

recreational opportunities; none of them restore riverine habitat. Each diversion alternative could pass a 1-percent chance flood with minor emergency measures and a 0.2-percent chance flood with emergency measures similar to those used successfully in the 2009 flood. They all provide nearly the same level of flood damage reduction economic benefits and residual damages (total average annual economic benefits in excess of \$172 million), but their net benefits are different due to differences in total project cost. A breakdown of the net benefits and residual damages associated with each of the diversion alternatives is provided in Table 4.

**Table 4 – Efficiency of plans – Net Benefits (all dollar values are in thousands)**

	<b>NO Action</b>	<b>LPP</b>	<b>FCP</b>	<b>ND35k</b>
Net Benefits of Plan (NED)	\$0	\$74,219	\$100,433	\$87,565
Residual Damages	\$194,800	\$32,000	\$30,000	\$32,000

The LPP and ND35K plans reduce flood risk from the Red and Wild Rice rivers plus four tributaries, while the FCP (along a Minnesota alignment) addresses only the Red and Wild Rice rivers. This was a key tradeoff for the non-federal sponsors that led to their request for the LPP on the North Dakota alignment.

All three of the action alternatives satisfy most of the planning constraints; they comply with international agreements, have no impacts on the Buffalo Aquifer in Minnesota, and comply with Executive Order 11988, Floodplain Management. However, none of the action alternatives avoided increasing peak Red River flood stages at all locations. The location and magnitude of stage increases are two significant tradeoffs between the alternatives.

The LPP causes upstream stage increases of up to 8.25 feet in the storage and staging areas and maximum downstream increases of less than four inches for a 1-percent chance event. Non-structural measures including buyouts, relocations, ring levees and easements will be used to mitigate for the upstream impacts to landowners. The ND35K plan and FCP cause much smaller stage increases (up to 2.1 feet) over a much larger downstream area along 250 river miles. The economic costs of these impacts and mitigation measures are reflected in the net benefits presented in Table 4. Although the Corps would not require mitigation for minor stage increases that did not rise to the level of a taking under the Fifth Amendment to the U.S. Constitution, the sponsors determined that downstream impacts of the ND35K plan were unacceptable, and they preferred to mitigate for upstream impacts in the smaller defined storage and staging areas included in the LPP.

The LPP is the most robust of the three action alternatives. The project features could withstand floods larger than a 0.2-percent chance event without overtopping into the benefitted area. The ND35K plan and the FCP would be overwhelmed by events larger than the 0.2-percent chance event.

# Executive Orders

## Executive Order 11988--Floodplain management

**Source:** The provisions of Executive Order 11988 of May 24, 1977, appear at 42 FR 26951, 3 CFR, 1977 Comp., p. 117, unless otherwise noted.

By virtue of the authority vested in me by the Constitution and statutes of the United States of America, and as President of the United States of America, in furtherance of the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 *et seq.*), the National Flood Insurance Act of 1968, as amended (42 U.S.C. 4001 *et seq.*), and the Flood Disaster Protection Act of 1973 (Public Law 93-234, 87 Stat. 975), in order to avoid to the extent possible the long and short term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative, it is hereby ordered as follows:

**Section 1.** Each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities for (1) acquiring, managing, and disposing of Federal lands, and facilities; (2) providing Federally undertaken, financed, or assisted construction and improvements; and (3) conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

**Sec. 2.** In carrying out the activities described in Section 1 of this Order, each agency has a responsibility to evaluate the potential effects of any actions it may take in a floodplain; to ensure that its planning programs and budget request reflect consideration of flood hazards and floodplain management; and to prescribe procedures to implement the policies and requirements of this Order, as follows:

**(a)(1)** Before taking an action, each agency shall determine whether the proposed action will occur in a floodplain--for major Federal actions significantly affecting the quality of the human environment, the evaluation required below will be included in any statement prepared under Section 102(2) (C) of the National Environmental Policy Act. This Determination shall be made according to a Department of Housing and Urban Development (HUD) floodplain map or a more detailed map of an area, if available. If such maps are not available, the agency shall make a determination of the location of the floodplain based on the best available information. The Water Resources Council shall issue guidance on this information not later than October 1, 1977.

(2) If an agency has determined to, or proposes to, conduct, support, or allow an action to be located in a floodplain, the agency shall consider alternatives to avoid adverse effects and incompatible development in the floodplains. If the head of the agency finds that the only practicable alternative consistent with the

law and with the policy set forth in this Order requires sitting in a floodplain, the agency shall, prior to taking action, (i) design or modify its action in order to minimize potential harm to or within the floodplain, consistent with regulations issued in accord with Section 2(d) of this Order, and (ii) prepare and circulate a notice containing an explanation of why the action is proposed to be located in the floodplain.

(3) For programs subject to the Office of Management and Budget Circular A-95, the agency shall send the notice, not to exceed three pages in length including a location map, to the state and areawide A-95 clearinghouses for the geographic areas affected. The notice shall include: (i) the reasons why the action is proposed to be located in a floodplain; (ii) a statement indicating whether the action conforms to applicable state or local floodplain protection standards and (iii) a list of the alternatives considered. Agencies shall endeavor to allow a brief comment period prior to taking any action.

(4) each agency shall also provide opportunity for early public review of any plans or proposals for actions in floodplains, in accordance with Section 2(b) of Executive Order No. 11514 as amended, including the development of procedures to accomplish this objective for Federal actions whose impact is not significant enough to require the preparation of an environmental impact statement under section 102(2)(C) of the National Environmental Policy Act of 1969, as amended.

**(b) Any requests for new authorizations or appropriations transmitted to the Office of Management and Budget shall indicate, if an action to be proposed will be located in a floodplain, whether the proposed action is in accord with this Order.**

**(c) Each agency shall take floodplain management into account when formulating or evaluating any water and land use plans and shall require land and water resources use appropriate to the degree of hazard involved. Agencies shall include adequate provision for the evaluation and consideration of flood hazards in the regulations and operating procedures for the licenses, permits, loan or grants-in-aid programs that they administer. Agencies shall also encourage and provide appropriate guidance to applicants to evaluate the effects of their proposals in floodplains prior to submitting applications for Federal licenses, permits, loans or grants.**

**(d) As allowed by law, each agency shall issue or amend existing regulations and procedures within one year to comply with this Order. These procedures shall incorporate the Unified National Program for Floodplain Management of the Water Resources Council,<sup>1</sup> and shall explain the means that the agency will employ to pursue the nonhazardous use of riverine, coastal and other floodplains in connection with the activities under its authority. To the extent possible, existing processes, such as those of the Council on Environmental Quality and the Water Resources Council, shall be utilized to fulfill the requirements of this Order. Agencies shall prepare their procedures in consultation with the Water Resources Council, the Director of the Federal Emergency Management Agency, and the Council on Environmental Quality, and shall update such procedures as necessary.**

[Sec. 2 amended by Executive Order 12148 of July 20, 1979, 44 FR 43239, 3 CFR, 1979 Comp., p. 412]

**Sec. 3.** In addition to the requirements of Section 2, agencies with responsibilities for Federal real property and facilities shall take the following measures:

(a) The regulations and procedures established under Section 2(d) of this Order shall, at a minimum, require the construction of Federal structures and facilities to be in accordance with the standards and criteria and to be consistent with the intent of those promulgated under the National Flood Insurance Program. They shall deviate only to the extent that the standards of the Flood Insurance Program are demonstrably inappropriate for a given type of structure or facility.

(b) If, after compliance with the requirements of this Order, new construction of structures or facilities are to be located in a floodplain, accepted floodproofing and other flood protection measures shall be applied to new construction or rehabilitation. To achieve flood protection, agencies shall, wherever practicable, elevate structures above the base flood level rather than filling in land.

(c) If property used by the general public has suffered flood damage or is located in an identified flood hazard area, the responsible agency shall provide on structures, and other places where appropriate, conspicuous delineation of past and probable flood height in order to enhance public awareness of and knowledge about flood hazards.

(d) When property in floodplains is proposed for lease, easement, right-of-way, or disposal to non-Federal public or private parties, the Federal agency shall (1) reference in the conveyance those uses that are restricted under identified Federal, State or local floodplain regulations; and (2) attach other appropriate restrictions to the uses of properties by the grantee or purchaser and any successors, except where prohibited by law; or (3) withhold such properties from conveyance.

**Sec. 4.** In addition to any responsibilities under this Order and Sections 202 and 205 of the Flood Disaster Protection Act of 1973, as amended (42 U.S.C. 4106 and 4128), agencies which guarantee, approve, regulate, or insure any financial transaction which is related to an area located in a floodplain shall, prior to completing action on such transaction, inform any private parties participating in the transaction of the hazards of locating structures in the floodplain.

**Sec. 5.** The head of each agency shall submit a report to the Council on Environmental Quality and to the Water Resources Council on June 30, 1978, regarding the status of their procedures and the impact of this Order on the agency's operations. Thereafter, the Water Resources Council shall periodically evaluate agency procedures and their effectiveness.

**Sec. 6.** As used in this Order:

(a) The term "agency" shall have the same meaning as the term "Executive agency" in Section 105 of Title 5 of the United States Code and shall include the military departments; the directives contained in this Order, however, are meant to apply only to those agencies which perform the activities described in Section 1 which are located in or affecting floodplains.

(b) The term "base flood" shall mean that flood which has a one percent or greater chance of occurrence in any given year.

(c) The term "floodplain" shall mean the lowland and relatively flat areas adjoining inland and coastal waters including floodprone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year.

**Sec. 7.** Executive Order No. 11296 of August 10, 1966, is hereby revoked. All actions, procedures, and issuances taken under that Order and still in effect shall remain in effect until modified by appropriate authority under the terms of this Order.

**Sec. 8.** Nothing in this Order shall apply to assistance provided for emergency work essential to save lives and protect property and public health and safety, performed pursuant to sections 305 and 306 of the Disaster Relief Act of 1974 (88 Stat. 148, 42 U.S.C. 5145 and 5146).

**Sec. 9.** To the extent the provisions of section 2(a) of this Order are applicable to projects covered by Section 104(h) of the Housing and Community Development Act of 1974, as amended (88 Stat. 640, 42 U.S.C. 5304(h)), the responsibilities under those provisions may be assumed by the appropriate applicant, if the applicant has also assumed, with respect to such projects, all of the responsibilities for environmental review, decisionmaking, and action pursuant to the National Environmental Policy Act of 1969, as amended.

<sup>1</sup>**Editorial note:** Inactive as of Oct. 1, 1982.

**The U.S. National Archives and Records Administration**

1-86-NARA-NARA or 1-866-272-6272