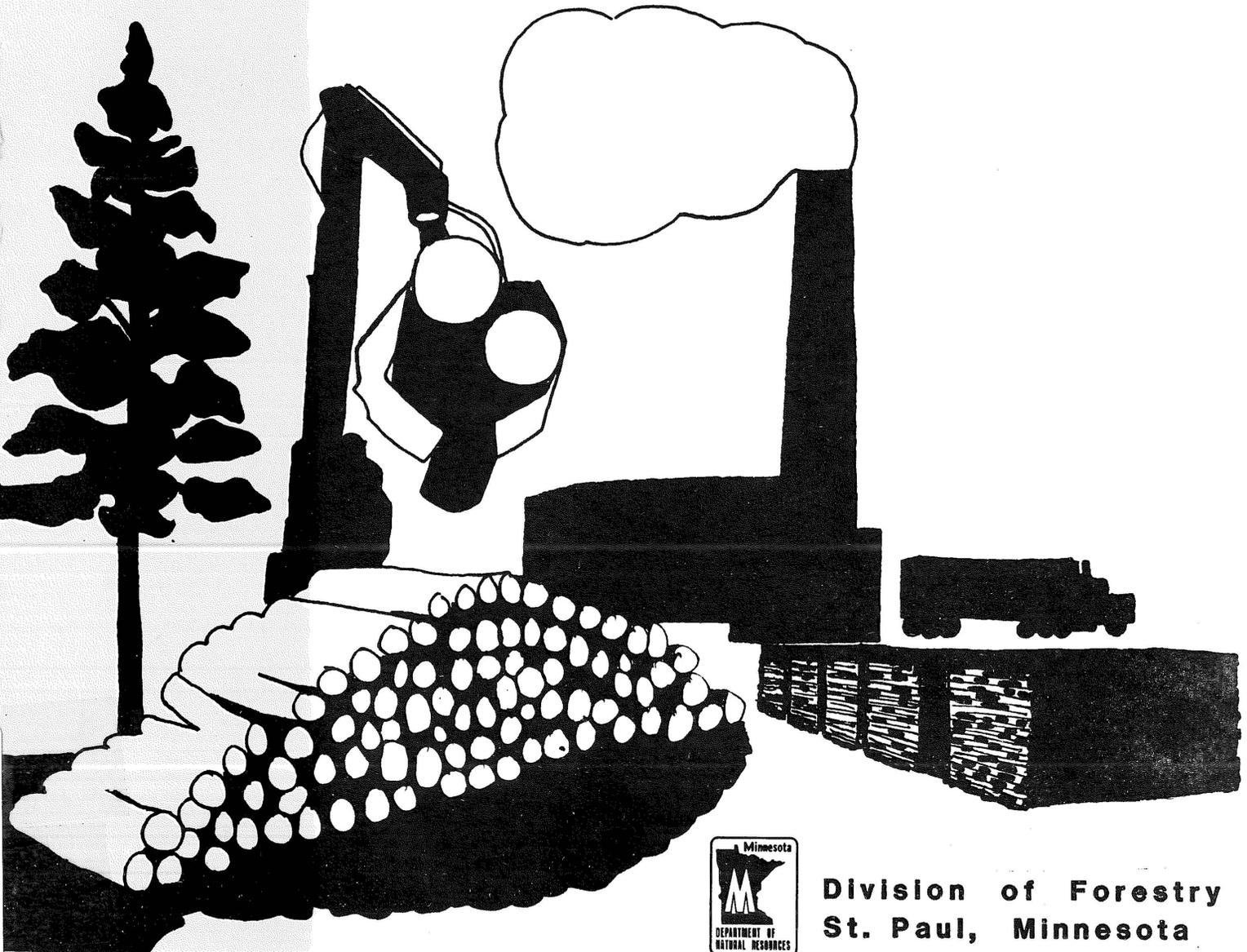




WORK PLAN

Minnesota DNR – Forestry Utilization and Marketing Unit 7/83 – 6/85

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Division of Forestry
St. Paul, Minnesota

MINNESOTA DNR - FORESTRY
UTILIZATION & MARKETING UNIT

Plan of Work
FY 1984/85
(July 1983 through June 1985)

Includes

The Current Utilization & Marketing Program

Description of Utilization & Marketing
Special Project Initiatives

Prepared: June 1983

DNR - Forestry
Centennial Office Building
Box 44
St. Paul, Minnesota 55155

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I. INTRODUCTION

A. Background

The Minnesota Department of Natural Resources, Division of Forestry has participated in the Forest Products Utilization and Marketing (U&M) program since its inception in 1966. For ten years, the program was handled by a single staff forester. In 1976, the staff was increased to three and then five. Since 1980, the U&M complement on the State Foresters staff has numbered seven.

Funding and technical assistance offered by the U.S. Forest Service, State and Private Forestry (S&PF), provided major impetus for the development of Minnesota's program. Four Federal Resource Conservation and Development Projects (RC&D) also provided significant assistance with funding and program direction prior to 1976. Currently, however, the U&M field positions are supervised by the DNR Regional Forest Supervisors and provided program direction by a coordinator in St. Paul.

Increased staff has brought with it a significant increase in capabilities. What started out as a small staff with limited experience has evolved into a complex unit with a good deal of expertise in primary processing, resource analysis, industrial development, marketing, wood fuels, wood by-products, secondary processing and harvesting. This unit has gained the confidence of the major wood industries in the state and has led a determined effort to expand the use and improve the utilization of Minnesota's wood resources.

B. Purpose

The purpose of the U&M program is twofold:

1. To expand the use of currently underutilized wood resources through marketing and economic development.
2. To improve the utilization of the wood resource through increased harvesting and processing efficiency.

In accomplishing these goals, the U&M program provides assistance and service to Minnesota's third largest industry which employs over 50,000 people and produces over \$1.8 billion worth of manufactured products annually.

C. Acknowledgements

It would be impossible for the Minnesota DNR-Forestry U&M staff to function effectively without the assistance, and cooperation of forest products personnel from other agencies. These agencies include: The University of Minnesota Department of Forest Products, the University of Minnesota Extension Service, the U.S. Forest Service, North Central Forest Experiment Station, and the U.S. Forest Service - State and Private Forestry. The Minnesota U&M staff offers a sincere "thank you" to the personnel from these agencies.

II. THE CURRENT UTILIZATION AND MARKETING PROGRAM

A. Budget

The line item budget for the U&M staff is carried over all activities. Special projects occasionally arise which increase the funding and staff on a temporary basis.

<u>BUDGET</u>	<u>UNIT OF MEASURE</u>	<u>ANNUAL AVERAGE PER BIENNium</u>			
		<u>1982-83</u>	<u>1984-85</u>	<u>1986-87</u>	<u>1988-89</u>
1) State General Fund	\$ (000's)	197	287	296	325
2) Federal Cooperative Funds	\$ (000's)	60	---	---	---
3) Federal BWCA Funds	\$ (000's)	55	50	50	50
4) Special Project Funds	\$ (000's)	---	10	10	15
<u>TOTAL</u>	<u>\$ (000's)</u>	<u>312</u>	<u>347</u>	<u>356</u>	<u>390</u>

B. Staffing

The current U&M staff consists of six DNR Regional U&M Specialists and one program director. They are as follows:

John Krantz
U&M Program Director
DNR - Forestry
Box 44
Centennial Bldg.
St. Paul, MN 55155

Paul Peterson
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DNR Regional Headquarters
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Grand Rapids, MN 55744

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1201 E. Hwy. 2
Grand Rapids, MN 55744

The overall supervision of the U&M program is the responsibility of Wayne Hanson, Supervisor, Forest Resources and Products Section, DNR - Forestry, Box 44, Centennial Office Building, St. Paul, MN 55155.

<u>STAFFING</u>	<u>UNIT OF MEASURE</u>	<u>ANNUAL AVERAGE PER BIENNIUM</u>			
		<u>1982-83</u>	<u>1984-85</u>	<u>1986-87</u>	<u>1988-89</u>
1) Complement U&M Staff (Region & St. Paul)	man/yrs.	7	8	8	8
2) Contributions by field foresters	man/yrs.	.7	1	1	2
3) Contributions by supervisory, support, and special project staff	man/yrs.	1.3	1.3	1.5	2.5
4) Contributions by field foresters as related to U&M career development	man/yrs.	0	1	1	1
	<u>TOTAL</u>				
	man/yrs.	9.0	11.3	11.5	13.5

It is anticipated that one additional full time staff will be added to the present U&M complement during FY 1984/85. It is likely that this position will be headquartered in the St. Paul office.

C. Specific Program Categories and Time Allotments

The goal of the Minnesota U&M effort is to maintain a diversified and well rounded program by: (1) responding to industrial demands for services; (2) maintaining existing programs and projects; (3) initiating utilization and marketing projects; and (4) responding to the needs of the DNR - Forestry organization.

Approximately 65% of staff time is programmed for responding to demand type projects, 10% of the U&M effort is directed towards Division of Forestry assistance while about 25% of the effort is set aside for special initiatives as described in the second portion of this plan of work.

The demand type projects involve a diversity of requests that basically fit into categories described as follows.

1. Primary Processing

This program involves assistance to industries that make the initial conversion of logs and roundwood for direct use or subsequent processing. Types of primary processors include: sawmills, pulp and paper mills, lath mills, post and pole manufacturing and treating plants, fuelwood processors, shingle mills, house log manufacturers, chippers, and a variety of other special processing industries.

The U&M staff is responsible for assisting the primary industry when requested or when a special need arises. Activities may include (1) analyzing primary processing operations for efficiency and improved utilization; (2) offering technical advice concerning actual machine operation; (3) evaluating mill yard design; (4) advising on the proper storage and handling of logs and lumber; (5) assisting with air and kiln drying procedures; (6) advising on all aspects of lumber grading; (7) merchandising raw material for highest value products; (8) determining production rates and values of mill and forest residue; (9) working to salvage wood lost through fire, floods, insects and disease; and (10) responding to requests for information on a broad spectrum of topics.

The primary processor assistance program has been the most popular U&M program in the past. Because a disproportionate amount of time could be spent in this area, less emphasis will be placed on detailed and time consuming mill analysis. Client problems will be handled by employing streamlined and less intensive mill study designs.

The FY 84/85 U&M effort in primary processing will be directed at conducting 15 to 20 individual mill analysis, including assisting three Indian Reservations. Many incidental requests covering a host of various processor inquiries will be also handled.

2. Resource Analysis and Industrial Development

Resource analysis involves the interpretation of forest survey data and the mating of this information with current and projected supply and demand information for Minnesota resources. Nearly 15-20% of U&M requests and proposals deal with timber resource analysis. Requests may come from industries currently operating in Minnesota or from others interested in investing in the state. Not all requests result in the development or expansion of an industry, but all carry with them a high level of impact potential.

The interpretation of data can become a very complex project. Many requests come from large nationwide corporations with diverse interests in wood products industries. Through experience, the U&M staff has developed the expertise to work with this type of clientele. Industry has acknowledged this expertise directly through expressions of gratitude and indirectly through repeat requests for assistance.

Examples of upcoming resource analysis studies include: assisting a Minnesota paper company to interpret data for a possible expansion; summarizing the potential for a medium density fiberboard (MDF) facility in Minnesota; continuing a resource feasibility study for the utilization of white birch; working with several firms interested in establishing hardwood dimension plants in Minnesota; updating the demand and supply study of Minnesota resources; determining the extent of use and the potential of the balsam resource in Minnesota; assisting several firms with analyzing the resources for an additional waferboard plant; and publishing the results of the statewide private lands conifer plantation survey.

3. Marketing

The U&M effort in marketing involves bringing together the wood products consumer and the producer. This program affects primary and secondary processors on both individual and company levels. In

excess of \$1 million dollars in trade is generated annually for Minnesota forest products businesses through U&M marketing activities.

Marketing activities involving the U&M staff include: (1) working with the Minnesota Trade Office to expand exports of Minnesota wood products; (2) developing informational and promotional literature highlighting Minnesota forest resources and wood products; (3) continuing to publish the DNR bi-monthly "Marketplace" marketing bulletin; (4) assisting in the development of a midwest market analysis for Minnesota produced posts and poles; (5) determining the scope and demands of the Minnesota pallet industry; (6) designing a new primary processors survey; (7) assisting the Governor's Council on Rural Development as co-sponsor of a Minnesota wood products trade show; (8) producing a forest products sample marketing package to be used as a promotional tool; (9) planning and constructing displays for the 1983 and 1984 state fairs; (10) and handling many day-to-day inquiries from producers and consumers of Minnesota produced wood product regarding markets.

4. Fuel and By-Products

Wood for energy is a key element in the Governor's plan to develop alternative energy sources for Minnesota. The U&M staff is directly involved in developing and analyzing timber and residue resource information to aid in the development of a sound wood energy program.

Several types of wood energy developments in Minnesota involve the U&M staff. One type involves the use of fuelwood for residential heating. Others involve the use of wood and wood residues for industrial, commercial and institutional applications. These applications involve the use of densified pellets and briquettes, green and dry fuels.

The U&M staff works with both the consumer and producer of wood fuels, in the areas of market development, equipment conversion, and

consumer acceptance. The staff also works to influence the development of wood fuel so that it does not come into direct competition with traditional industrial demands.

In FY 1984/85 the U&M staff will be involved with the following fuel and by-products projects: (1) compiling statewide summaries of industries that have converted to residue fuels; (2) developing comparison analysis for cost conversions; (3) conducting the 3rd residential fuelwood assessment to determine the amount of fuelwood used for residential heating especially that which is being removed from growing stock; (4) assisting DNR Field Services in determining the feasibility and placement of 12 to 15 densified fuel conversions; (5) evaluating the market potential for densified wood fuels; (6) developing informational literature for the purpose of informing the public on residue fuels and conversion opportunities; (7) updating and reprinting the 1981 Minnesota Wood Residue Studies; (8) and printing the Minnesota Residential Fuelwood Demand Assessment.

5. Secondary Processing

The greatest opportunity for growth of the forest products industry in Minnesota lies in the continued development and expansion of the secondary processing industry. Secondary processing includes pallet manufacturing, lumber planing, preservative treating, panel gluing, and a host of diversified functions that produce finished or near finished parts from lumber or other primary produced products.

The U&M staff actively seeks to promote the use of Minnesota timber species in the manufacture of final products. Considering that each \$1 worth of timber stumpage results in \$35 worth of product at the wholesale level, it is important to promote and assist secondary processing as much as possible.

The U&M staff will be working on a number of projects in FY 1984/85 to include: (1) assisting several processors to determine the most desirable species mix and grade for their particular product; (2) researching the possibilities of a wood turning industry; (3)

continuing to assist in establishing several glued wood panel industries; (4) determining the needs of the pallet industry in Minnesota and the feasibility of establishing a cut-up pallet parts industry; (5) working with other agencies to promote workshops dealing with lumber grading, drying, storage, and processing; (6) updating and expanding the secondary processing portion of the Minnesota Forest Products Directory; (7) and responding to many various individual requests.

6. Harvesting

Harvesting involves those activities aimed at improving the utilization efficiency of the forest harvesting process. In Minnesota, over 70% of the wood harvested is in the form of roundwood pulpwood which is used for paper pulp and waferboard. Less than one-third is harvested for sawlogs. The goal of the U&M harvesting effort is to; (1) make the producer more aware of the economic and cost accounting programs available to him; (2) to encourage the producer to merchandise his product for the best product use.

Projects scheduled for FY 84/85 include: (1) continuing to train the DNR field staff in use of programs designed to measure residue volumes and the degree of utilization; (2) working with producers to recognize the economic benefits of separating sawbolts from pulpwood and fuelwood; (3) participating in logger training sessions and workshops; (4) and working with producers to set up a marketing system for whole tree chip processing.

D. Targets for Specific Utilization and Marketing Programs

<u>SPECIAL PROGRAMS</u>	<u>UNIT OF MEASURE</u>	<u>TARGET BY BIENNIUM</u>		
		<u>FY 1984-85</u>	<u>FY 1986-87</u>	<u>FY 1988-89</u>
1. <u>Assistance to Primary Processing Industry</u>				
a. Major mill analysis	# studies	5-7	4-6	4-6
b. Improved utilization	M cords	25	30	35
c. Client assists	# assists	30-40	40-60	40-60
d. Productive capacity of assisted clients	M cords	1,200	1,400	1,500
e. U&M initiated projects	# projects	2-3	2-3	2-3
2. <u>Resource Analysis and Industrial Development</u>				
a. Major analysis	# studies	3-5	3-5	3-5
b. Increased utilization	M cords	100	200	200
c. Total capital investment resulting from studies	Million \$'s	8-10	40-60	40-60
d. Development committees/groups assisted	# assists	10-15	10-15	10-15
e. U&M initiated studies	# studies	1-2	1-2	1-2
3. <u>Marketing Activities</u>				
a. Assists	# assists	30-40	50-70	50-70
b. Amount MN production impacted by marketing assistance	%	2-4	5-10	5-10
c. Volume of production increases due to marketing assistance	M cords	25-30	40-50	40-50
d. Increase in export volume resulting from assistance	%	1-2	3-5	3-5
e. U&M initiated projects	# projects	2-3	2-3	2-3
4. <u>Fuel and By-Products</u>				
a. Assists all types	# assists	40-50	50-60	50-60
b. Conversions to wood residue fuels	# conversions	10-15	15-20	15-20
c. Volume increased residue utilization	M cords	20-25	25-30	25-30
d. Fuel savings due to fossil conversions	\$ (000's)	600	800	800
e. U&M initiated projects	# projects	2-3	4-5	4-5
5. <u>Secondary Manufacturing</u>				
a. Assists/clients	# assists	15-20	20-30	20-30
b. Volume of increased wood usage due to assistance	MMBF	6-7	7-8	8-9
c. Production capacity of assisted clientele	MMBF	7-8	9-12	9-12
d. Major studies/analysis	# studies	3-5	4-6	4-6
e. U&M initiated projects	# projects	2-3	2-3	2-3
6. <u>Harvesting</u>				
a. Requests/cases/projects	# projects	10-15	15-20	15-20
b. Loggers contacted	# contacts	30-40	40-50	40-50
c. Volume increased utilization	M cords	3-5	4-6	4-6

E. Future Emphasis of the Utilization and Marketing Program

During the next several years, the U&M staff will continue to emphasize projects and requests that offer the most return on the effort expended. This means that projects offering the highest potential economic return to the state will be emphasized. Projects of this type are likely to fall in the areas of marketing, secondary processing, and fuel by-products. Primary processing, which has been a major U&M program will be de-emphasized somewhat.

III. SPECIAL UTILIZATION AND MARKETING PROJECT INITIATIVES

A. Introduction

The Minnesota Division of Forestry, Utilization and Marketing Unit frequently initiates projects designed to round out the utilization program by responding to perceived needs and opportunities. Although much of the units work is done in response to requests from industry and government, this sort of approach tends to leave gaps. Staff initiatives are intended to fill these gaps and complement request initiated projects.

Approximately 25% of the U&M staff time will be directed toward accomplishing these special project initiatives. Time and resources will probably not allow the completion of each initiative in FY 84/85. Several initiatives may be added or altered to respond to particular needs.

B. Special Initiatives

1. SPECIAL INITIATIVE: DEVELOP A PROSPECTUS ON THE MANUFACTURING AND MARKETING OF SOFTWOOD POSTS AND POLES IN MINNESOTA

OBJECTIVE: The U&M staff receives numerous requests for assistance from individual post and pole producers, peelers, treaters and consumers. The volume of requests demonstrates a need for information within the industry. The preparation and distribution of a comprehensive prospectus will satisfy an existing need and facilitate increased activity within the industry.

PROJECT DESCRIPTION:

- 1) A literature review will be conducted to consolidate existing information.
- 2) A resource analysis (based on existing inventory information) will be conducted to determine the extent to which the softwood post and pole industry can be expanded.

- 3) The current post and pole processing and treating industry will be surveyed to determine existing and potential capacity.
- 4) Current and potential markets for Minnesota produced posts and poles will be surveyed.
- 5) A prospectus describing resource availability, current industry, market information and expansion opportunities will be prepared and distributed to the industry.

WORK PLAN: One U&M Specialist will conduct the necessary literature review, resource analysis, industry survey and market survey. Assistance with methodology and survey design will be solicited as necessary from other U&M staff, S & PF, University of Minnesota and others. The U&M Specialist will write the prospectus. Following an appropriate draft review process, the prospectus will be printed and distributed to post and pole producers, peelers, treaters and major consumers. The project will require up to 8 weeks of U&M Specialist time.

RESULTS: Information made available by a comprehensive manufacturing and marketing prospectus will increase Minnesota post and pole manufacturing and marketing activity. A market activity increase of 10% over the 1981 level would mean an increase in production and sales of some 100,000 pieces. This increase would have a final value of \$300 - 500,000 annually. This added value would be created by loggers, post peeling firms, treating firms, trucking firms, and wholesale/retail organizations. Although much of the increased production will be exported to neighboring states, harvest and processing will be completed in Minnesota. Direct impact will be increased income for existing harvesting and processing firms and the potential for existing firms to expand or for new firms to enter the industry.

2. SPECIAL INITIATIVE: ANALYZE THE MINNESOTA PALLET INDUSTRY

OBJECTIVE: Analyze the Minnesota pallet industry to determine how it can become a stronger competitor and a more efficient user of the Minnesota wood resource.

PROJECT DESCRIPTION:

- 1) Analyze the potential for the Minnesota pallet industry to increase its use of Minnesota produced cants and cut parts. Determine the amount of pallet material being imported from adjacent states.
- 2) Analyze the potential for additional pallet export.
- 3) Compile information on the existing Minnesota pallet industry and produce a Minnesota pallet manufactures directory.

WORK PLAN: One U&M Specialist will make necessary industry contacts, raw material procurement practice analysis and finished goods market analysis. He will solicit assistance from U&M staff, industry and other agencies as necessary. He will prepare a Minnesota pallet manufacturers directory. Complete project will require up to 8-10 weeks of staff time.

RESULTS: This project will identify problems in the Minnesota pallet industry and its relation to the wood resource. Methods to encourage this industry's healthy participation in the Minnesota forest products economy will be identified. A Minnesota pallet manufactures directory will be produced.

3. SPECIAL INITIATIVE: ANALYZE DNR SAWLOG SPECIFICATIONS AND DEVELOP RECOMMENDATIONS FOR SPECIFICATIONS WHICH MORE REALISTICALLY REPRESENT INDUSTRIAL STANDARDS.

OBJECTIVE: Current sawlog specifications, as defined in the DNR scaling manual, do not, in all cases, reflect actual industry

requirements and constraints. The objective of this project is to establish minimum sawlog specifications which reflect the minimum standard log that industry can economically process.

PROJECT DESCRIPTION:

- 1) Determine current industry standards by surveying private industries throughout the State.
- 2) Determine average breakeven log by reviewing mill studies if available and/or conducting studies to obtain data.
- 3) Determine log specifications being used by other agencies such as the U.S. Forest Service and County Forestry Departments.
- 4) Develop new specifications by analyzing above data.
- 5) Develop procedure for adjusting specifications based on local or changing market conditions.
- 6) Recommend new specifications and procedures for implementations.

WORK PLAN: One U&M Specialist will be responsible for gathering necessary information, documenting and preparing final recommendations. He will solicit assistance from other U&M staff, other DNR staff and industry as necessary. Project will require up to one month of U&M Specialist time.

RESULTS: The establishment and use of more realistic sawlog specifications by DNR will ease timber sale administration and reduce conflicts between timber sale administrators and sawlog consumers.

4. SPECIAL INITIATIVE: UPDATE AND PRINT A REVISED EDITION OF "MINNESOTA TIMBER RESOURCE AVAILABILITY - CURRENT AND PROJECTED SUPPLY AND DEMAND".

OBJECTIVE: In 1981 U&M staff consolidated information on:

- 1) Current and projected supply and demand for Minnesota's timber resource.
- 2) Supply and demand of wood residues recoverable from forest resources.
- 3) Supply and demand of wood residues generated from wood processing facilities.

This information was widely used by agency and industry planners. The objective of this project is to update this information and print a revised edition of MINNESOTA TIMBER RESOURCE AVAILABILITY - CURRENT AND PROJECTED SUPPLY AND DEMAND.

PROJECT DESCRIPTION:

- 1) Consolidate existing resource supply and demand information.
- 2) Make necessary agency and forest products industry contacts to update existing demand and supply data.
- 3) Prepare and print revised edition of supply and demand information.

WORK PLAN: One U&M Specialist will coordinate project activity. U&M staff assistance will be employed to compile and calculate changes in projections in supply and demand as necessary.

RESULTS: This timber resource supply and demand information is used by DNR, other agencies and industry as a planning tool. The preparation of an updated and revised edition will increase the reliability of the information.

5. SPECIAL INITIATIVE: COMPLETE AND PUBLISH THE NON-INDUSTRIAL PRIVATE FOREST (NIPF) PLANTATION SURVEY REPORT.

OBJECTIVE: During 1980 - 82, U&M Specialists compiled existing NIPF plantation inventory information and coordinated the completion of a statewide intensive NIPF plantation survey. Work was started on a NIPF plantation summary report. The objective of this project is to carry to completion the preparation and printing of a Minnesota NIPF plantation summary report.

PROJECT DESCRIPTION:

- 1) Review existing inventory information for completeness and fill information voids by solicitation of additional inventory from DNR field foresters.
- 2) Develop computer programs necessary for data compilation and summarization.
- 3) Process and summarize inventory information.
- 4) Prepare and print a NIPF plantation survey report.

WORK PLAN: One U&M Specialist will complete compilation of necessary data leading to the preparation and printing of a Minnesota NIPF plantation summary report. Assistance from other U&M staff, forest biometrician and others will be solicited as necessary. Up to 2 months of U&M staff time will be required to ready project for printing.

RESULTS: A published summary of the non-industrial private plantation resource in Minnesota will:

- 1) Provide the forest products industry with a reliable estimate of existing private conifer plantation resources and a projection of commercial softwood products expected to become available from this resource.
- 2) Provide a data base for developing management and marketing assistance programs for the private plantation owner by identifying plantation condition, ownership and needs.

3) Satisfy one aspect of the DNR Division of Forestry commitment to intensified softwood production resulting from BWCA legislation by identifying underutilized and undermanaged resources.

6. SPECIAL INITIATIVE: ANALYZE THE POTENTIAL TO INCREASE USE OF THE MINNESOTA WHITE BIRCH RESOURCE.

OBJECTIVE: White birch is currently the most underutilized timber resource in Minnesota. There is an estimated yearly surplus in excess of 250,000 cords. The majority of the birch resource is found as a secondary component of the aspen timber type. The recently increased paper and waferboard production capacities in Minnesota will result in future increases in aspen harvest with a concurrent increase in the amount of birch harvested. Lack of ready markets for birch will result in an increasing silvicultural and utilization problem for the resource manager. The objective of this project is to promote increased use of the white birch resource in Minnesota with emphasis on utilization for highest value products.

PROJECT DESCRIPTIONS: (Five individual projects)

1) Birch Resource Analysis:

This resource analysis will describe the various products and volumes available from the birch resource. It is anticipated that such an analysis will encourage increased use and/or new industrial development to utilize birch.

2) Potential for a Birch Wood Turning Industry in Minnesota:

Study to focus primarily on the market potential for birch turned products. A secondary processor, such enterprises would be considered cottage type industries that would serve diversified markets.

- 3) NCFES - University of Minnesota - DNR, White Birch Feasibility Study:

Continued support and participation in the white birch - System 6 - feasibility study. Publish birch resource analysis and birch bolt study reports. Provide information to any parties interested in birch and/or System 6.

- 4) Potential Demand for Birch for Pulpwood & Promotion of Birch as Raw Material for Pulp and Waferboard:

Investigate the demand for birch as raw material for pulp and waferboard by Minnesota, Wisconsin and Canadian mills. Use resource analysis as reference tool to support efforts to promote further use of birch by these industries.

- 5) Birch as a Potential Green Fuel:

This project would have a dual purpose: a) Publication of to-date history of the green fuel boiler at the DNR headquarters in Grand Rapids (one of the purposes of the installation was to serve as a model installation). b) Document the comparison of green birch vs. green aspen (both of which have been used at Grand Rapids) as a fuel. This project will emphasize the concept that use of birch as a fuel source is a very low value alternative and is considered viable only when birch residue is burned or no other markets are available.

WORK PLAN: One U&M Specialist will act as project coordinator. He will be involved in each project area with varying amounts of U&M staff assistance as required. Entire project will require up to 3 months of U&M staff time. The University of Minnesota Forest Products Department and the U.S. Forest Service will be frequently consulted during the duration of these birch projects.

RESULTS: Current birch harvest of approximately 3.5 MBF of sawtimber, 15,000 cords of sawbolts, and 120,000 cords of pulpwood

and fuelwood result in a stumpage value exceeding \$500,000 and a FOB mill/fuelwood purchaser value of \$5 million. Each 5% increase in birch harvest resulting from these projects will generate an additional \$250,000 of income at the harvesting and FOB mill level. End product value to the state is dependent upon the degree of value added processing which occurs within the state.

7. SPECIAL INITIATIVE: ANALYZE THE POTENTIAL OF THE MINNESOTA BALSAM FIR RESOURCE.

OBJECTIVE: Recent studies by the University of Minnesota have shown that the currently harvested balsam resource is being utilized for much lower value products than it can potentially produce. In 1976, there was a net annual growth of balsam on commercial forest land of 32 MM ft.³ but only 14 MM ft.³ was harvested. This is a removal rate of 44% of the total available. Therefore, the resource is under harvested and under utilized.

This project will determine why balsam is under utilized and under harvested. In doing so, it is anticipated that possibilities for increased utilization and harvest will be identified and promoted.

PROJECT DESCRIPTIONS: (Six individual projects)

1) Balsam Resource Analysis:

This resource analysis will concentrate primarily on identifying the volumes and roundwood products available from the balsam resource. Also incorporated will be the latest mortality data on the impact of the spruce budworm.

2) Potential Demand of Balsam for Pulpwood and Waferboard:

Investigate the current and future demand for balsam as a raw material for pulp and waferboard. Use resource analysis as a reference tool to promote increased use of balsam by these industries.

3) Balsam Price History and Harvesting Costs:

Gather price (stumpage and FOB mill) history and harvesting cost information for Minnesota and other states where balsam is used. It is anticipated that such information will provide insights as to why balsam is not utilized to its highest potential value.

4) Balsam Dimension Lumber Market Research:

Market research to focus on major lake states producers and marketers of balsam dimension lumber. Identify extent of market, constraints and potentials.

5) Consolidation of Existing Information of Balsam:

Information search to focus on the end products which use balsam as a raw material, their production and marketing constraints and potentials. This data, along with information provided by the other projects will provide insight as to where efforts may be directed to promote increased harvest and utilization of balsam.

6) Promotion of Balsam Dimension Lumber:

This dual purpose project will promote use of balsam dimension lumber in truss-frame construction; thereby promoting an under utilized resource and a construction technique which utilizes small size dimension lumber.

WORK PLAN: One U&M Specialist will be responsible for projects. He will solicit staff assistance as needed. University of Minnesota, S & PF, other agency and industry input will also be utilized. Up to 3 months of U&M staff time will be required.

RESULTS: Phase I Inventory showed a 1975 balsam harvest of 2.1 MBF and 121,000 cords. At today's stumpage and mill prices, that is equivalent to a stumpage value of \$455,000 and an FOB mill value of \$6.1 million. An anticipated 5% increase in balsam harvest due to these projects will result in an additional \$330,000 generated at the harvesting and mill level. Any upgrading of currently harvested balsam to a higher value roundwood product will result in a concurrent increase in revenue at the mill levels. End product value to the state's economy is dependent on the degree of value added processing which occurs within the state.

- 8) SPECIAL INITIATIVE: ENCOURAGE MINNESOTA FOREST PRODUCTS EXPORT TRADING.

OBJECTIVE: The objective of this project is to improve the financial climate in the Minnesota wood products industry by expanding the international and interstate export trade for Minnesota forest products. Export trade would be enhanced by: (1) complementing services already provided by other agencies, (2) providing a vehicle for advertising Minnesota forest products on an international and interstate basis where many individual Minnesota firms cannot presently afford to advertise, and (3) educating the forest products industry on export opportunities and constraints.

PROJECT DESCRIPTION

- 1) Determining the volume and type of wood products currently being exported from Minnesota.
 - a. Internationally
 - b. Interstate
- 2) Investigate services already available in order to complement, not overlap, other agencies work.
 - a. Develop a directory of contact persons for existing export services that might apply to wood products.

- b. Keep current on export business through trade journals, U.S. Dept. Commerce bulletins, etc.
 - c. Develop a working relationship with export facilities (ports, truck, barge, air, rail). Identify opportunities/constraints for each (i.e. what mode of transport best fits product).
 - d. Identify areas where the wood products industry needs better representation.
 3. Research promotional methods for export and how best to use them.
 - a. Foreign trade journals
 - b. Advertising agencies
 - c. Foreign and interstate contact lists. (interested companies, government agencies, etc.)
 4. Assist industry with product promotion and export plans.
 - a. Promote the Minnesota wood industry to trade associations: MN Export Council, MN World Trade Assn., Foreign Trade Consulates, Chambers of Commerce, Building Associations.
 - b. Test market products through U.S. Dept. of Commerce channels, MN Dept. of Economic Development catalogues, Domestic Trade shows.
 - c. Educate producers and present the Minnesota forest products industry to various trade organizations. Encourage formation of a Minnesota Forest Products Trade Association to take over promotion of primary and secondary products. Investigate the use of Export Trading Companies for the Minnesota wood industry.

WORK PLAN: One U&M Specialist will become involved with and knowledgeable in export trading. He will take the initiative to become involved with the various associations and agencies associated with export trading and establish communication between these organizations and potential exporting firms. This project will require that the U&M Specialist allocate up to 25% of his time to the export trade area.

RESULTS:

- 1) The wood products industry would have a more organized approach to interstate and overseas marketing (more aggressive than present request type of marketing).
 - 2) This project would encourage the formation of a Minnesota Forest Products Trade Association to represent the wood industry in interstate and foreign markets.
 - 3) More dollars would enter the state through the primary and secondary wood products industry. This program stresses partially or fully manufactured products in order to keep more of the value added in Minnesota.
 - 4) Assist industry with product promotion and export plans.
9. SPECIAL INITIATIVE: PREPARE A FOREST PRODUCTS SAMPLE MARKETING PACKAGE

OBJECTIVE: Actual samples of products have proven to be a useful tool for testing export markets. A package of Minnesota wood product samples would give buyers, domestic and foreign, a better idea of the quality and variety of Minnesota forest products. The objective of this project is to design and produce a forest products sample marketing package suitable for use as a market development tool.

PROJECT DESCRIPTION:

- 1) Meet with other involved agencies to define target producers.
- 2) Identify producers interested in export by survey (mail and/or personal visit).
- 3) Determine the best form to display wood products package.
- 4) Work with industry, wood products trade associations, and the Minnesota Dept. of Agriculture to put together a comprehensive package of manufactured or partially manufactured products.

WORK PLAN: One U&M Specialist will be responsible for project initiation and coordination. Assistance from other agencies, industry and trade associations will be solicited as needed. Actual product sample packages may be manufactured by sheltered workshop programs from donated product samples. Project will require up to 3 weeks of U&M and other agency staff time.

RESULTS: A representative package of Minnesota wood products consisting of actual samples from Minnesota firms will be available for distribution to potential domestic and foreign markets.

10. SPECIAL INITIATIVE: DEVELOP A MINNESOTA FOREST PRODUCTS INDUSTRY FACT SHEET

OBJECTIVE: Sectors of the Minnesota Forest products industry lack proper exposure in many market areas. The objective of this project is to print a brochure which will present information on Minnesota forest resources, industry, products and services. The brochure will be used as a promotional tool.

PROJECT DESCRIPTION:

- 1) Resource analysis. Collect data from Phase I forest inventory data. Concentrate on main timber types and highlights.

- 2) Compile numbers of manufacturers, and classify by type of product. Include gross volumes of product available for market. Utilize existing listings from Department of Commerce and manufacturers associations where possible.
- 3) Compile list of wood products produced in the state by category and approximate annual gross volumes available for each category.
- 4) Prepare a high quality brochure which describes the Minnesota forest products industry.

WORK PLAN: One U&M Specialist will compile the necessary information. He will prepare the basic brochure format. After an appropriate review process the brochure will be printed and made available to agencies and individuals having contact with the forest products industry. This project will require up to one month of U&M specialist time.

RESULTS: The primary purpose of the brochure resulting from this project will be to make potential buyers of wood products aware of the capabilities of the Minnesota wood industry. It will be used for initial contact with trade associations, foreign consulates, departments of commerce, and out-of-state industries looking at Minnesota as a potential supplier or plant location.

11. SPECIAL INITIATIVE: UPDATE THE "MINNESOTA FOREST PRODUCTS DIRECTORY - 1982," WITH EMPHASIS ON EXPANDING THE SECONDARY PROCESSOR SECTION.

OBJECTIVE: The current forest products directory, based on 1980/81 DNR survey information, was published in 1982 as a cooperative University of Minnesota Agriculture Extension Service and DNR Forestry project. The primary processor information is comprehensive but the secondary processor information identified less than one-half of the processors in Minnesota. The preparation and publication of an updated, revised and expanded forest products directory will provide the marketing tool to increase the flow of forest products within Minnesota, interstate, and internationally.

PROJECT DESCRIPTION:

- 1) A committee consisting of representatives of University of Minnesota Agriculture Extension Service, DNR and other interested parties will be formed to put together a funding and project coordination plan.
- 2) Survey method will be designed.
- 3) Minnesota primary and secondary forest processors will be surveyed.
- 4) Print and distribute updated forest products directory to the primary and secondary forest products industry in Minnesota.

WORK PLAN: The project coordinating committee will be responsible for design of survey method and designation of a project leader. Industry contacts and associated information gathering will most appropriately be done by hired consultants or student labor under the supervision of the project leader. Final preparation and printing would most appropriately be done by University of Minnesota Agriculture Extension Service.

RESULTS: Much of the secondary processing industry in Minnesota is unaware of the products which they could utilize that are produced by primary producers. As a consequence, Minnesota primary producers are not enjoying their potential market share of the Minnesota market. An updated forest products directory with a comprehensive secondary processor section will provide primary producers with information to more aggressively market their products to the entire market.

12. SPECIAL INITIATIVE: UPDATE AND REPRINT THE "MINNESOTA WOOD RESIDUE STUDIES."

OBJECTIVE: Minnesota Wood Residue Studies, a comprehensive analysis of the availability of Minnesota wood residue, was published by DNR

in 1980. It is now out of print and no longer available. The objective of this project is to update the information as necessary and print a revised edition.

PROJECT DESCRIPTION:

- 1) Solicit ideas for revision and updating from DNR, other public agencies and private industry.
- 2) Formulate plan for revised edition.
- 3) Compile information necessary for revision.
- 4) Write revised edition and have printed.

WORK PLAN: One U&M specialist will act as project coordinator. He will solicit ideas for revision and updating from the U&M staff, Minnesota Energy Agency, University of Minnesota and others. Information compilation, revision and rewriting will most appropriately be done by the U&M staff or through special project funding if available. Review and revision process will take up to 6 months requiring an input of up to two months of U&M specialist time. Coordination with the Department of Energy and Planning staff is essential.

RESULTS: Minnesota Wood Residue Studies, 1980 was one of the most comprehensive sources of up-to-date Minnesota wood residue information available. The updating and re-publishing of Minnesota Wood Residue Studies will again make this information available to existing and future wood residue based industries.

13. SPECIAL INITIATIVE: ANALYZE THE POTENTIAL TO CONVERT DNR BUILDINGS TO DENSIFIED WOOD FUEL.

OBJECTIVE: At this time three DNR facilities have been approved for installation of densified wood fuel heating systems (General Andrews Nursery, French River Hatchery, Scenic State Park Shop). There is

not, however, a concerted effort to convert additional buildings due to the lack of any one agency or group promoting it. The objective of this project is to develop criteria and prepare recommendations on the conversion of DNR buildings to densified wood fuel use.

PROJECT DESCRIPTION:

- 1) Establish criteria for selecting conversion candidates.
- 2) Identify acceptable conversion opportunities among existing DNR buildings.
- 3) Prioritize buildings to be converted and determine conversion costs for each. Do cost benefit analysis for each conversion.
- 4) Identify producers and suppliers of densified wood fuels.
- 5) Compile information on densified wood fuel heating systems and suppliers.
- 6) Make information available to appropriate authorities.

WORK PLAN: One U&M Specialist will gather necessary information and compile final report. He will solicit assistance from DNR buildings supervisor and staff as needed. Up to two months of U&M staff time will be required to complete project.

RESULTS: The development of a plan to convert DNR buildings to densified wood fuel use will eliminate the initial impediment to the conversion process. The plan will be distributed to appropriate authorities to make them aware of potential advantages and cost savings. Actual conversions undertaken as a result of this plan will reduce building heating costs and encourage the use of densified wood fuel as an alternative energy source in Minnesota.

14. SPECIAL INITIATIVE: PRINT THE "MINNESOTA RESIDENTIAL FUELWOOD DEMAND STUDY, 1979-80."

OBJECTIVE: A comprehensive study of residential fuelwood use in Minnesota was made by DNR in 1979-80. The study resulted in detailed information on current and projected residential fuelwood use in the state. The study design has subsequently been adopted as a standard for use by other states. The objective of this project is to have the study results formally printed and distributed so that the information is available to all possible users.

PROJECT DESCRIPTION:

- 1) Prepare existing draft copy for printing.
- 2) Have MINNESOTA RESIDENTIAL FUELWOOD DEMAND STUDY, 1979-80 printed.

WORK PLAN: One U&M Specialist will coordinate draft copy revision and printing. Up to two weeks of U&M specialist time will be required to complete necessary draft copy preparation and arrangements for printing.

RESULTS: MINNESOTA RESIDENTIAL FUELWOOD DEMAND STUDY, 1979-80 is the most comprehensive residential fuelwood use information now available in Minnesota. Its printing and distribution will make this valuable information available to the industries associated with the residential use of over 1.3 million cords of wood annually.

15. SPECIAL INITIATIVE: EVALUATE THE MARKET POTENTIAL FOR DENSIFIED FUELS IN MINNESOTA.

OBJECTIVE: To increase the net share of the energy dollar remaining in the state by increasing the rate of conversion to fiber fuel systems. Expansion in the use of locally produced densified fuels is hampered by a lack of information on the market potential. Producers, users and policy makers would benefit from a better understanding of the types of installations that exist and their adaptability to the various forms of densified fuel.

PROJECT DESCRIPTION: A brief description of the types of densified fuels being produced in Minnesota will be completed. The producers of these fuels, along with their production capacities, will be listed. Existing survey information will be supplemented where necessary and summarized to show the number of conversion candidates in Minnesota. A description of the appropriate application for each type of densified fuel will be completed. The description will be applied to the summary of candidates to show market potential for each fuel type. The relationship of fuel price and market penetration will be discussed and illustrated.

WORK PLAN: A working group of U&M personnel (approximately 3 members) as well as representatives from the Minnesota Extension Service, the Department of Energy and Planning, and the Fiber Fuels Institute will put together a detailed project proposal which would include among other things:

- a. A definition of the scope of the analysis.
- b. A definition of the depth of the analysis.
- c. A suggested framework for gathering, summarizing and presenting data.
- d. A summary of manpower and capital requirements.
- e. A tentative report format.

The specific proposal would be circulated among interested parties for input. The working group would then meet to decide what the final format and approach should be. A project implementation plan and timeline would be developed at that time. Optional approaches would be:

- a. Have the U&M staff complete the project independently.

- b. Have the U&M staff complete the project independently in cooperation with other agencies.
- c. Have the project completed by a consultant under the direction of the working group.

The target starting date for the execution phase of the project would be December 1, 1983. The planning phase would require approximately six man weeks of the working group's time.

RESULTS: This project is likely to have positive impacts from the standpoint of both economics and the resource. In 1980, there were about 116,000 homes in Minnesota that used wood as a major source of heat. It is likely that at least 50% of these homes would be capable of converting to densified fuel if it was available to them. This would seem to point a minimum conversion potential of 58,000 residential units.

In addition to these 58,000 units, there is a conversion potential among light commercial and institutional fuel users. Since no research into the potential of these type of users has been done, it is difficult to evaluate what their impact might be. If one were to assume that one of these types of establishments exists for every 20 households, there would be approximately 72,000 commercial/institutional heating units. If 20 percent of these installations would convert the total potential densified fuel consumption and value would be as depicted in the following table.

<u>TYPE</u>	<u>NUMBER OF CONVERSIONS (UNITS)</u>	<u>ANNUAL USE/UNIT (TONS)</u>	<u>TOTAL ANNUAL USE (M TONS)</u>	<u>TOTAL ANNUAL VALUE OF SALES¹ (MM\$)</u>
Residential	58,000	8	464	27.840
Commercial/ Institutional	14,000	20	280	16.800
	72,000	NA	744	44.640

1. Sales figured @ \$60/ton.

If a marketing study contributed one percent to the development of this market, it would be responsible for \$45,000 in annual market activity before any multipliers were applied.

16. SPECIAL INITIATIVE: PREPARE A FIBER FUELS FACT SHEET.

OBJECTIVE: To increase the net share of the energy dollar remaining in the state by increasing the rate of conversion to fiber fuel systems. The efficient and speedy conversion of residential and commercial heating installations is hampered by a lack of information. A "fact sheet" on fuel types, characteristics, costs, availability, burning equipment, etc. would promote these types of conversions.

PROJECT DESCRIPTION: The types of densified fuels being produced in Minnesota will be identified and described. This description will include specific characteristics such as BTU content, ash content, moisture content, product density, bulk density, cost/MMBTU, etc. Equipment that is currently available for burning the listed fuels will be identified and illustrated. Pros and cons of each fuel would be discussed relative to conversion costs, fuel availability, backup fuels, etc.

WORK PLAN: The basic design of the fact sheet will be initiated by U&M personnel requiring about two man weeks of staff time. The outline will be presented to University Extension along with a proposal to cooperate on the final development and publishing of the document. Information gathering and final writeup will be completed over the period of about three months. Effort supplied by Extension will reduce the U&M time required. Publishing is likely to take six to eight weeks once the final draft is complete. The deadline for project completion should be November 1, 1983.

RESULTS: This project is likely to have positive impacts from the standpoint of both economics and the resource. In 1980, there were 116,000 homes in Minnesota that used wood for their major source of heat. It is likely that at least 50% of these homes would be capable of converting to densified fuel if it was available to them.

This would seem to point toward a conversion potential of 58,000 residential units.

If a trend similar to that exhibited during the shift to chunk wood should occur, these conversions would all be completed in 10 years or less. This would indicate a conversion rate of 5,800 units/year in residential applications alone.

Developing and dispensing information of the type proposed here, could speed up the decision-making process significantly. If it resulted in the completion of these conversions over 8 years instead of 10, the net annual increase would be 1446 units per year. At an average consumption of 8 tons of fuel per year, the resulting increased use over the 10-year period would be approximately 463,000 tons. At a value of \$60.00 per ton, the increased sales generated by dispensing information could be in excess of \$27,800,000 (1982 dollars).

17. SPECIAL INITIATIVE: DEVELOP A POSITION PAPER ON THE EXPANSION AND FURTHER DEVELOPMENT OF THE DENSIFIED WOOD FUEL INDUSTRY IN MINNESOTA.

OBJECTIVE: Presently there is much interest, political and otherwise, to expand the manufacturing potential of densified wood fuels. This development could occur without a detailed analysis of raw material availability and cost, market potential, economical plant size, etc. By developing the criteria that should be met before any new development occurs and identifying areas in the State where potential development may occur, this project would help eliminate unsuccessful ventures and save tax dollars. Neither DNR or any other agency has developed an overall plan on the support or non-support of densified fuel use. Criteria will be developed where densified wood fuels are a feasible alternative to investigate and consider.

PROJECT DESCRIPTION:

- 1) Determine present manufacturing capacity of the densified wood plants in the State.
- 2) Develop raw material criteria required for successful plant development.
- 3) Identify potential areas in the State where the raw material requirements are met.
- 4) Develop criteria where densified wood fuels can be a feasible alternative fuel considering such things as heat requirements, present fuel and its cost, location, densified fuel availability, etc.
- 5) Identify market potential of densified wood fuels.
- 6) Prepare position paper and make available to the appropriate agencies both public and private.

WORK PLANS: One U&M Specialist will gather and compile the preliminary data and review with the entire staff. After this review, the final report will be prepared and should be completed by December 31, 1983. It is estimated that 5-6 weeks of U&M Staff time will be required to complete this project.

RESULTS: The development of criteria for the expansion of the densified wood fuel industry should help prevent the establishment of unsuccessful ventures due to raw material problems, lack of markets, etc. Also the development of criteria for the use of wood fuels should aid in the further development of the industry and enable the present industry to operate at or near its potential.

IV. CONCLUSION: THE MINNESOTA UTILIZATION AND MARKETING PROGRAM

It is projected that the demand for traditional forest products from Minnesota commercial forest lands will approach net growth around the year 2000. The current 2.4 million cord annual demand will increase steadily to 3.8 million cords by 1990 and then more gradually to an annual demand of 4.2 million cords by 2000. Although forest management practices are increasing yields, increased production will not satisfy increased demand. Thus we have a critical need to promote efficiency in both harvesting and processing which will lead to an improved and increased utilization of Minnesota's timber resources. The Minnesota DNR-Forestry Utilization and Marketing Program will play a lead role in the orderly transition from oversupply to resource scarcity. To sustain the growth of the Minnesota forest products industry, underutilized resources such as white birch must be employed, resource waste must be reduced and more accurate basic resource information must be developed. The activity of the U&M Unit is aimed directly at these areas.

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