

**REPORT OF THE COMMISSION OF
ENGINEERS APPOINTED TO INVESTIGATE
AND REPORT A PERMANENT PLAN
FOR THE RECLIMATION OF THE
ALLUVIAL BASIN OF THE MISSISSIPPI
RIVER, SUBJECT TO INUNDATION**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649691012

Report of the Commission of Engineers Appointed to Investigate and Report a Permanent Plan for the Reclamation of the Alluvial Basin of the Mississippi River, Subject to Inundation by United States Commission of the Mississippi River

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Cover @ 2017

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UNITED STATES COMMISSION OF THE MISSISSIPPI RIVER

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SUBJECT TO INUNDATION.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1875.

ALLUVIAL BASIN OF THE MISSISSIPPI RIVER.

M E S S A G E

FROM THE

PRESIDENT OF THE UNITED STATES,

TRANSMITTING

A report of the Commission of Engineers appointed to investigate and report a permanent plan for the reclamation of the alluvial basin of the Mississippi River subject to inundation.

JANUARY 25, 1875.—Referred to the Select Committee on Mississippi Levees and ordered to be printed.

To the Senate and House of Representatives :

I have the honor to transmit herewith the report of the Commission of Engineers appointed, in compliance with the act of Congress approved June 22, 1874, to investigate and report a permanent plan for the reclamation of the alluvial basin of the Mississippi River subject to inundation.

U. S. GRANT.

EXECUTIVE MANSION, *January 25, 1875.*

WAR DEPARTMENT,
Washington City, January 23, 1875.

SIR: I have the honor to transmit copy of the report of the Board of Commissioners appointed, under the act approved June 22, 1874, "to investigate and report a permanent plan for the reclamation of the alluvial basin of the Mississippi River subject to inundation."

I inclose a copy of the order appointing the board, (General Orders No. 73, of 1874.)

Very respectfully, your obedient servant,

WM. W. BELKNAP,
Secretary of War.

The PRESIDENT OF THE UNITED STATES.

General Orders No. 75.

WAR DEPARTMENT,
ADJUTANT-GENERAL'S OFFICE,
Washington, July 2, 1874.

By direction of the President, Major G. K. Warren, Major H. L. Abbot, and Captain W. H. H. Benyard, Corps of Engineers United States Army, are hereby assigned, and Jackson E. Sickles and Paul O. Hébert appointed, to serve as a board of commissioners under the act approved June —, 1874, "to provide for the appointment of a commission of engineers to investigate and report a permanent plan for the reclamation of the alluvial basin of the Mississippi River subject to inundation."

Major Warren is designated as president of the board.

Captain Benyard is designated as disbursing officer for the appropriation provided by section 3 of the act.

The board will assemble at Newport, Rhode Island, on the 20th instant, or as soon thereafter as practicable, for the purpose of organizing and entering upon the performance of their duties.

The following is the act of Congress above referred to :

AN ACT to provide for the appointment of a commission of engineers to investigate and report a permanent plan for the reclamation of the alluvial basin of the Mississippi River subject to inundation.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the President be, and he is hereby, authorized and directed to assign three officers of the Corps of Engineers United States Army, and to appoint two civil engineers eminent in their profession, and who are acquainted with the alluvial basin of the Mississippi River, to serve as a board of commissioners; the president of said board to be designated by the President of the United States. It shall be the duty of said commission to make a full report to the President of the best system for the permanent reclamation and redemption of said alluvial basin from inundation, which report the President shall transmit to Congress at its next session, with such recommendations as he shall think proper.

SEC. 2. That the members of the commission who may be appointed from civil life shall receive compensation at the rate of five thousand dollars per annum. The commission may employ a secretary, at a rate of compensation not exceeding two hundred dollars per month for the time he is employed; and the necessary traveling expenses of the members of the commission not officers of the Army, and of the secretary, shall be paid, upon the approval of bills for the same, by the Secretary of War.

SEC. 3. That the sum of twenty-five thousand dollars, or so much thereof as may be necessary to carry into effect the foregoing provisions, is hereby appropriated, and shall be subject to disbursement by the Secretary of War in accordance with the provisions of this act.

Approved June 22, 1874.

By order of the Secretary of War.

THOMAS M. VINCENT,
Assistant Adjutant-General.

OFFICE OF THE CHIEF OF ENGINEERS,
Washington, D. C., January 22, 1875.

SIR: I transmit herewith the report to His Excellency the President of the United States of the board of commissioners appointed to examine into the question of protecting the alluvial lands of the Mississippi River against inundation.

I beg leave to say that the views, plan, and recommendations of this board meet with my full concurrence. The surveys proposed by the board are equally necessary, whatever system of administration may be adopted for executing the plan of protection proposed.

Compared to the magnitude of the work, the estimated cost of these surveys is small. They are essential to determine the exact location,

dimensions, and cost of the levees, and may proceed simultaneously with the execution of the plan of protection. They should be begun at once, and the sum of \$160,000 is their estimated cost for the first year, the appropriation of which is recommended. Their total cost, extending over a period of three years, is estimated to be \$300,000.

A wide distribution of this report is very desirable, both in the alluvial region and to the engineering profession; and as its cost will be comparatively small, (the report making about 135 printed octavo pages,) the printing of 10,000 copies is respectfully recommended.

I have the honor to be, very respectfully,

A. A. HUMPHREYS,

Brigadier General and Chief of Engineers.

Hon. WILLIAM W. BELKNAP,
Secretary of War.

WASHINGTON, D. C., *January 18, 1875.*

GENERAL: As the president of the commission, I have the honor to transmit through you the report made in accordance with "An act to provide for the appointment of a commission of engineers to investigate and report a permanent plan for the reclamation of the alluvial basin of the Mississippi River subject to inundation," approved June, 1874.

This act authorized the President of the United States "to assign three officers of the Corps of Engineers, United States Army, and to appoint two civil engineers, eminent in their profession, and who are acquainted with the alluvial basin, to serve as a board of commissioners." The assignments and appointments were made by General Orders No. 73, War Department, Adjutant General's Office, Washington, July 2, 1874. The act itself is printed in this order.

The officers of the Engineer Corps United States Army thus empowered were the undersigned, Maj. Henry L. Abbot and Capt. W. H. H. Benyaurd; the civil engineers were Mr. Jackson E. Sickles and Mr. Paul O. Hébert. The act authorized the appointment of a secretary to the commission, and Mr. Charles M. Fautleroy was appointed.

The wording of the act of Congress makes it "the duty of said commission to make a full report to the President," and we have therefore addressed the report to him, but it is transmitted through your Office, which has been the channel of all the official communications of the commission.

The foundation of the report of the commission rests upon your invaluable surveys and investigations, which, begun in 1850 and continued till 1861, are published in the great work "The Physics and Hydraulics of the Mississippi River, and upon the protection of the alluvial region against overflow," &c., and upon the further contributions to these subjects contained in your published official reports in 1866 and 1869. The commission has obtained the additional data upon subsequent floods, and the results of the more recent experience in building and rebuilding levees, as far as they are attainable, so that their report is in a great measure exhaustive of the subject, and the conclusions reached may be considered entitled to confidence.

The only want of information that now exists, is in regard to the exact configuration of the land and water, which is as yet too indefinite to enable exact and proper location of levees to be made. The commission estimates that the necessary hydrographical and topographical

surveys will occupy three years, and cost about \$300,000. These surveys should be begun at once, and \$160,000 is desired for the first year. The results of the surveys can be almost immediately made applicable to levee location, and construction.

The report is divided into a general report, and four special reports, forming chapters to the general report, the whole accompanied by seven appendices and five diagrams.

The plan recommended for a permanent system of reclamation of the alluvial lands subject to inundation will be found at the end of the general report. Special attention is called to its position in the general report, as it cannot be given in more condensed form than as it there appears. A table of contents enables any part of the report to be readily referred to.

The commission regard it as important that a large edition of the whole report should be published for general distribution among the residents of the alluvial regions, in order that a general comprehension of the whole subject be made to reach every locality.

It is very necessary that the five diagrams should accompany the printed report. To facilitate doing this, the diagram relative to the heights of recent floods has been already engraved, and can be furnished, as rapidly as needed, at the mere cost of printing and paper. The other four diagrams are the monthly rain-charts of the United States Signal Corps, for the months of February, March, April, and May, 1874. These can probably be obtained also, as fast as needed, at the cost of printing and paper.

There have been considerable valuable data, contained in records, maps, and diagrams, obtained by the commission, which are not attached to their report. These will be sent to engineer headquarters, with a special communication respectfully requesting that they be placed on file for preservation and future consultation.

The commission is indebted for valuable assistance, such as records of observations, from officers of the Engineer Corps, United States Army, in charge of western river improvements; from General Albert J. Myer, Chief Signal-Officer United States Army; and from numerous gentlemen in various State or local offices, or in private life. A more extended notice of all these contributions will be found in the different special reports to which they relate.

Very respectfully, your obedient servant,

G. K. WARREN,

Major Engineers and Brevet Major-General, U. S. A.,

President of Commission.

Brig. Gen. A. A. HUMPHREYS,

Chief of Engineers United States Army.

REPORT AND PLAN

FOR THE

RECLAMATION OF THE ALLUVIAL BASIN OF THE MISSISSIPPI
RIVER SUBJECT TO INUNDATION,

BY

THE BOARD OF COMMISSIONERS APPOINTED UNDER ACT OF CONGRESS
APPROVED JUNE, 22, 1874.
