

Review of Federal Reports on a Unified National Program for Floodplain Management, 1966-1994

Appendix B

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1 Introduction

This attachment provides a review and analysis of the views on “wise use of floodplains” and federal flood risk management policy goals and responsibilities as expressed in the series of federal reports on “a unified national program for floodplain management,” as well as the precursor report to that report series. The latter, House Document (HD) 465, *A Unified National Program for Managing Flood Losses* released in 1966, called for a coordinated national program for managing flood risks (U.S. Task Force on Federal Flood Control Policy, 1966). The first report in the unified national report (UNP) series, *A Unified National Program for Floodplain Management*, was published in 1976 (U.S. Water Resources Council, 1976) in response to a directive in the 1968 National Flood Insurance Act. That UNP document was then updated and revised in separate report updates published in 1979 (U.S. Water Resources Council, 1979) and then again in 1986 and 1994 (Federal Interagency Floodplain Management Task Force, 1986 and 1994). These reports are reviewed briefly below in order to place the UNP reports in the broader historical context of national flood risk management and floodplain land use policies that preceded and followed those reports.

This review focuses on report perspectives on recommended federal policy goals and responsibilities for managing flood risks. The 1976, 1979, and 1986 UNP reports are considered together, since they are identically structured and offer the same basic perspectives on federal goals and responsibilities. The way in which these reports define the term “floodplains” is outlined in Box 1 on the following page. Tabular overviews of the reports are provided at the end of the narrative in Table 1a (HD 465), Table 1b (1976, 1979 & 1986 UNP reports), and Table 1c (1994 UNP report).

2 A Unified National Program for Managing Flood Losses (HD 465), 1966

The HD 465 report grew out of a request by the US Bureau of the Budget to Dr. Gilbert White for a consultant report on the status of federal flood control activities. Dr. White counter-proposed to the Bureau that he instead chair an effort of a Task Force that would be requested by the administration and would include a small group of representatives from federal agencies and outside experts.

Although the title of the resulting report refers to a national program for “managing flood losses,” Dr. White remarked in a 1993 interview, “I would have liked to have had it speak on making best use of the floodplains. But people thought that would be pushing it too far, that it would be a more attractive and supportable set of recommendations if the title were reducing or managing flood losses...” (Reuss, 1993; Pages 48-49). That statement reflects the report’s

focus on defining best use of the nation’s floodplains, and recommending federal policies and actions to advance that goal.

Box 1. Definitions for “Floodplains” in HD 465 and the UNP Reports

1966 HD 465: “A streambed and the flood plain lands immediately adjacent to it are integral parts of every watercourse. The flood plain is formed from sediment deposits or removal accompanying the natural, intermittent overflow of the stream above its ordinary bed...Coastal land such as bars, ridges, and deltas that are formed by the coastal current occupy a position relative to the sea that flood plains do to rivers. Typically, a river uses some portion of its flood plain about once in 2 to 3 years. At average intervals, say 25, 50, or 100 years, the river may inundate its entire flood plain to a considerable depth.” (page 13)

1976 UNP: “Flood plains are areas adjoining a river, stream, watercourse, ocean or lake, or other body of standing water that have been or may be covered by floodwater.” (page III-3)

1979 and 1986 UNP: “Floodplains are the lowland and relatively flat areas adjoining inland and coastal waters, and those other areas subject to flooding.” (page III-3)

1994 UNP: “Floodplains are the relatively low areas adjacent to rivers, lakes, and oceans that are periodically inundated.” (page 7)

The report asserts, “Public policy should seek to foster the efficient use of the bottom lands for the common good but it will fail in this so long as it is out of harmony with certain principles.” It identifies the principle of *national economic efficiency* and the related principles of *individual and social responsibility* as the basis for defining best use.

The efficiency principle starts from the premise that “use of floodplains involving periodic damage from floods is not, in itself, a sign of unwarranted or inefficient development,” since floodplain land use may produce substantial benefits in relation to costs. If the benefits of some floodplain use exceed all associated costs, where the latter include the direct use and flood damage costs borne by the floodplain occupant and as well as any costs shifted to others—such as public subsidies for flood control works, and public relief and rehabilitation assistance following floods—then that use can be said to be an economically efficient use.

The normative premise of individual responsibility starts from the idea that economically efficient floodplain use decisions can be fostered only if the decision-makers who reap the benefits of floodplain occupancy also bear the costs of that occupancy, and thus consider those costs in their decision-making.

The corollary principle of social responsibility recognizes that public policy, in the interest of promoting social equity as well as economic efficiency, should “discourage floodplain

development which would impose a later burden on the federal taxpayer, which would benefit some only at the expense of others, and which would victimize unsuspecting citizens.”

In short, the report recognizes that floodplain use is the result of many separate decisions made cumulatively over time primarily by individuals and local governments, and defines the best use concept in terms of the decision-making processes of these actors. Specifically, it asserts that floodplain use decisions will result in best use only insofar as the decision-makers consider their anticipated benefits in relation to all associated costs of floodplain use. That is, the report defines best use of floodplains as the result of **risk informed and cost-responsible decision-making by floodplain occupants**. The implication is that, if decisions on development in the floodplain were based on informed and cost-responsible decision-making processes, then whatever floodplain use outcomes that resulted from those decisions could be judged to be best use.

The report therefore concludes that the primary focus of federal policy should be on ensuring that floodplain decision-makers 1) are provided with accurate information on flood risks, since those risks necessarily affect the expected private benefits and costs of floodplain use decisions, and 2) internalize (bear) the costs of their floodplain use, so that those costs are factored into their decision-making.

The report notes three specific shortcomings of the national flood policies and programs that were in place in the early 1960s with respect to the above perspective on federal policy goals. These included:

- Inadequate public recognition of a) flood hazards and b) the limited ability of engineered flood control structures to eliminate flood hazards.
- Inordinate reliance on flood hazard reduction projects relative to other flood risk reduction actions that reduce exposure (e.g., land use regulation and permanent evacuation), reduce vulnerability (e.g., flood proofing of buildings and emergency warning and evacuation) and increase individual and community resiliency.
- The report argues that the imbalance in approaches is partly attributable to a cost distribution where beneficiaries of federally-authorized flood hazard reduction structures did not pay an adequate share of the project costs, and floodplain occupants in both protected and unprotected areas may anticipate receiving federal relief and rehabilitation assistance following damaging floods.

With respect to the last point, the report concludes, “The general public, by bearing all or a major part of the cost of flood protection works and lessening the individual’s damage costs, further subsidizes their use of the flood plain. Principles of economic efficiency and social equity are thereby violated.” HD 465 provides recommendations directed to federal agencies and the then-standing US Water Resources Council that were intended to move the nation towards risk

informed and cost-responsible decision-making by floodplain users. The introduction to the summary recommendations states, “While flood protection of existing property should receive public support, supplemental measures should assure that future developments in the floodplains yield benefits in excess of their costs to the nation. This would require a new set of initiatives by established federal agencies with the aid of state agencies to stimulate and support sound planning at the local government and citizen level.” The recommended federal actions were grouped under five major themes:

1. “To improve basic knowledge about flood hazard,” which is a call to federal agencies to develop and communicate improved flood risk information.
2. “To provide technical assistance to managers of floodplain property,” which relates to federal assistance and advice for specific localities and their floodplain occupants on measures they could take to reduce their exposure and vulnerability and increase their resiliency to flooding.
3. “To coordinate and plan new developments in the floodplain,” which recognizes the limits of federal influence on local land use decision-making and is focused on federal encouragement and support for non-federal floodplain land use regulation. Furthermore, the benefit cost test would apply to regulations as well to all other “human adjustments” (to use G. White’s term) to flood risk. In this important sense, land use regulation was not intended to mean “no use”.
4. “To adjust federal flood control policy to sound criteria and changing needs,” meaning increased cost-share requirements for state and local beneficiaries of federally-assisted flood hazard reduction projects. It is worth noting that significant increases in cost shares were realized by WRDA 1986. It is also worth noting that the federal financial commitment to such projects has significantly fallen since the late 1970s.
5. “To move toward a practical national program for flood insurance,” which relates to pilot testing and then establishing actuarially-based insurance for floodplain occupancy. This was a compromise from the concept of a “land occupancy charge” that is discussed earlier in the report. It is worth noting that this program was to apply in the whole of the floodplain and not be organized around lands subject to the 1% annual chance flood event (i.e., the base floodplain).

Some of the recommendations draw attention to actions designed to directly advance floodplain planning and regulation by states and localities, and measures that individuals could take to reduce their exposure and vulnerability to flooding, and to be more resilient after floods occur. However, these suggestions and the attention drawn to them are intended to expand the range of possible responses to flood risk that would follow from informed and cost-responsible decision-making by floodplain users.

For example, with regards to the recommendation on standing-up a national flood insurance program, the report includes an extended discussion of the desirable results of requiring an occupancy charge (in the form of an insurance premium) on new floodplain developments that is actuarially-based (i.e. variable rates based on the degree of flood risk faced by each specific property as determined by experts). One desirable result is that premium rates for new developments would provide specific information to potential floodplain users indicating the potential flood damage costs of prospective use decisions, which would serve to discourage uneconomic development. Another desirable result is that occupancy charges would generate support for appropriate floodplain regulation to reduce the costs of floodplain use, and provide incentives to individuals to adopt flood-proofing and related measures that could reduce damage potential and thus the premiums they face. And flood insurance would serve to indemnify floodplain occupants for flood losses incurred, which would reduce their need for public relief. With regards to these desired outcomes, the report states, "Objectives of any degree of flood insurance should be to achieve flood damage abatement, an efficient use of the floodplain, and to provide financial relief at times of flooding. Achieving a sensible use of the floodplain lands would be equally or more important than the indemnification of loss."

This quotation warrants some further discussion. First, what was uneconomic location and what was the appropriate adjustment to the flood risk would be determined by the individual and community after they took into consideration the premium cost. Also, note that the payout of the insurance policy would in effect be disaster aid.

Beginning in the Truman Administration, there were recommendations for a federal program of flood insurance. The logic offered was that floodplain occupants would contribute to their disaster aid through the premiums paid. The idea that the premium itself was a way to directly influence choice behavior was a significant insight offered by HD 465.

3 A Unified National Program for Floodplain Management, 1976, 1979 & 1986

The 1976, 1979 and 1986 reports represent three of the four published reports in the UNP series that grew out of an initial directive included in the National Flood Insurance Act of 1968. That act created what is now known as the National Flood Insurance Program that is now administered by the Department of Homeland Security, Federal Emergency Management Agency (FEMA). Noting that "the objectives of a flood insurance program should be integrally related to a uniform national program for floodplain management," the act required the President to transmit to the Congress "further proposals necessary for such a uniform program."

The 1976 and 1979 UNP reports were prepared by the US Water Resources Council and focused on "the coordination and improvement of existing programs necessary to achieve a unified approach to management of the nation's floodplains." The 1979 update was prepared "to reflect the increased concern for natural floodplain values enunciated in Executive Order 11988," the 1977 Presidential directive to federal agencies on floodplain management. The 1986

report was prepared by the Interagency Floodplain Management Task Force, which was chaired by FEMA and included representatives of several other federal agencies. The stated purpose of the 1986 report was to reflect floodplain management progress made since 1979.

These three UNP reports are identically structured and in many parts use the same or very similar language. The reports focus on floodplain management, which they assert is concerned with “a wise choice among uses competing for a limited number of locations.” The reports present what they say is a “conceptual framework within which public and private floodplain policies should be formulated if a unified national program of floodplain management is to be implemented.” The frameworks are comprised of “general principles” that include national goals for floodplain management, as well as “working principles” that include definitions and general statements. The most significant difference among the reports is the elevation of “natural and beneficial floodplain values” from a factor to be recognized and considered in floodplain management (1976 report), to a core objective for floodplain management with associated management strategies and tools (1979 & 1986 reports).

The reports define “wise use” within the introduction and general principles of the presented frameworks. The introduction to the framework in the 1986 report states,

“The conceptual framework is developed from and based on accepted, broad national objectives for water and related land resources planning. It recognizes that the wise use of the nation’s floodplains must be consistent with (1) an explicit concern for reduction of flood losses and threats to health, safety, and welfare; (2) the preservation and restoration of natural and beneficial floodplain functions; (3) a balanced view that in general promotes consideration of uses that eliminate exposure to flood loss rather than floodplain development or abandonment; (4) careful consideration of all relevant factors and the weighing of all reasonable alternatives. The conceptual framework fills a void previously hindering consistent articulation of programs functioning at all levels of government.”

The first two numbered factors define “wise use” as **floodplain land use outcomes that minimize potential flood losses while also protecting and restoring natural floodplain functions**. Defining wise use according to desired outcomes is reiterated in the framework general principles. For example, one principle that speaks to necessary features of sound floodplain management asserts, “An image of the expected and desired future is prerequisite to selection and implementation of management strategies and tools.”

The above passage suggests criteria for wise use; specifically, that flood risk management requires always seeking to eliminate exposure to flood losses. The UNP documents propose to judge floodplain land use against a wise use criterion defined by the objective of reducing flood losses, defined broadly to include damages to people, property, and the environment. Policies

are to be directed to secure an “image of an expected and desired future” where losses are eliminated.

This perspective differs from the conceptual framework that was offered in HD 465, which relied on risk informed and cost responsible individual and community choices to define best use. The perspective offered by HD 465 was that the best outcomes emerge from risk informed and cost responsible decision processes where individuals and communities weigh and internalize the benefits and the costs, including the costs of possible flood damages, of floodplain occupancy and of different flood risk reduction and management measures.

While there is an assertion in the UNP reports that “all reasonable alternatives” must be considered for reducing flood losses, the third listed item in the passage presented above and also noted in other sections of the reports clearly suggest a priority among alternatives with flood hazard reduction projects given lowest priority, except where there is significant existing development. The preference to avoid flood hazard reduction projects is justified by opportunities to protect and restore the natural and beneficial functions of floodplains (a rationale for avoiding hazard reduction projects that was introduced in the 1979 UNP report).

The reports’ “general statements” provide discussion of management strategies, tools, and targets deemed consistent with an “always seek to reduce flood losses” definition of wise use, and includes the arguments for preserving natural floodplains. One says, “Avoidance of development is the preferred approach for minimizing losses to people, property and natural floodplain values.” Another asserts, “Appropriate modification of the flood hazard should be considered for much of the existing development, whereas additional development and new uses should be carefully regulated to assure the harmonious development of floodplains consistent with the hazards present.”

Each UNP report includes a separate section that identifies and describes strategies and tools for minimizing flood losses for people and assets under three categories. The following strategies and tools are identified:

1. “Modify human susceptibility to flood damage and disruption,” which includes tools such as land use regulation and flood-proofing of individual properties that can reduce human and asset exposure to flooding.
2. “Modify flooding,” which includes tools such as flood hazard reduction structures (e.g., dams and reservoirs, levees and floodwalls) that can reduce flood hazard levels.
3. “Modify the impact of flooding on individuals and communities,” which includes tools such as the National Flood Insurance Program and post-flood recovery measures that can limit the permanence of flood losses.

The 1979 and 1986 UNP reports repeat this categorization scheme and discussion of specific strategies and tools for minimizing flood losses, but go beyond that to identify and discuss strategies and tools for protecting and restoring natural floodplain functions. The latter are divided into strategies and tools for: 1) avoiding actions that adversely affect floodplain natural values; 2) minimizing the adverse impacts of floodplain actions on natural values, 3) restoring natural values, and 4) preserving relatively undisturbed natural values.

Each report presents a list of recommendations directed to federal and state levels of government, and the 1986 report goes further to provide recommendations to local governments. The introduction to the federal-level recommendations states, “Actions are required to establish coordination at the national level for floodplain management activities, specifically for research, data collection, and information dissemination; strengthening management tools; and support of state programs.” Another general statement says, “There is a moral responsibility upon all levels of government to attempt to minimize the potential environmental and human losses associated with decisions affecting the floodplains. Minimize means to reduce to the smallest amount possible using all available means.”

The continuing reference to “all levels of governments” is an effort to motivate local government decision-makers—who plan and undertake municipal development projects in the floodplain, and who may have authority to regulate private floodplain uses—to elevate the federally-defined goals of flood loss reduction and restoration of natural and beneficial functions to a position of central importance in their local decision making.

Each report cites the findings and recommendations of the HD 465 as the foundation for the emphasis they place on government regulation of floodplain uses as a primary flood risk management tool. However, it does not appear that the fundamental conceptual framework of HD 465 is recognized in the UNP reports.

4 A Unified National Program for Floodplain Management, 1994

The 1994 report is the last version of the UNP series, and like the 1986 report, was prepared by the Federal Interagency Floodplain Management Task Force (Task Force) that was chaired by FEMA. This report claims that it extends the conceptual framework presented in the earlier UNP reports because of its focus “on the achievement of unification in floodplain management through concurrence and the pursuit of national goals, in contrast to earlier proposals, which emphasized coordination of authorities.”

The 1994 UNP report came after publication of *Floodplain Management in the US: An Assessment Report*, a 1992 consultant report to the Task Force that was motivated by a recommendation for such an assessment included in the 1986 UNP report (Federal Interagency Floodplain Management Task Force, 1992). One prominent assertion of the 1992 assessment report is that “floodplain management would benefit from a set of goals meant to be achieved

by a certain date and whose degree of achievement can be measured.” The 1994 UNP report says that it was based in part on the findings and conclusions of the 1992 assessment report, as well as recommendations made by a National Research Committee (chaired by Gilbert White) established to provide advice to the assessment process. The 1992 report by that committee noted that “...the Unified National Program is neither unified nor national” (National Review Committee, 1992).

The 1994 UNP report was prepared before and independent of another 1994 report, *Sharing the Challenge: Floodplain Management into the 21st Century*, that was prepared for the Task Force following the 1993 Midwest flooding (Interagency Floodplain Management Review Committee, 1994). That report was authored by an interagency review committee charged with identifying the causes and consequences of the Midwest flooding, evaluating the performance of existing floodplain management policies, and recommending changes in federal policies, programs, and activities. The 1994 Task Force report asserts that “these two documents reinforce each other by the commonality of their findings and recommendations.”

The 1994 UNP report says “floodplain management is a decision-making process that aims to achieve the wise use of floodplains,” and it defines wise use as follows:

“A floodplain is being put to wise use when the activities that take place on it are compatible with *both* the risks to human life and property from floods *and* the risks to the floodplain’s natural functions posed by the human activities ... This definition of wise use provides its own self-test. In theory, floodplain decisionmakers can ask themselves, ‘If this development (or other activity) is located in a floodplain, is it possible to minimize the loss of life and damage from flooding?’ If the answer to this is, ‘No,’ then the activity may not be a wise use of the floodplain land. If the risk to life and property can be mitigated, there is a second question, ‘Does locating this development in the floodplain allow for maintaining the floodplain’s natural functions?’ If it does not, then the activity may not be wise use of the floodplain, even if the first test was met. In other words, the answer to both questions must be ‘Yes ...’” (Federal Interagency Floodplain Management Task Force, 1994; Page 9; italics in original text)

This passage argues that wise use of floodplains means *minimizing* damages to people, property, and the environment, presumably pushing toward zero, although the word “minimize” is never given operational meaning. However, following the above passage the 1994 report states, “Thus, a wisely used floodplain is the product of a challenging process of evaluating and balancing the costs and benefits of sometimes competing uses...” which implies an economic efficiency perspective that considers the benefits as well as the costs of floodplain use, although the parties who would do the balancing and decision-making are not identified. Similar references to the relevance of the benefits of floodplain use are also made in the earlier UNP reports. Nevertheless, the main normative proposition made in the 1994 UNP report throughout the UNP report series is that the federal FRM goal is to achieve floodplain use outcomes that

minimize damages to people, property, and the environment. And like the earlier UNP reports, the 1994 report recognizes that floodplain management decision-making is the purview of local government, but nevertheless implies that because there needs to be attainment of the specified national goals, there is a role for the federal government to influence those choices toward wise use.

The 1994 UNP report provides “four recommended goals for the Unified National Program, 1995-2015.” These are described as “intermediate and long-term goals that will bring the nation closer to using floodplains wisely...Objectives necessary to achieving each goal are identified, and a target date is set for completing them...” The goals include:

1. “Formalize a national goal-setting and monitoring system.”
2. “Reduce by at least one-half the risks to life and property and the risks to the natural resources of the nation’s floodplains.”
3. “Develop and implement a process to encourage positive attitudes toward floodplain management.”
4. “Establish in-house floodplain management capability nationwide.”

Goal 2 includes four objectives and associated target dates for their achievement. The objectives include two that focus on inventorying floodplain structures and natural resources, as well as the following two that address risk reduction:

- “Mitigate the risk of flood damage to at least half the nation’s highest-risk floodplain structures, by 2020.”
- “Reduce by at least half the risk of degradation of the most important natural resources on the nation’s floodplains, by 2020.”

5 Summary

HD 465 argued in 1966 that floodplain land use decisions reflect “best use” whenever individual and community land use decision-makers are aware of and bear the flood risk costs of their floodplain use decisions so that they consider anticipated development benefits in relation to the full costs of floodplain use. That is, the report views best use of floodplains as the result of a process of risk informed and cost-responsible decision-making by floodplain occupants. As long as floodplain developments are based on risk informed and cost-responsible decision processes, then 1) whatever floodplain use outcome that results from those decisions can be judged to be best use, and 2) whatever flood losses are realized over time can be understood to be the correct level of losses whether they are rising, constant, or falling.

Accordingly, HD 465 concludes that federal policy should focus on ensuring that current and prospective floodplain occupants have accurate information on flood risks, and are forced to actually bear the bulk of all associated cost of their floodplain use decisions, so that those costs are factored into decision-making. The report provides a set of federal-level recommendations intended to advance those ends. While some of the report recommendations focus on providing federal assistance to states and localities to directly advance floodplain planning and regulation, in the main the report recommendations are concerned with advancing these and other desired results primarily through actuarially-based flood insurance for floodplain developments.

The UNP report series, which includes reports published in 1976, 1979, 1986 and 1994, introduces the term “wise use” and defined it in terms of two outcomes that are set as goals for the nation—continuously reducing potential flood losses, while also protecting and restoring natural floodplain functions. To achieve these national wise use outcomes, the reports advocate for regulations and investments that reduce exposure and vulnerability over time. However, most such policies and programs, especially those that require land use restrictions, are the purview of local governments. Thus, the UNP reports appear to call for federal policies and programs that can direct or influence local governments and individuals to always seek way to reduce damages and protect and restore the natural features of floodplains.

6 References

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Table 1a. Overview of A Unified National Program For Managing Flood Losses, 1966 (House Document 465). Prepared by Task Force on Federal Flood Control Policy (which was chaired by Gilbert White and included 8 total members)

Background & Focus	Views on Wise Use of Floodplains/Federal Policy Goals	Strategies & Recommendations
<p>Excerpts from: <i>Water Resources People & Issues: Interview with Gilbert White</i> (Reuss, 1993; pp. 38-39):</p> <p>Q. "In 1966 you got involved with a Bureau of the Budget [BOB] study dealing with floodplain management. I wonder if you could explain to me the origins of that study and your involvement in it."</p> <p>A. "As I recall, the director of the BOB called me up and asked me if I would come in and talk about the status of federal flood control activities, indicating that there had been extensive expressions of dissatisfaction among bureau staff about the policies that were being followed and the appropriation programs. I went in and talked with a number of the staff, and they proposed that I should do a consultant's report on the status of flood control... I felt that something that might possibly have influence would be a joint effort in which there were representatives of the federal agencies serving as individuals but nevertheless drawn from the agencies, together with people from the outside who could jointly present</p>	<p>"Public policy should seek to foster the efficient use of the bottom lands for the common good but it will fail in this so long as it is out of harmony with certain principles." (P. 12)</p> <p>"Use of floodplains involving periodic damages is not, in itself, a sign of unwarranted or inefficient development. It may well be that the advantages of flood plain location outweigh the intermittent cost of damage from floods. Further, there are some kinds of activities which can only be conducted near a watercourse. Principles of national economic efficiency require, however, that the benefits of flood plain occupancy exceed all associated costs, not merely those borne by the individual or enterprise that so locates. Total associated, or full social, costs include: 1) Immediate expenses of development, 2) Damage to be endured by the occupant or the expense of protective measures undertaken to reduce the frequency and extent of flood damage, and 3) Damages forced on others as a result of encroachment, and public costs involved in disaster relief and rehabilitation. Flood plain occupation in which benefits do not exceed the estimated total costs, or which yields lower returns than other uses such as recreation or wildlife conservation, is undesirable, because it causes an eventual</p>	<p>"An integrated flood loss management program which would satisfy the requisites of economic efficiency and social equity and make a realistic division of responsibility would entail:</p> <ul style="list-style-type: none"> (a) Federal responsibility for collection and dissemination of needed data; provision of technical services to assist in intelligent application of data in local planning; construction of flood control projects; management or supervision of an actuarially sound insurance program; and provision of credit, where needed, for local contributions to flood project construction. (b) State responsibility for establishing floodplain encroachment lines; granting of authority to assure conspicuous demarcation by state and local planners of flood hazard areas; and assisting local planning and project financing efforts. (c) Local responsibility for guiding desirable expansion and avoiding, to the fullest possible degree, use of high hazard areas for uneconomic activities; organizing flood project beneficiaries to pay for services rendered. (d) Individual responsibility for careful weighing of the costs and advantages of developing and occupying alternative sites; willingness to assume financial responsibility for new locational decisions." (p. 17) <p>"...While flood protection of existing property should receive public support, supplemental measures should assure that future developments in the floodplain yield benefits in excess of their costs to the nation. This would require a new set of initiatives by established federal agencies with the aid of state agencies to stimulate and support sound planning at the local government and citizen level..." (p. 1)</p> <p>The report presents 16 recommendations directed at one or more federal agencies & programs intended to provide or assist states & localities in addressing the following themes:</p> <ul style="list-style-type: none"> 1. Improve basic knowledge about flood hazard 2. Coordinate and plan new developments in the floodplain 3. Provide technical services to managers of floodplain property 4. Move toward a practical national program for flood insurance 5. Adjust federal flood control policy to sound criteria and changing needs

Table 1a. Overview of A Unified National Program For Managing Flood Losses, 1966 (House Document 465). Prepared by Task Force on Federal Flood Control Policy (which was chaired by Gilbert White and included 8 total members)

Background & Focus	Views on Wise Use of Floodplains/Federal Policy Goals	Strategies & Recommendations
<p>their reactions and their recommendations to the director of the BOB, with the knowledge that the findings were going to be carefully reviewed later by the agencies. The bureau accepted that recommendation, so I became chair of a group or task force, rather than doing an independent study.”</p> <p>Q. “And this study was called finally <i>A Unified National Program for Managing Flood Losses</i>?”</p> <p>A. “Although the group had been put together and I had first been asked to work on federal flood control policy, the title of the report was different from that which it had been intended to be.”</p> <p>Q. “The difference then being one of emphasizing flood control instead of lessening flood damages?”</p> <p>A. “Yes. In fact, I would like to have had it speak on making best use of the floodplains. But people thought that was pushing it too far, that it would be a more attractive and supportable set of recommendations if the title were reducing or managing</p>	<p>net loss to society. Any public policy which encourages submarginal development adds to those losses.” (pp. 13-14)</p> <p>“Flood damages are a direct consequence of flood plain investment actions, both private and public. Floods are acts of God; flood damages result from the acts of men. Those who occupy the flood plain should be responsible for the results of their actions.” (p. 14)</p> <p>“In its concern for the general welfare, the federal government has a proper interest in measures to hold flood damages to an economic minimum. It has a responsibility to discourage floodplain development which would impose a later burden on the federal taxpayer, which would benefit some only at the expense of others, and which would victimize unsuspecting citizens. It does not follow, however, that the federal government should be held solely responsible for success of a program to make wise use of floodplains. Attempts to resolve the problem of rising flood losses within the framework of the Nation’s traditional value system should focus on promoting sound investment decisions by individuals, local governments, and states. They should concentrate on bringing the moral, legal, and fiscal responsibilities of all</p>	<p>For theme 4, the report includes the following discussion of the purpose and ideal structure of a flood insurance program:</p> <p>“The concept of floodplain occupancy charges and indemnification of flood losses constitute a theoretically ideal procedure for using economic incentives to adjust floodplain use optimally in taking into the account the hazard imposed by nature. If each new development were required to pay an annual charge in proportion to its hazard (in return for indemnification for loss) plus any associated cost the occupancy causes others, then, in the long run, the following would result:</p> <ul style="list-style-type: none"> (a) Society would be assured that occupants of new developments were assuming appropriate responsibility for locational decisions. (b) New developments in the floodplain would be precluded unless the advantages were expected to equal or exceed the total social (public and private) cost. (c) There would be incentive to undertake all those flood damage reduction measures, public and private, the costs of which are less than the consequent reduction in damages potential since they would result in greater reduction in occupancy charges (total social cost) than the outlays for such measures. Moreover, if the cost of occupancy charges were taken into account in the benefit-costs analysis of flood protection works, it would help to determine the economics of any such undertaking and any increment in scale of such undertaking. (d) There would be support for appropriate regulation of floodplains to help, where possible, reduce the costs of floodplain occupancy. (e) In sum, an occupancy charge indemnification fund or flood loss insurance could be used in lieu of an uneconomic structural or other type of measure, and to complement an economic flood protection measure. <p>Design and management of a national flood insurance fund involves many unknowns. It is worth repeating that if misapplied an insurance program could aggravate rather than ameliorate the flood problem. Offers to insure or indemnify damages to new developments in the floodplain at a cost to policyholders less than the actual risk would promote rather than discourage unwarranted floodplain occupancy...Objectives of any degree of flood insurance should be to achieve flood damage abatement, an efficient</p>

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flood losses..."	involved into effective alignment." (p. 15)	use of the floodplain, and to provide financial relief at times of flooding. Achieving a sensible use of floodplain lands would be equally or more important than the indemnification of loss. High among considerations of any insurance scheme should be assessment of its effect upon the national effort to abate damages, and upon state and local efforts to achieve food planning in the use of floodplain lands." (p. 38)

Table 1b. Overview of the 1976, 1979, & 1986 report versions of *A Unified National Program for Floodplain Management*. The 1976 & 1979 reports prepared by the Water Resources Council, and the 1986 report by the Federal Interagency Floodplain Management Task Force.

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<p>1976 Report:</p> <p>“Section 1302 (c) of the National Flood Insurance Act of 1968 stipulated that “the objectives of a flood insurance program should be integrally related to a unified national program for floodplain management ... the President should transmit to the Congress for its consideration any further proposals necessary for such a unified program...”</p> <p>Subsequently, the Director, OMB requested that the council prepare the recommendations suggested by Section 1302. This report contains the Council’s findings and recommendations” (Preface, page iii)</p> <p>“The time is at hand to emphasize coordinating and strengthening of existing programs rather than new legislative proposals for flood plain management.” (Forward, p. ii)</p>	<p>The 1976 Report states, “A unified national program for floodplain management calls for continuing efforts that seek to reduce and keep flood losses at acceptable levels while recognizing floodplain values through wise use of water, land, and related resources.”</p> <p>The 1979 and 1986 reports include the same language as above, but add three words to the second objective as follows: “...while recognizing, preserving, and restoring the floodplain’s natural values through wise use of water and related land resources.” [bold type added]</p> <p>The 1976 Report states, “Floodplain management is concerned with the future role of the floodplain as an integral part of a community and of an entire natural river, shore, or coastal system...the focus of floodplain management is a wise choice among uses competing for a limited number of locations, many of which are subject to serious harm from flooding and for which the consequences of various adjustments to flooding must be anticipated.”</p> <p>The 1979 and 1986 reports include the same language as above, but alter the last part to say, “An accounting must be made for the consequences of various adjustments to development in these floodplain impacting locations.”</p> <p>The three reports each present a conceptual framework “within which public and private floodplain policies should be formulated if a unified national program of floodplain management is to be implemented.” The frameworks are fairly consistent across the three reports; however, the framework included in the 1979 and 1986 reports speaks to the preservation and restoration of natural & beneficial floodplain functions that is not included in the 1976 report. The 1986 report introduction to the</p>	<p>In each report, one of the “general statements” in the conceptual framework states, “Existing and new development should be treated differently. Appropriate modification of the flood hazard should be considered for much of the existing development, whereas additional development and new uses should be carefully regulated to assure the harmonious development of floodplains consistent with the hazards present.”</p> <p>In the 1979 and 1986 reports, the above statement is preceded by the following statement: “Development in or adversely affecting floodplains should be avoided unless it is necessary from a public interest standpoint and unless no suitable alternative exists. Avoidance of development is the preferred approach for minimizing losses to people, property and natural floodplain values.”</p> <p>Another general statement in the 1979 and 1986 reports states, “There is a moral responsibility upon all levels of government to attempt to minimize the potential environmental and human losses associated with decisions affecting the floodplains. Minimize means to reduce to the smallest amount possible using all available means.”</p> <p>The 1976 report includes the first expression of “strategies and tools for floodplain management,” which includes the following strategies for which specific tools are specified:</p> <ol style="list-style-type: none"> 1. Modify human susceptibility to flood damage and disruption

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<p>“The Task Force report [HD 465, 1966] suggested the need for new planning attitudes and a unified approach for floodplain management, but it stopped short of describing such a framework. Lack of a framework is judged at least partly responsible for the problems related to agency indecision and nonuniform Federal practices...this report attempts to lay out a conceptual framework.” (p. V-2)</p> <p>1979 Report:</p> <p>“This report focuses on the coordination and improvement of the existing programs necessary to achieve a unified approach to management of the nation’s floodplains...” (Forward, p. ii)</p> <p>“To reflect the increased concern for natural floodplain values enunciated in Executive Order 11988, the WRC in this</p>	<p>framework says: “The conceptual framework is developed from and based on accepted, broad national objectives for water and related land resources planning. It recognizes that wise use of the nation’s floodplains must be consistent with (1) an explicit concern for reduction of flood losses and threats to health, safety, and welfare; (2) the preservation and restoration of natural and beneficial floodplain functions; (3) a balanced view that in general promotes consideration of uses that eliminate exposure to flood loss rather than floodplain development or abandonment; (4) careful consideration of all relevant factors and the weighing of all reasonable alternatives. The conceptual framework fills a void previously hindering consistent articulation of programs functioning at all levels of government.” (p. I-2)</p> <p>The frameworks include general principles and working principles, where the latter includes definitions and general statements. One of 4 general principles in the 1976 report says, “Flood loss reduction is commonly viewed as an objective in itself. Flood losses must be reduced to and kept within acceptable levels. However, flood loss reduction must be viewed in the larger context of floodplain management, which includes other aspects of economic efficiency, environmental quality, and the quality of life, notably health and safety.”</p> <p>In the 1979 and 1986 reports the wording of this general principle had changed to address natural floodplain functions as follows: “Floodplains can be managed to achieve acceptable levels of (a) protection and maintenance of natural floodplain values and (b) reduction of existing and future flood loss potential. Both floodplain values and flood losses must be viewed within the larger context of water and related land resource management.”</p>	<p>2. Modify the impact of flooding on individuals and the community 3. Modify flooding</p> <p>The 1979 and 1986 reports present strategies and associated tools for floodplain management which are divided into those for 1) flood loss reduction, and 2) managing floodplain natural values. The former includes the same strategies and tools presented in the 1976 report (modify human susceptibility to flood damage and disruption, etc.), and the latter includes strategies and tools for a) avoiding actions that adversely affect floodplain natural values, b) minimizing adverse impacts of actions that affect the floodplain, c) restoring natural floodplain values, and d) preserving relatively undisturbed values.</p> <p>Each report presents a laundry list of recommendations directed to federal and state levels of government and states: “The recommendations which follow are directed toward a recognition and acceptance of the framework at all levels of government and should provide the basis for achieving the institutional coordination necessary for carrying through a unified national program for floodplain management.” (P. 1-2)</p> <p>The federal level recommendations include the following introduction: “Actions are required to establish coordination at the national level for floodplain management activities, specifically for research, data collection, and information dissemination; strengthening of management tools; and</p>

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<p>document presents a revision of its 1976 unified program. This revised report provides the needed modification to the conceptual framework and the recommendations to the responsible parties.” (p. II-2)</p> <p>1986 Report:</p> <p>“This document updates the 1979 document to reflect FP management progress and modifies associated recommendations.” (p. II-2)</p>	<p>Each report includes a general principle that speaks to various asserted factors that “sound floodplain management embodies.”</p> <p>One factor labeled “goals and objectives” says that floodplain management involves, “A decision making process wherein the goals of wise use, conservation, and development of interrelated land and water resources serve the diverse and frequently competitive objectives of economic efficiency, environmental quality, and the quality of life, notably health and safety.” Another factor labeled “image of the future” states, “Recognition of future needs and the role of the floodplain in the context of the physical, ecological, and socioeconomic systems of which it is a part. An image of the expected and desired future is prerequisite to selections and implementation of management strategies and tools.”</p>	<p>support of State programs.” (p. I-3)</p> <p>Unlike the 1976 & 1979 reports, the 1986 report provides for the first time in the unified series an added set of recommendations directed toward local government. The introduction to local level recommendations states, “Local governments have a primary role in floodplain management because they oversee decisions affecting floodplain use and they act to initiate local floodplain management programs using State and Federal guidelines and policies.” (p. 1-10)</p>

Table 1c. Overview of A Unified National Program for Floodplain Management, 1994. Prepared by Federal Interagency Floodplain Management Task Force. (A 9-member task force work group representing various federal agencies oversaw report development)

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<p>“This update of the Unified National Program is based in part upon the findings of the 1992 national assessment, <i>Floodplain Management in the US</i>, and upon the recommendations of the National Review Committee established to provide advice during the assessment process.” (p. 4)</p> <p>“The content and recommended goals of this document were prepared prior to, and independent of, the 1994 report, <i>Sharing the Challenge</i>...The [authors of that report] reviewed the information and strategies outlined in the <i>Unified National Program</i> and cited it in their report. These two documents reinforce each other by the commonality of their findings and recommendations. For example, both reports recognize the importance of continuing to improve our efforts to reduce the loss of life and property caused by floods and to preserve and restore the natural resources and functions of floodplains in an economically and environmentally</p>	<p>“Floodplain management is a decision-making process that aims to achieve the wise use of the nation’s floodplains.” (p.8)</p> <p>“It is a continuous process of making decisions about whether and how floodplain lands and waters are to be used.” (p. 8)</p> <p>“Wise use of floodplains means enjoying the benefits of floodplain lands and waters while still minimizing loss of life and damage from flooding and at the same time preserving and restoring the natural resources of floodplains as much as possible. Wise use thus is any activity or set of activities that is compatible with both the risks to the natural resources of floodplains and the risks to human resources (life and property).” [bold type included in original document]</p> <p>“The definition of wise use provides its own self-test. In theory, floodplain decision-makers can ask themselves, ‘If this development (or other activity) is located in the floodplain, is it possible to minimize the loss of life and damage from flooding?’</p>	<p>The report provides “an update of the strategies and tools for floodplain management,” which includes the following strategies for which specific tools are specified:</p> <ol style="list-style-type: none"> 1. Modify human susceptibility to flood damage and disruption 2. Modify the impact of flooding on individuals and the community 3. Modify flooding 4. Preserve and restore the natural resources and functions of floodplains <p>The report provides four “recommended goals for the Unified National Program, 1995-2015” that are described as:</p> <p>“...intermediate and long-term goals that will bring the Nation closer to using its floodplains wisely. These goals are based in part on the opportunities identified in Chapter 16 of the <i>Assessment Report</i> and in other document and forums, and in part on the national and global trends analyzed above. They also reflect recognition that making wise use of each and every floodplain in the country is a fairly distant ambition, but that, when aggregated, a number of independent improvements may represent significant overall progress. Objectives necessary to achieving each goal are identified, and a target date is set for completing them. The goals and objectives are precisely phrased to set an action agenda and to make estimates of progress as feasible as possible. Further refinement of the various objectives, precise definitions of their components, and methods for measuring progress will need to be addressed as the Program proceeds.” (p. 31)</p> <p>The report lists the following goals:</p> <ol style="list-style-type: none"> 1. Formalize a national goal-setting and monitoring system 2. Reduce by at least one-half the risks to life and property and the risks to the

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<p>sound manner.” (report transmittal letter)</p> <p>“This Unified National Program document focuses on achievement of unification in floodplain management through concurrence and the pursuit of national goals, in contrast to earlier proposals, which emphasized coordination of authorities.” (p. 27)</p>	<p>If the answer to this is, ‘No,’ then the activity may not be a wise use of the floodplain land. If the risk to life and property can be mitigated, there is another question, ‘Does locating this development in the floodplain allow for maintaining the floodplain natural functions.’ If it does not, then the activity may not be wise use of the floodplain, even if the first test was met. In other words, the answer to both questions must be ‘Yes.’” (p. 9)</p>	<p>natural resources of the Nation’s floodplains</p> <ol style="list-style-type: none"> 3. Develop and implement a process to encourage positive attitudes toward floodplain management 4. Establish in-house floodplain management capability nationwide <p>Goal 2 includes four objectives and associated benchmarks, including two that involve inventorying floodplain structures and natural resources as well as the following two which address risk reduction:</p> <ul style="list-style-type: none"> • Mitigate the risk of flood damage to at least half the Nation’s highest-risk floodplain structures, by 2020. • Reduce by at least half the risk of degradation of the most important natural resources of the Nation’s floodplains, by 2020. (pp. 31-32)