

*WATERSHED PLANNING TEAM
WATER RESOURCE PROJECTS
STATUS REPORT*



October, 1999

U. S. Department of Agriculture

*Natural Resources
Conservation Service*



Saint Paul, Minnesota



FORWARD

The Natural Resources Conservation Service (NRCS), prepares this report each year to show the status of Public Law 83-566 (PL-566) in Minnesota that includes the small watershed program, river basin studies, and flood hazard studies. Information is provided about the status of each watershed project for which an application has been received.

The Watershed Protection and Flood Prevention Act, PL-566, was passed in 1954. The primary purpose of the act was to reduce damages to our water and related land resources that resulted from flooding, erosion, and sedimentation. Since its passage, as national priorities changed, the program was amended to include a wide variety of purposes and objectives. Today, almost any water related issue may be addressed through the program.

New PL-566 watershed projects will be formulated to “improve and protect water quality and other environmental concerns, flood damage reduction, and water conservation.” Potential projects serving these purposes and utilizing the ecosystem based planning approach will receive high priority when:

- The primary solution to the resource problem can be accomplished using nonstructural and land treatment measures.
- The principal water resource problem being addressed is water quality and/or water conservation that will benefit fish and wildlife or other environmental concerns.
- Wildlife, wetland acquisition, preservation and/or enhancement are an integral part of the project.
- The project will provide significant benefits to socially and economically disadvantaged groups.
- A large portion of the project installation will be funded by other than PL-566 funds.

NRCS notes that all potential projects that conform to law and other established priorities may be considered for planning starts, but they may not be authorized if they deviate significantly from the above criteria.

Any questions concerning information contained in this report should be directed to personnel listed on page 3.

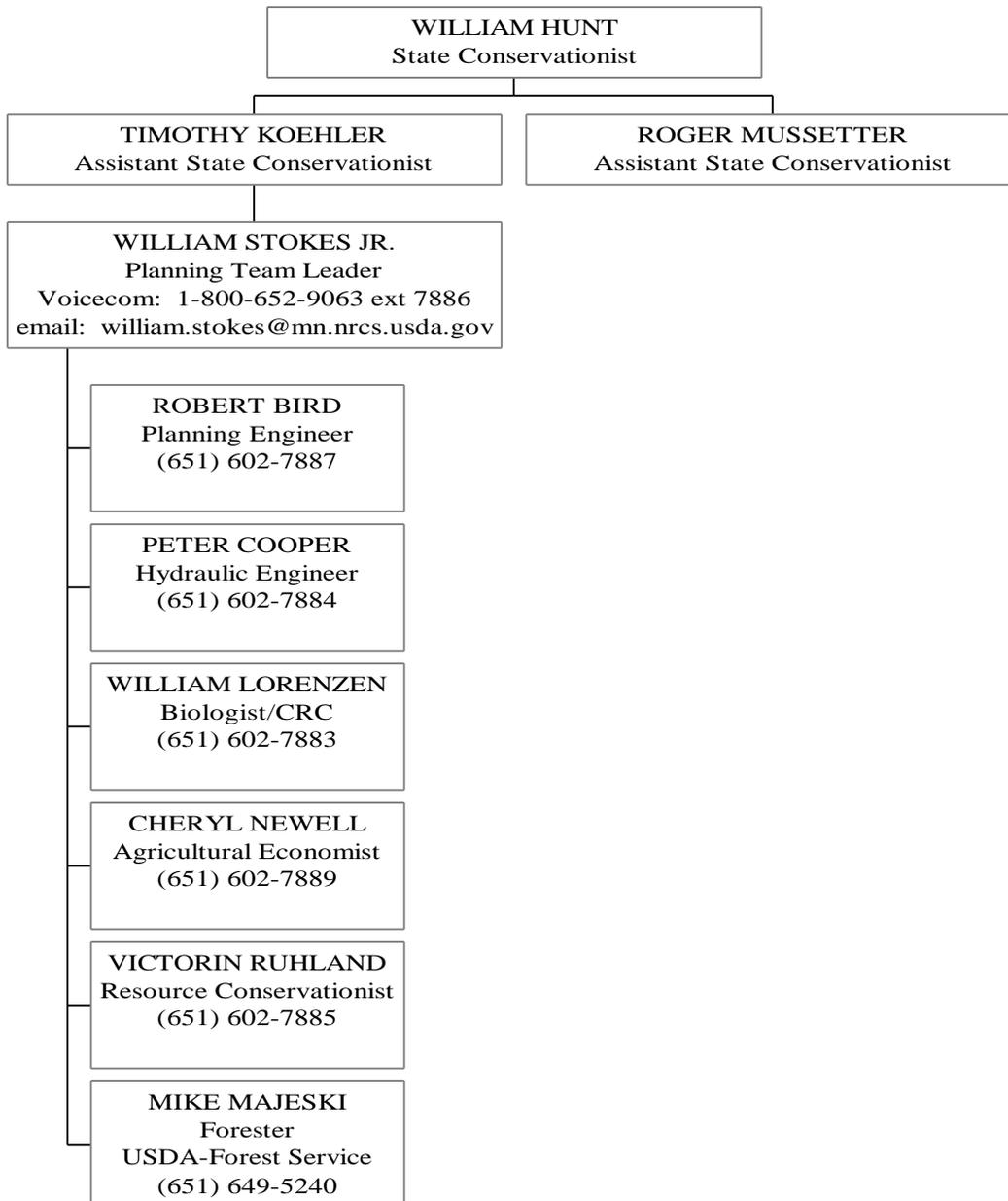
WILLIAM HUNT
State Conservationist

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WATER RESOURCES PLANNING TEAM

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
375 JACKSON STREET, SUITE 600
ST. PAUL, MN 55101-1854
PHONE: (651) 602-7886
FAX: (651) 602-7914



WATERSHED PROGRAM IN MINNESOTA

BACKGROUND

In Minnesota the PL-566 program, commonly called the Small Watershed Program, helps protect, manage, improve, and develop the water and related land resources of watersheds up to 250,000 acres in size. It is based on: (1) Local initiative and responsibility, (2) Federal technical and cost-sharing assistance, and (3) State review and approval of local proposals for state financial and other assistance.

The program has seven major purposes: (1) Watershed protection, (2) Flood prevention, (3) Agricultural water management that includes irrigation, drainage, rural water supply, water quality protection and improvement, water conservation, and other agricultural water management, (4) Nonagricultural water management that includes fish and wildlife, and public recreation, (5) Ground water recharge, (6) Water quality management, and (7) Municipal and industrial water supply. The program also provides funding for planning and installing land treatment, structural, and nonstructural measures.

Congress authorized the program in 1954 under the Watershed Protection and Flood Prevention Act, PL-566, as amended (16 U.S.C. 1001-1008). From 1954 through 1994, over ten amendments have been made to the law and sixteen laws have been passed that have affected the planning and implementation of PL-566 Watershed Projects. New national direction emphasizes PL-566 watershed planning can be done and implemented with any source of funding.

HOW THE PROGRAM WORKS

All PL-566 small watershed planning will entail the following steps:

1. Preapplication Consideration

Before planning activities can proceed, a request must be received from a local eligible sponsor. During this preapplication phase, a multiagency team will determine whether there is enough offsite

damages, benefits, and local agency and public support to proceed. Enough field work will be done to determine the potential feasibility of the project, its impact to the environment and cultural resources, as well as meeting the eligibility requirements for planning assistance. Appropriate federal and state agencies, local organizations, and the public will be notified of the potential application. Data collected during the preapplication phase should be useful to local organizations to help them decide if they should submit an application and also be helpful in the application preparation.

2. Sponsors apply for assistance

Any local nonprofit organization, having the authority under state law to develop and carry out a watershed project, can be a sponsor. Eligible sponsors include soil and water conservation districts (SWCDs), municipalities, counties, watershed districts (WDs), flood-control, conservancy, drainage, irrigation, or other special purpose districts, and irrigation and reservoir companies. The application is filed with the state agency designated to approve watershed applications (Minnesota Board of Water and Soil Resources).

3. State reviews application

The state approves or rejects applications and determines their priority status. To warrant high priority status, the application generally must convince the state that: (a) the sponsors intent to meet their commitments in carrying out and maintaining the project, (b) that progress has been or is being made in applying soil and water conservation on individual farms and ranches, (c) that the proposed project will benefit a substantial number of people, and (d) that it has the support of people throughout the watershed.

4. NRCS reviews application

When NRCS is able to furnish planning assistance, it reviews the applications given highest priority by the state. NRCS conducts a field examination of the watershed to determine the potential for an acceptable watershed plan, the probable alternative plans to be investigated, and the probable impact of each alternative. A Preauthorization Report, which

summarizes the results of planning done to date, is prepared and sent to Washington for planning authorization.

5. NRCS and sponsors plan the project

After the NRCS State Conservationist authorizes planning assistance, a multiagency interdisciplinary team works with local representatives to scope the project, to make environmental assessments, and to help the sponsors develop a watershed plan. Representatives of state and other federal agencies often are involved. The team prepares a planning document that explains the benefits, costs, and environmental impact of the project and the alternatives considered according to established guidelines. See Planning Process.

6. Congress or NRCS approves plan

Only after careful review of the plan and environmental documentation by government officials at all levels and by the public, can the federal government approve a small watershed project plan for the federal portion of the project funding. Depending on the amount of federal funding assistance involved, approval is made by the NRCS State Conservationist, by the NRCS Chief, or by Congress. Other agencies, organizations, and individuals will also be requested to support the project technically and financially.

7. Plan is implemented

The federal government gives technical help in installing some of the project measures, pays the full cost of construction for flood prevention, and shares the cost for other purposes. The State Conservationist certifies that all projects, or incremental phases of projects to be considered for future funding, will meet the following criteria on or before July 1 of the preceding year: (1) Land and water rights secured. (2) All necessary permits secured. (3) Designs completed. (4) Interagency and peer reviews completed within the past 5 years. (5) National Environmental Policy Act compliance complete within the past 5 years. (6) Project is free of litigation. (7) Sponsor's funding is available to cover local costs. (8) Sponsors have developed a sinking fund, or similar account, to address operation, maintenance and replacement costs. To help sponsoring organizations finance their share of the cost, the Rural Economic and Community Development (RECD) may lend a maximum of ten million dollars per project for a maximum of 50 years. To develop water supply for future municipal or industrial use, the federal government may advance funds amounting to a maximum of 30

percent of the cost of a multipurpose reservoir and may defer payment for a maximum of 10 years without interest. In Minnesota, various opportunities exist from state, federal, and other organizations for planning and implementation funding.

Major obligations of local sponsors are to acquire land, easements, and rights-of-way; awards contracts for construction on private land or delegates contracting to NRCS, and share the construction cost of certain measures.

8. Operation and maintenance

Local sponsors assume responsibility for operating and maintaining the completed project.

PLANNING PROCESS

The NRCS water resource planning activities are to conform to the "Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies" (P&G). Among the items included in the P&G are planning principles and standards, guidelines for economic and environmental evaluations, and a requirement that any plan recommending federal action is to be the alternative with the greatest net economic benefit consistent with protecting the Nation's environment. Project plans developed for funding from other sources are not required to follow P&G.

The planning process consists of the following nine steps that identify or respond to problems associated with the federal objectives and specific state and local concerns. All agencies, organizations, and private citizens are encouraged to be involved in every step of the planning process.

Phase I—Collection and Analysis

Step 1-Identify Problems: Identify resource problems, opportunities, and concerns in the planning area.

Step 2-Determine Objectives: Identify, agree on, and document the client's objectives.

Step 3-Inventory Resources: Inventory the natural resources and their condition, and the economic and social considerations. This includes onsite and related offsite conditions.

Step 4-Analyze Resource Data: Analyze the resource information gathered in planning Step 3 to clearly define the natural resource conditions, along with economic and social issues. This includes problems and opportunities.

Phase II-Decision Support

Step 5-Formulate Alternatives: Formulate alternatives that will achieve the client's objectives, solve natural resource problems, and take advantage of opportunities to improve or protect resource conditions.

Step 6-Evaluate Alternatives: Evaluate the alternatives to determine their effects in addressing the client's objectives and the natural resource problems and opportunities. Evaluate the projected effects on social, economic, and ecological concerns. Special attention must be given to those ecological values protected by law or Executive Order.

Step 7-Make Decisions: The client selects the alternative(s) and works with the planner to schedule conservation system and practice implementation. The planner prepares the necessary documentation.

Phase III-Application

Step 8-Implement Plan: Implement the selected alternative(s). The planner provides encouragement to the client for continued implementation.

Step 9-Evaluate Plan: Evaluate the effectiveness of the plan as it is implemented and make adjustments as needed.

The following pages summarize the PL-566 Activity in Minnesota. Included is the Watershed Protection and Flood Prevention map and the Watershed Applications Summary table with the status of each watershed application.

State of Minnesota

PL 83-566 Watershed Applications Summary

Watershed Map Number	WATERSHED NAME	Rejected (Not shown on map)	Returned to Sponsor	Reapplied	Awaiting Planning	Low priority	In Planning	Planning Terminated	Installation Terminated	Installation Underway	Installation Completed
1	Rush Pine Creek										X
2	Ten Mile Creek							X			
3	South Fork Crow River		X								
4	Coon Creek								X		
5	Spring Creek (Norman Co.)		X								
6*	Bitter Creek (Goodhue County)	X									
7	Middle Fork of Two Rivers										X
8	Janesville Village										X
9*	Spring Creek (Goodhue Co.)		X								
10	Bear Valley										X
11	Lost River No. 1		X								
12	Beaver Creek		X								
13	North Branch of Two Rivers										X
14	Mud and Lost Rivers		X								
15	Zippel										X
16	Crane Creek										X
17	Stoney Run Creek		X								
18	Dry Weather Creek							X			
19	South of Hawley-South Buffalo							X			
20	Crooked Creek										X
21	Garvin Brook							X			
22	Joe River										X
23*	Camp Creek (Fillmore County)		X								
24	Lost River No. 2		X								
25	Cooks Valley										X
26	Hayes-Kildare		X								
27	Tamarac River										X
28	Deerhorn Buffalo							X			
29	Rollingstone Creek		X								
30	Nelson Creek		X								
31	Lakes Okabena and Ocheda										X
32	Upper Dear Creek-Lake Hendricks										X
33*	White Oak Lake (Itasca County)	X									
34	Rabbit River		X								
35	South Zumbro										X
36	South Fork of the Root River		X								
37	Belle Creek										X
38	Upper Watonwan River							X			
39	Kichi Saga		X								
40	Norman Polk										X
41	Burnham Creek										X
42*	West Beaver Creek (Mower Co.)	X									
43	Norwegian Creek		X								
44	Harkcom Creek		X								
45	Cedar Valley					X					

Watershed Map Number	WATERSHED NAME	Rejected (Not shown on map)	Returned to Sponsor	Reapplied	Awaiting Planning	Low priority	In Planning	Planning Terminated	Installation Terminated	Installation Underway	Installation Completed
46	Canby Creek										X
47	Middle Fork of the Whitewater River **		X	X						X	
48	Thompson Valley					X					
49	Duxby		X								
50	Mounds Creek							X			
51	Tyler							X			
52	Spring Creek		X								
53	Rock River		X								
54	Turtle Creek					X					
55	Little Black River		X								
56	Three-Mile Creek		X								
57	Champepedan		X								
58	Badger-Skunk		X								
59	Jack Creek		X								
60	Okabena Creek		X								
61	Heron Lake		X								
62	Comstock Coulee		X								
63	Florida Creek							X			
64	Upper Yellow Medicine		X								
65	Des Moines River Headwaters		X								
66	West Branch of the Mustinka		X								
67	Yellow Bank River		X								
68*	Cottage Grove (Washington County)	X									
69*	St. James Creek (Watonwan County)	X									
70	South Fork Watonwan		X								
71*	Lower Pomme de Terre (Swift and Steven Counties)	X									
72*	South Branch Wild Rice River (Becker County)	X									
73	Badger Creek		X								
74	Melgaard-Swift Coulee		X								
75	Middle River		X								
76	Snake River ***			X			X	X			
77	Angus-Oslo		X								
78*	High Island Creek (Sibley, McLeod, Renville Counties)	X									
79	Kanaranzi-Little Rock									X	
80	Bostic Creek		X								
81	Lazarus Creek							X			
82	Upper North Branch of the Root River							X			
83	Lower Whitewater River									X	
84	Bear Creek									X	
85	North Fork of the Whitewater River									X	
86	South Fork of the Whitewater River									X	
TOTAL		8	39	2	0	3	1	12	1	6	18

Not shown on Watershed Protection Map

**Two applications, first one returned to sponsors

***Two applications, first one planning terminated

2 PILOT WATERSHED PROJECTS

Congress appropriated \$5 million in 1953 (referred to as the Pilot Watershed Program) with which 65 pilot watershed projects were started in the nation (two in Minnesota). One objective of this Federal action was to demonstrate the benefits of combining soil and water conservation on the land with upstream flood-prevention structures. A second objective was to find out the best ways to achieve local, state, and federal teamwork in planning and carrying out watershed protection and development. This was followed by the passage of Public Law 83-566 in 1954 putting into legislative form what had been started with the Pilot Watershed Program. The two pilot watershed projects authorized in Minnesota are discussed below. Their location is shown on the watershed map. They are not included in the table.

1. EAST WILLOW CREEK (Map #I)

Fillmore County

Sponsors:

West Fillmore Soil Conservation District

Size: 24,000 acres

Approved for Operations: 1954

Estimated Total Cost of Project:

Federal Government	\$187,204
Farmers	\$151,000
County & State Government Units	\$33,305
Total	\$371,509

Completion Date: 1959

Measures Installed: Sixteen stabilizing and sediment control structures, 7 floodwater retarding and erosion control structures, 3 miles stabilized and development of waterways, and streambank protection on 3 miles of channel and 17 acres of tree planting to stabilize critical runoff and sediment producing area.

Project Life: 50 years

2. CHIPPEWA RIVER TRIBUTARIES AND HAWK CREEK (3 subwatersheds, Map #IIa,b,c)

2a. SHAKOPEE RIVER

Kandiyohi, Swift and Chippewa Counties

Sponsors: Kandiyohi Soil Conservation District,

Swift Soil Conservation District, and

Chippewa Soil Conservation District

Size: 204,414 acres

Estimated Total Cost of Project:

Federal Government	\$ 546,842
Farmers	\$593,000

County & State Government Units \$67,866

Total \$1,207,708

Measures Installed: measures used for the conservation of water and watershed lands contributing directly to prevent flooding, flood prevention measures, and land treatment measures.

Project Life: 50 years

Benefit/Cost Ratio: 5.09:1

2b. MUD CREEK

Swift and Kandiyohi Counties

Sponsors: Swift and Kandiyohi County Soil Conservation District

Size: 56,131 acres

Authorized for Planning: Fiscal Year 1954

Approved for Operations:

Estimated Total Cost of Project:

Federal Government	\$537,574
Farmers	\$264,082
County & State Government Units	\$220,178
Total	\$1,021,834

Completion Date: June 1959

Measures Installed: Three floodwater retarding structures and main floodway, 4 branch floodways in Mud Creek Watershed, and improvement of Chippewa River for 18 miles.

Project Life: 50 years

Benefit/Cost Ratio: 5.07:1

3c. HAWK CREEK

Chippewa, Kandiyohi, and Renville Counties

Sponsors: Chippewa and Renville Soil Conservation

Districts and Kandiyohi County Soil Conservation District

Size: 321,553 acres

Authorized for Planning: 1958

Estimated Total Cost of Project:

Federal Government	\$546,842
Farmers	\$593,005
County & State Government Units	\$67,866
Total	\$1,207,713

Completion Date: 1965

Measures Installed: 61.5 miles of floodway, 3 grade stabilization structures, 2 streambank control structures, and land treatment measures.

Project Life: 50 years

Benefit/Cost Ratio: 4.62:1

18 PL-566 WATERSHED PROJECTS WITH INSTALLATION COMPLETED

The () coincides with number on the Watershed Protection and Flood Prevention Map on page 9.

1. BEAR VALLEY (Map #10)

Goodhue and Wabasha Counties

Sponsors: Goodhue SWCD, Wabasha SWCD, and Bear Valley WD.

Size: 29,326 acres

Authorized for Planning: April 21, 1959

Approved for Operations: May 11, 1961

Constructed Started: March 7, 1963

Estimated Total Cost of Project:

- PL-566 Funds \$237,278
- Others (includes farmers, Federal government, County & State Government) \$86,530

Total \$323,808

Completion Date: May 15, 1969

Measures Installed: Ten grade stabilization structures

Project Life: 50 years

Benefit/Cost Ratio: 1.09:1

2. BELLE CREEK (Map #37)

Goodhue County

Sponsors:

Goodhue SWCD, Goodhue County Board of Commissioners, and Belle Creek WD

Size: 52,790 acres

Authorized for Planning: August 20, 1965

Approved for Operations: March 16, 1972

Constructed Started: September 20, 1976

Estimated Total Cost of Project:

- PL-566 Funds \$3,772,300
- Other \$900,000

Total \$4,672,300

Completion Date: October 11, 1985

Measures Installed: Five floodwater retarding structures and two grade-stabilization structures.

Project Life: 100 years

Benefit/Cost Ratio: 1.5:1

3. BURNHAM CREEK (Map #41)

Polk County

Sponsors: Polk County Board of Commissioners, West Polk SWCD, and East Polk SWCD

Size: 104,200 acres

Authorized for Planning: May 22, 1975

Approved for Operations: March 16, 1983

Constructed Started: September 1987

Estimated Total Cost of Project:

- PL-566 Funds \$3,231,300

- Other \$679,300
- Total \$3,910,600

Completion Date: July 2, 1993

Measures Installed: One multiple purpose flood prevention and wildlife structure, 11 miles of channel work, and 1 grade stabilization structure.

Project Life: 50 years

Benefit/Cost Ratio: 1.3:1

4. CANBY CREEK (Map #46)

Yellow Medicine and Lincoln Counties

Sponsors: Lac qui Parle-Yellow Bank WD, Lincoln SWCD, and Yellow Medicine SWCD

Size: 20,150 acres

Authorized for Planning: July 15, 1968

Approved for Operations: April 20, 1976

Constructed Started: November 5, 1980

Estimated Total Cost of Project:

- PL-566 Funds \$5,069,600
- Other \$1,698,100

Total \$6,767,700

Completion Date: August 31, 1988

Measures Installed: Three floodwater retarding structures (one with recreation development) and one mile of channel stabilization

Project Life: 100 years

Benefit/Cost Ratio: 1.2:1

5. COOKS VALLEY (Map #25)

Wabasha County

Sponsors: Wabasha SWCD, Wabasha County Board of Commissioners, and Cooks Valley WD

Size: 15,940 acres

Authorized for Planning: February 25, 1963

Approved for Operations: August 17, 1964

Constructed Started: April 13, 1966

Estimated Total Cost of Project:

- PL-566 Funds \$66,220
- Other \$135,400

Total \$201,620

Completion Date: February 25, 1974

Measures Installed: Three grade stabilization structures.

Benefit/Cost Ratio: 1.3:1

6. CRANE CREEK (Map #16)

Steele and Waseca Counties

Sponsors: Waseca SWCD, Waseca County Board of Commissioners, Steele SWCD, and Steele County Board of Commissioners

Size: 66,713 acres

Authorized for Planning: March 9, 1959

Approved for Operations: April 24, 1964

Constructed Started: September 14, 1967

Estimated Total Cost of Project:

- PL-566 Funds \$915,996

- Other

\$1,569,183
Total \$2,485,179

Completion Date: June 18, 1976

Measures Installed: 25.1 miles of channel modification and 5 structures for wildlife.

Project Life: 50 years

Benefit/Cost Ratio: 1.15:1 with out local secondary benefits and 1.5:1 with local secondary benefits.

7. CROOKED CREEK (Map #20)

Houston Counties

Sponsors: Root River SWCD, Houston County Board of Commissioners, and Crooked Creek WD

Size: 44,560 acres

Authorized for Planning: April 14, 1961

Approved for Operations: October 31, 1963

Constructed Started: June 29, 1965

Estimated Total Cost of Project:

- PL-566 Funds \$1,107,328
 - Other \$204,777
- Total \$1,312,105

Completion Date: June 18, 1976

Measures Installed: Four floodwater retarding structures, 4 grade stabilization structures, streambank protection and trout stream improvement.

Project Life: Floodwater retarding structures-100 years, streambank control measures-50 years, trout stream improvement-50 years

Benefit/Cost Ratio: 1.4:1

8. JANESVILLE VILLAGE (Map #8)

Waseca, Blue Earth, and Le Sueur Counties

Sponsors: Waseca County Board of Commissioners, Blue Earth County Board of Commissioners, Waseca SWCD, Blue Earth SWCD, Le Sueur SWCD, and Alton Town Board

Size: 69,400 acres

Authorized for Planning: November 19, 1962

Approved for Operations: September 8, 1967

Constructed Started: June 29, 1972

Estimated Total Cost of Project:

- PL-566 Funds \$846,182
 - Other \$2,090,216
- Total \$2,936,398

Completion Date: June 18, 1976

Measures Installed: 8.2 miles of channel modification, 2 grade-stabilization structures, and 3 structures for wildlife.

Project Life: 50 years

Benefit/Cost Ratio: 2.3:1

9. JOE RIVER (Map # 22)

Kittson County

Sponsors: Kittson SWCD, Kittson County Board of Commissioners, and Joe River WD.

Size: 54,960 acres

Authorized for Planning: March 12, 1962

Approved for Operations: October 31, 1963

Constructed Started: June 5, 1968

Estimated Total Cost of Project:

- PL-566 Funds \$502,483
 - Other \$861,271
- Total \$1,363,754

Completion Date: June 27, 1973

Measures Installed: 26.5 miles of channel modification and 1 single-purpose structure for wildlife.

Project Life: 50 years

Benefit/Cost Ratio: 3.3:1

10. Lakes Okabena and Ocheda (Map #31)

Nobles County

Sponsors: Okabena-Ocheda WD, and Nobles County SWCD.

Size: 46,495

Authorized for Planning: November 18, 1962

Approved for Operations: July 12, 1965

Constructed Started: January 23, 1967

Estimated Total Cost of Project:

- PL-566 Funds \$716,468
 - Other \$788,563
- Total \$1,505,031

Completion Date: August 23, 1985

Measures Installed: One sediment basin, 1 multipurpose floodwater retarding and recreation structure and basic facilities, 5.4 miles of channel modifications, and 1 mile of water supply channel and associated wildlife facilities.

Project Life: 50 years

Benefit/Cost Ratio: 3.1:1

11. MIDDLE FORK OF TWO RIVERS

(Map #7) Kittson County

Sponsors: Kittson SWCD, Kittson County Board of Commissioners, Village of Hallock, and Two Rivers WD.

Size: 57,532 acres

Authorized for Planning: February 11, 1957

Approved for Operations: May 11, 1960

Constructed Started: June 30, 1965

Estimated Total Cost of Project:

- PL-566 Funds \$167,118
 - Other \$233,476
- Total \$400,594

Completion Date: June 27, 1969

Measures Installed: 10.6 miles of channel modifications.

Project Life: 50 years

Benefit/Cost Ratio: 9.3:1

12. NORMAN-POLK (Map #40)

Norman and Polk Counties

Sponsors: West Polk SWCD, East Agassiz SWCD, Polk County Board of Commissioners, and Wild Rice WD.

Size: 72,500 acres

Authorized for Planning: September 19, 1966

Approved for Operations: November 4, 1975

Constructed Started: September 28, 1977

- PL-566 Funds \$3,835,900
 - Other \$1,715,600
- Total \$5,551,500

Completion Date: August 1981

Measures Installed: 28 miles of channel work and 6 grade stabilization structures

Project Life: 50 years

Benefit/Cost Ratio: 1.4:1

Estimated Total Cost of Project:



Norman-Polk grade stabilization and channel work

13. NORTH BRANCH OF TWO RIVERS

(Map #13) Kittson and Roseau Counties

Sponsors: Kittson SWCD, Roseau SWCD, Kittson County Board of Commissioners, Roseau County Board of Commissioners, Village of Lancaster, and Two Rivers WD.

Size: 234,223 acres

Authorized for Planning: November 14, 1958

Approved for Operations: November 5, 1962

Constructed Started: June 30, 1965

Estimated Total Cost of Project:

- PL-566 Funds \$198,532
 - Other \$430,716
- Total \$629,248

Completion Date: June 26, 1970

Measures Installed: 11.5 miles of channel modifications, 2 grade stabilization structures, and 1 structure for wildlife.

Project Life: 50 years

Benefit/Cost Ratio: 1.44:1

14. RUSH PINE (Map #1)

Fillmore, Houston, and Winona Counties.

Sponsors: Whitewater SWCD, East Fillmore SWCD, Root River SWCD, and Rushford Conservancy District.

Size: 88,050 acres

Authorized for Planning: June 1, 1955

Approved for Operations: July 11, 1956

Constructed Started: June 27, 1958

Estimated Total Cost of Project:

- PL-566 Funds \$47,659
 - Other \$135,641
- Total \$183,300

Completion Date: June 30, 1961

Measures Installed: Stabilization of 3 critical sediment producing areas.

Project Life: 50 years

Benefit/Cost Ratio: 1.09:1

15. SOUTH ZUMBRO (Map #35)

Dodge and Olmsted Counties

Sponsors: Dodge SWCD, Upper Zumbro SWCD, Olmsted County Board of Commissioners, and City of Rochester

Size: 200,540 acres

Authorized for Planning: January 14, 1964

Approved for Operations: September 30, 1982

Constructed Started: August 16, 1985

Estimated Total Cost of Project:

- PL-566 Funds \$19,358,990
 - Other \$12,691,400
- Total \$32,050,390

Completion Date: July 1996

Measures Installed: Six flood control dams, 1 multipurpose dam, 1500 ft streambank protection, 1 recreational facility and Chester Woods Park.

Project Life: 100 years

Benefit/Cost Ratio: 1.5:1



South Zumbro WR-4, one of six flood control dams

16. TAMARAC RIVER (Map #27)

Marshall, Kittson, and Roseau Counties

Sponsors: Marshall County SWCD, and Village of Stephen.

Size: 234,700 acres

Authorized for Planning: April 15, 1963

Approved for Operations: September 10, 1965

Constructed Started: September 29, 1971

Estimated Total Cost of Project:

- PL-566 Funds \$2,506,590
 - Other \$2,550,680
- Total \$5,057,270

Completion Date: September 22, 1978

Measures Installed: 40.8 miles of channel modification, 1 grade stabilization structure, and 2 multipurpose structures with minimum recreation facilities

Project Life: 50 years

Benefit/Cost Ratio: 2.4:1

17. UPPER DEER CREEK-LAKE HENDRICKS MINNESOTA PORTION (Map #32)

Lincoln County

Sponsors: Lincoln SWCD

Size: 9,480 acres (MN)

Authorized for Planning: April 23, 1962

Approved for Operations: July 19, 1966

Constructed Started: August 11, 1970

Estimated Total Cost of Project:

- PL-566 Funds \$257,849
 - Other \$284,243
- Total \$542,092

Completion Date: June 18, 1976

Measures Installed: 1.0 miles of channel modification and 1 structure for wildlife.

Project Life: 50 years

Benefit/Cost Ratio: 1.36:1

18. ZIPPEL (Map #15)

Lake of the Woods County

Sponsors: Lake of the Woods SWCD, and Lake of the Woods County Board of Commissioners.

Size: 51,964 acres

Authorized for Planning: January 17, 1961

Approved for Operations: December 5, 1962

Constructed Started: June 23, 1964

Estimated Total Cost of Project:

- PL-566 Funds \$258,301
 - Other \$284,243
- Total \$542,544

Completion Date: June 14, 1968

Measures Installed: 16.2 miles of channel modification.

Project Life: 50 years

Benefit/Cost Ratio: 2.3:1

6 PL-566 WATERSHED PROJECTS WITH INSTALLATION UNDERWAY

1. BEAR CREEK (Map #84)

Houston and Fillmore Counties, MN and Allamakee and Winneshiek Counties, IA

Sponsors: Houston County Board of Commissioners, Root River SWCD, Winneshiek County SWCD, and Winneshiek County Board of Supervisors

Size: 34,990 acres (24,660 acres in IA and 10,330 acres in MN)

Approved by State Committee: August 10, 1989

Status: Preauthorization Report was developed April 1995.

Authorized for Planning: 1995

Approved for Operations: September 16, 1998

Estimated Total Cost of Project (1996):

• PL-566 Funds	\$4,943,600
• Other	\$765,900
	Total \$5,709,500

Land Treatment: 7,750 acres cropland, 9,480 acres pastureland, and 1,240 acres forest land will be treated for severe erosion.

Watershed Problems: Principal problems include flooding, water quality degradation, and sedimentation.

Project Purposes: Watershed protection, flood protection, water quality, and fish and wildlife management.

Structural Measures Planned: 52 dams plus land treatment measures will be constructed during the 15-year project installation period.

Structural Measures Installed: No structural measures have been installed to date.

Land Treatment Measures Installed: None

Easement Status: No easements have been obtained to date.

Effectiveness of Project: Soil erosion reduced by 116,000 tons annually (52%), sediment yield to trout stream reduced by 48% and flood damages reduced by 45% on 970 acres.

Project Life: 50 years

Benefit/Cost Ratio: 1.1:1

2. LOWER WHITEWATER RIVER (Map #83)

Wabasha and Winona Counties

Sponsors: Wabasha SWCD, Wabasha County Board of Commissioners, Winona SWCD, and Winona County Board of Commissioners.

Size: 45,600 acres

Authorized for Planning: June 15, 1993

Watershed Agreement Signed: February 16, 1998

Approved for Operations: February 16, 1998

Estimated Total Cost of Project (1997):

• PL-566 Funds	\$549,000
• Other	\$253,500
	Total \$802,500

Land Treatment: A total of 2,000 acres within the Lower Whitewater River Watershed will benefit from project installation.

Watershed Problems: Principal problems involve sedimentation damages and degraded water quality.

Project Purposes: Watershed protection and water quality of both surface and ground water.

Structural Measures Planned: None

Easement Status: No easements required.

Effectiveness of Project: Damage reduction benefits on 15,000 acres include soil productivity-\$34,600, on crop growth-\$45,600, and loss nutrients-\$21,100. Increased net income from conservation tillage, terraces, and nutrient management-\$182,700 and reduced recreational impairment-\$297,400. Total benefits amount to \$581,400.

Project Life: 50 years

Benefit/Cost Ratio: 1.3:1

3. MIDDLE FORK WHITEWATER RIVER

(Map #47) Olmsted and Winona Counties

Sponsors: Olmsted SWCD, Olmsted County Board of Commissioners, Winona SWCD, and Winona County Board of Commissioners,

Size: 36,800 acres

Authorized for Planning: June 15, 1993

Watershed Agreement Signed: February 16, 1998

Approved for Operations: February 16, 1998

Estimated Total Cost of Project (1997):

• PL-566 Funds	\$741,000
• Other	\$370,200
	Total \$1,111,200

Land Treatment: A total of 4,000 acres within the Middle Whitewater River Watershed will benefit from project installation.

Watershed Problems: Principal problems involve sedimentation damages and degraded water quality.

Project Purposes: Watershed protection and water quality of both surface and ground water.

Structural Measures Planned: None

Easement Status: No easements required.

Effectiveness of Project: Damage reduction benefits on 15,000 acres include soil productivity-\$34,600, on crop growth-\$45,600, and loss nutrients-\$21,100. Increased net income from conservation tillage, terraces, and nutrient management-\$182,700 and reduced recreational impairment-\$297,400. Total benefits amount to \$581,400.

Project Life: 50 years

Benefit/Cost Ratio: 1.3:1

4. NORTH FORK WHITEWATER RIVER (MAP #85)

Olmsted, Wabasha, and Winona Counties
Sponsors: Olmsted SWCD, Olmsted County Board of Commissioners, Wabasha SWCD, Wabasha County Board of Commissioners, Winona SWCD, and Winona County Board of Commissioners.

Size: 64,600 acres

Authorized for Planning: June 15, 1993

Watershed Agreement Signed: February 16, 1998

Approved for Operations: February 16, 1998

Estimated Total Cost of Project (1997):

- PL-566 Funds \$1,065,200
 - Other \$561,500
- Total \$1,626,700

Land Treatment: A total of 5,000 acres with the North Fork Whitewater River Watershed will benefit from project installation.

Watershed Problems: Principal problems involve sedimentation damages and degraded water quality.

Project Purposes: Watershed protection and water quality of both surface and ground water.

Structural Measures Planned: None

Easement Status: No easements required.

Effectiveness of Project: Damage reduction benefits on 15,000 acres include soil productivity-\$34,600, on crop growth-\$45,600, and loss nutrients-\$21,100. Increased net income from conservation tillage, terraces, and nutrient management-\$182,700 and reduced recreational impairment-\$297,400. Total benefits amount to \$581,400.

Project Life: 50 years

Benefit/Cost Ratio: 1.3:1

5. SOUTH FORK WHITEWATER RIVER (Map #86)

Olmsted and Winona Counties
Sponsors: Olmsted SWCD, Olmsted County Board of Commissioners, Winona SWCD, and Winona County Board of Commissioners.

Size: 58,400 acres

Authorized for Planning: June 15, 1993

Watershed Agreement Signed: February 16, 1998.

Approved for Operations: February 16, 1998

Estimated Total Cost of Project (1997):

- PL-566 Funds \$954,500
 - Other \$495,200
- Total \$1,450,200

Land Treatment: A total of 4,000 acres within the South Fork Whitewater River Watershed will benefit from project installation.

Watershed Problems: Principal problems involve sedimentation damages and degraded water quality.

Project Purposes: Watershed protection and water quality of both surface and ground water.

Structural Measures Planned: None.

Easement Status: No easements required.

Effectiveness of Project: Damage reduction benefits on 15,000 acres include soil productivity-\$34,600, on crop growth-\$45,600, and loss nutrients-\$21,100. Increased net income from conservation tillage, terraces, and nutrient management-\$182,700 and reduced recreational impairment-\$297,400. Total benefits amount to \$581,400.

Project Life: 50 years

Benefit/Cost Ratio: 1.3:1

6. KANARANZI-LITTLE ROCK (Map #79)

Nobles and Rock Counties

Sponsors: Nobles County SWCD, Nobles County Board of Commissioners, Rock County SWCD, Kanaranzi-Little Rock WD.

Size: 198,400 acres

Authorized for Planning: March 1984

Watershed Agreement Signed: November 19, 1987

Approved for Operations: May 11, 1988

Construction Start Approved: June 13, 1988

Estimated Total Cost of Project (1986):

- PL-566 Funds \$4,950,000
 - Other \$2,850,000
- Total \$7,800,000

Land Treatment: A total of 114,600 acres of cropland are in need of protection.

Watershed Problems: The major problem is the reduced net farm income due to excessive soil erosion on 114,600 acres of cropland.

Project Purposes: Watershed protection

Measures Planned: Land treatment practices on 51,800 acres of cropland.

Land Treatment Measures Installed: 11,136 acres of conservation tillage, 171 water and sediment basins, 92,300 feet of field borders, 124 acres (83,220 feet) of grassed waterways, 30.9 miles of terraces, 1,083 acres of contouring, 421 acres of hayland planting and 38.8 miles of underground outlet.

Easement Status: No easements required.

Effectiveness of Project:

Project Life: 40 years

Benefit/Cost Ratio: 2.7:1

1 WATERSHED PROJECTS CURRENTLY IN PLANNING

SNAKE RIVER (Map #76)

Marshall, Pennington, and Polk Counties

Sponsors: City of Warren, and Middle River-Snake River WD.

Size: 166,400 acres

Authorized for Planning: January 30, 1997

Status: Plan development started in Fiscal Year 1997 and completed in Fiscal Year 1999.

3 LOW PRIORITY WATERSHED PROJECTS AWAITING PLANNING ACTIVITY

1. CEDAR VALLEY (Map #45)

Winona County

Sponsors: Winona County Board of Commissioners, Burns-Homer-Pleasant SWCD, and Homer Township Board.

Size: 11,481 acres

Approved by State Board: April 9, 1985

2. THOMPSON VALLEY (Map #48)

Sponsors: Root River SWCD, Houston County Board of Commissioners, and Village of Hoka.

Size: 24,500 acres

Approved by State Board: August 31, 1964

3. TURTLE CREEK (Map #54)

Sponsors: Freeborn SWCD, Freeborn County Board of Commissioners, Mower SWCD, Mower County Board of Commissioners.

Size: 96,000 acres

Approved by State Board: July 29, 1965

Preliminary Investigation Report Prepared:

September 13, 1972. Decisions to proceed are needed from the sponsors before planning authorization can be requested.

1 PL-566 WATERSHED PROJECTS WITH INSTALLATION TERMINATED

COON CREEK (Map #4)

Sponsors: Anoka County SWCD, Anoka County Board of Commissioners, Coon Creek Watershed.

Size: 55,276 acres

Authorized for Planning: February 11, 1957

Approved for Operations: February 20, 1959

Estimated Total Cost of Project:

• PL-566 Funds	\$572,837
• Other	<u>\$1,061,601</u>
Total	\$1,634,438

Land Treatment: Approximately 65% of the land shown in the work plan are adequately treated watershed problems: Principal problems were flood damages to agricultural lands.

Project Purposes: Watershed protection, flood prevention, agricultural water management, and fish and wildlife management.

Structural Measures Planned: 27.1 miles of channel modification.

Structural Measures Installed: No structural measures were installed.

Easement Status: No easements were obtained.

Project Deauthorized: June 1996

12 PL-566 WATERSHED PROJECTS WITH PLANNING TERMINATED

1. DEERHORN BUFFALO (Map #28)

Clay, Wilkins, and Ottertail Counties

2. DRY WEATHER CREEK (Map #18)

Chippewa and Swift Counties

3. FLORIDA CREEK (Map #63)

Yellow Medicine and Lac qui Parle Counties

4. GARVIN BROOK (Map #21)

Winona County

5. LAZARUS CREEK (Map #81)

Yellow Medicine and Lac qui Parle Counties, MN and Deuel County, SD

6. MOUNDS CREEK (Map #50)

Brown and Cottonwood Counties

7. SNAKE RIVER WATERSHED (Map #76) Reapplied

8. SOUTH OF HAWLEY-SOUTH BUFFALO (Map #19)

Clay, Wilkin, Ottertail, and Becker Counties.

9. TEN MILE CREEK (Map #2)

Yellow Medicine County

10. TYLER (Map #51)

Lincoln, Lyon and Pipestone Counties

11. UPPER NORTH BRANCH ROOT RIVER (Map #82)

Dodge, Mower and Olmsted Counties

12. UPPER WATONWAN RIVER (Map #38)

Watsonwan, Cottonwood and Brown Counties

RIVER BASIN STUDIES IN MINNESOTA

INTRODUCTION

Cooperative river basin studies are conducted under the authority of Section 6, Public Law 83-566, the Watershed Protection and Flood Prevention Act. These studies are for appraising water and related land resources and formulating alternative plans for the conservation, use, and development of these resources. Plans may include management and land treatment measures, nonstructural measures, structural measures, or a combination of these measures that will address present and project resource problems.

Cooperative river basin studies deal with needs as specified by the requesting agency and these needs must be consistent with the mission and responsibilities of the USDA. Generally, the studies are of limited scope and short duration to provide specific information needed for planning. Such studies should meet the immediate needs of the U.S. Department of Agriculture and cooperating agencies. Short duration studies could include:

1. Special studies needed for project planning, such as project potential or the cumulative impact of several projects.
2. Local studies for erosion reduction and/or flood prevention.
3. Studies for ground water mining reduction and/or potential for water conservation.
4. Localized studies of rural and agricultural nonpoint source pollution problems.
5. Analysis of special problems.
6. Other national conservation problems.

River basin studies are oriented toward problem solving. The final report should be useful to resource managers and decision-makers in understanding their resource problems and alternatives for solutions. Ordinarily, study products should lead to implementation decisions.

TYPES OF COOPERATIVE RIVER BASIN STUDIES

There are three types of river basin studies. They differ, mainly, in the extent of planning and amount of detail included. Most of Minnesota has been included in at least one of these studies (see Maps A and B). A brief explanation of each type of study and status follows:

1. Framework Studies and Assessments (Level A)

Framework studies and assessments are merged into the first and broadest level of planning. They are the evaluation or appraisal, on a broad basis, of the needs and desires of people for the conservation, development, and utilization of water and related land resource. Regions (hydrologic, political, economic, etc.) with complex problems will be identified which require more detailed investigations and analyses, and may recommend specific implementation plans and programs in the areas not requiring further study. They will consider federal, state and local means for solving resource problems and will be multiobjective in nature. These studies will not involve basic data collection, cost estimating, or detailed plan formulation. Completed studies include (See Map A):

- | | | | |
|----|--|----|---|
| a. | Great Lakes Basin
Authorized-1967
Status-Completed 1976
Prepared by the Great Lakes
Basin Commission | b. | Upper Mississippi River Basin
Authorized-1962
Status-completed 1972
Prepared by the Upper
Mississippi River Basin
coordinating Committee |
|----|--|----|---|

- | | | | |
|----|--|----|---|
| c. | Souris-Red-Rainy Basin
Authorized-1967
Status-completed 1972
Prepared by Souris-Red-Rainy
River Basin Commission | e. | Strategic Water Management
Plan/Hydrologic Unit Atlas
(Statewide Plan and Atlas)
Authorized-1993
Status-study underway
Prepared in the U.S. Dept. of
Agriculture. |
| d. | Missouri Basin
Authorized-1965
Status-completed in 1971
(updated 1973)
Prepared by Missouri Basin
Interagency Committee | | |

2. Regional or River Basin Plans

A regional (political, economic, etc.) or river basin plan (hydrologic region) is a preliminary or reconnaissance level water and related land plan for a selected area. These are prepared to resolve complex long-range problems identified by framework studies and the national assessment. They will vary widely in scope and detail, will involve federal, state, and local interest in plan development, and will identify and recommend plans and programs to be pursued by individual, federal, state, and local entities. They will be undertaken only where problems are interdisciplinary and of such complexity that an intermediate planning step is needed between framework and implementation level studies.

Regional or River Basin Studies (Type 2, 4, and Level B) completed include: (All are located on Map A except c, d, i and k which are located on Map B).

- | | | | |
|----|--|----|--|
| a. | Minnesota River Basin
Authorized-1970
Status-completed 1977
Prepared by Southern Minnesota
Rivers Basin Board | e. | Bois de Sioux-Mustinka Subbasin
Authorized-1970
Status-completed in 1972
Prepared by Souris-Red-Rainy
River Basin Commission |
| b. | Southern Minnesota Tributaries
Basin
Authorized-1970
Status-completed 1980
Prepared by U.S. Department of
Agriculture | f. | Des Moines River Basin
Authorized-1977
Status-completed 1984
Prepared by the U.S. Dept. of
Agriculture |
| c. | Minneapolis-St. Paul Regional
Area
Authorized-1973
Status-completed 1978
Prepared by Upper Mississippi
River Basin Commission | g. | Iowa Cedar River Basin
Authorized-1970
Status-completed 1976
Prepared by the U.S. Dept. of
Agriculture |
| d. | Upper Mississippi Main Stem
Authorized-1976
Status-completed 1980
Prepared by Upper Mississippi
River Basin Commission | h. | Big Sioux River Basin
Authorized-1965
Status-completed 1970
Prepared by the U.S. Dept. of
Agriculture |
| | | i. | Red River Basin
Request made-1976
Request withdrawn-1980 |

- | | |
|--|---|
| <p>j. Upper Ottertail River Basin
Authorized-1987
Status-completed 1991
Prepared by the U.S. Dept. of
Agriculture</p> | <p>m. Leech Lake River Basin Study
Request made-1991
Status-completed 1993
Prepared by the U.S. Dept. of
Agriculture</p> |
| <p>k. GREAT I
Authorized-1976
Status-completed 1980
Prepared by Corps of Engineers
and U.S. Fish and Wildlife
Service</p> | <p>n. Nemadji River Basin
Authorized-September 1993
Status-study completed 1996
Being prepared by the U.S. Dept.
of Agriculture</p> |
| <p>l. South Central Minnesota River
Basin
Request made-1989
Status-completed 1993
Prepared by the U.S. Department
of Agriculture</p> | <p>o. Thief/Red Lake River Basin
Authorized-September 1993
Status-completed 1996
Prepared by the U.S. Dept. of
Agriculture</p> |

3. Implementation Studies (Level C)

Implementation studies encompass the broad spectrum from preservation to full development of the resources. They can include administrative, legal, other non-development action programs, structural programs or a combination thereof to meet the study objectives. Plan formulation for implementation studies include multipurpose and multiobjective considerations, benefit and cost determinations-including all intangible aspects and cost allocation, and cost sharing and repayment analysis. Studies were completed for:

Upper Minnesota River Subbasin Study (PL 87-639)
Authorized-1975
Status-completed in 1989
Prepared by the U.S. Dept. of agriculture and Corps of Engineers
Map B

FLOOD HAZARD STUDIES

A flood hazard report provides detailed information concerning the nature and extent of flood hazards in a community. The reports include a description of the flood hazards and detailed maps and drawings defining the local hazard areas. They serve as a technical tool to enable local residents and officials to carry out an effective flood plain management program to minimize the risk of flood damage.

The NRCS performs flood hazard studies under the authority of Section 6 of Public Law 83-566 through a joint coordination agreement with the Minnesota Department of Natural Resources (MN-DNR), entered into in March 1972. This joint coordination agreement is derived from authority granted to MN-DNR by the 1969 legislature to coordinate federal, state, and local governmental units in their flood plain management activities.

Local officials desiring a flood hazard study of their community should contact the MN-DNR. Priorities for study are based on need for the study, including degree of development pressure, and the communities' willingness to contribute to the study.

- The NRCS has published the following reports for Minnesota Communities:
- City of Canby and Vicinity, Yellow Medicine County
- Vermillion River-City of Vermillion, City of Farmington-Dakota County
- Elm and Rush Creeks-Cities of Champlin, Corcoran, Dayton, Maple Grove, Medina, and Plymouth, Hennepin County
- North Fort Rush Creek-Cities of Maple Grove, Dayton and Corcoran, Township of Hassan, Hennepin County
- Pioneer Creek, Spruzem Creek, and Lake Ribins Tributary-Cities of Minnetrista, Independence, and Medina, Hennepin County