NPS Form 10-900-b
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United States Department of the Interior
National Park Service

National Register of Historic Places Multiple Property Documentation Form

This form is for use in documenting multiple property groups relating to one or several historic contexts. See instructions in *Guidelines for Completing National Register Forms* (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. For additional space use continuation sheets (Form 10-900-a). Type all entries.

A. Name of Multiple Property Listing

Federal Relief Construction in Minnesota, 1933-1941

B. Associated Historic Contexts

Federal Relief Programs in Minnesota, 1933-1941

C. Geographical Data

The State Of Minnesota

☐ See continuation sheet

D. Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR Part 60 and the Secretary of the Interior's Standards for Planning and Evaluation.

Signature of certifying official Ian R. Stewart — Date 6/6/91

Deputy State Historic Preservation Officer

State or Federal agency and bureau Minnesota Historical Society

I, hereby, certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.

Beth Boland — Date 8/12/91

Signature of the Keeper of the National Register

E. Statement of Historic Contexts

Discuss each historic context listed in Section B.

[X] See continuation sheet

I. THE PUBLIC WORKS ADMINISTRATION

The Federal Emergency Administration of Public Works, commonly known as the Public Works Administration, was established on June 17, 1933 by Executive Order 6174. The agency was created under the authority of Title II, "Public Works and Construction Projects," of the National Industrial Recovery Act. On May 17, President Roosevelt delivered a message to Congress in which he described his proposed public works program:

> A careful survey convinces me that approximately $3,300,000,000 can be invested in useful and necessary public construction and at the same time put the largest possible number of people to work. Provision should be made to permit States, counties, and whomever, to the most effective possible means of eliminating favoritism and wasteful expenditures on unwarranted and uneconomic projects. [1]

The Public Works Administration (PWA) was not considered a relief agency. Its purpose was to stimulate economic recovery by providing employment for workers in the building trades and in the industries supplying construction materials, and by "priming the pump" of industry and increasing purchasing power by placing large sums of money in circulation. Harold L. Ickes, the Secretary of the Interior, was appointed administrator of the PWA and was placed in charge of the 3.3 billion dollars appropriated by Congress.

The PWA provided financial assistance for public works in the form of outright grants, loans, or a combined grant and loan. The entire cost of a federal project was paid from the appropriation, while states and their subdivisions could receive a grant of thirty percent of the cost of labor and materials together with a loan for any portion of the balance. The maximum grant was increased to forty-five per cent in 1935. Non-public corporations were eligible for loans but not grants.

The recovery act did not specify all projects eligible for assistance, however, the following classes of undertakings were

listed because it was believed they would best serve the interest of the general public:

> (1) The construction, repair, and improvement, of public highways and parkways, public buildings, and any publicly-owned instrumentalities and facilities.
>
> (2) The conservation and development of natural resources, including the control, utilization, and purification of waters, the prevention of soil or coastal erosion, the development of water power, the transmission of electrical energy, flood control, the construction of river and harbor improvement, and certain river and drainage improvements.
>
> (3) The construction, reconstruction, alteration, or repair, under public regulation or control, of low-cost housing and slum clearance projects, and assistance in the purchase of subsistence homesteads.
>
> (4) The financing of self-liquidating projects formerly eligible for assistance by the Reconstruction Finance Corporation, to which are now added the construction or completion of hospitals, financed in part from public funds, reservoirs, pumping plants, and dry docks.
>
> (5) The construction of naval vessels and aircraft, technical works for the army air corps, army housing projects, and original equipment for the mechanization or motorization of army tactical units.
>
> (6) The financing of such railroad maintenance and equipment as might be approved by the Interstate Commerce Commission as desirable for the improvement of transportation facilities. [2]

Even before the proposed public works program was officially in place, construction periodicals, such as The Improvement Bulletin, expressed strong support for the proposal. The May 19, 1933 edition of this Minneapolis weekly featured a cover which included the following text:

> Approval of Congress of a $3,300,000,000 public works-industrial control bill, designed to stimulate employment through the building of public works and to permit industry to enter trade agreements, will make possible the speedy inauguration of a construction program which will start a flow of dollars through the channels of industry, bringing jobs to many. The bill provides $400,000,000 for public highways, with undetermined expenditures for public buildings, slum clearance, forest work, and soil erosion work. A nationally launched construction program will supply employment to idle men and restore purchasing power, and will hasten the day of emergence from the depression cycle.

Even before the necessary bureaucracy had been established to administer the PWA program in Minnesota, Governor Floyd B. Olson announced that Minnesota would request $83,560,000 in federal funds. A tentative list of public works projects had been prepared by Governor Olson, E.V. Willard, acting Commissioner of the State Department of Conservation, and N.W. Elsberg, the State Highway Commissioner. The projects included completion of a nine-foot channel on the Mississippi river from Minneapolis to Iowa, a variety of flood control projects, highway and bridge construction, and funding for local public works. [3]

On July 26, 1933 a Minnesota State Advisory Board was appointed by President Roosevelt in order to consider applications for public works projects in Minnesota. The board members included N.W. Elsberg, the State Highway Commissioner, Judge John F.D. Meighen, a banker from Albert Lea, and Fred Schilplin, a newspaper publisher from St. Cloud. Elsberg provided office space for the State Advisory Board in the offices of the State Highway Department at 1246 University Avenue in St. Paul. Roosevelt also appointed Frank W. Murphy of Wheaton, Minnesota, a farm leader and President of the Minnesota State Bar Association, as the regional advisor to the Public Works Administration for Region No. 4, an area which included Minnesota, North Dakota, South Dakota, Nebraska, Iowa, and Wyoming. Located in Omaha, the regional office served as the liaison between the federal government and the states. William N. Carey, the City Engineer for St. Paul, was

also appointed the State Engineer for the Minnesota PWA and he served as the executive officer of the State Advisory Board. [4]

The purpose of the state board was to stimulate the submission of applications for allotments and to circulate information concerning projects eligible for grants and loans. The board prepared a report on each application and forwarded both the application and the report to Washington. A favorable or unfavorable recommendation was also included. A staff of engineers organized the state office and received, recorded, and examined all applications. The engineers and their staffs provided the only detailed analysis of the applications and the advisory boards usually adhered to the engineer's recommendations. Eventually the advisory boards were abolished and the state engineers became the principal representative of the Public Works Administration in the field. The engineers were also involved in the inspection and supervision of all projects previously approved. The country was also dividend into seven regions, [See Exhibit I] although very little use was made of the regional administrative units until 1937. At that time the regional director was placed in charge of supervision of construction. These officers served as both consulting engineers in regard to the construction contracts and specifications and as supervisors for the engineers assigned to monitor the construction process. [5]

The first act of the Minnesota State Advisory Board at its initial meeting was to approve a request by C.C. Ludwig, City Manager of Albert Lea, asking for a loan and grant of $147,000 for repaving the Albert Lea business district, and a grant of 30% of the cost of an $18,000 water works improvement project. [6]

The following list includes many of the initial applications for funding from the Public Works Administration which were submitted to the Minnesota Advisory Board:

Albert Lea - City, waterworks system, $11,750; paving, $166,300.
Alexandria - City, enlarging light, water and municipal heating plant, $84,000.
Bovey - Village, village hall and auditorium, $60,000.
Biwabik - Village, sewage plant, $19,171.
Blue Earth - City, electric light plant, $95,271.
Calumet - Village, paving, bridge and waterworks system, $11,740.

Crookston - City, street surfacing, $3,361; public school building, $107,142.
East Grand Fords - City, dam, $19,650.
Eveleth - City, paving, sewers, reservoir, $443,567.
Gilbert - Village, paving, $43,086; sewers, sidewalks and curbs, $28,458.
Grove City - Village, electrical distribution plant, $6,000.
Harmony - Village, paving, waterworks, and remodeling municipal buildings, $39,587.
Hibbing - Village, paving, sewage treatment, waterworks system, heating and lighting, $1,429.029.
Itasca - County, road improvements, $173,115.
Lake of the Woods Bridge Company - Toll bridge at Baudette, $250,787.
Minnesota State Highway Department - Miscellaneous highway repairs, $303,607.
University of Minnesota - buildings, $350,000.
Rice - County, court house, $100,000.
St. Louis - County, school buildings, $107,000; highway grading and graveling, $2,353,465; bituminous treatment of roads, $337,050; frost boil prevention, $73,616; bridges, $160,830; paving, $26,750.
St. Paul - City, intercepting sewers, $5,943,540; paving $860,601; building renewal and remodeling, $652,673; airport grading and surfacing, sewers, $486,826; waterworks, $634,180; city market, $235,000; new schools, stadium and shelter houses, $2,109,000.
Thief River Falls - City, power plant, $56,984.
Virginia - City, hospital, $118,800; road improvement, $25,000; park improvements, $160,000.
Austin - Village, repairs to roof slab of reservoir, $12,450; warehouse and garage, $36,910.
Dundas - Village, village hall, $8,086.
Elbow Lake - Village, auditorium and library, $48,803.
Itasca - County, construction of poor home, nurses home and addition to county hospital, $2,483.
Kasson - Village, drilling new well, $1,167.
Minneapolis - City, public school construction, $6,545,000.
Osakis - Village, water main extension, $12,102.
Springfield - City, water purification plant, $10,000. [7]

While not all projects may have received funding, it is interesting to note the variety of improvements for which federal assistance was requested. Applications were evaluated based on the following criteria:

1. The relation of the particular project to coordinated planning, and its social desirability.
2. Economic desirability of the project, i.e., it relation to unemployment and revival of industry.

3. The soundness of the project from an engineering and technical standpoint.
4. The financial ability of the applicant to complete the work and to reasonably secure any loans made by the United States.
5. The legal enforceability of the securities to be purchased by the United States, or any lease to be entered into between the applicant and the United States. [8]

As a result of these strict guidelines, many applications were returned because they were lacking in detail or because the preliminary plans and specifications were not complete. In order to assist counties and municipalities in preparing applications, the Governor's committee on public works requested that every county highway engineer provide instructions to each applicant. Information regarding the procedures for obtaining public works funding was also provided by the League of Minnesota Municipalities through a series of meetings held at Mora, Preston, Slayton, New Ulm, Stillwater, Hopkins, Wadena, Moorhead, Crookston, Bemidji, and Chisholm. [9]

By March 16, 1934, PWA projects in Minnesota with a total value of $26,228,669 had been approved. These represented 93 allotments to 85 municipalities. The largest single project was for the sanitary sewer district of Minneapolis and St. Paul for which Minneapolis was allotted $11,525,000 and St. Paul was allotted $6,521.000. The smallest allotment was $1,168 to the village of Kasson for a well. [10] The first federal PWA grant money allotted in the United States came to Minnesota in part payment of a grant to the village of Elbow Lake for the erection of a combination auditorium and library. The payment was $5,060.

The PWA continued to be the primary public works financing agency of the national government until the middle of 1935. With Title Two of the National Industrial Recovery Act about to expire, Congress enacted the Emergency Relief Appropriation Act of 1935. This statute, carrying the largest appropriation in the history of the nation, made available to the President the sum of $4,880,000,000 for use until June 30, 1937. The Emergency Relief Appropriation Act specifically continued the life of the Public Works Administration until June 30, 1937, and authorized the President to permit the PWA to perform functions under both the

Recovery Act and the new statute. [10] The President also created several new agencies including the Works Progress Administration. Because there was no clear understanding of the distinction between the projects assigned to the PWA and those over which the WPA had jurisdiction, a statement was issued by the Public Works Administrator, the Works Progress Administrator, and the executive director of the National Emergency Council, with the approval of the President.

The PWA was to receive applications for construction projects, other than those of a repair or maintenance character, where the aggregate cost of completion was estimated to be more than $25,000. Typical projects included buildings of various types, bridges, power distributing plants, highways, canals, subway tunnels, filtration plants, water distributing systems, and disposal plants. The PWA could make grants and loans to public bodies for such undertakings, and, in addition, could continue its program of slum clearance and low-cost housing. All applications for loans, regardless of the cost or type of project, were also required to be submitted to the PWA. The Works Progress Administration, on the other hand, was to consider applications involving only grants of federal money. It would undertake work of a non-construction nature designed to employ professional, clerical, and other white collar workers as well as construction projects costing less than $25,000. In addition, it was indicated that applications rejected by the PWA should be submitted to the WPA. Since that agency was chiefly concerned with providing work relief, the WPA might find the application eligible even though the PWA, with its more severe financing rules, had been forced to reject the application. In other words, projects sponsored by the PWA were generally more extensive and involved only new construction. [11]

The PWA was continued until July 1, 1939 by the Public Works Administration Extension Act of 1937. The statute appropriated $15,000,000 for administrative expenses and $59,000,000 for grants. The Public Works Administration Appropriation Act of 1938 extended to life of the PWA to June 30, 1941 and appropriated $965,000,000 to the agency. In addition, loans could be made up to a total of $400,000,000 from funds realized through the sale of securities acquired from the appropriation, or with proceeds from the securities. [12] This final appropriation to the Public

Works Administration required that all applications be submitted by September 30, 1938, that construction begin by January 1, 1940, and that the project should be substantially completed by June 30, 1940. [13] The following projects were among the final applications approved and funded for Minnesota. The total project cost as well as the grant from the PWA are listed.

Albert Lea - rural school building, $6,000, grant $2,970.
Austin - bridge, $15,000. grant, 6,912.
Bemidji - school auditorium, $175,000, grant, $78,750.
Bird Island - water system, $4,300, grant, $1,935.
Duluth - highway construction, $878,160, grant, $395,172.
Mankato - highway garage, $33,000, grant, $14,850.
Minneapolis - journalism building, U of M, $275,000, grant, $123,750.
Minneapolis - three new fire stations, $284.703, grant, $128,116.
New Prague - city hall, garage, fire station, $43,751, grant, $19,688.
New Ulm - swimming pool and bathhouse, $63,636 grant, $28,636.
Owatonna - machine shop and warehouse, $16,060, grant, 7,223.
Preston - municipal power plant addition, $46,200, grant, $20,790.
South St. Paul - sewage treatment plant, $960,552. grant, $432,248. [14]

The diversity of projects undertaken in Minnesota was illustrated by thirteen buildings and structures selected from throughout the state which were pictured in a 1939 PWA publication entitled Public Building: Architecture Under The Public Works Administration 1933-1939. These included:

Bovey Village Hall
Minneapolis Armory
Hibbing Memorial Building
Ely Community Building
Elbow Lake Public Library
Moose Lake School Building
Rochester Public Library
Men's Dormitory, University of Minnesota
Marshall Swimming Pool and Bath House
Moose Lake State Hospital
Minneapolis and St. Paul Sewage Treatment Plant
Dam 5-A, Mississippi River, Winona
Oil House, Dora Lake Ranger Station

These projects include a broad range of architectural styles, represented by the Bovey Village Hall, which was designed in the Baroque Revival Style, the Dora Lake Oil House, a log structure designed in the Rustic Style, the Minneapolis Armory and the Ely Community Building, both designed in the Moderne Style, and a Men's Dormitory at the University of Minnesota, designed in the Colonial Revival Style. This diversity was typical of PWA projects nationwide. This occurred because the PWA did not judge the architectural style of a building, only the soundness and feasibility of construction. This policy is clearly defined in the following statement by the PWA:

> The PWA does not design any buildings or projects. It does not write the specifications or make any drawings. The character of architecture, the materials to be used and the type of construction are left entirely to the private architects and engineers employed.....The PWA acts somewhat in the nature of a bank or a large building and loan association. The engineer sent to a project as an inspector is there for the purpose of seeing that the project is constructed in accordance with the owner's plans and specifications.....He also ascertains the policies of the Government, chiefly concerning fair and adequate competition in the purchase of materials and labor, are properly adhered to by the contractors and everyone concerned. The PWA does not undertake at any time to assume any responsibility for, or to make any changes in design or specifications unless it may be obvious that the plans are technically or economically unsound.

Thus, the Public Works Administration essentially allowed the architectural styles of the day to continue to develop. However, it does appear that the standards and requirements of the PWA resulted in a noticeable improvement in the quality of construction and the safety of the resulting buildings and structures. [15]

Federal buildings, in particular, were often decorated with sculpture or mural paintings. The Section of Painting and Sculpture, later called the Section of Fine Arts, was a program administered by the Treasury Department. It obtained painting and

sculpture to decorate new federal buildings, largely post offices and courthouses, by anonymous competitions. The program began in October 1934 and ended in 1943. Approximately, 1,400 contracts were awarded at a cost of about $2,571.00. [16] The artwork reflected a realistic, regional style and was notable for the depiction of historical events and activities associated with the communities in which they were located. The subject matter could typically be described as the American scene in all its phases.

By 1939 the Public Works Administration had allotted funds through grants and loans to over 34,500 projects and helped to bring into the economy nearly 7 billion dollars in new construction costs. [17] In 1933 the PWA accounted for 33% of all construction in the United States, it averaged nearly 140,000 workers each year, and indirectly created more than 600,000 other jobs. [18] There were only two counties in the entire United States which did not benefit from a project sponsored by the Public Works Administration. All told, the Public Works Administration sponsored 666 federal and non-federal projects in Minnesota. The PWA provided a total of $46,460,445 in grant and loans which resulted in 101,196,000 man hours in direct and indirect employment for the state. [19] The Public Works Administration pioneered the policy of direct federal allotments to municipal government, it initiated the federal housing program, and it sponsored projects of high quality construction which are still in use today. [20]

II. THE CIVILIAN CONSERVATION CORPS

On March 21, 1933, just shortly after he took the oath of office as the 32nd President of the United States, Franklin D. Roosevelt presented a message to Congress on the topic of unemployment relief. His proposal was prompted by the Great Depression, when unemployment rose from just over 3% of the civilian work force in 1929 to over 25% in 1933. Not only were many young people unemployed, but approximately 30% of those working had only part time jobs. [21] Roosevelt suggested a prompt plan to enroll unemployed persons in public employment. He stated:

> .....I have proposed to create a civilian conservation corps to be used in simple work, not interfering with the normal employment, and confining itself to forestry, the prevention of soil erosion, flood control, and similar projects.....The type of work is of definite, practical value, not only through the prevention of great financial loss, but also as a means of creating future national wealth.....
> Control of such work can be carried on by executing machinery of the Departments of Labor, Agriculture, War and Interior. The enterprise will....conserve our precious natural resources and more important will be the moral and spiritual gains of such work.

Roosevelt's attempt to conserve both human and natural resources was an extension of his own personal philosophy. His first appointment as a New York State Senator was as chairman of the State's Committee on Forest, Fish and Game. In that position he was able to spearhead the passage of the first New York legislation on supervised forestry. While Governor, he encouraged the state legislature to pass laws to aid in county and state reforestation. Public works projects were also created for the unemployed. [22]

Congress quickly responded to Roosevelt's proposal and on March 31, 1933 Executive Order 6106, Relief of Unemployment through the

Performance of Useful Public Works, was passed by Congress. One of the components of the legislation established Emergency Conservation Work, which was immediately referred to as the Civilian Conservation Corps, although not officially designated as such until 1937.

Upon signing the bill, Roosevelt indicated he would like the program operational within just two weeks. A meeting was held with representatives from the Departments of War, Labor, Interior, and Agriculture to discuss the implementation of the legislation and the duties of each agency. As part of this cooperative effort, the Department of Labor was to initiate a nationwide recruiting program, the Army was to condition and transfer enrollees as well as operate and supervise work camps, and the Park Service and Forest Service, known as the technical services, were responsible for the actual work projects, technical planning and execution, and supervision of the work force. [23]

Enrollees had to be unemployed single men between the ages of 18 and 25. United States citizenship was required as well as sound physical fitness, and each person selected had to demonstrate need. A limited number of skilled local men known as locally experienced men or LEMs could be hired as well. For these men, the age and martial stipulations were waived. The bulk of the work force, however, was to be taken from the unemployed in large urban centers. Enrollment regulations were later relaxed in order to include American Indians and veterans of World War I. Enlistment was guaranteed for a 6 month period with a two year maximum. In return, each enrollee received food, clothing, shelter, and an allowance of $30. per month, although it was required that $25. be returned to their families. [24]

On April 7, 1933 the first CCC camp (Camp Roosevelt) was opened near Luray, Virginia. By September 1933, there were 1,520 CCC camps in operation with a total enrollment of 248,740, with each camp typically containing 200 men. [25] This manpower offered the U.S. Forest Service and the National Park Service the means to expand and develop state and national forests as well as national, state, county and metropolitan parks.

In Minnesota, CCC enrollees were sent to the state-wide headquarters at Fort Snelling, later known as the Head Quarters Company, Minnesota District, which was in fact the 7th Army Corps. Here they received clothing and supplies and were sent on to the camps. In 1937 Grand Rapids replaced Fort Snelling as the state headquarters. By August 1933 there were 12,200 men employed in 61 camps throughout Minnesota. These camps were divided into the following types:

U.S. National Forests	24	
State Forests	24	
State Parks	3	
Private Land or Forests	1	
Erosion and Flood Control	9	[26]

The majority of the camps were located in northern Minnesota in the Superior and Chippewa National Forests. Eventually, a total of 49 camps were placed in operation. These included the following camps which were identified by a prefix "F" signifying a federal camp and followed by the individual camp number:

Camp Number	Camp Name	Post Office
F-1	Halfway	Ely
F-2	Gegoka	Ely
F-3	Wanless	Schroeder
F-4	Cascade (Devil's Lake)	Grand Marais
F-5	Gunflint	Grand Marais
F-6	Northern Light	Grand Marais
F-7	Fenske (Spring Creek)	Ely
F-8	Portage River	Ely
F-9	Cold Springs	Ely
F-10	Sawbill	Tofte
F-11	Caribou	Tofte
F-12	Pike Bay	Cass Lake
F-13	Bena	Bena
F-14	Cut Foot Sioux	Deer River
F-15	Winnibigoshish	Bena

F-16	Dunnigan	Ely
F-17	Isabella	Ely
F-19	Temperance (Negro Camp)	Tofte
F-20	Good Harbor	Grand Marais
F-21	Bena (Engineers Co.)	Bena
F-22	Schley	Schley
F-23	Burns Lake	Cass Lake
F-24	Sand Lake	Britt
F-25	Luna Lake	Chisholm
F-26	Sand Lake	Deer River
F-27	Inger	Deer River
F-28	Big Lake	Cass Lake
F-29	Angora	Cook
F-30	Big Rice Lake	Virginia
F-32	Mack	Mack
F-34	Day Lake	Grand Rapids
F-35	Stokes	Grand Rapids
F-36	Squaw Lake	Squaw Lake
F-41	Poplar Lake	Grand Marais
F-42	?	Cass Lake
F-43	Cross River	Grand Marais
F-44	Fernberg	Ely
F-46	Remer	Remer
F-47	Longville	Longville
F-48	Walker	Walker
F-49	Boy River	Boy River
F-50	Rabideau	Blackduck
F-51	Wagner Lake	Northome
F-52	Partridge River	Aurora
F-53	Spruce Lake	Two Harbors
F-54	Baptism Camp	Ely
F-55	Sea Gull	Grand Marais
F-56	Vermilion	Tower
F-57	?	Ely [27]

A total of 22 CCC camps were established in state and municipal parks, and a Recreational Demonstration Area, although the camp at Beaver Creek Valley State Park was never actually placed in operation. These camps were responsible for the development of recreational facilities and the construction of hundreds of Rustic

Style buildings. (See Minnesota State Park CCC/WPA/Rustic Style Historic Resources Multiple Property Documentation Form) These included the following camps which were identified by a prefix "SP" signifying a state park camp (with the exception of NP-1 which identified the St. Croix Recreational Demonstration Area project) and followed by the individual camp number:

Camp Number	Name of Area
NP-1	St. Croix RDA
SP-1	Itasca State Park
SP-2	Jay Cooke State Park
SP-3	Scenic State Park
SP-4	Whitewater State Park
SP-5	Gooseberry Falls State Park
SP-6	St. Croix RDA
SP-7	Sibley State Park
SP-8	Glenwood Municipal Park
SP-9	Whitewater State Park
SP-10	Gooseberry Falls State Park
SP-11	Camden State Park
SP-12	Fort Ridgely Memorial State Park
SP-14	Cottonwood River State Park
SP-17	Lake Vadnais Metropolitan Park
SP-19	Itasca State Park
SP-20	Beaver Creek Valley State Park
SP-21	Jay Cooke State Park [28]

However, this study is primarily concerned with the activities of the Civilian Conservation Corps in areas other than state parks and national forests, such as lands under the jurisdiction of the Minnesota Department of Conservation, including the Division of Forestry, the Division of Drainage and Waters, and the Minnesota Department of Highways.

A total of 31 CCC camps were considered state camps and were typically located in state forests. These camps still remained under the technical guidance of the U.S. Forest Service but they operated in cooperation of the Division of Forestry or the

Division of Drainage and Waters within the Minnesota Department of Conservation. This division had previously been known as the Division of Forestry and Fire Prevention, yet, until the Depression Era, its activities had remained rather limited in scope. In 1931, for example, the total budget for the division was $367,458.81. However, during fiscals years 1933-34, total emergency expenditures for operations in state forest camps totaled $5,151,922. [29]

When federal assistance first became available to Minnesota, no state forests had been established, although there were a number of preserves. As a result, the 1933 legislation enacted Chapter 419 and created thirteen state forests and defined their boundaries. This gave the Department of Conservation the only legal grounds on which it could justify the request for the establishment of Emergency Conservation Work (CCC) camps within the state. By the end of 1933, CCC camps had been established in at least 12 of the original 13 state forests. These state forests are listed below along with the accomplishments of the Civilian Conservation Corps during fiscal years 1933-34:

Beltrami Island - Three U.S. Forest Service Emergency Conservation Work (CCC) State Forest camps operated within the Beltrami Island State Forest during the first six month enrollment period. Forty-four miles of telephone lines and 68 miles of truck trails were constructed, 56 miles of roadside were cleared, 2.1 miles of fire break were built, and 12.5 miles of lineal surveys were completed. Fire hazard reduction covered 1,438 acres. Two hundred acres were covered by timber surveys and sixty acres of forest stand improvement were completed. Five buildings were constructed and the equivalent of 8,976 man-days were spent on fire fighting.

Cloquet Valley - One U.S. Forest Service ECW State Forest camp was operated within the Cloquet Valley State Forest through the first four enrollment periods. Sixty-nine miles of telephone lines were built as well as 33.9 miles of truck trails. Two buildings were also constructed. Additional projects included 75 miles of lineal surveys, 6.5 miles of

roadside cleanup, 4,618.5 acres of fire hazard reduction, 364 acres of forest stand improvement, and 8,170 acres of timber surveys. 504 bushels of seeds for nursery plantings were collected. Blister rust control was extended to 1,962.5 acres and the equivalent of 4,694.5 man-days were spent on fire fighting.

Finland - One U.S. Forest Service ECW State Forest camp was operated within the Finland State Forest during all four enrollment periods. The camp constructed 8.5 miles of truck trails, improved 15 acres of camp grounds, planted 56 acres, collected 327 bushels of seed, completed 5,288 acres of timber surveys, finished 51.9 miles of roadside cleanup, and completed 9,815 acres of fire hazard reduction. Six buildings were constructed, 54 lineal miles of surveys run, blister rust control extended to 162 acres and forest stand improvement covered 62 acres. The equivalent of 1,458 man-days were spend on fire fighting.

Fon du Lac - One U.S. Forest Service ECW State Forest camp was in operation within the Fon Du Lac State Forest during the first four enrollment period. 6.1 miles of telephone lines were constructed, 22.7 miles of truck trails were built, and one building was constructed. Additional projects included 60 miles of fire break construction, 689.7 acres of hazard reduction, 33.9 miles of roadside cleanup, and 399.8 acres of forest stand improvement. One lookout tower was built, 368.5 acres were planted, 85 bushels of seed were collected, and 817.5 acres were covered by blister rust control. Timber surveys covered 78,217.5 acres and 180 miles of lineal surveys were completed. Nursery work consumed 458 days and fire fighting required 1,149 man-days.

Foot Hills - One U.S. Forest Service ECW State Forest camp operated within the Foot Hills State Forest during the first enrollment period and constructed 2.1 miles of truck trails, erected three buildings, completed 131 acres of forest stand improvement and 20.5 acres of fire hazard reduction. Fire fighting required 931 days and nursery work occupied 1,026 man-days. Thirty miles of lineal surveys were completed.

George Washington - Four U.S. Forest Service ECW State Forest camps were operated within the George Washington Memorial State Forest for a total of twelve six month enrollment periods. These camps constructed 35 miles of telephone lines, built 61.5 miles of truck trails, and completed two miles of fire breaks. Additional projects included 954.5 acres of fire hazard reduction, 35 miles of roadside cleanup, 1,848 acres of forest stand improvement, 9,678 of blister rust control, and 13,320 acres of timber surveys. Fifteen buildings were constructed. Nursery work required 510 days and fire fighting occupied 5,488 man-days. 712 acres were planted and 15.4 acres of camp grounds were improved. Seed collection yielded 441 bushels and lineal surveys covered 105 miles.

Grand Portage - Three U.S. Forest Service ECW State Forest camps operated for a total of seven six month enrollment periods. Projects included 18.5 miles of telephone lines, 21.2 miles of truck trails, the construction of two buildings and one lookout tower, 28.9 miles of roadside clean-up, 59.2 acres of fire hazard reduction, and 222 acres of forest stand improvement. 113 acres were planted. Six miles of lineal surveys were completed and fire fighting occupied 2,109 man-days.

Kabetogama - Three U.S. Forest Service ECW State Forest camps operated in the Kabetogama State Forest for a total of ten six month enrollment periods. Construction included 129.5 miles of telephone lines, 4 lookout towers, 5 buildings, and 18.6 miles of truck trails. Additional projects included 4,040 acres of fire hazard reduction, 3,587.4 acres of forest stand improvement, 250.3 acres of planting, 8,329.7 acres of timber surveys, and 77 acres of camp ground improvement. Twenty miles of roadside clean-up, 111.5 miles of lineal surveys, and the collection of 148 bushels of seed were also completed. Nursery work occupied 788 days and fire fighting required 2,766 man-days.

Land O'Lakes - No informations is available for this state forest.

Pine Island - Three U.S. Forest Service ECW State Forest camps operated within the Pine Island State Forest for a total of six six month enrollment periods. Projects included the construction of 55.5 miles of telephone lines, 21 miles of truck trails, ten buildings, and 48.5 miles of fire break. Hazard reduction was extended to 255 acres, 36.7 miles of roadside clean-up was completed, 3,420 acres of forest stands were improved, 52 acres were planted, 320 acres of blister rust control was completed, 3,360 acres of timber surveys were conducted, and 9.5 acres of camp grounds were improved. Fire fighting occupied 10,605 man-days and 18 miles of lineal surveys were completed.

Savanna - One U.S. Forest Service ECW State Forest camp operated within the Savanna State Forest during one six month enrollment period. Construction included 8 miles of truck trails, 2 buildings, and 2 lookout towers. Fire hazard reduction was extended to 42 acres, 32 acres of roadside clean-up was completed, and 25.9 acres were planted. Fire fighting required 795 man-days.

Third River - One U.S. Forest Service ECW State Forest camp operated with the Third River State Forest during four six-month enrollment periods. Construction included 80.2 miles of telephone lines, 15.8 miles truck trails, 8 miles of fire break, one lookout tower, and six buildings. Fire hazard reduction was extended to 1,410 acres, 25.2 miles of roadside clean-up was completed, 701.5 acres of forest stands were improved, and 629.2 acres of blister rust control was completed. Timber surveys covered 7,720 acres. Eleven acres of camp grounds were improved, 54.5 acres were planted, and 10.5 miles lineal surveys were run. 100 bushels of seed were collected and fire fighting required 3,410 man-days.

White Earth - Four U.S. Forest Service ECW State Forest camps operated within the White Earth State Forest for a total of eleven six-month enrollment periods. Construction included 117.8 miles of telephone lines, 13.3 miles of fire breaks, 169.3 miles of truck trails, three buildings, and two lookout towers. Hazard reduction covered 120 acres, 50.6 miles of roadside clean-up were completed, 1,943.5 acres of forest

stands were improved, 1,682 acres of blister rust control was completed, and timber surveys were conducted on 14,880 acres. Ten man-days were spend on nursery work and 2,991 man-days were required for fire fighting. Lineal surveys covered 58.9 miles. [30]

A total of 31 state camps were eventually placed in operation. These included the following camps which were identified by a prefix "S" signifying a state camp and followed by the individual camp number:

Camp Number	Camp Name	Post Office
S-51	Brimson	Brimson
S-52	Cusson	Orr
S-53	Side Lake	Side Lake
S-54	Owen Lake	Coleraine
S-56	?	Warroad
S-57	Lovelis	Park Rapids
S-58	Elbo Lake	Arago
S-59	Third River	Grand Marais
S-62	Finland	Finland
S-70	Itasca State Park	Douglas Lodge
S-76	?	Nisswa
S-79	Big Lake	Cloquet
S-81	Kabetogama Lake	Ray
S-83	?	Big Falls
S-94	?	Orr
S-95	Deer Lake	Effie
S-97	Outing	Remer
S-98	Wilton	Bemidji
S-99	?	Hines
S-100	?	Remer
S-101	?	Walker
S-102	Boy River	Boy River
S-134	?	Nevis
S-135	?	Onamia
S-136	?	Sebeka
S-140	?	Sandstone

S-141	?	Bagley
S-142	?	Osage
S-143	?	Big Falls
S-144	Badora	Akeley [31]

An additional 14 camps were operated in cooperation with the Soil Conservation Service and the Division of Drainage and Waters of the Conservation Department. All but one of these camps were located in southeastern Minnesota and were involved in drought and erosion control. These included the following camps which were identified by a prefix "SCS", signifying a Soil Conservation Service camp, and followed by the individual camp number:

Camp Number	Post Office
SCS-1	Valley
SCS-2 (PE-88)	Caledonia
SCS-3	Zumbrota
SCS-4 (PE-89)	Houston
SCS-7 (PE-91)	Lanesboro
SCS-9 (PE-85)	Red Wing
SCS-10	Waterville
SCS-11 (PE-87)	Lewiston
SCS-12 (PE-93)	Rochester
SCS-13 (PE-96)	Plainville
SCS-14 (PE-92)	Chatfield
SCS-15	Rollingstone
SCS-16 (PE-86)	Lake City
Indian CCC Camp	Grand Portage [32]

When the CCC came to an end in 1942 after nine years of operation, the Department of Conservation reported that 184 buildings and structures had been built by the state CCC camps in Minnesota (this excludes federal camps as well as state park camps), typically at ranger stations and state forest recreational areas. The buildings and structures included 66 water towers, 35 water conservation dams, 47 warehouses, 9 offices, 56 cabins, 10 garages, 2 pump houses, 6 bath houses, a fish hatchery building, 1

machine shed, 2 bunk houses, 1 supply building, 3 seed extraction plants, 1 speeder house, 1 refectory, 1 cold storage plant, 1 sprinkler system, 1 well shelter, 23 latrines, 1 boat house, 8 ice houses, 8 oil houses, 1 camp ground shelter, and 1 barn. [33]

Four additional CCC camps were sponsored by the Minnesota Department of Highways under the technical supervision of the National Park Service. These camps were identified by the same prefix "SP" as were the state park camps since the Park Service administered both programs with the same technical and supervisory staff. These include the following camps:

Camp Number	Name of Area
SP-13	Spruce Creek Highway Wayside
SP-15	Mille Lacs Lake Highway Wayside
SP-16	Leech Lake Wayside Park
SP-18	Lakeshore Wayside Park

The Minnesota Department of Highways had long recognized the transportation needs of the state's industrial, commercial, and private vehicular traffic. Yet, the social and recreational use of highways was an issue closely associated with the Depression Era. To address this need, the Department of Highways maintained a Roadside Improvement Division whose principal objective was to increase the recreational qualities and enjoyment of the state's highways. Yet, "roadside improvement" also included incorporating landscape design in the construction of the modern trunk highways. This was evidenced by "streamlined" cross-sections, the conservation of existing timber on the right-of-way beyond construction stakes, and planting for erosion control and ground cover. Aside from furnishing a public route between designated points for the greatest convenience of users, the basic consideration in determining the location of new highways and the realignment of old locations were safety, construction and maintenance costs, providing facilities for the pleasure and convenience of the public, and the preservation of the character of the natural landscape through which they pass. [34]

On all trunk highway allotments to Minnesota by the federal government, it was mandatory for at least one percent of these funds to be expended for roadside development projects. Roadside development or improvement consisted not only of grading, seeding, sodding, and planting operations, but also the elimination of old construction scars, the construction of roadside parking areas and picnic grounds, the construction of stone concourses and overlooks to take advantage of panoramic views, the landscape improvement of bridge approaches and the approaches to cities and towns, the development of natural springs along the roadsides, and the construction of historic markers. Design work was completed by the Minnesota Central Design Office of the National Park Service with the assistance of consulting local landscape architects such as A.R. Nicols. The CCC constructed highway wayside projects included the following:

Spruce Creek Highway Wayside - Also known as the Cascade River Wayside, this area originally included 2,965 acres which had been acquired by the Minnesota Department of Highways in 1934 for utilitarian purposes and to protect a particularly beautiful section of lakeshore drive near the mouth of the picturesque Cascade River. A highway concourse was constructed adjacent to Lake Superior along the mouth of the Cascade River. Foot trails were built along both sides of the river gorge leading from the concourse and continuing one mile up river to a rustic foot bridge. A public area was also built about 500 feet east of the concourse. According to U.W. Hella, who supervised the development, the Cascade project was said to be one of the first of its kind in the nation. It served as a demonstration project of how natural rock outcroppings might best be accommodated within the highway backslopes. [35]

Leech Lake Highway Wayside - Little is known of the activities of this highway wayside project. It operated for one enrollment period for a total of 6 months. This camp may have been responsible for the construction of a stone constructed overlook along the south shore of the lake near Whipholt.

Lakeshore Wayside Park - This project was located along Lake Superior near the Knife River. Several waysides were constructed including an impressive overlook built with native stone, located just south of Two Harbors.

Mille Lacs Lake Highway Wayside - In 1935-36 the Department of Highways acquired 53 acres in several tracts in or near the town of Garrison along U.S. Highway 169, an important recreational and commercial route. Much of the land is located on Mille Lacs Lake, one of the most popular lakes in Minnesota. The most spectacular development was an impressive concourse and overlook in Garrison. In another area, a shelter and picnic facilities were developed. Highway 169 was also relocated in order to place the picnic area on the same side of the pavement as the lake. An additional overlook was located on a nearby lake and at least three stone-faced highway bridges were built. Architectural plans, which were never executed, were completed for at least two other developments along the lake.

A total of 84,000 Minnesota enrollees participated in the Civilian Conservation Corps, and 85 million dollars were spent within the state. The impact on the state was extraordinary and benefits are still felt today. For nine years, the CCC program gave the state millions of man days of conservation labor, advancing the state's forestry, park, and soil conservation projects ahead by decades. The program allowed trained foresters, in both the state and national programs, to be relieved of forest maintenance and fire protection duties and allowed the implementation of forest and wildlife studies and management plans.

The importance of the CCC in Minnesota is illustrated by their accomplishments. The CCC provided 3.5 million man days of conservation labor for the U.S. Forest Service, and the Divisions of Forestry, Drainage and Waters, and State Parks, within the Minnesota Conservation Department. Of that figure, 123,000 man days were invested in forest fire fighting; 11,800 in manning lookout towers; and 6,400 in fire prevention work. CCC crews built 3,330 miles of firebreaks; 1,635 miles of forestry telephone lines, and 3,900 miles of forestry roadways. They inventoried

3,739,500 acres of forest lands and provided the first comprehensive forest inventory of the state; collected 9,000 bushels of seed cones, and planted 124,000,000 trees. Utilizing the CCC labor, the State Legislature created 35 new state parks and forests which the CCC inventoried and improved. Other accomplishments included soil erosion control and stream improvements, the construction of new steel fire towers, the construction of forestry stations, state and federal park and campground construction and improvements, picnic ground construction, dam road and culvert development, game management programs, general timber stand improvement, lake depth and lake shore surveys, experiments in rodent control, and the commercial adaptability of Minnesota wild foods.

The accomplishments of the Civilian Conservation Corps are still with us fifty years after their completion. Hundreds of Rustic Style buildings were constructed throughout Minnesota in state and national parks and forests. Plantations planted by the CCC have been thinned several times and are now reaching full marketable yields. Without the efforts of the CCC in forest fire prevention, fires would have been much larger and more damaging and the forest vegetation of today might have been much different. [36]

These efforts also represent an important period in the state-wide historic context of Northern Minnesota Lumbering 1870-1930s. Through the financial assistance of the federal government and the manpower of the CCC, Minnesota was able to initiate the first large-scale, state-wide attempt to manage the state's natural resources, and to repair the considerable damage which had occurred in earlier years. Not only had large areas of land been destroyed through disastrous forest fires, but sections of cut over land were being returned to the state, tax forfeited, after the timber had been harvested. Because these lands were also ill-suited for agriculture, the problem of idle lands had become an emergency.

A noted Minnesota conservationist, Ernest C. Oberholtzer, envisioned the potential of the Civilian Conservation Corps when he commented as early as 1931 in Minnesota Municipalities of the "wreckage of the old regime" and how "our forest problem lends itself better than any other to the solution of slack labor." The

CCC tree planting program attempted to produce forests on lands which were tax delinquent and non-productive. Planting concentrated in "burnt over and cut over lands in Hubbard, Beltrami, Koochiching, Itasca, St. Louis, Carlton, Cook, Lake of the Woods, and Clearwater Counties." [37] These forest lands are just now becoming ready for harvest, after having been returned to their original condition through the efforts of the Civilian Conservation Corps.

III. THE STATE AND FEDERAL EMERGENCY RELIEF ADMINISTRATIONS

The Great Depression of 1929 found the United States unprepared to meet the wide spread problem of relief. By 1930 almost 4 million people were unemployed; the number rose to almost 7 million by the end of the year, and this number doubled by the early part of 1933. [38] Yet, public relief for the destitute was still generally administered under state poor laws designed to care for a small number of relief cases. In the late 18th and early 19th centuries, when state poor laws were established, the relief problem centered on unemployables, such as the aged, handicapped, the insane, and orphans. Relatives were considered to have the primary responsibility for these individuals and only where family assistance could not be secured, and private charity was unavailable, was relief given, and generally only by the local community.

The early poor laws of the various states were based upon English poor laws of the Elizabethan era and they included many repressive features which were intended to discourage the needy from applying for public relief. A "pauper's oath" was usually required and relief was kept at a bare minimum. Efforts to reduce the harshness of these laws continued throughout the 19th and early 20th centuries. The care afforded to those placed in poor houses improved and the wide spread practice of housing homeless children, the aged, the insane, and even vagrants in the same institution was curbed. The development of outdoor relief, or home relief, represented another important effort at the turn of the century. Home relief allowed certain needy persons to receive relief in their own homes rather than being institutionalized, although relief was usually limited to small donations of food, clothing, and fuel. The development of "categorical relief" recognized that certain groups of needy persons were entitled to receive better care than was given under the poor laws. By 1929 44 states had passed veterans relief laws, 43 states had enacted legislation providing aid to dependent children in their homes, 22 states had laws for aid for the blind, and 10 states had laws for assistance to the needy aged.

Yet, up until 1929, although improvements had been made in the methods of furnishing relief to unemployables, little had been done toward developing any system of relief capable of dealing with destitution arising from unemployment. At first, because relief had traditionally been a local responsibility, local agencies were called upon to provide for unemployed workers and their families. However, the inability of local governments to finance large scale programs of unemployment relief soon forced state governments to provide assistance. Emergency relief administrations were set up in four states in 1931, and in half the states by the end of 1932. But the states were unable to meet the increasing demand for relief and federal aid was requested. The first step taken by the federal government was the appointment of the President's Emergency Committee for Employment in late 1930. The committee attempted to stimulate state and local relief as well as public construction. In 1931 the committee's work was assumed by the President's Organization on Unemployment Relief, yet the efforts of both committees was rather limited since neither had been provided with any federal funds.

The first significant departure from the concept of local responsibility for relief was the adoption of the Emergency Relief and Construction Act of 1932 which made $300,000,000 in federal funds available for advances to states and local governments. The act provided that any funds received could be repaid with deductions from future Federal Highway Aid appropriations beginning with fiscal year 1935, although the funds were ultimately considered an outright grant. Applications for an advance were made to the Reconstruction Finance Agency and a governor had to certify that his state could not meet its relief needs from its own resources. [39]

When the RFC ended its activities on May 29, 1933 under Title I of the Emergency and Construction Act, nearly all of the states had received advances. This funding allowed relief programs to continue in some of the most destitute areas of the country, but by 1933 many local governments were nearly bankrupt and few states were able to give substantial aid to local relief activities. There was no longer any question of the necessity of federal aid for unemployment relief. On May 12, 1933 the Federal Emergency Relief Administration was created and an extensive federal

bureaucracy was organized to administer the program. [See Exhibit II] A total of $500,000,000 was made available for grants to the states for emergency relief purposes. By the end of 1933, grants made been made to all of the states. [40]

In Minnesota, local property taxation was the only source of funds for financing relief prior to September 29, 1932. The state had not accepted any responsibility for unemployment relief, and except for the state's three largest political subdivision, the City of Minneapolis, Ramsey County, and St. Louis County, the administration of relief had been left entirely in the hands of local officials. Fifty counties were operating under the so called county system of relief in which the county was responsible for providing the necessary funds for financing relief through a uniform levy on the entire taxable valuation of the county. Thirty-seven counties were operating under the township system in which the governing body of each city, village, and township was responsible for financing and administering relief within its boundaries. [41]

Once the Emergency Relief and Construction Act of 1932 was adopted, the Board of Public Welfare of St. Paul and Ramsey County and the St. Louis County Poor Commission indicated their interest in the possibility of obtaining funds. It also became clear that other political subdivisions, particularly in northern Minnesota, were unable to meet the demands of poor relief, let alone the growing need caused by the rapid increase in unemployment. These governmental units also had no facilities for preparing and presenting applications to the Reconstruction Finance Corporation and Governor Olson recognized that it would be necessary for the state to assume this responsibility for the various local political subdivisions. Morris B. Lambie, a Professor of Political Science at the University of Minnesota and the Executive Secretary of the League of Minnesota Municipalities, was appointed as the Minnesota Relief Administrator. The State Board of Control, headed by Mrs. Blanche LaDu, was designated as the agency which would assist in certifying the relief needs of those submitting applications and to formulate rules and regulations under which these funds were to be expended. Application forms and procedural instructions were sent to each county board of commissioners and to larger towns and cities, although technically

all applications had to originate in a political subdivision no smaller than a county. The counties were informed that no applications would be approved unless the relief needs in a particular community were over and above the financial ability of the local unit of government. The county was required to prove that both its available funds and its credit were exhausted. [42]

Applications were received almost immediately from 18 rural counties, the City of St. Paul, Ramsey County, and St. Louis County. The following applications were approved by the RFC on October 19, 1932 for the full amount requested:

Political Subdivision	Amount
Aitkin County	$ 9,570.00
Anoka County	11,500.00
Beltrami County	14,660.00
Carlton (City of Cloquet)	9,640.00
Cass County	6,900.00
Chippewa County	5,120.00
Cook County	6,500.00
Crow Wing County	1,540.00
Hubbard County	4,700.00
Isanti County	5,295.00
Itasca County	99,925.00
Kanabec County	3,350.00
Koochiching County	21,600.00
Lake County	12,345.00
Lake of the Woods County	9,095.00
Mahnomen County	9,225.00
Marshall County	3,750.00
Norman County	9,640.00
Ramsey County	137,072.00
St. Louis County	271,626.00
Total	$653,053.00 [43]

When these funds were received, it was necessary to establish an organization to uniformly administer relief throughout the state. The State Board of Control proceeded to appoint a County Emergency Relief Committee in each county, however, the actual work of administering relief was placed in the hands of trained social

workers or county relief workers. Bulletins were issued by the Minnesota Relief Administrator and the State Board of Control which described the principles under which the relief program was to function. Direct relief was defined as "relief to individuals or families to include food, clothing, shelter, fuel, household supplies, medical supplies and other necessities of life." Work relief was defined a relief to be paid in the form of relief orders for work under the following conditions:

1. That the recipients of work relief and the amounts given are both determined on the basis of actual need.

2. That funds for such relief are made available from those specifically allotted for relief purposes.

3. That the funds are used for worthwhile projects, which shall be determined and supervised by responsible officers of the county or local political subdivisions.

4. That projects could not otherwise be undertaken at the time or in the immediate future or financed out of available public revenues.

5. That the amount of work relief shall be no more than sufficient to provide direct relief for the family, after applying for these purposes the income of the family from other sources, and shall be in lieu of direct relief.

6. That all applicants shall be investigated and registered as provided for direct relief.

7. That work shall be permitted only to employable persons with physical capacity for the type of work granted.

8. That work relief projects shall not be for work to be done under contract.

9. That no money from the Emergency Relief Fund shall be used for work materials and supplies.

> 10. That all work relief projects, on which relief workers are employed and paid, be relief orders from the Emergency Relief Funds (which) shall be approved by the County Emergency Relief Committee for the foregoing purposes. [44]

Work relief projects were encouraged by the Board of Control but no centralized supervision was provided. With the exception of a few projects conducted in cooperation with the State Department of Conservation and the State Highway Department, the entire responsibility for originating and supervising work relief projects was left to the local political subdivisions. Projects were not permitted for regular maintenance work or for any work which could be financed from other funds. In some instances, considerable pressure was brought to bear on local political subdivisions to require them to originate work relief projects, and possible projects were suggested, but there was no attempt to approve projects in the state office.

Subsequent applications to the RFC were approved as follows, but only a total of 28 political subdivisions received allotments:

Date Granted	Amount
December 1932	$696,467.00
February 3, 1933	291,936.00
February 25, 1933	448,813.00
April 8, 1933	81,524.00
April 27, 1933	99,462.00
May 1, 1933	188,149.00
May 9, 1933	57,060.00 [45]

When it became apparent in the spring of 1933 that an additional federal appropriation would be necessary, Congress enacted the Federal Emergency Relief Act of 1933 which was approved by the President on May 12. This act created the Federal Emergency Relief Administration and provided for the appointment of Harry Hopkins as the Federal Emergency Relief Administrator. The agency received an appropriation of $500,000,000 which would be made available to the states in the form of direct grants rather than loans. These grants were administered according to the two appropriating subdivisions of the Federal Emergency Relief Act:

Subsection (b) of Section 4 provided that each state was entitled to receive grants equal to one-third of the funds expended by the state; and Subsection (c), the so called discretionary funds, which provided that the balance of the amount made available by the act could be granted to the states at the discretion of the Administrator upon proof of need by the applicant. This act differed significantly from the 1932 Act in providing direct grants rather than loans and may be viewed as a major step on the part of the federal government in definitely assuming part of the responsibility for providing relief. [46]

The Minnesota State Board of Control was approved as the State Emergency Relief Administration by Harry Hopkins and the county relief administrations created by the board were accepted as the local units of administration. Since the act provided that funds would be advanced based on past expenditures for relief, all states were instructed to certify their expenditures for the months of January, February, and March of 1933. The expenditures in Minnesota for those months totaled $2,316.264.04 and the state accordingly received a grant for $772,086.00. Almost immediately thereafter, expenditures for April, May, and June were certified and Minnesota received an additional grant of $692,688.00. [47]

In contrast with the policies of the Reconstruction Finance Corporation, the FERA did not recognize individual political subdivisions and relied entirely on the discretion of the state administration to allocate the funds. However, states and localities were not free to spend FERA funds in any manner they saw fit. The states were required to follow certain federal regulations which were intended to achieve a gradual establishment of higher standards in relief practices. One of the most important goals of the FERA was to see that the relief given to persons in need was as adequate as possible. As one of the conditions of its grants, the FERA developed a general formula which local relief agencies were to use in determining the amount of relief for each case which received relief or work relief. The local relief agency first estimated the minimum monthly income upon which a family of a given size could subsist in that locality. The total estimated monthly income of the family was subtracted from this estimated budget and the local relief agency was to furnish the budgetary deficiency. The FERA also ruled that

persons on work relief must be given cash. Cash was also suggested for those receiving direct relief, but no ruling was issued on this point. In reality, the amount of relief given to a family varied considerably throughout the country. Relief was adequate in some states while other states were unwilling or unable to adopt the required standards. However, during the period of FERA grants, the average amount of relief given monthly to each case for the country as a whole increased from $14.13 in May 1933 to $28.13 in January 1935. [48]

Other FERA regulations were designed to diversify the relief programs so that the appropriate kind of relief could be given to each group of needy person. Among those on relief were large number numbers of workers from cities, destitute farmers, the aged, mothers with dependent children, youths, and other special groups. The FERA sought to differentiate between the various relief groups and develop programs to fit their specific needs. A large scale direct relief program was operated for those who were unable to work, or for whom public work could not be provided. A rural rehabilitation program was created to assist some of the rural destitute. In addition, special programs such as transient relief, emergency education, and aid for college students were also provided. [49]

Although work programs had been in place prior to the establishment of the FERA, they often involved make-work type projects with little regard for the past experience of the relief workers. The FERA work program was intended to conserve the skills, work habits, and morale of the unemployed through work which was suited to their abilities and of value to their communities. With substantial aid from the FERA, state and local programs were gradually improved during the period from June through October 1933. However, large-scale unemployment still continued and the construction program operated by the newly created Public Works Administration was slow in getting under way. As a result, it was decided to supplement PWA and FERA activities by operating a program known as the Civil Works Administration, which would provide useful employment during the winter of 1933-34.

On November 8, 1933, the State Board of Control received a telegram from Harry Hopkins, the CWA Administrator, designating the board as the State Civil Works Administration and each county relief administration as the County Civil Works Administration. Any local political subdivision of the state, including cities, villages, townships, school districts, and county governments could submit work projects for consideration. In addition, any department of the state government, and both state and local CWA offices, were also authorized to originate work programs. Projects were submitted almost immediately by various local political subdivisions throughout the state in response to a request for proposals by Governor Floyd Olson, which was made during a general meeting held at the State Capitol. However, at the time the Civil Works Administration was established, FERA funds were being expended in counties only on a decentralized basis, and there had been no emphasis placed on a supervised work program. As a result, the staff and headquarters of the SERA were comparatively small. It was therefore necessary to strengthen and enlarge the staff of the SERA which was to act as the staff of the State Civil Works Administration. Instructions were received from Washington to establish a uniform accounting system, appoint an engineering staff, select and train a purchasing agent, and to place in operation all the various departments which are necessary for the administration of a public works program. L.P. Zimmerman, a former employee of the State Highway Department, was designated as the State Engineer for the State Civil Works Administration. The State Engineer, along with a staff of eight regional engineers, supervised the actual operation of the projects, furnished technical advice on difficult engineering problems, and was generally responsible for the actual work projects. [50]

When the Civil Works Administration ended on March 31, 1934, the FERA established a new work program to take its place. In fact, this merely returned the responsibility for the work program back into the hands of the State Emergency Relief Administration in a legal sense. By this time an elaborate and well organized bureaucracy had been developed to administer the various programs of the SERA. [See Exhibit III] As of October 1934, the state administrative office of the SERA included the following divisions and directors:

Governor Floyd B. Olson.....Administrator
L.P. Zimmerman.....Acting Administrator
Benjamin E. Youngdahl.....Director of Social Service
Nathan Harris.....Director of Work Division
Oscar W. Behrens.....Director of Transient Division
C.T. Fredrickson.....Director of Finance
Dr. R.W. Murchie.....Director of Rural Rehabilitation

Each division functioned through district, county, and local units. The Work Division, for example, included a staff engineer in the central offices, 10 district engineers, and a engineer in each county. The five divisions of the State Emergency Relief Administration were responsible for the following functions:

Social Service Division - This division operated through the country relief workers and was responsible for carrying out a comprehensive program of investigating and certifying relief cases. The division also supervised the selection of CCC enrollees on behalf of the Department of Labor.

Finance Division - The Finance Division processed all payrolls and disbursements of federal and state funds. All purchases were made through the Finance Division, which ranged from stamps to complete transient camps capable of housing 400 men.

Rural Rehabilitation Division - This division operated rural work centers, water conservation projects, and educational programs. In 1934 aid was provided for 40,000 drouth victims, while 46,000 head of cattle were relocated to the northeastern part of the state where subsistence pasturage was available.

Transient Relief Division - The Transient Division of the Federal Emergency Relief Administration began to function in July 1933. Because many states and localities had long regarded transients as an unwelcome burden, the FERA agreed to pay all expenses associated with the program. The primary purpose of the transient program was to provide shelter, food, and clothing to this class of persons for whom no other unit of government would admit responsibility. Moreover, it was desired to reduce the aimless

drift of people from one section of the country to another. Through a program of training and education, it was hoped to rehabilitate many of the transients so that they might be absorbed in the community where they were housed or returned to their place of legal residence equipped to regain a normal place in society. [51]

The State Board of Control organized a transient program which was approved by the FERA in November 1933. Registration centers were established in the state's five largest cities while in practically all other counties the county relief office was designated as a transient registration bureau. Families and homeless women were typically returned to their place of legal residence while two types of care were provided for transient men: out-camp and camp care. Out-camp care was provided through shelters such as the Salvation Army and missions for which the Transient Relief Division paid a per diem fee. The camp program was strongly emphasized in Minnesota and homeless men were usually moved from shelters to the camps. The men were expected to work six hours a day in return for food, lodging, clothing, and medical and dental care. They were also given a cash allowance of one dollar per week and extra hours could be arranged as well. Each camp maintained a long term work program which was generally organized in cooperation with the State Department of Conservation. The transient men were involved in the removal of fire hazards and constructing fire breaks, building lookout towers and ranger patrol stations, as well as the development of recreational facilities. Evaluated on the basis of 55 cents per hour, the work of the Transient Division in Minnesota's parks and forests would have cost the State Conservation Department approximately one million dollars up to June 30, 1934. As of this same date, the following 13 camps were in operation which housed approximately 2,200 men although total capacity was about 3,500: [See Exhibit IV]

Camp Name	Nearest Town	Capacity
Badoura	Akeley	20
Crystal Springs	Rochester	110
Elbow Lake	Ponsford	100
Happyland	Littlefork	150

Headwaters	Itasca State Park	100	
Independence	Duluth	250	
Itasca	Itasca State Park	60	
Medicine Lake	Minneapolis	1,000	
Mendota	Mendota-Shakopee	950	
Park Avenue	Big Falls	200	
Perch Lake	Hibbing	300	
Savanna	McGregor	140	
Thistledew	Hibbing	125	[52]

Work Division - After the CWA expired, the new program was called the Emergency Relief Administration or ERA The organization was similar to the CWA except that it was necessary to distinguish between relief and non-relief labor and much less money was available for the purchase of materials than during the prior program. The types of projects which could be undertaken were also limited by the types of labor available on relief in a given community. Work projects were initiated by ERA officials or by state, county, city, or other governmental units. All work was done on public property and local financial participation was required for most projects. As of October 1934, a total of 2,501 projects had been approved by the State Emergency Relief Administration. This represented a total expenditure of approximately $17,600,000 which included funds of $14,850,000 and local contributions of $2,750.00. As of July 1934, the SERA case load included 112,812 families representing 489,014 persons. Of these, 36,773 families, or 162,258 persons, reported for work relief. In addition to family participation, there were 11,953 single persons in the program, of which 1,269 reported for work relief. [53]

Construction projects included highway work, public buildings (such as schools, town halls, and community buildings), bridges, sewers, utilities, recreational facilities, waterways, parks, and airports. A variety of conservation projects were also undertaken including the construction of dams and the diversion of water flow to restore former lakes and streams. Non-construction work projects included public welfare programs, educational activities, and the production of various goods for the unemployed. Typical construction related projects include the following:

Long Prairie - remodel Todd County Courthouse
Grey Eagle - town hall building
Willmar - airport
Princeton - city park
Motley - 2,000 feet of sewer
Gilbert - school repairs
Duluth - auditorium and playroom at Fairmont School
Foley - county work shop
Rockville - school
Duluth - zoo
Browns Valley - community building
Foley - bath house
St. Paul - conservation building, state fairgrounds
Willmar - auditorium
Deerwood - auditorium
St. Paul - bridge, Phalen Park
Little Falls - building construction at Camp Ripley [54]

As of June 1934, the work projects typically associated with construction were classified as follows:

Project Type	Number of Projects	Number Employed
Highways, Bridges		
New	57	617
Repair/Maintenance	233	4,327
Public Buildings		
New	27	203
Repair/Maintenance	370	2,545
Bridges		
New	7	74
Repair/Maintenance	10	13
Sewers		
New	40	323
Repair/Maintenance	28	258

Utilities		
New	44	85
Repair/Maintenance	26	186
Recreational Facilities		
New	26	240
Repair/Maintenance	3	1,743
Parks, Airports	106	1,594
Miscellaneous	9	811 [55]

The State Board of Control acted as the State Emergency Relief Administration until July 1934 when the program was organized as a separate agency. In January 1936 the legislature gave the SERA legal status and it began to operate as the State Relief Agency (SRA). However, at the end of 1935 the Federal Emergency Relief Administration was discontinued and the responsibility for direct relief was returned to the states and local units of government. This change in federal policy was based on the premise that the FERA had met the relief crisis of 1933 and that sufficient time had been provided for the states to plan appropriate relief programs. In addition, it was clear that federal policy intended to emphasize work rather than direct relief with respect to needy employables. The new works program was established in the spring of 1935 with the Works Progress Administration as the replacement for the work program of the State and Federal Emergency Relief Administrations. However, the State Relief Agency was required to certify to the WPA those persons who were eligible for employment under this new program. The impact of the reduction in federal funds for direct relief in Minnesota is shown in the following table which traces state, federal, and local expenditures of the State and Federal Emergency Relief Administrations:

Date	Fund	Amount	Percent
May 1935	Federal	$4,498,505	88.8%
	State & Local	569,541	11.2%
		$5,068,046	

November 1935	Federal	$1,015,342	44.7%
	State	458,539	20.2%
	Local	799,785	35.1%
		$2,273,666	
February 1936	Federal	$95,882	6.6%
	State	755,071	51.8%
	Local	606,402	41.6%
		$1,457,355	
July 1937	Federal	$16,653	1.8%
	State	346,377	36.1%
	Local	595,344	62.1%
		$958,374 [56]	

Not only was unemployment decreasing, but many of those who had received relief or work relief from the SERA were now working for the Works Progress Administration. In April 1935, 20% of the state's population was on relief. This number had decreased to 7.6% by the end of 1935. [56] By the end of 1936, over 180 million dollars had been expended in Minnesota for direct and work relief by the State Relief Administration, the Works Progress Administration, the Old Age Assistance program, and the Civil Works Administration as itemized in the following table:.

Program	Dates	Amount
SRA	11/32-12/36	$102,725,617
WPA	8/35-12/36	49,868,809
OAA	2/36-12/36	7,535,380
CWA	11/33-3/34	20,671,440
		$180,801,246 [57]

The SRA continued until 1939 when the legislature created the Social Welfare Division of the Social Security Department and the

responsibility for the administration and distribution of direct relief was transferred to this division. During its existence, the Federal Emergency Relief Administration provided federal funds totaling $3,068,000,000 to state governments. These funds financed a major part of the total cost of relief to the unemployed and their families from May 1933 when the agency was created until the end of 1935. When the programs conducted by the emergency relief administrations reached their peak in January 1935, more than 20,000,000 persons, or about 16% of the total population of the United States, had received relief. [58]

IV. The Civil Works Administration

The Civil Works Administration was established on November 9, 1933 by President Franklin Roosevelt. Executive Order 6420-B, listed below, officially created the agency.

Executive Order

Creation of the Federal Civil Works Administration

> (1) I hereby establish a Federal Civil Works Administration and appoint as Administrator thereof the Federal Emergency Relief Administrator, as an agency to administer a program of public works as a part of, and to be included in, the comprehensive program under preparation by the Federal Emergency Administration of Public Works, which program shall be approved by the Federal Emergency Administrator of Public Works and shall be known as the "civil works program."
>
> (2) The Federal Emergency Relief Administrator, as the head of the Federal Civil Works Administration, is authorized to construct, finance, or aid in the construction or financing of any public-works project included in the civil works program and to acquire by purchase any real or personal property in connection with the accomplishment of any such project and to lease any such property with or without the privilege of purchase.
>
> (3) The said Administrator is further authorized to appoint without regard to the civil service laws or the Classification Act of 1923, as amended, and fix the compensation of such officers, experts, and employees, and prescribe their duties and authority and make such expenditures.....as may be necessary to carry out the purposes of the Federal Civil Works Administration and, with the consent of the municipality concerned, may utilize such State and local officers and employees as he may deem necessary.
>
> (4) For purposes of this order, there is hereby allocated to the Federal Civil Works Administration the sum of $400,000,000 out of the appropriation of $3,300,000,000 authorized by section 220 of the National Industrial Recovery Act and made by the fourth Deficiency Act, fiscal year 1933, approved June 16, 1933. [59]

The Civil Works Administration (CWA) was established because existing New Deal measures such as the National Recovery Administration, the Civilian Conservation Corps, the Agricultural

Adjustment Administration, and particularly the Public Works Administration, had failed to sustain the economic upswing which had appeared so promising in the summer of 1933. By November, only 251,851 men had received employment on PWA projects. Yet, approximately 10,076,000 people were out of work in October, an increase of eleven thousand over the September figures. [60] A new approach was needed, at least one which could be implemented during the winter months. Harry Hopkins, the Federal Emergency Relief Administrator, was placed in charge of the new program. He estimated that about 400 million people could be given jobs with the $400 million which had been allocated to the CWA by the Public Works Administration. On November 10, the Washington CWA office sent telegrams to state agencies designating them as civil works organizations, and in most areas, appointing state, county, and city relief administrators as CWA officials. In fact, operating the CWA simply became an additional job. The message to the North Dakota Emergency Relief Administration was typical:

> The State Emergency Relief Administration is hereby constituted the Civil Works Administration for the state of North Dakota with yourself as chairman. It will be the Federal Civil Works Administration. The present emergency relief committees in each county of your state are hereby constituted the Civil Works Administration for that county. [61]

In order to explain the new program to hundreds of relief administrators throughout the country, Hopkins invited governors, county officials, mayors, and relief administrators to a conference in Washington. Hopkins described how each state would be allotted federal money for approved projects and that quotas would be determined on the basis of population (75 percent) and relief load (25 percent). Meetings were held at the local level as well and applications were prepared for CWA projects, most of which received the immediate approval from the state administration. In addition, any existing state work relief projects were automatically shifted to the CWA. On the first payday, November 23, the CWA issued checks to 814,511 workers. [62]

When the Civil Works Administration came to an end on March 31, 1934, a total of $20,671.440 had been expended in Minnesota and approximately 1 billion dollars nationwide. Responsibility for work projects returned to the State Emergency Relief Administration. The following chronology highlights important dates for the CWA program:

November 9, 1933 - An Executive Order was issued creating the CWA and providing $400,000,000 from the Public Works Administration for the new organization. The object of the Executive Order was to put 4,000,000,000 of the unemployed to work, 2,000,000 by December 1, 1933 and a total of 4,000,000 by January 15, 1934.

November 15, 1933 - A meeting of the governors, mayors and other officials was held at the Mayflower Hotel in Washington at which the Civil Works program was launched.

November 16-19, 1933 - All relief work beneficiaries and projects were transferred to the Civil Works Administration.

November 20, 1933 - A meeting was called by Mrs. Roosevelt at the White House to organize women's participation in the CWA program.

November 23, 1933 - The first payroll totaled $7,873,350.

November 28, 1933 - The Civil Works Service was organized to assume activities such as education surveys, nursing, child hygiene, and social welfare of a service nature.

December 7, 1933 - 2,037,000 were employed on CWA projects.

January 18, 1934 - 4,040,000 were employed on CWA projects, this was the peak of CWA employment. The payroll reached a high point of of $62,024,850.

February 15, 1934 - $950,000,000 was appropriated by an Act of Congress for the Federal Emergency Relief Administration. $450,000,000 of this sum, by a supplementary act of the same date, was made available for the continuation of the CWA.

Typical CWA projects executed in Minnesota are listed below:

Jackson - storm sewer extension, $5,900.
Maynard - water main extension, sewer repair, water tank, $1,854.
Aitkin - village Hall improvements, $2,000.
Preston - electrical system, $5,572.
Duluth - repair and paint library buildings
St. Cloud - construct granite safety walls
Virginia - build stone entrance and several shelters at golf course
Lanesboro - dam, flood control, $3,340.
Ely - build airport runway, $13,000.
Duluth - build auditoriums for school buildings
Waseca Co. - build garages at Waldorf and Waseca
St. Peter - city hall addition
New Richland - bridge and water main construction
Welcome - build gymnasium
Crookston - sanatorium
Ada - pavilion
Willow River - city hall
Gilbert - recreation field
Bancroft - town hall
Owatonna - fair buildings
Walker - administration building and museum
Polk Co. - rural school
Bemidji - tourist information building [63]

As of January 1934, Frank M. Rarig Jr., the Minnesota CWA Director, announced that 84,500 people were employed on projects state-wide. Nineteen thousand were employed in Minneapolis alone. In February 1934, eight district engineers were appointed to maintain supervisory control over CWA projects. These engineers worked in an advisory capacity along with local highway engineers, who were usually the county CWA engineers as well. In fact, over 50% of the work by the CWA in the state involved street and highway repair.

The Civil Works Administration also funded the first art project sponsored by the federal government on a national scale. Known as the Public Works of Art Project (PWAP), the program was administered by the Treasury Department from December 1933 to June 1934 when the program was terminated. Approximately, 3,700 artists were paid $35 to $45 per week to produce murals and sculptures for public buildings. The program cost about $1,312,000. [64]

February 15, 1934 - An order was issued providing for the reduction in the number of CWA employees and anticipating the final termination of the organization on March 31, 1934.

March 31, 1934 - The CWA was terminated. [65]

The Civil Works Administration remained in existence a mere four and one half months. Yet, over 4,000,000 workers were employed who received minimum wages rather than relief payments. The CWA remains the first attempt by the federal government to give work to the unemployed instead of aiding the states in the problem of relief. It served as a precedent for later and larger federally sponsored work programs.

V. THE WORKS PROGRESS ADMINISTRATION

The Works Progress Administration was established by Executive Order No. 7034, dated May 6, 1935. This action was taken by the President under the authority of the Emergency Relief Appropriation Act of 1935, approved April 8, 1935. The nearly $5 billion authorized by the act was the greatest single appropriation in the history of the United States and $1.4 billion of this funding was allocated to the WPA. [66] Both the WPA and the new social security system were intended to replace the emergency programs of the Federal Emergency Relief Administration with a program which distinguished between unemployment relief and other types of assistance. Direct relief for the aged, handicapped, and other unemployables was to be returned to the state and local governments. As originally designed, the WPA was to have two functions; first, it was to operate a nation-wide program of small useful projects designed to provide employment for needy employable workers, and secondly, it was responsible for coordinating the various activities of the "Works Program" as a whole. Four years later, in the President's Reorganization Act of 1939, and effective July 1, 1939, the Works Progress Administration was incorporated in the Federal Works Agency and was renamed the Work Projects Administration. [67]

The WPA was authorized to fund projects sponsored by both federal and non-federal agencies. Federal projects included those sponsored by (a) federal emergency agencies (such as the Rural Electrification Administration, the Resettlement Administration, Emergency Conservation Work, and the Works Progress Administration), and (b) regular departments of the federal government (such as the War, Navy, and Agriculture Departments). Non-federal projects could be sponsored by a state, territory, possession, or any governmental subdivision which typically included counties, cities, villages, or townships, and which offered a definite plan and procedure for the employment of persons on relief or in need of employment. Projects could not be sponsored by boards of trade, clubs, societies, churches, orphanages, veterans' organizations, or other private, sectarian, civic, or similar organizations, although such organizations could cooperate unofficially with sponsors in the origination of a

project. Ultimately, projects sponsored by state and federal agencies represented only a small part of the WPA program. The vast majority of approved projects were planned and initiated by local units of government.

The President announced that the following criteria would be utilized in determining the eligibility of work projects:

(1) The projects should be useful.

(2) The projects should be such that a considerable proportion of the money should be spent on wages for labor.

(3) Projects which promise ultimate return to the Federal Treasury of a considerable proportion of the costs will be sought.

(4) Funds allotted for each project should be actually and promptly spent and not held over until later years.

(5) In all cases projects must be of a character to give preference to those on the relief rolls.

(6) Projects will be allocated to localities or relief areas in relation to the number of workers on relief rolls in those areas.

(7) To move from the relief rolls to work on such projects, or into private employment, the maximum number of person in the shortest time possible. [68]

Each of the ERA acts which funded the Works Progress Administration specified the types of projects for which appropriated funds might be used. Section 1 (b) of the ERA Act for fiscal year 1943 included the following list of eligible project types:

"Highways, roads, and streets; public buildings; parks, and other recreational facilities, including buildings therein; public utilities, electric transmission and distribution lines or systems to serve persons in rural areas, including projects sponsored by and for the benefit of nonprofit and cooperative associations; sewer systems, water supply, and purification

systems; airports and other transportation facilities; facilities for the training of personnel in the operations and maintenance of air navigation and landing area facilities; flood control; drainage; irrigation, including projects sponsored by nonprofit irrigation associations organized and operating for community benefit; water conservation; soil conservation, including projects sponsored by soil conservation districts and other bodies duly organized under state law for soil-erosion control and soil conservation, preference being given to projects which will contribute to the rehabilitation of individuals and an increase in the national income; forestation, and other improvements of forest areas, including the establishment of fire lanes; fish, game, and other wildlife conservation; eradication of insect, plant and fungus pests; the production of lime and marl for fertilizing soil for distribution to farmers under such conditions as may be determined by sponsors of such projects under the provisions of state law; educational, professional, clerical, cultural, recreation, production, and service projects, including training for manual occupations in industries engaged in production for national-defense purposes, for nursing and for domestic service; aid to self-help and cooperative associations for the benefit of needy persons; and miscellaneous projects; not less than $6,000,000 of the funds made available in this Act shall be used exclusively for the operation of day nurseries and nursery schools for the children of employed mothers." [69]

The WPA sponsored the broadest range of projects of any work program of the period. Construction projects were not unlike those undertaken by the Public Works Administration, and a variety of conservation projects were conducted like those of the Civilian Conservation Corps. Yet, a broad range of service projects were also performed which typically employed professionals, white-collar workers, and women. Public activity projects included adult education, nursery schools, library services, recreation projects, museum projects, and Federal Project No. 1, which involved the sponsorship of music, art, writers', and theater projects. Research projects included social and economic surveys and studies, research assistance projects, public records projects, and historical records surveys. Welfare projects included sewing projects, school lunch programs, gardening and canning projects, housekeeping projects, surplus commodity distribution projects, public health projects, and hospital aide projects.

In order to carry out its program, the WPA was organized at four administrative levels:

(1) The Central Administration in Washington - the central administration had the responsibility for the determination of WPA policies in accordance with the laws and regulations governing all WPA activities. Harry L. Hopkins was Administrator of the WPA from July 1935 through December 23, 1938. He was followed by Francis C. Harrington, Howard O. Hunter, Francis H. Dryden, Major General Phillip B. Fleming, and George H. Field who served until the end of the program in June 1943. The major divisions maintained in the central administration during the eight years of WPA operations included the following: (1) Engineering and Construction, (2) Service Projects, (3) Training and Reemployment, (4) Finance, (5) Employment, (6) Management or Administration, (7) Statistics, (8) Research, (9) Investigation, (10) Information, and (11) Legal.

(2) The Regional Offices - the regional offices had the responsibility for the direction and coordination of the program in the states of each region and in accordance with the policies and regulations prescribed by the central administration.

(3) The State Administrations - the state administrations were each responsible for the general administration of the WPA program within each state, which included securing federal approval and funds for project operations and the authorization of such project operations in accordance with local needs. The operating divisions at the state level were organized in sections which corresponded functionally to the divisions of the central administration.

(4) The District Offices - the district offices were responsible for the direct management of project operations and a variety of associated activities including the assignment of certified workers to projects, timekeeping, scheduling, and the initiation, termination, and completion of projects, and cooperating with local sponsors in the timing and management of project operations.

At the peak of the WPA program, in the fall of 1938, nearly 36,000 people held administrative positions in the central, regional, state, and district offices. [70]

A formal proposal for the operation of a WPA project had to be made by a public agency, typically a local unit of government, which was legally empowered to sponsor the work proposed. This application was submitted on WPA Form 301 [See Exhibit V] and included a description of the project, cost estimates for labor, supervision, and materials, an analysis of the types of labor required (unskilled, intermediate, skilled, professional, technical, and supervisory), an analysis of the required equipment and materials, the estimated monthly employment, and a justification statement for the proposed project. All costs were expressed in terms of both the federal funds and the sponsor's contributions. A proposal for a construction projects had to be accompanied by preliminary engineering plans and sketches. The sponsors also agreed to complete the project if for any reason the project could not be completed by the WPA and they were also required to maintain and operate all completed project at their own expense.

All proposals were forwarded by the sponsors to the state WPA office. After the proposal was reviewed for eligibility and found acceptable, it was used as the basis for a project application, which was a formal request by the state administrator for authority to spend federal funds on the work described. The application was then sent to the Washington office of the WPA where it received a thorough review and was approved or disapproved. Final approval was given by the President. [See Exhibit VI] Authorized projects were then released for operation. Yet, the release of projects, the temporary suspension of project operations, or the termination of projects, all depended on the number of needy unemployed person in the community and the amount of federal funds appropriated to carry on the WPA program. All projects had to provide employment for the needy unemployed persons available in the local community. Many projects were delayed until other projects had been completed or until enough qualified unemployed persons had been certified to the WPA for employment. The vast majority of persons certified for employment were unskilled workers, and it became necessary for the sponsors to use their own funds to hire skilled workers needed to execute a particular project. This was particularly true for projects involving construction, such as schools and other public

buildings, since this work usually required a high percentage of skilled workers.

Sponsors were required to pay a portion of the costs for each project. The average sponsor's contribution increased throughout the program although no minimum percentage was set by the WPA until the ERA Act of 1939 which contained a provision that sponsor's contributions must aggregate 25 percent of the cost of any project approved after January 1, 1940. The WPA typically paid the cost of the labor while the sponsor paid for non-labor expenses such as materials, equipment, tools, skilled labor, technical supervision, office space, and supplies.

When sponsoring WPA projects, state and local governments considered the fact that they had the responsibility for financing their direct relief programs. When WPA employment was provided in a community, there were fewer people in need of direct relief. This was one of the incentives for sponsoring WPA project, yet, the chief incentive was the desire to secure useful public improvements and services.

The total WPA expenditures for the eight year period of the program were $10,750,501,000. Sponsors contributed $2,837,713,000. The largest part of these expenditures was devoted to construction projects. For the period from July 1935 through March 1943, construction projects accounted for more than 77% of the total expenses while service projects accounted for about 23%, and training and reemployment projects accounted for less than 1%. The greatest expenditures were for highway, road, and street projects. Expenditures on these projects totaled $4,903,767,000 and accounted for about one-half of the expenditures on construction projects and nearly two-fifths of the expenditures on all projects during the eight years of the WPA program. Next in terms of total expenditures were welfare projects which totaled $1,438,674,000 and accounted for about one-half of the expenditures on all service projects and for more than one-tenth of total expenditures. [71] The following table provides a breakdown of funds expended on all WPA operations through March 31, 1943:

Type of Project	Percent
Division of Engineering and Construction	76.9
Airports and airways	3.1
Buildings	10.6
Conservation	3.5
Engineering surveys	0.4
Highways, roads, and streets	37.9
Recreation facilities (excluding buildings)	7.6
Sanitation	1.8
Water & sewer systems and other utilities	10.1
Other	1.9
Division of Service Projects	22.5
Public activities	7.0
Art and museum	0.6
Education	2.0
Library	1.0
Music	0.7
Recreation	2.0
Writing	0.2
Other	0.5
Research and records	4.0
Historical records survey	0.3
Public records	1.5
Research and surveys	2.0
Other	0.2
War services	0.4
Welfare	11.1
Feeding	3.3
Production	0.4
Public health and hospital work	0.8
Sewing	6.2

Other	0.4
Division of Training and Reemployment	0.6 [72]

The physical accomplishments associated with these expenditures include the construction or improvement of 651,087 miles of highways, streets, and roads, and the construction of 77,965 bridges and viaducts, 1,668 parks, and 2,877 public utility and sanitation plants. New construction of public buildings is itemized in the following table:

Type of Project	Number
Public Buildings - Total	35,064
Educational	
Libraries	151
Schools	5,908
Recreational	
Auditoriums	422
Gymnasiums	1,255
Other	7,019
Offices and administrative	1,536
Hospitals	226
Penal institutions	181
Dormitories	1,473
Firehouses	325
Garages	2,522
Storage	2,368
Armories	357
Barns and stables	1,930
Other	9,391

When additions and building improvements are also included, these figures assume staggering proportions with 4,792 additions and 85,254 reconstructions or improvements. [73]

When the Works Progress Administration was established in May 1935, there were 51,727 people employed in the work program of the Minnesota State Emergency Relief Administration. There were an additional 90,107 who had registered for employment. It was the responsibility of the WPA to assume the work program of the SERA and to operate the new federal work relief program. [74] In June 1935, a WPA Administrator was appointed for Minnesota who became the first of the following three individuals to serve in this position:

Victor Christgau - Christgau was born on September 20, 1884 in Dexter Township in Mower County. He attended the University of Minnesota (1914-1917) and the University College of Agriculture (1918-1924). He was a member of the Farmer Labor Party and was elected state senator from the 5th district in 1926. In 1928 he was elected to the U.S. Congress from the 1st district, where he served until 1932. He was appointed assistant administrator of the Agricultural Adjustment Administration in 1933. Christgau returned to Minnesota in 1935 as the first administrator of the state's WPA program. He was replaced as administrator in 1939, apparently for political reasons, and later held several administrative positions within the Minnesota Employment Service. In 1954 he returned to Washington as Director of the Bureau of Old Age and Survivor Insurance of the Department of Health, Education, and Welfare. [75]

Linus C. Glotzbach - Glotzbach had served as a WPA District Director and served briefly as state administrator in 1939.

Sidney L. Stolte - Stolte received a degree in architectural engineering from the University of Minnesota. After working for an architectural firm, Stolte became Assistant Area Engineer in St. Cloud for the State Emergency Relief Administration. He later moved to St. Paul and became Construction Engineer for the SERA. When the WPA was established, Stolte retained the same position within the new program and was eventually appointed Director of Operations in April 1936. He served as State WPA Administrator from August 1939 until April 1943 when the program ended. Stolte returned to private practice and was employed by architect P. C. Bettenburg of St. Paul. [76]

In addition to the state administrative office, the state was divided into districts in order to achieve decentralized administrative control. The state was initially organized into nine districts, which may have been loosely based on the state's nine congressional districts. After it was determined which county areas were to be included in each district, it was decided to further decentralize for purposes of project operation and area offices were also established within each district. As of December 31, 1935, the Minnesota WPA contained nine districts and was further subdivided into 38 areas. [77] [See Exhibit VII] The number of districts and areas varied throughout the program based on the total employment provided by the WPA as illustrated in the following table:

Date	Districts	Areas	Total Employed
December 1935	9	38	51,554
December 1936	9	35	48,421
December 1937	7	22	44,400
December 1938	6	28	63,762
December 1939	5	27	43,570
December 1940	5	27	40,309
December 1941	4	12	25,994
December 1942	3	6	8,139 [78]

The Minnesota Works Progress Administration included the following divisions which were represented at both the state and district level, while only the finance and operating divisions were represented at the area level:

Division of Engineering and Construction - The Division of Projects and Planning, later known as the Division of Operations, and finally renamed the Division of Engineering and Construction, included a State Director, or Chief Engineer, an Assistant

Engineer, the District Directors, and the Area Supervisors. At the state level, this division was further subdivided into an Engineering Review Section, a Project Control Section, a Field Inspection Section, and a Special Phases Section, all of which were concerned with the overall administrative control of construction projects, with the detailed control of an actual project delegated to the district and area staffs. In 1936 a Safety Section was incorporated within this division in order to supervise the safety practices of both the engineering section and service projects.

The Division of Service Projects - Known at times throughout the WPA program as the Division of Women's and Professional Projects, the Professional and Service Division, and the Division of Community Service Programs, this division developed programs in the fields of sewing, health, book repair, clerical work, recreation, adult education, library work, school lunch programs, health programs, housekeeping aide programs, research, statistical, and survey projects, nursery school programs, and music and art projects. Employment within this division focused on women, and professional, and white collar workers.

Division of Training and Reemployment - Initiated in 1940, this division was established by the ERA Act for fiscal year 1941 in order to provide a vocational training program for qualified WPA employees. Its establishment was prompted by a demand for skilled workers as a result of the growing concern over the beginning of the international conflict. Training activities were instituted first on a basis of a refresher course for those persons who already possessed a skill in an occupation declared essential to the defense effort, and second, as a pre-employment course for those persons showing considerable aptitude for mechanical or vocational training.

Division of Employment - The Division of Employment was created from two separate divisions, the Division of Labor Management and the Division of Intake and Certification. Local welfare offices, under the supervision of the State Emergency Relief Administration, certified those workers eligible for the WPA program. Once a worker had been certified, the Division of

Employment maintained a labor inventory and assigned the worker once a suitable position was available.

Division of Finance and Control - This division was responsible for the accounting of all funds expended, determining the legality of expenditures, and the performance of all work activities.

Division of Supply - Established in 1938, this division operated a central warehouse in order to purchase certain materials more profitably in bulk, to transfer equipment from one project to another, to make the proper provision for the repair and maintenance of tools and equipment, and for the economical distribution of property to various projects.

Like the Public Works Administration, the WPA clearly stated that it was not its practice to suggest or specify the architectural style for a particular project. This remained the responsibility of the sponsor who was also required to furnish the architectural plans and specifications. However, the design would be reviewed for its structural soundness and a simplification in architectural style might be recommended since straightforward design would be best suited to the limited skills usually available for WPA work. Sponsors might be urged to eliminate ornate architectural features, intricate structural systems, and elaborate trim. Designs were suggested which would not require highly skilled and specialized workers who were not available from the relief rolls. In order to employ the maximum amount of WPA labor, sponsors were encouraged to use methods which would require the least equipment consistent with efficiency. [79] Thus, the typical styles of the day continued to develop within the framework of WPA projects and a style such as the Moderne was often employed because of its straightforward design and popularity.

However, regional architectural styles developed throughout Minnesota which may be more directly linked to the WPA because of various financial restrictions associated with both the program itself and a project's sponsor. A sponsor was usually responsible for all non-labor costs associated with a project, including materials, and federal funds become increasingly limited for such non-labor items. In addition, certain types of construction projects, such as bridges or buildings, often involved non-labor

costs which totaled 40%-60% of the total cost. Yet, the greatest need for employment often existed in locations where communities were least able to afford the sponsor's contribution. State funds were sometimes available in such cases, but this situation also resulted in the exploitation of local building materials. [80] Fieldstone, for example, involved minimal material cost to the sponsor, yet resulted in labor intensive construction methods which clearly met the needs of the relief program.

Quarries were opened by the WPA to produce limestone, and sometimes granite, in order to construct buildings which would not have been available to a community had the sponsor been required to purchase the finished product. Pink Mankato stone was discovered in some abandoned bridge piers in the Mississippi river near St. Paul which was reused for the Hamline, Minnehaha, Highland, and Baker Playground Buildings. Several limestone buildings at the old Stillwater State Prison were considered a safety hazard and relief labor demolished the buildings and salvaged the stone. In the meantime, an abandoned stone plant was equipped and manned with an experienced crew from the WPA rolls, many of whom were former employees of the plant itself. The stone was then used for various improvements in St. Paul. Similarly, large quantities of brick and timbers were salvaged from the demolition of the old State Capitol building and were used in the construction of other projects.

Sand and gravel operations were initiated in order to provide materials for gravel roads and architectural concrete for buildings, bridges, culverts, sidewalks, curbs, gutters, and other improvements. In fact, reinforced or precast concrete construction was the preferred construction method when the relief labor available for a project was relatively unskilled. In the northern part of the state, CCC and Transient Camps cleared dead and fallen timber for the primary purpose of providing protection against forest fires. Many valuable timber logs were then salvaged and processed for direct log construction or were cut into dimensional lumber and used in the construction of forestry and other public buildings. Thus, relief labor was used in both the original preparation of the building material and in the construction of the structure itself. However, the necessary craftsmen were required as well. A WPA report concerning Gus

Anderson, the foreman for the Brandon Community Building, commented that, "His talent for handling field stone has made his services much in demand for other similar projects in the 8th WPA District."

Buildings throughout the state illustrate a variety of regional architectural expressions based on the use of native building materials. Examples include a granite school building in Rockville, the log constructed Conservation Building at the Itasca County Fairgrounds, and the Silver Lake Recreation Area in Rochester which utilized native stone in construction. One of the most interesting examples of the use of native materials include a series of stone buildings located in west central Minnesota. These include the Moorhead Community Building, the Hawley Bath House, the Rothsay School, the Oakport Community Building, the Mahnomen City Hall, and the Flom Community Building. In each case, native field stone, either split or cut, was chosen as the building material. It is unlikely that this would have been the material of choice had the WPA not required the project sponsor to furnish all non-labor items. Thus, even though an architectural style may not have been specified, the programmatic requirements of the WPA lead to a variety of architectural expressions which often utilized finely crafted indigenous materials.

Completed buildings, such as schools, libraries, auditoriums, and municipal buildings, could also be decorated with art works produced under the WPA Federal Art Program, which, along with the music, theater, and writer's projects, was administered under Federal Project No. 1. The program began in August 1935 and was administered according to the relief rules of the WPA. It lasted until June 1943, and cost about $35,000,000. Slightly over 5,000 persons were employed at its peak.

The most typical artistic expression in public buildings was mural painting, with a total of 2,566 murals executed nationwide. [81] Only one restriction was placed on the subject matter, it must be American, whether naturalistic, symbolic, legendary, or historical. The artwork reflected a realistic, regional style and was notable for the depiction of historical events and activities associated with the communities in which they were located. The

subject matter could typically be described as the American scene in all its phases.

Over 42,00 easel paintings and were produced as well as large numbers of sculptures, silk-screenings, posters, and graphic arts works. The Index of American Design was a research project which eventually produced 20,000 photographic reproductions and classifications of a wide variety of American art, paintings, sculptures, handicrafts, and folk art. The Federal Art Project also established hundreds of community arts centers, organized exhibitions, and provided many communities with original works of art for the first time. [82]

By January 1938, when the Works Progress Administration had been in effect for two years and 5 months, a total of $96,000,000 had been expended on work relief in Minnesota. The following list of improvements to public property is particularly complete and clearly differentiates new construction, additions, and repairs, which is not always clear in later statistical reports. This listing also describes the diversity of the projects which were sponsored in Minnesota and the rather remarkable accomplishments achieved in a rather limited period of time.

Administrative buildings and offices - 78 projects; 3 additions, 20 new structures, 55 repair projects; total square feet, 2,427,945.

Aircraft hangars - 6 projects; 1 new, 4 repair projects, 1 demolition.

Auditoriums - 29 projects; 14 new, 13 repair, 2 additions; total floor space, 355,510 square feet; total seating capacity, 32,565.

Barns - 46 projects; 25 new, 16 repairs, 4 additions, 1 demolition; total volume, 5,296,480 cubic feet.

Community buildings - 68 projects; 21 new, 36 repair, 2 additions, 9 demolitions.

Dormitories - 20 projects; 3 new, 17 repair; total floor space, 133,440 square feet; total accommodations, 879 persons.

Fire houses - 16 projects; 3 new, 10 repair, 3 demolition; total volume, 1,498,427 cubic feet; total capacity, 99 pieces of equipment.

Garages - 88 projects; 49 new, 38 repair, 1 addition; total volume, 3,636,887 cubic feet; total capacity, 811 vehicles.

Gymnasiums - 10 projects; 3 new, 4 repair, 3 additions; total floor space, 61,925 square feet.

Hospitals - 19 projects; 1 new, 18 repair; total floor space, 1,029,781 square feet; total capacity, 3,864 patients.

Jails - 14 projects; 3 new, 11 repair; total floor space, 147,260 square feet; total capacity, 1,026 inmates.

Institutional buildings - 25 projects; all repair projects; total floor space 347,020 square feet; total capacity, 2,581 patients.

Libraries - 16 projects; 1 new, 15 repair; total capacity, 622,3481 books.

Power houses - 2 projects; 2 repair; kilowatt capacity, 12,000.

Recreational buildings - 107 projects; 39 new, 68 repair; total floor space, 396,989 square feet.

Schools - 405 projects; 52 new 344 repairs, 3 additions, 6 demolitions; total floor space, 8,570,004 square feet; total capacity, 180,012 pupils.

Stadiums - 19 projects; 10 new, 8 repairs, 1 demolition; total seating capacity, 31,140.

Warehouses - 30 projects; 15 new, 11 repair, 1 addition, 3 demolition.

Culverts - 3,958 locations; 2,859 new, 1,099 repair; total length, 172,820 feet.

Curb replacements - 251,174 linear feet, or 37.61 miles.

Gutters - 193,415 linear feet (paved); all new.

Small dams - 106 locations; 105 new, 1 repair; total length of crest, 4,312 linear feet; total storage capacity, 474,476 acre feet.

Large dams - 21 locations; all new; total length of crest, 762 linear feet.

Docks, wharfs or piers - 13 locations; 2 new, 11 repair; total usable water front, 4,247 feet.

Roadside drainage - open ditch, linear feet of new construction, 398,298; repair work, 1,503,909; pipe drainage, 12,786 linear feet, all new construction.

Drainage other than roadside, - open ditch, 601,239 linear feet; pipe drainage, 657,622 linear feet; total acres drained 82,759.

Excavating and filling - cubic yards excavated, 3,623,906; cubic yards filled, 2,253,419.

Fences and wall fences - linear feet of enclosing fences, 50,794; acreage fenced, 47,068; linear feet of line fence, 342.

Grading - other than excavation or fill - 1,895 acres.

Levees and embankments - 35,226 linear feet; 196,185 cubic yards.

Lighting installations - park areas, athletic fields, landing fields - 4 locations totaling 3.31 acres with 86 lights. In addition, 1,226 miles of road lighted requiring 8,183 lights.

Power distribution lines - 6,733 linear feet with 65 consumer connections.

Pumping stations - 2 locations; 1 new and 1 repair.

Athletic fields - 136 locations; 37 new, 99 repair.

Band shells - 8 locations; 6 new, 2 repair.

Golf courses - 12 locations; 2 new, 10 repair; total acreage, 1,158.

Handball courts - 8 projects, all new.

Horseshoe courts - 34 projects, all new.

Ice skating areas - 189 locations; 181 new, 8 repair; total skating surface, 10,548,320 square feet.

Parks - 147 locations; 29 new, 118 repair; total acreage, 3,370.

Playgrounds - 67 locations; 15 new, 52 repair.

Ski Jumps - 1 project, new.

Swimming pools - 16 locations; 13 new, 3 repair; total square feet of water surface, 123,497.

Tennis courts - 219 locations; 40 new, 179 repair.

Retaining walls and revetments - total length, 57,925 linear feet; total cubic yards, 239,068.

River bank improvement - 17.67 miles.

Sidewalks - paved, 377,542 linear feet, unpaved, 92.703 linear feet.

Slopes, berms, terraces - 10 locations, all new construction; total linear feet, 1,700.

Storm and sanitary sewers - trunk lines, 540,203 linear feet; laterals, 107,238 linear feet; service connections, 792; man-holes and catch basins, 1,526.

Telephone lines - 2,415,568 linear feet.

Sewage treatment plants - 20 locations; 13 new and 7 repair; total capacity, 7,580,918 gallons per day; total population served 33,385.

Tunnels - 6 locations, all new construction; total linear feet, 3,113.

Water mains - linear feet, 286,145.

Water tanks and reservoirs - 33 locations; 30 new, 3 repair; total capacity, 14,653,474 gallons.

Game sanctuaries - 4 locations with a total of 24 acres improved.

Reforestation - 2,054 acres on which 171,903 trees were planted. [83]

Yet, in spite of its accomplishments, the WPA remained the most controversial program of the New Deal. The "make work" nature of certain projects was often criticized, and when dissident workers formed the Workers' Alliance, congressional critics and a segment of the public were further alienated. The unprecedented Federal Project No. 1, which included the art, writer's, and theater projects, was also particularly susceptible to criticism. Private industry also charged the WPA with unfair competition. Unlike like the Public Works Administration, which funded construction utilizing private contractors, the WPA would serve as the general contractor for its projects and would supervise and manage all aspects of construction. Not surprisingly, the construction industry praised the PWA but constantly demanded the termination of the WPA. The Improvement Bulletin, a regional construction periodical, consistently attacked the WPA, particularly after the PWA had come to an end.

Yet, the Works Progress Administration remained one of the most important works programs of the Depression Era. By the time the WPA ended in 1943, approximately, 8,500,000 different persons had been employed on projects during the 8 year duration of the program. [84] This represented about one-third of the nation's unemployed at an average monthly income of $50. In Minnesota, one quarter billion dollars were expended affecting some 600,000 persons. Physical accomplishments include 28,000 miles of roads newly built or improved; 677 bridges built and 766 improved; 28,000 feet of culverts; 578 miles of sidewalk; 673 miles of curbs; 106 miles of gutters; 1,324 new public buildings constructed (including 126 new schools, 7 hospitals, and 3 armories), and 2,334 others improved; 52 stadiums or grandstands seating 105,000 people; 119 athletic fields; 15 swimming pools; 56 sewage treatment plants; 6 water treatment plants; 769 miles of storm and sanitary sewers; 348 miles of watermains; 5 fish hatcheries; 313 water control dams; 1 million square yards of riprap; three new airports built and nine improved. [85]

The Works Progress Administration promoted its own accomplishments through procedures which mandated the presence of identifying signs at projects sites, and by supplying a variety of bronze plaques for completed buildings. As a result, the initials WPA are among the best remembered symbols of the New Deal and are still found on hundreds of buildings throughout the state. [86]

VI. THE NATIONAL YOUTH ADMINISTRATION

The National Youth Administration was created by Executive Order No. 7086 on June 26, 1935 under the authority of the Emergency Relief Appropriation Act of 1935. The NYA was essentially a recognition that prior federal programs of the early days of the New Deal had dealt inadequately with the employment and educational needs of American youth. Upon signing the order, President Roosevelt made the following statement, which reflected the national concern of parents, educators, labor, and industry on the problem of youth unemployment, and which set the broad administrative policy of the NYA:

> I have determined that we shall do something for the Nation's unemployed youth because we can ill afford to lose the skill and energy of these young men and women. They must have their chance in school, their turn as apprentices, an opportunity for jobs, and a chance to work and earn for themselves.
>
> In recognition of this great national need, I have established a National Youth Administration to be under the Works Progress Administration.
>
> This undertaking will need the vigorous cooperation of the citizens of the several States, and to insure that they shall have an important part in this.work, a representative group will be appointed to act as a national advisory board, with similar boards of citizens in the States and municipalities throughout the country. On these boards there shall be representatives of industry, labor, education, and youth, because I want the youth of America to have something to say about what is being done for them.
>
> Organizations along State and municipal lines will be developed. The work of these organizations will be to mobilize industrial, commercial, agricultural, and educational forces of the States so as to provide employment and to render other practical assistance to unemployed youth.
>
> It is recognized that the final solution of this whole program of unemployed youth will not be attained until there is a resumption of normal business activities and opportunities for private employment on a wide scale. I believe that the national youth program will serve the most pressing and immediate needs of that portion of unemployed youth most seriously affected at the present time.
>
> It is my sincere hope that all public and private agencies, groups, and organizations, as well as educators, recreational leaders, employers, and labor leaders, will cooperate

wholeheartedly with the National and State Youth Administrations in the furtherance of this national youth program.

The yield on this investment should be high. [87]

The major objectives of the NYA were formulated shortly after its creation, and they remained fundamentally unchanged throughout the life of the program. These objectives included:

1. To provide funds for the part-time employment of needy school, college, and graduate students so that they could continue their education.
2. To provide funds for the part-time employment of young people on work projects, the projects being designed primarily not only to give these young people valuable work experience but to benefit youth generally in the local communities.
3. To establish and to encourage the establishment of job training, counseling, and placement services for youth.
4. To encourage the development and extension of constructive educational and job-qualifying leisure-time activities.

Therefore, the National Youth Administration had just one basic purpose: to provide part-time work, paying wages, for two groups of young people throughout the country, youth who were in school but who needed financial assistance in order to continue their education, and youth who were out of school, unemployed, and needy. [88]

The NYA was in operation eight years, from June 26, 1935 to June 30, 1943. A total of $662,300,000 was expended, of which $467,600,000 went for the payment of wages for the employment of needy, unemployed, out-of-school youth, and $169,500,000 in wages to needy young persons in order that they might continue their education. This expenditure of federal funds enabled the employment of 4,800,000 young people, of whom 2,800,000 were given work experience and training on work projects producing useful goods and services, and 2,000,000 were school, college, and graduate students working in public and semi-public non-profit institutions. [89]

In Minnesota, $10,312,393 was expended for the out-of-school work program and $4,004.704 was spent on the student work program, for a total of $14,317,097. [90]

The various types of work activities conducted during fiscal year 1942 were categorized as follows on a nationwide basis:

Project Type	Percent
Construction	21.5
Production activities	34.5
Professional and clerical	44.0 [91]

Only 13.3% of construction activities were involved in building construction. As a result, few buildings were constructed in Minnesota by the National Youth Administration. Rare examples include the finely crafted log buildings at Bemidji State Park, which are already listed on the National Register, and the Stuntz Township Garage near Hibbing. However, a significant NYA construction undertaking was roadside improvement which was conducted throughout the state in cooperation with the Minnesota Department of Highways. Waysides, overlooks, and parking areas were constructed, historic markers were built, and natural roadside springs were developed. In addition, picnic tables and benches, refuse containers, fireplace grates, and directional markers were also constructed.

The Annual Report of the Accomplishments of Roadside Development Along the Trunk Highways in Minnesota for 1939 includes the following locations of NYA highway projects:

Brophy Lake
Eskos Corner Weighing Station
Frontenac
Trunk Highway 61 at Lake Pepin
Garfield Avenue in Duluth
Glencoe
Lexington Avenue and Trunk Highway No. 36
Mendota
Pine Bend
Reads Landing
Savage
Shakopee Camp Grounds
Shakopee - (five miles northeast of town)
Stillwater - (old prison grounds)

Stillwater - (north and south of town)
NYA Center -(Work Shop)

A particularly intact and well preserved wayside overlook is located just south of Stillwater, high above the St. Croix River. Finely crafted native stone was used in the construction.

Under the reorganization legislation effective July 1, 1939, the National Youth Administration was transferred from the Works Progress Administration to the newly created Federal Security Agency. Executive Order No. 9247, dated September 17, 1942, transferred the NYA to the War Manpower Commission in the Office for Emergency Management of the Executive Offices of the President. In the Labor-Federal Security Appropriation Act of 1944, Congress ordered the liquidation of the National Youth Administration no later than January 1, 1944.

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F. Associated Property Types

I. Name of Property Type _____

II. Description

III. Significance

IV. Registration Requirements

[X] See continuation sheet

[X] See continuation sheet for additional property types

G. Summary of Identification and Evaluation Methods

Discuss the methods used in developing the multiple property listing.

[X] See continuation sheet

H. Major Bibliographical References

[X] See continuation sheet

Primary location of additional documentation:

- [X] State historic preservation office
- [ ] Other State agency
- [ ] Federal agency
- [ ] Local government
- [ ] University
- [ ] Other

Specify repository: _____

I. Form Prepared By

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ASSOCIATED PROPERTY TYPES

I. NAME OF PROPERTY TYPE: **GOVERNMENT BUILDINGS**

II. DESCRIPTION

Government Buildings of the Depression Era are generally those buildings associated with the administration and operation of the federal, state, county, and municipal levels of government. This property type is divided into the following structural types:

A. POST OFFICES

Post office buildings represent the most visible federal presence in Minnesota communities and their frequent construction during the Depression Era produced a common structural type throughout the state. The construction of federal buildings, such as post offices, had been promoted prior to the Roosevelt Administration and many buildings were constructed under this earlier program, such as the Minneapolis Post Office which was begun by early 1933. However, once the Public Works Administration assumed sponsorship of post office construction for the Treasury Department later that same year, over three times as many buildings were constructed than had been built in the preceding 50 years. One new post office could be constructed in each congressional district each year and by 1939 the PWA had financed the construction of 406 post office buildings nationwide.

As early as 1915, post office construction had been standardized as a cost savings measure. Four classifications (A-D) were developed which determined the size and building material for a particular post office based on the level of annual postal receipts. For example, a Class A building indicated a significant site with annual receipts in excess of $800,000. In this case, the building materials might include marble or granite. However, a Class D building, with receipts of less than $15,000. would be built with brick with standard doors and sash. Standardization continued during the Depression with the design work generally

completed by architects of the Treasury Department such as Louis Simon. Typical standardized buildings with only minor modifications in design and materials include post offices in Grand Rapids, Hibbing, and Hastings. These buildings are one story structures constructed with brick with minimal stone trim.

All told a remarkable variety of designs were executed by Treasury Department architects as well as local architects which were employed on certain projects. Notable examples include the monumental Minneapolis Post Office built in the Moderne Style, the Collegiate Gothic post office in Northfield, and a post office in Park Rapids designed in the Georgian Revival Style.

B. COURTHOUSES

Only one known courthouse building was constructed by the federal work programs; the Becker County Courthouse in Detroit Lakes. This three story Moderne building occupies an entire city block and features polished marble trim. However, both the Kanabeck and Todd County Courthouses were expanded during the period and the Fillmore and Polk County Courthouses were remodeled. The Moderne Style Rice County Courthouse in Faribault was already under construction when the Public Works Administration was established, yet, the PWA allotted a grant for the completion of the building.

C. MUNICIPAL BUILDINGS

Municipal buildings, also known as city, town, or village halls, represent one of the most frequently constructed structural types from the period. These buildings are typically one story structures of moderate size, although a number of two story buildings were also constructed. Building materials include brick, stone and reinforced concrete, although frame construction was not uncommon. Stylistically, municipal buildings represent a range of designs from Moderne to split stone construction, with an occasional singular example such as the Bovey Village Hall which was built in the Baroque Revival Style.

Municipal buildings were often multi-functional, particularly when constructed in small communities. These buildings frequently combined any number of the following uses: office facilities, council chambers, libraries, auditoriums, meeting rooms with kitchen space, police stations, fire departments, and even post offices. Notable examples of this structural type were constructed in Bovey, Calumet, Milaca, Mahnomen, Hawley, New York Mills, Onamia, Roseau, and Buckman.

D. POLICE STATIONS AND FIRE DEPARTMENTS

Although often included within municipal buildings, Police Stations and Fire Departments were sometimes built as separate structures. These buildings are one or two story structures of brick, stone, or frame construction. Examples include a police station in Duluth and a fire hall in north Minneapolis.

E. WAREHOUSES AND GARAGES

Warehouses and garages were built for cities, counties, schools, hospitals, and forestry stations. These are often plain, utilitarian structures of varying size built with frame or brick construction. The most distinctive examples of this property type are constructed with native stone such as the Olmsted County Garage in Rochester and a school garage in Chisholm.

F. CEMETERY CHAPELS

A finely crafted split stone cemetery chapel and mausoleum was built at the Maple Hill Cemetery in Hibbing. The small structure was designed in Gothic Revival Style. Chapels were also constructed at Bagley and Bemidji.

G. MILITARY FACILITIES

A military facility is best defined by an armory building, however, this structural type also includes buildings and structures constructed at large scale military complexes such as Fort Snelling and Camp Ripley. Armory buildings are large, imposing structures, often with monumental proportions, which often occupy an entire city block. Building materials usually include reinforced concrete and structural steel, sometimes employed with innovative construction methods. Armory buildings were constructed in Minneapolis, Brainerd, Moorhead, Crookston, Albert Lea, and Camp Ripley.

Construction at Camp Ripley also included an entrance structure, a brigade headquarters building, a kitchen, an oil storage building, as well as grease racks and rifle butts.

III. SIGNIFICANCE

Government Buildings are historically significant for their association with the social, political, and economic impact of the Great Depression and the subsequent development of the various federal relief programs which were responsible for their construction. This unprecedented federal response often produced a building representing a city's first modern and complete municipal facility, which ultimately resulted in an expanded governmental presence in the community. Towns and villages, which had previously provided the services of only a fire department and jail, were able to offer libraries, auditoriums, and community rooms, which were used for a variety of social and civic functions, as well as complete public safety facilities, all of which enhanced the quality of life in the community.

The construction of a Government Building often provided substantial employment to the area and significantly reduced the number of residents receiving direct relief. The federal

assistance associated with these buildings established the precedent for direct federal allotments to municipal governments which we know today.

Government Buildings are architecturally significant as many of the most prominent and visually significant buildings in the community. A variety of well executed designs were constructed, including the prevailing styles of the day, as well distinctive architectural expressions associated with specific works programs, such as the Works Progress Administration. The programmatic requirements for such projects often resulted in the use of native building materials featuring irreplaceable labor intensive methods and finely crafted detailing.

IV. REGISTRATION REQUIREMENTS

The following criteria should be applied in order to place Government Buildings on the National Register of Historic Places:

1. The construction of a Government Building should have been financed through a grant or loan from the federal government, or federal funds should have been utilized for materials, labor, or supervision.

2. Construction should have been completed by the end of 1941.

3. Due to the large number of surviving resources, and because many Government Buildings may be considered historically significant for their association with the unprecedented federal response to the Great Depression, the following criteria should also be applied:

a. A Government Building should be eligible under National Register Criterion A by representing a particularly important project through the size and scope of the work involved, or by the number of people employed; or the project should represent a significant contribution to the community by providing a new and modern facility which offered programs, amenities, or community services which were previously unavailable. For example, a

municipal building which lacked architectural significance and which merely duplicated previously available services might not be considered eligible unless it provided significant employment. Or if this criteria is not met, the following criteria should be applied:

b. A Government Building should be eligible under National Register Criterion C for incorporating the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values. This criteria may be met if a building is constructed with finely crafted indigenous materials, a distinctive construction method often associated with specific federal work programs such as the Civilian Conservation Corps or the Works Progress Administration; or a building may be considered eligible if it contains art or sculpture which has been evaluated as artistically significant. For example, a post office designed in a distinctive example of the Collegiate Gothic Style may be considered eligible, however, a post office constructed utilizing a standardized federal design not may be eligible unless it represents a particularly important work relief project, or contains a mural of artistic significance. Or if this criteria is not met, the following criteria should be applied:

c. A Government Building should represent the only known example in the state of a particular category of resource within this property type, or one of the few remaining buildings associated with a specific work program. For example, a garage building may not be considered architecturally significant, yet, it may be eligible as one of the few examples of a complete building constructed by a work program such as the National Youth Administration; or a sole surviving example of a municipal building may be eligible for its ability to represent this historically significant building type.

4. A building constructed as part of a larger existing complex, such as a military facility, may not be considered eligible unless evaluated in terms of the broader contexts associated with the complex.

5. A Government Building should possess integrity of location, design, materials, workmanship, and association, and should be without substantial alterations. Original materials and prominent features should remain intact, and any alterations should be modest in scale without impacting or obscuring major facades, elements, or design features. A Government Building should represent new construction rather than an addition or expansion.

6. A building need not retain its original function if historic physical integrity is retained.

I. NAME OF PROPERTY TYPE: **PUBLIC UTILITIES**

II. DESCRIPTION

The construction of modern public utilities was one of the most popular projects of the period. In fact, over 50% of the initial Minnesota applicants for funding from the Public Works Administration included some provision for public utilities. This property type includes the following structural types:

A. WATERWORKS

Waterworks may include filtration and softening plants as well as standard water towers. Buildings are typically one story brick or stone structures with large industrial sash. Stylistically, these buildings are often plain and utilitarian, yet Moderne Style structures were also constructed such as the water softening plant in Little Falls, a filtration plant in Hallock, and a waterworks facility in Faribault.

B. POWER AND HEATING PLANTS

Like the waterworks facilities, heating and power plants are often large utilitarian structures which house substantial mechanical operations. Building materials usually include brick with minimal stone trim. Examples of this structural type include heating plants at Keewatin and Sleepy Eye.

C. SEWAGE TREATMENT PLANTS

The installation of sewers and the construction of sewage disposal plants was one of the standard projects of the Depression Era. These projects often represented the first modern sanitation facilities in a community. Although even as late as 1940 a surprising number of Minnesota municipalities were still without a sewage treatment plant.

Sewage treatment plants consist of a complex of buildings and structures built with brick, stone, or reinforced concrete. The small treatment plant at Perham was typical of those constructed in rural communities, while urban areas often constructed extensive facilities which represented some of the largest public works projects of the period. The massive Minneapolis and St. Paul Treatment Plant and sewer system, for example, was erected at a cost of approximately ten million dollars.

One of the most interesting projects in the state was the sewage treatment plant in Hibbing which included nine buildings and structures built in the Moderne Style. The two trickling filters were enclosed by self supporting reinforced concrete domes, 150 feet in diameter, which were among the largest of their type in the world.

III. SIGNIFICANCE

Public Utilities are historically significant for their association with the social, political, and economic impact of the Great Depression and the subsequent development of the various federal relief programs which were responsible for their construction. This unprecedented federal response provided many communities in the state with their first modern and complete utility systems. Public utility projects were among those most frequently requested throughout the entire Depression Era and studies from the period confirmed that the absence of sanitary facilities was commonplace throughout the state, a situation which improved dramatically throughout the 1930s.

Public utility projects were also a major source of work relief. The implementation or extension of sewer or water systems was a project which required minimal supervision, and which could be initiated almost immediately, without extensive planning. Some of the largest projects from the entire period involved the construction treatment plants built in cities ranging from Hibbing to Minneapolis and St. Paul.

From both an architectural and visual standpoint, utility systems are often overlooked. The major portions of a project may remain concealed beneath the earth and plants and treatment facilities are usually utilitarian in nature and located in remote areas of a town. Yet, a number of impressive complexes of buildings and structures were constructed, some of which represent interesting adaptations of the Moderne Style and several which exhibit engineering significance because of their innovative construction.

IV. REGISTRATION REQUIREMENTS

The following criteria should be applied in order to place Public Utilities on the National Register of Historic Places:

1. The construction of a Public Utility should have been financed through a grant or loan from the federal government, or federal funds should have been utilized for materials, labor, or supervision.

2. Construction should have been completed by the end of 1941.

3. Due to the large number of surviving resources, and because Public Utilities may be considered historically significant for their association with the unprecedented federal response to the Great Depression, the following criteria should also be applied:

a. A Public Utility should be eligible under National Register Criterion A by representing a particularly important project through the size and scope of the work involved, or by the number of people employed; or the project should represent a significant contribution to the community by providing modern utilities or sanitation facilities which were previously unavailable; or if this criteria is not met, the following criteria should be applied:

b. A Public Utility should be eligible under National Register Criterion C for incorporating the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values.

This criteria may be met if property is constructed with finely crafted indigenous materials, a distinctive construction method often associated with specific federal work programs such as the Works Progress Administration; or if this criteria is not met, the following criteria should be applied:

c. A Public Utility should represent the only known example of a particular category of resource within this property type, or one of the few remaining buildings associated with a specific work program.

4. A Public Utility which included a number of buildings or structures should retain sufficient elements from the project in order to convey a sense of the original scale and the functional relationships of the various components.

5. A Public Utility should possess integrity of location, design, materials, workmanship, and association, and should be without substantial alterations. Original materials and prominent features should remain intact, and any alterations should be modest in scale without impacting or obscuring major facades, elements, or design features. For example, a sewage treatment plant whose original components have been substantially replaced or obscured by new construction may not be considered ineligible. A Public Utility should also represent new construction rather than an addition or expansion.

6. A Public Utility need not retain its original function if historic physical integrity is retained. However, a heating or power plant which now serves as a garage may not be considered eligible if there is a complete loss of historic association. Similarly, a functional plant may not be eligible if it has been substantially enlarged in the modern era and all historic mechanical systems have been replaced.

I. NAME OF PROPERTY TYPE: **EDUCATIONAL FACILITIES**

II. Description

Education facilities represent one of the most important property types from the Depression era. In fact, educational building construction was the leading project type of the Public Works Administration. In Minnesota, the PWA sponsored the construction of 252 educational buildings or additions. Similarly, the Works Progress Administration built 216 schools or school additions and improved an additional 1,001 buildings. This property type includes the following structural types:

A. LIBRARIES AND MUSEUMS

Few library or museum buildings were constructed outside of primary or secondary schools or universities. However, one combined library and museum facility was built in New Ulm. This two story Moderne Style structure is built with a local cast stone known as artstone. The building features decorative grillwork and railings and a relief sculpture of a prairie schooner over the museum entrance. Library additions were also constructed, such as the expansion of the Grand Rapids Public Library which included a series of panels with low-relief sculpture on the principal facade. The Longfellow House in Minneapolis was restored as part of a WPA project and used as a library facility.

B. PRIMARY AND SECONDARY SCHOOLS

Representing perhaps the most frequently constructed building type by any of the federal work programs, primary and secondary schools were built throughout Minnesota. A typical building features brick and reinforced concrete construction, yet, a wide variety of designs and building materials were employed. Straightforward frame construction was common in rural areas such as the Baxter Township School in Crow Wing County, or the Grant Valley School in Beltrami County. Several rural school buildings, such as a school

in District 14 near Morris, feature labor intensive construction with local field stone. Perhaps the most distinctive school building of this type is the picturesque Rothsay School in rural Clay County which includes a wonderful bell tower. Small town schools were often one story Moderne Style structures such as the Adams and Jefferson Schools in Fergus Falls or schools in Norcross and Rockville. The John Clark School in Rockville was built entirely with granite from a local quarry. Large scale schools include buildings constructed in communities such as Winona, Pine Island, and Minneapolis. A typical building is South West High School in Minneapolis, which was built with brick and reinforced concrete. Additions were also frequently built, with gyms and auditoriums the most common type.

C. UNIVERSITY BUILDINGS

University buildings are generally large multi-story brick and reinforced concrete structures such as the Health Building at the Mankato Teacher's College. The largest collection of Depression Era university buildings in the state is located at the University of Minnesota in Minneapolis and St. Paul. The first building constructed was Pioneer Hall, a dormitory building, designed in the Georgian Revival Style. Other buildings include the Hydraulics Laboratory, located on the Mississippi River, the Museum of Natural History and the Union Building, both Moderne Style structures, the Journalism Building, the Health Sciences Building, an underground garage, a forestry building, and additional dormitories.

III. SIGNIFICANCE

Educational Facilities are historically significant for their association with the social, political, and economic impact of the Great Depression and the subsequent development of the various federal relief programs which were responsible for their construction. Educational Facilities represent one of the most frequently constructed property types of the Depression Era and one which impacted all areas of the state, from large urban centers to remote rural communities. Modern and complete

facilities were provided which often replaced inadequate, unsafe, and dilapidated buildings. Buildings were erected which included facilities considered essential in a modern educational program, such as auditoriums, gymnasiums, libraries, science laboratories, art and music rooms, and home economics and industrial arts facilities. In addition, small school districts were sometimes reorganized into larger administrative units in order to provide modern and efficient educational programs.

Educational Facilities are sometimes plain, utilitarian brick buildings which lack architectural distinction Yet, many well designed buildings were constructed which include the both the prevailing styles of the day as well as unique architectural expressions associated with specific work programs, such as the Works Progress Administration. The programmatic requirements for such programs often resulted in the use of native building materials, which feature irreplaceable labor intensive methods and finely crafted detailing.

IV. REGISTRATION REQUIREMENTS

1. The construction of an Education Facility should have been financed through a grant or loan from the federal government, or federal funds should have been utilized for materials, labor, or supervision.

2. Construction should have been completed by the end of 1941.

3. Due to the large number of surviving resources, and because many Educational Facilities may be considered historically significant for their association with the unprecedented federal response to the Great Depression, the following criteria should also be applied:

a. An Educational Facility should be eligible under National Register Criterion A by representing a particularly important project through the size and scope of the work involved, or by the number of people employed; or the project should represent a significant contribution to the community by providing a new and

modern building which offered programs, community services, or a physical environment which were previously unavailable. For example, this criteria could be met if a new building replaced a small school and now offered expanded facilities or opportunities. If this criteria is not met, the following criteria should be applied:

b. An Educational Facility should be eligible under National Register Criterion C for incorporating the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values. This criteria may be met if a building is constructed with finely crafted indigenous materials, a distinctive construction method often associated with specific federal work programs such as the the Works Progress Administration; or a building may be considered eligible if it contains art or sculpture which has been evaluated as artistically significant; or if this criteria is not met, the following criteria should be applied:

c. An Educational Facility should represent the only known example of a particular category of resource within this property type, or one of the few remaining buildings associated with a specific work program. For example, a sole surviving example of a library may be eligible for its ability to represent this historically significant building type.

4. A building constructed as part of a larger complex, such as a university, may not be considered eligible unless evaluated in terms of the broader context associated with that facility.

5. A building should possess integrity of location, design, materials, workmanship, and association, and should be without substantial alterations. Original materials and prominent features should remain intact, and any alterations should be modest in scale without impacting or obscuring major facades, elements, or design features. For example, a school with a modern addition may be considered eligible if the integrity of the original construction is not impaired. However, if the size of the addition exceeds the original building, of if it encloses a portion of the earlier structure, the building may not be eligible. A building which has been altered might be considered

eligible if the school represented an important relief project for the community or if the building contained art of sculpture which has been evaluated as artistically significant. A Educational Facility should also represent new construction rather than an additional or expansion.

6. A building need not retain its original function if historic physical integrity is retained.

I. NAME OF PROPERTY TYPE: **CONSERVATION STRUCTURES**

II. DESCRIPTION

Conservation structures were constructed throughout Minnesota in order to manage forests, wildlife, and the state's water resources. The WPA alone was responsible for more than 250 conservation projects. This property type is divided into the following structural types:

A. LAKES AND DAMS

Hundreds of dams were constructed throughout the state in order to provide a more dependable domestic water supply and more uniform flows for power production. Lakes or reservoirs were also created to control and store flood waters, which could be conserved in times of drought. The most common dam was the "Type C," a small structure usually constructed at the outlet of a lake. Examples of this type include the Keller Lake dam in St. Paul and the Lake Calhoun dam in Kandiyohi County. Larger scale projects include a dam which forms a small lake at the Oronoco State Wayside and the Silver Lake dam in Rochester.

One of the largest projects of the entire Depression Era was the 2.5 million dollar Lac qui Parle Flood Control Project which created a 40 mile long widening in the Minnesota River and included Big Stone, Swift, Chippewa, and Lac qui Parle Counties. Another major conservation project was the Tri-State Flood Control-Water Conservation Project which involved Minnesota, North Dakota, and South Dakota. This project, which was undertaken by the U.S. Army Corps of Engineers, had first been mentioned in 1892 and plans and surveys were begun in 1918, but it was not until the 1930s that the necessary legislation and monetary support was possible. The project included the 14,400 foot long White Rock Dam and control structure, six miles north of Wheaton, which created a large reservoir for storing flood waters. The dam maintained the level of Lake Traverse and could flood over 23,000

acres. A levee and diversion channel were also located near Browns Valley.

B. GAME FARMS

The Division of Game and Fish of the Department of Conservation constructed several game farms during the 1930s. A small farm was constructed at Madelia but the most extensive project of this type was the Carlos Avery Game Farm near Forest Lake. The game farm was located on the Carlos Avery Game Refuge, an 8,479 acre tract of land which had been acquired in 1933. A large complex of buildings was constructed which included two residences, a garage and power plant building, all frame construction with classical details, and two large shop and service buildings with picturesque dormers, gables, and cupolas. Approximately 20 structures for rearing game birds were also built. When the game farm was dedicated in 1938, it was considered one of the most modern and complete facilities of its kind in the nation.

C. FORESTRY STATIONS

Forestry Stations were constructed by both the Civilian Conservation Corps and the Works Progress Administration in state forests as well as urban settings where district headquarters were built, all for the Division of Forestry of the Department of Conservation. The most interesting examples of this structural type are the CCC constructed buildings, which sometimes featured rustic full-log construction, such as the Kabetogama Ranger Station in Kabetogama State Forest. Semi-rustic design, however, was more typical and was generally characterized by building methods which were considerable less labor intensive. Example include forestry stations at Bemidji, Hibbing, Park Rapids, Hackensack, Brainerd, and at Itasca State Park. Each station typically included an office building, with a projecting central bay, covered by a bracketed gable roof. These buildings were constructed with log siding resting on a rock-faced foundation. The interiors usually featured a split stone fireplace. Shops, garages, pump houses, lookout towers, and various service buildings were also constructed.

III. SIGNIFICANCE

Conservation Structures are historically significant for their association with the social, political, and economic impact of the Great Depression and the subsequent development of the various federal relief programs which were responsible for their construction. Conservation Structures represent the first large-scale, state-wide attempt to manage Minnesota's natural resources. These efforts include the establishment of Minnesota's first state forests, the development of the state park system, the construction of large scale dams and structures to control water resources, and the first state-wide effort involving wildlife propagation.

A number of Conservation Structures, such as dams, may embody engineering significant by representing the primary structure in a large-scale conservation project. However, the majority of Minnesota's conservation projects were constructed under the direction of the U.S. Forest Service and the National Park Service, agencies which had chosen the Rustic Style as the appropriate method of construction. For this reason, many Conservation Structures are architecturally significant as exceptional examples of Rustic Style architecture, a style which represents a distinctive and uniquely American architectural style possessing high artistic value. These log and stone constructed buildings feature irreplaceable labor intensive methods and finely crafted detailing based on the design philosophy of the supervising federal agencies.

IV. REGISTRATION REQUIREMENTS

The following criteria should be applied in order to place Conservation Structures on the National Register of Historic Places:

1. The construction of a Conservation Structure should have been financed through a grant or loan from the federal government, or federal funds should have been utilized for materials, labor, or supervision.

2. Construction should have been completed by the end of 1941.

3. Due to the large number of surviving resources, and because many Conservation Structures may be considered historically significant for their association with the unprecedented federal response to the Great Depression, the following criteria should also be applied:

a. An Conservation Structure should be eligible under National Register Criterion A by representing a particularly important project through the size and scope of the work involved, or by the number of people employed; or the project should represent an accomplishment in the field of conservation through a significant effort to manage the state's natural resources. For example, an artificial lake might not be considered eligible unless it was associated with a significant conservation effort or a larger recreational development. If this criteria is not met, the following criteria should be applied:

b. A Conservation Structure should be eligible under National Register Criterion C for incorporating the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values. This criteria may be met if a building is constructed with finely crafted indigenous materials, a distinctive construction method often associated with specific Federal work programs such as the the Civilian Conservation Corps or the Works Progress Administration. For example, a minor dam might be ineligible unless it demonstrated engineering significance or was constructed with finely crafted indigenous materials. Or if this criteria is not met, the following criteria should be applied:

c. A Conservation Structure should represent the only known example of a particular category of resource within this property type, or one of the few remaining buildings or structures associated with a specific work program.

4. A Conservation Structure constructed as part of a larger complex, such as a forestry station or game farm, may not be considered eligible unless a sufficient number of components survive from the original facility which can interpret the historic function of the property. For example, a forestry station would not be considered eligible if only one building of a larger complex survived. However, that individual building might be considered eligible if it represented a significant example of the Rustic Style, such as a building with full-log construction.

5. A Conservation Structure should possess integrity of location, design, setting, materials, workmanship, and association, and should be without substantial alterations. For example, a dam which has been largely reconstructed in the modern era may not be considered eligible. A Conservation Structure should represent new construction rather than an addition or expansion.

6. A building or structure need not retain its original function if historic physical integrity is retained.

I. NAME OF PROPERTY TYPE: **SOCIAL AND RECREATIONAL FACILITIES**

II. DESCRIPTION

Social and Recreational Facilities were one of the most prevalent property types of the period. An increase in leisure time and the impact of the automobile increased both the mobility of the American family and the demand for recreational facilities. The WPA alone was responsible building or improving 358 parks, 513 playgrounds and athletic fields, and 30 swimming pools. This property type includes the following structural types:

A. AUDITORIUMS AND COMMUNITY BUILDINGS

Dozens of Auditoriums and Community Buildings were constructed across the state, although they vary considerably in design, scale, and building materials. They range from large scale structures built in Willmar, Deerwood, Red Lake Falls, and Beardsley, to modest facilities constructed in Perley and Gully. Styles include frame construction with simple classical details, straightforward brick construction, Moderne Style structures, and a large number of building which utilized native materials. This last group remains the most distinctive and individual within this structural type as a result of finely crafted labor intensive construction. Squared or split field stone was employed in auditoriums and community buildings in Moorhead, Flom, Oakport, and Deerwood while quarried stone was used in the community building in Stewartville. These buildings may only contain an auditorium or meeting room, but many were multi-functional such as the Deerwood Auditorium which included a library and fire hall.

B. SPORTS AND RECREATION STRUCTURES

The largest buildings within this structural type are arenas such as the Winter Sports Arena in Crookston or the sprawling frame arena building in Bemidji. A variety of recreation structures of

moderate size were also very common. These include field houses, recreation centers, and golf course clubhouses. These buildings were usually brick but native stone was sometimes used and a number of frame structures with minimal stone trim were also constructed. Examples include the Wheeler and Memorial Field Houses in Duluth, recreation buildings in Anoka, Thief River Falls, and Columbia Heights, and gold course clubhouses in Rochester and Hibbing.

Stadiums and grandstands were also constructed, typically in conjunction with athletic fields. These range from utilitarian bleachers built at the Coleraine High School a and covered baseball grandstand with stone sidewalls at Chisholm, to a sports stadium in International Falls with a large relief sculpture depicting the virtue of sports. Miscellaneous structures were also built such as a ski jump and toboggan slide in St. Paul. One year the WPA even sponsored the construction of the Ice Palace for the St. Paul Winter Carnival.

C. SWIMMING POOLS AND BATHHOUSES

Swimming Pools and Bathhouses were a very popular project during the Depression Era. Pools range from small wading pools built in a number of Minneapolis city parks to the more common large scale structures which were built, for example, in Springfield or Pipestone. Bathhouses were usually built in conjunction with swimming pools and were typically characterized by rustic construction or the use of native materials. Examples include cut stone bathhouses at Hawley and Highland Park in St. Paul, or the monumental bathhouse in Marshall which is capped with a pyramidal roof. A Moderne Style bathhouse was built in New Ulm, yet, the most unusual example from the period is perhaps the bathhouse pavilion in Rochester. Built in the Colonial Revival Style, this large pavilion includes a central section complete with a decorative cupola which is flanked by wings connected by covered passageways.

D. PARKS AND PARKWAYS

Park construction and improvements range from a 2.5 million dollar expenditure in Minneapolis to the construction of modest shelter buildings in small communities. The unifying factor, however, was the inevitable use of native materials and labor intensive building methods. The National Park Service and the U.S. Forest Service considered rustic architecture the appropriate style for construction in state and national parks and forests, and perhaps these agencies influenced the proliferation of this style on a state-wide basis.

A large scale building program was also conducted in St. Paul where buildings were constructed at Minnehaha, Baker, and Hamline Playgrounds. A colorful pink Mankato stone was utilized in construction which had been salvaged from abandoned piers in the Mississippi River. Particularly well developed park facilities were built in a number of communities. Silver Lake Park in Rochester features a stone shelter and sanitation building, a picturesque frame constructed recreation building, and three finely crafted stone foot bridges. Montevideo Park in Montevideo includes a recreation building with full log construction, a bathhouse and a shelter building, both built with a combination of log and stone, and two stone vehicular bridges. Alexander Ramsey City Park in Redwood Falls, which was formerly a state park, includes shelter and sanitation buildings, stone curbing, and a swayback bridge, all built with stone. Nearby Birch Coulee Memorial Park includes a finely crafted stone arched bridge A wide variety of buildings were constructed including kitchen shelters, pumphouses, and service and support buildings. Bandstands were sometimes constructed as well, such as in a city park in Cannon Falls.

A notable small rural park is Beltrami County Park near Bemidji. The park contains a T-shaped dining hall which features unusual full log palisade construction and a finely crafted split stone fireplace.

Parkway construction and improvement was undertaken in Minneapolis with stone faced bridges constructed along Minnehaha Parkway and a series of stairs, bridges, and retaining walls along the West River Road.

E. ZOOS

Three zoo complexes were constructed in Minnesota by the federal work programs. The Duluth Zoo includes a number of split or squared stone animal houses as well as Rustic Style foot bridges. The most prominent feature at the Como Zoo in St. Paul is a Moderne Style building constructed with stone. A small zoo was also included in the Montevideo Park and contains a number of rustic buildings and structures.

F. STATE AND COUNTY FAIR BUILDINGS

Construction at state and county fairgrounds ranges from the addition of a single building to the construction of large scale complexes. Notable buildings and structures at county fairgrounds include a log conservation building at the Itasca County Fairgrounds, a grandstand and stone exhibition building at the Olmsted County Fairgrounds, a story and a half stone and frame exhibition building with gabled dormers at the Lincoln County Fairgrounds, and a complex of six buildings and one structure at the Mahnomen County Fairgrounds.

However, the most impressive collection of buildings is located at the State Fair Grounds in St. Paul. The first Depression Era building to be built was the Conservation Building, constructed with milled logs from the Page and Hill Company, which was built by the State Emergency Relief Administration. Later construction by the WPA was decidedly Moderne in Style and featured poured concrete construction. Notable buildings include the Swine Barn, Horse Barn, Poultry Barn, Arcade and Commissary Building, and the 4-H Building. The grandstand was also expanded.

G. WAYSIDES AND OVERLOOKS

Waysides and Overlooks were built to increase the recreational qualities and enjoyment of the state's highways. Overlooks include those structures built to take advantage of a scenic landscape. They are usually paved with stone flagging and are defined by a stone wall with semi-circular projections allowing for an optimum view. Waysides may contain large parking areas, shelters, and sanitation buildings.

The CCC built a number of overlooks along the North Shore of Lake Superior located at the Knife, Temperance, Gooseberry, and Cascade Rivers. In each case, a wall built with native stone defines the overlook. Dozens of additional waysides and overlooks were built by the WPA and the NYA, such as the Watson Wayside near Montevideo, which includes shelter and sanitation buildings, overlooks near Milaca and Stillwater, and the Oronoco State Wayside which includes a finely detailed sanitation building.

The most important wayside project from the period was the extensive Mille Lacs Lake Highway Wayside project by the Civilian Conservation Corps which included development at several locations around the lake. The most prominent structure is a massive stone overlook, resembling a fortress, which projects into Lake Mille Lacs at Garrison. Additional construction included a kitchen shelter, three stone-faced bridges, and a smaller overlook on a nearby lake. Designs were completed for additional buildings and structures which were never executed.

III. SIGNIFICANCE

Social and Recreational Facilities are historically significant for their association with the social, political, and economic impact of the Great Depression and the subsequent development of the various federal relief programs which were responsible for their construction. Social and Recreational Facilities often provided the focus for the social, civic, cultural, and recreational activities within a community. These were often the first well-developed facilities of their type. Their development

was a response to the demand for social and recreational activities as a result of the impact of the automobile and the increasing leisure time of the American people. Facilities administered by state agencies represent the first state wide efforts to provide state owned and centrally administered recreational areas to a large segment of the population.

Social and Recreational Facilities are architecturally significant as outstanding examples of the use of native building materials in the construction process. These include significant examples of the Rustic Style as well as finely crafted masonry construction. Parks, parkways, and waysides are often significant for incorporating the principles of landscape architecture into the design process in an attempt to achieve non-intrusive and environmentally sensitive development.

IV. REGISTRATION REQUIREMENTS

The following criteria should be applied in order to place Social and Recreational Facilities on the National Register of Historic Places:

1. The construction of a Social or Recreational Facility should have been financed through a grant or loan from the federal government, or federal funds should have been utilized for materials, labor, or supervision.

2. Construction should have been completed by the end of 1941.

3. Due to the large number of surviving resources, and because many Social and Recreational Facilities may be considered historically significant for their association with the unprecedented federal response to the Great Depression, the following criteria should also be applied:

a. A Social or Recreational Facility should be eligible under National Register Criterion A as a particularly important project through the size and scope of the work involved, or by the number of people employed; or the project should represent a

significant contribution to the community by providing a new and modern facility which offered programs, amenities, recreational activities, or community services which were previously unavailable; or if this criteria is not met, the following criteria should be applied:

b. A Social or Recreational Facility should be eligible under National Register Criterion C for incorporating the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values. This criteria may be met if a building is constructed with finely crafted indigenous materials, a distinctive construction method often associated with specific Federal work programs such as the Civilian Conservation Corps or the Works Progress Administration; or a building may be considered eligible if it contains art of sculpture which has been evaluated as artistically significant. For example, a recreational building featuring unusual full log palisade construction may be considered eligible, however, an undistinguished stone shelter building may not. Similarly, a wayside defined by only a low split stone wall may not be eligible. Or if this criteria is not met, the following criteria should be applied:

c. A Social or Recreational Facility should represent the only known example of a particular category of resource within this property type, or one of the few remaining buildings associated with a specific work program.

4. A building or structure constructed as part of a larger complex, such as a park, parkway, wayside, or zoo, may not be considered eligible unless the original landscape design and spatial and functional relationships remain intact. In such cases, the property should be nominated as an historic district. In addition, grandstands, ski jumps, and other sports structures might not be eligible unless they represent components of a larger sports complex or demonstrate architectural or engineering significance. Similarly, a single building constructed at a park or fairgrounds may not be eligible, yet, there may be situations where sufficient components exist to form an historic district.

5. A Social or Recreational Facility should possess integrity of location, design, materials, workmanship, and association, and should be without major alterations. Original materials and prominent features should remain intact, and any alterations should be modest in scale without impacting or obscuring major facades, elements, or design features. For example, a stone bath house might be considered ineligible because the accompanying swimming pool has been infilled. A building or structure should represent new construction rather than an additional or expansion.

6. A building or structure need not retain its original function if historic physical integrity is retained.

I. NAME OF PROPERTY TYPE: **INSTITUTIONAL BUILDINGS AND SOCIAL WELFARE PROJECTS**

II. DESCRIPTION

Institutional Buildings and Social Welfare Projects include those buildings and structures associated with institutional facilities and social welfare programs. This property type is divided into the following structural types:

A. HOSPITALS

Hospital buildings were constructed in several communities in the 1930s. Moderate size two story brick structures with stone trim were built in Warroad, Glenwood, and Sleepy Eye. A one story building constructed at Bigfork (now razed) was the first modern medical facility in the community. Additions were also built, such as the expansion of the Itasca Memorial Hospital in Grand Rapids.

State facilities were also expanded during the period. A four story infirmary was built at the State Soldiers Home, and new buildings were constructed at the Ramsey County Children's (Tuberculosis) Preventorium, and the Cambridge and St. Peter State Hospitals. The federal government constructed a building for Indian patients at the State Sanatorium for Consumptives at Ah-Gwah-Ching (Walker).

Yet, the largest Depression Era work relief project undertaken at a state hospital was the fourth state hospital for the insane at Moose Lake, built as a PWA project in 1936-38. This complex of massive brick buildings features a rather sombre interpretation of the Colonial Revival Style and represents one of the largest PWA projects in the state.

B. COUNTY HOMES

A A County Home for the indigent was built in Grand Rapids by the Public Works Administration. The building is a plain two story brick structure.

C. HOUSING PROJECTS

Large scale housing projects involving slum clearance were promoted by the Public Works Administration on a nationwide basis. However, due to a variety of legal problems, the responsibility for housing was later turned over to other governmental agencies.

One PWA development was the 3.5 million dollar Sumner Field Housing Project constructed in Minneapolis. A 23 acre site was cleared and 694 housing units were built in the form of rather plain two story brick apartments and row houses. All units were required to have cross-ventilation, running water, private baths, and a central heating plant; community buildings, and stores were also built, all arranged around landscaped open spaces. The PWA designed standard floor plans with specified minimum square footage for each room which were used long after the housing program came to an end. Housing projects were also contemplated for both St. Paul and St. Cloud.

A housing project was also built in Duluth by the Subsistence Home Division of the U.S. Department of the Interior. Forty units with seven different plans were constructed. A housing project was also built in Austin.

D. WORK CAMP BUILDINGS AND STRUCTURES

This structural type includes those buildings and structures constructed to house relief workers and to conduct the operation of various work projects. Such work camp facilities were built by the Civilian Conservation Corps, the State Emergency Relief Administration, and the Works Progress Administration. With the exception of those camps operated by the CCC, work camps were

usually built to house transient men. The camps usually included barracks, mess halls, recreation buildings, latrines, maintenance and equipment buildings, offices, and staff quarters. However, because work camp buildings were considered temporary or even portable, few examples survive outside of state parks and national forests. Several foundations and a fireplace survive from one of the Minnesota Valley work camps located near Fort Snelling and a WPA camp at Lake Shetek, although no longer in state hands, is now used as a church camp. Additional examples may be identified within Minnesota's state forests.

III. SIGNIFICANCE

Institutional Buildings and Social Welfare Projects are historically significance for their association with the social, political, and economic impact of the Great Depression and the subsequent development of the various federal relief programs which were responsible for their construction. Institutional Buildings and Social Welfare Projects are significant for providing services which ranged from the first permanent hospitals to transient camps, facilities which may have been previously unavailable. Completely new institutional complexes were constructed and existing facilities were expanded and modernized. These activities established the precedent for federal responsibility for the administration of human services. They also represent the federal government's first attempt to provide public housing and to address the unemployment problem through work camp environments.

Institutional Buildings and Social Welfare Projects are architecturally significant as prominent and visually significant buildings based on the philosophy of institutional care during the Depression Era. Work camp buildings and structures are significant as the few surviving resources associated with such Depression Era programs.

IV. REGISTRATION REQUIREMENTS

The following criteria should be applied in order to place Institutional Buildings and Social Projects on the National Register of Historic Places:

1. The construction of an Institutional Building or Social Welfare Project should have been financed through a grant or loan from the federal government, or federal funds should have been utilized for materials, labor, or supervision.

2. Construction should have been completed by the end of 1941.

3. Because many Institutional Buildings and Social Welfare Projects may be considered historically significant for their association with the unprecedented federal response to the Great Depression, the following criteria should also be applied:

a. An Institutional Building or Social Welfare Project should be eligible under National Register Criterion A as a particularly important project through the size and scope of the work involved, or by the number of people employed; or the project should represent a significant contribution to the community by providing a new and modern facility which offered programs or services which were previously unavailable; or if this criteria is not met, the following criteria should be applied:

b. An Institutional Building or Social Welfare Project should be eligible under National Register Criterion C for incorporating the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values. This criteria may be met if a building is constructed with finely crafted indigenous materials, a distinctive construction method often associated with specific federal work programs such as the Works Progress Administration; or a building may be considered eligible if it contains art of

sculpture which has been evaluated as artistically significant; or if this criteria is not met, the following criteria should be applied:

c. A Institutional Building or Social Welfare Project should represent the only known example of a particular category of resource within this property type, or one of the few remaining buildings associated with a specific work program.

4. A building or structure constructed as part of a larger complex, such as hospital facility or housing project, may not be considered eligible unless the original design and spatial and functional relationships remain intact. In such cases, the property should be nominated as an historic district. In addition, a building constructed within an existing complex may need to be evaluated in terms of the broader context of that facility. For example, a building constructed at an existing hospital or sanatorium complex may not be considered eligible until it has been evaluated under the broader context associated with that facility. However, a newly constructed complex may be eligible as an historic district. Similarly, a large housing project may be considered eligible if a significant portion of the complex remains intact. If this surviving portion can depict the original design and configuration, the property may be nominated as an historic district.

5. An Institutional Building or Social Welfare Project should possess integrity of location, design, materials, workmanship, and association, and should be without substantial alterations. Original materials and prominent features should remain intact, and any alterations should be modest in scale without impacting or obscuring major facades, elements, or design features. For example, a hospital with a large addition which is unsympathetic to the original construction may be considered ineligible. A building should represent new construction rather than an additional or expansion.

6. A building need not retain its original function if historic physical integrity is retained.

7. Due to the scarcity of surviving work camps, any extant buildings associated with a Civilian Conservation Corps or Transient Relief Administration camp should automatically be considered eligible for the National Register. Minimal physical integrity may be acceptable if the building still reflects the design features usually associated with work camp buildings, such as straightforward frame construction with horizonal or vertical siding, gable roofs with a low pitch, and small pane casement sash. In addition, if sufficient footings or foundations walls exist from the majority of a camp's buildings (which would usually total approximately fifteen) and these structures can interpret the operation of the camp, the property should be nominated as an historic district.

I. NAME OF PROPERTY TYPE: **TRANSPORTATION SYSTEMS**

II. DESCRIPTION

Projects involving Transportation Systems comprise one of the largest components of the federal work programs. Their importance actually increased late in the period when attention was focused on defense projects in preparation for World War II. This property type is divided into the following structural types:

A. HIGHWAYS, STREETS, AND SIDEWALK PROJECTS

Highway, street, and sidewalk construction accounted for the largest share of federal expenditures from the period. The WPA alone constructed 578 miles of sidewalks, and built or improved 28,000 miles of roads. This represents over one-third of the entire WPA expenditure for the state.

B. AIRPORT FACILITIES

Landing fields were built at St. Paul, Springfield, Grand Marais, Slayton, Baudette, Warroad, Duluth, and Camp Ripley. Hangars were constructed at Marshall and Bemidji. Concrete runways were built at Wold Chamberlain Field in Minneapolis and a Moderne Terminal Building was constructed at Holman Field in St. Paul.

III. SIGNIFICANCE

Transportation Systems are historically significant for their association with the social, political, and economic impact of the Great Depression and the subsequent development of the various federal relief programs which were responsible for their construction. Transportation Systems are also significant for

providing a major expansion of both the size and quality of the state's highway system. Transportation Systems also provided a major source of work relief. Highway construction, for example, was a project which required minimal supervision, and which could be initiated almost immediately, without extensive planning.

Highways may be architecturally significant for incorporating the principles of landscape design in the construction process.

IV. REGISTRATION REQUIREMENTS

The following criteria should be applied in order to place Transportation Systems on the National Register of Historic Places:

1. The construction of a Transportation System should have been financed through a grant or loan from the federal government, or federal funds should have been utilized for materials, labor, or supervision.

2. Construction should have been completed by the end of 1941.

3. Because many Transportation Systems may be considered historically significant for their association with the unprecedented federal response to the Great Depression, the following criteria should also be applied:

a. A Transportation System should be eligible under National Register Criterion A by providing a particularly important change in the existing transportation pattern. This may be represented by a newly developed farm-to-market road which may have provided year-around connections across routes which were previously impassable for portions of the year, a highway incorporating the principles of landscape design into the construction process, a road system developed for a specific purpose such as providing improved access to the resort areas of the state, or an airport which was newly developed or significantly expanded; or if this criteria is not met, the following criteria should be applied:

b. A Transportation System should be eligible under National Register Criterion C for incorporating the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values. A highway may be eligible because of a significant landscape design; or if this criteria is not met, the following criteria should be applied:

c. A Transportation System may be eligible for listing on the National Register if it represents the only known example in the state of a particular category of resource within this property type, or one of the few remaining projects associated with a specific work program.

4. A Transportation System should possess integrity of location, design, setting, materials, workmanship, feeling, and association. A highway should retain the essential features that identify it as such. However, because pavement is an inherently fragile component that is routinely covered over and replaced, original pavement is not a requirement although it would be considered a desired feature. In addition, an airport runway should retain the original length and configuration. Nominated highway segments should also be of sufficient length to convey the feeling and setting of a continuous road. The setting should reflect the general character of the period of significance.

5. A Transportation System consisting of a number of resources, such as an airport with a runway and terminal building, may not be considered eligible unless a sufficient number of components survive from the original facility which can interpret the historic function of the property.

6. A Transportation System need not retain its original function if historic physical integrity is retained.

SUMMARY OF IDENTIFICATION AND EVALUATION METHODS

The Multiple Property Documentation Form entitled Federal Relief Construction in Minnesota, 1933-1941 was developed in order to analyze the broad context of federally assisted Depression Era construction beyond those resources already evaluated in a previous Multiple Property Documentation Form entitled Minnesota State Park CCC/WPA/Rustic Style Historic Resources. In addition to this previous document, bridge construction from the period had also been analyzed and a State-Owned Building Survey completed by the State Historic Preservation Office in 1986 also referenced a variety of federal relief projects.

This study began with a library search which revealed a lack of comprehensive information concerning federal relief construction in Minnesota. As a result, the State Archives within the Archives and Manuscripts Division of the Minnesota Historical Society were reviewed to determine which collections might yield contextual information about the period under consideration. It was found that detailed reports and administrative files documented Depression Era activities of a number of state agencies such as the Department of Conservation, the Department of Highways, and the State Board of Control, which were all major recipients of federal assistance. In addition, administrative files of the Works Progress Administration were also located, as well as the personal papers of several key individuals within that agency. The National Archives was also contacted in order to determine which records might be found within that repository.

Specific information about federal relief construction was found within the existing country survey files of the State Historic Preservation Office, in publications from the period by agencies such as the Public Works Administration and the Works Progress Administration, and from a regional construction periodical entitled the Improvement Bulletin. The Improvement Bulletin proved to be an invaluable source of information by providing detailed accounts of the establishment and operation of nearly every federal relief program involved in construction. The rules and regulations for each program were published and sample application forms were included and described. Nearly every

construction project from the period was noted along with the federal program which provided assistance. Project descriptions documented the significance of all but forgotten work programs such as the State Emergency Relief Administration.

Limited field work was also completed in order to identify important federal relief projects. This phase of the project revealed that nearly every community surveyed contained some type of federally assisted construction. A remarkable variety of property types were also identified. Individuals directly associated with these activities were also interviewed.

Based on this information, it was determined that one historic context would be developed which would examine the six most significant work programs from the period. Seven property types associated with these contexts as well as 29 corresponding structural types were also identified. Registration requirements for these properties were rather restrictive due to the large number of surviving resources. The standards of integrity for these properties were based on National Register standards for assessing integrity.

Seven National Registers Nominations are being prepared in conjunction with this Multiple Property Documentation Form for properties which document the more important federal relief programs from the period and the most significant property types constructed.

Rolf T. Anderson, who completed this study, has a B.A. in Architecture from the University of Minnesota.

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REGIONAL OFFICES
PUBLIC WORKS ADMINISTRATION

NOV. 1, 1937

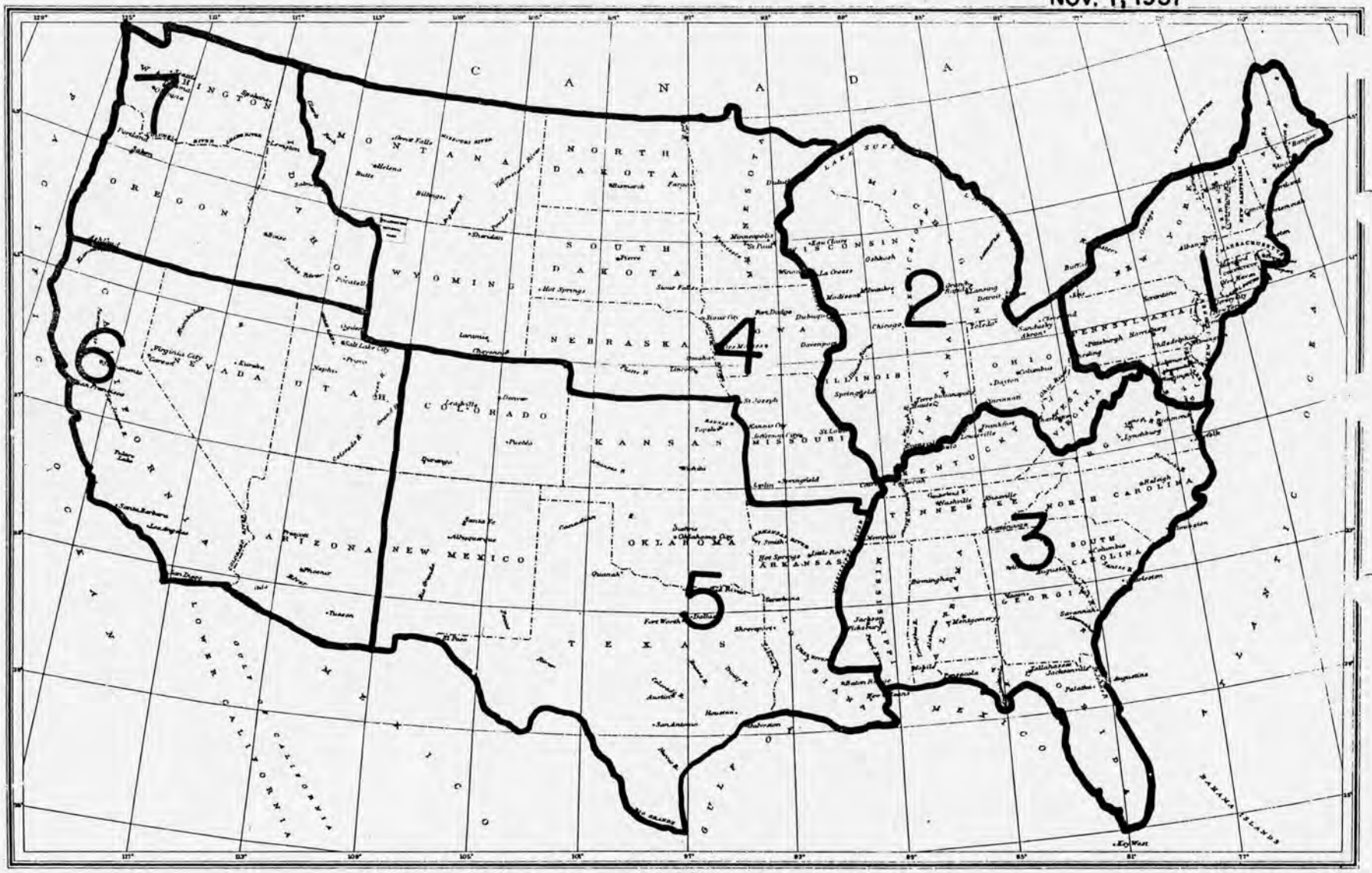

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Exhibit I

FEDERAL EMERGENCY RELIEF ADMINISTRATION

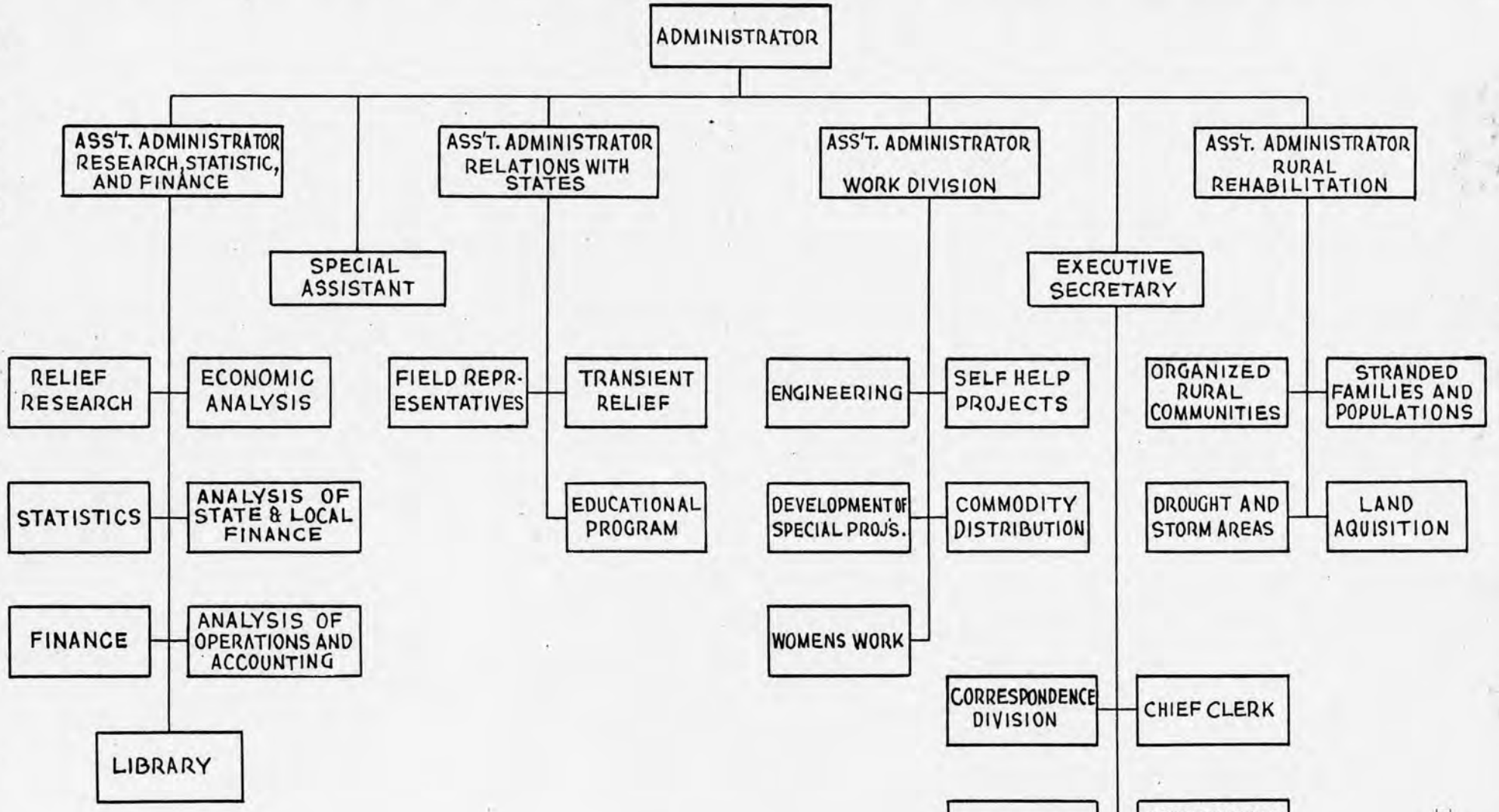
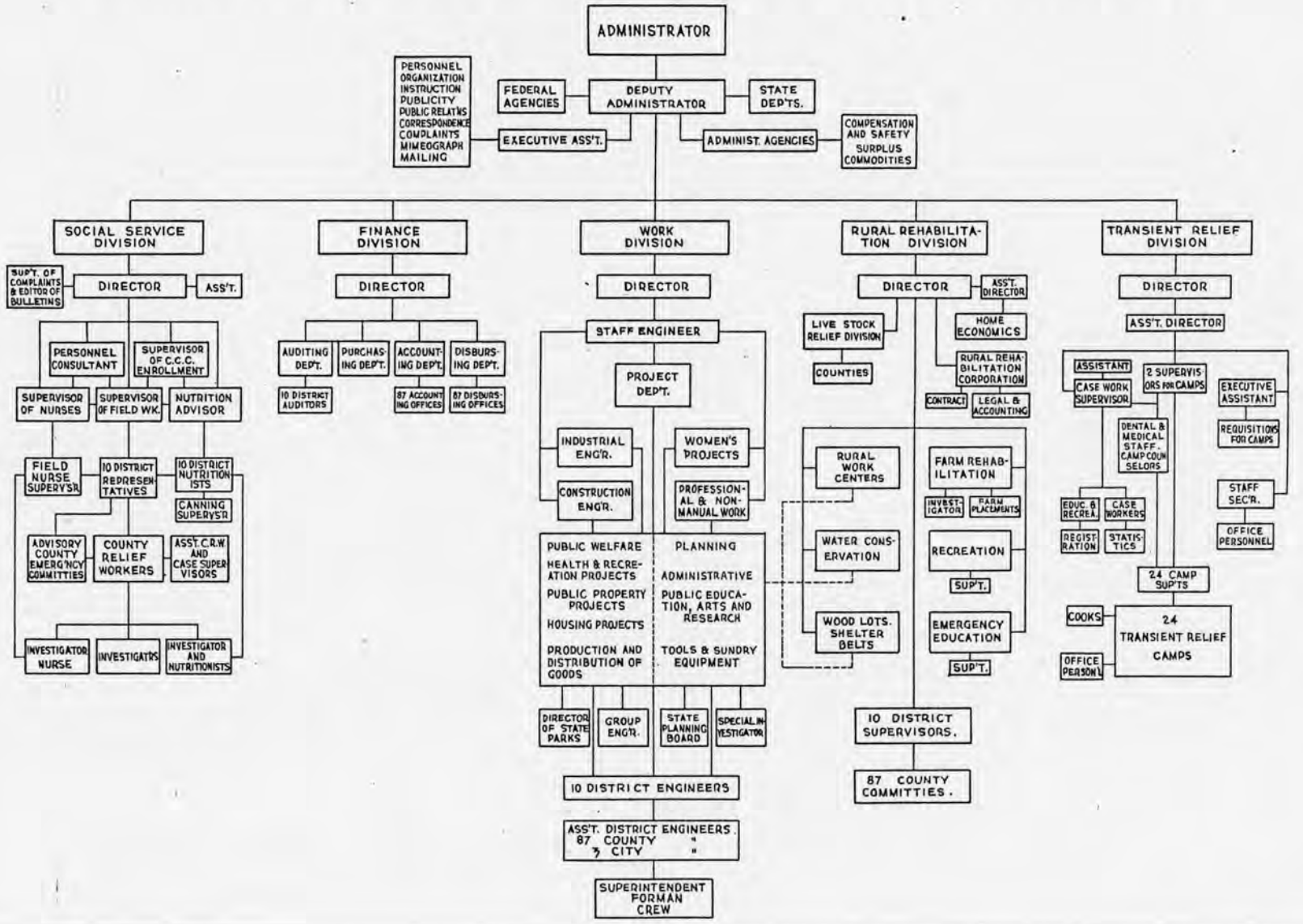


Exhibit II

C.L. 1-17-35

MINNESOTA EMERGENCY RELIEF ADMINISTRATION ~ ORGANIZATION CHART



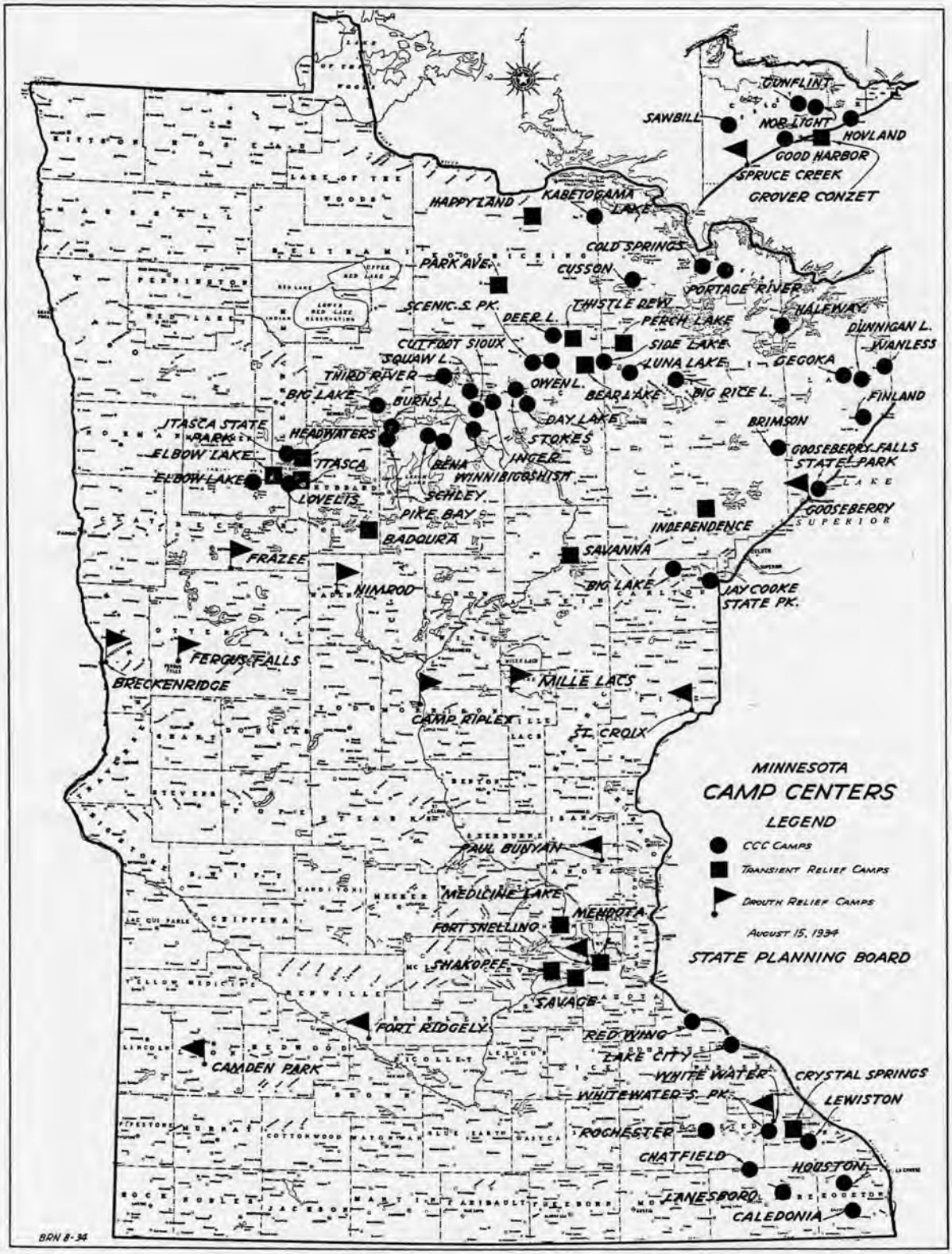

MINNESOTA
CAMP CENTERS
LEGEND
CCC CAMPS
TRANSIENT RELIEF CAMPS
DROUTH RELIEF CAMPS
AUGUST 15, 1934
STATE PLANNING BOARD
GUNFLINT
SAWBILL
NOB LIGHT
HOVLAND
GOOD HARBOR
SPRUCE CREEK
GROVER CONZET
HAPPYLAND
KABETOGAMA LAKE
COLD SPRINGS
PARK AVE.
CUSSON
PORTAGE RIVER
SCENIC S. PK.
THISTLE DEW
DEER L.
PERCH LAKE
NALEWAY
DUNNIGAN L.
IVANLESS
CUTFOOT SIOUX
SQUAW L.
SIDE LAKE
LUNA LAKE
GEGOKA
THIRD RIVER
OWEN L.
BEAR LAKE
BIG RICE L.
FINLAND
BIG LAKE
BURNS L.
DAY LAKE
BRIMSON
ITASCA STATE PARK
HEADWATERS
STOKES
ELBOW LAKE
ITASCA
BENA
INGER
GOOSEBERRY FALLS STATE PARK
ELBOW LAKE
WINNIBIGOSHISH
LOVELL'S
SCHLEY
GOOSEBERRY
PIKE BAY
INDEPENDENCE
BADOURA
SAVANNA
FRAZEE
NIMROD
BIG LAKE
JAY COOKE STATE PK.
FERGUS FALLS
BRECKENRIDGE
MILLE LACS
CAMP RIPLEY
ST. CROIX
PAUL BUNYAN
MEDICINE LAKE
MENDOTA
FORT SNELLING
SHAKOPEE
SAVAGE
FORT RIDGELY
RED WING
LAKE CITY
CAMDEN PARK
WHITE WATER
CRYSTAL SPRINGS
WHITEWATER S. PK.
LEWISTON
ROCHESTER
CHATFIELD
HOUSTON
LANESBORO
CALEDONIA
BRN 8-34

Exhibit IV

NPS Form 10-900-a
(8-86)

OMB Approval No. 1024-0018

6/28/91

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Section number _____ **Page** _____

Federal Relief Construction in Minnesota MPS

		Date Listed
COVER	Substantive Review	8/12/91
1. Avery, Carlos, Game Farm	Substantive Review	8/9/91
2. District School No. 182	Entered in the National Regist-	8/9/91
3. Willmar Auditorium	Entered in the National Registe-	8/9/91
4. Hibbing Disposal Plant	Entered in the National Registe-	8/9/91
5. Bovey Village Hall	Entered in the National Registe-	8/15/91

National Register of Historic Places

Note to the record

Additional Documentation: 1994

NPS Form 10-900-b
(June 1991)

OMB No. 1024-0018

United States Department of the Interior
National Park Service

National Register of Historic Places Multiple Property Documentation Form

This form is used for documenting multiple property groups relating to one or several historic contexts. See instructions in *How to Complete the Multiple Property Documentation Form* (National Register Bulletin 16B). Complete each item by entering the requested information. For additional space, use continuation sheets (Form 10-900-a). Use a typewriter, word processor, or computer to complete all items.

___ New Submission __X__ Amended Submission

A. Name of Multiple Property Listing

Federal Relief Construction in Minnesota, 1933-1941

B. Associated Historic Contexts

(Name each associated historic context, identifying theme, geographical area, and chronological period for each.)

Federal Relief Programs in Minnesota, 1933-1941

C. Form Prepared by

name/title Rolf T. Anderson

organization _____ date August 30, 1993

street & number 212 W. 36th Street telephone 612/824-7807

city or town Minneapolis state Minnesota zip code 55408

D. Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR Part 60 and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation. (☐ See continuation sheet for additional comments.)

Sam Marler — 3 June 1994

Signature and title of certifying official — Date

U.S. Fish and Wildlife Service

State or Federal agency and bureau

I hereby certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.

Beth Boland — 9/19/94

Signature of the Keeper — Date of Action

Table of Contents for Written Narrative

Provide the following information on continuation sheets. Cite the letter and the title before each section of the narrative. Assign page numbers according to the instructions for continuation sheets in *How to Complete the Multiple Property Documentation Form* (National Register Bulletin 16B). Fill in page numbers for each section in the space below.

Page Numbers

NPS Form 10-900-a
(8-86)

OMB Approval No. 1024-0018

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Multiple Property Documentation Form:

Section number D Page 1 Federal Relief Construction in Minnesota, 1933-1941

Amended Submission: Included in this amendment is a chapter entitled:

VII. The Resettlement Administration
Section E, pages 79-94

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR Part 60 and the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation.

Ian R. Stewart 11/20/94

Signature and title of certifying official Ian R. Stewart Date
Deputy State Historic Preservation Officer

Minnesota Historical Society
State or Federal agency and bureau

D. Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR Part 60 and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation.

Signature and title of certifying official

7/29/94
Date

U.S. Fish and Wildlife Service
State or Federal agency and bureau

VII. The Resettlement Administration

The Resettlement Administration was established by President Franklin D. Roosevelt on April 30, 1935 by Executive Order No. 7027 which stated:

> By virtue of and pursuant to the authority vested in me under the Emergency Relief Appropriation Act of 1935, approved April 8, 1935 (Public Res. No. 11, 74th Cong.), I hereby establish an agency within the Government to be known as the "Resettlement Administration", and appoint Rexford G. Tugwell, Under Secretary of Agriculture, as administrator thereof, to serve without additional compensation.
>
> I hereby prescribe the following functions and duties of the said Resettlement Administration to be exercised and performed by the Administrator thereof:
>
> (a) To administer approved projects involving resettlement of destitute or low-income families from rural and urban areas, including the establishment, maintenance, and operation, in such connection, of communities in rural and suburban areas.
>
> (b) To initiate and administer a program of approved projects with respect to soil erosion, stream pollution, seacoast erosion, reforestation, forestation, and flood control.
>
> (c) To make loans as authorized under the said Emergency Relief Appropriation Act of 1935 to finance, in whole or in part, the purchase of farm lands and necessary equipment by farmers, farm tenants, croppers, or farm laborers.
>
> In the performance of such duties and functions the Administrator is hereby authorized to employ the services and means mentioned in subdivision (a) of section 3 of said Emergency Relief Appropriation Act of 1935, to the extent therein provided, and, within the limitations prescribed by said section, to exercise the authority with respect to personnel conferred by subdivision (b) thereof.

To the extent necessary to carry out the provisions of this Executive order the Administrator is authorized to acquire, by purchase or by the power of eminent domain, any real property or any interest therein and improve, develop, grant, sell, lease (with or without the privilege of purchasing), or otherwise dispose of any such property or interest therein.

The acquisition of articles, materials, and supplies for use in carrying out any project authorized by this Executive order shall be subject to the provisions of title III of the Treasury and Post Office Appropriation Act, fiscal year 1934 (47 Stat. 1489, 1520).

For the administrative expenses of the Resettlement Administration there is hereby allocated to the Administration from the appropriation made by the Emergency Relief Appropriation Act of 1935 the sum of $250,000. Separate allocations will be made hereafter for each of the authorized activities as may be needed.

The fundamental purpose of the Resettlement Administration was to attack the problem of chronic rural poverty. To head this program Roosevelt chose Rexford G. Tugwell, the Undersecretary of Agricultural and a former economics professor at Columbia University, who had persistently proposed solutions for permanent land reform. Tugwell believed that exhausted lands should be taken out of production and fatigued farmers should either be relocated on more productive land or encouraged and helped to enter industry. With over one million farm families on relief, efforts to maintain marginal farmers on their submarginal lands was pointless, and these lands could be best converted to new, economically viable uses. Here was an opportunity for experimentation in land-use planning, cooperative farming, community planning, massive retirement of lands, and the restoration of life to exhausted people.[92]

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[92]Sidney Baldwin, Poverty and Politics: The Rise and Decline of the Farm Security Administration. (Chapel Hill: The University of North Carolina Press, 1968), p. 88.

A number of New Deal programs, including the Agricultural Adjustment Administration, the Federal Emergency Relief Administration, and the Division of Subsistence Homesteads of the Department of the Interior, had already begun to address these problems. However, it was clear that not one of these agencies offered any real promise of effectively dealing with farm poverty. It was hoped that the Resettlement Administration could offer a concentrated approach, and all existing related programs were transferred to the new agency. On April 30 Roosevelt transferred the land program of the Federal Emergency Relief Administration to the Resettlement Administration and on May 15 he transferred the Division of Subsistence Homesteads. The Land Policy Section of the Agricultural Adjustment Administration was moved to the Resettlement Administration on June 1, furnishing many of the personnel for continuing the submarginal land program. On June 30 the Rural Rehabilitation Division of the Federal Emergency Relief Administration, including the state corporations and communities, was transferred.

The Resettlement Administration was thus a repository for a multitude of New Deal programs. It had the task of carrying on rural relief or rehabilitation, of continuing the whole land utilization program, and of continuing and extending the New Deal community building program through both rural and urban resettlement. Rural rehabilitation was soon to include loans to individuals, loans to cooperatives, grants to destitute farmers, and a debt-adjustment program. An additional problem was the care of migratory works. An editorial comment on the order creating the Resettlement Administration might have read, "To rearrange the earth and the people thereof and devote surplus time and money, if any, to a rehabilitation of the Solar System."[93]

The agency began with a staff of 12 employees on May 1, 1935 but by the end of the year it employed 16,386 people, 3,524 in the Washington office and 12,862 scattered around the country. Of these, 4,200 came from nine different agencies. In seven months the Resettlement Administration became a major federal agency which, in terms of size, scope, and cost, was rivaled only by the

93Paul K. Conkin, Tomorrow A New World: The New Deal Community Program. (Ithaca: Cornell University Press, 1959), p. 153.

Veteran's Administration and the Departments of Treasury, War, Post Office, Navy, Interior, and Agriculture.[94] Twelve regional offices were also established, with Minnesota located in Region II along with Wisconsin and Michigan. Small offices were set up in each state and in most counties.

The Resettlement Administration was organized into the following four main divisions:

Rural Rehabilitation - This division included five closely related programs; a standard loan program based on combining credit and farm and home planning; an emergency grant program for subsistence needs; a feed and seed loan program; a farm debt adjustment program designed to assist the farm debtor and his creditor in reaching an equitable settlement; and a cooperative loan program to assist client families in organizing or participating in various kinds of cooperative enterprises.

Land Utilization - This division was responsible for planning and executing a program of submarginal land retirement and improvement involving more than 275 land acquisition projects providing for the eventual purchase of 20 million acres of land and the resettlement of more than 20,000 dislocated farm families.

Rural Resettlement - This division was considered a complement to the land utilization program since the families occupying the purchased lands had to be relocated. The Rural Resettlement division established a variety of model rural communities, individual farms, small garden home projects for farm laborers, and migratory labor camps.

A total of 37 rural and urban communities were initiated by the Resettlement Administration, which also inherited 34 communities from the Division of Subsistence Homesteads and 28 communities initiated by the Federal Emergency Relief Administration, only a few of which had been completed before their transfer to the RA. Nearly 11,000 housing units were constructed in the 99 planned communities.

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[94]Baldwin, p. 103.

Suburban Resettlement - The Suburban Resettlement division constructed three model suburban communities for low-income city workers and farmers which were named Greenbelt, near Washington, D.C.; Greenhills near Cincinnati, Ohio; and Greendale, near Milwaukee, Wisconsin. A fourth community, Greenbrook, near New Brunswick, New Jersey, was never completed as a result of a lawsuit by a local group which opposed the project. Rexford Tugwell had long been interested in the concept of satellite cities and he wrote in 1935 that, "My idea is to go just outside centers of population, pick up cheap land, build a whole community and entice people into it. Then go back into the cities and tear down whole slums and make them parks." The offices for Suburban Resettlement were located in the Evelyn Walsh McLean mansion on Massachusetts Avenue in Washington, D.C. From its high-ceilinged rooms with brocaded walls and marble emerged the brilliant conception of the Greenbelt towns, complete garden suburb communities, protected by encircling belts of farm and woodland, easily accessible to cities, but with the space and tranquillity of the countryside.[95]

Twelve additional divisions were also established to provide technical and managerial support including Management, Construction, Special Plans, Legal, Public Health, Procedure, Information, Labor Relations, Business Management, Personnel, Investigation, and Finance and Control.

After one year in operation, the Resettlement Administration had spent or obligated $205,000,000. Its many activities were documented in the First Annual Report, a 173 page publication with dramatic photographs, a fifty-three page statistical section, and a multi-colored pictorial map. The report also described a documentary film completed by the agency entitled, "The Plow That Broke the Plains." The film was selected by the Museum of Modern Art Film Library as the finest documentary ever made by the federal government.

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[95]Arthur M. Schlesinger, Jr., The Age of Roosevelt: The Coming of the New Deal. (Boston: Houghton Mifflin Company, 1958), pp. 370-71.

However, as early as late summer 1935, the Resettlement Administration already found itself under attack. Particularly among those who opposed the New Deal, the activities of the Resettlement Administration were considered threatening to "the American way of life" and cooperative farms and industries were called "communistic." Much hostility was directed to the resettlement projects and the model communities. Senator Harry F. Byrd of Virginia, for instance, condemned what he believed were silly extravagances and costly absurdities, such as electricity, refrigerators, factory-made furniture, and indoor plumbing for "simple mountain people." Senator McKellar of Tennessee criticized the agency for constructing "wonderfully fine stone houses or mansions" on top of the Cumberland Mountains, and he resented the idea of a relief worker "living in a stone mansion very much handsomer that I ever lived in in my life." Projects were also attacked due to haste in planning, expensive experimentation in construction methods, and relatively high housing standards, all of which tended to increase construction costs.[96] Some resettlement projects were economic failures, particularly "stranded communities" where the RA provided not only housing but also attempted to develop sources of employment and attract industry. The most controversial of these projects was Arthurville, a community for unemployed coal miners at Reedsville, West Virginia. The lawsuit over Greenbrook was also problematic. Some of the criticism was completely unwarranted because many of the projects had been initiated by the agencies which preceded the Resettlement Administration, but the RA become the easiest target. Existing governmental agencies involved with agriculture were resentful of the Resettlement Administration since it appeared it would become a permanent agency, and organizations representing well-established farmers criticized the assistance provided to low-income farm families. Finally, there was the problem of legitimacy. The Resettlement Administration was operating largely as a result of presidential directive rather than legislative authorization.

The Resettlement Administration reacted to these criticisms by shifting its primary emphasis away from land reform and resettlement to rural rehabilitation, in which farmers would be

[96]Baldwin, pp. 106-111.

assisted on their present lands. Existing model communities were completed but no new projects were initiated. It had already been recognized that large scale land acquisition and retirement was costly and difficult, and many people were reluctant to relocate. Accordingly, the infiltration method of resettlement became favored in which farmers were settled on scattered individual sites, rather than on farm colonies or model communities, and this was the case in all of Minnesota's rural resettlement projects. Tugwell himself had questioned the merits of subsistence homesteads, which combined part-time employment with part-time farming, wondering whether they would truly result in permanent solutions. By June 1936 this shift was well underway with 536,302 active rural rehabilitation client families, representing more than two million farm people, approximately 8 per cent of the total farm population in the United States. The agency had expended approximately 95 million dollars on the program, which was 60 per cent of the total budget for the year.[97] As of June 30, 1936, there were 34,578 Rural Rehabilitation clients in Minnesota.

However, the criticism continued, with much of it directed at Tugwell, possibly the most controversial member of the Roosevelt administration. Tugwell resigned as head of the Resettlement Administration on December 31, 1936 and named his deputy administrator, Dr. Will W. Alexander, to replace him. At the same time the Resettlement Administration was transferred into the Department of Agriculture, in part, to provide the agency with a measure of legitimacy. Concurrently, attention was focusing on the problem of the tenant farmer, representing two out of every five farmers in the United States, and who faced chronic insecurity. A special Presidential Committee on Farm Tenancy endorsed the initial work of the Resettlement Administration in this area but called for an expanded organization within the Department of Agriculture which would continue land retirement, resettlement, and rehabilitation, but would also purchase land and sell it to qualified tenants. The community housing program, however, was eliminated. The tenant-purchase program was authorized by the Bankhead-Jones Act which passed both houses of Congress in July 1937. On September 1, 1937 the Farm Security Administration was established to carry out the program. This was

[97]Baldwin, p. 108.

in actuality the Resettlement Administration under a different name for the personnel remained unchanged and the work on current projects continued. The Farm Security Administration continued the resettlement and rehabilitation programs while the Land Utilization Division returned to its old home in the Bureau of Agricultural Economics, also in the Department of Agriculture. However, at least in Minnesota, the land utilization aspect of a number of the resettlement projects, such the Pine Island and Beltrami Island Projects, was completed under the direction of the Soil Conservation Service rather than directly by the BAE. Alexander continued as head of the Farm Security Administration but was later replaced by C. B. Baldwin, who had been an assistant administrator under Tugwell. Both men visited the northern Minnesota resettlement projects in July 1937. Baldwin remained with the FSA until 1943 and thus Tugwell's philosophical vision remained somewhat in place until that time. In 1946 the Farm Security Administration was abolished and replaced by the Farmers Home Administration.

A wide variety of projects were undertaken in Minnesota by the Resettlement Administration and its predecessors, including housing, resettlement, and land utilization projects. One of the earliest projects to have been contemplated was reported in the Improvement Bulletin on January 26, 1934 and involved the establishment of ten settlements in the Superior National Forest, each for 200 families, complete with schools, stores, a post office and community building. This subsistence homestead project was described by the regional forester from Milwaukee and was estimated to cost two million dollars, although it not believed that the project ever left the drawing board. The following projects are among those which were completed in the state:

Housing

Austin Acres - This project was initiated by the Division of Subsistence Homesteads of the Department of the Interior and was described in the Improvement Bulletin on March 2, 1934 with the following article:

> The Federal Subsistence Homestead Bureau will loan $125,000 to Austin Homesteads, Inc., to finance the purchase of land now under option and the construction of low-cost houses to be built adjacent to Austin. Fifty well-built homes will be constructed and sold to working men on long amortization plans. The homes will each be accompanied by from three to five acres of land, depending on the size of the family. The cost will average $46.75 per acre. Approximately 40 acres will be set aside for community purposes, including a park, a common pasture and a wood-lot.
>
> There exists a shortage of well-built low-cost houses in Austin. Prior to the granting of the loan, Victor Christgau and Jay Hormel discussed it at Washington with Dr. M. L. Wilson (the director of the Division of Subsistence Homesteads) of Bozeman, Mont.

The purpose of the project was to provide affordable housing to industrial workers who might be unable to purchase their own homes. Income would be supplemented by gardening or small-scale farming through which the homeowners could meet a significant portion of their subsistence needs. The project was unique in that it was located near a one-factory town and for its sponsorship by the president of that factory, George A. Hormel of the Hormel meat packing company. Seventy per cent of the homesteaders at Austin were to be Hormel employees. This reflected the belief by the Division of Subsistence Homesteads that it was necessary to cooperate with industry in setting up part-time farming, part-time industrial communities.

Eighteen buildings had been constructed when the Resettlement Administration assumed responsibility for completion of the project. Forty-four units were ultimately constructed at a total cost of $213,227.87, or a unit cost of $4,846.[98] The First Annual Report of the Resettlement featured a photograph of a homesteader at Austin Acres canning home grown vegetables in her new kitchen.

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[98]Conklin, p. 333.

Albert Lea Acres - This project was initiated by the Federal Emergency Relief Administration and included 14 housing units on 5 acre tracts of land with a total project cost of $38,160.68, or a unit cost of $2,726.00. Of the 99 New Deal communities constructed nation-wide, only one other project was constructed for a lower unit cost. Like Austin Acres, this project was considered an industrial community which combined employment with subsistence farming.

Duluth Homesteads: - The third of Minnesota's housing communities was originated by the Division of Subsistence Homesteads, although not much more than land acquisition had been completed by the time the project was transferred to the Resettlement Administration. The RA completely redesigned the project and substantially improved the quality of design and construction. The First Annual Report of the Resettlement Administration described the project as follows:

> ...Duluth Homesteads is located in St. Louis County about 7 miles from the business center of Duluth, Minn. The Government now owns 400 acres of land on which it had been proposed to build about 40 homesteads. Some work had been done prior to the establishment of the Resettlement Administration. Shallow wells had been dug, and a bisecting road approximately 1 mile long had been grated. Upon investigation and with the approval of the Administrator, this Division (Special Plans) has designed four types of houses. These houses will contain from two to four bedrooms, will be brick veneer exterior, will contain basements and heating plants, and will utilize the wells which have already been dug. Individual septic tanks and sewage disposal fields will be provided for each house. Plots will vary in size from 5 to 10 acres. At present, the land is covered with second growth timber, and 1 acre on each plot has been cleared as a garden plot. In this first unit, there will be a total of 40 houses....

> As a second unit, it is proposed to purchase approximately 800 additional acres, developing such an acreage along the same lines as outlined above except as to the grouping of the houses.

A total of 84 units were constructed at a cost of $983,984.30, or a unit cost of $11,714.00. However, as was the case with many of the housing projects, it was likely that the homesteaders paid a lesser amount. The Duluth Homesteads, as well as the communities in Austin and Albert Lea, are believed to have been relatively successful financially, unlike many of the New Deal community projects.

Resettlement and Land Utilization

St. Croix Recreational Demonstration Area - This was one of 46 Recreational Demonstration Areas in the United States whose purpose was to demonstrate how large tracts of submarginal agricultural lands could be converted into prototypical state parks which could serve the urban population.[99] The initial land acquisition was begun by the Federal Emergency Relief Administration, but once the Resettlement Administration was established the project area was significantly enlarged with an allocation of $126,000 which was used to purchase an additional 19,000 acres, resulting in a total project area of over 27,000 acres. However, once the land purchase was complete, the entire project was turned over to the National Park Service for development. In addition, it is believed that only seven families were relocated from the lands. The National Park Service developed an extensive recreation area utilizing the labor of the CCC and WPA which constructed over 150 Rustic Style buildings and structures including three group camp facilities.[100]

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[99]The most famous of the Recreational Demonstration Areas was called Shangri-la during the Roosevelt Administration and later named Camp David.

[100]Additional information concerning the St. Croix RDA is found in the Multiple Property Documentation Form entitled, "Minnesota State Park CCC/WPA/Rustic Style Historic Resources," and the associated National Register nominations for the park.

Beltrami Island Project - Representing the state's largest known project in resettlement and land utilization, the Beltrami Island Project was an extensive federal relief effort encompassing a 740,000 acre tract of land located in Beltrami, Roseau, and Lake of the Woods Counties. The project involved the relocation of hundreds of settlers from submarginal agricultural lands, the restoration of those lands to their natural condition, and the establishment of economic stability for the area through the development and management of forestry, wildlife, and recreational resources. The project was the first of the demonstration resettlement projects in the United States to begin the actual removal of its settlers and it became a pioneer experiment in settler relocation and land-use planning. The Resettlement Administration was assisted by every major federal relief program of the Depression Era including the State Emergency Relief Administration (SERA), the Works Progress Administration (WPA), and the Federal Emergency Administration of Public Works (PWA). Through resettlement, the financial position of the settlers was improved and the project relieved the serious financial problems encountered by the adjacent county governments through the reduction of tax delinquency, relief payments, and by facilitating the centralization of public services. Significant employment was also generated with an average of over 500 men employed in 1936, 400 in 1937, and 200 to 300 between 1938 and 1942. A total of 80,616.92 acres of land was purchased by the federal government.[101]

Pine Island Project - This project, which was also involved in resettlement and land utilization, was located to the east of the Beltrami Island Project in Koochiching County and actually shared the same administrative staff. The project area of 816,000 acres was actually larger than Beltrami Island, however, in terms of the number of settlers relocated and the land development activities, it appears the project was no more than half the size of Beltrami Island. The settlers for both projects were relocated using the infiltration method which placed the families on scattered sites rather than on a centralized farm community.

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[101]For a complete history of the Beltrami Island Project, refer to the National Register Nomination for the Norris Camp.

Mud Lake Project - This project was located in Marshall County and like the Pine Island and Beltrami Island Projects, settlers were relocated from submarginal agricultural lands which had once been wetlands that were drained. The Resettlement Administration completed the purchase of 60,172 acres at a cost of $368,153.60 and relocated 50 to 60 homesteaders. The lands purchased by the federal government were contiguous and efforts were undertaken to restore the original wetlands to their natural condition. The area became the Mud Lake National Wildlife Refuge which was later renamed the Agassiz National Wildlife Refuge.

Rice Lake Project - This project involved the purchase of 7,786.21 acres of land by the Resettlement Administration at a cost of $36,786.35. The area became the Rice Lake National Wildlife Refuge. It is not known if any settlers were relocated.

Additional projects were planned in Pope and Marshall Counties although it is possible that long-term loans may have been the extent of the assistance provided by the Resettlement Administration. Land acquisition may have occurred in Becker County for the Tamarac National Wildlife Refuge.

One of the most remarkable legacies of the Resettlement Administration is a collection of 107,000 captioned prints and 210,000 negatives which were taken between 1935 and 1943 by the Historical Section of the Information Division. This section was headed by Roy Emerson Stryker, who had been a student of Rexford Tugwell's at Columbia University and later his colleague in the economics department. In the 1920s, Tugwell, Stryker, and Thomas Munro co-authored an innovative textbook entitled American Economic Life and the Means of Its Improvement. The book made extensive use of photographs selected by Stryker and helped develop his strong interest in visual images.

The purpose of the Historical Section was to promote the activities of the Resettlement Administration through photographic documentation, and three classifications of photographic activities were defined: service, information, and historical record. Service functions included meeting in-house needs such as providing other divisions with charts, drawings, exhibits, enlargements of plans, models, architect's drawings, as well as

photographs showing the construction progress on the Resettlement Administration's projects. Information activities involved filling requests for photographs from magazines, newspapers, and publishers. The purpose of the historical record is perhaps the most intriguing from an historical standpoint and may reveal both Stryker's and Tugwell's long-range vision:

> The historical and documentary function is fulfilled not only in keeping a record of the administration's projects, but also in perpetuating photographically certain aspects of the American scene which may prove incalculably valuable in time to come. Especially is this true of the rural scene, where a sympathetic and accurate record of all its phases is being made.[102]

Roy Stryker sent Paul Carter, one of the staff photographers, to northern Minnesota in 1936 to cover the Pine Island and Beltrami Island Projects. When commenting on the difficulty of capturing the problems of stranded settlers on film, Stryker wrote:

> "Isolated schoolhouses and roads serving a limited number of people are very expensive items for the taxpayers of any county to maintain. This offers one of the best arguments for Resettlement, particularly so when one or two families living in an isolated region necessitate the maintenance of roads and schoolhouses. We need pictures to illustrate this situation."[103]

Carter's photographs of Beltrami Island capture many touching images of the living conditions of the isolated settlers. While in Minnesota, he also photographed Austin Acres. John Vachon, who was to become one of the Historical Section's most talented photographers, visited Minnesota in 1939 and 1941. During the visit in 1939 he photographed the Northern Minnesota Pioneer Home in Spooner, which housed older lumberjacks and farmers who had been displaced by the Beltrami Island Project. The photographs

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[102]Resettlement Administration, First Annual Report. (1936), P. 97.

[103]Robert L. Reid, Picturing Minnesota 1936-1943: Photographs from the Farm Security Administration. (St. Paul, Minnesota Historical Society Press, 1989), p. 32.

from this later period, as well as those by other staff photographers, emphasized the rehabilitation of farm families on the project lands through assistance in the form of loans and expert advice and began to feature life in cities and small towns. In Minnesota these photographs featured a wide variety of subjects including lumber camps, the iron mines, migrant families, and scenes from the Twin Cities. Jack Delano, who joined the staff in 1940 called the project "a search for the heart of the American people." This extensive collection of photographs, which is presently identified within the Library of Congress as the Farm Security Administration-Office of War Information Collection, was praised by Edward Steichen, one of America's most respected photographers, as "the most remarkable human documents that were ever rendered in pictures."[104]

A overall assessment of the Resettlement Administration is somewhat problematic because of the various administrative and organizational changes which occurred, and because of the criticism which surrounded the agency. The Resettlement Administration was the most controversial of the New Deal programs and yet perhaps the most distinctive with its ambitious program of reform that was intended to reshape the face of rural and urban America. The community program attracted the majority of the criticism, although the 99 communities provided modern housing for nearly 11,000 families and their construction and management offered direct and indirect employment for thousands of workers. In spite of their problems, they represent the remarkable vision of their creators, which is even recalled in the title of a contemporary account by Paul K. Conkin entitled, Tomorrow a New World: The New Deal Community Program. From a financial standpoint, Minnesota's housing communities may be among the most successful of these efforts. The three greenbelt towns represent the most significant communities of the New Deal and remain a monument to Rexford G. Tugwell's work in the Resettlement Administration. They were the most original and ambitious experiments in public housing in the United States and represent the culmination of the garden city movement in America.[105]

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[104]Reid, pp. 1-2.
[105]Conkin, p. 305.

Approximately 20,000 dislocated farm families were resettled, hundreds of thousands received assistance from the Rural Rehabilitation Division, and the serious problems of the migrant worker were addressed.

Yet, little analysis is available on the land utilization projects when compared with the housing communities, even though they involved more than 275 acquisition projects providing for the purchase of approximately 20 million acres of land. However, in his summation on the Resettlement Administration, Arthur Schlesinger commented, "The Resettlement Administration was doing as much as it could. In perhaps its most important work, RA's Land Utilization Division bought up many millions of acres of submarginal land and transferred them to states or to the Park or Forest Services to be converted into pasture or forest."[106] These projects are well-represented in Minnesota with examples such as the outstanding development at the St. Croix Recreational Demonstration Area and the extensive conservation efforts and land-use planning of the Beltrami Island Project. Together with the subsistence housing projects, the Resettlement Administration left its imprint across Minnesota with a variety of landscapes from the New Deal.

[106]Schlesinger, p. 380.

National Register of Historic Places

Note to the record

Additional Documentation: 2002

NPS Form 10-900-b
(Revised March 1992)

OMB No. 1024-0018

United States Department of the Interior
National Park Service

National Register of Historic Places Multiple Property Documentation Form

This form is used for documenting multiple property groups relating to one or several historic contexts. See instructions in *How to Complete the Multiple Property Documentation Form* (National Register Bulletin 16B). Complete each item by entering the requested information. For additional space, use continuation sheets (Form 10-900-a). Use a typewriter, word processor, or computer to complete all items.

___ New Submission __x__ Amended Submission

A. Name of Multiple Property Listing

Federal Relief Construction in Minnesota, 1933-1941

CO4-805

B. Associated Historic Contexts

(Name each associated historic context, identifying theme, geographical area, and chronological period for each.)

Federal Relief Programs in Minnesota, 1933-1941

C. Form Prepared by

name/title Susan Granger, Scott Kelly and Kay Grossman

organization Gemini Research date December, 2001

street & number 15 E. 9th Street telephone 320/589-3846

city or town Morris state Minnesota zip code 56267

D. Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR Part 60 and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation. (☐ See continuation sheet for additional comments.)

Signature and title of certifying official Ian R. Stewart Date 7/23/02

Deputy State Historic Preservation Officer

State or Federal agency and bureau Minnesota Historical Society

I hereby certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.

Edson H. Beall

Signature of the Keeper Date of Action 9/6/2002

Table of Contents for Written Narrative

Provide the following information on continuation sheets. Cite the letter and the title before each section of the narrative. Assign page numbers according to the instructions for continuation sheets in *How to Complete the Multiple Property Documentation Form* (National Register Bulletin 16B). Fill in page numbers for each section in the space below.

Page Numbers

II. THE CIVILIAN CONSERVATION CORPS, CONTINUED

ROADSIDE DEVELOPMENT

Section E, pages 95-101

Section F, pages 39-44

Section G, page 3

Section H, pages 6-8

As the designated authority under the National Historic Preservation Act, I hereby certify that this amendment to the Federal Relief Construction in Minnesota, 1933-1941, Multiple Property Documentation Form meets the National Register documentation standards and sets forth requirements consistent with the National Register Criteria. This submission meets the procedural and professional requirements set forth in 36 CFR Part 60 and the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation.

Ian R. Stewart 7/23/02

Signature and title of certifying official Date

Ian R. Stewart
Deputy State Historic Preservation Officer

Minnesota Historical Society
State or Federal agency and bureau

II. THE CIVILIAN CONSERVATION CORPS, CONTINUED

ROADSIDE DEVELOPMENT

Roadside development is a field of landscape architecture and highway design that is concerned with roadway safety and aesthetics. The Civilian Conservation Corps was one of at least five New Deal federal relief agencies that helped the Minnesota Department of Highways (MHD) in its first large-scale effort to construct roadside development facilities in Minnesota.

Although some local governments in the U.S. had been landscaping streets and roads since at least the 1870s, it was not until around 1912 that "highways" received similar attention in the country's first roadside development projects. Among the early projects that drew national recognition were roadside improvements in Westchester County and on Long Island, both in New York, and the development of Mount Vernon Memorial Highway near Washington, D.C. (Simonson and Royall 1934:1). Noted American landscape architect Jens Jensen was a "pioneer in highway beautification." Among his designs of the 1920s was a portion of the Lincoln Highway in Indiana that was landscaped with native trees and grasses and a roadside campground with parking areas, a council ring, restrooms, a gas station, and a store (McClelland 1993:36).

In Minnesota, roadside development work by cities and counties began in the 1920s as roadsides were landscaped and public picnic and camping areas were created, most through local initiative. The State became involved in roadside improvement soon after voters approved the Babcock Plan in 1920, which established the state trunk highway system. The Minnesota Department of Highways (MHD) (established in its modern form in 1925) was at first consumed with simply building, grading, paving, and marking the new and existing highways. By 1929, however, it was the MHD's practice to "preserve native trees along the roads wherever possible," to seed or sod roadside slopes, to collaborate with the state forestry service to plant roadside trees, and to regulate public utilities within the right-of-way (Bennett 1929:207). Advertising within trunk highway right-of-way had been prohibited by the legislature since circa 1923.

The federal government, through its Bureau of Public Roads (predecessor of the Federal Highway Administration), was also promoting roadside development by the 1920s and, by the early 1930s, was requiring it. The bureau first allowed federal highway funds to be used for roadside planting in 1928, although few states actually used their federal funds for this purpose. In 1933 the federal government required that a minimum of one-half of one percent of all federal highway funds be spent on roadside development. This requirement was increased to one percent the following year.

The required roadside development could occur on either new or existing roadways. The bureau encouraged the states to improve well-traveled highways near major population centers, in part so they could serve as demonstration projects of roadside development work. The bureau urged

the use of properly trained landscape architects and horticulturists. Illustrated publications, such as the bureau's *Roadside Improvement* (1934), recommended purchasing adequately-wide rights-of-way, selectively cutting roadside trees to achieve a parklike appearance, creating shoulders with natural contours, storing roadside topsoil during construction so that it could be reused, and using plants to soften the harsh line between the road cut and surrounding vegetation (Simonson and Royall 1934).

The bureau urged state highway departments to give roadside landscaping a "regular place in highway construction." It also confirmed the link between roadside development and tourism, suggesting:

> For those who desire a direct return on every [roadside development] investment, there is the tourist traffic to be considered. This traffic will seek the routes of greatest beauty, as it always has been in the past, and leave money behind in payment for gasoline, meals, lodgings, garage services, and incidental expenditures (Simonson and Royall 1934:3).

The Minnesota Department of Highways established its Roadside Development Division in 1932, anticipating the 1933 federal mandate. Harold E. Olson, an engineer who had been with the MHD for ten years, was appointed to head the new unit. Olson led the Roadside Development Division and served as the chief engineer for the state's roadside development projects for the next 31 years until 1963.

Arthur R. Nichols, a 52-year-old landscape architect with a well-established practice in Minneapolis, became Roadside Development's Consulting Landscape Architect in 1932. Nichols consulted frequently for the division through at least 1940. He is believed to have designed most of the division's wayside rests -- including scenic overlooks, picnic areas, and historical markers -- during the 1930s. Nichols also helped formulate the division's early policies and goals. Fred Vogt, the division's staff landscape architect, worked closely with Nichols. Unlike many state highway landscape architects of the early 1930s, Nichols and Vogt were trained in both engineering and highway design, as well as in landscape architecture. The competence of these men, as well as the accomplishments of other MHD staff including Harold E. Olson (who served as head engineer for nearly all projects), helped integrate roadside development more completely into the highway design process and helped make Minnesota a national leader in the field.

One of the major missions of the Roadside Development Division was to optimize highway safety. This was achieved through landscaping to reduce roadside hazards and through the construction of wayside rests to reduce driver fatigue and to allow cars to travel safely through scenic areas. The division was also mandated to enhance the public's traveling experience by providing aesthetically attractive rights-of-way and roadside facilities. The division worked to bring a "balance of safety, good construction, economical maintenance, and natural beauty" to Minnesota highways, and to build roads that were in harmony with surrounding views, topography, and vegetation (Nichols 1937:169). A. R. Nichols was a strong proponent of

introducing roadside development principles into early highway planning. He, in fact, discouraged the use of the term "Roadside Beautification" which, in his view, suggested the enhancement of a road *after* it had been constructed and underplayed the field's basis in early planning and highway engineering (Nichols 1937:270).

The Roadside Development Division promoted highway safety and aesthetics through a range of methods. Division staff "erased" construction scars by rounding slopes and by planting to blend the roadbed with the surrounding vegetation. The division enhanced scenic views by clearing trees to expose or frame vistas. Plantings were used to screen ugly buildings and other conditions from motorists' view. The division enhanced the roadway itself with plantings, Rustic style bridges, and landscaped bridge approaches. (Mowing and other maintenance of the right-of-way was also within Roadside Development's purview for many years.) The staff encouraged the routing of highways through scenic areas and in accordance with natural topography. It promoted the purchase of rights-of-way that were 200'-400' wide, rather than the traditional 66'-100' (Olson 1933:1-2). The division worked to safely accommodate motorists who wished to experience the scenery or photograph the view by constructing scenic overlooks to bring motorists to optimal vantage points. It developed natural springs and dug wells for roadside drinking water. It constructed welcoming signs at state entrances. Finally, the designers, engineers, and construction crews worked to ensure that access to all facilities was safe and that the public could enjoy roadside amenities without being endangered by moving traffic (*Biennial Report* 1935-1936:28).

Wayside rests not only improved highway safety by encouraging drivers to rest and relax during their trip, but they offered important amenities like drinking water, privies, and picnic spots at a time when gas stations were far apart and modern convenience stores were nonexistent. At many wayside rests, enticing foot trails, scenic overlooks, and other attractions drew people out of their cars to experience the beauty of a natural setting. Some wayside rests included historical or geological markers to educate travelers about a specific region or locale.

Many of these roadside parks were designed in the National Park Service Rustic Style, a style of landscape architecture that preserves and capitalizes on a site's natural topography and landscape features. Man-made structures were often built of materials like local stone, peeled logs, and unfinished timber so that they blended unobtrusively with the surrounding hills, rocks, and trees. Roads and trails were designed to naturally follow the topography and to bring visitors to optimal points of view. Designers strove to preserve existing trees, to screen particular areas of the park from the highway, and to repair construction scars. Local trees and shrubs were often transplanted onto the right-of-way from the surrounding forests.

FEDERAL RELIEF PROGRAMS

Roadside development properties built during the New Deal formed the lion's share of the MHD Roadside Development Division's first collection of sites. During the Depression the highway

department, like many state agencies, actively participated in New Deal programs and became the sponsoring agency for many federal relief projects.

The partnership between roadside development and federal work programs was ideal. Highway construction and roadside development were well-suited as federal work projects because they often required large numbers of relatively unskilled workers who needed little advance training. The labor-intensive work meant that most of a project's costs went directly for wages rather than to purchase materials. Roadside development projects also fit the New Deal's emphasis on the development of parks and other recreational facilities for the public. Outdoor recreation and physical activity were seen by New Deal proponents as positive, healthy leisure-time activities that would help the country overcome the despair and hopelessness that the Depression had produced.

During the Depression the MHD Roadside Development Division, like the Minnesota Department of Conservation's State Parks Division, received considerable technical support and financial assistance from the National Park Service (NPS). By the early 1930s the National Park Service had already spent more than 15 years grappling with the challenge of bringing large numbers of visitors in contact with pristine natural areas and was well-qualified to assist the states. The NPS urged state and local agencies to hire qualified landscape architects. It distributed recommendations regarding plant materials, site development, and the design and construction of all types of landscape features. The NPS issued several publications, including Albert H. Good's *Park Structures and Facilities* (1935) that served as design guides to stimulate the construction of landscape features in the National Park Service Rustic Style. Through offices set up specifically to help state and local governments, NPS landscape architects, engineers, horticulturists, inspectors, and other staff helped agencies like the MHD design and construct projects.

CCC-BUILT PROPERTIES

The Civilian Conservation Corps (CCC) worked in partnership with the MHD Roadside Development Division to build numerous facilities along Minnesota trunk highways. Many are located in central and eastern Minnesota. The projects include some of the most elaborate roadside development structures in the state including Garrison Concourse on Mille Lacs Lake and Gooseberry Falls Concourse on the North Shore of Lake Superior. CCC workers created stone masonry structures of exceptional quality at sites such as Cascade River Overlook, Garrison Concourse, Gooseberry Falls Concourse, Kenney Lake Overlook, and Willow Lake Roadside Parking Area, among others. All of the known CCC-built MHD roadside development sites with existing standing structures were designed by, or their design is attributed to, either A. R. Nichols or landscape architects from the National Park Service including Edward W. Barber (e.g., Gooseberry Falls Concourse) and H. O. Skooglun (e.g., Garrison Pedestrian Underpass, Kenney Lake Overlook, and Whitefish Creek Bridge).

Most CCC-built roadside development properties on Minnesota trunk highways were built by four CCC camps in Minnesota that were sponsored by the state highway department and worked specifically on roadside development. The four 200-man camps were located on the North Shore of Lake Superior (where there were two), at Mille Lacs Lake, and at Leech Lake. The work was supervised by the National Park Service and the highway department's Roadside Development Division, usually in cooperation with the Minnesota Department of Conservation's State Parks Division. Like other CCC camps, the camps themselves were organized and administered by the U.S. Army. The four MHD-sponsored camps are listed below:

Number	Camp Name	Location
SP-13	Spruce Creek	Hwy 61 at Cascade River, North Shore
SP-15	Mille Lacs Lake	Hwy 169 at Garrison, Mille Lacs
SP-16	Leech Lake	Hwy 200 near Whipholt, Leech Lake
SP-19	Lakeshore	Hwy 61 near Knife River, North Shore

The four highway department camps were operated in conjunction with Minnesota's numerous state park CCC camps, hence the camp numbers contain the letters "SP", referring to "state park."

The earliest of the four camps was Spruce Creek, which was established in 1934 at the Cascade River on the North Shore of Lake Superior. Its first superintendent was Leo W. Donnelly, who was succeeded by U. W. Hella. The Spruce Creek Camp developed the extensive Cascade River Wayside which includes several miles of foot trails, a picnic area, and a large stone overlook wall. The initial success of the Spruce Creek Camp led to the establishment of the other three highway department camps one year later in 1935.

CCC workers at the four camps improved landscaping along the right-of-way; planted trees, shrubs, and ground cover; and built foot trails, bridges, culverts, drainage ditches, retaining walls, and wayside rests. The most extensive work was completed by the Mille Lacs Lake CCC Camp at Garrison, which was supervised by Superintendent Agge Thompson (Anderson "Mille Lacs" 1990:8-5). Plans for most of the four CCC camps' roadside development work were drawn by the highway department in cooperation with the NPS's Central Design Office.

OTHER FEDERAL RELIEF PROGRAMS

In addition to the CCC, several other federal relief agencies were involved in the construction of MHD roadside development properties. They include the Federal Emergency Relief Administration/State Emergency Relief Administration (FERA/SERA), the National Youth Administration (NYA), and the Works Progress Administration/Work Projects Administration (WPA), plus National Recovery Work Relief (NRWR) funds, which may have been combined with funding from the aforementioned programs.

More than one federal relief agency worked on some projects. For example, two federal relief agencies helped build the Mendota Overlook, Pomme de Terre Roadside Parking Area, St. Croix Boomsite Roadside Parking Area, and Stillwater Overlook - North. Three different federal relief programs were involved in the construction of the Camp Ripley Entrance Walls.

Federal Emergency Relief Administration/State Emergency Relief Administration (FERA/SERA) properties include the Preston Overlook and Inspiration Point Wayside Rest, which are two intact rest areas in southeastern Minnesota's Fillmore County, as well as the Redwood Falls Retaining Wall. The latter is an elaborate retaining wall near downtown Redwood Falls that is unique among MHD roadside development properties because of its somewhat formal design and urban setting.

National Youth Administration (NYA) roadside development properties include wayside rests that have shrine-like historical markers (e.g., National Grange Historical Marker, St. Cloud Historical Marker, and Indian Battle Ground Historical Marker), wayside rests that constitute more complex parks (e.g., Pine-Hickory Lakes Roadside Parking Area), and wayside rests with handsome scenic overlook walls (e.g., Glenwood Overlook, Stillwater Overlook - South, and Lake City Concourse). The NYA also operated several vocational training centers in Minnesota that supplied signs and other site furnishings to the Roadside Development Division. In 1938, for example, NYA shops built 190 wooden picnic table and bench sets, 123 refuse containers, 72 fireplace grates, 6 "stoves," and 6 signs for the division (*Annual Report* 1938:1).

Works Progress Administration/Work Projects Administration (WPA) roadside development properties include extensive highway landscaping and wayside rest construction along T.H. 100 ("Lilac Way") in the cities of Robbinsdale, Golden Valley, and St. Louis Park, which are all west of Minneapolis. Another property, the Mendota Overlook, was built by residents of a WPA "transient" work camp for homeless men that was located at Mendota.

SNAPSHOT OF THE 1938 CONSTRUCTION YEAR

The 1938 MHD Roadside Development Division's annual report (one of only two such reports that are known to have been completed in the pre-World War II era) contains detailed information about the partnership between the Roadside Development Division and various federal relief agencies at the height of the New Deal.

The 1938 report briefly describes more than 60 separate projects on which substantial work was completed in 1938. About 11 projects were built in cooperation with the CCC, 22 with the NYA, approximately 11 with the WPA, 10 as "regular Federal Aid Projects," and 7 as State Direct Labor Projects (projects for which no relief labor was available). The approximately 60 projects had an estimated value of $501,325, which gave the State of Minnesota a three-to-one return on its expenditures, according to the report.

The 1938 projects include about 33 roadside parking areas (some with scenic overlooks, historical markers, or spring enclosures), about 17 areas of roadside landscaping without standing structures, and the construction and landscaping of several weigh stations, highway retaining walls, and small bridges and culverts. The 1938 work includes the building of more than 9,000 cubic yards of stone wall, nearly 29,900 cubic yards of flagstone walkway, and more than 7,000 linear feet of stone curbing. The projects required 36 stone picnic tables, 71 wooden picnic tables, 9 stone and concrete benches, 77 fireplaces, 10 footbridges, 8 council rings, 2 bathhouses, and 9 latrines. Nearly 30,000 trees and shrubs were planted in addition to extensive ground cover (*Annual Report* 1938).

The Roadside Development Division's job of planning, designing, and supervising the construction of the 1938 workload, plus completing all of the paperwork required by federal and state agencies, must have been staggering. The more than 60 projects were scattered throughout the state from Orr (about 30 miles south of the Canadian border) to Preston (about 15 miles north of the Iowa state line). Most were located in the more populated eastern half of Minnesota where the demand for roadside facilities was presumably higher and the number of unemployed workers was greater.

END OF THE NEW DEAL

After Pearl Harbor was bombed in December of 1941, pleasure travel in the U.S. decreased dramatically as the country shifted all available resources to the war effort. The New Deal's eight years of continuous building ended as all non-essential highway construction, including the building of roadside development facilities, was stopped. Work on at least one MHD roadside development project, the Whipholt Roadside Parking Area, ended abruptly when the war began in 1941. Construction of the Whipholt site had begun in 1941, but the WPA was only able to build a gravel parking area, complete the central section of a stone overlook wall, and lay a few courses of the outer wall sections before being ordered to stop. When work ceased in 1941, the wall was only 20 percent complete. The highway department did not complete the wall until the 1950s.

Roadside development work all but ceased during World War II. A. R. Nichols apparently stopped consulting for the Roadside Development Division in late 1940, but may have continued to monitor the construction of projects through at least 1941. In 1942 the division's staff landscape architect Fred Vogt, like many MHD employees, began a leave of absence to work on defense-related projects. During the next six years, Vogt designed site plans and landscaping for army bases, air fields, ordnance plants, housing units, and other (mostly public) facilities. He did not return to Roadside Development until March of 1948.

ASSOCIATED PROPERTY TYPES, CONTINUED

I. NAME OF PROPERTY TYPE: SOCIAL AND RECREATIONAL FACILITIES

II. DESCRIPTION

G. WAYSIDES AND OVERLOOKS

Many New Deal-era roadside development properties were built from 1933-1941 by various federal relief agencies for the Roadside Development Division of the Minnesota Department of Highways (MHD). (Other state and federal agencies such as the Minnesota Department of Conservation's State Parks Division were also involved in many of the projects.) These properties are located throughout the state in both rural areas and within municipal limits.

Most MHD federal relief-built roadside development properties were designed to meet the major objectives of the MHD roadside development program -- increasing highway safety, enhancing roadway aesthetics, and, in turn, furthering the state's tourism industry.

One of the most prevalent property types -- wayside rests -- reduced driver fatigue by offering travelers safe places to rest and stretch their legs. Also called "roadside parking areas" by the division, the sites provided amenities like foot trails, picnic facilities, drinking water, and privies. Most of these roadside parks ranged in size from .1 acre to 50 acres. Those built in scenic areas provided safe vantage points from which to enjoy a particular vista, thereby reducing the number of cars that were simply stopped on the highway shoulder. Many wayside rests offered an interpretive marker to teach travelers about local history or geology. Most were designed for daytime use only, rather than for overnight camping.

Another group of MHD roadside development properties was not built specifically for the traveler to stop at, but nevertheless met roadside development objectives. These properties include retaining walls, bridges, and culverts that were designed by the Roadside Development Division to beautify the highway while fulfilling more mundane functions like controlling erosion and providing drainage. This category of properties also includes walls and gates, such as the Camp Ripley Entrance Walls, that were designed to mark the entrances to, or boundaries of, public institutions located along the highway.

State line markers (also known as state entrance markers) were also built by the MHD Roadside Development Division with federal relief assistance. This series of monuments and signs was constructed on the Minnesota border at points where key trunk highways entered the state. Some state line markers were sited within small wayside rests, while others were designed to be viewed by passing vehicles but apparently did not provide a place for travelers to stop.

Many MHD federal relief-built roadside development properties were designed by Arthur R. Nichols, a prominent Minnesota landscape architect who served as the division's first Consulting Landscape Architect from 1932 to the early 1940s. Harold E. Olson, the first head of the MHD Roadside Development Division, served as chief engineer for most MHD roadside development projects built between 1932 and 1963.

The plan of many of the MHD roadside development properties is based around a simple, curved highway pull-off drive that channels cars safely off of and back onto the highway. A key structure such as an historical marker or a spring water enclosure was often centrally located along the drive. Some larger roadside parks have more complex site plans that include picnic areas, foot trails, scenic overlooks, swimming beaches, and softball fields. Many of these landscape features were used to draw people out of their cars to stretch their legs and experience the beauty of the natural setting.

Extant MHD federal relief-built roadside development properties include a wide range of standing structures from bathhouses to rock gardens. Historical markers, scenic overlook walls, retaining walls, curb stones, bridges, trail steps, council rings, fireplaces, and benches are the most common structures.

Many MHD federal relief-built roadside development properties are excellent examples of the National Park Service Rustic Style. These properties were designed with landscape features and planting schemes that intrude as little as possible into the natural landscape. Stylistically, most MHD roadside development properties built during the New Deal differ significantly from properties built for the same purpose later, in the 1950s and early 1960s, when simpler, less rustic, and less labor-intensive designs were used.

Most structures in Rustic Style wayside rests were built of local stone and other "native" materials to complement the landscape and to enhance the roadway. Stylistically, many structures like overlook walls and historical markers that were designed by A. R. Nichols blend the Rustic Style with slightly more formal, classically-inspired forms.

Most planting schemes in Rustic Style wayside rests use naturalistic groupings of trees and shrubs that were either native materials transplanted from the surrounding area, or were other compatible plant materials chosen to blend the site into its setting. In treeless parts of the state, American Elms and other large deciduous trees were often used to shade and shelter the site. Historical markers were often framed by somewhat formal, simple arrangements of deciduous and coniferous trees and shrubs.

III. SIGNIFICANCE

Many MHD federal relief-built roadside development properties are significant for both their historical associations and their design or construction quality. The properties are associated with the development of the field of roadside development in the U.S. and in Minnesota, and with the formation and early work of the MHD Roadside Development Division. They represent fruitful partnerships between the MHD and various federal relief agencies that built necessary roadway facilities while at the same time providing critically-needed jobs for Minnesota's unemployed. Many of the properties are excellent examples of the National Park Service Rustic Style, a design tradition that respects and capitalizes on a site's natural assets while creating man-made features that blend unobtrusively with the environment. Many of the sites were designed by either landscape architects from the National Park Service's state parks assistance program or by A. R. Nichols, one of Minnesota's most prominent landscape architects.

IV. REGISTRATION REQUIREMENTS

The following criteria should be used to evaluate the National Register eligibility of Minnesota highway department federal relief-built roadside development properties:

To be eligible for the National Register of Historic Places, a Minnesota highway department federal relief-built roadside development property must meet ONE of the following four conditions and must also meet the National Register integrity requirements.

1. Important Federal Relief Associations

The roadside development property must have significant associations with federal relief efforts in the state. For example, the federal relief project may have been particularly large in size and scope or may have employed an especially large number of people. The federal relief project may have been one of few projects to employ a particular category of workers. The roadside development property may be one of few remaining sites associated with a specific federal relief program such as the WPA or NYA. (National Register Criterion A)

2. Significance to the History of Roadside Development

The roadside development property must be associated with an event, trend, or project that is particularly significant to the history of roadside development work in Minnesota or nationwide. For example, a property may be eligible if it is associated with the earliest roadside development activities in the state or represents a particularly important accomplishment of the MHD Roadside Development Division. (National Register Criterion A)

3. Significance to Local History

The roadside development property must have made an unusually significant contribution to the local community by providing an important amenity, facility, or recreational opportunity that was previously unavailable locally and was particularly significant to the social or economic history of the community. Such significance must be established by a pattern of use during a period of significance that extends beyond the original construction of the site. For example, a roadside development property that is a community's only public park may have outstanding social or recreational significance to the community. (National Register Criterion A)

4. Design Significance

The roadside development property must incorporate the distinctive characteristics of a type, period, or method of construction; or represent the work of an important designer or builder; or possess superior artistic value. This condition may be met by ONE of the following:

a. the design of the site must be a noteworthy example of the National Park Service Rustic Style or another specific design tradition, or be associated with a significant movement or trend in landscape architecture, or be noteworthy for a particular innovation in landscape design or roadside development design. The design of the site may have superior artistic value. The property may represent one of the few known or few remaining examples of a particular type of structure or category of roadside development property. (National Register Criterion C)

b. the property must represent the work of highly skilled craftsmen, or display the distinctive use of indigenous materials, or be built using a distinctive or innovative construction or engineering method. (National Register Criterion C)

c. the design of the property must be noteworthy within the body of work of an important landscape architect, artist, architect, engineer, or horticulturalist. (National Register Criterion C)

Integrity Discussion

To be eligible for the National Register, a roadside development property must be sufficiently intact to continue to convey its historic character and design intent. Identifying the property's character-defining features is a first step in assessing its integrity.

If a property has been altered, the extent and impact of the changes and the time period in which changes occurred are taken into account when assessing the property's overall physical integrity.

A property may be in poor physical condition and still retain overall integrity. Poor physical condition is often considered to be a repairable or reversible state and, therefore, does not necessarily render a site ineligible for the National Register.

A property need not retain integrity in all seven areas -- Location, Design, Setting, Materials, Workmanship, Feeling, and Association -- to be eligible for the National Register. However, most National Register-eligible properties retain integrity in several, and usually all, of the seven areas.

The guidelines below should be used to determine each roadside development property's overall integrity. After changes to the property are analyzed using these guidelines, the cumulative impact of alterations to the site's character-defining features should be weighed against the cumulative effect of the historic features that remain unchanged.

1. Integrity of Location

The property's significant features should be located on or near their original location. In most cases they should still be located within the historical boundaries of the property.

2. Integrity of Setting

The setting of a property is comprised of the natural and man-made features that surround it. A property's setting need not be entirely intact, but it should not be so inconsistent in character with the original setting that the property is no longer able to convey its historic associations and design intent. For example, if a scenic overlook wall was designed to take advantage of a particular view, then the Integrity of Setting may be compromised if the view is now blocked by buildings. If a property was built as part of a larger complex such as a local or state park, then the relationship between the roadside development facility and the larger complex should generally be intact. If the property was originally designed to be adjacent to and a functional part of a roadway, then the roadway is generally considered to be a character-defining feature of the property and/or an essential part of the setting.

3. Integrity of Design, Materials, and Workmanship

The character-defining features that comprise the property should be without major alteration. The features must still be able to convey their historic character and design intent.

Additions and alterations should be modest in scale and should not obscure the property's major design or structural characteristics. The presence of original site furnishings such as benches strengthens a property's integrity, but their absence does not necessarily mean that a site has lost integrity.

Circulation features such as roadways, drives, curbing, traffic islands, walkways, and parking areas are usually character-defining features. Some changes to these features are acceptable, but the cumulative effect of changes should not interfere with the property's overall ability to convey its historic character and design intent. The paving of gravel access roads and parking areas with asphalt does not, in itself, mean that a site has lost integrity of Design and Materials.

Character-defining vegetation need not be entirely intact for a property to retain Integrity of Design, Materials, and Workmanship. Vegetation and similar landscape elements are subject to natural forces such as plant overgrowth, erosion, disease, and old age. (Many roadside development properties, for example, have lost their American Elms to Dutch Elm disease.) Changes to vegetation and similar landscape features are often expected, and are sometimes considered reversible in the same way that the physical condition of a building may be reversible. In general, however, the property must still be able to convey its historic character and design intent.

4. Integrity of Feeling and Association

To retain Integrity of Feeling, a property must retain enough of its historic physical characteristics that a visitor can still perceive or feel a sense of the property's historic character. To retain Integrity of Association, a property must retain enough of its historic physical characteristics to maintain a perceptible link with the events, trends, needs, or social or artistic forces that created and shaped it.

SUMMARY OF IDENTIFICATION AND EVALUATION METHODS, CONTINUED

Information on roadside development properties constructed by federal relief agencies for the Minnesota Department of Highways was gathered during a study of roadside development properties that was conducted in 1996-1998 by Gemini Research for the Minnesota Department of Transportation (Mn/DOT). Susan Granger of Gemini Research served as Principal Investigator. One of the goals of the study was to inventory all roadside development properties on current Mn/DOT right-of-way that contain pre-1961 standing structures. An historic context entitled "Roadside Development on Minnesota Trunk Highways, 1920-1960" was developed. A total of 102 properties were inventoried with fieldwork conducted at all sites. The project's principal final products include an inventory file on each site and a final report that includes historic context documentation, survey analysis, and recommendations. The report is entitled *Historic Roadside Development Structures on Minnesota Trunk Highways* by Susan Granger, Scott Kelly, and Kay Grossman (prepared for the Minnesota Department of Transportation by Gemini Research, Dec. 1998).

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National Register of Historic Places

Note to the record

Additional Documentation: 2017

FEDERAL RELIEF CONSTRUCTION IN MINNESOTA, 1933-1943

AMENDED SUBMISSION for MULTIPLE PROPERTY DOCUMENTATION FORM (MPDF)

D. CERTIFICATION

Certification of Amendment

Amy Spong
Deputy State Historic Preservation Officer

5·18·17
Date

E. STATEMENT OF HISTORIC CONTEXTS

The MPDF for Federal Relief Construction in Minnesota, 1933-1943 has been amended to include a statement of historic context for fire lookout towers constructed during the Neal Deal period.

F. ASSOCIATED PROPERTY TYPES

The MPDF has been amended to include a section on associated property types.

G. SUMMARY OF IDENTIFICATION AND EVALUATION METHODS

The MPDF has been amended to include a summary of identification and evaluation methods for fire lookout towers.

H. MAJOR BIBLIOGRAPHICAL REFERENCES

The MPDF has been amended to include sources used for the historic context on fire lookout towers.

II. THE CIVILIAN CONSERVATION CORPS, CONTINUED

CONTEXTUAL BACKGROUND ON MINNESOTA'S FIRE LOOKOUT TOWERS

Minnesota's fire lookout towers were built beginning around 1910. The U.S. Forest Service likely built its first lookout towers just before 1910, and the Minnesota Forest Service built its first towers in 1911, the year the agency was established. The oldest extant towers in Minnesota date from circa 1924. The last towers were erected in the early 1970s.

Fire lookout towers remained the primary method by which the northern one-third of the state was protected from forest fires until about 1970. That year an estimated three-quarters of the state's 200 lookout towers were still being manned. After 1970, use of lookout towers declined as aerial detection was phased in and as fires were increasingly reported by members of the public via telephone. The need for fire towers did not end, however, and some towers are still in use today.

Minnesota's fire lookout towers were built in 28 counties. Within the exception of one, all towers were located in north central and northern Minnesota. The only tower south of Anoka County was the Elba or Whitewater Tower (extant) in Winona County, built to protect Whitewater State Park and other forests that later became Minnesota Memorial Hardwood State Forest.

In addition to being associated with the statewide historic context "Federal Relief Construction in Minnesota, 1933-1943," Minnesota's fire lookout towers are associated with three other statewide historic contexts established by the State Historic Preservation Office:

Northern Minnesota Lumbering, 1870-1930s
This context encompasses the themes, events, people, and property types associated with the first phase of logging in northern Minnesota. White pine logging stimulated Euro-American settlement of northern Minnesota and was the region's principal economic activity from 1870 to the 1930s. The period encompassed by the lumbering context begins in 1870 when the first railroad was built to Duluth, and ends when the last major sawmills closed in the early 1930s. Minnesota fire lookout towers were built to protect the resources associated with this first phase of northern Minnesota lumbering, as well as those associated with post-1940 logging.

Indian Communities and Reservations, 1837-1934
This statewide historic context was designed to encompass the history of Minnesota's Indian reservations and communities beginning in 1837 when the first major land cession treaty was signed. Until land cession treaties, all Minnesota forests were owned by native groups. The statewide context ends in 1934 when Congressional passage of the Indian Reorganization Act helped reverse longstanding government policies designed to force acculturation. As part of the shift, the practice of breaking up reservations through land allotment ended, land began to return to tribal control, and policies began to support tribal self-determination and self-governance. A significant number of Minnesota fire lookout towers were built to protect Indian reservations. Many were owned by the U.S. Indian Service and operated by its Forestry Division; some were built and manned by the Indian Division of the Civilian Conservation Corps (CCC).

Minnesota Tourism and Recreation in the Lake Regions, 1870-1945

The statewide tourism context begins in 1870 when the construction of railroads began to provide access to the state's lakes and forests. Early tourism was concentrated near the Twin Cities and other population centers; Lake Minnetonka was an early attraction. After about 1910 as automobiles became more affordable and roads were built, the number of tourists increased and they began to travel farther north where most of the state's lakes and forests are located. In the 1920s tourism became an increasingly important component of a northern Minnesota economy recovering from the demise of white pine logging. The statewide tourism context ends in 1945 when World War II was drawing to a close. A significant number of Minnesota fire lookout towers protected resources associated with recreational development and tourism, and many lookout towers themselves became popular visitor destinations.

Significance Overview

- Minnesota fire lookout towers were the state's principal method for detecting forest fires from about 1910 through about 1970. Fire towers formed a broad public safety network critical to the protection of about one-third of Minnesota's land area from fire.
- The state's first towers were built around 1910 and the last was built in the early 1970s. Extant towers date from circa 1924 to 1973. During the 1920s through early 1970s most Minnesota towers were simple, well built, durable structures made of steel from standardized designs. It is believed some extant towers represent types that are rare nationwide.
- The development of Minnesota's fire protection system was strongly influenced by several catastrophic forest fires that spurred the Minnesota Legislature into action. Severe fires in the late 19th and 20th century caused losses of life and property that are difficult to fathom. Between 1893 and 1918 nearly 900 Minnesotans lost their lives to forest fires and dozens of communities were burned to the ground. Similar fires were occurring nationally, especially in western states. Minnesota's four largest fires – Hinckley (1894), Chisholm (1908), Baudette-Spooner (1910), and Moose Lake-Cloquet (1918) – burned between 200,000 and 400,000 acres each with millions of dollars of resources lost. The 1894 fire that destroyed Hinckley and the 1918 fire near Moose Lake and Cloquet remain two of the worst forest fires in U.S. history.
- Forest fires were a serious and recurrent threat. Between 1911 and 1948 alone the Minnesota Forest Service recorded nearly 46,000 fires that destroyed 8.1 million acres with an estimated loss of $1.28 billion in 2014 dollars.[1]
- The construction of fire towers in Minnesota reflected national trends, with Minnesota often being at the forefront of fire prevention and forest conservation nationwide. Following congressional passage of the Weeks Act of 1911 and the Clarke-McNary Act of 1924, federal grants to Minnesota helped support fire prevention and the construction of towers.
- Fire lookout towers were the structures most important to preventing and controlling forest fires. According to a 1940 Minnesota Department of Conservation source, "the orbit around which every fire prevention pattern moves is the lookout tower and the forest ranger."[2] Other structures included buildings at lookout sites (e.g., spotter's cabins, tool sheds, and garages); forestry telephone lines;

[1] Alfred L. Nelson, "Hazards + Carelessness = Forest Fires," *Minnesota Conservation Volunteer* (March-Apr. 1948), 23-24. *Minnesota Conservation Volunteer* is hereafter *MCV*.
[2] "Guardians of the Timberlands," *Minnesota Conservation Volunteer* (Nov. 1940), 34.

ranger stations; remote patrol cabins; tool caches; firebreaks; and forest roads, trails, and portages. Many of these historic resources no longer exist.

- Because they were such an effective tool, fire lookout towers were built in increasing numbers as funds became available and as northern Minnesota's permanent and seasonal population increased. While the exact number of lookout towers is not known, it is estimated there were about 200 towers in operation when numbers reached their peak around 1942. There were still roughly 200 towers operating in 1960. It is believed that today there are about 80 extant towers, many of which have lost historic integrity.
- Fire lookout towers protected public and private land without distinction. The towers protected population centers, forests, farms, logging operations, iron mines, parks, and Indian reservations. They were built as population increased in a given area, as logging spread, as iron ore mines opened, as state and national forests were established and expanded, as roads were built, and as state parks, game refuges, resorts, campgrounds, and summer cottages were developed.
- Fire towers were built by all three of Minnesota's forestry agencies – the Minnesota Forest Service (later Division of Forestry), the U.S. Forest Service, and the Forestry Division of the U.S. Indian Service (later the Bureau of Indian Affairs). The agencies worked in partnership with citizens, local governments, and private industry, all of which had a vested interest in controlling forest fires. Fire towers are significant to the early history of all three agencies, in part because fire protection was historically their top priority. These agencies are historically significant to the preservation and management of the state's natural resources, to the evolution of modern forest management and conservation practices, to the development of the state's substantial wood products industry, and to the history of northern Minnesota tourism. Fire towers were an iconic symbol of these agencies' responsibilities and forest management practices.
- Fire protection in Minnesota was strengthened considerably when the manpower and resources of the New Deal allowed forestry agencies to replace existing towers with more modern structures and to establish new lookout sites to provide better coverage. New Deal agencies built newly fabricated towers and dismantled, moved, and re-erected towers and improved their sites. Many or most lookout towers were manned by federal relief workers as well. The number of fire towers reached its peak at the end of the New Deal. Towers erected or re-erected during the New Deal are associated with the unprecedented dedication of public resources to forestry and natural resource conservation in the 1930s and early 1940s, and with the development and implementation of new public policies in forestry, conservation, and recreation. The New Deal towers are associated with federal and state efforts to combat the devastating poverty and social impacts of the Great Depression by providing meaningful work to the poor while at the same time constructing necessary public infrastructure. Minnesota fire towers are an important and lasting physical accomplishment of the CCC camps based in forested parts of Minnesota and of the significant conservation efforts of other New Deal agencies. Some towers are rare examples of the work of specific categories of federal relief workers.
- Fire towers played a significant role in the history and economic development of northern Minnesota. Towers protected the local population and the resources on which they depended for their livelihood. Towers represented a critical part of the public infrastructure necessary for the region's settlement and development.
- Fire towers protected Minnesota during the last two decades of white pine logging. After the industry's collapse, fire towers played a critical role in protecting the cutover during its long economic and environmental recovery.

- Fire towers are significant to the development of the state's postwar timber industry – the state's third-largest industry – by protecting the raw materials that fed growing paper factories and pulpwood processing plants. Fire towers protected the trees passed over by the first wave of logging, the burned- and cutover land that was naturally regrowing, and vast forest areas being replanted. As Clarence Prout, Deputy Commissioner of Conservation, wrote in 1956, "Basically, the primary duty of the Division of Forestry is fire control. Without it there would be no point in planting trees, and there would be little timber to manage or sell."[3]
- Fire towers are significant to the history of natural resource conservation in Minnesota. According to a Minnesota Forestry Division publication from 1937, "Forest fire protection is perhaps the most important of all conservation activities; without it all phases of the work cannot be entirely successful."[4] The state's conservation movement began in the late 19th century as the public became increasingly concerned about the environmental damage caused by unlimited logging and the uncontrolled forest fires that followed logging's footsteps. The conservation movement grew along with government efforts to protect and manage forests for multiple uses and long-term sustainability. Fire towers protected irreplaceable old-growth forests and a full range of recovering forests, wildlife habitat, stream watersheds, and other ecosystems. Towers protected millions of acres of cut- and burned-over land while it was being reforested or otherwise rehabilitated, as well as protecting important nurseries; experimental, research, and demonstration plots; and educational and other facilities dedicated to forestry and conservation.
- Fire towers are important to the history of public land management in Minnesota. Historically the vast majority of state- and federally-owned land was located in the area served by fire towers. Towers are associated with the establishment and early development of dozens of state forests, state parks, land recovery projects, wildlife refuges, and two national forests, one of which – Superior National Forest – was the second-largest in the nation. Much of this activity was initiated or significantly advanced during the New Deal.
- Fire towers are significant to the history of Minnesota tourism, an industry important to the history of the state and to northern Minnesota's post-logging economic recovery. Towers protected public and private investment in resorts, cottages, parks, roads, and campgrounds. Many fire towers became popular tourist attractions in their own right.

Forest Fire Danger and Prevention

Of the three Great Lakes states that are forested – Minnesota, Wisconsin, and Michigan – Minnesota historically had more forest fires, a fact attributed to its location next to the western prairies. Because of this proximity, Minnesota forests experienced higher temperatures and lower humidity, as well as a tendency for drying winds to blow in from the west and southwest.[5]

Forest fires were a constant and recurring threat. Between 1911 and 1948 alone the Minnesota Forest Service recorded 45,952 fires that cumulatively burned more than 8.1 million acres and destroyed natural and manmade resources valued at $44 million in 1948 dollars.[6]

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[3] Clarence Prout, "Building Minnesota – Forestry for Tomorrow," *MCV* (Jan.-Feb. 1956), 37.
[4] *Forestry in Minnesota* (St. Paul: Minnesota Dept. of Conservation Division of Forestry, 1937), 3.
[5] Don Wilson, "Modern Problems of Forest Fires," *MCV* (May-June 1961), 47.
[6] Nelson, "Hazards + Carelessness = Forest Fires," 23.

Forest fires destroyed human lives and devastated natural and manmade resources. They burned transportation, power, and communication systems, as well as buildings, timber inventories, and other valuable property. They wiped out wildlife habitat, affected entire ecosystems, and diminished water quality. Cutover land was much more likely to burn than a healthy green forest, and an area that burned once was much more likely to burn again. Fires also prevented the forest from naturally regenerating because they killed young trees passed over by loggers, destroyed seedlings, and consumed the seed source itself. In the words of a 1938 source, "If the seed has been destroyed, or if burning is frequent, the plant cover of the area changes from evergreen to brush forest and finally, with the depletion of the soil, to unproductive thicket."[7]

From their inception, Minnesota forestry agencies kept detailed records on all fires and gathered daily weather information on temperature, rainfall, wind speed, and humidity. Matching the data helped personnel improve prediction, explain fire behavior, and determine where lookout towers should be placed and when they should be staffed. Analysis in the 1940s, for example, indicated that 90% of all fires occurred on 40% of the days in the fire season. Agencies even predicted the number of fires likely to start on any given day.[8]

Forestry agencies estimated that up to 95% of fires were caused by human activity and only a small percentage by lightning strikes. The greatest danger occurred in the seven-month period from early April to mid-November when there was no snow on the ground. The principal causes of Minnesota's forest fires were the following:

Logging: Forest fires were accidentally started by logging companies burning leftover debris or slash, by the operation of logging camps, and by the campfires and cigarettes of itinerant loggers.

Logging railroads: Logging spur lines penetrated deep into the forest. Many fires were started by sparks and embers flying from locomotive smokestacks, locomotive ash pans, and railcar brake shoes. The sparks ignited duff on the forest floor, or landed on piles of slash and sawlogs lining the railroad tracks.

Agriculture: As cutover land was converted to agriculture, farmers used fire to clear the land of stumps and brush to create fields and pastures. They often burned meadows or pastures to regenerate the grasses, and also burned trash and other debris.

Recreation and other uses: Forest fires were also caused by the campfires and cigarettes of campers, picnickers, hikers, fishermen, hunters, berry pickers, and others. As the population of forest users increased, so did the frequency of fires.

Lookout towers were important because they allowed forest fires to be detected early. While most of the thousands of fires that started in Minnesota each year were extinguished while still manageable, factors such as late detection, dry conditions, high winds, inaccessibility, and a lack of adequate people and equipment allowed some fires to rage out of control.

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[7] Writers Program of the Works Progress Administration, comp., *The WPA Guide to Minnesota*, 1938 (rpt St. Paul: Minnesota Historical Society Press, 1985), 18.
[8] Nelson, "Hazards + Carelessness = Forest Fires," 22.

Forestry Agencies

Most fire towers in Minnesota were built by, or for, one of the three public forestry agencies: the Minnesota Forest Service (later Division of Forestry), the U.S. Forest Service, and the Forestry Division of the U.S. Indian Service. The three were founded about the same time – in 1911, 1905, and 1910, respectively.[9] The Minnesota Forest Service owned and operated most fire lookout towers in Minnesota and was generally in charge of overall coordination. For these reasons, and because most towers standing today are associated with the state agency, the Minnesota Forest Service receives the most attention in the discussion below.

A few fire lookout towers were also built and operated by logging, mining, and railroad companies. (See the discussion of industry cooperation under Prevention Strategy below.) Most of these towers were built in the early 20th century and were built and/or operated in cooperation with the Minnesota Forest Service. No known examples remain today.

Fire lookout towers are significantly associated with the history of all three forestry agencies, in large part because the control of fires was historically each agency's top priority. Erecting lookout towers, wiring them for telephone service, and building reliable roads and trails to reach both towers and fire-prone areas were major concerns through the decades covered by this narrative.

Of Minnesota's total land area of 51.7 million acres, the Minnesota Forest Service was responsible for the protection of about 20 million acres, or about one-third of the state.[10] Within this area, the U.S. Forest Service protected Chippewa and Superior national forests, which together comprised about 4.2 million acres in 1940 and about 5.5 million acres today. The U.S. Indian Service had jurisdiction over Minnesota's Indian reservations which today, in northern Minnesota, comprise about 2.2 million acres.

Prevention Strategy

For all three of Minnesota's forestry agencies, cooperation with local governments, private industry, and members of the public was essential. The agencies had limited resources of their own, and cooperative programs were built into the fire protection program from the beginning as the only hope of making fire prevention and control effective.

The general fire control strategy included early detection through the use of lookout towers and a small number roaming patrols; removing fuel by clearing slash from railroads, roadsides, and the forest interior; constructing firebreaks, portages, and truck trails; controlling the activities of logging

[9] In 1931 the Minnesota Forest Service was renamed the Forestry Division of the Minnesota Department of Conservation. Both names are used herein depending on the period being discussed. The U.S. Indian Service was renamed the Bureau of Indian Affairs in 1947.

[10] The Minnesota Forest Service/Minnesota Forestry Division used the number 20 million acres through the 1950s. This was sometimes called the intensive protection area and basically comprised the forested northern part of the state. By the early 1940s the Division also identified an area west and south of the northern forests that would be protected only in extreme fire conditions. This covered about 11 million acres and extended as far west and south as Fergus Falls, Alexandria, New London, Redwood Falls, St. James, Mankato, Faribault, Preston, and Caledonia; see *Forest Protection Map*, Minnesota Dept. of Conservation Division of Forestry, June 17, 1942, Minnesota Dept. of Conservation, Forestry Division Records, Minnesota Historical Society, St. Paul, hereafter MHS. See also Prout, "Building Minnesota – Forestry for Tomorrow," 37. A 1962 publication indicates the Division "furnishes protection to 17¾ million acres of public and private land"; see E. L. Lawson, "Division of Forestry," *MCV* (Nov.-Dec. 1962), 28. The figure was often rounded to 18 million acres in the 1960s and 1970s.

companies and railroads; and educating loggers, farmers, resorters, hunters, and the general public. The state forest service divided Minnesota into several administrative areas (roughly 15), each with a headquarters. Each area was further divided into a set of ranger districts, each manned by a small staff. The U.S. Forest Service maintained a similar system in Chippewa and Superior national forests.

In addition to lookout towers, the physical infrastructure of fire protection included support buildings at lookout sites (e.g., spotter's cabins, tool sheds, and garages); telephone lines; ranger stations; boat houses and garages; remote patrol cabins; tool caches; firebreaks; and roads, trails, and portages.

In the job of detection, fire lookout towers were supplemented by patrols on foot, horseback, rail car, and later, automobiles. Patrolmen were directed to fire-prone areas such as railroad tracks, while lookout towers could effectively cover much larger areas. Because detection was so important, rural mail carriers, state game wardens, drainage supervisors, and employees of the state highway department were also asked to watch for fires as they moved throughout northern counties. Finally, the help of the general public was continually enlisted.

Scattered throughout the ranger districts were scores of citizens – many designated as township fire wardens – who issued burning permits and raised crews of local men to help fight fires. Under Minnesota law, all able-bodied citizens were required to assist with firefighting if called upon, and to surrender automobiles and other equipment to government foresters if requested. By the mid-1930s more permanent groups of citizen firefighters (often called smoke chasers and stand-by crews) were organized to increase the efficiency of gathering men once a fire broke out. Fire wardens and other citizens were paid a nominal wage when they engaged in fire work. The wages were often appreciated in northern Minnesota's generally poor counties.[11]

Firefighters traveled on foot, horseback, bicycle, car, and railroad to a fire. Forestry agencies owned very few cars and trucks before the 1930s. All railroad companies allowed government foresters to travel the rails in small gas-powered vehicles known as "speeders." Foresters stored tools such as shovels, axes, and pails in tool sheds or other caches placed at strategic locations. Firefighting was often limited to controlling the burn at its margins by beating flames with wet burlap sacks, shoveling dirt on the flames, and using backpack sprayers that were refilled by pumping water from a nearby stream or swamp. Firebreaks, which were trenches a fire could not easily cross, were dug with shovels and plows. The plows were pulled by horses and later by tractors. Firefighters often worked for days or weeks to control a fire, basically trying to keep it from spreading until rainfall finally came. Much was dependent on the weather and, if strong winds began to blow, a fire could be whipped into an inferno.[12]

Minnesota's forestry agencies collaborated with one another, especially where their jurisdictions physically abutted or overlapped. Among many formal agreements were those that specified where lookout towers would be placed and when they would be manned so that parts of the forest were not inadvertently left unprotected.

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[11] Don Wilson, *Be a Forest Ranger, 1927-1936* (By the author, 1986).

[12] *Forestry in Minnesota*, 3-16; Wilson, *Be a Forest Ranger*; Mary Hoff, et al., *Connected to our Roots: 100 Years of Growing Forests in Minnesota* (St. Paul: Minnesota Dept. of Natural Resources, 2010). See Julius F. Wolff, Jr., "Some Major Forest Fires in the Sawbill Country," *Minnesota History* (Dec. 1958), 131-138, for compelling accounts of fighting large fires in 1929, 1936, and 1948 on the North Shore of Lake Superior.

Forestry agencies also made agreements with lumber, railroad, and mining companies that required the companies to reduce fire hazards, supply or pay for patrolmen, fight fires, and sometimes operate lookout towers and telephone lines. One of the greatest fire threats was posed by the logging railroads whose lines crisscrossed northern Minnesota and penetrated deep into remote forests. Locomotive smokestacks could throw cinders up to 300', sparks flew from steel brake shoes, and live coals dropped from engine ash pans. Railroad corridors were often littered with piles of logs and slash ready to ignite. Because railroad companies had deep pockets, they were often sued when valuable timber was destroyed and it was therefore in their interests to help prevent fires. The State of Minnesota required railroads to install spark arresters and other safety equipment and to employ men (or cooperate with the State who hired them) to patrol the tracks during the dry season. Patrols often moved along the tracks on a speeder 10 or 20 minutes after a train to watch for fires and extinguish them.[13]

In a similar vein, logging companies created their own fire protection organizations to help control fires. One example is the Wales Forest Protection Association, established in 1921 by the Northwest Paper Company (one of the Weyerhaeuser interests) and others. In cooperation with the state forest service, the association patrolled 700,000 acres of private and public land near Cloquet Valley State Forest. In the mid-1920s the association was employing 16 to 30 men per season and operating six fire lookout towers built in cooperation with the state. It also had seven patrol cabins, 80 miles of telephone lines, several railroad speeders, and a range of firefighting equipment. Some protective organizations were headquartered at state ranger stations. Iron mining companies also cooperated in fire protection – the Oliver Iron Mining Company, for example, provided its own patrolmen and firefighters, as well as lookout towers and telephone lines.[14]

Development of Minnesota Fire Towers

White pine logging in Minnesota began in the Stillwater area in the 1830s. Intensive logging in northern Minnesota began around 1870 when the first railroad reached Duluth and the Duluth shipping canal opened (1871). The industry was largely organized and capitalized by experienced lumberman who came to Minnesota from states farther east. Labor was provided by thousands of immigrants who moved to northern Minnesota to work as lumberjacks and sawmill workers. They moved to a region that was very sparsely populated at the time.

Loggers traveled through the virgin forest, following major waterways and, after 1890, using an expanding network of logging railroads. Lumber companies cut the most valuable white pine first, then red (Norway) and jack pine, and later, hardwoods. The pineries were concentrated on the eastern bank of the Mississippi River from approximately Anoka County up to the Canadian border and northeast through the Arrowhead. Forests extending into northwestern Minnesota (to a point west of Red Lake) were populated with a mixture of white, red, and jack pine and less desirable trees such as white spruce,

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[13] *State of Minnesota Department of Conservation's Second Biennial Report for Fiscal Years 1933-1934* (Minnesota Dept. of Conservation, Dec. 1934), 119-120; *Federal Cooperation in Fire Protection-Minnesota*, annual report to the federal government by Minnesota Forest Service per the Weeks Law, 1920, Minnesota Dept. of Conservation, Forestry Division Records, MHS; hereafter called Weeks Law reports.

[14] F. J. Sensenbrenner, "How it Can Be Done," in *Forestry in Wisconsin: A New Outlook. Official Report of the Wisconsin Commercial Forestry Conference Held at Milwaukee March 28-29, 1928* (Milwaukee: The Conference, 1928); "Fire Losses Reduced by Minnesota Association," *Forest Worker* [newsletter of the U.S. Forest Service] (Jan. 1929), n.p.; Elizabeth Bachmann, comp., *A History of Forestry in Minnesota With Particular Reference to Forestry Legislation* (Association of Minnesota Division of Lands and Forestry Employees, 1969), 21.

black spruce, cedar, tamarack, and balsam fir. These areas were harvested as the pineries became depleted.[15]

Trees were cut during the winter by men living in hundreds of small logging camps scattered through the woods. Logs were stacked, marked, and measured in clearings adjacent to major streams. When the ice melted in the spring, the logs were driven downstream to sawmills located in settlements with waterpower. Many of the timber workers worked in the logging camps during the winter and in the mills during the summer.[16]

In 1870 Minnesota logging was feeding some 200 sawmills. Around 1890 the industry expanded as forests in Michigan and other states became depleted. Eastern markets were opened to Minnesota timber and key lumbermen such as Frederick Weyerhaeuser moved to Minnesota from Wisconsin, Michigan, and nearby states.

While U.S. population rose and the Great Plains was being settled, the market for Minnesota wood products was almost unlimited. Timber cut in northern Minnesota provided the raw material for factories that made wagons, railroad boxcars, millwork, barrels, and furniture, turning the Twin Cities and other communities into major manufacturing centers. The construction of transcontinental railroads by Minnesota companies required huge amounts of timber, as did the development of northern Minnesota's new iron mining industry. Railroads shipped construction lumber, millwork, and manufactured goods to an expanding number of small towns and cities being built across the Plains. For some major railroads, a full one-fourth of their freight business consisted of lumber.[17]

The peak of sawmilling in the Twin Cities occurred in a 15-year period from 1890-1905. In 1899 the combined output of Minneapolis sawmills made the city the world leader in lumber production and shipment. In 1900 Minnesota as a whole was ranked third among the nation's lumber-producing states. In 1900 three of the four largest sawmills in the U.S. were located in Minnesota.[18]

By 1900 the focus of the industry was shifting from the Twin Cities to Duluth in northern Minnesota. Duluth was closer to the remaining forests, had good rail connections, and was able to economically ship lumber eastward across the Great Lakes. Duluth's first sawmill had opened in the mid-1850s but the industry remained small until the first railroad arrived in 1870. Nearby Cloquet's first mill opened in 1878 and the town eventually became a major lumbering center. In 1892 the two largest sawmills in the Duluth area were both at Cloquet; the largest was the Cloquet Lumber Company, owned by Frederick Weyerhaeuser, which cut 60 million board feet that year.[19]

Minnesota's timber industry continued to be a major force nationwide in the first decades of the 20th century. Beginning with the state's first paper mill which opened in Cloquet in 1898, major paper mills were built in Brainerd, Grand Rapids, International Falls, Little Falls, and Sartell. In 1902 the production of sawmills in the Duluth area peaked at 1.032 billion board feet – 70% more lumber than

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[15] For a detailed history of pre-World War II logging in Minnesota see Agnes M. Larson, *The White Pine Industry in Minnesota, A History* (1949, rpt. Minneapolis: University of Minnesota Press, 2007).
[16] Larson, 182-184.
[17] Larson, 163, 240, 244.
[18] Larson, 243.
[19] Larson, 248, 253.

had been cut in Minneapolis in 1899. In 1905 Minnesota was fifth among states in lumber production. In 1907 a massive operation, billed as the world's largest white pine sawmill, opened in Virginia. Its owner, the Virginia and Rainy Lake Lumber Company, employed 1,700 to 2,500 men annually between 1910 and 1925, as well as 900 horses and 13 locomotives.[20] In 1910 another huge mill opened at International Falls.

As easy-to-reach forests were cut, loggers penetrated into more remote areas. And after the largest trees were cut, the industry began to make use of so-called inferior species such as jack pine, spruce, fir, and cedar. The state's market share of construction lumber began to slip as high quality trees became harder to harvest profitably, as large companies shifted operations to the Pacific Northwest, and as the use of cement and steel as alternative building materials began to rise. By the mid-1920s the production of paper and other products that used softer, fast-growing species exceeded the production of lumber in Minnesota. Lath, fencing, utility poles, railroad ties, and crates are just a few of many products made.[21]

By 1907 large sawmills were closing, a trend that accelerated in the 1920s. The last large sawmill in Minneapolis closed in 1919. Duluth's last major sawmill closed in 1932. The Virginia and Rainy Lake Lumber Company in Virginia closed in 1929, and the plant at International Falls closed in 1934. During peak years of Minnesota logging, 2 billion board feet of lumber or 1.3 million cords were cut. By 1932 the cut was only 58 million board feet or 37,755 cords. In the late 1930s the last river log drive occurred, and in the late 1940s the last of the logging camps closed.[22]

The effect was severe for at least 16 counties in northern Minnesota as large companies pulled out and unemployment skyrocketed. Millions of acres had been cleared of large trees, leaving the land physically scarred and covered with highly flammable slash. While dense green forests tend to resist fire, the dry cutover landscape could burst into flames if conditions were right. If fire burned a particular area one year, it was vulnerable to reburning in successive seasons. The clearcutting of streambanks and lakeshores created erosion that diminished water quality. Logging completely changed the ecosystem and caused widespread loss of wildlife habitat. Longstanding state tax policies favored clearcutting and then abandoning the land, giving no incentives for lumber companies to replant trees or protect the land from fire as forests regrew.[23]

What to do with Minnesota's vast cutover – how to physically repair the land, and how the region could recover economically and regain population – was a major challenge for the entire state.

Many assumed that agriculture was the inevitable next step and, beginning around 1910, large numbers of jobless timber workers attempted to farm the cutover. Nationwide, farm prices were strong and northern Minnesota logging camps were providing a local market for milk, eggs, and other farm products. Cutover agriculture was actively promoted by government agencies and University of Minnesota experts who were interested in the economic recovery of the area, and by logging companies and railroads trying to sell excess land. Beginning around 1910 state and local governments increased road-building and sponsored large projects to drain peat bogs and swamps to convert them to farmland.

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[20] Writers' Program of the Work Projects Administration, comp., *The WPA Guide to the Minnesota Arrowhead Country*, 1941 (rpt St. Paul: Minnesota Historical Society Press, 1988), 13.
[21] Larson, 254-255, 389, 399.
[22] Hoff et al., 59, 64.
[23] Larson, 342-244, 402.

Road-building encouraged settlers to move into remote locations. Swamp drainage increased the amount of flammable material, and the principal method of clearing the land for agriculture – by fire – created a forest fire nightmare. According to the Minnesota Forest Service in 1917, the fire danger had "materially increased" because of the drainage of two million acres of swamps. While wild fires were typically driven *into* wet swamps to help extinguish them, swamp drainage created stores of dry peat in the ground, sometimes 10' deep, that could smolder without notice or, even if detected, could burn for months in fires almost impossible to put out.[24] In 1934 the state reported that "all of the large disastrous fires" in the previous 30 years had originated in peat.[25]

Early Conservation

In the late 19th century, while white pine logging was in its heyday, an early conservation movement emerged. It was led by a handful of Minnesotans who knew the state's timber resources were finite and that the environmental effects of indiscriminant logging were rising to catastrophic levels. From the beginning of the movement, protecting both uncut timber and cutover areas from fire was a primary concern. A lack of fire protection was one factor that encouraged clearcutting: because there was no way to protect their investment from fire, many lumber companies cut their timber as rapidly as possible instead of harvesting the trees selectively.[26]

Minnesota's pioneering advocate for fire protection and forest conservation was General C. C. Andrews, sometimes called the apostle of conservation forestry. A Harvard-trained lawyer and former diplomat, he began to influence events in Minnesota around 1890. Andrews promoted practical forest management based on models used in Scandinavia. He argued that forests should occupy only land not suitable for agriculture; that harvesting should be sustainable with annual cutting not exceeding annual growth; and that forests should be harvested in strips or blocks to promote natural reseeding. Fire prevention was key to Andrews' strategy. On paper, Andrews developed a fire prevention plan in the early 1890s consisting of a state warden or commission which oversaw a league of local township clerks who would serve as fire wardens; trained rangers who would seasonally patrol the forest; watch or lookout towers to spot fires; and telegraph lines to report them. He argued that lumber companies should be prohibited from burning their debris during the fire season, that railroads be required to clear their rights-of-way of debris and install spark arrestors, and that the fire prevention scheme should be financed by special taxes paid by lumber and railroad interests.[27] Many of Andrews' ideas were eventually realized.

During this period, large fires simultaneously burned in several places in the Duluth area in 1891. In 1893, Virginia – the most important new community on the developing Mesabi iron range – was completely destroyed. Then in September 1894 after one of the driest summers on record, the towns of Hinckley, Sandstone, Brook Park, Pokegama, and Mission Creek were burned to the ground in a giant firestorm. A total of 418 people were killed in Hinckley and 200,000 acres were burned. The 1894

[24] Weeks Law report, 1917, 1; Wilson, *Be a Forest Ranger*.
[25] *State of Minnesota Department of Conservation's Second Biennial Report*, 116.
[26] Larson, 345; William E. Lass, *Minnesota: A History*, 2nd ed. (New York: Norton and Co., 1998), 242-244.
[27] Newell Searle, "Minnesota State Forestry Association: Seedbed of Conservation," *Minnesota History* (Spring 1974), 27-28; see Searle for the early politics of conservation forestry in Minnesota.

Hinckley fire remains one of the worst forest fires in U.S. history. The same season, another 30 people were killed in fires burning in remote areas near the Rainy River.[28]

In 1895 in the aftermath of the Hinckley fire, the Minnesota Legislature took its first steps to protect Minnesota's forests from fire by passing a bill largely written by C. C. Andrews. While providing some fire protection, public control of forests, and care in forest management, the mandate was mostly unfunded. It did, however, publicly acknowledge many of the principals that would increasingly guide Minnesota forest conservation in the 20th century. The law authorized one salaried position – Chief Fire Warden – to which C. C. Andrews was appointed. It created a system of local officials in each township and village who would assist with fire protection for nominal pay. The law set penalties for setting destructive fires, and required railroads to install spark arresters on locomotives and keep their rights-of-way clear of slash. In 1897 there was an attempt to repeal the law but the movement was rebuffed, largely because lumber companies supported the act.[29]

In 1899 a Forestry Board was created to manage forest lands owned by the State of Minnesota. The law provided that two-thirds of the income generated from certain state-owned parcels – income typically derived from timber sales (i.e., timber-cutting rights) – would help fund public education. Protecting these forests from fire helped preserve the important source of revenue. The first major forest designated under the 1899 law was Pillsbury Forest Reserve (later Pillsbury State Forest), a tract of nearly 1,000 acres of tax-delinquent cutover land in Cass County west of Brainerd donated by former governor John S. Pillsbury. The transaction, completed in 1902, established the University of Minnesota as recipient of the income. A similar parcel, Burntside Forest Reserve, was created in 1903 on 20,000 acres north of Ely.

In 1903, the same year that Burntside Forest Reserve was created, the precursor of Chippewa National Forest was designated by the federal government on the Leech Lake Indian Reservation. In 1908 Chippewa National Forest was formally established, and in 1909 Superior National Forest was created. Both forests were established with scientifically managed timber production as a principal aim. The designations placed under federal management thousands of acres of commercially viable timber as well as thousands of acres of forest cutover in need of rejuvenation. Within a few years fire lookout towers were built to protect these forest resources, both by the U.S. Forest Service within the designated boundaries and by the State of Minnesota outside their perimeters.

At the turn of the century forest fires continued to ravage northern Minnesota. In 1898, for example, fires burned substantial areas around Grand Rapids, Deer River, Tower, and along the North Shore of Lake Superior. In 1899 a large fire threatened western Duluth. In 1900 most of the town of Virginia, which had been rebuilt after the 1893 fire, was destroyed again. In 1905 there were major fires along the North Shore, near Cass Lake, and along the Mesabi iron range. The same year a six-mile-long fire threatened Duluth and there were large fires at Bovey and Chisholm. In 1907 there were substantial fires north of Virginia and again at Chisholm.[30]

During this period the U.S. Forest Service was established in 1905. Fire prevention, including the use of lookout towers for early detection, was one of the agency's top priorities. The Forest Service's first

[28] Julius F. Wolff, Jr., "Of Fire, Forests, and People," *MCV* (March-April 1974), 15-16.
[29] Searle, 28.
[30] Wolff, "Of Fire, Forests, and People," 16-17.

nationwide Chief Forester, Gifford Pinchot, believed that suppression of all forest fires was critical to protecting America's diminishing forest resources, and used the tragedy of mammoth fires in western mountain states to bring public awareness to the fire threat and to help leverage support for the Forest Service as a vital federal agency. Pinchot's strict no-fire mandate guided U.S. Forest Service policy for many decades.

The 1908 forest fire season was one of Minnesota's worst. In the spring and summer, very large fires burned near Two Harbors and at Cass Lake, and in early September there were two fires near Hibbing. Then on September 6th, fire destroyed the mining town of Chisholm. Two hundred square miles of the Mesabi iron range were affected by "one continuous inferno" that stretched more than 22 miles from Hibbing to Nashwauk. Historian Julius Wolff writes that "virtually the entire male population of the Mesabi Range [was] on the fire line." No lives were lost but 400,000 acres of land were destroyed including 20,000 acres of valuable commercial timber. In the same month fires on the North Shore isolated and threatened the towns of Grand Marais, Tofte, and Hovland and requiring mobilization of the Navy Reserve based in Duluth. There were also fires at Cass Lake, more fires near Nashwauk and Aurora, and fires on Isle Royale.[31]

In 1909 after nearly 15 years of trying to protect forests with unsalaried township fire wardens, the Minnesota Legislature finally authorized the first corps of paid men, called forest rangers, to patrol the woods. Twenty-four men were employed in the 1909 season and 26 men in 1910. Unfortunately the 1910 crew was laid off in September due to lack of funds.

One month later, in October 1910 – only two years after the destructive 1908 fires – a massive fire wiped out the towns of Baudette and Spooner on the Rainy River, killing 42 people and burning 360,000 acres. The same season a rapidly spreading fire threatened Bemidji; it was stopped at the last minute only a mile south of town by volunteers from the Bemidji fire department and 100 citizens. Another large fire spreading toward Walker was stopped at the eleventh hour by the heroic efforts of local citizens and employees of the Minnesota state hospital there.[32]

Creation of the Minnesota Forest Service

The tragedy of these fires prompted state action and in 1911 the legislature established the Minnesota Forest Service. The first state-owned fire lookout towers were built soon after the agency was founded. The state forest service joined the ranks of the U.S. Forest Service, created in 1905, and the U.S. Indian Service Forestry Division, founded in 1910.

The first leader of the Minnesota Forest Service was William T. Cox, an early graduate of the University of Minnesota school of forestry. The University was a national pioneer in forestry education, teaching the first forestry course in the U.S. in 1889 and establishing a formal forestry degree program in 1903. In 1900 a University faculty member planted a research plot near Grand Rapids which, in 1962, was noted as being the oldest forest plantation in the U.S. on which continuous records had been kept.[33] In 1909 the University received authorization to establish a forest research and teaching station at Itasca

[31] Wolff, "Of Fire, Forests, and People," 17-19.
[32] "Bemidji and Walker Saved," *Albert Lea-Freeborn County Standard*, May 18, 1910.
[33] J. H. Allison, "Tree Planting Started Years Ago," *MCV* (Jan.-Feb. 1962), 20-22.

State Park and the same year acquired land at Cloquet for the University's Forest Experiment Station. (Lookout towers remain standing at both Itasca State Park and at the Cloquet station.)

Establishment of the Minnesota Forest Service coincided with congressional passage of the Weeks Law of 1911. The Weeks Law authorized the U.S. Forest Service to cooperate with the states on firefighting and fire protection. It was the first time federal funding for fire protection could be passed to nonfederal agencies and it spurred passage of new state laws and the establishment of state fire protection agencies and public forests. The Minnesota Forest Service was one of the first state forestry agencies established in the country, and Minnesota was one of the first states to apply for Weeks Law funds. Beginning in 1911 the state received money annually for rangers to patrol forests at the headwaters of major rivers. The federal money supplemented Minnesota's paltry legislative appropriation, helped free up money to build fire lookout towers and, in qualifying areas, helped pay for spotters. Under the Weeks Law the federal government increased its holdings within Chippewa and Superior national forests and built new fire towers. The law also spurred the establishment of forest research and educational programs and cooperation between the U.S. Forest Service and private landowners.

During the 1911 season, the Minnesota Forest Service built 92 wooden towers, many of them "tree towers" with spikes or ladders in tree trunks, as well as its first 13 steel towers. The 13 steel towers were probably all prefabricated, three-legged structures with a simple open platform near the top. The agency also built eight patrol and lookout cabins that season. In 1912 the agency built five more towers, two of steel and three of wood. This brought the state agency's total to 115 fire lookouts, the majority of which were tree towers. Its steel towers ranged in height from 50' to 70'. The U.S. Forest Service was building its own early lookout towers during the same period. The Minnesota Forest Service built very few towers in 1913-1920 because of meager state appropriations. Instead, the limited workforce concentrated on stringing telephone lines, building trails to the towers, and on forest reconnaissance and mapping.[34]

In 1917-1918 a severe drought parched the state. At the same time a tremendous fire hazard was created by increased logging during World War I, widespread drainage of peat bogs for agriculture, and the use of fire to clear cutover farmland. In 1917 more than 1 million acres burned, while the Minnesota Forest Service's workforce consisted of only 13 district rangers, 35 seasonal patrolmen, private railroad and logging company patrols, and a system of unsalaried local fire wardens.

Then in early October of 1918, near the end of the driest season in 48 years, an estimated 50 to 75 fires burned simultaneously. The wind picked up and the fires united into a great conflagration that completely burned about 2,000 square miles, mainly within 50 to 100 miles of Duluth. Known as the Moose Lake-Cloquet Fire of 1918, it remains one of the worst forest fires in U.S. history. At least 453 people died and another 85 were badly burned. In Moose Lake, 87 charred bodies, many of them unidentified, were interred in one large trench grave. The fire destroyed 52,000 homes, leaving tens of thousands homeless. A total of 87,000 square miles was affected to some degree, and 27 towns and villages were wiped out.[35]

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[34] *First Annual Report of the State Forester* (Minnesota Forestry Board, 1911), 49; Weeks Law report, 1912, n.p.

[35] Daniel L. Casey, "Wildfire," *MCV* (Jan.-Feb. 1976), 36; Elizabeth Bachmann, "Fire! . . . An Underwriter of the History of Minnesota Forestry," *MCV* (Jan.-Feb. 1964), 4-9; H. W. Richardson, "The Northeastern Minnesota Forest Fires of October 12, 1918," *Geographical Review* (April 1919).

Soon after the 1918 fires, the Minnesota Forest Service wrote that its lack of manpower and equipment had been "repeatedly called to the attention of the legislature" but appropriations had remained very low. The report noted that the cost of fighting the 1918 fires, providing relief to the victims, and repairing lost infrastructure – along with the value of property lost – would have been enough to fund the Minnesota Forest Service for the next 80 years.[36]

While the legislative response was tepid at first, the fires had raised public awareness and in the next several years a significant number of new fire towers were built, including the oldest lookout towers that remain standing in Minnesota today.

Fire Towers in the 1920s

After 1920 northern Minnesota logging continued at a reduced level as the most valuable trees had been removed. In the aftermath, public ownership of land increased dramatically. Millions of acres of cut- and burned-over land went into tax delinquency and reverted to state and county ownership as logging companies had no use for it. Former loggers with little experience or capital were barely surviving on cutover farms, challenged by stump-covered fields, thin rocky soils, a short growing season, and distant markets. Logging companies shirked responsibility for the useless land, leaving a small number of marginal farmers to pay the entire property tax burden of roads and drainage. Nationwide, farm prices collapsed in 1919 and Minnesota agriculture entered a slump that did not end until World War II. As farms and forests were lost to back taxes, more and more cutover land became public. "By 1930," writes historian William Lass, "the situation had reached crisis proportions. About one-seventh of the state's entire acreage was on the tax-delinquent rolls and about three-fourths of those acres were in the old coniferous forest area."[37]

In the 1920s fires continued to plague northern Minnesota. The Minnesota Forest Service wrote in 1921, "The danger from fires in the timbered sections of Minnesota is constantly growing greater because of the increased settlement, extensive drainage without control, increase in the number of tourists, hunters, and fishermen, and the drying out of soil in logged-over and burned-over areas."[38] In 1922-1923 more than one million acres burned, including five entire townships near Cloquet. Serious blazes occurred again in 1925 and 1926. There were several large fires near Hibbing in 1928, and triple the number in 1929. According to a 1929 newspaper account, the Maple Hill Tower (razed), "perched on the highest section of land in the Hibbing forestry area, more than proved its worth during this season's fire activities."[39]

In the 1920s the Minnesota Forest Service built a significant set of towers as soon after the 1918 fires as funding would permit.[40] Eighteen new steel towers were built by the state circa 1922. By the end of that year the Minnesota Forest Service had built, since its creation in 1911, 34 steel lookout towers, dozens of wooden towers, 16 patrol and lookout cabins, 4 ranger stations, and 11 storage sheds, in addition to

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[36] Weeks Law report, 1918, 3.
[37] Lass, 247. See also Forest W. Stearns, "History of the Lake States Forests: Natural and Human Impacts," in *Lake States Regional Forest Resources Assessment: Technical Papers*, eds. J. Michael Vasievich and Henry H. Webster (St. Paul: U.S. Dept. of Agriculture Forest Service, North Central Forest Experiment Station, 1997), 8-29.
[38] Weeks Law report, 1921, 1-2.
[39] "Fires in Hibbing Forest Area Show Triple Increase," *Albert Lea Evening Tribune*, Nov. 12, 1929; Bachmann, *A History*, 20.
[40] Wilson, "Fire in our Forests," 36.

hundreds of miles of trails, portages, firebreaks, and telephone lines, all for firefighting.[41] By 1923 the state staff had increased to 15 district rangers, 55 regular patrolmen, and 51 temporary patrolmen. Many of the lookout towers were staffed by the temporary patrolmen.[42]

In 1924 the Minnesota Forest Service's first leader, William T. Cox, was replaced by Grover M. Conzet. Conzet was also a University of Minnesota Forestry School graduate. Conzet was influential in the passage of fire protection laws and the development of new firefighting equipment and techniques. Among his inventions was a peat nozzle that helped with the almost impossible task of fighting fires in dried peat. Another innovation was Conzet's backpack pump, nicknamed the "GMC," which was adopted nationwide.[43]

In June of 1924 Congress passed the Clarke-McNary Act, essentially an expansion of the Weeks Act of 1911. Federal funding to the states for fire prevention and firefighting was increased. Substantial grants to Minnesota under the Clarke-McNary Act began in the summer of 1925 and continued through the period covered by this narrative. With the impetus of Clarke-McNary funding there was a new burst of fire lookout tower construction in Minnesota. Towers fabricated and erected in the mid-1920s that still stand today include the Ash River, Cambridge, Devilfish, Elephant Lake, Linder, Loman, Prosper, Rapid River, Sand Dunes, Schoolcraft, and Smoky Hills towers.[44] These are Minnesota's oldest extant towers (see Minnesota's Extant Towers under Section F (Associated Property Types) for the counties in which these towers are located).

In 1925 the state forest service built its first permanent ranger district office in Park Rapids. To this point most ranger districts had been headquartered in hastily built shacks and temporary quarters. In 1925-1930 permanent rangers' offices were also built in Bemidji, Blackduck, and Moose Lake, and construction of an office at Deer River was begun. In 1927 the legislature authorized a tax on private land to help pay for fire prevention.[45]

The next significant set of towers built by the Minnesota Forest Service comprised 30 steel towers erected in the winter and spring of 1928-1929. Four of them were the state agency's first stair towers and the rest were ladder towers. This brought the number of state-owned steel towers to about 54 by the end of 1929, a decade after the tragic 1918 fires. Extant towers believed to have been built in 1928-1929 are Aiton Heights, Birchdale, Nimrod, Roseau River, Cloquet Forestry Center, Coleraine, Emily, Longville, and Summit/Bagley (see Associated Property Types for locations). The existing Aiton Heights and Cloquet Forestry towers are two of the first four state-owned stair towers built in Minnesota; the other two have been razed. In 1931 the State of Minnesota was reportedly operating an estimated 90 lookout towers.[46]

During this period, automobiles were becoming more affordable for the middle class and northern Minnesota began to experience significant recreational development. Most of the state's lakes were

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[41] Bachmann, *A History*, 19.
[42] Clarence Prout, "Building Minnesota – Early-Day Forestry," *MCV* (Sept.-Oct. 1955), 35.
[43] Bachmann, *A History*, 20, 40.
[44] When using terms such as "built" or "erected," some sources, both historic and modern, do not differentiate between a *newly fabricated* (e.g., newly purchased) tower being erected on a given site, or a tower *moved* to a given site from another location (i.e., a tower being reused). Historians will often need to conduct further research to clarify.
[45] Larson, 347-348.
[46] Hoffet al., 31.

located in the forested fire protection zone, and fire towers were critical to the protection of these and other natural resources that drew tourists. Across the region, new roads were built and fishing camps, resorts, summer cottages, and picnic and campgrounds were created on both public and private land. The trend continued through the period discussed in this narrative. The significant increase in tourism added to the fire protection burden. Not only did the number of fires increase with more people using the woods, but agencies felt "the responsibility of providing more intensive fire protection to lakeshore development" which was experiencing a "staggering" increase in property value.[47]

The 1930s and the New Deal

In 1931, after a landslide victory elected Democrat Floyd B. Olson as governor, the Minnesota Forest Service was reorganized as the Division of Forestry within a new Minnesota Department of Conservation. The Conservation Department was charged with the management of all land, timber, mineral, and water resources owned by the state, ending the decades-long conflict with the State Auditor that had favored clearcutting for immediate revenue over forest conservation and longterm sustainability. Shifts in policy emphasized that forests "should be put to the highest and most productive use for the permanent good of the greatest number of people," in the words of the state conservation commission.[48] By 1937 the state forestry agency was employing about 80 permanent rangers, patrolmen, lookout tower spotters, and other workers. An average of 100 to 150 additional workers were added to the payroll during emergencies.

The 1931 legislature designated several new state forests and state parks, as well as protecting state-owned lands within Chippewa National Forest from sale to private parties. The state Forestry Division was now responsible for protecting and managing timber resources on roughly 23% of the land in the northern forested part of the state, including about 2.5 million acres within the boundaries of the designated state forests.[49]

In 1932 a state commission organized to study the future of the northern Minnesota cutover recommended that the region be reforested and used for timber production and recreation. More state forests and state parks were created during the next few years. The U.S. Forest Service, with authorization from the Clarke-McNary Act, purchased more private lands for forestry purposes, significantly enlarging the boundaries of Chippewa National Forest and Superior National Forest. The latter became one of the largest national forests in the country. The U.S. Forest Service increased the number of its fire towers accordingly.

The 1930s were a period of unprecedented drought, and Minnesota suffered some of the worst fire seasons in state history. In 1931, for example, nearly one million acres of peat and timber lands burned in Roseau, Marshall, Beltrami, and Lake of the Woods counties, claiming several lives and leaving hundreds of people homeless. In 1931 the state Forestry Division recorded within its jurisdiction a total of 2,778 fires; 756 of them burning more than 100 acres each and, of those, 157 fires burning more than 1,000 acres.

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[47] Lass, 242; J. H. Hubbard, "State Forest Protection," *MCV* (Dec. 1942), 22. The creation of designated picnic areas and campgrounds in public forests and parks originated as a way to concentrate campfires in single locations.
[48] Hoff et al., 55.
[49] Hubbard, 22-23.

The 1931 fires led to charges that the state forest agency was inadequately protecting forest resources. In the spring of 1932 the *Brainerd Daily Dispatch* reported: "Four major lumber companies and more than a score of settlers Thursday charged the state forestry department with inefficiency in fire prevention work." According to the newspaper, "The charges grew out of the destruction of large areas in Lake of the Woods and Koochiching counties last September when forest fires swept the area. The four companies making the charges were the Minnesota and Ontario Paper Co., the Blandin Paper Co., the Watab Paper Co., and the T. M. Partridge Lumber Co."[50]

The severity of fires in the early 1930s led the Minnesota Department of Conservation to write in 1934, "The increasing fire hazard to forest, peat, and meadow lands of the state from the effects of the present protracted drouth is a matter of great concern to the division and the department. There have been periods during the past several seasons when all human efforts to cope with the fire menace have seemed hopeless. . . . Widespread conflagrations with a great loss of property as well as human lives seemed imminent on several occasions but were averted."[51]

Another particularly acute fire season occurred in 1936. In the first week of August a dozen fires burned simultaneously in northern Minnesota. A virtual army of 750 men worked fire lines up the Gunflint Trail and along the U.S.-Canadian border, while another 400 men were fighting a fire south of Ely. At the same time a 5,000-acre fire was burning near Grand Portage and 600 men were fighting another fire on Isle Royale. Peat fires were also burning in north central Minnesota and northwest of the Twin Cities; 300 men were fighting to put those out. Smaller fires burned as far south as Winona. In the first ten days of August 1936, the Minnesota Forestry Division expended $100,000 (in 1936 dollars) compared with $16,000 spent in the previous eight months combined. Forestry Division director Grover Conzet "declared conditions to be the worst in the history of Minnesota" and reported, "We are buying fire-fighting equipment and getting it into the area[s] as rapidly as possible but we can't get enough equipment. Today we are shopping by wire and telephone all over the United States in an attempt to buy all the hose available."[52]

As the Great Depression worsened, incomes plummeted, the unemployment rate in the state nearly 25%, and hundreds of thousands of Minnesotans fell into poverty. In response to the devastation nationwide, newly elected President Franklin D. Roosevelt and the U.S. Congress launched a sweeping package of federal programs known as the New Deal in the spring of 1933. Practically overnight, unprecedented resources became available to state, federal, and Indian Service foresters. According to a Minnesota Forestry Division official writing in late 1941, New Deal agencies "had manpower, equipment, and proper supervisory personnel. . . . To the forester they represented a heaven-sent gift – a chance to make paper plans a reality."[53] In many respects, the New Deal shaped the face of conservation in Minnesota for the next several decades, as well as helping repair northern Minnesota both physically and economically.

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[50] "Score Forestry Unit For Methods," *Brainerd Daily Dispatch*, April 15, 1932.

[51] *State of Minnesota Department of Conservation's Second Biennial Report*.

[52] "Hundreds Battle Forest Fires in the North Woods," *Brainerd Daily Dispatch*, Aug. 4, 1936; "New Fires Raging Out of Control in North," *Albert Lea Evening Tribune*, Aug. 12, 1936. See also Wolff, "Some Major Forest Fires in the Sawbill Country," 131-138.

[53] C. J. Prout, "Minnesota's Cutover Lands: An Outline for Their Development," *MCV* (Dec. 1941), 23. This article contains an overview of work completed by New Deal agencies for the Minnesota Division of Forestry.

The principal New Deal forestry program was the CCC. The U.S. Forest Service was deeply involved with the Roosevelt administration in planning its structure and scope. The CCC put thousands of men to work on firefighting, nursery work, disease control, and tree planting. By August 1933 there were 12,200 men stationed more than 60 CCC camps throughout Minnesota. The workers built lookout towers, improved tower sites, built firebreaks, installed telephone lines, developed truck trails, cleared fire hazards from roadsides and forest interiors, and conducted specialized studies and mapping. The Works Progress Administration (WPA) and other federal relief programs also made significant contributions to forest conservation efforts. Most fire lookout towers in Minnesota were manned by CCC or WPA crews during the Depression. The enrollees of virtually all CCC camps in Minnesota were also instrumental in fighting the era's severe fires. Even Soil Conservation Service camps in southern Minnesota sent men to the North Woods to help on the fire lines.[54]

In Minnesota, fire prevention was the first priority of CCC forestry camps. The first five categories of the highly-organized CCC work program included 1. Fire Protection; 2. Telephone Line Construction; 3. Fire Break Construction; 4. Fire Hazard Reduction; and 5. Lookout Towers. (The other work categories were Miscellaneous Construction, Recreational Development, Truck Trails (including tower access roads), Foot Trails and Portages, Airfield Construction, Water Conservation, Reforestation, Forest Protection (from disease), Surveys, Timber Stand Improvement (e.g., thinning seedlings), Forest Experiment and Research, Game Management, and Indirect Camp Work.) A report on CCC work in Minnesota state forests prepared in 1938, midway through the New Deal, noted the following:[55]

Fire Protection: CCC crews were on permanent standby for firefighting duty. "The availability of this manpower has resulted in an unknown amount of forest protection, particularly in the suppression of fires before they attain large size. This is especially true of the extreme seasons of 1933, 1934, and 1936. The man-days used [for firefighting] varied from a low of about 3,500 in 1935 to a high of about 37,000 in 1933. Enrollees have been trained for tower duty and during the fire seasons they have manned the towers." CCC enrollees in the state forests manned lookout towers for 6,428 man-days in the period June 1933 to March 1938.

Telephone Line Construction: "Telephone connections between the towers, ranger stations, patrol stations, and camps are necessary to report fires, direct firefighting, and [for] the ordinary business of forest administration. A considerable number of miles of line originally built by the State Forest Service has been rebuilt or moved, while a large number of miles of new line has been added to the system."

Fire Break Construction: "Fire breaks have been constructed around nurseries, new plantations, and [in] lines to break up large tracts of timber where there were no roads or natural barriers."

Fire Hazard Reduction: This work included clearing brush from 50- to 400-foot swaths along highways, truck trails, and other trails, as well as clearing slash and debris from old logging operations, blow-downs, and other areas.

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[54] "Forty-Three Years of Forestry," *MCV* (July-Aug. 1951), 41; Clarence Prout, "Building Minnesota – Modern-Day Forestry," *MCV* (Nov.-Dec. 1955), 24.

[55] L. R. Beatty, *Five Years for Conservation: A Report of the Conservation and Training Accomplishments of the CCC Camps on the Minnesota State Forests, June 1933 to March 1938* (July 1938), 14-15, Iron Range Historical Society, Gilbert, MN.

Lookout Towers: "The original state forestry system of 1933 has been increased by the addition of 35 new towers [in state forests; as of March 1938]. Many towers have been shifted – the old ladder tower being taken down and replaced by [a] new stairway [tower], and old towers re-erected on new locations. The first towers were erected under the supervision of experienced state forestry tower builders, but as men in the camps gained experience they took charge of the work. The erection of new towers has necessitated the construction of a road, a telephone line, site improvement, hazard reduction, and in many instances new buildings." During the period June 1933 to March 1938, CCC state forest camps erected 35 new towers. Fifteen of these projects evidently involved replacing an existing tower, which was either moved to a different location or placed in storage.[56]

With the help of New Deal programs, Minnesota's system of fire lookout towers was significantly strengthened. According to one source, the CCC built (and moved) about 150 towers in the state. Within and near the state forests alone, the CCC erected about 66 lookout towers, 47 of them newly fabricated and the other 19 moved from other lookout sites and re-erected. In addition the CCC workers improved dozens of tower sites by rebuilding their dedicated access roads or trails, stringing better telephone lines, and constructing spotter's cabins, latrines, garages, and storage sheds.[57]

In the 1930s reforestation of the cutover began under the protection of the lookout towers. The land area requiring restoration was vast – an estimated 30,000 square miles. While some species could regenerate from natural seed dispersal, others such as pine needed to be replanted. Replanting efforts by forestry agencies had remained small until the early 1930s, when major public nurseries were established and New Deal manpower became available. The CCC planted 25 million seedlings in Minnesota and collected 9,000 bushels of cones; another 18 million trees were planted by the WPA. The Minnesota Forestry Division's Badoura Nursery was created in 1931, doubled in size during the New Deal, and has remained the state's principal nursery. (The Badoura Fire Lookout Tower, erected in 1934 at the nursery, is extant.) In 1939 the need for even more seedlings prompted establishment of the state's second nursery, General C. C. Andrews Nursery, which was developed near Willow River in Pine County with help from the WPA. Some state forests had small nursery areas, and the U.S. Forest Service and the U.S. Indian Service also established nurseries for reforestation.

The total number of towers owned by the State of Minnesota increased from about 90 in 1931 to about 117 in circa 1935 to about 130 in circa 1940.[58] Similar growth in the number of towers occurred in the two national forests and on Minnesota's Indian reservations. In 1940 Minnesota had about 185 lookout towers being manned by all agencies. These included about 130 state-owned towers, 46 U.S. Forest Service towers in Chippewa and Superior national forests (about 21 and 25, respectively), a few towers administered by federal agencies such as the Fish and Wildlife Service, and a few administered by the U.S. Indian Service.[59]

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[56] Beatty, *Five Years for Conservation*, 16-19.

[57] Barbara W. Sommer, *Hard Work and a Good Deal: The Civilian Conservation Corps in Minnesota* (St. Paul: Minnesota Historical Society Press, 2008), 128; L. R. Beatty, *Summary: Minnesota CCC Work, 1933-1941*, U.S. Civilian Conservation Corps, U.S. Dept. of Agriculture, and Minnesota Dept. of Conservation, 1942, p3, MHS.

[58] "ECW Construction Proposed and MFS Tower and Building Sites," ca. 1935, Minnesota Dept. of Conservation, Forestry Division Records, MHS, and others.

[59] *Chippewa National Forest* (U.S. Dept. of Agriculture Forest Service, 1938); *Superior National Forest* (U.S. Dept. of Agriculture Forest Service, 1941); "Guardians of the Timberlands," 34.

A 1941 U.S. Forest Service brochure on Superior National Forest warned, "the greatest single enemy of the forest is fire" and stated that, since the U.S. Forest Service's establishment, "fire suppression has had highest priority among all phases of the forest program." In a 1938 brochure on Chippewa National Forest, the Forest Service wrote, "The history of our American forests has indicated very clearly that only with complete protection from fire and other devastating influences can we ever hope to perpetuate them. When forests are protected we can be assured that recreational areas, wildlife, and satisfactory watersheds will be available for future generations." The text then favorably compares the portion of Chippewa National Forest which had been under federal protection and management since 1905 with the condition of the Forest's two new purchase units. In the unmanaged areas, "The timber was cut off without any consideration for future timber crops. Fires have burned over the area repeatedly. Today on much of the area tangles of charred snags and windfalls are common. Brush which has choked out more valuable timber species covers much of the land and in some places where fires have been especially bad all that remains is the bare boulder strewn soil." On the managed areas the forest was on its way to recovery and commercial productivity.[60]

During the New Deal most fire towers built by federal relief agencies for the State of Minnesota were built for the Minnesota Forestry Division, but the Minnesota Department of Conservation's Game and Fish Division and State Parks Division were sponsors of a few tower projects. Most towers erected by federal relief agencies for the federal government were built for the U.S. Forest Service in one of the two national forests. Towers were also erected on reservations for the U.S. Indian Service, and a few were erected for miscellaneous federal agencies such as the U.S. Biological Service (later the Fish and Wildlife Service), the Resettlement Administration, and possibly the Soil Conservation Service. Extant towers built for the U.S. Bureau of Biological Survey include the Mud Lake Refuge Headquarters Tower (1939) in Marshall County, which was built and manned by the CCC as part of a large reclamation of cut- and burned-over land. Extant towers built for the Resettlement Administration include the Norris Tower (1934) and the Pine Island Tower (1937). The towers were built as part of the Beltrami Island and Pine Island projects which relocated failing farmers and established large public conservation projects to restore forests, wetlands, and prairies in Lake of the Woods, Beltrami, Koochiching, and Roseau counties. The Norris Tower stands on its original site in Lake of the Woods County and the Pine Island Tower was moved in 2011 to Big Bog State Recreation Area in Beltrami County (see also the Rapid River and Roseau towers below).

Most fire lookout towers erected during the New Deal were built by the CCC. In a history of the CCC nationwide, one author writes:

> The first priority of the CCC was the protection of the country's vast forest resources. Organized firefighting was developed in the national forest system with the formation of the U.S. Forest Service in 1905, but lack of funds and manpower through the years limited what the Forest Service could do. The CCC's fight against fire was two-fold. With the vast manpower available from the Corps, trained people could man the fire lines along with regular Forest Service personnel. The other aspect of firefighting was fire prevention. CCC enrollees built firebreaks, roads, fire lookouts, and airfields, installed telephone lines, cleared debris, and patrolled forest

[60] *Superior National Forest*, 15, 17. It was not until the early 1960s that the use of prescribed burns as a fuel-reduction, reforestation, and wildlife management tool began to be common. The Minnesota Forestry Division, for example, conducted its first prescribed burn in 1961. *Chippewa National Forest*, 8-9.

areas. All of this contributed tremendously to the war against fires as did the CCC's work on insect and disease control and slash disposal.[61]

Nationwide, the CCC built an estimated 3,470 fire lookout towers. As the New Deal was drawing to a close in the early 1940s, forestry agencies kept CCC personnel on firefighting duty as long as possible even as other work projects were cancelled and camps were disbanding.[62]

Minnesota had a few CCC camps that were not populated by "regular" CCC enrollees but by groups such as Native Americans and veterans. It is not known whether the Veterans Division of the CCC built any Minnesota fire towers, but the Indian Division of the CCC (CCC-ID) likely built and manned several fire towers. In a February 1934 piece on the forestry work of the CCC-ID nationwide, an Indian Service official wrote that Native Americans had a "huge proprietary stake" in their timber stands, many of which were commercially valuable. He wrote that "Almost the full strength of the Indian Emergency Conservation Work [CCC] in forest operations . . . will go into the protection of large areas against forest fires."[63] Nationwide, CCC-ID resources were deployed to build lookout towers, roads, trails and telephone lines, and to stand ready as a trained firefighting force to be quickly dispatched as fires were detected.[64] On Minnesota reservations CCC-ID enrollees attended forest fire training, built bridges, built and manned fire lookout towers, built firebreaks, fought fires, and cleared the woods of currant bushes to help control pine blister rust.

Workers hired by the Civil Works Administration (CWA) either erected or re-erected the Quadna Tower (extant) in Aitkin County for the Minnesota Forestry Division. The CWA evidently also collaborated with the CCC on the Jasper Peak Tower (extant) in St. Louis County. WPA crews stationed at the Resettlement Administration's Norris Camp in Lake of the Woods County erected two steel towers, both moved from other Minnesota Forestry Division lookout sites, in the spring of 1941. They were the Rapid River Tower (extant) in Lake of the Woods County and the Roseau River Tower (extant) in Roseau County. Both towers are associated with the Resettlement Administration's important Beltrami Island Project. Under the State Emergency Relief Administration (SERA) Transient Relief program, homeless men housed in residential forest camps worked on fire prevention including building lookout towers, firebreaks and truck trails, and clearing fire hazards from forests and roadsides. They also helped develop state nurseries for reforestation seedlings and helped build picnic- and campgrounds in state forests. SERA/FERA work camps were later operated under the CWA and WPA programs.

Public Education and Tourism

Because the vast majority of forest fires were started by human activity, state and federal agencies devoted considerable resources to working with industry groups and the general public to educate about fire prevention and fire prevention laws throughout the period covered by this narrative. Public education was an immediate priority for the Minnesota Forest Service, for example, when it was established in 1911, and from 1911-1923 the agency published a monthly magazine, *North Woods*, in cooperation with the Minnesota State Forestry Association. A subsequent periodical, the Minnesota

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[61] Stan Cohen, *The Tree Army: A Pictorial History of the Civilian Conservation Corps, 1933-1942* (Missoula, MT: Pictorial Histories Pub. Co., 1980), 87-88.
[62] Cohen, 129.
[63] Ray Ovid Hall, "The Forestry Program Under Indian Conservation Work," *Indians at Work* (Feb. 1934), 7-10.
[64] *Forestry on Indian Lands* (Washington, DC: U.S. Indian Service, U.S. Dept. of the Interior, Jan. 1940), 95-96.

Department of Conservation's *Minnesota Conservation Volunteer* (still in publication), featured frequent articles on forest fires, fire prevention, and fire lookout towers. U.S. Forest Service publications on the Chippewa and Superior national forests repeatedly discussed fire protection and included information about, and photographs of, fire lookout towers.

Fire lookout towers played a key role in these educational campaigns. From the 1910s through the early 1970s fire lookout towers were compelling symbols of state and federal forestry and fire prevention work. In 1911 the fledgling Minnesota Forest Service wrote, "By personal contact, general discussion, and newspaper publicity, the idea that a new era in forest protection had arrived in Minnesota was widely disseminated. This idea was more firmly fixed by the concrete examples of Forest Service work. The lookout towers and other improvements demonstrated that the Service was permanent."[65] From the 1920s to the early 1970s, graphic images – usually of a single fire tower – were widely used in forestry agency periodicals and public education pieces as "branding" for the fire prevention effort. For many years the *Minnesota Conservation Volunteer*, for example, used a line drawing of a fire tower to introduce articles that discussed forest fires, fire danger and safety, and the state's fire prevention efforts.

One of the most important ways fire lookout towers served public education was by being a destination for visitors. This association began in the mid-1920s when the first significant numbers of steel towers were erected in northern Minnesota just as automobile-based tourism began to grow. For decades the northern Minnesota tourism industry received government support as part of the state strategy to help northern Minnesota recover in the aftermath of white pine logging. As described below, the relationship between fire lookout towers and tourism was beneficial for both the forestry agencies and regional tourism interests.

State and federal foresters actively invited the public to visit and climb fire lookout towers, and some towers became very popular tourist attractions. The Minnesota Tourism Bureau, established in 1931 within the Minnesota Department of Conservation, participated in these promotions by, for example, publishing photographs of smiling tourists visiting fire towers.[66] Tower watchmen were trained to welcome the public, record their names in a visitors' registry in the tower cab, and instruct the visitors on fire danger, fire prevention, and forest conservation. These efforts not only prevented fires but raised public awareness of, and support for, the forestry agencies and all forest conservation work. The Minnesota Department of Conservation wrote in 1942, "The public is becoming more and more educated to the fact that without adequate fire protection, all other forestation practices are in vain."[67]

According to the Department of Conservation's report for the 1935-1936 biennium:

> Lookout towers and ranger stations are developing into points of public interest and are being used as educational centers where visitors are told of forest attractions and values and of the problems which are vital to forest protection. In order to encourage the use of lookout towers by forest visitors and to make them safe for such purposes, towers are being equipped with steps or stairways instead of the old style outside ladders considered hazardous by all except the trained towermen. Towermen are being trained to explain the work of the division to visitors and

[65] Weeks Law report, 1911, n.p.
[66] The director of the Minnesota Tourism Bureau is also quoted in "Fire Tower Registration Shows Tourist Increase," *Brainerd Daily Dispatch*, Sept. 24, 1934, linking fire tower visits with desirable increases in regional tourism.
[67] W. L. Strunk, "Minnesota Conservation Problems," *MCV* (April 1942), 2.

> emphasize responsibilities of tourists and campers in our state forests. Records for the past season show that 32,213 visitors actually climbed lookout towers and registered in the 'crow's nest.' A souvenir is given each guest who shows his or her interest in the forest by climbing a tower in the form of a membership card in the 'Ancient and Honorable Order of Squirrels,' a sample of which follows. The reverse side of the card has a picture of the tower climbed and forest fire protection reminders.[68]

The "Ancient and Honorable Order of Squirrels" was created in 1927 by ranger Allan W. Stone of the Minnesota Forest Service's Park Rapids district. The Order of Squirrels program was used system-wide by the Minnesota Forestry Division and soon spread across the country with state and federal foresters issuing membership cards to all who climbed to the top of the tower. In 1933, 34,000 visitors climbed the towers of the Minnesota Forestry Division. In 1948, Order of Squirrels membership cards were distributed to 5,304 visitors who climbed one of the most popular, the Aiton Heights Tower (extant) in Itasca State Park.[69]

Fire Lookout Towers in the 1940s

Minnesota's fire lookout towers played a role in homeland defense after the U.S. entered World War II in December 1941. While spotters in fire lookout towers on the U.S. coasts watched for enemy aircraft and submarine activity, Minnesota spotters watched for forest fires that could potentially be started by the enemy, as well as those originating from the usual causes.[70]

With the U.S. on heightened forest fire alert, the Minnesota Forestry Division reviewed its fire protection plans to ensure they adequately focused on valuable timber and other resources vital to the war effort. The highest priorities for protection were the Mesabi and Vermilion iron ranges and the Duluth-Cloquet area, locations critical to iron ore mining and ore transport and where high population increased the fire danger. Also high on the list were forested areas in Koochiching, St. Louis, and Itasca counties, where logging had increased to supply wood for military and defense industry use.[71]

During the war the Minnesota Office of Civilian Defense in partnership with its federal counterpart, also called the Office of Civilian Defense (OCD), operated a program called the Forest Fire Fighters Service (FFFS). The FFFS helped fund fire detection and train civilian spotters and firefighters who replaced and supplemented the dwindling number of regular forestry personnel who were not in military service. Civilians who trained for Minnesota's FFFS wore arm bands with a pine tree insignia. According to a manual for the Minnesota program:

> Because of the effect forest fires may have on the war program through the probable crippling of our defense efforts, the problem of prevention and control is of vital concern to every citizen. It is not entirely the danger of actual destruction to vital war materials, but also the danger of retarding defense activities by taking the men from their jobs to fight fire, the tying up of transportation facilities and the general disruption of all other activities which always follow

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[68] *State of Minnesota Department of Conservation's Third Biennial Report for Fiscal Years 1935-1936* (St. Paul: Minnesota Dept. of Conservation, Dec. 1936), 100-101.
[69] Elizabeth Bachmann, "Honorable Order of Squirrels," *MCV* (Sept.-Oct. 1949), 49-50.
[70] *Manual Forest Fire Fighters Service, Minnesota* (St. Paul: Forest Fire Fighters Service, Office of Civilian Defense, 1942).
[71] A. E. Pimley, "Forest Fires and Defense," *MCV* (Jan. 1942), 51.

> devastating fires. The fire protection organizations are intensely handicapped by the loss of so many of their trained men, and also by the alarming shortage in most localities of men available for firefighting. . . . The lack of certain types of firefighting equipment, due to the rubber and other material shortages, also increases the problem of protection.[72]

The threat of forest fires and the need for lookout tower vigilance was intensified by a Japanese campaign to drop incendiary bombs on U.S. soil. The devices were small hydrogen-filled balloons that passively traveled the jet stream carrying small bombs designed to start forest fires. Six people were killed by one of the bombs in Oregon; these were the only deaths from enemy attack on the U.S. mainland during the war. One of the first wild fires started by a Japanese bomb was detected by a lookout tower in Oregon in September 1942. In 1944 and 1945 the Japanese launched a major campaign by releasing 9,300 of the bombs. Hundreds of balloons and bombs were eventually found on the ground, most in western states but also as far east as Minnesota, Iowa, and Michigan.[73] At least two of the bombs were found in northern Minnesota, constituting the only enemy attacks recorded on Minnesota soil.[74]

After reaching a low point in the mid-1930s, the demand for wood increased during World War II, as did cutting in Minnesota forests. While logging was at lower levels than it had been at the turn of the century, more of the revenues were staying in local communities rather than going to distant absentee owners. In this new era of logging, wood was processed close to the forests themselves, reducing costly transport. Fiberboard, insulation, boxes, paper, and packing materials were made from rapidly growing aspen and other species. In 1942 the Minnesota forestry industry was employing tens of thousands of people and future prospects were positive.[75]

As demand for wood rose, more private landowners with modestly sized parcels became interested in raising and selling timber, adding a new dimension to the resources protected by fire towers. According to one 1941 estimate, 24% of the merchantable saw-timber in Minnesota, Wisconsin, and Michigan resided in small private woodlands.[76] In 1941 the Tree Farm program originated in Oregon and in 1943 it was established in Minnesota. Administered by an organization called Keep Minnesota Green in cooperation with the state Forestry Division, the Tree Farm program encouraged conservation forestry and best management practices in small private parcels. Tree Farms were identified by white and green signs with a pine tree logo; for decades the signs became highly visible symbols of conservation forestry along northern Minnesota roadsides. In 1953 Minnesota had 282 certified Tree Farms and in 1958 the number of enrolled Tree Farms reached 1,000.[77]

In 1943 state forestry laws were strengthened and 29 state forests were established and/or reauthorized. In 1943 Minnesota became the fourth state in the nation to regulate private timber cutting by regulating the size of trees that could be cut on private land and requiring that seed trees be left standing.[78]

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[72] *Manual Forest Fire Fighters Service*, 3-5.
[73] "Five Attacks Made by Japs on West Coast," *Albert Lea Evening Tribune*, June 2, 1943.
[74] Dave Kenney, *Minnesota Goes to War: The Home Front During World War II* (St. Paul: Minnesota Historical Society Press, 2005), 48, 239; Homer Whiting, Memo to Anson E. Pimley, Nov. 20, 1946, Minnesota Dept. of Conservation, Forestry Division Records, MHS.
[75] Strunk, 4.
[76] Raphael Zon, "Forest Research Points the Way: It's Related to our Defense," *MCV* (Aug. 1941), 13.
[77] Bachmann, *A History*, 33.
[78] Prout, "Building Minnesota – Modern-Day Forestry," 25.

Recreational use of Minnesota forests also increased during World War II, continuing the trend of the 1920s and 1930s. In 1944, the U.S. Forest Service introduced "Smokey the Bear" to help raise public awareness of forest fire prevention. Smokey the Bear became a successful and enduring carrier of the fire prevention message and joined Minnesota's fire lookout towers, rangers, and ranger stations as popular public symbols of the forest conservation movement.[79]

Only a few new fire lookout towers were erected in Minnesota during the 1940s. Late in the decade, some towers were erected to replace earlier towers including, in 1947, a new tower at Cuyuna on the Cuyuna Iron Range. The Minnesota Forestry Division was operating 123 steel towers in both 1942 and 1948.[80]

Fire Lookout Towers in the 1950s and 1960s

After World War II the harvest and processing of timber – Minnesota's third-largest industry – continued its wartime expansion. In Chippewa National Forest, for example, the amount of the cut increased almost 250% from 1941 to 1951. One source noted that the 25 million board feet harvested in Chippewa National Forest in 1951 was enough lumber to build 1,200 five-room houses.[81]

As the postwar economy grew, Minnesota's papermaking and pulpwood industries continued to expand. Major paper mills in cities like Brainerd, Cloquet, Grand Rapids, International Falls, and Sartell bought pulpwood cut from forests across northern Minnesota.

In 1948 the State of Minnesota's Office of Iron Range Resources and Rehabilitation noted:

> The welfare of the entire state rests heavily upon permanent forest land management because approximately one-third of our productive land has no better prospective use than for growing timber, [and] also because a large portion of our population is directly affected by the employment afforded by this important natural source. Although our forest resources have changed in many respects since the turn of the century, it is still classified definitely as one of our major resources. Unlike our iron ore resources, forests are ever renewable, which means that they must be recreated and safeguarded.[82]

A 1958 report on the status of Minnesota's forest resources was optimistic about recovery from the clearcut logging era. The report credited several factors: 20 years of replanting begun during the 1930s, "substantial progress . . . made in reducing losses from forest fires," the incorporation of large areas of cutover land into public forests which could be properly managed, the establishment of industry-owned managed forests, and government programs to encourage sustainable management on other privately-owned parcels including tree farms and farm woodlots. According to the report, "Fire, which in earlier years was one of the leading destroyers of timber, now has been brought under better control. The average annual acreage burned in Minnesota for 1931-1935 was 476,070 acres, while for 1948-1952 it

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[79] Elizabeth Bachmann, "Smokey Bear," *MCV* (May-June 1954), 30-34.
[80] "Lookout Towers – Old and New," *MCV* (Dec. 1942), 24; Nelson, "Hazards + Carelessness," 23.
[81] "Forty-Three Years of Forestry," 42.
[82] *The Forest Resource of Crow Wing County* (St. Paul: Office of Iron Range Resources and Rehabilitation, 1948), fwd.

was 103,230 acres. A program for educating the public to the wanton waste in wildfires, together with improved organization for fire protection and suppression, has accomplished the reduction."[83]

In 1953 Minnesota had nearly 2,000 plants, most of them small operations, that cut or used wood products. One of the largest sawmills was operated by the U.S. Indian Service at Redby on the Red Lake Reservation. Nine were pulpwood mills producing paper products. In 1954 the estimated value of products made in Minnesota from local timber totaled more than $164 million (more than $1.4 billion in 2014 dollars). They included, in order of value: pulpwood; lumber; fuel wood; Christmas trees; posts; match and barrel wood; stakes and miscellaneous products; timbers for mining; poles; railroad ties; chemical byproducts; veneer wood; mill byproducts used for fuel; and piling.[84] Stick matches, book matches, toothpicks, clothespins, tongue depressors, and hockey sticks were all made in Minnesota; Cloquet's Diamond Match Company was the largest match factory in the nation. By the end of the 1960s the amount of wood being cut annually was reaching the quantity cut at the peak of the white pine logging era in 1900.[85]

During the postwar era, logging moved from a labor-intensive, largely manual job to an industry increasingly mechanized. Chainsaws, trucks, and skid-loaders made the harvest more efficient and new manufacturing technology made use of a broader range of species and used more parts of each tree with less waste. The manufacture of paper, boxes, pallets, packaging material, and building products such as wallboard, plywood, paneling, and chipboard became increasingly important. Truck logging required the construction of new roads deep into the forest. While roads and trucks increased the fire danger in remote locales, the roads also provided access for lookout tower sites, firefighting, and other forest management activities.

With timber in short supply, the reforestation of Minnesota forests accelerated after the war. Minnesotans began raising more trees on private land, with many private parcels operating as designated Tree Farms. In 1947 the legislature began to allow the forestry division to sell state-raised seedlings to private landowners. In 1955 the State of Minnesota planted 4 million trees on state-owned land. The need for reforestation was daunting – in 1962 the Forestry Division wrote that the State of Minnesota itself owned more than a million acres that needed reforestation and that, at the current rate, this would take more than 300 years to accomplish.[86]

More tree planting increased the fire danger and required extra vigilance. In 1961 the Forestry Division's head of fire prevention wrote, "Areas of plantation have greatly increased during the past few years and about 42 million seedlings are planted annually. This is somewhat behind other states' planting programs but there is already the additional fire hazard of young coniferous plantations and in the very near future we will have an even greater problem in forest fire control."[87]

The northern Minnesota tourism industry that developed in the 1920s through 1940s flourished after World War II as life returned to normal, new families were formed, and employment was strengthened. Fire lookout towers continued to be an attractive visitor destination; a 1949 article in the *Brainerd Daily*

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[83] R. N. Cunningham et al., Minnesota's Forest Resources (Lake States Forest Exper. Station, US Dept. of Agriculture, Oct. 1958), 1, 21.
[84] Cunningham, et. al, 25-27. C. B. Buckman and George Rogosheske, "How to Produce Forests," *MCV* (May-June 1956), 59, 62.
[85] Stearns, 8-29; in 1971, 1.5 million cords were cut in Minnesota, compared to 1.3 million cords cut in 1900.
[86] Buckman and Rogosheske, 62; Lawson, 30-31.
[87] Wilson, "Modern Problems," 38.

Dispatch promotes the Ahrens Fire Tower near Brainerd as a great spot for amateur photographers.[88] Postwar increases in tourism, logging, and iron ore mining drew more people into forested areas. This heightened the fire danger and the need for lookout towers. While more activity meant more fires, there was also some benefit to the population increase because there were more people in the woods to notice and report fires. In 1961 the state acquired land for seven new state parks, including several in northern Minnesota, and in 1963 the legislature established 20 new state forests.

Forest fires continued to be very destructive during this era, despite record numbers of lookout towers, more public money for firefighting, and better weather forecasting. The late 1950s was a period of very little snow cover. The fall 1956 fire season was the worst in 20 years and the 1957 and 1958 seasons were also severe. In 1958 the Minnesota Forestry Division was forced to ask the legislature for emergency funds, the first time since the 1930s. The state agency recorded 1,100 fires in 1958, only 7 caused by lightning and the rest by human activity. A total of 52,120 acres burned in 1958 including nearly 12,000 acres in Lake of the Woods County, 6,800 acres in Aitkin County, and 5,000 acres in Pine County. At the end of the 1958 fire season, there had been 22 consecutive months of reportable fires because of the unusually mild winter. The 1968 fire season was also devastating, with the Forestry Division reporting, in its jurisdiction, 1,214 fires that destroyed a total of 70,340 acres.[89]

Forestry Division director E. L. Lawson wrote in 1962: "The Division of Forestry furnishes fire protection to 17¾ million acres of public and private land. This is one of the most important activities of the division. Although great strides have been made in the development and use of new firefighting equipment and techniques, fire incidence still remains high. For the past five years an average of 1,072 fires burned over 64,500 acres annually."[90]

By 1962, Minnesota had about 18 million acres of commercially productive forest land, or about 35% of the state's land area. About 56% was owned by federal, state, and local governments and 44% by private parties.[91] About 20% of the public land was owned by the state. The sale of state-owned timber remained a significant source of state revenue – in 1958 sales of state-owned timber conducted by the Minnesota Forestry Division were bringing in more than $1 million annually (up to $32 million in 2014 dollars).[92] By 1964, 70 percent of the land area in much of northeastern Minnesota was publicly owned.[93]

During the 1950s and most of the 1960s Minnesota's fire lookout towers were being used at full strength. In both 1956 and 1969 the State of Minnesota was operating 123 towers, the same number as in the 1940s. In 1962 E. L. Lawson indicated the division was planning to "make additions to the lookout tower system and add aircraft patrol to provide fire protection."[94]

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[88] "Ahrens Tower Scenic View," *Brainerd Daily Dispatch*, April 9, 1949.

[89] Bachmann, *A History*, 42.

[90] Lawson, 28.

[91] Lawson, 28. Thomas J. Baerwald, "Forces at Work on the Landscape," in *Minnesota in a Century of Change: The State and its People Since 1900*, ed. Clifford E. Clark, Jr. (St. Paul: Minnesota Historical Society Press, 1989), 35. For a map of the state's commercial forests in 1964, see John R. Borchert and Donald P. Yaeger, *Atlas of Minnesota Resources and Settlement* (Prepared for the State Planning Agency by the Dept. of Geography, University of Minnesota, 1968), 51.

[92] Julius F. Wolff, Jr., "A State Division of Forestry is Built," *MCV* (Nov.-Dec. 1958), 34-38.

[93] Borchert and Yaeger, 51.

[94] Lawson, 28; Bachmann, *A History*, 42, 46; "Our Timber Crop," *MCV* (March-April 1964), 64; Wilson, "Fire in Our Forests," 34-38; *Fergus Falls Daily Journal*, Oct. 3, 1969 quoted in Tom Kremer, *Minnesota's Historical Fire Lookout Towers* website.

U.S. Forest Service towers were also being manned through the 1950s. A 1958 U.S. Forest Service tower schedule for Chippewa National Forest, for example, indicates that during the 1958 season 20 towers would be manned in the Forest. Most would be operated from 9 or 10 a.m. to 5 p.m., with hours increasing to 8 a.m. to 6 p.m. when conditions warranted. Four of the towers were classified as "secondary" and were to be put into service during driest conditions.[95] In 1966 there were about 16 U.S. Forest Service towers within Chippewa National Forest and perhaps the same number in Superior National Forest, although the remoteness of Superior National Forest was making aerial detection more attractive.

In the 1960s and early 1970s, the Minnesota Forestry Division was still purchasing new towers from fabricators such as Aermotor. New towers included the Pomroy Lake Tower (1963, extant, Kanabec County), Toad Mountain Tower (1965, razed), Lawson Tower (1969, extant, Marshall County), and Rusheba Tower (1973, extant, Chisago County). The state service was also moving towers to new locations as it adjusted the tower network.[96]

In the late 1960s, according to a department document, the Minnesota Forestry Division was manning 125 towers regularly, plus the Elba (Whitewater) Tower in southern Minnesota's Winona County which was being intermittently staffed. Labor costs for tower manning were averaging about $80,000 per year.[97]

Aerial Detection. U.S. Forest Service ranger William Osborne argued in 1934 that lookout towers were superior to airplane surveillance of forest fires. He explained:

> Air patrol has been thoroughly tried out for many years. It is now clear that it can only be used to supplement and not to replace lookouts for detection work. Visibility is good and smoke which is showing up above the timber at [the] time [the] plane passes can usually be detected and located with a fair degree of accuracy. Their weakness for this work is that any given territory is under observation for only a few minutes each day. Occasionally they can be used to advantage for supplementing the lookouts immediately after bad lightning storms on areas which are incompletely covered [by towers]. Also they can occasionally be used to excellent advantage in reconnoitering large fires.[98]

The practice of using airplanes for spotting began slowly in Minnesota, with the U.S. Forest Service using planes before the state forestry service.

In 1941 the U.S. Forest Service was using an airplane to spot fires in Superior National Forest when visibility from towers was low. During World War II, the Civil Air Patrol, a statewide civilian defense network of pilots, established a Forest Fire Patrol program to help spot forest fires. It is not known how widespread its activity was.[99]

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[95] "Chippewa National Forest (Hours of [Tower] Manning)," March 1, 1958, Chippewa National Forest Records, Iron Range Research Center, Chisholm, MN.

[96] Minnesota Dept. of Conservation, Forestry Division Records, MHS; Kremer, *Minnesota's Historical Fire Lookout Towers*.

[97] Don Wilson, "Aerial Detection," typescript, Nov. 25, 1970, Minnesota Dept. of Conservation, Forestry Division Records, MHS.

[98] W. B. Osborne, *The Western Fire Fighters' Manual. Chapter 5: The Lookout System* (Seattle: Western Forestry and Conservation Assoc., 1934), 2.

[99] Gerald W. Williams, *The USDA Forest Service: The First Century* (Washington, DC: USDA Forest Service, July 2000/rev. April

In a mid-1950s description of the Minnesota Forestry Division fire protection program, there is no mention of aerial spotting or of firefighting using planes, suggesting state government's use of these practices was just beginning. In the mid-1960s, according to one source, the division was using planes to spot only if weather conditions were hazy.[100]

In 1968 a state forestry division committee charged with studying the potential for aerial detection recommended a two-year test using planes along the remote Canadian border between International Falls and Superior National Forest. According to Don Wilson, director of fire protection for the division, the planes would fly a 115-mile circuit. The number of flights would depend on the danger: on 69 days in the spring season there would be two flights daily (totaling four hours of observation), and on 35 days in the summer and fall there would be three flights daily (six hours of observation). The flights would replace six state-owned towers – Ash River, Black Bay, Crane Lake, Kabetogama, Ray, and Shoe Pac – but would only provide 50% to 75% of the detection that would be expected if the towers were manned. The airplane spotting would cost more than double the manning of the towers. Forestry Division field staff were overwhelmingly skeptical that planes would provide adequate coverage. As late as 1970, Wilson was also cautious, concerned that an airplane flight with a typical three hours of observation time would be inadequate to replace a tower that could provide eight hours of detection.[101]

By 1969 the U.S. Forest Service was increasingly using planes in Minnesota. At the same time, more fires were being reported by members of the public as northern Minnesota's number of seasonal homes, year-around residents, and visitors increased and as telephones became common even in remote areas. Across the U.S., forestry agencies were studying aerial surveillance and retiring fire lookout towers as flights were phased in.

Fire Lookout Towers After 1970

Fire lookout towers remained the primary method by which the U.S. Forest Service watched for forest fires until the late 1960s. They remained the primary detection method for the Minnesota Forestry Division somewhat longer, until about the mid-1970s.

Northern Minnesota's timber industry was still on the rise in 1970. Trees planted decades earlier, then thinned, nurtured, and protected from fire, had reached maturity. The demand for wood products was high, and technological improvements made it possible to process more types of trees, and more parts of each tree, in a profitable manner. In the early 1970s the world's first factory making oriented strand board (OSB), an improvement on plywood, opened in Minnesota. By the end of the decade the state's timber industry was on its way to significant increases – between 1980 and 1985 both the commercial timber harvest and the number of forest industry jobs rose 73%. The industry employed 52,000 people in 1985.[102]

2005), 32; Writers' Program of the Work Projects Administration, 46; "State CAP [Civil Air Patrol] Go on Forest Fire Patrol," *Albert Lea Evening Tribune*, April 16, 1943.

[100] Prout, "Building Minnesota – Forestry for Tomorrow," 37; Wilson, "Fire in Our Forests," 34-38.

[101] Don Wilson, Memo to Emil Kukschka, subject line Aerial Detection Study Report, April 4, 1968, Minnesota Dept. of Conservation, Forestry Division Records, MHS; also Wilson, "Aerial Detection."

[102] Mary Hoff, "A Century for the Trees," *MCV* (March-Apr. 2011), 19; Hoff et al., 78. Today there are about 17.3 million acres of forest in Minnesota, about 16 million acres of which are commercially productive.

The Minnesota Forestry Division's tower staffing records for September 1970 list 120 fire towers. Of this total three-quarters, or 90 towers, were manned in September 1970. Another 23 of the 120 towers were not manned, and the incomplete document does not provide data for 7 of the 120 towers.[103] The U.S. Forest Service was probably manning less than half of its towers in Chippewa and Superior national forests in 1970. The status of Bureau of Indian Affairs towers is not known, but their rate of use was probably similar to the U.S. Forest Service towers.

As late as 1976 the state forestry division was still calling lookout towers "our front-line method for spotting fires." In a *Minnesota Conservation Volunteer* article on forest fires, the division included a prominent photograph of a fire tower, and another photo of a towerman plotting fires on a wall map in a cab. The author concluded a discussion of aerial detection with the statement, "However, airplanes will never replace lookout towers. Too much time between flights could result in a fire starting and burning out of control before it is spotted." Decades later in 2013 a longtime forestry division towerman and firefighter confirmed the importance of towers during the era noting, "it took a lot of planes to match the vigilance of a man in a tower."[104]

In 1971, Superior National Forest experienced its worst fire in 42 years when 14,600 acres burned. The year 1975 was also extremely dry in Minnesota. In 1976 the state experienced the second-highest number of fires since 1915, with 3,385 fires burning 150,000 acres. The largest, the Huntersville-Badoura fire, destroyed 24,000 acres. As part of the 1976 battle, the state forestry division for the first time extensively used airplanes and helicopters to drop water, issued its first statewide burning ban, and imported firefighters from other states.[105]

In 1972 the U.S. Forest Service offered for sale nine retired towers in Chippewa National Forest – Bass Lake, Birch Hill, Dixon Lake, Nushka, Pimushe, Stokes, Sumac, Whipholt, and Winnie Dam – leaving ten towers standing in the Forest.[106]

Most forest fires in Minnesota today are reported by members of the public. Several fire lookout towers are still used for detection including the Badoura, Nimrod, Norris, Pequot, and Sand Dune towers, among others. The Nimrod Tower, erected in 1928, has the longest record of continuous use. The Pequot Tower was recently refurbished, taken out of retirement, and manned during the 2015 season.

The Minnesota Division of Forestry's Wildfire Operations and Management program continues to be responsible for the protection of all Minnesotans from wildfires, whether the fires occur on public or private land. In 2012-2013, the program's allocation comprised 44.5% of the entire Minnesota Forestry Division budget.

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[103] "Tower Manning – 1970 – September," Sept. 1970, Minnesota Dept. of Conservation, Forestry Division Records, MHS.

[104] Casey, 38-39; Denton Newman, Jr., "Former Forester, Firefighter Shares Knowledge of Fire Towers." *Lake Country Echo and Pine River Journal*, April 16, 2013.

[105] "100 Events That Shaped the DNR," *MCV* (July-Aug. 1981), 12-13; Hoff et al., 79.

[106] "Lookout Towers to be Sold," *Bemidji Pioneer*, May 30, 1972.

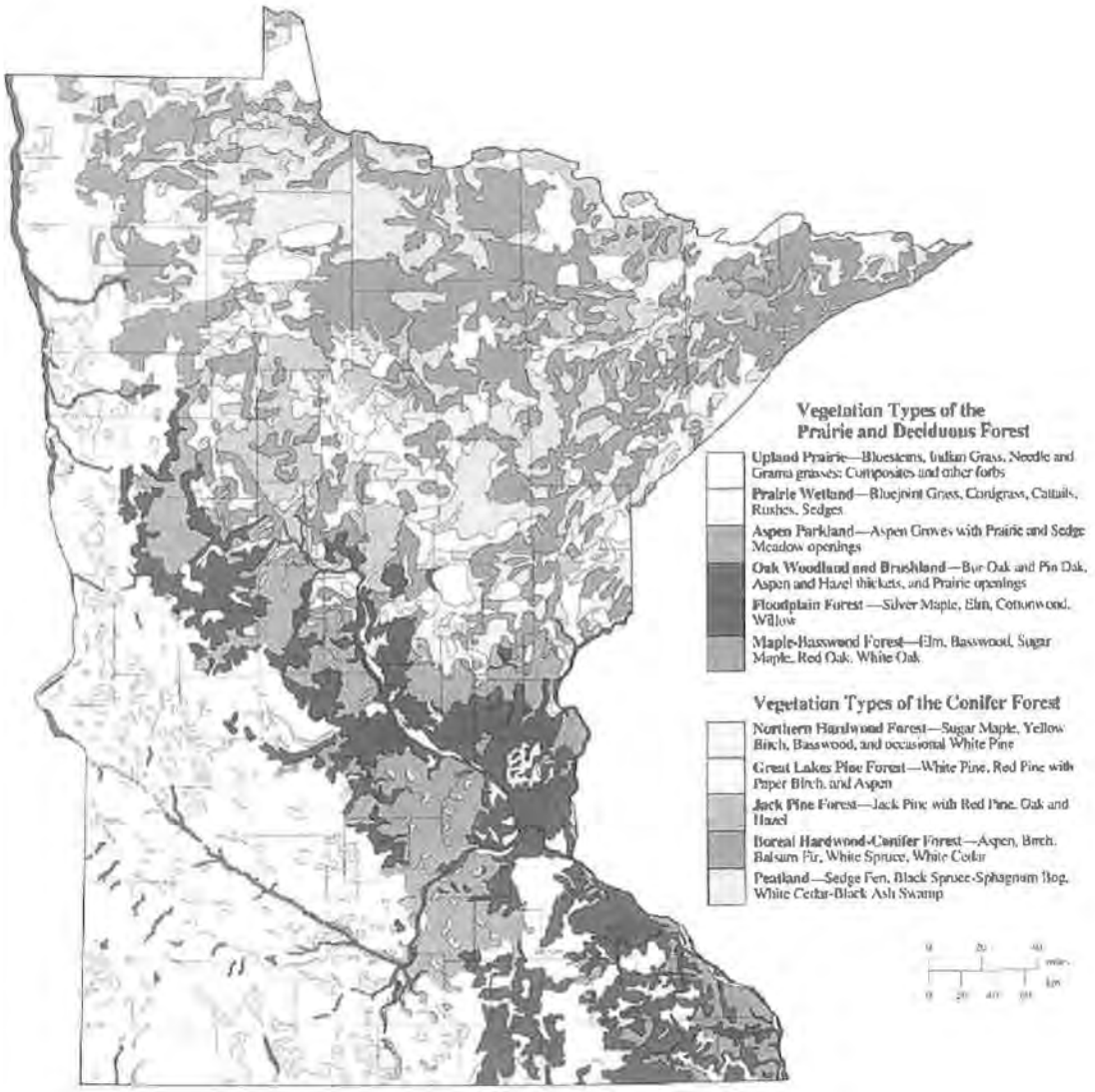

Figure E1. At the time of Euro-American settlement much of northern Minnesota was dominated by coniferous forests and by a band of mixed coniferous and deciduous forests and brush immediately to the west and south. Minnesota's lumber, mining, and tourism industries were historically concentrated in these areas. Minnesota's fire lookout towers were also located here. On this native vegetation map, the coniferous region is indicated by pines (two shades of blue), hardwoods (pale green), mixed conifers and deciduous species (purple), and extensive peat bogs and tamarack swamps (gray). The band west and south of the coniferous forest includes, in northwestern Minnesota, aspen forests (orange) and prairie wetlands (dark yellow), and in central Minnesota, oak-aspen-hardwood thickets (dark red) and maple-oak-basswood forests (dark green). Map reprinted from *Natural Vegetation of Minnesota at the Time of the Public Land Survey, 1847-1907*, Keith M. Wendt and Barbara A. Coffin, Minnesota Dept. of Natural Resources, Dec. 1988.

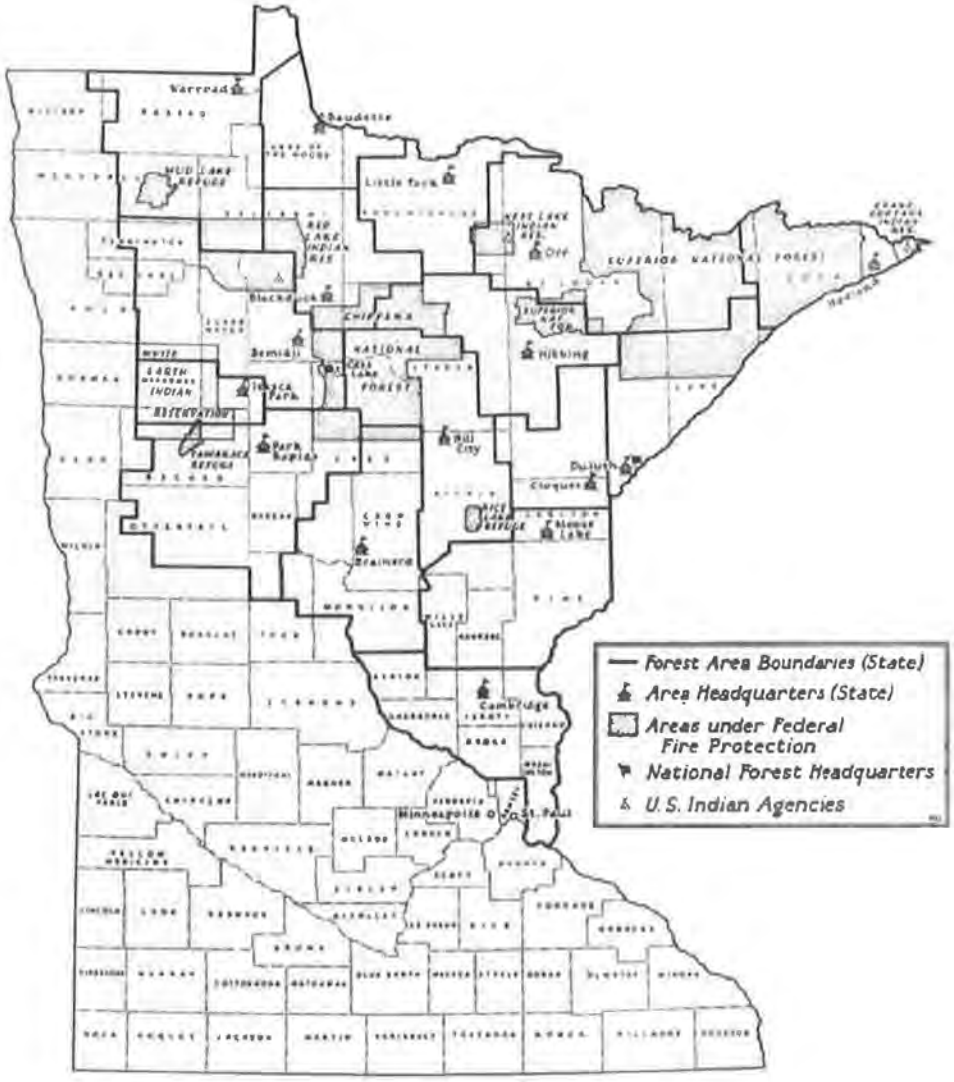

Figure E2. Most fire lookout towers were located in the region outlined in black. The map shows the overlapping jurisdictions of Minnesota's three professional forestry agencies in 1942. The black outlines indicate the Minnesota Forest Service's 15 forestry areas, each with a headquarters. The U.S. Forest Service was protecting Chippewa National Forest and Superior National Forest, with forest headquarters marked at Cass Lake and Duluth. The U.S. Indian Service was protecting the Grand Portage, Nett Lake (Bois Forte), and Red Lake reservations and also maintaining a headquarters at Cass Lake on the Leech Lake Reservation (within Chippewa National Forest). At the time of this map, fire protection on Minnesota's other Indian reservations was contracted to the Minnesota Forest Service. The map also shows the three federal wildlife refuges under federal fire protection: Mud Lake, Rice Lake, and Tamarac. The refuges were administered by the U.S. Fish and Wildlife Service which built the refuge fire towers with help from CCC crews. Reprinted from *Manual Forest Fire Fighters Service, Minnesota*, St. Paul: Forest Fire Fighters Service, Office of Civilian Defense, 1942, p.4.

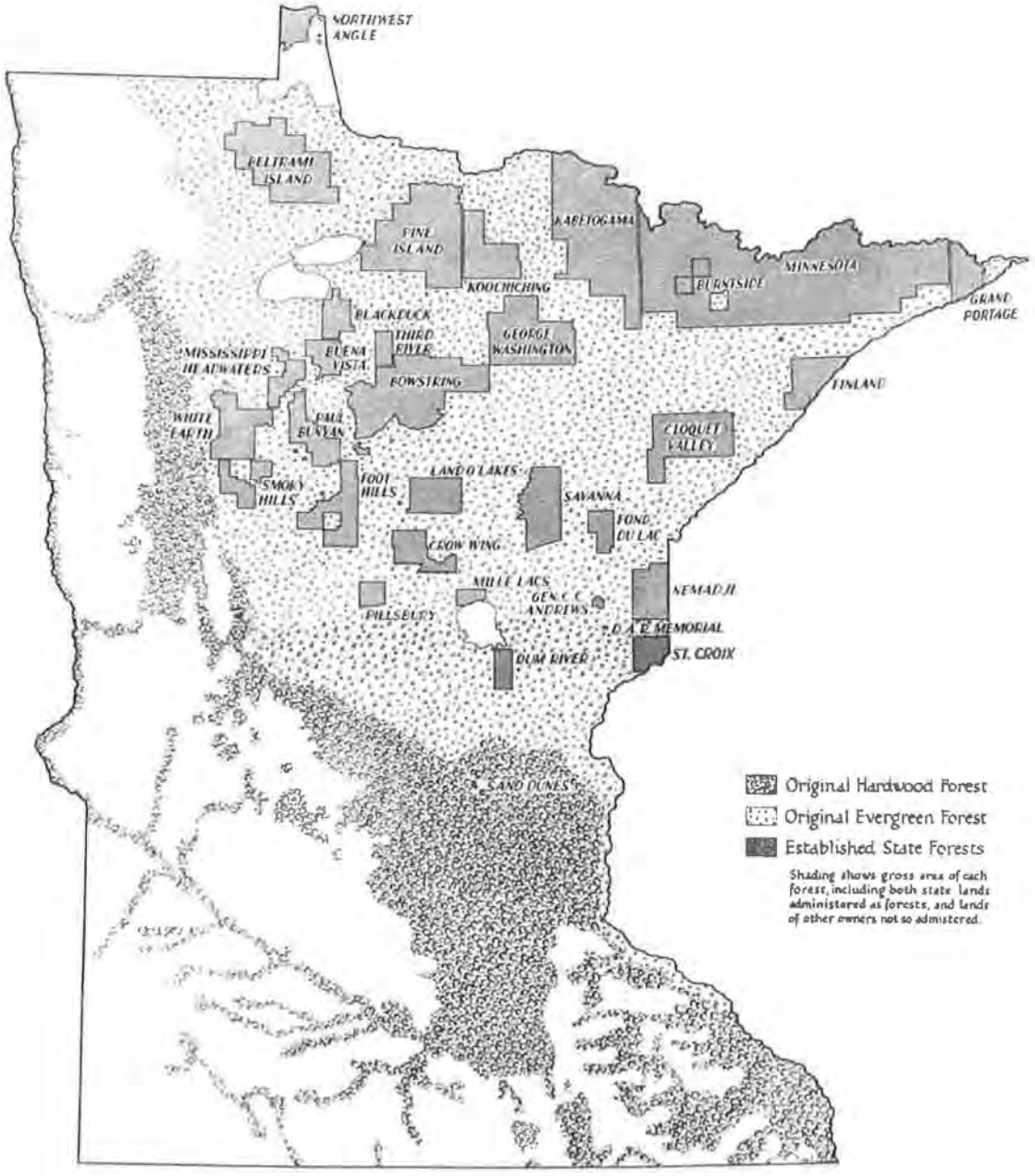

Figure E3. In 1943 Minnesota had 32 designated state forests, all of which were protected by fire lookout towers. Most contained a mixture of private land and land that became state-owned through tax forfeiture. State forests contained valuable timber inventories – the sale of timber from state-owned lands was an important source of state revenue – as well as critical wildlife habitat and recreational resources. Reprinted from *Minnesota State Forests*, St. Paul: Minnesota Dept. of Conservation Division of Forestry, 1943.

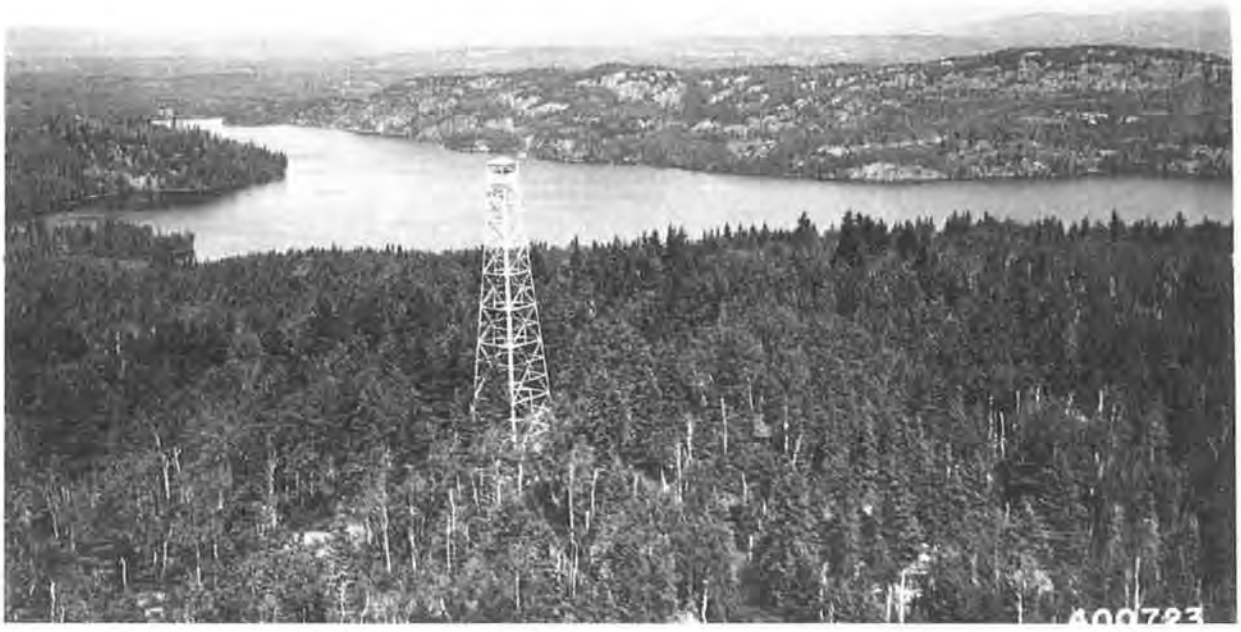

Figure E4. August 1940 photo of a CCC-built tower in a remote forest setting. It is the Kekekabic Tower (razed) near the Canadian border in Superior National Forest. Reprinted from *Superior National Forest*, U.S. Dept. of Agriculture Forest Service, 1941, p.14.

Fire Detection

The key to fire suppression is the detection of fire as soon as possible. The eyes of the protection organizations are fire towers strategically located throughout the forest areas. These towers are connected by telephone and many are also equipped with radio communication.

All members of the Forest Fire Fighters Service should be constantly on the alert for forest, brush, or peat fires, and any signs of fire should be immediately investigated and reported to the proper authorities. Members should urge all other persons to do the same.

There are times when because of fog, haze, or smoke, towermen can see but a short distance, and unseen fires may be burning for a long time before they are reported. During times of extreme fire hazard and poor visibility, it may be necessary for civilians to patrol certain areas on foot or by automobile to assist the regular organization in detecting fires.

Figure E5. According to this World War II-era publication, "The eyes of the protection organizations are fire towers strategically located through the forest areas." During the war, spotters in Minnesota lookout towers watched for forest fires that could potentially be started by the enemy, as well as those originating from the usual causes. Forest fires could destroy timber resources needed for the war effort as well as draw manpower away from important defense work. The state forest service prioritized its protection areas, with the Mesabi and Vermilion iron ranges and the Duluth-Cloquet area heading the list. Reprinted from *Manual Forest Fire Fighters Service, Minnesota*, St. Paul: Forest Fire Fighters Service, Office of Civilian Defense, 1942, p.11.

Figure E6. A circa 1950 postcard welcoming visitors to Ahrens Hill Tower (razed) and its neatly kept grounds. Since the vast majority of Minnesota fires were caused by human activity, public education was an important part of fire prevention strategy, and forestry agencies encouraged the public to climb the towers and learn about fire prevention and forest conservation. The Ahrens Hill Tower, located near Brainerd, was erected in the fall of 1928 by the Minnesota Forest Service and was one of the state's first stair towers. It was also a popular tourist attraction. Postcard, Minnesota Historical Society.

ASSOCIATED PROPERTY TYPES, CONTINUED

I. NAME OF PROPERTY TYPE: CONSERVATION STRUCTURES

II. DESCRIPTION

D. FIRE LOOKOUT TOWERS

The property type fire lookout towers is described below. Fire tower sites and other site elements are also addressed. New Deal agencies erected lookout towers that had been newly fabricated, as well as moving towers from one lookout site to another since Minnesota's steel lookout towers were routinely relocated as the fire protection system was adjusted. Most towers that were relocated by New Deal federal relief labor had been fabricated in the 1920s. New Deal agencies also improved many tower sites by building or rebuilding access roads, installing telephone lines, and constructing ancillary structures.

Tower Numbers

Minnesota fire lookout towers were built from circa 1910 to the early 1970s. Lookout towers in Minnesota were built nearly as soon as they were nationwide, and the pace of tower construction in the state generally mirrored national trends. The number of fire lookout towers in Minnesota has varied through the years. In 1912, for example, the Minnesota Forest Service was operating about 115 fire lookout towers (many of them tree towers) and the U.S. Forest Service may have operated another 40 towers. The number of fire towers in the state reached its peak at the end of the New Deal (circa 1942) when there were about 200 lookout towers in use by all agencies. There were still roughly 200 towers in operation in 1960.

Tower Locations

Minnesota's collection of fire lookout towers formed an effective public safety network designed to protect all private and public land in both towns and rural areas from forest fires. With nearly 900 Minnesotans dying in forest fires between 1894 and 1918, protecting population centers, as well as forest resources, was an important part of the mission.

The fire towers essentially protected all portions of the state prone to forest fires. This area was first defined by forestry agencies as about 20 million acres in north central and northeastern Minnesota, or roughly one-third of the state. In the 1960s and 1970s the state forest service was using the figure 18 million acres. The protection area included Minnesota's original coniferous forests, and also the mixed forests, aspen stands, and peat bogs or tamarack swamps immediately west and southwest of the coniferous region. The protection area included not only the state's timber resources and Iron Range, but most of Minnesota's recreational lakes. Most settlements, villages, towns, and cities in north central and northeastern Minnesota were in the coverage area of a fire lookout tower.

Fire towers were built in 28 different counties. Only one tower was built in southeastern Minnesota. It is the Elba or Whitewater Tower (extant), built in 1936 near Whitewater State Park in northwestern Winona County.

Tower locations were chosen primarily based on desired visual coverage and potential road and telephone access. Many towers were located in isolated locations deep in the forest, at the tops of peaks, or in spots in the U.S.-Canadian boundary waters that required the construction of long access roads or remote canoe portages. Foresters usually built a dedicated access road to the tower, sometimes extending a half-mile or more.

Towers were built on land that was publicly owned, as well as on small parcels leased from private landowners. Towers were usually named for the summit on which the tower was built, for the township they stood in, or for the nearest lake, stream, ranger station, or community.

A fire lookout was created using the combination of a lookout site and a lookout tower, both chosen to raise the observer as high as possible and provide optimal visual coverage. Lookout sites on high peaks could use shorter towers, while relatively flat forested areas required tall towers of 100' or 120'.

Towers were tall enough so the cab projected above the tree tops which, in the case of white pines, could rise to 80'. Towers ideally offered 360-degree visibility. For many towers, however, part of the view was blocked by nearby hills and a perfect circle of coverage was not attained. Most towers in Minnesota provided a 10- or 15-mile (radius) view. A 100' tower on relatively flat terrain could cover a 12-mile radius before sightlines hit the horizon (due to the curvature of the earth). Raising a 100' tower onto a 50' hill could increase the range significantly. A tower with an unoccluded 12-mile radius would cover about 450 square miles or 280,000 acres.[1]

By the mid-1920s forestry officials in Minnesota were using "visibility studies" with detailed mapping to help analyze the effectiveness of tower coverage and determine where new sites should be located. Many visibility studies were conducted during the New Deal with help from CCC manpower. The potential visibility of new lookout sites was often determined by climbing a tall tree (for example, to 40'), sketching the area visible, and then extrapolating to estimate the coverage for a given tower height. Conducting a visibility study for each tower in an area could also identify blind spots.

In the best-case scenario, lookout towers were spaced so their coverage overlapped and one tower could see an adjacent tower's blind spots. Spacing towers so fires could be seen by multiple towers was also preferred because it helped pinpoint the fire location more accurately. This saved valuable time for ground crews trying to reach the fire as quickly as possible. While sightings from multiple towers was preferred, however, many fires were spotted and reported by a single tower.

In some cases, a ranger district headquarters turned out to be an effective lookout site. Ranger stations were often located on a good road or railroad near the edge of a small town. When a lookout tower was located within a ranger station complex, it was generally sited at the edge of the building cluster or across the road. An extant example of a tower associated with a ranger station is the Sandy Lake Tower (1933) in Aitkin County.

[1] With each tower covering 280,000 acres, about 80 towers would be needed to cover the state's 20,000,000-acre protection area if each tower had an unobstructed 360-degree, 12-mile view. In reality, conditions were far from perfect; there were about 200 towers in Minnesota circa 1942.

Beginning in the 1920s, forestry agencies began to classify towers as "primary" and "secondary" based on the area covered. Primary towers were usually manned throughout the entire fire season, while secondary towers were manned for shorter periods, usually during times of highest fire danger or when visibility was low. There was no physical difference between towers classified as primary and secondary with 80' and 100' towers, for example, used as either. A lookout could be reclassified if a new lookout site was created nearby or if a tower was exchanged for one of a different height, which might alter the set-up. A schedule for the 20 towers operating in Chippewa National Forest in 1958 classifies 16 of the towers as primary and 4 as secondary.[2]

Tower Operation

Towers were manned when the fire danger was greatest. This was generally when there was no snow on the ground, often from mid-April to early November.

Towermen were usually forest agency staff (often seasonal patrolmen) or sometimes local residents employed as spotters. During the New Deal, trained CCC enrollees manned many or most Minnesota towers.

Minnesota's first female spotter, a woman named Johnson, was stationed at the Jasper Peak Tower (razed), just west of Superior National Forest, in the mid-to-late 1920s. Women spotters were still uncommon a decade later in October 1938 when the state's only female spotter was a 21-year-old women named Therese Huber who manned the fire tower in Carlos Avery Game Refuge in Anoka County. More women served as spotters during the labor shortages of World War II. In August 1942 the U.S. Forest Service in Minnesota announced it had hired the first women lookout person in 20 years. Her name was Mary Tonkovich and she also worked as a stenographer in the U.S. Forest Service office in Ely. In the late 1940s through the 1960s married couples sometimes shared spotting jobs.[3]

A spotter stayed in the towers all day – from 8:00 a.m. to 6 p.m., for example – and also climbed the tower several times during the night if fire danger was especially high. They were instructed never to leave their post in the cab even if the view was completely obstructed by hazy or smoky conditions because vision could clear up at any moment, even temporarily.[4] Standing or sitting in the cab, the spotter scanned the horizon looking for wisps of smoke rising above the treetops, bogs, or grassland. By the color of the smoke an experienced spotter could determine whether the fire was in grass, dried slash, or green timber.

If smoke was detected, the spotter sighted it using an alidade that swiveled on a table in the center of the cab. The Osborne Firefinder, developed in 1911 by a U.S. Forest Service ranger in the Pacific Northwest, became standard equipment for the U.S. Forest Service and many other forestry agencies nationwide. The alidade had a circular plate with a graduated rim. The Osborne Firefinder usually had a map mounted on the metal plate. The Minnesota Forestry Division generally used a alidade that did

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[2] "Chippewa National Forest (Hours of [Tower] Manning)," March 1, 1958, Chippewa National Forest Records, Iron Range Research Center, Chisholm, MN.

[3] Caption for Minnesota Dept. of Conservation photo of Jasper Peak Tower, Minnesota Dept. of Natural Resources (MnDNR) Historical Photographs, Historical Collections (100th Anniversary) webpage; Cy Plattes, "100 Deer in Wilderness Under Guard," *Albert Lea Evening Tribune*, Oct. 17, 1938; "U.S. Forest Service Will Hire Women," *Albert Lea Evening Tribune*, Aug. 24, 1942.

[4] *Manual of Instructions* (St. Paul: Minnesota Forest Service, Minnesota Dept. of Conservation, 1930), 22.

not have a map on the plate. The alidade rotated so the crosshairs could be aligned on the column of smoke. The Osborne Firefinder could also be shifted laterally on its supporting track so a visual obstruction such as the corner of the cab could be dodged and an accurate reading taken.

If smoke was sighted, the spotter telephoned or radioed the local ranger station with the directional reading, the estimated height of the smoke and its color, and the estimated distance from the tower. At the station, each of the area towers was marked on a wall map. Each tower on the map was surrounded by a gauged circle marked with 360 degrees. On the map the ranger drew a straight line out from the reporting tower corresponding to the compass reading called in. The ranger then contacted nearby towers, asking them to look for the smoke and provide a reading. The new lines were added to the wall map, and the fire location determined from the point where the lines drawn out from two or three towers intersected.[5]

Tower Construction Process

Before the New Deal, fire lookout towers and related structures were generally built by forestry staff themselves. According to a 1911 report, some early towers were built by settlers who contracted with the state to erect towers on parcels of their land which the state leased for lookout sites.[6]

Between the spring of 1933 and the spring of 1942, most towers as well as telephone lines, site improvements, access roads and trails, and other forestry infrastructure were built with labor supplied by the CCC. A few towers were built by other federal work relief programs. The projects were designed and supervised by the appropriate government forestry agency. After the New Deal the agencies again built towers themselves or contracted out the work.

For the Minnesota Forest Service, tower-building and the construction of support buildings, roads, and trails was often shoehorned in around more critical lookout tower duty. Forestry staff would keep watch in lookout towers all day during dry periods, but work on construction projects during rainy periods and at other times when fire danger was low.[7]

Almost all steel towers were made by a commercial manufacturer and shipped to the site as an unassembled, bundled kit of parts. A 100'-tall tower weighed about 15,000 pounds. The kits were often shipped to a ranger station or Indian reservation headquarters and then hauled to the site. Some extant steel towers bear the name, stenciled in black paint, of the ranger district or supervising ranger to whom the tower was shipped (see Steel Markings below). Each component of a steel lookout tower was usually stamped by the manufacturer with a part number to facilitate assembly.

In the 1930s an 80' to 100' tower cost about $1,000 (evidently including shipping). In the late 1960s a similar tower cost about $6,000 plus delivery.[8]

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[5] "Guardians of the Timberlands," *Minnesota Conservation Volunteer* (Nov. 1940), 34; Daniel L. Casey, "Wildfire," *Minnesota Conservation Volunteer* (Jan.-Feb. 1976), 36-41. *Minnesota Conservation Volunteer* is hereafter cited *MCV*.

[6] *First Annual Report of the State Forester* (Minnesota Forestry Board, 1911), 49.

[7] Don Wilson, *Be a Forest Ranger, 1927-1936* (By the author, 1986).

[8] L. R. Beatty, *Summary: Minnesota CCC Work, 1933-1941*, U.S. Civilian Conservation Corps, U.S. Dept. of Agriculture, and Minnesota Dept. of Conservation, 1942.

Although in the 1920s some towers were assembled on the ground and tipped up in place, it was more common for them to be built from the ground up, tier by tier. A gin pole – that is a tall steel pipe with a pulley at the top – was often used to initially hoist the parts. As the tower rose, the pulley could be affixed to the steel framework itself.

State forestry official Don Wilson, who began his career in 1927, recalls that in the 1920s a tower could be constructed by two experienced builders with support from a ground crew. Beginning in 1928 Wilson helped build several state towers including Birch Lake (razed), Coleraine (extant, Itasca County), Glen (razed), Longville (extant, Cass County), and Spider Lake (razed). Wilson describes the construction process:

> In the late 1920s and early 1930s there were several men who [became] experts at working topside. It was essential that a person thoroughly trust his working partner when working from 20' to as much as 100' in the air. One better have trust when he was up there with one leg wrapped around a tower leg and with both hands trying to swing a heavy piece of steel into his partner's hands at the opposite corner. Some of the men with whom I felt absolutely comfortable when working the 'high side' were Dana Worrall, Art Ward, Harold Schuppel and Scoop Szuszitzky.
>
> . . . A good ground crew was essential in the construction of a tower. They needed to read the blueprint accurately so the proper piece of steel was sent up when needed. A wrong part sent up meant much wasted time while it was let down and the right piece sent up. They also needed to send up the proper size and length bolts as required, and occasionally to return a dropped tool. Everything was pulled up by hand-powered rope and pulley. The top crew (usually only two) would move the pulley to the proper location as the construction proceeded so the next part arrived where it was to be used. Usually a ground crew was three men but two experienced men would do as well.[9]

Wilson describes building the Spider Lake Tower:

> Since Scoop and I had erected towers similar to or exactly like this one, we had memorized many of the part numbers. Before beginning construction we laid out the parts on the ground in the order in which they would be used. Also as we worked on the tower we were able to identify, from the air, most parts by their size and shape. All this made it much easier for the ground crew. There was little delay in their finding the next piece needed and having it pulled up so we could immediately use it. We did not complete the final tightening of the bolts until all the steel was up. It was a little shaky working that way but much easier to get the various parts to fit together. Things went well even with the untrained ground crew members, and we were successful in putting together all the steel for the 81' ladder tower in just ten working hours. However this did not include the erection of the cab.[10]

Wilson wrote that, to his knowledge, no state forestry employee was ever seriously injured building a tower.

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[9] Wilson, *Be a Forest Ranger*, 78-79.
[10] Wilson, *Be a Forest Ranger*, 80.

Movement of Towers

Minnesota's steel lookout towers were routinely relocated to other sites as the fire protection system was adjusted. Many towers were moved during the New Deal by the CCC, for example. It was common for a given lookout site to have a succession of two towers, perhaps one wooden and one steel; a few sites had three. Some steel towers were moved twice thereby occupying three different lookout sites. Replacement towers were generally taller or sturdier than their predecessors but sometimes a 100' tower was replaced with an 80' tower as officials fine-tuned fire protection plans. Sometimes a ladder tower was replaced with a stair tower to provide better access for the visiting public since encouraging the public to climb towers and learn about forest fires was important to forestry agencies' fire prevention strategy.[11] A site's second tower was often built adjacent to the existing tower, which was then removed. The Mount Maude Tower in Cook County is an example of an extant tower that has footings of a previous tower nearby. Sometimes the second tower was built some distance away from the first such as on a nearby summit in the same range of hills.[12]

Minnesota towers were moved as late as the early 1970s. The Minnesota Forestry Division's Boy River Tower, for example, was moved in 1972 to Otter Tail County to become the Hillview Tower (razed).[13]

Height

Minnesota towers historically ranged in height from about 20' to 120'. Steel towers were often sold in 20' height increments. Manufacturers and forestry officials measured the height of a lookout tower from the top of the concrete footings to the floor of the cab.[14] While early Minnesota towers might be 40' tall, most of the state's later towers were 80' to 100'. Perhaps because of the state's relatively flat terrain, Minnesota lookout towers are at the tall end of the height range for fire lookout towers nationwide. Across the country, a tower of 100' is considered very tall.[15]

Because they extended above the tree tops, lookout towers needed to withstand high winds and lightning strikes, as well as the weathering effects of sun and rain. The towers were grounded against frequent lightning strikes. Telephone and radio transmission equipment was sometimes damaged by lightning and had to be replaced. In 1949 the Minnesota Forestry Division lost its first cab to a fire caused by lighting.[16]

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[11] *State of Minnesota Department of Conservation's Third Biennial Report for Fiscal Years 1935-1936* (St. Paul: Minnesota Dept. of Conservation, Dec. 1936), 101; "General Seasonal Notes, 1930," Minnesota Forest Service, Minnesota Dept. of Conservation, Forestry Division Records, MHS.

[12] Some historic and modern sources on Minnesota lookout towers, including lists, articles, and websites, do not always differentiate between the year a tower was *moved* onto a given site, or built from scratch on that site. The term "erected," for example, could mean either, and historians should conduct further research to clarify the situation. Researchers should also be aware that sometimes a lookout site's name was retained even though the replacement tower was built a mile away from the original site, which can lead to confusion.

[13] Tom Kremer, *Minnesota's Historical Fire Lookout Towers* website.

[14] Researchers should be aware that tower heights reported by non-forestry officials such as geological survey crews often include the cab and footings since their instruments were sighted to the tops of the towers.

[15] Gerald W. Williams, *The USDA Forest Service: The First Century* (Washington, DC: USDA Forest Service, July 2000/rev. April 2005), 32.

[16] Alfred L. Nelson, "Fire Towers are Targets," *MCV* (July-Aug. 1949), 24.

Tree Towers

Most of Minnesota's first fire lookout towers were simply tall trees. The Minnesota Forest Service described in its first annual report, issued in 1911, that at some lookout sites "a tree taller than the surrounding trees was trimmed of branches in its top, and answered the purpose. A simple ladder was often added." In many cases a small platform was added to the tree at a height of, for example, 30' to give the spotter a more comfortable place to stand. This was dubbed a crow's nest, a nickname that persists today.[17]

Modern Wooden and Steel Towers

Fire lookout towers, both wooden and steel, were simple, durable structures whose design represented standard engineering for the period. Their design was derived from wooden and steel towers made for windmills, gas and oil derricks, and other purposes. Several companies that supplied fire lookout towers to forestry agencies also made windmills, electrical and radio transmission towers, and similar structures.

Towers for windmills and oil derricks were fairly common throughout the U.S by 1880. Windmill towers were typically about 16' to 40' tall while oil derrick towers were often 80'. America's first successful all-steel windmill was made by the Aermotor Company in 1888, and by the 1920s and 1930s the steel Aermotor windmill was the most popular windmill in the U.S. Aermotor supplied its first steel fire towers to the U.S. Forest Service nationwide in 1914 and soon became the leading fabricator of steel fire lookout towers in the country.[18]

In a comprehensive history of American windmills, historian T. Lindsay Baker outlines some of the characteristics that made wooden and steel windmill towers so successful on American farms – attributes that could also describe fire lookout towers. Baker notes that, because of their open design, the towers used minimal raw materials and were therefore economical to both manufacture and ship. Towers could be shipped in pieces and assembled with simple tools and without special skills or training. Parts were interchangeable which made towers both economical to manufacture and fairly simple to repair. Finally, towers were durable, particularly if the wood was painted or the steel galvanized.[19]

The design of steel fire towers became standardized across the U.S. soon after the first steel lookout towers were made around 1910. Designs for steel lookout towers were generally developed by forestry agencies – primarily the U.S. Forest Service – working with the manufacturers. After specifications were developed, companies such as Aermotor and International Derrick would competitively bid to

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[17] *First Annual Report of the State Forester*, 48. What may have been the last remaining example of a tree-type lookout tower in Minnesota was still standing circa 2005 north of Two Harbors when it was visited by David Quam, former director of the Minnesota Chapter of the Forest Fire Lookout Association. Ladder rungs and two platforms had been nailed into a tall white pine. The tree tower was evidently erected circa 1921 by the Wales Forest Protective Association, a cooperative fire prevention group organized by a group of logging companies that year; see David Quam, "1921 Minnesota Tree Fire Tower Still Standing," on David Quam, ed., *Minnesota Fire Towers* website.

[18] T. Lindsay Baker, "Turbine-Type Windmills of the Great Plains and Midwest," *Agricultural History* (Jan. 1980), 45-46; John R. Grosvenor, *A History of the Architecture of the USDA Forest Service* (Washington, DC: USDA Forest Service, July 1999), chap. 2.

[19] T. Lindsay Baker, *A Field Guide to American Windmills* (Norman: University of Oklahoma Press, 1985), 111.

supply towers to federal and state agencies. Because of exacting government specifications and close competition between companies, some models made by multiple companies are nearly identical. According to one author, for example, the Aermotor MC-39 tower is nearly identical to the International Derrick model 1933.[20] McClintic-Marshall also made a very similar tower. (See information on manufacturing companies below.)

Wooden Towers

The first free-standing lookout towers, as opposed to those built into trees, were made of wood. Wooden towers were less portable and less durable than steel towers and generally had non-standard designs.

Most wooden towers had open platforms rather than enclosed cabs, but some wooden towers built in Minnesota as early as 1921 had glassed-in cabs.[21] While most wooden towers were shorter than steel towers, some wooden towers rose to 100'.

In 1911, the year the Minnesota Forest Service was established and erected its first major collection of towers, the agency reportedly erected 105 towers, 92 of which were made of wood. Many of these were tree towers. In 1911 the state forest service was whitewashing its wooden towers to help preserve them and to make them easier to locate in the woods "by settlers and others who might be expected to use them to locate fire."[22]

While few wooden lookout towers were built after the 1920s, some important and very tall wooden towers were built by the CCC for federal agencies during the New Deal. One was the tower at the Chippewa National Forest Supervisor's Office in the town of Cass Lake. It was built circa 1936 (possibly with both CCC and WPA labor) of squared redwood timbers. Sometimes called the Lydick Nursery Tower, it stood until the 1950s.[23]

Two more examples of tall timber towers were built on federal wildlife refuges developed in the 1930s as New Deal projects. One was a 100' tower (razed) built in 1938 by the CCC at Mud Lake Migratory Waterfowl Refuge, now Agassiz National Wildlife Refuge, in Marshall County. In 1940 a similar tower (razed) was built by the CCC at the Rice Lake National Wildlife Refuge near McGregor. Both refuges were established by the federal government on submarginal farmland that was being returned to its pre-agricultural condition. Both refuges were developed by CCC camps sponsored by the U.S. Bureau of Biological Survey, now the U.S. Fish and Wildlife Service, which administered the refuges.[24]

There are no examples of wooden towers known to be standing in Minnesota.

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[20] Bill Starr, *The Five Various Steel Fire Tower Models Utilized in New York State* (By the author, 2010), 3.

[21] Leslie R. Beatty, "A Forest Ranger's Diary," *MCV*, May-June 1965, 63.

[22] *First Annual Report of the State Forester*, 49. Even today fire towers are difficult to spot in the woods because their slender legs blend into the trees.

[23] Kremer, *Minnesota's Historical Fire Lookout Towers*.

[24] C. B. Vogen, "Narrative [CCC] Report, Mud Lake Refuge Minnesota," reporting period Nov. 1 to Jan. 31, 1939, U.S. Fish and Wildlife Service collection, U.S. Dept. of the Interior; Kremer, *Minnesota's Historical Fire Lookout Towers*.

Steel Towers

In 1911 the Minnesota Forest Service built its first 13 steel towers. It is believed the U.S. Forest Service began building steel towers in Minnesota about the same time. As early as 1914 the ladder on Minnesota Forest Service towers was protected by wire safety fencing giving it, according to the state forest service, a "distinct advantage in lookout tower construction owing to the fact that the enclosed ladder renders the ascension absolutely safe."[25]

Steel towers were built in tiers of about 15' to 20', with the uppermost tiers being slightly shorter than lower tiers. The legs, sometimes called posts, converge as the tower rises. Early towers in Minnesota had three legs. No three-legged towers were likely built after World War I and none remain today.

In general, towers fabricated before the New Deal have lighter frameworks, that is, are made of smaller steel components, than the frames of later towers. In many fire towers the principal members are simply lapped and bolted together. In others, steel plates are added at the principal connection points for strength.

The steel on most towers was galvanized. Some extant towers have been painted. The steel on many towers is in remarkably good condition today considering the towers' age.

The base of a 60' tower is about 12' square. The base of a typical 80' to 100' tower is about 19' to 24' square.

Tower legs are made of steel angles. The legs of a typical Minnesota ladder tower from the 1920s are made of 2½" angles. The legs on a typical stair tower from the 1930s might be made of 3½" or 4" angles. The sturdiest Minnesota towers have legs made of 5" angles. A historic photo of the Mount Josephine Tower (razed) in Cook County suggests it had unusual lattice-like legs.[26] The tower legs are usually bolted to concrete footings that may be 16" or 24" square. Each manufacturer and tower model had a different style of clamp or bolting plate design.

Tower legs are joined by horizontals, or girts, made of steel angles. Horizontals on a ladder tower from the 1920s might be made of 1½" and/or 1¾" angles while horizontals on a stair tower might be 2½" or 3" angles. The sturdiest towers have horizontals made of 5" angles supporting the landings.

A series of cross-braces stabilizes and stiffens the tower. Many of Minnesota's early ladder towers have cross-bracing made of steel rods about ½" and $^{5}/_{8}$" in diameter. In a few early examples such as the Smoky Hills Tower (extant) in Becker County, the rods are fairly small and have looped or twisted connectors. In most stair towers the cross-bracing is made of 2" to 2½" steel angles. In some, the cross-bracing has an additional set of intermediate vertical members. The Farley Hill Tower (extant) in Itasca County, which is a 1935 ladder tower, has cross-bracing made of steel rods in the upper five tiers and steel angles in the lower three tiers.

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[25] *First Annual Report of the State Forester*, 48-49.

[26] The photo, which identifies the tower as the Grand Portage tower, is in Mary Hoff, et al., eds., *Connected to our Roots: 100 Years of Growing Forests in Minnesota* (St. Paul: Minnesota Dept. of Natural Resources, 2010), 69.

According to historic photos some Minnesota towers were built with guy wires, but guy wires were not typical and no examples are believed to exist today. The use of guy wires was common in some states, particularly in windy, mountainous areas.

Steel Markings. The steel components of many of Minnesota's fire lookout towers are marked. Types of markings include:

Shipping Information. Some towers have a few components that bear the name of the ranger station, or the ranger, to which or whom the tower was shipped by rail. These markings are generally stenciled in black paint. Marks on the Schoolcraft (also called Frontenac Lake) Tower in Hubbard County south of Bemidji, for example, read "J. H. Nelson, Bemidji." Marks on the Ben Draper Tower in Land of Lakes State Forest in Cass County read "Ben Solinger, Remer."

Tower Fabricator. Some towers in Minnesota have a small metal plate affixed to a leg or horizontal member that indicates the manufacturer. A manufacturer's mark is rare in Minnesota and such plates are evidently also uncommon nationwide.[27]

Steel Supplier. Some tower components are imprinted with the name of the company that supplied the steel to the tower manufacturer. The steel for Minnesota towers was made by companies such as Bethlehem Steel Company, Cambria Steel Company (a subsidiary of Bethlehem Steel), Carnegie Steel Company, and Jones and Laughlin Steel Corporation.

Part Number. Most components of Minnesota's steel fire towers are marked with the manufacturer's part number, either imprinted in the steel or stenciled with black paint. Because the towers were shipped to the site as kits, the part numbers were marked for efficient assembly.

Other Marks. A few towers have other types of markings. The Blackduck Tower, for example, has black stenciled letters reading "Tower No. 4," evidently referring to a Chippewa National Forest marking system.

Tower Access: Ladder or Stairs

Minnesota fire lookout towers have either ladder or stair access. In some states, ladder towers were retrofitted with stairs to increase safety but this was evidently not the practice in Minnesota.[28]

Nearly all wooden towers in Minnesota are believed to have had ladders. An exception is Minnesota Forest Service's Jasper Peak Tower (1919) in St. Louis County which had a set of prefabricated steel stairs. On the few very tall timber towers built in the 1930s (for example, towers built by New Deal agencies at the Mud Lake and Rice Lake federal wildlife refuges in northwestern Minnesota), the ladders were angled to achieve some of the safety provided by stairs.

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[27] In an overview of extant fire towers in New York state, author Paul Laskey provides a photo of a small Aermotor plate on a tower in that state and indicates it is the only such plate he has seen in years of examining towers; see Paul Laskey, *The Fire Observation Towers of New York State* (Ballston Spa, NY: MLK Publishing, 2003), 21.

[28] Laskey, 9; Bill Starr, *A Pictorial History of the Fire Towers in New York State* (By the author, 2009), 11; no fieldwork or documentary research has identified a Minnesota ladder tower that was altered with the addition of stairs.

The earliest steel towers built by all forestry agencies in Minnesota had ladders. Forestry agencies continued to buy new ladder towers even after they began to use stair towers. One of the last newly fabricated ladder towers in Minnesota was the Toad Mountain Tower (razed) in Becker County, an 86' ladder tower erected by the Minnesota Forestry Division in 1965.[29] Newly fabricated stair towers were erected in Minnesota through the early 1970s.

The Minnesota Forest Service erected its first stair towers during the winter of 1928-1929. They were: Ahren's Hill (razed) in Crow Wing County; Aiton Heights Tower (extant, originally called Itasca Forest Headquarters Tower) in Itasca State Park; Cloquet Forestry Tower (extant) at the University of Minnesota's Cloquet Forest Experiment Station; and the Larsmount Tower (razed) in Lake County. The U.S. Forest Service may have built its first stair towers about the same time. Another early stair tower built by the state is the Side Lake Tower (extant), built in 1932 at the Side Lake Ranger Station in St. Louis County.

Minnesota forestry agencies generally placed stair towers at sites most likely to be visited by the public because encouraging the public to climb towers and learn about fire prevention and forest conservation was an important part of comprehensive forestry and fire prevention efforts. The same was true in other states.

A typical Minnesota tower has a ladder about 15" wide made of 1" steel angles. Ladders were typically surrounded by woven wire safety fencing all the way to the top. Former state forester Don Wilson writes that the safety fencing on the Smoky Hills Tower (1926, extant) was made of wire hog fencing. He describes climbing the tower in the spring of 1927 with a bulky backpack full of the telephone equipment that was brought up to the cab each spring and having difficulty fitting through the safety netting as he ascended the ladder (see more on ladder towers below).

A typical 80' to 100' stair tower in Minnesota might have 8 to 15 flights of steps, depending on manufacturer. The lowest flight was typically bolted to a concrete footing which might have a footprint of 3' by 2' or 4' by 4'. Stairs are typically 24" wide with 2" angles used to create both the stringers and tread supports. Stair runs are assembled with bolts and rivets. Wooden planks were used for treads. Stairs and landings typically have handrails made of 1½" and 2" angles. It is not clear how much woven wire safety fencing was originally furnished on stair towers, but it was eventually added by forestry agencies to landings and, in some cases, to stairs.

Of the approximately 80 fire lookout towers, all steel, believed to be standing today, about 28 are ladder towers and the rest, about 52, have stairs. A recent perusal of fire towers studies from several states identified relatively few unaltered examples of ladder towers, suggesting that Minnesota's ladder towers are uncommon nationwide.[30]

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[29] Wilson, *Be a Forest Ranger*, 198. A set of 1930s U.S. Forest Service plans for steel towers contains options for both ladder and stair towers, both with 7' x 7' cabs; see "7' x 7' Lookout Tower," 10 sheets, 1932, rev. 1934, U.S. Dept. of Agriculture Forest Service, Chippewa National Forest Records, Iron Range Research Center, Chisholm, MN (hereafter IRRC).

[30] For example, see Major Bibliographical References in Section H for fire tower overviews from Alabama, Kentucky, New Hampshire, New York, Oregon, Washington, and Vermont.

Tower Cabs: Cylindrical, Octagonal, or Square

The earliest Minnesota towers, both wooden and steel, had open observation platforms at the top, often edged with safety rails. The U.S. Forest Service was still drawing plans for open platforms on steel towers in the 1930s.[31]

An improvement in cab design was the addition of solid cylindrical sides and a cone-like roof. This type of cab was about 6' in diameter and the sides were open above the 3'-tall lower wall.[32] All towers in Minnesota with cylindrical cabs were probably three-legged steel towers. None are extant.

Around 1920 Minnesota forestry agencies began using towers with fully-enclosed, steel-framed cabs with multipaned windows. The earliest of these premanufactured cabs were octagonal. Octagonal cabs were a little smaller than later square cabs. Towers with octagonal cabs were erected in Minnesota through about 1933.[33] Fire towers studies from several states, as well as general internet searches, identified no steel towers with octagonal cabs in any locations other than Minnesota. While this research was not exhaustive, it suggests that Minnesota's towers with octagonal cabs are rare nationwide.[34] Many steel towers with octagonal cabs were dismantled, moved, re-erected, and manned by the CCC for the Minnesota Forestry Division during the New Deal. The sites were often improved by the CCC with roads and telephone lines and other site elements.

Square cabs were first used in Minnesota in the mid- to late-1920s, first by the U.S. Forest Service. Square cabs are generally 7' by 7' and about 9' tall.

The size of the steel framing members on both octagonal and square cabs was minimized to reduce blind spots for the sighting equipment. The cabs' lower walls and roof are made of heavy-gauge galvanized steel sheets. Roofs often have a ventilator at the peak. Floors are made of wooden planks with a trap door-style opening. Sturdy floors were necessary to ensure the sighting equipment remained perfectly level.

The cabs had multipaned sash, which was typically wooden in octagonal cabs and steel- or aluminum-framed in square cabs. The sash on octagonal cabs typically slides down. Minnesota towers had several typical configurations for the multipaned windows in square cabs including, on a side, two 4-pane sashes separated by a narrow muntin; two 9-pane sashes with little or no muntin; and a pattern with several small panes surrounding a central operable pane. In square cabs with two 9-pane sashes, the left-hand sash (viewed from the outside) usually tilts open from a pivot point half-way up the side of the sash. International Derrick's 1937 model tower is distinctive because it has a slightly taller cab with a sun visor across the top of the windows. The Finland Tower (1950, extant) in Lake County is one of few known International Derrick model 1937 towers in Minnesota.

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[31] "7' x 7' Lookout Tower," 10 sheets, 1932, rev. 1934, U.S. Dept. of Agriculture Forest Service, Chippewa National Forest Records, IRRC.

[32] Wilson, *Be a Forest Ranger*, 76-77; Nelson, "Fire Towers," 24.

[33] Some Minnesota sources use the term hexagonal, but is likely an error: only octagonal towers have been observed in historic photos. If researchers encounter an octagonal cab on a Minnesota tower "built" after 1933, the tower was almost certainly moved to its site in that year, not fabricated.

[34] See fire tower overviews from Alabama, Kentucky, New Hampshire, New York, Oregon, Washington, and Vermont in Major Bibliographical References in Section H.

The interior of a lookout cab was very simple. Many were furnished with only a sturdy central map cabinet (made of steel in 1930s examples) to hold the firefinding equipment, and a backless stool. Interiors were often painted a medium to dark green.

Unlike fire lookouts in mountainous states, Minnesota fire towers did not have cabs that were designed to be slept in. Instead, the spotter climbed to the top in the morning and generally stayed in the cab until suppertime (or until rainfall, which significantly lowered the fire danger). In the western U.S. some fire lookouts consisted of small cabins (for example, 14' by 14') built directly on a mountain peak or on short, stout tower legs. According to a 1934 piece by the U.S. Forest Service's William Osborne, the disadvantages of combining sleeping quarters with the lookout cab included the fact that a larger cab reduced visibility, and that providing too many distractions within the cab might reduce the vigilance of the spotter.[35]

Communications: Telephone and Radio

For a fire lookout tower to function it was essential that it be linked to a communication system so the towerman could report the fire to the ranger station. Telephones were used exclusively until the mid-1930s, and a combination of two-way radio and telephone was used after that point. Telephone equipment was hauled up to the cab each spring and down for the winter. Telephone lines to the towers were undependable one-wire systems, owned and built by the forestry agency and often strung through the trees. Even when wires were strung on wooden poles the telephone lines were susceptible to breakage from high winds and snow-load, and repairing broken lines and getting the system working each spring was a critical task.

When CCC manpower became available in the 1930s, telephone lines to Minnesota's lookout towers were substantially improved with significant manpower expended erecting and replacing telephone lines. Beginning about this time the telephone numbers of towers and ranger stations were disseminated in press releases and brochures that encouraged the public to call the nearest tower or ranger station to report a fire.

Even after radio hookup, many towers continued to retain a telephone line. In the late 1940s and 1950s, hundreds of miles of telephone lines were sold to local telephone companies. By the mid-1960s many lines to towers had been removed.[36]

The Minnesota Forestry Division began experimenting with two-way radios in the mid-1930s. Radio provided increasingly flexible communication so that one tower could talk to another, and a towerman could serve as a dispatcher, relaying information between towers and to firefighters on the move. Radios required that an antenna be attached to the top of each tower.

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[35] W. B. Osborne, *The Western Fire Fighters' Manual. Chapter 5: The Lookout System* (Seattle: Western Forestry and Conservation Assoc., 1934), 7-8.

[36] Don Wilson, "Fire in our Forests," *MCV* (Jan.-Feb. 1964), 36; "Foresters Ask Cooperation in Minimizing Fire Losses," *Brainerd Daily Dispatch*, Sept. 10, 1940; Wilson, *Be a Forest Ranger*; Don Wilson, Transcript of oral interview of Wilson by Amy Rieger, Aug. 10, 1993, Itasca State Park Oral History Project, Minnesota Historical Society, St. Paul, hereafter MHS, 9.

The first state tests of tower radio began in the summer of 1935. Tower-to-tower communication initially proved more successful than ground-to-tower because it avoided obstructions. In 1940 the Minnesota Forestry Division installed 20 radio sets for communication between towers and ranger stations, as well as tower-to-tower. When radios were installed in 1940 at the Littlefork Tower (razed) and the Black Bay Towers (extant, Koochiching County), it was necessary to extend the antennas 40' above the cab roofs because nearby hills were blocking the radio waves.[37]

Forestry agencies made few improvements to lookout towers during World War II, but the use of radio rapidly increased during the next decade. In 1952 the Minnesota Division of Forestry began a major program to equip towers with radios. The U.S. Forest Service was doing the same: U.S. Forest Service drawings from 1950 provide specifications for mounting antennas on the roof of existing towers. Each antenna rose from the peak of the roof and consisted of a 10' pole supporting an 82" whip antenna.[38] By the end of the 1950s most, if not all, Minnesota fire towers had antennas for two-way radios.

In 1954 the Minnesota Forestry Division's inventory of radio equipment consisted of walkie-talkie units for use on the fire line; 157 backpack units for lookout towers and similar units for aircraft; 100 units for trucks, cars, and patrol boats; 41 fixed stations for ranger stations; and 14 fixed stations for area headquarters. In 1958, the radio network was to be changed over to high frequency channels; in 1962 that process was still underway. In 1966, about half of 28 towers within and just outside Chippewa National Forest (16 federal towers and 12 state towers) had commercial telephone service and all had two-way radio service. Two of the federal towers had state as well as federal radio equipment to allow the transfer of information between the federal and state agencies.[39]

Miscellaneous Tower Components

Many Minnesota lookout towers were historically equipped with simple weather instruments such as anemometers. Some also had a flagpole attached to the side of the cab. Minnesota fire lookout towers were not wired for electricity.

Tower Fabricators

Companies that fabricated fire lookout towers standing in Minnesota include those listed below.

Aermotor Windmill Company was one of the principal manufacturers of steel fire lookout towers in the United States. Minnesota has a number of extant examples. In addition to windmills and fire lookout towers, Aermotor made towers for electrical lines, sirens and beacons, and radio transmission. It also made water pumps, motors, and other types of machinery and equipment, particularly for agriculture.

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[37] *State of Minnesota Department of Conservation's Third Biennial Report*, 116-118; see also J. A. Kehborn, "Radio as a Fire Fighting Aid," *MCV* (June 1941), 19-20.

[38] Wilson, "Fire in our Forests," 36; "Coaxial Antenna Mounting on 7x7 Steel Cab," 1950, U.S. Dept. of Agriculture Forest Service, Chippewa National Forest Records, IRRC.

[39] Wilson, interview by Amy Rieger; Elizabeth Bachmann, comp., *A History of Forestry in Minnesota With Particular Reference to Forestry Legislation* (Association of Minnesota Division of Lands and Forestry Employees, 1969), 36, 47; E. L. Lawson, "Division of Forestry," *MCV* (Nov.-Dec. 1962), 29; "Memorandum of Understanding," Cooperative agreement between the U.S. Forest Service and the Minnesota Forest Service for Chippewa National Forest and adjoining areas, rev. Jan. 13, 1966, in *Forest Service Manual*, Chippewa National Forest, U.S. Forest Service, March 1966, Chippewa National Forest Records, IRRC.

Aermotor had plants in Broken Arrow, Oklahoma, and elsewhere. Although it has changed hands several times, Aermotor is still in business and today is headquartered in Texas.

International Derrick and Equipment Company was also a leading supplier of steel fire lookout towers nationwide. The company also made drilling and other industrial equipment. International Derrick became a division of the International Stacey Corporation around the early 1930s. After the merger International Derrick continued to manufacture fire lookout towers under its own name. Only about six extant towers in Minnesota have been identified as being made by International-Derrick. They are the Ball Bluff (Aitkin County), Clear River (Roseau County), Finland (Lake County), Height of Land (Clearwater County), Scenic (Itasca County), and Tulaby (Mahnomen County) towers. The towers are 80' to 100' tall with both ladder and stair access.[40]

International Stacey Corporation was also a leading fire tower manufacturer. Stacey Manufacturing Company of Cincinnati was organized in the late 19th century and made structural and plate-metal equipment such as gas line components, furnaces, water tanks, pipes, and tank holders. The company merged with International Derrick and Equipment Company in the early 1930s. In the 1930s the company known as International-Stacey Corporation of Columbus, Ohio, was a leader in the development of steel radio towers. International-Stacey also made oil derricks, pumps, drilling equipment, radio antenna towers, observation towers, and power transmission structures.

McClintic-Marshall Company was a leading manufacturer of fire lookout towers shipped nationwide. The company was founded in 1900 by civil engineers Howard H. McClintic and Charles D. Marshall. McClintic-Marshall was a major supplier and fabricator of railroad and highway bridges and other steel products. It had large plants in Chicago and Pittsburgh. Minnesota has at least 12 extant towers fabricated by McClintic-Marshall. They are stair towers ranging in height from 60' to 100'. They were built in the 1930s by the CCC for the Minnesota Forestry Division.

Pittsburgh-Des Moines Steel Company was founded in 1892 in Iowa as the Des Moines Bridge and Iron Company. It began as a builder of bridges and steel water towers, assembling the structures in Iowa from steel shipped from Pittsburgh. In 1900 the company opened a second fabricating plant in Warren, Pennsylvania and in 1916 moved its headquarters to Pittsburgh and became the Pittsburgh-Des Moines Steel Company. The company became a major supplier of steel for railroad and highway bridges, and a builder of those bridges. In the mid-20th century it was also one of the two largest water tower fabricators working in the Midwest. The company operated under the name Pittsburgh-Des Moines Steel until 2001. Extant Minnesota towers believed to have been built by Pittsburgh-Des Moines include the Devilfish Tower (Cook County), the Black Bay Tower (Koochiching County), the Sandy Lake Tower (Aitkin County), and the Side Lake Tower (St. Louis County).[41]

Western Steel Company manufactured only one tower known to be extant in Minnesota and little is known of the company. The tower is the Elephant Lake Tower (1924) which was first erected near the Ash River in St. Louis County (where it was called the Ash River Tower) and circa 1940 moved to its current site at Elephant Lake, also in St. Louis County. Western Steel towers that have been razed

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[40] Inventory Index Cards, updated through ca. 1955, Minnesota Dept. of Conservation, Forestry Division Records, MHS; Kremer *Minnesota's Historical Fire Lookout Towers*; Scenic Tower manufacturer's plate.

[41] Kremer *Minnesota's Historical Fire Lookout Towers*.

include the Motley Tower (1920s, first stood at Rail Prairie in Morrison County, later in Cass County) and the Sullivan Lake Tower (1920s, Morrison County).[42]

Woodmanse Manufacturing Company of Freeport, Illinois, was a leading manufacturer of windmills nationwide. The company was founded in 1871 and began making steel windmill towers in 1892. It also made irrigation equipment, water tanks, and pumps. In the 1890s the company was known as Woodmanse and Hewitt. Around 1900 it became known as Woodmanse Manufacturing Company, the name used into the 1950s. Only one extant Minnesota tower is believed to have been made by Woodmanse, the Smoky Hills Tower erected by the Minnesota Forest Service in 1926. It is an 80' ladder tower standing in Smoky Hills State Forest in Becker County.[43]

Minnesota's Extant Towers

It is believed that Minnesota has about 80 extant fire lookout towers. Many are believed to have lost historic integrity. Several of the towers are still occasionally used as fire lookouts.

Tower Age

The approximately 80 extant towers were fabricated from circa 1924 to 1973. The 80 towers include about 28 towers made before the New Deal, about 44 fabricated during the New Deal, and about 7 manufactured in subsequent years. Many towers fabricated before the New Deal were moved from one lookout site to another by New Deal work crews including the CCC. There are about 9 extant examples.[44]

The earliest extant towers, fabricated circa 1924-1932, include the following: Aiton Heights (Clearwater), Ash River (St. Louis), Birchdale (Koochiching), Cambridge (Isanti), Cloquet Forestry Center (Carlton), Coleraine (Itasca), Devilfish (Cook), Elephant Lake (St. Louis), Emily (Crow Wing), Hovland (Cook), LaSalle (Clearwater), Linder (Beltrami), Loman (Koochiching), Longville (Cass), Nickerson (Pine), Nimrod (Wadena), Prosper (Lake of the Woods), Quadna (Aitkin), Rapid River (Lake of the Woods), Roseau River (Roseau), Sand Dunes (Sherburne), Schoolcraft (Hubbard), Side Lake (St. Louis), Smoky Hills (Becker), Stony Ridge (Anoka), Summit (Clearwater), Tulaby (Mahnomen), and White Pine (Aitkin). (The county in which the tower is currently located is parenthesized.)

The Aiton Heights, Ash River, Elephant Lake, Nickerson, Quadna, Rapid River, Roseau River, Schoolcraft, and Tulaby towers – while fabricated before the New Deal – are the nine extant towers known to have been moved during the New Deal from one lookout site to another, generally by a federal relief work crew such as the CCC.

Extant Minnesota towers manufactured during the New Deal include:

[42] Inventory Index Cards; David Quam, ed., *Minnesota Fire Towers* website.
[43] Baker 1985, 330-337; Inventory Index Cards.
[44] Kremer, *Minnesota's Historical Fire Lookout Towers*; Inventory Index Cards.

Badoura (Hubbard Co.)
Ball Bluff (Aitkin Co.)
Bemidji (Hubbard Co.)
Ben Draper (Cass Co.)
Black Bay (Koochiching Co.)
Blackduck (Beltrami Co.)
Bois Forte (Koochiching Co.)
Boulder Hill (Itasca Co.)
Carlos Avery (Anoka Co.)
Clear River (Roseau Co.)
Cotton (St. Louis Co.)
Cuba Hill (Cass Co.)
Elba/Whitewater (Winona Co.)
Farley Hill (Itasca Co.)
Faunce (Lake of the Woods Co.)
Floodwood (St. Louis Co.)
Gheen (St. Louis Co.)
Height of Land (Clearwater Co.)
Heritage (Koochiching Co.)
Indian Pines (Koochiching Co.)
Isle Harbor (Mille Lacs Co.)
Jasper Peak (St. Louis Co.)
Kabekona (Hubbard Co.)
Kabetogama (St. Louis Co.)
Marshall (Koochiching Co.)
Mirror Lake (St. Louis Co.)
Molde (St. Louis Co.)
Moose Lake (Carlton Co.)
Mt. Maude (Cook Co.)
Mt. Sophie (Cook Co.)
Mud Lake (Marshall Co.)
Mud River (Beltrami Co.)
Norris (Lake of the Woods Co.)
Pequot (Crow Wing Co.)
Pine Island (Beltrami Co.)
Pinewood (Beltrami Co.)
Ponemah (Beltrami Co.)
Red Lake (Beltrami Co.)
Ridge (Beltrami Co.)
St. Croix (Pine Co.)
Sandy Lake (Aitkin Co.)
Scenic (Itasca Co.)
Vermilion Dam (St. Louis Co.)
Waskish (Beltrami Co.)

Extant Minnesota towers postdating the New Deal include: Babbitt (age uncertain; St. Louis Co.), Cromwell (Carlton Co.), Finland (Lake Co.), Lawson (Marshall Co.), Pomroy (Kanabec Co.), Rusheba (Chisago Co.), and Woodland (Anoka Co.).[45]

Tower Height

The tallest extant towers in Minnesota, all about 120' tall, are the Cuba Hill Tower (1936) in Cass County, Finland Tower (1950) in Lake County, and Marshall Tower (1930s) in Koochiching County. Cuba Hill was erected by the CCC for the U.S. Forest Service and Marshall was probably erected by the Indian Division of the CCC for the U.S. Indian Service (later Bureau of Indian Affairs). The Finland Tower was erected by the Minnesota Forestry Division.

Extant Tower Subtypes

Minnesota's extant towers, all of which are steel, represent three subcategories, each described below.

Ladder Towers With Octagonal Cabs. Minnesota towers built before the early 1930s typically have ladder access and octagonal cabs. The ladder is bolted to the outside of the horizontals in the center of

[45] See Susan Granger and Scott Kelly, *Fire Lookout Towers in Minnesota, 1910-1970: Historic Context Information* (submitted to the Minnesota Department of Transportation by Gemini Research, December 2015) for information on towers believed extant.

one side of the tower. There are no landings; the spotter enters the cab directly from the top of the ladder.

There are about 23 extant ladder towers with octagonal cabs remaining in Minnesota (at least two are missing their cabs). The towers range from about 60' to 90' tall. They were erected by the Minnesota Forest Service from 1924 to 1933. Extant examples are believed to have been fabricated by at least four companies including Aermotor (most examples); Western Products (Elephant Lake Tower); Pittsburgh-Des Moines (Devilfish Tower); and Woodmanse (Smoky Hills Tower).[46]

Ladder Towers With Square Cabs. Some Minnesota towers were built with ladder access and square cabs. There are only about five examples known to be standing in the state. Ladder towers with square cabs tend to be more recent (e.g., post-1933) than ladder towers with octagonal cabs. The towers have a landing one tier below the cab to make entering and leaving the cab more safe. There are two versions, distinguished by whether the ladder climbs the outside of the tower or up an interior corner, as described below:

In the outside ladder examples, the ladder is attached to the exterior of the tower at the center of one of the sides. An example from the 1920s was the Carlton Peak Tower (razed) in Superior National Forest, likely erected by the U.S. Forest Service and likely made by Aermotor. It is believed there is only one surviving example of this style of tower, the Farley Hill Tower, which was built in 1935 by the CCC in Chippewa National Forest for the U.S. Forest Service. The Farley Hill Tower is 100' tall and was fabricated by Aermotor.

In the interior ladder examples, the ladder is located in a corner of the tower just inside one of the legs. Extant examples include the Ball Bluff (Aitkin County), Clear River (Roseau County), Cuba Hill (Cass County), and Height of Land (Clearwater County) towers. Ball Bluff, Clear River, and Height of Land are believed to be International Derrick towers, while Cuba Hill was made by Aermotor.[47]

Stair Towers With Square Cabs. A common form of Minnesota tower has stair access and a square cab. There are about 52 known examples standing (at least two are missing their cabs). The Minnesota Forest Service erected its first towers of this type in the winter of 1928-1929 and the last in the early 1970s. Minnesota's stair towers were manufactured by various companies including Aermotor, International Derrick, McClintic-Marshall, and Pittsburgh-Des Moines.

Minnesota's stair towers are about evenly divided into two configurations. In the first, the stairs climb the tower from corner to corner. In the second, the stairs climb the tower from side to side. The runs are longer in the corner-to-corner style and many of the landings are triangular.

Sites and Site Elements

Lookout tower sites often comprise a hilltop designed to maximize a tower's coverage. Many sites are remote locations deep in the forest. Within a site, the tower is usually located on the highest point (see also Tower Locations above).

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[46] Inventory Index Cards; Kremer, *Minnesota's Historical Fire Lookout Towers*.
[47] Inventory Index Cards; Kremer, *Minnesota's Historical Fire Lookout Towers*.

Because lookout towers were intended to be visited by the public, there was often directional signage on nearby public roads and an identification sign at the tower site entrance. In the early 1970s the Minnesota Forestry Division was removing directional and identification signs to reduce tower vandalism.

Some tower sites, particularly those leased from private owners, were fairly small. The site leased by the state for the Eveleth Tower, for example, was a 330' by 380' rectangle comprising 2.88 acres. A even smaller leased parcel was the Link Lake Tower site which was a rectangle comprising 1.2 acres. U.S. Forest Service improvement plans for towers in Chippewa National Forest show tower sites ranging from about 4 to 14 acres. Most tower sites located on large parcels of public land such as state parks or forests did not have definitive boundaries.[48]

Access Roads. Sometimes a tower site was adjacent or fairly close to a public road, but most towers had a long, narrow, dedicated access road that was essential to the tower's function. The access road can be a half-mile in length and, at the end, sometimes forms a loop around or near the tower. Access roads were generally built by forestry personnel themselves. Many were improved during the New Deal by the CCC. Some access roads retain evidence of stone fill or riprapping at the side slopes, as well as ditches and adjacent linear mounds of earth that represent spoils from the road construction.

Most towers appear to be cardinally aligned on their site. When the terrain is relatively flat, the spatial organization of a site is often rectilinear. On hilly sites the layout is often informal (curvilinear) to accommodate the terrain. All tower sites had a telephone line and most had a well with a hand pump. Some had gravel sidewalks, trail steps, and stone retaining walls or riprapping. Sites were often improved by the planting or transplanting of trees such as native pines. On some sites the spotter maintained a vegetable or flower garden or planted perennials or shrubs not normally found in the surrounding forest. Near the base of the Pequot Tower, for example, are two or three large lilac bushes that flower each spring.

As early as the 1930s a few Minnesota lookout towers were surrounded at the base by chainlink security fencing, but this was uncommon before the 1960s.

Minnesota lookout towers often had a handful of small support structures. Very few of these buildings are believed extant. Some tower sites retain foundations or visible depressions from these structures. Typical buildings are described below:

Spotter's Cabins and Latrines. Unless sleeping quarters were available at a town, ranger station, farm, or other facility nearby, a tower was often accompanied by a small cabin called a spotter's, lookout, or watchman's cabin. On very hilly sites the cabin was sometimes located some distance from the tower. In addition to housing the spotter (and sometimes their spouse or other family), some cabins were occasionally used by other forestry staff when they were working deep in the woods, in which case they

[48] "Administrative Site-Ground Plan, Eveleth Tower," June 1939, rev. June 27, 1939, Minnesota Dept. of Conservation, Forestry Division Records, MHS; "Administrative Site-Ground Plan, Link Lake Lookout Tower," 1940, rev. 1946, Minnesota Dept. of Conservation, Forestry Division Records, MHS; see also U.S. Forest Service improvement plans for fire lookout towers in Chippewa National Forest, Chippewa National Forest Records, IRRC.

were sometimes called guard or patrol cabins. Tools and other firefighting equipment were often stored in a cabin if the site had no other storage building or tool shed.[49]

Cabins were typically very small, one-story buildings, usually with gabled roofs. Those constructed before the early 1930s were sometimes built of logs, but woodframe cabins with clapboard siding were more typical. Cabins were sometimes designed to be portable, and even those not specifically designed to be moved were occasionally dismantled and moved from one lookout site to another.[50]

Small cabins at Minnesota towers might be 10' x 14', 10' x 16', or 14' by 18' A moderately sized cabin might be 20' by 26'. Cabins often had a small front porch. Latrines were often 4' by 5', 5' by 6', or 6' by 6'.[51]

The Minnesota Forest Service developed plans for a standard 14' x 18' lookout cabin used throughout the state in the late 1920s and 1930s. It was a one-room gable-roofed building with a bracketed, gabled overhang sheltering the front door. A 1934 drawing indicates the cabin was furnished with a kitchen cabinet, sink, and drainboard; a stove for heating and cooking; and a table, bed, and small cabinet for clothes.[52]

Before the New Deal, cabins were generally built by forest agency staff. During the 1930s and early 1940s the CCC and other New Deal work programs replaced or improved many cabins, and built new ones where new lookout sites were established.

By the 1950s and 1960s better roads and automobiles reduced the need for lookout cabins. Depending on the distance to the spotter's normal residence (whether rural or in a town), the spotter could drive to the site each day. The need for spotting often ended around suppertime so driving home for the night was feasible.

There is believed to be a rare extant spotter's cabin at the Mount Sophie Tower in Cook County. A CCC-built cabin at the Aiton Heights Tower in Itasca State Park was moved in the late 1950s to the park's boat launch area and adapted for another use. A spotter's cabin that once accompanied the St. Croix Tower in St. Croix State Park was moved in 1967 to a new site in the park and remodeled.

Garages and Storage Buildings. Some lookout sites had a woodframe garage that might measure 14' by 20'. Many sites had what forestry agencies termed a "warehouse," which was a shed or other simple building for the storage of firefighting tools and other materials and equipment. Small warehouses measured 10' by 14' or 10' by 16'. Many built by the CCC were 16' by 22', 18' by 26', or 24' by 36'. A few lookout sites had an ice house that might measure 10' by 10'.[53] On very hilly sites support buildings might be located some distance away from the tower. Very few support buildings remain on lookout sites today.

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[49] Don Wilson describes 1920s lookout cabins in *Be a Forest Ranger*.

[50] "Stock Inventory," updated through ca. 1957, Minnesota Dept. of Conservation, Forestry Division Records, MHS.

[51] "Stock Inventory;" also historic photos in Minnesota Dept. of Conservation, Forestry Division Records, MHS.

[52] "Standard 14' x 18' Lookout Cabin," Plan 2-6-34, drawn by H. Schuppel, Feb. 6, 1934, Minnesota Dept. of Conservation Forestry Division, Minnesota Dept. of Natural Resources (MnDNR) Forestry Division, St. Paul.

[53] "Stock Inventory;" also historic photos in Minnesota Dept. of Conservation, Forestry Division Records, MHS. Wilson describes building an ice house in *Be A Forest Ranger*.

Radio Relay Buildings. Small sheds for radio equipment were built on lookout sites beginning around 1950. A typical shed might be 8' by 8' or 12' by 16'. Modern buildings erected more recently for communication equipment may be larger.

Common Alterations

Minnesota's fire lookout towers generally did not require alteration during the decades they were in use. While a lookout site's access lane, telephone line, and ancillary buildings may have been altered or removed, a tower built in 1936 (to which a modern radio antenna was added in the 1950s) could fully function without alteration in 1976.

Common alterations to lookout towers, both during and after the period of significance, include:

- relocation to another fire lookout site
- relocation to another type of site for recreational or private purposes
- replacement of worn or damaged parts
- loss of the following:
  - minor steel framing members
  - cab window panes, window frames, roof, floor, or walls
  - entire cab
  - stair treads or floor of landing
  - lower section(s) of ladder or stairs
- addition of the following:
  1. woven wire safety fencing
  2. steel framing members (added for strength)
  3. modern communications antennas
- site alterations including:
  - loss of ancillary buildings, a well, sign, trail steps, trees, or other elements
  - alteration of roads or spatial organization
  - addition of a chainlink fence around tower, a small communication equipment shed, a road, trail, parking lot, sign, or modern communications tower

Some of these alterations occurred during the period of significance but most occurred later. The lower tier(s) of a ladder or stairs has sometimes been temporarily removed by an owner to prevent public climbing. Some of the alterations listed above could be considered issues of poor condition. Many are reversible. In the decades after they were retired from service, many fire lookout towers were demolished. Several have been moved to new sites by public agencies or sold to private owners and then moved. Some towers serve a recreational or educational purpose on their new site. Examples include the Boulder Hill Tower, now at the Forest History Center near Grand Rapids; Isle Harbor Tower, now at Mille Lacs Kathio State Park near Onamia; Pine Island Tower, now at Big Bog State Recreation Area near Waskish; and Pinewood Tower, now at Beltrami County Fairgrounds near Bemidji. (See IV. Registration Requirements below for the impact of these changes on National Register eligibility.)

Figure F1. Mulberg Lookout Tower (razed) in Superior National Forest. It was built of logs circa 1911. The tower was evidently built by the Minnesota Forest Service; another photo of the tower appears in the *First Annual Report of the [Minnesota] State Forester* (1911). Circa 1911 photo, from Historical Photography posted by Superior National Forest onto Flickr website.

Figure F2. The Jasper Peak Tower (razed) was made of heavy timbers with a set of steel steps. It was built in 1919 by the Minnesota Forest Service before the agency began using standardized tower plans. The tower stood in St. Louis County just west of Superior National Forest at an elevation of 1,600'. Note the shutters used to close the cab in the off-season. Standing beneath the tower is Minnesota's first female spotter, a woman named Johnson. Circa 1920s photo by Minnesota Forest Service, from Minnesota Dept. of Natural Resources Historical Collections, 100th Anniversary website.

Figure F3. Some of Minnesota's earliest steel towers, like the unidentified example shown here, had three rather than four legs. The first cabs on steel towers were cylindrical, enclosing the open crow's nest. No examples of three-legged towers or towers with open platforms or cylindrical cabs have survived. Minnesota Historical Society collection.

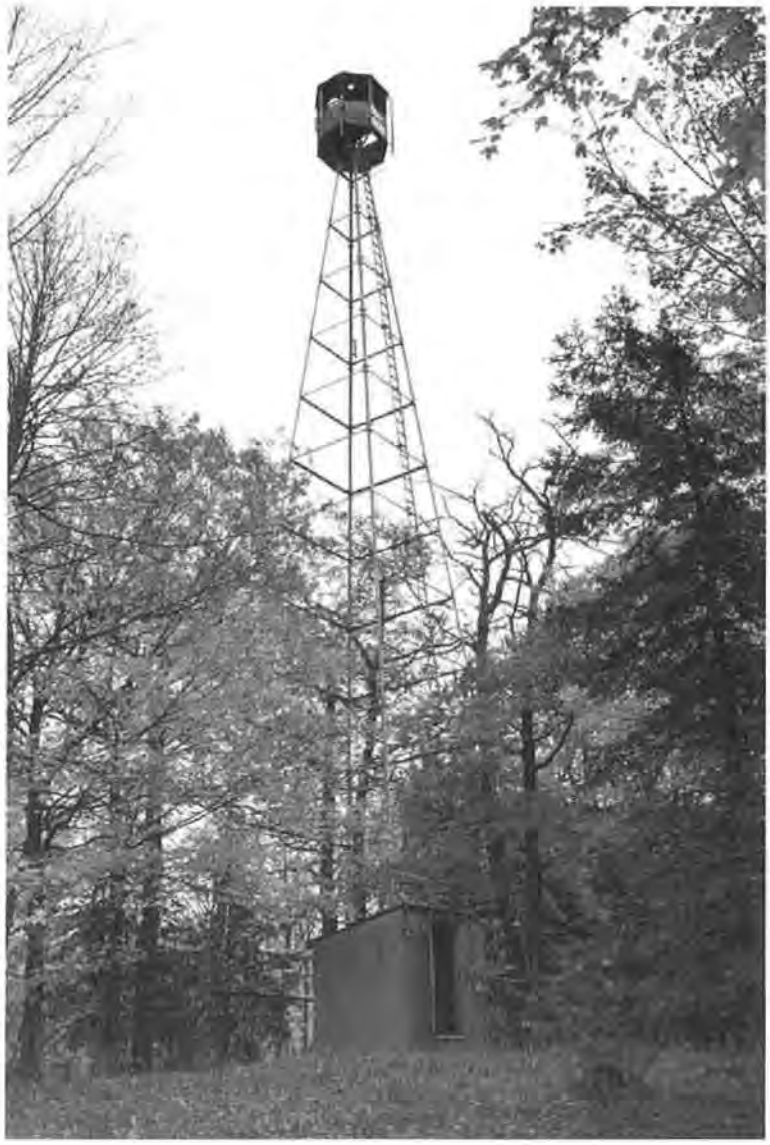

Figure F4. The Summit Tower in Clearwater County is an intact example of a steel tower with an octagonal cab. While not fabricated during the New Deal, many towers of this type were dismantled, moved, re-erected, and manned by the CCC for the Minnesota Forestry Division. Octagonal-cab towers are believed rare nationwide. Note that the top of the legs converge within the cab, unlike towers with square cabs where the cab sits on top of the legs. The Summit Tower was erected in 1929 by the Minnesota Forest Service. It was fabricated by Aermotor and is 94' tall. At the base is a small utility building which, by virtue of its modest size, does not overly disrupt the setting. 2014 photo by Gemini Research.

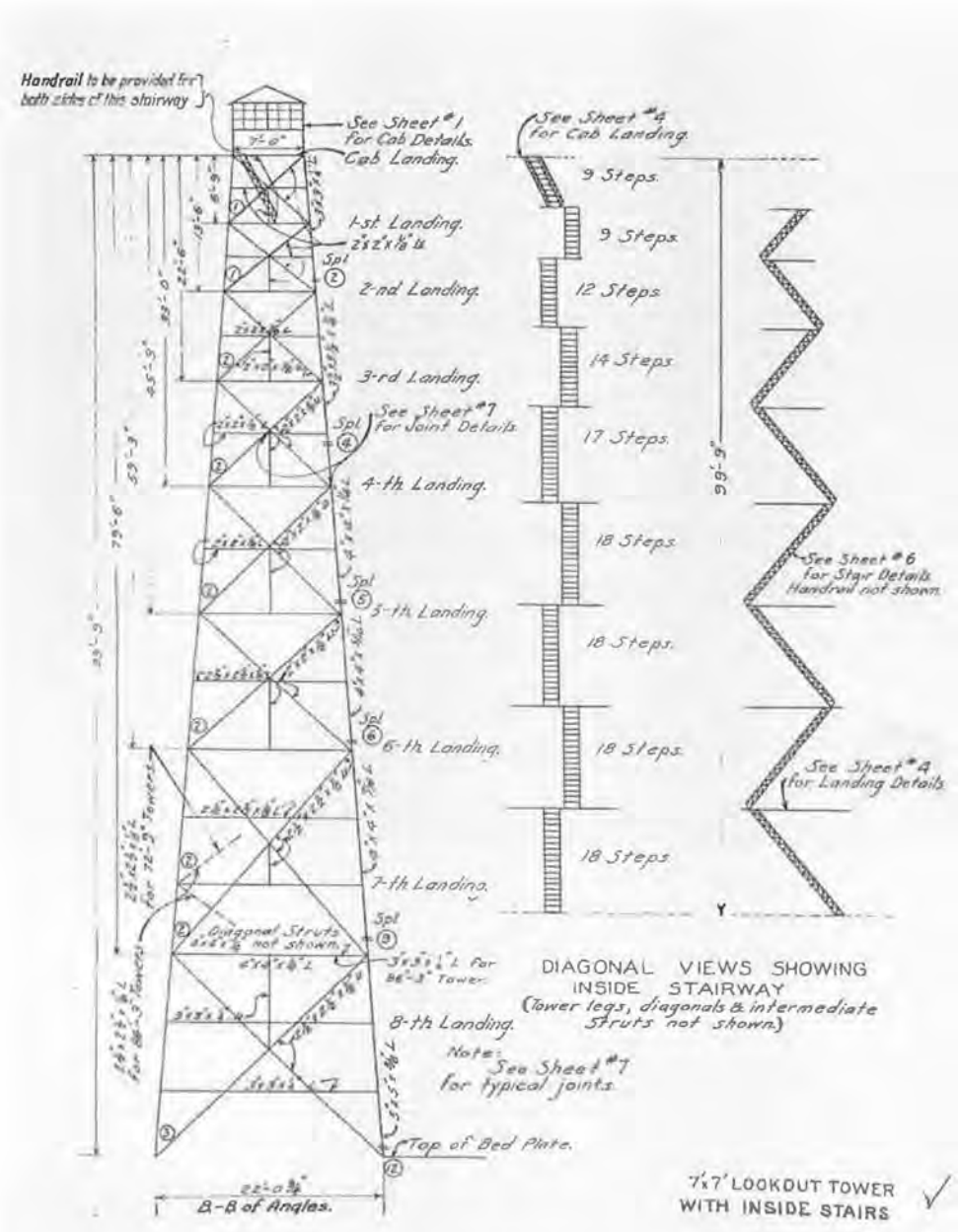

Figure F5. U.S. Forest Service plans for a steel tower with a square cab and corner-to-corner stairs. The plan was drawn in 1932 and revised in 1934. The tower is drawn at 100' but a shorter tower could be achieved by eliminating the lower tiers. Each side of the cab has a pair of 9-pane metal-framed sashes. One of the pair (usually the left-hand sash when viewed from the exterior) pivots to allow the bottom of the sash to swing out while the top tilts in. Additional plan sheets specify 20-gauge steel sheets for the cab's lower walls and roof. The plan suggests the roof be assembled on the ground and hoisted into place. Reprinted from "7' x 7' Lookout Tower," Sheet 2: 7' x 7' Lookout Tower With Inside Stairs, Drawing T1002-A, 1932, rev. 1934, U.S. Dept. of Agriculture Forest Service, in Chippewa National Forest Records, Iron Range Research Center, Chisholm, MN.

Figure F6. The Osborne Firefinder was a type of sighting device, called an alidade, developed in 1911 by a U.S. Forest Service forester in Oregon. It eventually became standard equipment for the U.S. Forest Service and many other forestry agencies nationwide. The firefinder has a circular metal plate on which a map was placed. The Minnesota Forestry Division generally used a version that did not have a map on the plate. With both versions the spotter rotated the graduated rim to align the crosshairs on a column of smoke. The compass reading, estimated height of the smoke, and estimated distance from the tower were telephoned to the nearest ranger station. Note that the corners of the cab and the window muntins are very narrow to reduce blind spots. If necessary, the Osborne Firefinder could be shifted laterally on its supporting track to dodge these visual obstructions. Pictured is spotter Raymond Thompson at the Brule Lake Tower (razed) in Superior National Forest. June 1950 photo by P. Freeman Hein of U. S. Forest Service, reprinted courtesy of the Forest History Society, Durham, NC.

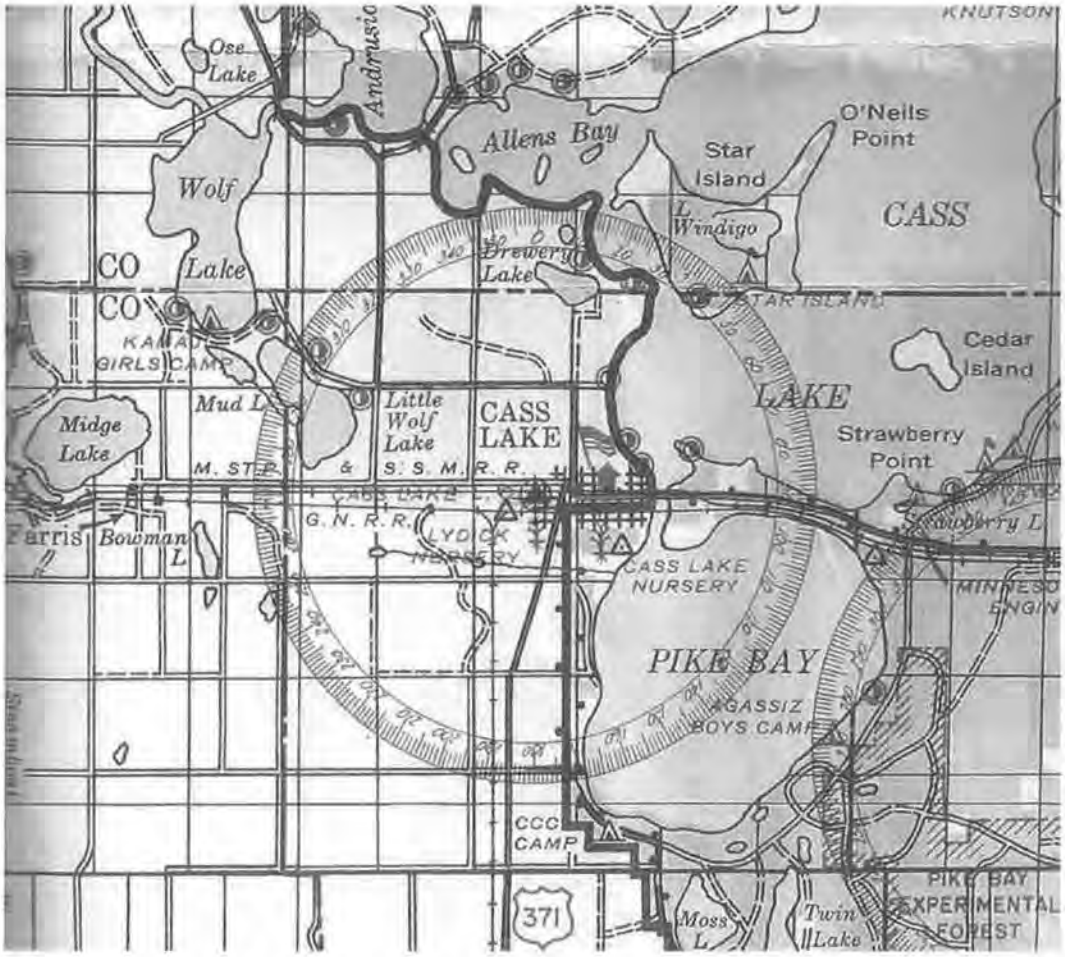

Figure F7. Detail from a ranger district wall map. Each of the district's lookout towers was depicted on the map in the center of a graduated circle. When the spotter called in a fire, the ranger transferred the compass reading to the wall map by drawing a straight line out from the tower through the appropriate mark on the circle. Nearby towers were then contacted and asked to look for the smoke and provide readings. Ideally, lines drawn out from two or three towers would intersect to pinpoint the location of the fire, although many fires were spotted from a single tower. Circa 1950 map reprinted from Tom Kremer, *Minnesota's Historical Fire Lookout Towers* website.

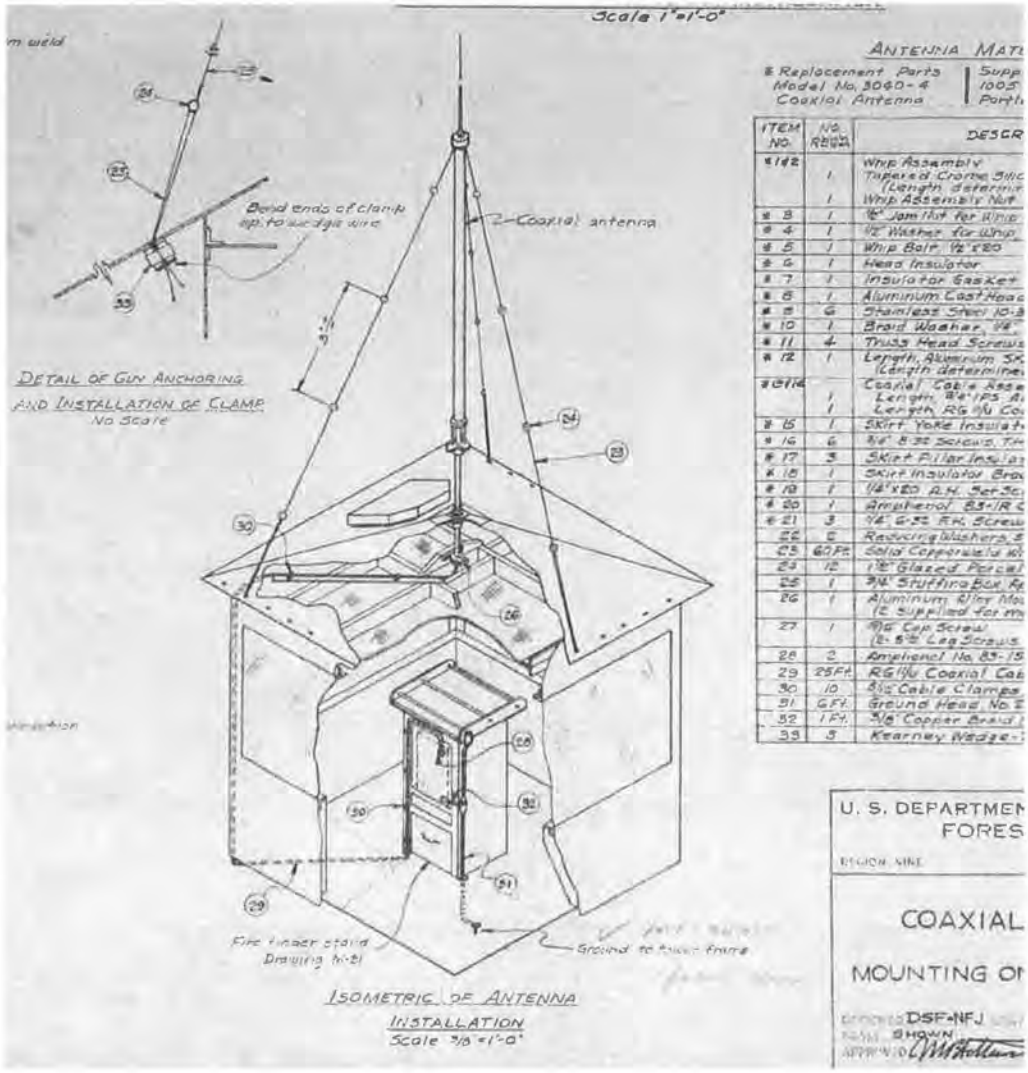

Figure F8. Detail from U.S. Forest Service plans, dated 1950, for mounting a two-way radio antenna on the roof of a 7' by 7' cab. The plans indicate a 82"-tall whip antenna is to be mounted on a 10' pole. Note, within the cab, the steel cabinet (with lower file drawer) on which an Osborne Firefinder would be placed. Typically the only other furniture in the cab would be a stool. Reprinted from "Coaxial Antenna Mounting on 7x7 Steel Cab," 1950, U.S. Dept. of Agriculture Forest Service, in Chippewa National Forest Records, Iron Range Research Center, Chisholm, MN.

Figure F9. The Farley Hill Tower is a square cab tower with an exterior ladder. Farley Hill is believed to be the only surviving example of this particular style (square cab, exterior ladder); the state's other ladder towers with square cabs have interior ladders. Note the metal safety straps and hoops at the ladder. At the top of the ladder is a landing that eases the transition into the cab. The Farley Hill Tower was built in 1935 by the CCC for the U.S. Forest Service in Chippewa National Forest. It is one of only three U.S. Forest Service towers still standing in the state. It is also associated with the history of Leech Lake Indian Reservation which lies mostly within Chippewa National Forest. 2014 photo by Gemini Research.

Figure F10. At 120', the Cuba Hill Tower is one of the state's tallest towers. (About three towers of this height are extant.) Cuba Hill was erected in 1936. It is a square cab tower with an interior ladder and a 28' by 28' footprint. The vertical members are built of 4" angles and the horizontals and cross-bracing are made of 3" angles. The ladder climbs the tower in an interior corner. Cuba Hill is one of only three U.S. Forest Service towers remaining in the state. 2014 photo by Gemini Research.

Figure F11. The Sandy Lake Tower is a stair tower with steps that climb the tower from side to side. The 100' tower was built in 1933 by either the WPA or SERA for the Minnesota Forestry Division. It is a rare example of a tower built by a New Deal agency other than the CCC. The tower is located at Sandy Lake Ranger Station, an early state ranger station. It is one of few towers remaining in the state that was fabricated by the Pittsburgh-Des Moines Company. 2014 photo by Gemini Research.

Figure F12. The Vermilion Dam Tower has stairs that climb the tower from corner to corner. There are both rectangular and triangular landings. It is an 86' tower manufactured by McClintic-Marshall. The Vermilion Dam Tower was built in 1934 by the CCC for the Minnesota Forestry Division. It stands in Kabetogama State Forest, created in 1931. Note that the hilltop has been cut or burned and is regrowing. 2014 photo by Gemini Research.

Figure F13. The upper portion of the Farley Hill Tower, erected in 1935. Farley Hill is a 100' ladder tower manufactured by Aermotor. It has an uncommon window glazing pattern. The early rooftop antenna provided two-way radio communication between the tower and the ranger station. 2014 photo by Gemini Research.

Figure F14. The Badoura Tower's cab. The simplicity of the sheet metal construction is typical. Attached to the corner is a modern antenna that represents a minor alteration. Badoura Tower was built in 1934 by the CCC for the Minnesota Forestry Division. It was built on Badoura State Nursery, established in 1931 and expanded and operated by the CCC. The tower also protects Badoura State Forest, established in 1931. It is 100' tall and was fabricated by the McClintic-Marshall Company. 2014 photo by Gemini Research.

Figure F15. Fire lookout tower legs are generally bolted to concrete footings, with each manufacturer having a slightly different connection style. This photo of the Ben Draper Tower (1937) shows the manufacturer's part number in stenciled black paint ("U 716" on the vertical plate) – essential for the on-site assembly of the tower. On some towers the part number is imprinted in the metal rather than painted. Also visible in the photo are two other components with stenciled lettering. This is shipping information that reads "Supt. Ben Solinger, Remer, Minn." The tower kit was likely shipped by rail to Solinger at the local ranger district and then hauled by the CCC out to the site. 2014 photo by Gemini Research.

Figure F16. The stairs and their concrete footing at the Ben Draper Tower. The tower was erected by the CCC for the Minnesota Forestry Division in Land O'Lakes State Forest, which was established in 1933. It is a 100' tower fabricated by Aermotor. The 42" by 48" footing is signed and dated by the CCC. The tower is 24' square at the base and its largest members are 5" steel angles. 2014 photo by Gemini Research.

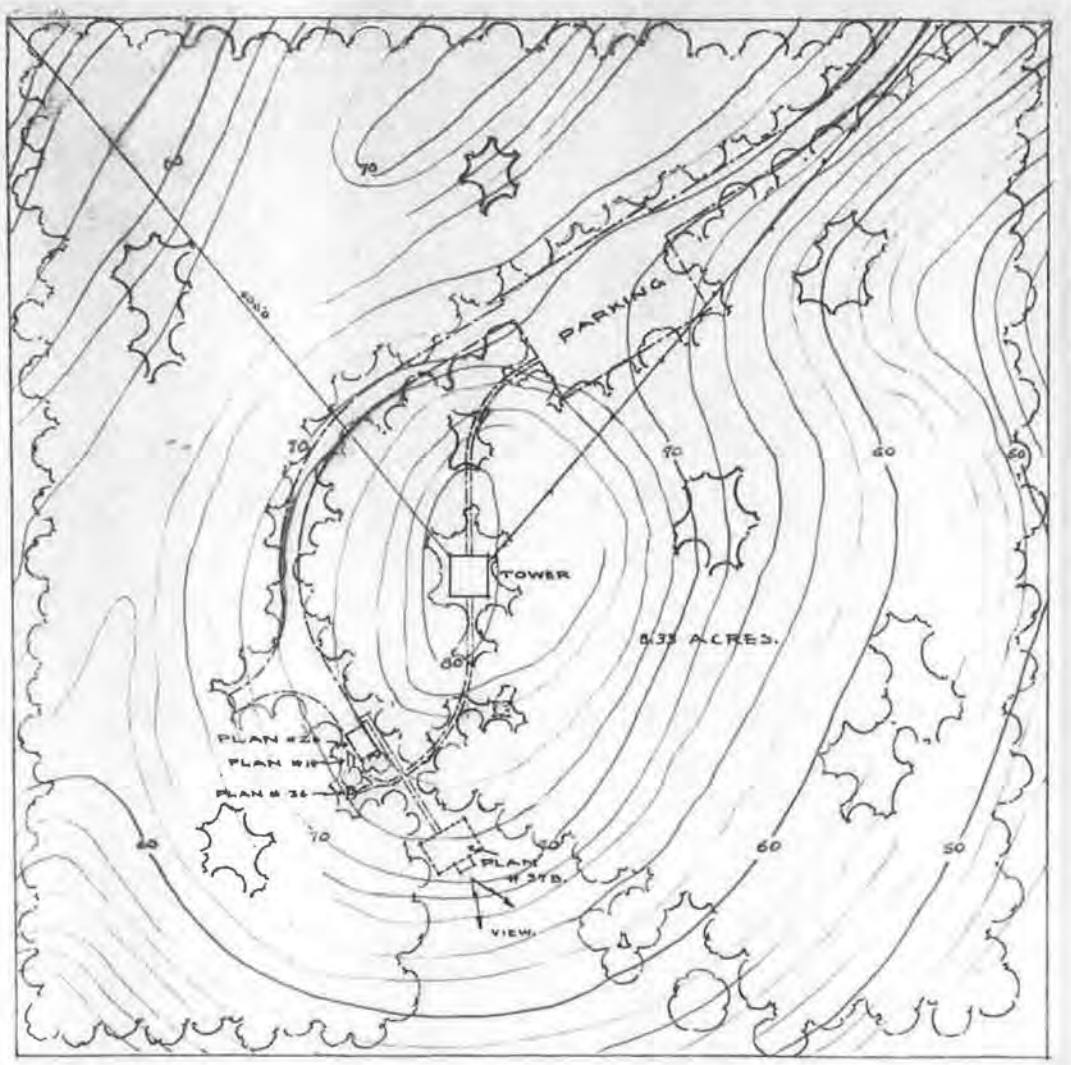

Figure F17. U.S. Forest Service plan, dated March 1937, for an 8.33-acre hilltop site at the Remer Tower (razed) in Chippewa National Forest. In 1938 CCC replaced the 80' ladder tower with a 100' stair tower and improved the site. Note the telephone line at the upper left and right corners. The site's narrow road passes a parking area and ends at a small garage. The plan also shows a spotter's cabin, a latrine, and a well. Reprinted from "Improvement Plan, Remer Lookout, Chippewa National Forest," March 1937, U.S. Dept. of Agriculture Forest Service, in Chippewa National Forest Records, Iron Range Research Center, Chisholm, MN.

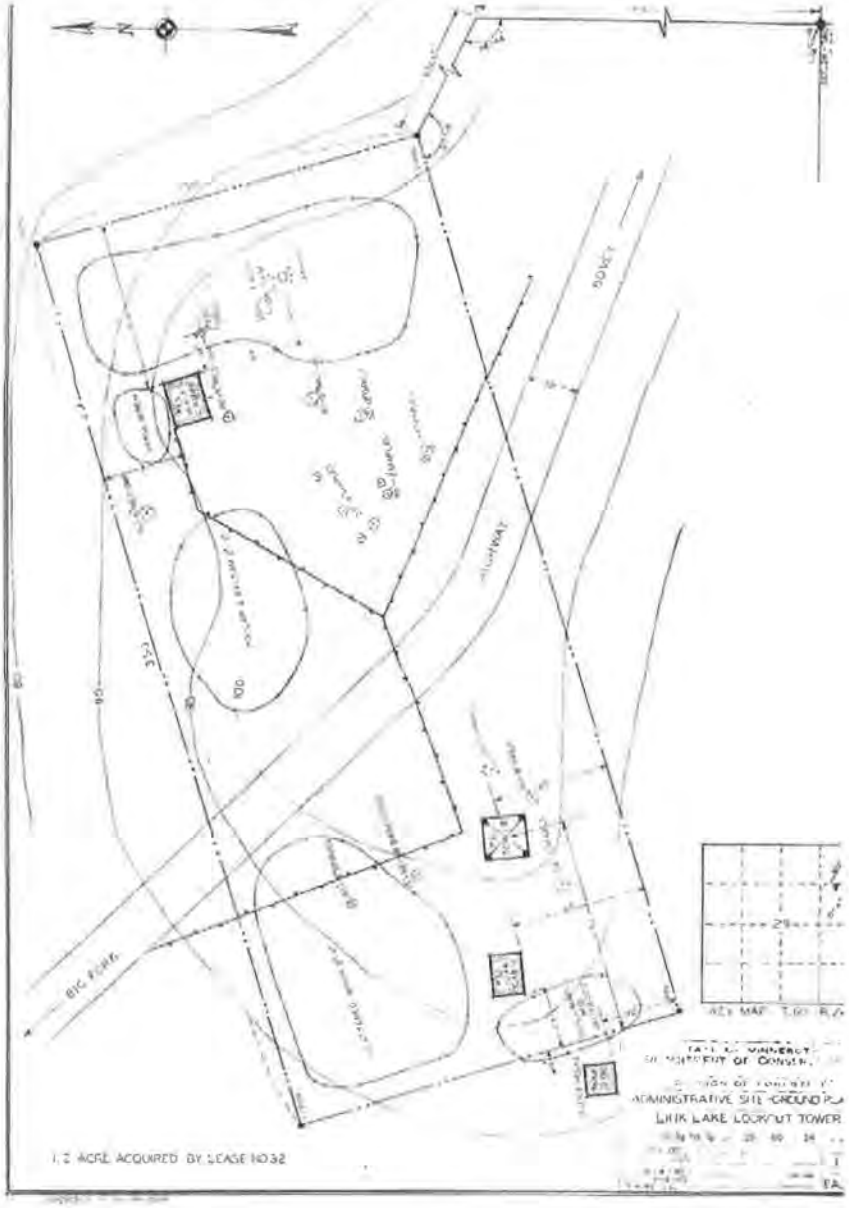

Figure F18. Minnesota Forestry Division site plan for the Link Lake Tower (razed) in Itasca County drawn in 1940 and revised in 1946. According to the plan, the rectangular parcel was small, 1.2 acres, and being leased by the state. On the west side of the 19'-wide highway is the tower (built 1930) and what appear to be an early spotter's cabin (12' by 16') and adjacent ice house (technically off the leased site). On the east side of the highway is a newer cabin (14' by 18') with an adjacent well and latrine. The newer cabin is tied into the tower's telephone line. Reprinted from "Administrative Site-Ground Plan, Link Lake Lookout Tower," Oct. 1940, rev. Nov. 1940, rev. July 1946, Minnesota Dept. of Conservation Division of Forestry, in Minnesota Dept. of Natural Resources (MnDNR) Division of Forestry collection, St. Paul.

Figure F19. A lookout tower's access road was critical to its use. Dedicated access roads and trails were often built by forestry staff or the CCC, or improved by the CCC. Construction of the road usually took much longer than erecting the tower itself. Many, like the road to Vermilion Dam Tower shown here, are cut into the side of a hill and curve upward to the summit. Some roads retain evidence of stone fill or riprapping at their side slopes, ditches, and adjacent linear mounds of excavation spoils. 2014 photo by Gemini Research.

Figure F20. The CCC improved many Minnesota lookout tower sites. Some towers, like the Ben Draper Tower (1937) shown here, are still surrounded by CCC-planted pines. The CCC also protected the summit of this tower by placing stone riprap (mostly obscured by leaves) on the steep slope. Extant examples of this type of site element are rare. 2014 photo by Gemini Research.

Figure F21. Rare CCC-built stone steps leading to the Ben Draper Tower. The flanking hillside is riprapped with stones. 2014 photo by Gemini Research.

Figure F22. Extant spotter's cabins are very rare. This photo shows the Minnesota Forest Service's standardized 10' x 14' lookout cabin (razed) at the Emily Tower in Crow Wing County. The tower (1929) is extant. 1931 photo by Grover M. Conzet for the Minnesota Forestry Division, in Minnesota Dept. of Conservation, Forestry Division Records, Minnesota Historical Society, St. Paul.

Figure F23. A few Minnesota lookout tower sites retain the foundations of a spotter's cabin, garage, and/or storage building. This foundation is located at the Schoolcraft Tower in Paul Bunyan State Forest. Building foundations, which are rare, improve the historic integrity of lookout sites by helping the site convey its historic spatial organization and operation. 2014 photo by Gemini Research.

III. SIGNIFICANCE

Fire lookout towers were Minnesota's principal method for detecting forest fires from about 1910 through about 1970. They formed a broad public safety network that protected about one-third of Minnesota's land area from thousands of forest fires that burned annually. Four of the most severe fires killed nearly 900 Minnesotans between 1893 and 1918. Two were among the worst forest fires in U.S. history. Fire towers also played an important role in the public education efforts that were a critical part of state and federal strategies to prevent forest fires and advance forest conservation.

Most Minnesota fire towers were simple, well built, durable structures made of steel from standardized designs. Some extant towers may represent types that are rare nationwide. There were about 200 towers when the number reached its peak around 1942, and roughly 200 towers still operating in 1960. Today there may be about 80 extant towers, many of which have lost historic integrity.

Fire towers played a significant role in the history and economic development of northern Minnesota. They protected the local population and the resources on which they depended for their livelihood. Towers represented a critical part of the public infrastructure necessary for the region's settlement and development.

Fire towers are significant to the last two decades of white pine logging – one of Minnesota's most important industries – by protecting raw materials, infrastructure, and personnel critical to its existence. In the aftermath of white pine logging, fire towers played a significant role in the cutover region's long economic and environmental recovery by providing essential protection to the natural and manmade resources and activities that contributed to that recovery.

Fire towers are significant to the development of Minnesota's postwar timber industry – the state's third-largest industry. Fire towers protected the raw materials that fed growing paper factories and pulpwood processing plants, as well as protecting the plants themselves, other industry-related infrastructure, and the homes of workers.

Fire towers are significant to the history of natural resource conservation in Minnesota, a movement that rose in response to the environmental devastation of clear-cut logging and the severe forest fires that followed. Towers protected millions of acres of cut- and burned-over land while it was being reforested as well as protecting important nurseries; experimental, research, and demonstration plots; and educational and other facilities dedicated to forestry and conservation. Fire towers are also important to the history of public land management in Minnesota.

Fire towers are significant to the history of Minnesota tourism, an industry important to the history of the state and to northern Minnesota's post-logging recovery. Towers protected public and private investment in resorts, cottages, parks, roads, and campgrounds. Many fire towers became popular tourist attractions in their own right.

Fire towers are significant to the history of three forestry agencies – the Minnesota Forest Service (later Division of Forestry), the U.S. Forest Service, and the Forestry Division of the U.S. Indian Service. Historically, fire protection was the top priority of all three agencies. Fire towers remain an iconic

symbol of the agencies' forest protection and management efforts and their responsibilities to natural resource conservation and support of the state's timber and tourism industries.

Towers erected or re-erected during the New Deal by the CCC and other federal relief programs are associated with the unprecedented dedication of public resources to forestry and natural resource conservation in the 1930s and early 1940s. These New Deal towers are associated with federal and state efforts to combat the devastating poverty and social impacts of the Great Depression by providing meaningful work to the poor while at the same time constructing necessary public infrastructure. Minnesota fire towers are an important and lasting physical accomplishment of the CCC camps based in forested parts of Minnesota and of the significant conservation efforts of other New Deal agencies. Some towers are rare examples of the work of specific categories of federal relief workers. Many tower sites were improved by New Deal programs. Many towers were manned by the CCC and possibly other New Deal work crews.

IV. REGISTRATION REQUIREMENTS

New Deal agencies erected lookout towers that had been newly fabricated, or towers moved from another lookout site. Most relocated towers had been fabricated in the 1920s. New Deal agencies also improved many tower sites by building or rebuilding access roads, installing telephone lines, and constructing ancillary structures.

Determining Property Boundaries

Historic ownership boundaries can sometimes be used to help determine the boundary of a National Register-eligible fire tower site. If an historic site plan is available, it may also be useful. If no historic boundary lines are available for reference – for example, if the tower stands on a large parcel such as a state park – it is recommended that the process of boundary creation begin with a baseline 300' by 300' square with the tower near the center. If the tower is located near a multiuse road (e.g., a township road) from which the tower's historic, dedicated access road branched, and the multiuse road was present during the period of significance, the road may be used as one side of the boundary and the 300' by 300' baseline area truncated at the road's location, or the baseline area extended to the edge of the road as appropriate. If site elements from the period of significance such as an access road loop, telephone line, building, building foundations, trails, steps, retaining wall, intentional plantings, and similar elements are not already included in the baseline area, they should be added, with the boundary line drawn at least 50' out from the edge of each element. (As described in the Integrity Guidelines below, these site elements are not required for National Register eligibility but strengthen historic integrity and help the site convey its historic spatial organization and operation.) In cases where a hilltop, knob, or summit is present and combines with the tower to create the lookout, significant portions of the hill or knob should be added to the baseline area if not already included. (In some cases, the landform is distinctive; in others, the slopes are more gradual and such inclusion may not be appropriate.) To the baseline area should also be added the tower's historic access road, if it retains reasonable physical integrity. It is not unusual for the access road to be as long as one-half mile. The boundary along the road should be drawn 20' out from the edges of any road-related features such as ditches and linear embankments of excavation spoils. As a final step the boundary of the fire lookout property should be adjusted as needed to account for unique aspects of the site and to exclude peripheral areas that no longer retain historic integrity (usually because of the addition of manmade structures).

National Register Criterion A

Most fire lookout towers in Minnesota will be eligible for the NRHP under Criterion A, that is, for their associations with significant events or broad patterns of history. Under this historic context, a fire tower eligible for the NRHP under Criterion A must meet the following criteria:

1. The fire lookout tower was erected or re-erected before 1955. These lookout towers were placed on their sites when spotting from lookout towers was still the most important method by which Minnesota forestry agencies detected fires. Among them are Minnesota's first generation of towers – those fabricated circa 1910-1932 – as well as towers erected and re-erected by New Deal federal relief work crews.

2. The fire lookout tower played a substantive role in one of the significant trends or patterns of events outlined under III. Significance above.

3. The fire lookout tower possesses the character-defining features of the property type, listed below, and retains good historic integrity as defined under Character-Defining Features and Integrity Guidelines below.

Under National Register Criterion A, the areas of significance will likely be Conservation, Politics/Government, Industry, and/or Entertainment/Recreation (which encompasses tourism).

National Register Criterion B

A fire lookout tower will probably not be eligible for the NRHP under Criterion B, associations with a significant person.

National Register Criterion C

A fire lookout tower will be eligible for the NRHP under Criterion C if it embodies the distinctive characteristics of a type, period, or method of construction. These distinctive characteristics must clearly illustrate the pattern of features common to the property type, the individuality or variation of features that occurs within the property type, and/or the evolution of the property type. The tower may be, for example:

- an octagonal-cab tower
- one of Minnesota's first stair towers
- an uncommon or rare type or model representing the property type's range
- the work of a manufacturer other than Aermotor or McClintic-Marshall
- an unusually well-preserved tower, that is, a tower with very good historic integrity (see Character-Defining Features and Integrity Guidelines below)
- a tower on a particularly well-developed site or a site that retains rare or distinctive features such as buildings, a well-crafted retaining wall, riprapping, or steps, or similar elements
- a tower with unusual design elements (not expected to be likely)

The area of significance would usually be Engineering.

Fire towers eligible under Criterion C will usually also meet Criterion A eligibility.

Criteria Considerations

National Register Criteria Considerations will not apply to a fire lookout tower except Criteria Consideration B which relates to moved properties. For information on the movement of fire towers, see Chapter 3 (Associated Property Types), as well as referencing Integrity of Location and Setting in the Integrity Guidelines below. No fire lookout tower is expected to possess the extraordinary significance necessary to meet Criteria Consideration G which relates to properties less than 50 years old.

Period of Significance

The period of significance for a property eligible under Criterion A is the span of time when the property actively contributed to the significant events, activities, or patterns. The period of significance should not be extended beyond the time of the property's active contribution to the significant trend (e.g., the period of significance should not continue merely because the property was still in use). Because fire lookout towers played a critical role that did not diminish in importance until airplanes took over fire detection in a given geographic area (roughly around 1970), it is recommended that the period of significance for a National Register-eligible tower extend until aerial spotting in that geographic area became the standard detection method.

The period of significance for a property eligible under Criterion C is based on the time period when the property achieved the character on which the significance is based. This will usually be the year of construction for the tower and other site elements associated with the Criterion C significance.

Level of Significance

Most Minnesota fire lookout towers will be eligible for the NRHP at a State or Local level of significance.

Character-Defining Features and Integrity Guidelines

A National Register-eligible fire lookout tower must possess the characteristics that make it a good representative of the property type. Character-defining features of Minnesota's fire lookout towers include:

- a standardized design that was not customized, altered, or enhanced by forestry agencies except with the addition of flexible woven wire safety fencing around ladder, stairs, and/or landings, and with the addition of communications or weather forecasting equipment
- on-site assembly of a kit of prefabricated parts
- tower made of steel angles bolted together, sometimes with steel rod cross-bracing
- poured concrete footings (unless the tower was secured in natural rock)
- access to the cab via either a steel rung ladder or a set of stairs with wooden treads and landings

- an octagonal or square cab with wooden floor, sheet metal roof and lower walls, extensive multipaned windows with narrow frames, and spartan interior
- a viewshed radius of at least 10 miles (up to 20 miles) in most directions
- a site often comprising the summit of a hill
- tower access via a narrow gravel road or dirt footpath
- trail steps, riprapping, retaining wall(s), or other miscellaneous site elements; extant examples are uncommon
- foundations of small support buildings; extant examples are rare; extant support buildings are very rare

A property may be in poor physical condition and still retain sufficient integrity to convey its historic character and significance.

Properties eligible under Criterion C should usually be more intact that those eligible under Criterion A because for a Criterion C property the physical characteristics are the basis for the significance.

The cumulative effect of all changes to a fire lookout tower should be assessed. The goal is to determine whether the lookout tower retains enough integrity to continue to convey its historic character, associations, and significance.

Towers with unusual, early, rare, or otherwise outstanding characteristics or associations may possess significance that justifies a lower threshold of physical integrity.

Integrity of Workmanship

Fire lookout towers were simple, well-built structures. High quality workmanship, however, is not a defining characteristic. Distinctive workmanship may be relevant if the site includes, for example, a hand-built stone wall or steps.

Integrity of Design and Materials

A fire lookout tower should retain good integrity of design and materials. A tower should retain its original configuration of steel angles bolted together, with steel rod cross-bracing if originally present. The tower should retain poured concrete footings unless the legs were secured in natural rock. It should retain an access ladder or stairs. It should retain an octagonal or square cab with a wooden floor, sheet metal roof and lower walls, large windows, and a simple interior. The tower should be standing. It does not need to be in current use for fire spotting, but if the tower is in use or could be used, the strength of its integrity is likely increased.

Replacement of Worn or Damaged Parts. The replacement of worn or damaged parts does not substantively diminish a tower's historic integrity. For example, on many Minnesota towers wooden stair treads, landings, and cab floors have deteriorated and have been replaced in-kind. In a few towers now open to the public, wooden stair treads and landings have been replaced with steel grate-like material. Because the substitution is visually unobtrusive, the alteration is considered minor.

Loss of Components
The removal of the cab renders a tower ineligible for the NRHP. Loss of parts of a cab such as the floor or window sash may be considered an issue of poor condition (and repairable) rather than an alteration. The loss of a cab's floor or window sash is less serious than loss of the roof or a wall.

On some towers the lower tier (or two) of the ladder or stairs has been removed to restrict public access. This change does not substantially diminish historic integrity. A tower is not eligible for the NRHP, however, if the entire ladder or all stairs have been removed.

Sometimes a lookout tower is missing a steel member such as part of its cross-bracing or another minor part. This alteration is visually unobtrusive and considered minor.

Alteration of Components
The cab of a tower should not have been substantially altered. The window area should remain nearly unobstructed.

A tower's ladder or stairs should not have been widened or otherwise substantially altered. Minor alterations such as unobtrusively reinforcing the steel angle handrails with wood (for example, tucking long 1½" x 1½" boards under the angles) are acceptable.

The steel framework of a few extant towers has been reinforced with additional steel members to increase the public's sense of security when climbing. The addition of conspicuous, heavy steel members alters a tower's simple design and diminishes integrity to the point that the tower is no longer individually eligible for the NRHP. Some reinforcement (for example, tucking additional steel under/within a tower's steel angles) may be acceptable as long the basic engineering is not changed and the alteration is inconspicuous.

Addition of Components
Most, if not all, Minnesota towers had woven wire safety fencing installed on ladders, stairs, and landings during the period of significance. The addition of flexible, woven wire safety fencing after the period of significance is considered a minor alteration. Safety fencing should be visually unobtrusive and not made of thick, solid, or opaque material.

As early as the 1930s a few Minnesota lookout towers were surrounded at the base by chainlink fencing to limit public access. Today chainlink fencing at the base of towers is common. Usually the addition of this fencing outside the period of significance is considered a minor alteration. However, fences that are excessively high, bulky, or otherwise extensive may be unacceptable, particularly if combined with other alterations.

Radio antennas were added to Minnesota towers beginning in the 1930s and were common in the 1950s. Early antennas were generally straight vertical structures. Modern antennas with straight or rectilinear parts are visually unobtrusive and considered minor alterations. Round parabolic antennas, which are often protected by white plastic domes, are more conspicuous. While the addition of modern antennas is generally considered acceptable and reversible, in a few cases the number and size of the antennas visually overwhelms a tower and creates an unacceptable loss of integrity.

Loss of Site Elements. The most important components of a fire tower property are the tower itself and the land or summit on which it stands; the two work together to create the fire lookout. Even with the removal of other site elements such as support buildings a fire lookout can convey its historic character, function, and significance and be eligible for the NRHP. For example, many towers were sited in remote locations on large parcels of forested or otherwise undeveloped land. When accompanying structures are removed, the natural character of the site and setting remain dominant and the tower retains its ability to convey its historic function and significance.

Most fire lookout towers were accompanied by a small spotter's cabin unless other sleeping quarters were available nearby. Tower sites typically also had an outhouse, storage shed, and sometimes a garage. On very hilly sites the support structures may have been located some distance from the tower. Support buildings are very rare today. Because the tower itself was historically the principal manmade feature on the site and the key functional element, it is not necessary that an eligible tower be accompanied by support buildings. The historic integrity of a lookout tower property is strengthened if building foundations remain since their presence helps an observer understand the site's historic spatial arrangement and operation.

The removal of roads, trails, wells, fences, riprapping, trees, and other site elements diminishes the property's historic integrity but does not make it ineligible for the NRHP. The site's integrity is strengthened if such site elements remain.

Alteration and Addition of Site Elements. Fire tower properties are sensitive to the addition of modern structures. The historic integrity of a tower is more harmed by the addition of modern elements, or the modernization of historic elements, than by the removal of components from the period of significance (see Loss of Site Elements above). The addition of too many modern structures pulls the visitor's perception into the modern era and interferes with the site's ability to convey its historic character and associations.

Many fire towers have a small modern building near the base that was built after the period of significance to house communications equipment. The addition of a single small building, for example 8' by 10', 10' by 12', or 10' by 16', does not make the property ineligible. It is helpful if the building is located at least 20' to 30' from the base of the tower. A larger building or multiple modern structures will usually disrupt the property's ability to convey its historic character and significance to the point that the property is ineligible.

The addition of a modestly sized communications tower does not, in itself, make a fire tower ineligible for the NRHP. However, a communications tower that is much taller and bulkier than the fire tower and/or has a type of "crow's nest" or similar bulky structure at the top may visually overwhelm the fire tower and dominate the site making it ineligible.

The alteration or addition of roads, trails, parking lots, signs, fences, and other site elements may be considered minor alterations, or may be disruptive, depending on their number, location, scale, and/or the extent. Like all changes, they should be taken into consideration when assessing overall integrity and determining the boundaries of the National Register-eligible property.

Integrity of Location and Setting

A fire lookout tower should retain integrity of location and setting. It should remain on its original site, except as outlined below. The tower's immediate setting – that is, the area immediately outside (i.e., surrounding) the property boundaries as determined via these guidelines – may have been altered since the period of significance, but the changes should not include so many large modern structures that the tower property is unable to convey its historic character, function, and significance. A fire tower's more distant setting can sustain more change – the viewshed from the cab of a fire tower typically extended at least ten miles in all directions and it is unlikely that most changes to this more distant setting would significantly affect a tower's historic integrity. The addition of a wide modern expressway or a large commercial, residential, or industrial complex where elements of this scale did not exist during the period of significance may seriously diminish historic integrity but not render the tower ineligible for the National Register. It is conceivable that a fire lookout tower may represent such an unusual model or type that Criterion C significance would mitigate the loss of integrity of location and setting, but this would be highly unusual.

Relocation To Another Fire Lookout Site Within the Period of Significance. The movement of towers was part of the development and operation of Minnesota's fire lookout tower system. It was common for a steel lookout tower to serve in more than one location. Movement from one lookout site to another would not make a tower ineligible for the NRHP as long as the movement occurred within the period of significance.

Relocation Within a Lookout Site. It is conceivable that, during the period of significance, a tower may have been moved *within* a lookout site as defined using the Property Boundaries guidance above. This would not alter historic integrity. Movement of a tower within a lookout site after the period of significance would not, in itself, make a tower ineligible for the NRHP provided the move resulted in relatively minor changes to the site and setting.

Relocation To Another Site. Under limited circumstances a tower may be moved a modest distance (i.e., a few miles) from its lookout site after the period of significance and be eligible for the NRHP. The new site must allow the tower to retain its physical connection with the same resources it historically protected. The new site must physically resemble the earlier site. For example, the new site should be isolated, forested, and hilly if these were characteristics of the earlier site. A tower moved to a new site that does not have the same attributes as the original site has usually lost sufficient integrity of location and setting to be National Register-eligible.

Integrity of Feeling and Association

Integrity of feeling as a property's ability to convey the sense or character of a particular time period. If a fire lookout tower retains integrity of design, materials, location, and setting as described above, it will retain integrity of feeling.

Integrity of association is the property's ability to convey its links to the important events, activities, and patterns for which it is significant. A fire lookout tower will retain integrity of association if it retains integrity of design, materials, location, and setting as described above.

SUMMARY OF IDENTIFICATION AND EVALUATION METHODS, CONTINUED

Information on Minnesota's federal relief-built fire lookout towers was gathered during a historic context study of all fire lookout towers in Minnesota conducted in 2014-2015 by Gemini Research for the Minnesota Department of Transportation (MnDOT). Susan Granger served as Principal Investigator. The project included extensive documentary research and field visits to 21 lookout towers. The final report, *Fire Lookout Towers in Minnesota, 1900-1970: Historic Context Information* by Susan Granger and Scott Kelly (submitted to MnDOT by Gemini Research, 2016), is on file at the State Historic Preservation Office, St. Paul.

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UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION/RETURN SHEET

Requested Action: COVER DOCUMENTATION

Multiple Name: Federal Relief Construction in Minnesota, 1933-1943 MPS (AD)

State & County: ,

Date Received: 5/26/2017
Date of 45th Day: 7/10/2017

Reference number: MC100001296

Reason For Review:

__ Appeal	__ PDIL	__ Text/Data Issue
__ SHPO Request	__ Landscape	__ Photo
__ Waiver	__ National	__ Map/Boundary
__ Resubmission	__ Mobile Resource	__ Period
__ Other	__ TCP	__ Less than 50 years
	__ CLG	

__X__ Accept _____ Return _____ Reject _____ Date

Abstract/Summary Comments: This MPS amendment provides very extensive documentation on the history, development, and typology of fire lookout towers in Minnesota.

Recommendation/ Criteria

Reviewer Roger Reed Discipline Historian

Telephone (202)354-2278 Date

DOCUMENTATION: see attached comments: No see attached SLR: No

If a nomination is returned to the nomination authority, the nomination is no longer under consideration by the National Park Service.

National Register of Historic Places
Memo to File

Correspondence

The Correspondence consists of communications from (and possibly to) the nominating authority, notes from the staff of the National Register of Historic Places, and/or other material the National Register of Historic Places received associated with the property.
Correspondence may also include information from other sources, drafts of the nomination, letters of support or objection, memorandums, and ephemera which document the efforts to recognize the property.

400-10080797

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington, D.C. 20240

ADDRESS ONLY THE DIRECTOR
FISH AND WILDLIFE SERVICE

AUG 1 1994

RECEIVED
AUG 5 1994
NATIONAL REGISTER

In Reply Refer To:
FWS/RF/94-00322

Memorandum

To: Director, National Park Service

From: Deputy Director

Subject: Nomination of the Norris Camp to the National Register of Historic Places

The Fish and Wildlife Service (Service) is pleased to submit the attached documentation nominating the Norris Camp to the National Register of Historic Places (National Register). The structures included in the nomination were constructed in 1935 to serve as a camp for the Civilian Conservation Corps which was occupied and expanded by the Federal Government's Resettlement Administration. The documentation also includes an amended Multiple Property Listing submission for Federal Relief Construction Programs in Minnesota (1933-1941) that incorporates information about the Resettlement Administration.

Please be advised that, until further notice, Mr. William F. Hartwig, Acting Assistant Director - Refuges and Wildlife, will fulfill the responsibilities of the Service's designated authority under the National Historic Preservation Act, as amended. As a result of an administrative error, the nomination's certification sections were mistakenly signed by the Service's Twin Cities Regional Director. Rather than request the preparation of new forms, we have attached new certification statements signed by Mr. Hartwig indicating that the Service has reviewed and approved the nomination.

Thank you for your assistance in reviewing the documentation. Questions on the nomination package should be directed to Kevin Kilcullen at (703) 358-1786.

Attachment

Minnesota Historical Society
State Historic Preservation Office
345 Kellogg Blvd West, St. Paul, Minnesota 55102
651/296-5434

TO: Carol Shull, Keeper
National Register of Historic Places

FROM: Susan Roth, National Register Historian

DATE: 24 July 2002

NAME OF PROPERTY: Federal Relief Construction in Minnesota, 1933-1941

COUNTY AND STATE: MN

SUBJECT: National Register:

- ☐ Nomination
- ☒ Multiple Property Documentation Form
- ☐ Request for determination of eligibility
- ☐ Request for removal (Reference No.)
- ☐ Nomination resubmission
- ☐ Boundary increase/decrease (Reference No.)
- ☒ Additional documentation (Reference No.)

DOCUMENTATION:

- ☐ Original National Register of Historic Places Registration Form
- ☐ Multiple Property Documentation Form
- ☒ Continuation Sheets
- ☐ Removal Documentation
- ☐ Photographs
- ☐ Original USGS Map
- ☐ Sketch map(s)
- ☐ Correspondence
  - ☐ Owner Objection

    The enclosed owner objections

    Do☐ Do not ☐ constitute a majority of property owners

STAFF COMMENTS:

WASO Form - 177
("R" June 1984)

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION/RETURN SHEET

COVER

Federal Relief Construction in Minnesota MPS
MINNESOTA

Working No. 6-28-91
Fed. Reg. Date: _____
Date Due: 7/31/91 - 8/14/91
Action: ✓ ACCEPT 8/12/91
___ RETURN _____
___ REJECT _____
Federal Agency: _____

☐ resubmission
☐ nomination by person or local government
☐ owner objection
☐ appeal

Substantive Review: ☐ sample ☐ request ☐ appeal ☐ NR decision

Reviewer's comments:

Outstanding documentation - easily one of the best MPS covers I've seen. Not only is the contextual information thorough, well-written, and clearly organized, the registration requirements are detailed and demonstrate considerable analysis of the various types of resources considered (rather than just parroting NR criteria). WELL DONE!

Recom./Criteria Accept
Reviewer Boland
Discipline Historian
Date 8/12/91
___ see continuation sheet

Nomination returned for: ___ technical corrections cited below
___ substantive reasons discussed below

1. Name

2. Location

3. Classification

Category	Ownership	Status	Present Use
	Public Acquisition	Accessible	

4. Owner of Property

5. Location of Legal Description

6. Representation in Existing Surveys

Has this property been determined eligible? ☐ yes ☐ no

7. Description

Condition		Check one	Check one
☐ excellent	☐ deteriorated	☐ unaltered	☐ original site
☐ good	☐ ruins	☐ altered	☐ moved date _____
☐ fair	☐ unexposed		

Describe the present and original (if known) physical appearance

☐ summary paragraph
☐ completeness
☐ clarity
☐ alterations/integrity
☐ dates
☐ boundary selection

8. Significance

Period Areas of Significance—Check and justify below

Specific dates Builder/Architect
Statement of Significance *(in one paragraph)*

☐ summary paragraph
☐ completeness
☐ clarity
☐ applicable criteria
☐ justification of areas checked
☐ relating significance to the resource
☐ context
☐ relationship of integrity to significance
☐ justification of exception
☐ other

9. Major Bibliographical References

10. Geographical Data

Acreage of nominated property _____
Quadrangle name _____
UTM References

Verbal boundary description and justification

11. Form Prepared By

12. State Historic Preservation Officer Certification
The evaluated significance of this property within the state is:

____ national ____ state ____ local

State Historic Preservation Officer signature

title **date**

13. Other

☐ Maps
☐ Photographs
☐ Other

Questions concerning this nomination may be directed to _____

Signed _____ Date _____ Phone: _____

GPO 918-45(

Comments for any item may be continued on an attached sheet

ADDITIONAL DOCUMENTATION

WASO Form - 177
("R" June 1984)

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES EVALUATION/RETURN SHEET

Federal Relief Construction in Minnesota MPS (COVER)

MINNESOTA

Working No. 8/5/94
Fed. Reg. Date: _____
Date Due: 9/19/94
Action: ___ ACCEPT _____
___ RETURN _____
___ REJECT _____
Federal Agency: _____

☐ resubmission
☐ nomination by person or local government
☐ owner objection
☐ appeal

Substantive Review: ☐ sample ☐ request ☐ appeal ☐ NR decision

Reviewer's comments:

Recom./Criteria Accept
Reviewer Boland
Discipline historian
Date 9/19/94
_____ see continuation sheet

Nomination returned for: _____ technical corrections cited below
_____ substantive reasons discussed below

1. Name

2. Location

3. Classification

Category	Ownership	Status	Present Use
	Public Acquisition	Accessible	

4. Owner of Property

5. Location of Legal Description

6. Representation in Existing Surveys

Has this property been determined eligible? ☐ yes ☐ no

7. Description

Condition
☐ excellent ☐ deteriorated
☐ good ☐ ruins
☐ fair ☐ unexposed

Check one
☐ unaltered
☐ altered

Check one
☐ original site
☐ moved date _____

Describe the present and original (if known) physical appearance

☐ summary paragraph
☐ completeness
☐ clarity
☐ alterations/integrity
☐ dates
☐ boundary selection

8. Significance

Period Areas of Significance—Check and justify below

Specific dates Builder/Architect

Statement of Significance *(in one paragraph)*

- ☐ summary paragraph
- ☐ completeness
- ☐ clarity
- ☐ applicable criteria
- ☐ justification of areas checked
- ☐ relating significance to the resource
- ☐ context
- ☐ relationship of integrity to significance
- ☐ justification of exception
- ☐ other

9. Major Bibliographical References

10. Geographical Data

Acreage of nominated property _____

Quadrangle name _____

UTM References

Verbal boundary description and justification

11. Form Prepared By

12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

____ national ____ state ____ local

State Historic Preservation Officer signature

title date

13. Other

- ☐ Maps
- ☐ Photographs
- ☐ Other

Questions concerning this nomination may be directed to _____

Signed _____ Date _____ Phone: _____

GPO 918-450

Comments for any item may be continued on an attached sheet

Minnesota Historical Society
State Historic Preservation Office
345 Kellogg Blvd West, St. Paul, Minnesota 55102
651-259-3451

TO: Stephanie Toothman, Keeper
National Register of Historic Places

FROM: Denis P. Gardner

DATE: May 18, 2017

NAME OF PROPERTY: Federal Relief Construction in Minnesota, 1933-1943

COUNTY AND STATE: Minnesota

SUBJECT: National Register:

- ☐ Nomination
- ☒ Multiple Property Documentation Form
- ☐ Request for determination of eligibility
- ☐ Request for removal (Reference No.)
- ☐ Nomination resubmission
- ☐ Boundary increase/decrease (Reference No.)
- ☒ Additional documentation (Reference No.)

DOCUMENTATION:

- ☐ Original National Register of Historic Places Registration Form
- ☒ Multiple Property Documentation Form
- ☒ Continuation Sheets
- ☐ Removal Documentation
- ☐ Photographs
- ☐ CD w/ image files
- ☐ Digital Map
- ☐ Sketch map(s)
- ☐ Correspondence
  - ☐ Owner Objection

    The enclosed owner objections
    Do☐ Do not ☐ constitute a majority of property owners

STAFF COMMENTS:

The appended document is an amendment to the Multiple Property Documentation Form "Federal Relief Construction in Minnesota, 1933-1943." It covers fire lookout towers constructed during the New Deal period.