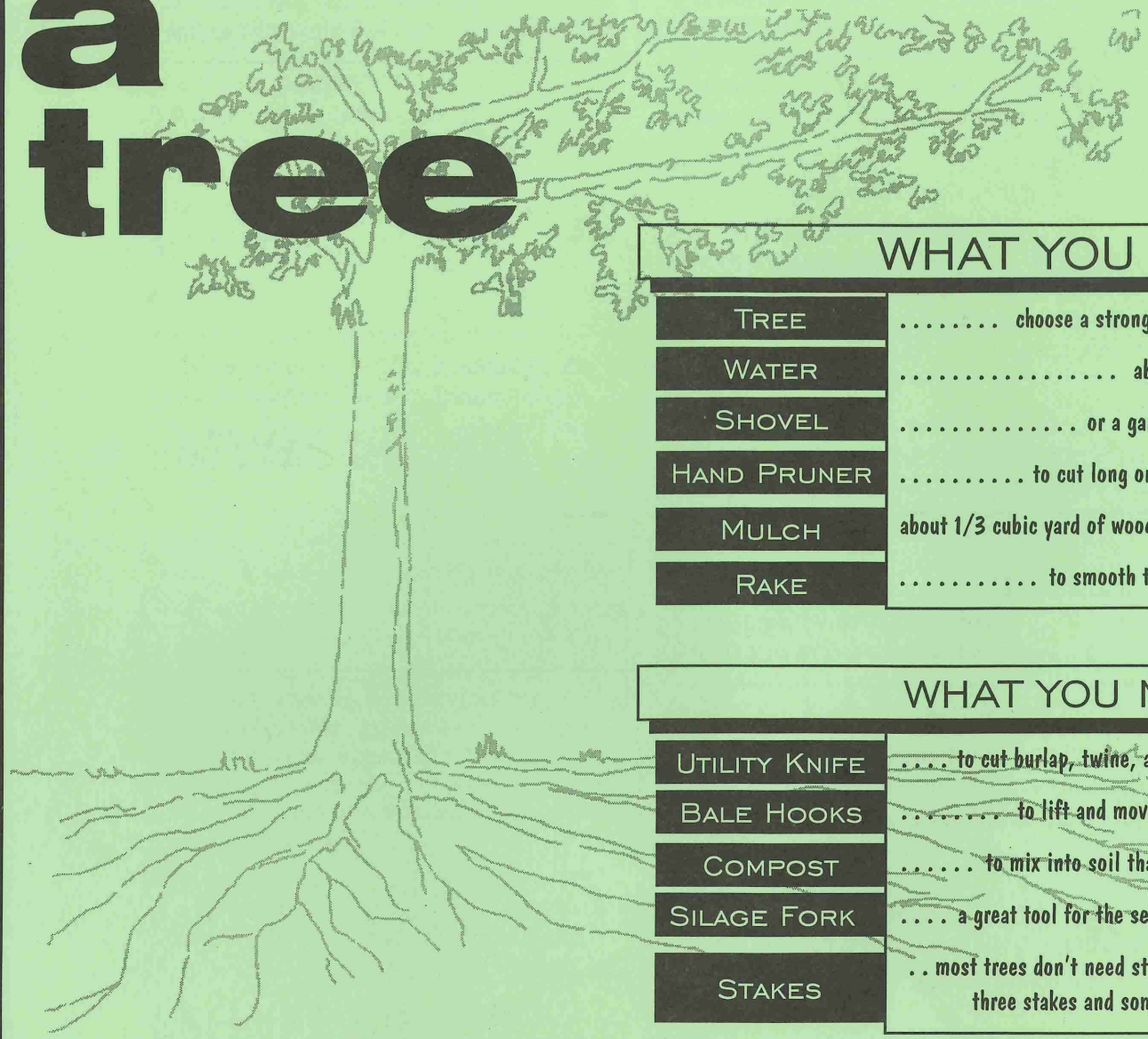
Region 6

Location	Project Name / Grantee	Accomplishments / Centers Treated	App Elg	Cash	In-Kind	ReLeaf	Total
Eagan	Eagan Oak Wilt Suppression		M	$16,741.33	$3,300.00	$9,768.56	$29,809.89
Andover	Andover Oak Wilt Suppression	36 Infection Centers Treated	M	$9,136.18	$3,528.26	$9,974.87	$22,639.31
Ham Lake	Oak Wilt Control Anoka Co.		O	$2,533.53	$7,486.47	$10,000.00	$20,020.00
Ham Lake	Oak Wilt Control Ham Lake		M	$12,564.53		$10,000.00	$22,564.53
Shoreview	Oak Wilt Control Shoreview		M	$2,464.50	$1,200.00	$2,464.50	$6,129.00
North Oaks	Oak Wilt Control		M	$10,000.00		$5,000.00	$15,000.00
Forest Lake	Oak Wilt Control	13 Infection Centers Treated	T	$6,795.04	$1,195.00	$7,990.04	$15,980.08
Shoreview	Oak Wilt Control	19 Infection Centers Treated	C	$14,765.57	$799.04	$10,000.00	$25,564.61
Shoreview	Oak Wilt Control Private Property		C	$2,734.62		$2,734.63	$5,469.25
N. St. Paul	Verna Gust	1 Infection Center Treated	M	$862.50		$862.50	$1,725.00
Eagan	Oak Wilt Suppression Program		M	$24,400.00	$4,200.00	$10,000.00	$38,600.00
Columbus	Oak Wilt Control		M	$6,000.00	$4,000.00	$10,000.00	$20,000.00
Lakeville	Oak Wilt Suppression Program		M	$12,000.00	$5,000.00	$10,000.00	$27,000.00
Blaine	Oak Wilt Control		M	$13,943.00	$790.00	$10,000.00	$24,733.00
Apple Valley	Oak Wilt Suppression		M	$118,800.00	$21,719.00	$10,000.00	$150,519.00
Ramsey County	Oak Wilt Suppression		C	$8,950.00	$8,950.00	$9,950.00	$27,850.00
Mounds View	Oak Wilt Control	12 Centers Treated	M	$3,000.00	$3,800.00	$3,400.00	$10,200.00
Mahtomedi	Oak Wilt Control Program		M	$6,000.00	$2,000.00	$6,000.00	$14,000.00
New Brighton	Oak Wilt Control	10 Centers Treated	M	$6,000.00	$6,000.00	$6,000.00	$18,000.00
North Oaks	Oak Wilt Control Program		M	$10,000.00		$5,000.00	$15,000.00
Ramsey County	Oak Wilt Control		C	$16,400.00	$1,200.00	$10,000.00	$27,600.00
Ramsey County	Oak Wilt Control		C	$3,000.00	$200.00	$3,000.00	$6,200.00
Savage	Community Oak Wilt Control		M	$3,000.00	$2,000.00	$5,000.00	$10,000.00
Anoka County	Oak Wilt Supression		C	$8,000.00	$18,000.00	$10,000.00	$36,000.00
Andover	Spruce Bud Worm Control	260 Acres Sprayed	M	$12,432.40	$100.00	$10,000.00	$22,532.40
Mounds View	Oak Wilt Control	11 Centers Treated	M	$3,000.00	$1,950.00	$3,450.00	$8,400.00
New Brighton	Oak Wilt Control	12 Centers Treated	M	$4,500.00	$4,500.00	$6,000.00	$15,000.00
Stillwater	Oak Wilt Control	2 Infection Centers Treated	T	$1,364.75		$1,364.75	$2,729.50
TOTALS				**$339,387.95**	**$101,917.77**	**$197,959.85**	**$639,265.57**

KEY APP ELG: Applicant Eligibility; M: Municipality; S: School District; NP: Non-Profit;

new in '97 - '99

HOW TO PLANT a tree

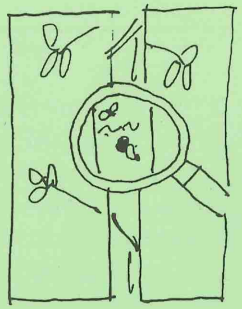


WHAT YOU WILL NEED

TREE	..... choose a strong, healthy tree over a cute, bushy one
WATER	..... about 15 gallons per tree
SHOVEL	..... or a garden fork to work up the soil
HAND PRUNER	..... to cut long or broken roots and broken branches
MULCH	about 1/3 cubic yard of wood fiber mulch per tree (enough to fill 50 ice cream pails)
RAKE	..... to smooth the soil before you add the mulch

WHAT YOU MIGHT NEED

UTILITY KNIFE	.... to cut burlap, twine, a basket or a pot from the root ball of a tree
BALE HOOKS	..... to lift and move a balled and burlapped (B&B) tree
COMPOST	..... to mix into soil that is low on organic matter or compacted
SILAGE FORK	.... a great tool for the serious tree planter who moves a lot of mulch
STAKES	.. most trees don't need staking, but if yours cannot stand up on its own, you need three stakes and some sort of soft material for ties. No wire please.



MAINTAIN

Check on your new tree once a week. Watch for problems. Check the soil moisture an inch below the mulch. If the soil is moist, your tree is fine. Check again in a few days.

Water your new tree once a week. An inch of rainfall usually does the job. When you water with the hose, let it run slowly for an hour or two.

Pull weeds by hand. Try to keep soil from getting mixed into the mulch.

WHY? *Soil mixed into mulch encourages weeds.*

Add woodchips as needed to keep them 4 inches thick.

Avoid chemical damage. When you (or your lawn care company) take care of the lawn, do not spray any chemicals in the area near your new tree.

WHY? *Unless it is an evergreen tree, your tree is a broadleaf plant, so it reacts to herbicide just like a broadleaf weed.*

Fertilize the second autumn after planting. Use a product with slow release nitrogen.

Prune your tree in the winter when it is dormant. Use a hand pruner to remove any branches that are broken or that rub on other branches. Train your tree to have a single central trunk by pruning off branches that turn up and compete with it. Leave trees alone in the spring and fall.

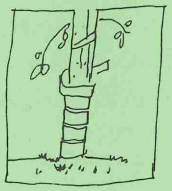
WHY? *In the spring, trees focus their energy on growing leaves and wood, rather than growing over wounds. In the fall, energy is focused on the growing of roots.*

WATCH OUT FOR TREE KILLERS

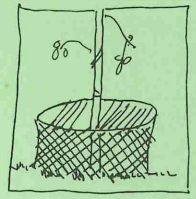
These can kill young trees (old ones, too!)

- Chains or cables wrapped around the trunk
- Planting annual flowers under established trees
- String weed trimmers
- Plastic weed barriers
- Installing a sprinkler system
- Soil compaction
- Under-watering
- Over-watering
- Lawn mowers
- De-icing salt
- Herbicides

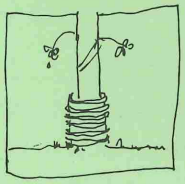
SPECIAL CARE



If your tree has smooth, thin bark, you should protect it from winter sun scald. Wrap it with paper tree wrap or cover the south side with cardboard every autumn until the bark becomes rough. Remove the wrapping or cardboard each spring.



Protect tasty young fruit trees (including crabapple trees) from damage caused by chewing mice and rabbits. Use a piece of hardware cloth at least 5 feet long and 2 feet wide. Put it around your tree to form a cage 2 feet high and 1 foot in diameter. Set the cage a little below ground line and fasten to a stake.



If your tree is vulnerable to damage from weed whips or lawn mowers, protect the base with a guard. The guard can be a piece of field dr tile about 6 inches long (the large diameter tile, not 4 inch tile), or an ice cream pail with the bottom cut off. Slit the guard on one side to put it around the base of the tree.

WHAT IF?

. . . . . Wind tips my new tree?

Saturate the soil around the tree. Take hold of the tree by the base and gently pull until the tree is upright. Don't rip roots! Stake the tree in place for a few months.

. . . . . My tree gets hurt?

Most wounds are best left alone and open to the air. Consult an arborist or a community forester to look at serious wounds. You can also consult the Dial U Clinic at the University of Minnesota or a tree inspector with your tree questions.

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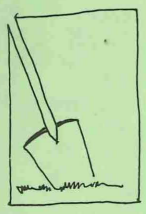


PREPARE THE SOIL

Check your site for drainage: Dig a hole about a foot deep and fill it with water. If it takes hours to drain away you have a drainage problem. Choose a tree that tolerates "wet feet".

> ***WHY?*** *Tree roots need to breathe, and cannot breathe in compacted or waterlogged soil. They need oxygen that they find in tiny air spaces in the soil.*

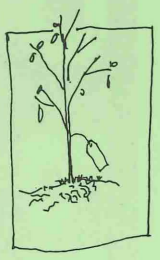
Call Gopher One (1-800-252-1166) to locate underground utility lines at least two working days before you dig.

Remove soil from a hole that is as deep and as wide as the tree root system. Break clods of soil into small chunks. Dig only as deep as the root ball.

> ***WHY?*** *Most tree roots grow out from the tree in the top few feet of soil.*

Turn over the soil in an area around the hole. You can do this either before or after you plant your tree. Work up an area at least 5 feet wide. Go wider in compacted soil. Mix compost into soil that is low in organic matter or compacted.

> ***WHY?*** *Organic matter helps soil hold moisture and makes it available to trees.*



PREPARE THE TREE

Choose a strong tree with one central trunk and well attached branches that are spread out along the trunk.

B&B or field potted

These trees are heavy and fragile. Protect the root ball from falling and breaking. Use hooks to carry the tree by the wire basket that holds the root ball, or use a cart or a loader.

> ***WHY?*** *Broken or wounded roots, including tiny roots, add stress to a tree.*

Bare root

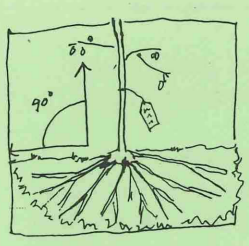
Keep roots moist and cool until it's time to plant. You can soak a bare root tree in a tub of water for up to 24 hours before planting. Trim long or broken roots and woody stubs with a hand pruner.

Some bare root trees need to be "sweated" before planting. If you buy the following trees bare root, ask the nursery to sweat them or show you how: hackberry, hawthorn, birch, oak and ironwood.

Container grown

Carry the tree by the container. To loosen the container, lay it on its side and pat it all the way around. Gently pull the container or cut it off of the root ball. Cut any roots that spin around the root ball.

A word of caution: Avoid "fresh potted" trees that haven't had time to develop the fibrous root system that holds the soil together during planting -- ask for trees which have been grown in the container.



SET TREE IN PLACE

Find the root collar of the tree. This is where the roots of the tree attach to the trunk. Set the tree in the hole so that the root collar is at ground line and the tree is straight. Spread out the roots so that none are going in circles.

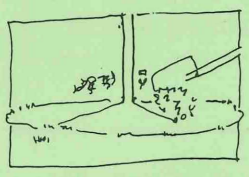
> ***WHY?*** *Any root left wrapped around the tree will eventually strangle it.*

If a root is too long to fit in the hole, or if it is broken, cut it off. Some trees are grafted. The graft union belongs above ground line.

Face the tree in a direction that takes advantage of nature: If you know what side of the tree faced north in the nursery, plant it with the same side facing north.

If you don't know what direction it grew in the nursery, plant it so that a low branch faces south.

> ***WHY?*** *Trees adapt to local conditions. They develop strength in the direction of prevailing winds. A low branch on the south side helps shade bark on that side where it is vulnerable to sun scald.*



BACKFILL

Fill the planting hole half-way with the same soil you removed.

> ***WHY?*** *If you backfill a planting hole with different soil than what you removed, tree roots might decide not to grow out into the surrounding soil and that's not good.*

Be careful not to injure roots in the process. Gently push the soil in place so that it holds the tree up, but use care not to compact it too much. No foot stomping please!

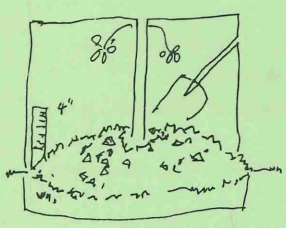
Remove the top of the wire basket from a balled and burlapped tree and cut away as much of the burlap as possible.

If the burlap is treated to resist decay or if it is made of plastic, remove all of it.

Water the soil to settle it.

> ***WHY?*** *Water settles the soil without compacting it.*

Add the rest of the soil to the hole and water it again.



MULCH

Put down 4 inches of organic mulch over the entire planting area. Woodchips or shredded bark are good.

> ***WHY?*** *Mulch helps hold moisture and reduce weeds. As it decomposes, it adds valuable nutrients to the soil.*

Keep the mulch 6 inches away from the trunk of the tree.

> ***WHY?*** *Mulch right up against the trunk keeps the root collar wet (not good) and may encourage mice to nibble on the tree.*

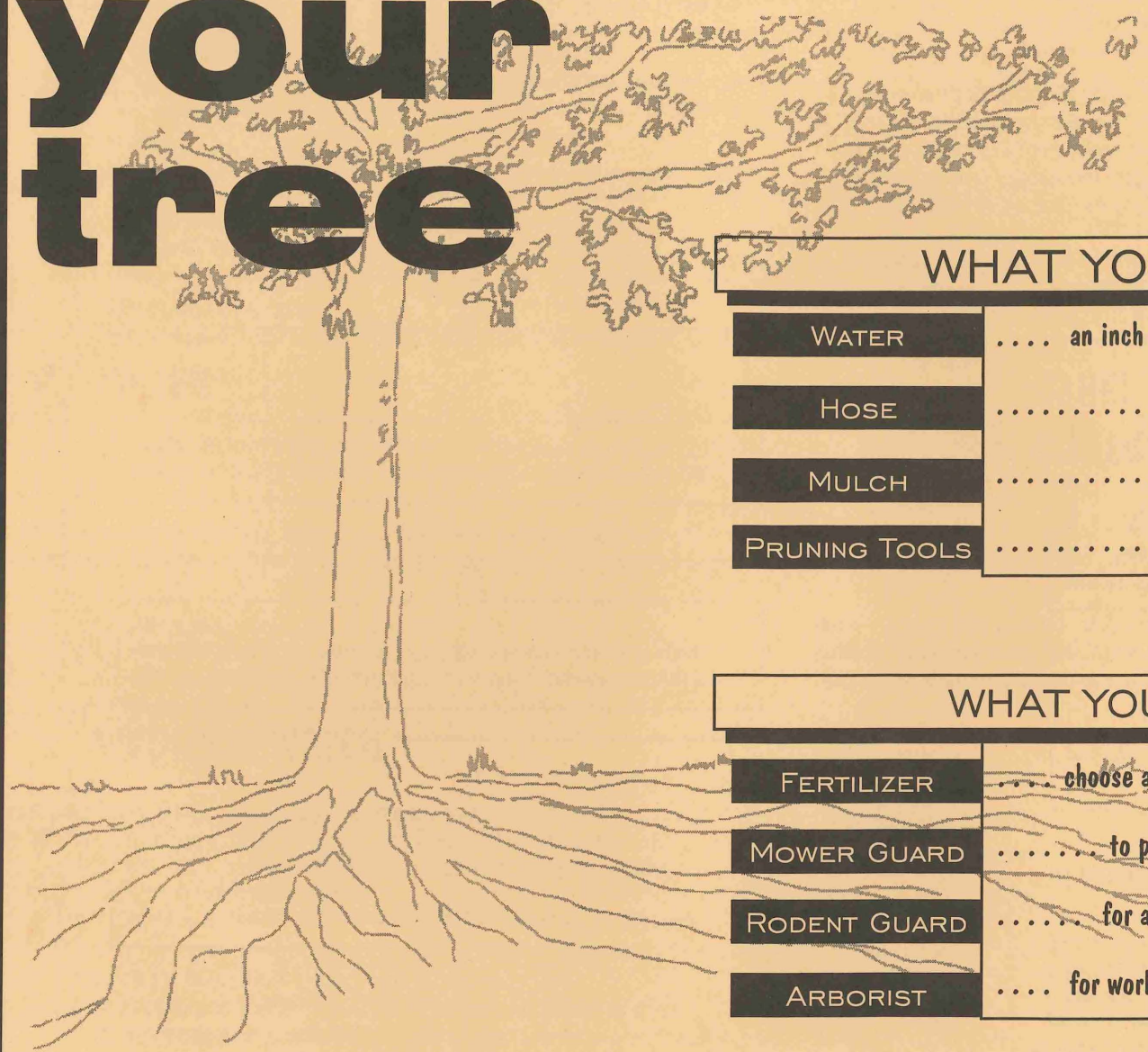
Water the planting area slowly to settle the soil.

Your new tree says 'thank you'!

new in '97-'99

HOW TO CARE FOR

your tree



WHAT YOU WILL NEED

WATER	.... an inch of rainwater each week or additional watering
HOSE	..... to water during dry spells
MULCH	..... enough to keep it 4" deep
PRUNING TOOLS	..... to remove problem branches

WHAT YOU MIGHT NEED

FERTILIZER	.... choose a balanced fertilizer with slow release nitrogen
MOWER GUARD	..... to prevent lawn mower and weed whip wounds
RODENT GUARD	..... for a tree that mice and rabbits like to chew on
ARBORIST	.... for work that is off the ground or requires a chainsaw

WATCH OUT FOR TREE KILLERS

These can kill young trees (old ones, too!)

- Chains or cables wrapped around the trunk
- Planting annual flowers under established trees
- String weed trimmers
- Plastic weed barriers
- Installing a sprinkler system
- Soil compaction
- Under-watering
- Over-watering
- Lawn mowers
- De-icing salt
- Herbicides

WHAT IF?

. . . . . wind tips my tree?

For young trees, saturate the soil around the tree. Take hold of the tree by the base and gently pull until the tree is upright. Don't rip roots! Stake the tree in place for a few months.

Older trees that tip in the wind might have broken roots that make them prone to fall over. Look for telltale mounds of soil or a slit in the soil on the side of the tree opposite the direction of lean. They are clues to a dangerous situation and the only solution is removal.

. . . . . my tree gets hurt?

Most wounds are best left alone and open to the air. Consult an arborist or a community forester to look at serious wounds.

You can also consult the Dial U Clinic at the University of Minnesota or a tree inspector with your tree questions.

DON'T TOP TREES!

"**Topping**" is cutting branches off to stubs. It causes incurable rot.

Some topped trees starve to death from the sudden loss of leaves and twigs that are full of buds. Others rot away little by little. Eventually they become hollow.

Topped trees become dangerous over time as heavy sprouts grow from increasingly weak branches.

Good arborists no longer top trees. They know pruning techniques that protect the health of trees -- they remove whole branches rather than leaving stubs.

Minnesota Department of Natural Resources

Minnesota ReLeaf

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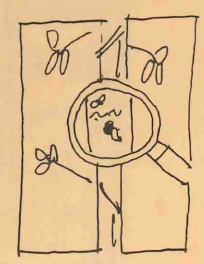
SUMMER ACTIVITIES may june july august september

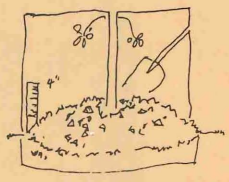


INSPECT

Check your tree every week. Soil under the mulch should be moist but not soggy. Compare the tree to others around it. Look for problems. Watch for changes.

> ***WHY?*** *Common problems are easy to correct if caught early.*

Check your tree for structural problems. It should have a central leader with well-attached branches and no dead or broken branches. Watch for roots that grow around the base of the tree and risk girdling it.

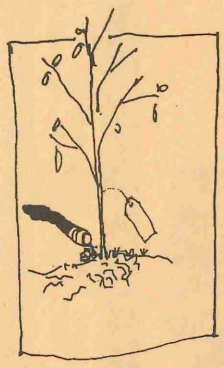


MAINTAIN MULCH

> ***WHY?*** *Mulch helps hold moisture, reduce weeds and prevent damage from lawn mowers. As mulch decomposes, it adds valuable nutrients to the soil.*

Maintain a 4" thickness of mulch around trees and shrubs. Use shredded bark or wood chips. Keep the mulch about 6" away from the base of each tree.

> ***WHY?*** *Mulch that is right up against the trunk keeps the root collar wet (not good) and may encourage mice to nibble.*



WATER

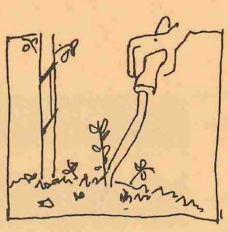
Water a tree once a week during the first few years and during dry periods after that.

> ***WHY?*** *Newly transplanted trees need extra watering until their roots grow out into the area beyond the planting hole.*

An inch of rainfall usually does the job. Water less often in late summer.

> ***WHY?*** *Too much water late in the season may stimulate growth that does not have time to go into dormancy.*

When you water with the hose, let it run slowly for an hour or two. Set the hose anyplace under the canopy of the tree. Move the hose every half hour for a large tree.



CONTROL WEEDS

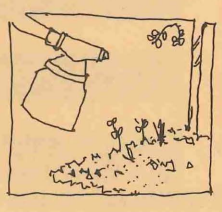
> ***WHY?*** *Weeds may be unsightly and can compete with the tree for moisture and nutrients.*

Pull weeds by hand. Try to keep soil from getting mixed into the mulch.

> ***WHY?*** *When soil gets mixed into mulch, it encourages weed growth.*

Herbicide may be helpful to keep weeds out of the mulch around trees. Use as little as possible to do the job and don't get any on the tree. Spray on a day with no wind. When you use an herbicide, always read and follow label directions.

> ***WHY?*** *Trees are broadleaf plants so they are affected by broadleaf weed killers.*



CONTROL INSECTS, DISEASES AND OTHER HEALTH PROBLEMS

Find out exactly what is wrong with the tree before treating a health problem. Consult the Dial U Clinic at the University of Minnesota, your arborist, a tree inspector, or a forester for help in diagnosing a problem.

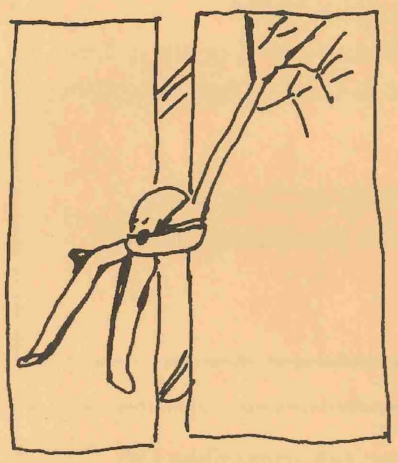
The University of Minnesota Extension Service produces fact sheets and other publications with recommendations for treating common health problems. They are available through your county Extension office.
Follow the treatment recommendations closely. If you use a pesticide to treat a problem, read and follow label directions carefully.

> ***WHY?*** *Many tree health problems are easy to correct if found and treated early. Treatment may or may not include use of pesticides or fertilizers. Pesticides and fertilizers applied at the wrong time can harm trees rather than cure a problem.*

WINTER ACTIVITIES december january february march

PRUNE TREES

> ***WHY?*** *Periodic pruning of trees prevents future problems. Trees recover best from pruning during the winter, when insects and diseases are not active.*



Train your tree to have a single trunk by pruning off branches that turn up and compete with it. Remove weakly attached branches. Remove branches that are dead, broken or rubbing on other branches.

Prune roots that grow encircling the base of the tree and risk girdling it.

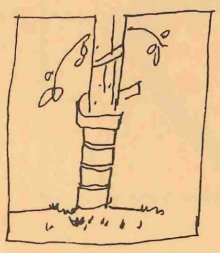
> ***WHY?*** *Any root closely encircling the tree will eventually strangle it.*

Prune trees every couple of years during the first decade after planting. After that, prune on a regular schedule of no more than every 5 years.

Do most pruning in the winter when trees are dormant. If you prune during the summer, choose a dry day.

Leave tree wounds open to the air. An exception is fresh wounds on oak trees between April 15 through July 1. Paint them to prevent spread of oak wilt disease. Hire a professional arborist to work on your large tree.

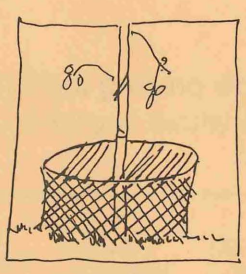
SPECIAL ACTIVITIES



If your tree has smooth, thin bark, you should protect it from winter sun scald.

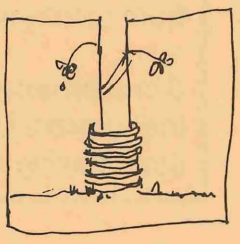
Wrap it with paper tree wrap or cover the south side with cardboard every autumn until bark becomes rough.

Remove the wrapping or cardboard each spring.



Protect tasty young fruit trees (including crabapple trees) from damage caused by chewing mice and rabbits.

Use a piece of hardware cloth at least 5 feet long and 2 feet wide. Put it around your tree to form a cage 2 feet high and 1 foot in diameter. Set the cage a little below ground line, fasten to a stake.



If your tree is vulnerable to damage from weed whips or lawn mowers, protect the base with a guard.

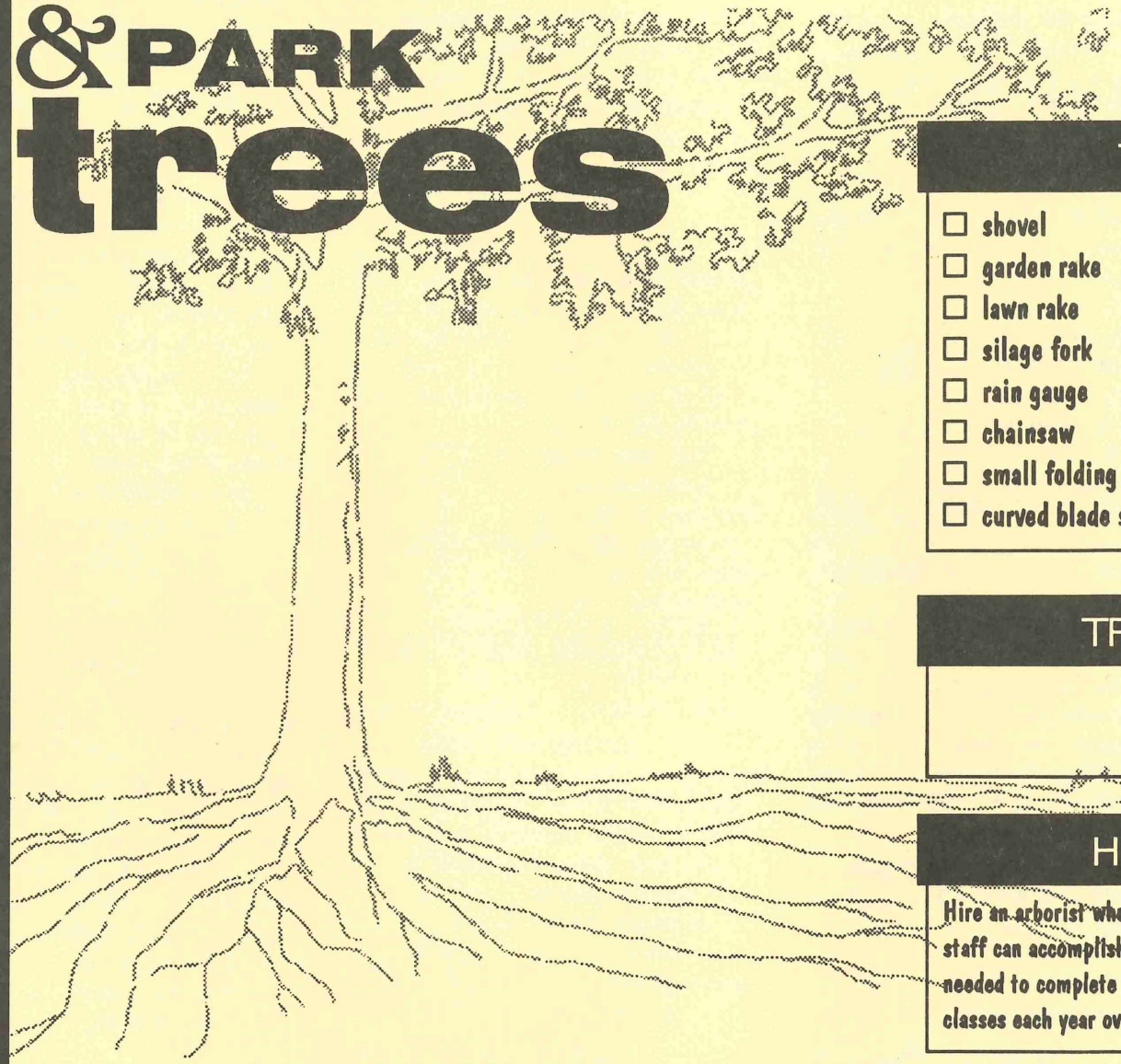
The guard can be a piece of field drain tile about 6 inches long (the large diameter tile, not 4 inch tile), or an ice cream pail with the bottom cut off. Slit the guard on one side to put it around the base of the tree.

new in '97-'99

A GUIDE FOR TREE CARE MANAGERS

HOW TO CARE FOR

STREET & PARK trees



TREE CARE TOOLS

- ☐ shovel
- ☐ garden rake
- ☐ lawn rake
- ☐ silage fork
- ☐ rain gauge
- ☐ chainsaw
- ☐ small folding saw
- ☐ curved blade saw
- ☐ water tank with hoses
- ☐ hand pruner with a side cutting blade
- ☐ pole pruner with a side cutting pruner head
- ☐ lopper with a side cutting blade
- ☐ TREE INSPECTOR'S FIELD MANUAL published by the Minnesota Department of Agriculture

TREE CARE SUPPLIES

- ☐ fertilizer
- ☐ tree wrap
- ☐ mower guards
- ☐ rodent guards

HIRING AN ARBORIST

Hire an arborist when the amount or type of work needed is beyond what in-house staff can accomplish. Choose an arborist with the training, staff and equipment needed to complete the job. Hire an arborist who takes continuing education classes each year over one with little or no training.

STREET & PARK TREES care calendar

APRIL

- ☐ wash salt off of trees and soil in sidewalk cutouts (while ground is still frozen)
- ☐ remove tree wrap from trunks

MAY

- ☐ water
- ☐ add mulch
- ☐ train summer workers
- ☐ plant replacement trees
- ☐ install weed whip guards where needed

JUNE

- ☐ water
- ☐ control weeds
- ☐ inspect for health problems

JULY

- ☐ water
- ☐ add mulch
- ☐ inspect for health problems
- ☐ OK to prune

AUGUST

- ☐ water
- ☐ control weeds
- ☐ inspect for health problems
- ☐ remove dead trees

SEPTEMBER

- ☐ water

EVERY MONTH

- ☐ treat health problems
- ☐ care for storm-damaged or vandalized trees

OCTOBER

- ☐ water young evergreen trees
- ☐ fertilize trees
- ☐ wrap young, thin-barked trees
- ☐ remove stakes and ties from trees
- ☐ inspect rodent guards

NOVEMBER

- ☐ OK to prune
- ☐ train workers for tree pruning
- ☐ order replacement trees

DECEMBER

- ☐ OK to prune

JANUARY

- ☐ OK to prune
- ☐ inspect for hazards

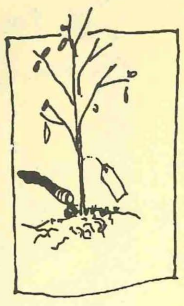
FEBRUARY

- ☐ OK to prune
- ☐ prune or remove hazards

MARCH

- ☐ best time to prune

WATER



Check soil moisture under the mulch. If soil feels dry or near dry, the tree needs water. Young trees need at least 15 gallons of water at a time. Water early in the day. Generally young trees need watering during any week that there is less than an inch of rain. Use a rain gauge to measure rainfall.

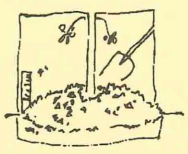
CONTROL WEEDS

Remove most weeds by hand. Avoid mixing soil into mulch as you pull weeds. A trained worker can use herbicide to keep grass out of the edge of the mulch and to spot-spray weeds. Use care with herbicides. Most trees are broadleaf plants and they react to broadleaf weed killers the same way dandelions do.

WASH OFF DE-ICING SALT

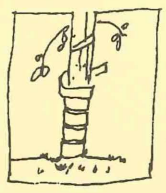
Rinse salt off of trees and soil in medians and in sidewalk cutouts each spring while the ground is still frozen.

MAINTAIN MULCH



Maintain a 4" thickness of mulch around young trees. Use chipped or shredded bark or wood. Keep the mulch about 6" away from the base of each tree. When available, use two-year old mulch around new trees to increase the activity of helpful soil microorganisms.

WINTER SUN PROTECTION

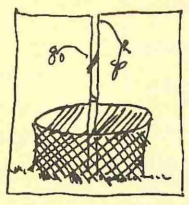


Protect thin-barked trees (linden, maple, crabapple, mountain-ash) from winter sun with paper tree wrap. Start at the base of the tree and wrap upwards to the first branch. Fasten the top with masking tape. Remove the wrapping each spring. Wrap each year until the tree develops thicker, rough bark.

FERTILIZE

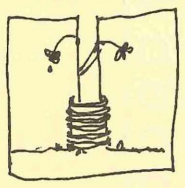
Fertilize new trees the second October after planting. Fertilize older trees only if they are diagnosed as nutrient deficient. Fertilize in the fall as leaves are falling off. Use a balanced fertilizer with slow release nitrogen.

RODENT GUARDS



Protect tasty young fruit trees (including crabapple trees) from damage caused by chewing mice and rabbits. Use a piece of hardware cloth 5 feet long and 2 feet wide. Put it around the tree to form a cage 2 feet high and 1 foot across. Set the cage a little below the ground line and fasten it to a stake. Leave it on throughout the year. Inspect rodent guards each year.

WEED WHIP GUARDS

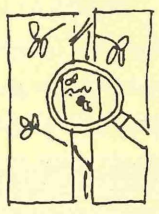


Protect the base of vulnerable trees with a guard. Use a piece of large diameter field drain tile about a foot long. Slit one side to fit it around the base of the tree. Leave the guard on for several years.

REMOVE STAKES AND TIES

In the fall, remove the stakes and ties from trees planted earlier in the year.

INSPECT



Look for problems. Inspections should be conducted by a tree inspector certified by the Minnesota Department of Agriculture. The tree inspector should know all types of trees in the city, what they normally look like and what their needs are.

INSPECT FOR HAZARDS

Choose an individual trained in hazard tree assessment to survey for hazardous trees each winter and after storms.

WORKER TRAINING

For tree pruning training, hire an experienced arborist/trainer to conduct an annual training session for workers or send an employee to a training session or use training video tapes. For summer workers, have a trained, experienced staff person conduct an annual training session.

PRUNE TREES

Ongoing

Remove all dead and damaged branches or whole dead trees.

Paint over the wounds of oak trees that are injured or pruned from April 15 through July 1. Leave all other wounds open to the air.

Avoid pruning trees in the spring when leaves are forming and in the autumn when leaves are falling.

Summer

Choose a dry day for summer pruning.

Prune for clearance over streets and sidewalks and around signs.

Remove suckers and sprouts.

Winter

Train young trees to have a single central leader. Remove weakly attached branches and branches that interfere with the leader.

Remove suckers, sprouts and rubbing branches. Remove branches that interfere with sidewalks, streets and signs.

Elevate the crowns of street and shade trees by removing branches on the bottom one-third of the tree.

WATCH OUT FOR TREE KILLERS

These can kill young trees (old ones, too!)

- Chains or cables wrapped around the trunk
- Planting annual flowers under established trees
- String weed trimmers
- Plastic weed barriers
- Installing a sprinkler system
- Soil compaction
- Under-watering
- Over-watering
- Lawn mowers
- De-icing salt
- Herbicides

TREAT HEALTH PROBLEMS

Consult a certified tree inspector to diagnose tree problems and recommend corrective action. Control insects and diseases that injure the tree.

Try cultural control methods first. Use chemical treatments only as a last resort.

WHAT IF?

..... wind tips a tree?

For young trees, saturate the soil around the tree. Take hold of the tree by the base and gently pull until the tree is upright. Don't rip roots! Stake the tree in place for a few months.

Older trees that tip in the wind might have broken roots that make them prone to fall over. Look for telltale mounds of soil or a slit in the soil on the side of the tree opposite the direction of lean. They are clues to a dangerous situation and the only solution is removal.

..... a tree gets hurt?

Most wounds are best left alone and open to the air. Have an arborist, a community forester or a certified tree inspector look at serious wounds.

This brochure was produced with funding approved by the Minnesota Legislature, 1995 Mn Laws, Chap. 220, Sec. 20, Subd. 8(c) as recommended by the Legislative Commission on Minnesota Resources from Oil Charge Funds for the Minnesota ReLeaf Program.

new in '97-'99

HOW TO MAINTAIN

windbreaks

MAINTENANCE THE FIRST 10 YEARS

WATER	. . . . . during dry spells
INSPECT	. . . . . often in summer, once in winter and after storms
MULCH	. . . . . and control weeds within & between rows
PREVENT	. . animal damage and control insects, disease & other problems
PRUNE	. . . . . trees for stength and form

MAINTENANCE AFTER 10 YEARS

WATER	. . . . . during dry spells
INSPECT	. . . . . each year and after storms
MULCH	. . . . . and control weeds between rows
PREVENT	. . animal damage and control insects, disease & other problems
PRUNE	. . . . . trees to remove dead, damaged or defective branches
THIN	. . . . . dense tree and shrub rows

WATCH OUT FOR TREE KILLERS

These can kill young trees (old ones, too!)

- Chains or cables wrapped around the trunk
- Planting annual flowers under established trees
- String weed trimmers
- Plastic weed barriers
- Installing a sprinkler system
- Soil compaction
- Under-watering
- Over-watering
- Lawn mowers
- De-icing salt
- Herbicides

SPECIAL CARE

Protect tree bark

If your trees have smooth, thin bark (maples, lindens, crabapples, mountain-ash) you should protect them from winter sun scald. Wrap with paper tree wrap each October until the bark becomes rough. Start wrapping at the base of each tree and work upwards. Fasten the top with masking tape. Remove the wrapping each April.

If your trees are vulnerable to damage from weed whips or lawn mowers, protect the base of each one with a guard. The guard can be a piece of field drain tile (large diameter, over 4") about 6 inches long, or an ice cream pail with the bottom cut off. Slit the guard on one side to put it around the base of the tree.

Staking

If a tree needs to be staked to keep from falling over, remove the staking within a year.

Fertilizing

Fertilize new trees the second October after you plant them. Use a balanced fertilize with slow release nitrogen.

WHAT IF? . . . . wind tips my tree?

For young trees, saturate the soil around the tree. Take hold of the tree by the base and gently pull until the tree is upright. Don't rip roots! Stake the tree in place for a few months.

Older trees that tip in the wind might have broken roots that make them prone to fall over. Look for telltale mounds of soil or a slit in the soil on the side of the tree opposite the direction of lean. They are clues to a dangerous situation and the only solution is removal.

. . . . . my tree gets hurt?

Most wounds are best left alone and open to the air. Consult an arborist or a forester to look at serious wounds.

You can also consult the Dial U Clinic at the University of Minnesota with your tree questions.

CARE CALENDAR

Summer
Water as needed
Add mulch as needed
Inspect for health problems
Prune in July

Fall
Water as needed, especially young evergreens
Fertilize
Install sun protectors on young, thin barked trees
Inspect rodent guards
Control rabbits and p[illegible]t gophers

Winter
Inspect for broken branches and other damage
Prune

Spring
Remove sun protectors from tree trunks
Water as needed
Inspect depth of mulch
Inspect for health problems

Anytime
Inspect for damage after storms
Treat health problems

Minnesota Department of Natural Resources

Minnesota ReLeaf

Stewardship Forest

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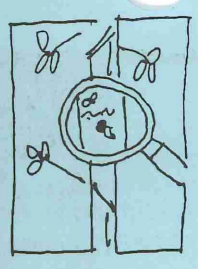


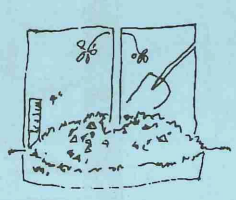
INSPECT

Check your trees every week. Soil under the mulch should be moist but not soggy. Compare each tree to others around it. Look for problems. Watch for changes. Check your trees for structural problems. Each tree should have a central leader with well-attached branches and no dead or broken branches.

WHY? *Common problems are easy to correct if caught early.*

As the belt matures, look for branches that touch branches of other trees. This may signal the need to thin trees within a row or to remove a whole row. Watch how snow drifts in and around the windbreak. Snow should be distributed throughout the windbreak, and much deeper than in the surrounding area. If snow is deeper outside the break or if the shrub row fills quickly to the top with snow during a storm, thinning is needed.

WHY? *Thinning is the most common maintenance need in older, or densely planted windbreaks.*



MAINTAIN MULCH

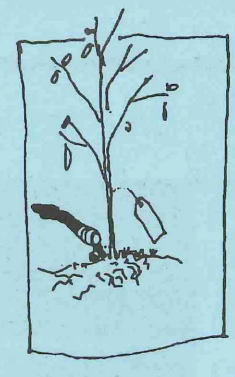
WHY? *Mulch helps hold moisture, reduce weeds and prevent damage from mowers. As mulch decomposes, it adds valuable nutrients to the soil.*

Maintain a 4" thickness of mulch around trees and shrubs. It should extend beyond the longest branches of the tree. Use shredded bark, wood chips, leaves, hay, straw, ground cobs, or sawdust. Keep the mulch about 6" away from the base of each tree.

WHY? *Mulch that is right up against the trunk keeps the root collar wet (not good) and may encourage mice to nibble.*

To control weeds in an entire row, mulch in a band 3 to 6 feet wide along the entire row. Use up to a 6" mulch thickness in areas that are well away from new trees and shrubs.

WHY? *When mulch is too thick, it can suffocate roots.*



WATER

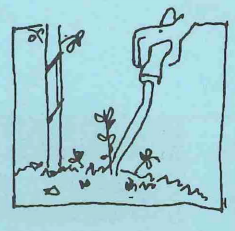
Water a tree once a week during the first few years and during dry periods after that.

WHY? *Newly transplanted trees need extra watering until their roots grow out into the area beyond the planting hole.*

An inch of rainfall usually does the job. Water less often in late summer.

WHY? *Too much water late in the season may stimulate growth that does not have time to go into dormancy.*

When you water , give each tree 5-15 gallons of water. Small seedlings need much less water, less often than larger nursery stock.



CONTROL WEEDS

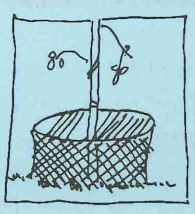
Keep the space between rows of a windbreak free of weeds by cultivating during the first three years. Then seed with native wildflowers and grass. Choose a mix with short plants that won't shade new trees and shrubs. Mow several times each year. Control weeds between trees and shrubs in a row, using mulch, fabric weed barrier or herbicides. Control weeds until the windbreak trees and shrubs are big enough to shade the ground beneath themselves.

WHY? *Weeds can compete with the tree for moisture and nutrients. Weed control within a row is usually different than weed control between rows, because it is difficult to cultivate or mow between trees in a row without damaging them..*

Mulch is the best method for controlling weeds around trees and shrubs. Fabric weed barrier can be used where mulch is scarce. Roll a length of fabric down each row on both sides of the trees or shrubs. Fasten it down. Do not mulch over the fabric. You may put fabric over a thin layer of mulch.

Herbicide may be helpful to keep weeds out of the mulch around trees. Use as little as possible to do the job and don't get any on the tree. Spray on a day with no wind. When you use an herbicide, always read and follow label directions.

WHY? *Trees are broadleaf plants so they are affected by broadleaf weed killers.*



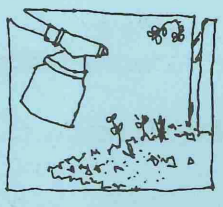
PREVENT ANIMAL DAMAGE

Protect tasty young fruit trees (including crabapple trees) from damage caused by chewing mice and rabbits. Use a piece of hardware cloth 5 feet long and 2 feet wide. Put it around the tree to form a cage 2 feet high and 1 foot across. Set the cage a little below the ground line and fasten it to a stake. Leave it on throughout the year. Inspect rodent guards each year.

When snow is deep, tree guards may not prevent rabbit damage. Use rabbit repellent or control the rabbit population if you see damage. Avoid attracting rabbits by leaving piles of brush or debris near the windbreak.

Watch for evidence of pocket gophers, and eliminate them if needed. Trees damaged by pocket gophers are pale, dry and tipped to the side.

WHY? *Mice and rabbits chew the bark off of trees and kill them. Pocket gophers chew on the roots of trees. A single pocket gopher can kill many established trees.*

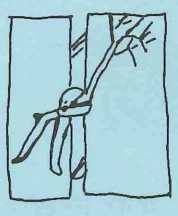


CONTROL INSECTS, DISEASES AND OTHER HEALTH PROBLEMS

Find out exactly what is wrong with the tree before treating a health problem. Consult the Dial U Clinic at the University of Minnesota, your arborist, a tree inspector, or a forester for help in diagnosing a problem.

The University of Minnesota Extension Service produces fact sheets and other publications with recommendations for treating common health problems. They are available through your county Extension office. Follow the treatment recommendations closely. If you use a pesticide to treat a problem, read and follow label directions carefully.

WHY? *Many tree health problems are easy to correct if found and treated early. Treatment may or may not include use of pesticides or fertilizers. Pesticides and fertilizers applied at the wrong time can harm trees rather than cure a problem.*



PRUNE TREES

Train your trees to have a single trunk by pruning off branches that turn up and compete with it. Remove weakly attached branches. Remove branches that are dead, broken or rubbing on other branches. Do not prune lower branches off of windbreak trees. Prune roots that grow encircling the base of the tree and risk girdling it.

WHY? *Periodic pruning of trees prevents future problems. Trees recover best from pruning during the winter, when insects and diseases are not active. Any root closely encircling the tree will eventually strangle it.*

Prune trees every couple of years during the first decade after planting. After that, prune on a regular schedule of no more than every 5 years. Hire a trained, professional arborist to work on large trees.

Do most pruning in the winter when trees are dormant. If you prune during the summer, choose a dry day.

Leave tree wounds open to the air. An exception is fresh wounds on oak trees between April 15 through July 1. Paint them to prevent spread of oak wilt disease. Hire a professional arborist to work on your large tree.

Renew old, leggy shrubs by removing all the stems near the ground in late winter or early spring.

THIN YOUR WINDBREAK

If branches of trees within a row touch, it may be time to thin the row. Remove every other tree or more so that tree spacing is about 20 feet (measured trunk to trunk).

If branches of trees in different rows touch each other, it may be time to remove a row. Remove rows so that there is at least 20 feet of space between rows. Leave rows of evergreens whenever possible. Remove the fastest growing deciduous trees first, such as silver maple or hybrid poplar.

When it's time to thin shrubs, remove every other one.

WHY? *Once branches of trees touch, they begin to shade each other and lower branches tend to die out. A thinner shrub row can actually catch more snow than one that has grown too dense.*

Tree Planting Accomplishments

In order to track statewide tree planting accomplishments, please provide **MINNESOTA ReLEAF** with the following information regarding your personal or community efforts. *(Mail to address on reverse side)*:

WHO: _____ **ADDITIONAL COMMENTS:** _____

WHAT: _____ _____

_____ **CONTACT PERSON:** _____

Address _____

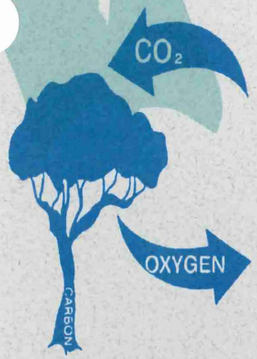
WHEN: _____

City _____ **State** _____ **Zip** _____

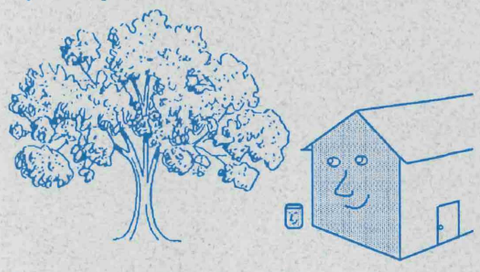
TOTAL TREES PLANTED: _____

Phone _____

How Can Trees Help?



- Trees use up excess carbon dioxide in the atmosphere and turn it into life-giving oxygen. A properly managed forest removes more carbon dioxide from the atmosphere than a decaying or understocked forest.
- Trees help conserve energy. Properly planted trees around your home can cut your air-conditioning bill by *10-15 percent.*



Trees turn urban "heat islands" into cool and comfortable "oases", making the concrete jungle livable for all of us.

- The American Forestry Association estimates there are 100 million energy-efficient tree planting sites available around homes and in our towns and cities. Planting those 100 million trees could offset America's CO_2 emissions by 18 million tons a year, saving American consumers $4 billion each year!
- Trees provide the added benefits of filtering pollutants from the air and ground water, stopping soil erosion both through soil holding roots and wind blocking foliage, and provide homes for many different species of animals.

What Is MINNESOTA ReLEAF?

The **MINNESOTA ReLEAF** campaign is just one part of a larger effort headed by the American Forestry Association called **Global ReLeaf**—an international effort aimed at reducing the carbon dioxide (CO_2) build-up in the earth's atmosphere. Like its national counterpart, MINNESOTA ReLEAF aims to increase the number of trees in both rural and urban settings by assisting local governments, landowners and business in tree planting and public education regarding tree care.

MINNESOTA ReLEAF Programs

The **MINNESOTA ReLEAF** programs are:

1. Provide assistance to communities and individuals in managing the community tree resource. Assistance may include technical information on tree planting and maintenance, tree board formation, and fund raising for tree projects.
2. Provide private landowners with technical and financial assistance for tree planting and maintenance on rural lands.
3. Provide a vehicle through the Future Forest Fund for individuals and corporations to donate money for state land tree planting.
4. Coordinate the promotion of additional funding sources for urban and rural tree planting.

MINNESOTA ReLEAF Goals

MINNESOTA ReLEAF calls for the following accomplishments in the next ten years (by the year 2000):

1. To plant and establish one million new trees in Minnesota communities;
2. Increase by 500,000 acres the amount of rural land planted with trees;
3. Develop a network of one million Community Tree CareTakers pledging to support proper management of their urban and community forest resource.

MINNESOTA ReLEAF

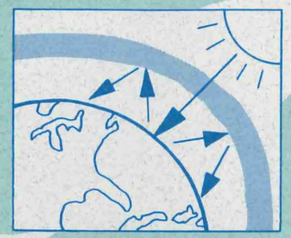
It's as simple as planting a tree.

Minnesota
DEPARTMENT OF NATURAL RESOURCES

Global Warming:

ONE ENVIRONMENTAL CRISIS WE CAN DO SOMETHING ABOUT.

The Earth is warming. Average global temperatures are the highest on record and the implications for society could be enormous if this trend continues.



At the root of the problem is the "greenhouse effect": carbon dioxide (CO_2), released into the atmosphere when fuels like coal and oil are consumed, traps the sun's rays before they can bounce back into outer space, turning the earth into a planetary hothouse.

Trees use carbon dioxide as they grow, and could help cool the globe. But there simply are not enough trees in our global greenhouse to absorb all the CO_2 that's blanketing the earth.

The clearing of forests throughout the globe from the tropics to the temperate zones has seriously reduced the planet's capacity to absorb the CO_2 that is produced by human energy use. Remaining forests that are poorly managed cannot contribute significantly to the reduction of atmospheric CO_2.

Closer to home; since becoming a state in 1858, Minnesota has lost 42 percent of its forest land to agriculture, and development for houses, businesses and industries. Trees are a renewable resource, and lost forest land can be reclaimed.

Clearly, one way to halt global warming is to reduce energy consumption and to rely less on fossil fuels. But another important way to reduce the "greenhouse effect" is to plant trees—lots of trees—particularly in and around urban "hot spots."

You Can Make A Difference

Here are four **MINNESOTA ReLEAF** actions you can take *right now*:

1. *Plant and care for trees.*

You'll find that a "greener" life in your yard and in your town is more beautiful, more energy efficient, and you'll feel great doing your part for **MINNESOTA ReLEAF** !

2. *Organize or join a citizen tree action group.*

…re your tree knowledge with your community. Every American town or city has "missing trees"—trees yet to be planted or trees to be replaced. There is no better way to leave your mark on the landscape than by planting energy-saving trees.

3. *Give to the Future Forest Fund.*

Your entire tax-deductible contribution will be used to fund tree planting on state lands in Minnesota. No administrative fees are deducted from your contribution. Your contribution can play a vital role in maintaining a properly managed forest.

4. *Join the National Effort.*

Write **Global ReLeaf**, P.O. Box 2000, Washington, D.C. 20013.

For More Information

YES, I want to participate in **MINNESOTA ReLEAF** !

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE _____

Please send me the following:

- ☐ Tree planting Information
- ☐ Community Forestry Program Information
- ☐ Future Forest Fund Information

SEND TO:
MINNESOTA ReLEAF Program
Minnesota Department of Natural Resources
Division of Forestry, Box 44
500 Lafayette Road
St. Paul, Minnesota 55155-4044

and over

Where winters are long and windy, the most valuable way to reduce annual energy use is to **create windbreaks.** Tall trees will guide wind up and over an area extending downwind at least ten times the height of the windbreak.

- ☑ Select windbreak trees which are evergreen and which will have branches from ground level to a height at least twice as tall as the building being sheltered.
- ☑ Select trees that are best adapted to the site's growing conditions so they will be tall, yet dense.
- ☑ Plant rows or continuous clusters of trees upwind and perpendicular to the primary wind direction - usually running along the west and north sides of the property

your lot is very large:

- ☑ Make the windbreak longer than the area being sheltered
- ☑ Space evergreens about 20 feet apart and deciduous trees at greater spaces to allow the sun to reach the lower branches; where space is limited, plant fewer trees - don't crowd the trees.
- ☑ Locate the inside of a shelterbelt on a very open site at least 50 feet from buildings and driveways to avoid snow drifting problems, even if the windbreak is on the other side of the road.

If your lot is smaller:

- ☑ Plant evergreen trees to the west and north in sunny locations in rows or groupings with trees spaced about ten feet apart.

HOME ENERGY USE FACTS

Minnesotans typically spend ten times more to hea than to cool their home.

In Summer

- Most unwanted heat comes through east and west facing windows.
- Less than 5% of the heat goes through insulated roof and walls.
- Shading west windows reduces costly peak electric use.

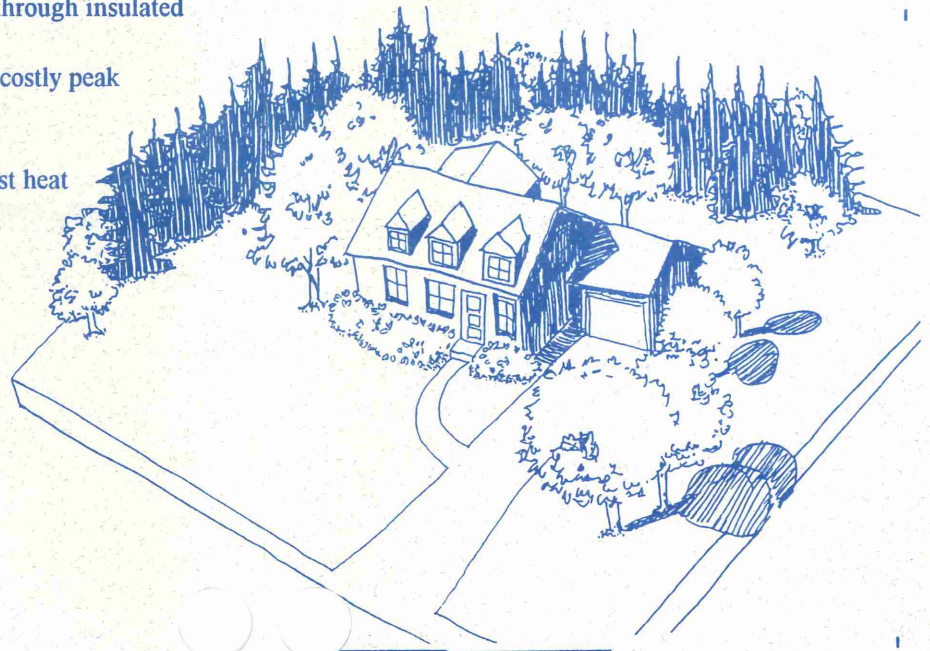
In Winter

- Northwesterly winds causes most heat loss.
- Sunshine gives significant free solar energy through south windows.

Minnesota
Department of Natural Resources
Division of Forestry
(612) 772-7562

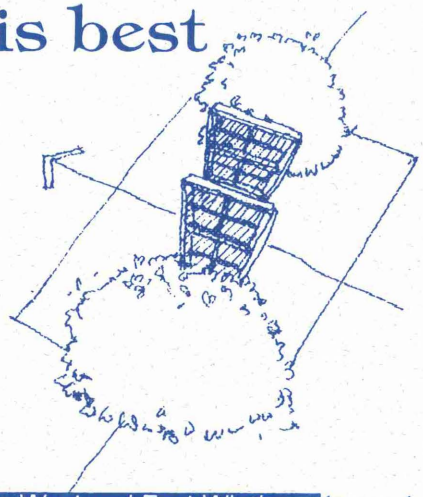
This brochure was produced with funding approved by the Minnesota Legislature, 1995 Mn Laws, Chap. 220, Sec. 20, Subd. 8(c) as recommended by the Legislative Commission on Minnesota Resources from Oil Charge Funds for the Minnesota ReLeaf Program.

PLANTING STRATEGIES FOR ENERGY CONSERVATION



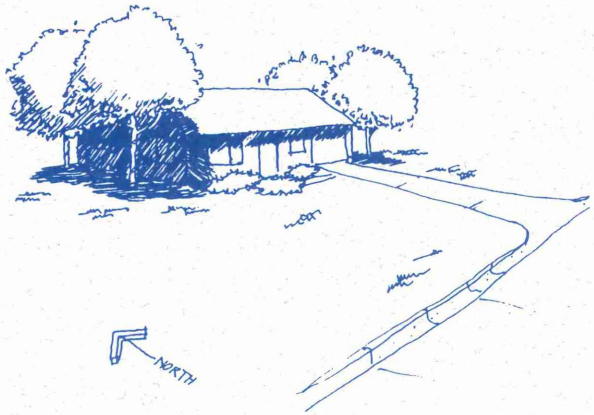
In Minnesota, strategically placed shade trees can reduce an air conditioning bill by up to about 25% and a windbreak can reduce annual fuel bills by up to 10-20%. Also, trees throughout the community (our community forest) cool our neighborhoods in summer thereby reducing air pollution and they shelter us from harsh winter winds. But, in order to achieve these savings trees should be properly located to maximize the benefits.

west is best

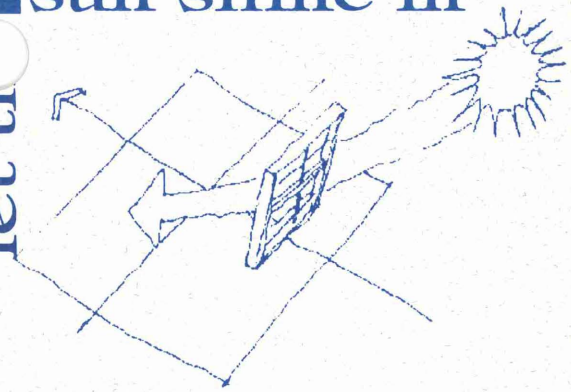


Shade West and East Windows to most efectively reduce air conditioning use:

- ☑ Give highest priority to planting shade trees directly west of west windows.
- ☑ Plant trees east of east windows as second priority.
- ☑ Select a tree that can be planted within twenty feet of the window and will grow at least ten feet taller than the window.
- ☑ Select trees that are strong, resisting disease, pests and damage from storms; and that will grow vigorously under local site conditions.
- ☑ Select a tree with dense foliage, as broad in f as space permits.



let tl sun shine in



Avoid shading south windows by keeping new trees south of the home at least twice their mature height away from south windows.

If trees already exist south of windows:

- ☑ Remove their lower branches to allow more winter sun under the limbs.

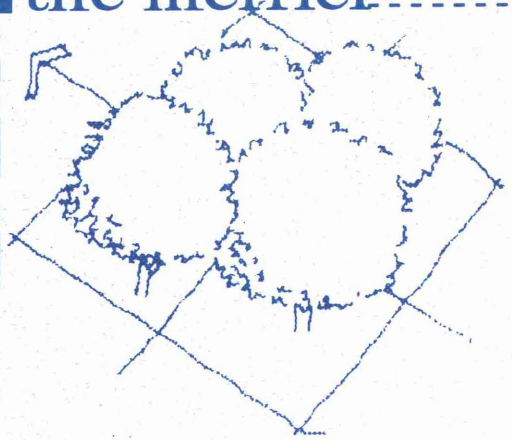
If you do want a tree southeast or southwest of a window:

- Use a "solar friendly" tree which has moderately dense foliage during the hottest times of the year, loses its leaves early in fall as the heating season begins, and has sparse winter branches.
- ☑ Select cultivars from northern seed sources which will lose their leaves earlier in the fall.

Remember :

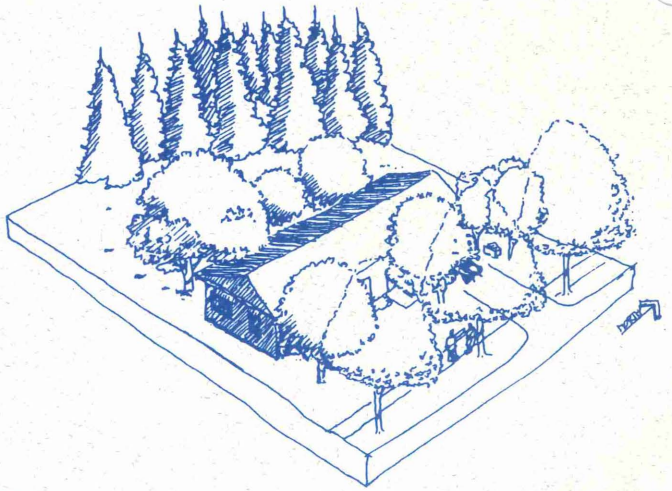
Take advantage of the free solar energy coming in through the south windows in the winter. Therefore, the worst place to have a tree is in the yard south of a home, since the sun's angles cause the shadow of the tree to miss the home during the summer months and always fall on the home during the winter months.

the more the merrier



Maximize tree canopy cover throughout the neigborhood to maximize environmental benefits.

- ☑ Achieve at least a 50% tree canopy cover by planting trees throughout the neighborhood.
- ☑ Preserve and care for existing trees and forests near neighborhoods.
- ☑ Locate air conditioners away from south windows and shade them with trees allowing good air circulation around the air conditioner.
- ☑ Shade car parking areas with trees which have enough rooting space to thrive.

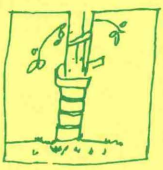


AFTER I'M IN THE GROUND

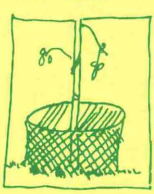
CHECK ON ME once a week. Watch for problems. Check the soil moisture an inch below the mulch. If the soil is moist, I'll be fine. Check again in a few days.

- **WATER ME** once a week. An inch of rainfall usually does the job. When you water with the hose, let it run slowly for an hour or two.
- **PULL WEEDS** by hand. Try to keep soil from getting mixed into the mulch.

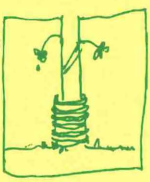
- **ADD WOODCHIPS** as needed to keep them 4 inches thick, but not heaped against the trunk.
- **AVOID HERBICIDE DAMAGE**. When you (or your lawn care company) take care of the lawn, do not spray any herbicide in the area near me.
- **FERTILIZE** the second autumn after planting. Use a product with slow release nitrogen.
- **PRUNE ME IN THE WINTER** when I'm dormant. Use a hand pruner to remove any branches that are broken or that rub on other branches. Train me to have a single central trunk by pruning off branches that turn up and compete with it. Leave me alone in the spring and the fall.



- **WRAP ME.** If I have smooth, thin bark, use paper tree wrap every autumn until my bark becomes rough. Remove the wrapping each spring.



- **PROTECT ME,** if I'm a tasty fruit tree, from damage caused by chewing mice and rabbits. Use a piece of hardware cloth to form a tall cage. Set it a little below groundline and fasten it to a stake.



- **PROTECT MY BASE WITH A GUARD** if I'm vulnerable to damage from weed whips and lawnmowers. Use a piece of field drain tile about 6 inches long or an ice cream pail with the bottom cut off and a slit cut in the side.

WATER ME NOW!

- AND KEEP THESE INSTRUCTIONS HANDY FOR TWO YEARS.

MINNESOTA RE/LEAF

This tree was planted through the MINNESOTA RELEAF Program

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