

A REPORT ON
POLLUTION OF THE UPPER MISSISSIPPI RIVER
AND
MAJOR TRIBUTARIES

U. S. DEPARTMENT OF THE INTERIOR
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION
GREAT LAKES REGION
TWIN CITIES-UPPER MISSISSIPPI RIVER PROJECT

JULY 1966

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SECTION I

INTRODUCTION AND BACKGROUND

INTRODUCTION

Authority for Study

In letters from Governor Karl A. Rolvaag of Minnesota and Governor John W. Reynolds of Wisconsin to Secretary Anthony J. Celebrezze of the Department of Health, Education, and Welfare on September 9, 1963, a request was made for action to abate pollution in the area as provided in Section 8 of the Federal Water Pollution Control Act (33 U.S.C. 466 et seq.).

In response to the request of the Governors, on September 23, 1963, Secretary Celebrezze sent letters calling for a conference on the matter of pollution of the waters of the Mississippi River and its tributaries to official water pollution control agencies for the States of Minnesota and Wisconsin.

A formal public announcement of the conference and the initiation of a resident study was made by the late President, John F. Kennedy, in a speech at Ashland, Wisconsin, on September 24, 1963.

The concern of the public as well as the urgency of the situation was demonstrated at the conference held in St. Paul, Minnesota on February 7 and 8, 1964. Both Governor Rolvaag of Minnesota and Governor Reynolds of Wisconsin participated in the conference and gave strong positive support to the need for effective pollution control action utilizing Federal, State and local resources.

Conclusions of Enforcement Conference

In light of the conference discussions, the conferees unanimously agreed to the following conclusions and recommendations:

1. Pollution in these waters from industries, municipalities and storm overflow sources has created a health hazard to persons engaging in

water contact activities, causes visual nuisances, interferes with fish and fishing, causes sludge banks which give off noxious odors and floating sludge, interferes with bottom aquatic life, and with feeding and spawning grounds for fish propagation. This pollution must be abated.

2. The Wisconsin and Minnesota water pollution control agencies have active water pollution control programs. The delays, if any, are those which may be expected to occur in the execution of the pollution abatement program of a large metropolitan area.

3. The Department of Health, Education, and Welfare in conjunction with both State agencies and in keeping with State staff and fund limitations, is to conduct an intensive survey of the Mississippi River. Participation is to be on a cooperative basis by all agencies, both on the technical level and in advisory and policy direction capacities. This study project is to include but not be limited to investigation of municipal, industrial, and Federal installation wastes, thermal sources of pollution, agricultural sources of pollution, bulk storage areas, pipelines, barges, coliform bacteria, BOD, suspended solids, sludge deposits, oil, algae, tastes and odors, pesticides, and with the cooperation of the Corps of Engineers, low flow augmentation. The study can be modified or expanded at the request of the technical committee.*

4. At the suggestion of a Wisconsin member, the conferees agreed that the study area be extended to include St. Croix Falls, Wisconsin, and Taylors Falls, Minnesota.

5. The study and report is to be planned and carried out so that features relating to Twin City metropolitan area sewage disposal will be completed, if at all possible, in time to report the findings and recom-

* See section on Project organization for further information on technical committee.

mendations by January, 1965, the opening of the 1965 Minnesota State Legislature.

6. This study is not a substitute for, but a supplement to, already existing state programs for pollution control and abatement.

7. At the completion of the study and the report of its findings, the conference will be reconvened at the call of the chairman of the conference to determine necessary action.

Objectives of Project

Based upon these conclusions the Twin Cities-Upper Mississippi River Project was established to carry out the following objectives:

1. To determine the extent of pollution in the rivers of the study area. The study area extends on the Mississippi River for 107 miles between its confluences with the Rum and Chippewa Rivers, on the Minnesota River from its mouth upstream 110 miles to Mankato, Minnesota, and on the St. Croix River from its mouth 55 miles upstream to Taylors Falls, Minnesota. (See Figure I-1).

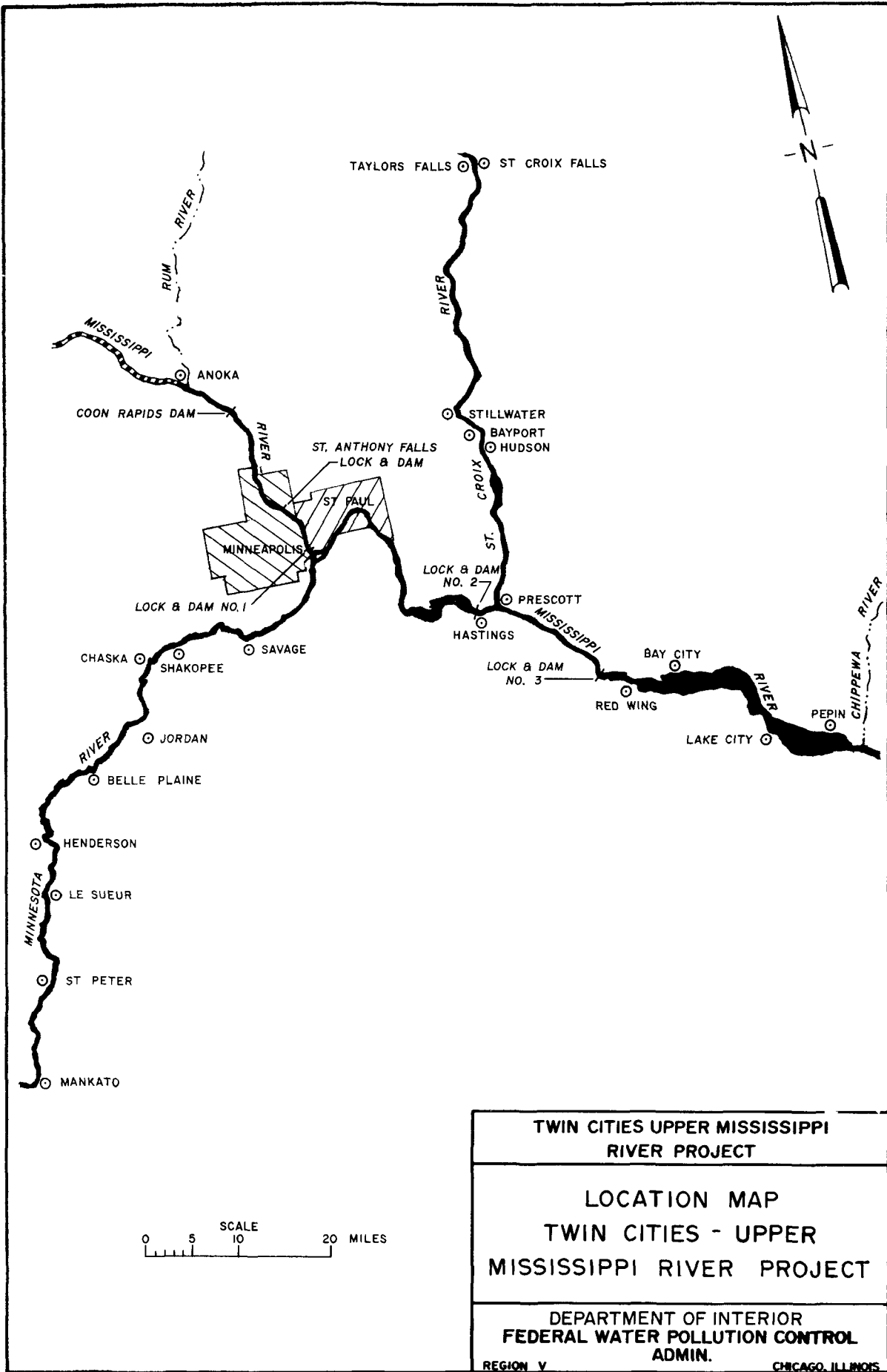
2. To investigate the principal sources of pollution and contributions from these sources.

3. To determine the effect of pollution on the numerous water uses.

4. To develop programs for the achievement of various water uses on rivers of the study area.

Project Organization

The Twin Cities-Upper Mississippi River Project was initiated as a special project of the Enforcement Branch of the Division of Water Supply and Pollution Control, Public Health Service. Immediate supervision was provided by the Project Director at Project Headquarters in Minneapolis, Minnesota. Administratively the Project was an activity of the Region V, Water Supply and Pollution Control Program.



**TWIN CITIES UPPER MISSISSIPPI
RIVER PROJECT**

**LOCATION MAP
TWIN CITIES - UPPER
MISSISSIPPI RIVER PROJECT**

**DEPARTMENT OF INTERIOR
FEDERAL WATER POLLUTION CONTROL
ADMIN.**

REGION V CHICAGO, ILLINOIS

Organizationally the Project was divided into three principal sections. They, in turn, were subdivided into units. The organizational structure and personnel roster are shown on pages I-5, I-6, and I-7.

One of the recommendations of the conferees was the establishment of a Technical Committee. Experience in similar Projects demonstrated the need for a group of appropriate persons whom the Project could continually inform of its activities. In consideration of the length and character of the Project plus the administrative procedures required for the establishment of technical advisory boards, a decision was made to appoint members of Federal, State, municipal, civic, and industrial water oriented groups to a Project Committee. The principal purpose of this committee was to receive and disseminate information on Project activities and to suggest areas of additional concern. A list of the committee members and their affiliations is given on page I-8.

Technical consultation was obtained from Dr. Richard S. Engelbrecht, Professor of Sanitary Engineering, University of Illinois; Dr. Lawrence B. Polkowski, Professor of Civil Engineering, University of Wisconsin; and specialists in the Public Health Service.

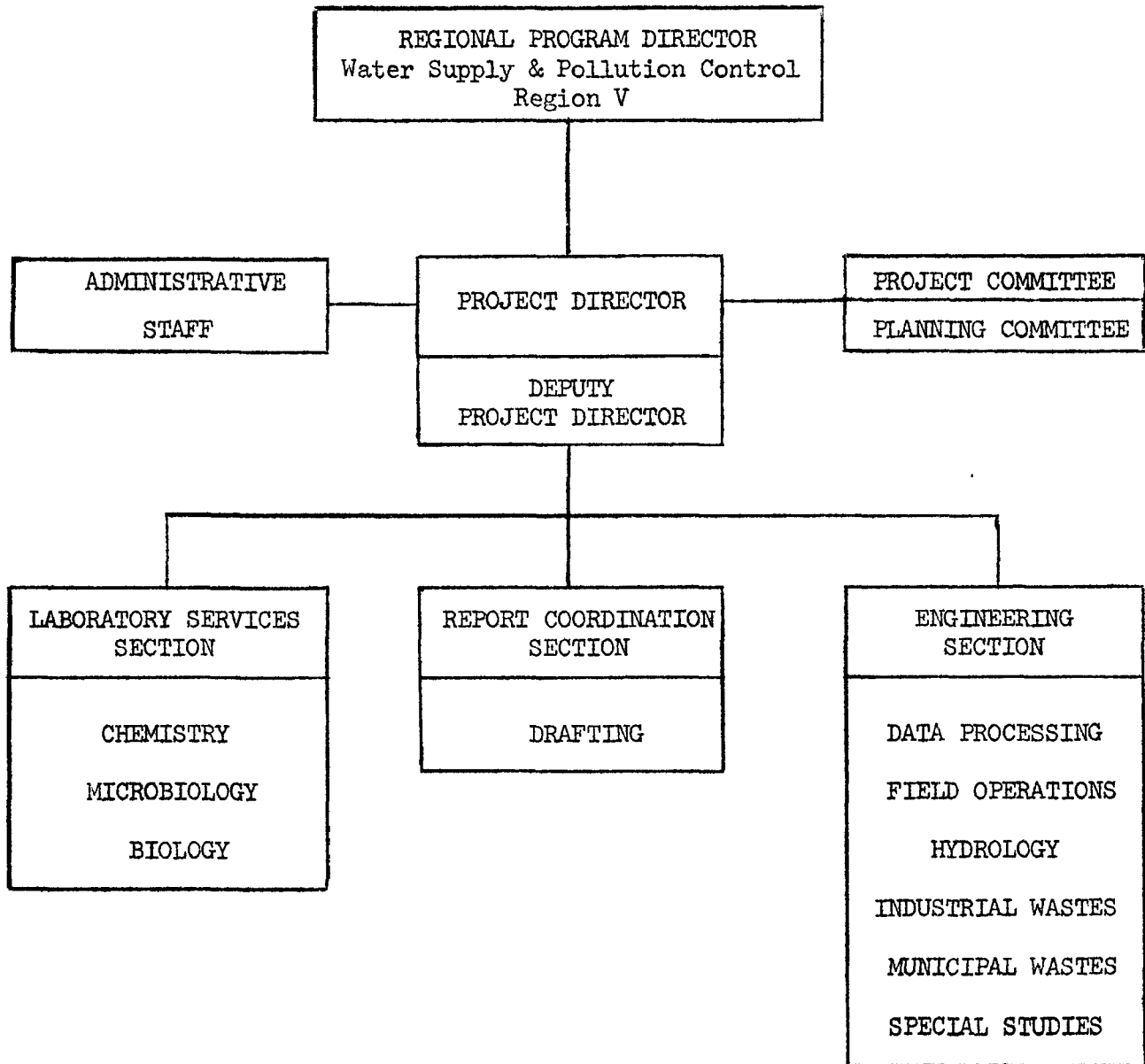
Operation of Project

Immediately following the assignment of a Director and part of the staff to the Project in late 1963, a conference report was prepared and procurement of adequate facilities, equipment, and personnel was initiated.

Space secured at the U.S. Naval Air Station in Minneapolis, Minnesota, required extensive modification and renovation of office and laboratory areas before occupancy. Office facilities were completed by mid-January, 1964. It was necessary to set up temporary laboratory facilities in a corridor for use from April until July, 1964, when the permanent laboratory became operational.

TWIN CITIES UPPER MISSISSIPPI RIVER PROJECT

ORGANIZATION CHART



TWIN CITIES UPPER MISSISSIPPI RIVER PROJECT

PROFESSIONAL STAFF

Albert C. Printz, Jr.
Resident Project Director
September 1963 - September 1964
Project Director
September 1964 - Present

John W. Arthur
Biologist

Bobby Gene Benefield
Chemist

John M. Rademacher
Project Director
September 1963 - September 1964

Ronald E. Gastineau
Chief, Field Operations Unit

Harry C. Grounds
Chief, Industrial Wastes Unit

William T. Sayers
Chief, Engineering Section
November 1963 - August 1964
Deputy Project Director and
Chief, Report Coordination Section
August 1964 - Present

Frank E. Hall
Chief, Hydrology Unit

Wm. Bliss Horning, II
Chief, Field Operations Unit & Biologist

Dale S. Bryson
Chief, Engineering Section
August 1964 - Present

William R. Norton
Chief, Data Processing Unit

William P. Schrader
Chemist

Thaddeus C. Kmiecik
Chief, Laboratory Services Section
March 1964 - November 1965

James L. Summers
Microbiologist

Wayne C. Tippetts
Microbiologist

SUPPORTING STAFF

Marvin J. Schley
Administrative Officer

Delores Fitch
Clerk-Stenographer

Michael A. Burg
Aquatic Sampler

Curtis A. Golden
Aquatic Sampler

June M. Clarke
Secretary

Eugene P. Hines
Boat Operator

Ronald A. Erickson
Laboratory Helper

Darlene M. Hundley
Clerk-Typist

Ronald B. Faanes
Chemist

Thomas A. Lee
Draftsman

Willis J. Munson
Aquatic Sampler

R. Thomas Olson
Aquatic Sampler

Robert E. Pearson
Biological Technician

Sharon A. Sovde
Clerk-Stenographer

Robert V. Speer
General Mechanic

Bertha M. Thompson
Clerk-Stenographer

William E. White
Aquatic Sampler

NOTE: This list includes all permanent personnel participating in part
or all of study.

PROJECT COMMITTEE

of

TWIN CITIES UPPER MISSISSIPPI RIVER PROJECT

State of Minnesota

| | | |
|-----------------|------------------------|---|
| L. H. Smith | Executive Engineer | Water Pollution Control Commission |
| F. L. Woodward | Director | Div. of Environmental Sanitation, Department of Health |
| W. H. Olson | Commissioner | Department of Conservation |
| A. W. Winter | President | Great Northern Oil Co. |
| K. L. Mick | Supt. & Chief Engineer | Minneapolis-St. Paul Sanitary District |
| P. S. Duff, Jr. | Editor | Downstream Communities |
| R. A. Haik | Attorney | Member of President's Water Pollution Control Advisory Board |

State of Wisconsin

| | | |
|------------------|-------------------|---|
| T. F. Wisniewski | Director | Committee on Water Pollution |
| O. J. Muegge | Sanitary Engineer | State Health Department |
| L. F. Motl | Chief Engineer | Conservation Department |
| P. Pratt * | Director | Dept. of Resource Development |
| H. J. Krauss | Member | Advisory Committee to the Wisconsin Department of Resource Development |
| L. V. Spriggle | Citizen | Water Use Groups |
| Martin Hanson | President | Council of Resource Development and Conservation |

Public Health Service

| | |
|----------------------------|---|
| H. W. Poston (Chairman) | Regional Program Director, DWS&PC, Region V, Chicago |
| H. C. Clare | Regional Program Director, DWS&PC, Region VI, Kansas City |
| P. G. Kuh | Enforcement Branch, DWS&PC, Washington, D.C. |

* Replaced F. P. Zeidler, former Director.

Detailed program plans based on Project objectives were prepared following review of available existing information. Planning began with the development of a final report outline in sufficient detail to indicate what information would be required. Then, individual studies needed to obtain this information were formulated. Planning was completed with the development of an operating schedule in the form of a program control chart in which the dates for completion of the various phases of each study were set.

As each study progressed and a greater familiarity with the problems was achieved, plans and schedules were revised as necessary to maintain a realistic program. The program control chart is shown in Figure I-2.

The studies were divided into two general categories: those for determination of waste sources and water quality and those for projecting water uses.

The following studies were conducted for the purpose of determining waste sources and water quality:

1. Municipal waste surveys
2. Industrial waste surveys
3. Routine and intensive stream surveys
4. Special studies
 - a. Storm water overflow
 - b. Accident potential
 - c. Virus and pathogenic bacteria
 - d. Fish flesh taste evaluation
 - e. Ice cover effects
5. Terminal monitoring program