

FEDERAL EMERGENCY MANAGEMENT AGENCY

**Further Advice
on Executive Order 11988
Floodplain Management**

Interagency Task Force on Floodplain Management

The Interagency Floodplain Management Task Force was established in 1975 to carry out the responsibility of the President to prepare for the Congress a Unified National Program for Floodplain Management. Since 1982 the Task Force has been chaired by the Federal Emergency Management Agency. Membership of the Task Force consists of the Departments of Agriculture, Army, Commerce, Energy, Housing and Urban Development, Interior, Transportation; the Environmental Protection Agency, and the Tennessee Valley Authority.

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This publication is considered an interim document for a period of one year. At the end of that year, the Task Force will evaluate its utility and relevance. Based on conclusions reached by the Task Force, any necessary revisions will be made before the document is finalized.

During this interim period, it is intended that this document be used by Federal agencies as well as by local governments which have been delegated by Section 9 of the Executive Order with compliance with specific programs. The document should be equally beneficial for use by those States which have issued executive orders similar to Executive Order 11988 or which administer specific programs that require compliance with the Executive Order per Section 9 by local governments.

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PREFACE

A review of the effectiveness of Executive Order 11988 was undertaken in 1982 by the Federal Emergency Management Agency (FEMA) at the request of the Office of Management and Budget (OMB). As a consequence, OMB directed the Federal Interagency Floodplain Task Force to provide implementation guidance for field level staff. This document has been prepared to provide that guidance.

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• INTRODUCTION

The purpose of this document is to provide guidance by discussing specific and commonly recurring issues and by providing examples that show how to implement the provisions of Executive Order 11988, Floodplain Management; it will not resolve all issues or questions. The Water Resources Council Floodplain Management Guidelines' for implementing Executive Order 11988 were developed to provide broad guidance in the interpretation of the Executive Order and to assist each agency which would be developing its own individual procedures for compliance with the Executive Order. Since the guideline's initial publication in 1978, questions, problems and issues, which were not foreseen or addressed, have arisen. This guidance document does not supplant, but supplements the still valid WRC Guidelines. It is intended that this document be used by Federal agencies as well as by local governments which have been delegated by Section 9 of the Executive Order with compliance with specific programs. The document should be equally beneficial for use by those States which have issued executive orders similar to Executive Order 11988 or which administer specific programs that require compliance with the Executive Order per Section 9 by local governments.

This document has been divided into two principal parts. The first provides an interpretation on several issues which continue to present problems to those individuals responsible for implementing the Executive Order. The second represents a series of scenarios which illustrate how to address those issues when implementing the Executive Order. The scenarios have been grouped together to provide a broad spectrum of Federal actions in the context of the Executive Order. The categories of Federal actions range from those over which a Federal agency has direct control to those where responsibility has been delegated to local units of government. While the scenarios may appear to be addressing an action undertaken by a specific agency, they are intended to be generic and applicable to Federal agencies with similar responsibilities and programs.

(See footnotes at the end of this document)

- HISTORY OF EXECUTIVE ORDER 11988

The Origins of Executive Order 11988, Floodplain Management, are found in a Bureau of Budget study published in August 1966, as House Document 465, "A Unified National Program for managing Flood Losses."² This study sought to identify ways for the Federal Government to arrest flood losses that continued to rise in spite of large expenditures for flood control structures. The study argued the need to utilize nonstructural approaches as well as structural approaches to flood loss reduction. Included among the study recommendations were establishment of a Federal flood insurance program and an executive order directing Federal agencies to carry out flood hazard evaluations before taking actions located in floodplains. The Bureau of Budget study marked the beginning of an 11-year experience leading up to issuance of the current Executive Order 11988, Floodplain Management, in 1977.

In August 1966, the President issued an earlier executive order on floodplain management, Executive Order 11296, "Evaluation of Flood Hazard in Locating Federally Owned or Financed Buildings, Roads, and other Facilities, and in Disposing of Federal Lands and Properties." That Executive Order directed the heads of Federal agencies to:

1. provide leadership in encouraging a unified effort to prevent unnecessary use of the Nation's floodplains and to lessen the risk of flood losses;
2. evaluate flood hazards; and,
3. develop implementing procedures and to certify to the Bureau of Budget that flood hazard evaluations had been carried out for any appropriations requested for Federal construction of buildings, structures, roads or other facilities.

Executive order 11296 set a policy of Federal responsibility and leadership to reduce economic losses caused by flooding. It was followed in 1968 by passage of the National Flood Insurance Act (Public Law 90-448). The National Flood Insurance Program thereafter adopted, the 100-year flood as the base flood standard of the insurance program. Use of this flood standard in implementing that Executive order was first advocated by the Water Resources Council (WRC) when it adopted 'Flood Hazard Evaluation Guidelines for Federal Executive Agencies.'³

In 1975, the Comptroller General's report "National Attempts to Reduce Losses from Floods by Planning for and Controlling Uses of Flood-Prone Lands" ⁴ found that Federal agencies did not adequately evaluate flood hazards in their programs. As stated in that report, over the period from 1966 to 1976 Executive Order 11296 proved to have a limited effect in reducing flood losses due to the lack of agency implementing procedures and full compliance by Federal agencies. However, it did serve to raise awareness that flood losses were a serious national problem and that reduction of those flood losses required the Federal government to take a more active leadership role.

In May 1977, the President issued Executive Order 11988, Floodplain Management, which superseded Executive Order 11296. In essence, this subsequent Executive Order:

1. directed Federal agencies to assert leadership in reducing flood losses and losses to environmental values served by floodplains;
2. directed Federal agencies to avoid actions located in or adversely affecting floodplains unless there is no practicable alternative;
3. directed Federal agencies to take action to mitigate losses if avoidance is not practicable;

4. established a process for flood hazard evaluation based upon the 100-year base flood standard of the National Flood Insurance Program;
5. directed Federal agencies to issue implementing procedures;
6. provided a consultation mechanism consisting of the WRC, Council on Environmental Quality, and the Federal Insurance Administration (FIA) staff to assist agencies in developing their implementing procedures; and,
7. provided oversight mechanisms: a) certification by Federal agencies to the Office of Management and Budget (OMB) that proposed actions are in accord with the Executive Order when authorization and appropriations are requested; b) periodic evaluation of agencies and procedures and their effectiveness by the WRC; and c) public notice of proposed actions.

In February 1978, the WRC issued Floodplain Management Guidelines for implementing Executive Order 11988. These guidelines provide a section-by-section analysis of the Executive Order, definition of key terms, and an eight-step decision-making process for carrying out the Executive Order's directives. The process contained in the WRC guidelines incorporates the basic requirements of Executive Order 11988. Briefly, this eight-step process is:

Step 1: Determine if a proposed action is in the base floodplain;

Step 2: Provide for public review;

Step 3: Identify and evaluate practicable alternatives to locating in the base floodplain;

Step 4: Identify the impacts of the proposed action;

Step 5: Minimize threats to life and property and to natural and beneficial floodplain values. Restore and preserve natural and beneficial floodplain values;

Step 6: Reevaluate alternatives.

Step 7: Issue findings and a public explanation; and

Step 8: Implement the action.

Those guidelines continue to provide the basic interpretation of the Executive Order.

- **BACKGROUND OF THIS DOCUMENT**

In January 1981, President Reagan appointed a Task Force on Regulatory Relief, directing it to investigate Federal regulations and policies that might impose a severe hardship on States, local entities, and citizens. Because of the impact of Federal floodplain management policies on future development in floodplain areas and on the State and local governments, which control land use and development, Executive Order 11988 on Floodplain Management and the "100 - year-flood" standard upon which it was based were selected for review by the Task Force. In a letter dated August 26, 1982 the Office of Management and Budget (OMB) directed the Federal Emergency Management Agency (FEMA), as the administrator of the National Flood Insurance Program (NFIP) and the Federal agency having lead responsibility for flood hazard assessment and mitigation to (1) investigate whether Federal agencies are complying with the requirements of the Executive Order and determine what impact, if any, the Order is having on the level of

Federal support in designated flood hazard areas,' and (2) review the base, or "100-year," flood standard used in implementing the Executive Order and other Federal flood hazard reduction programs.

On October 24, 1983, FEMA transmitted its report, with findings and recommendations, to the OMB. The report, which was based on surveys, evaluations, experiences, attitudes and comments of many affected agencies, found that:

1. Retention of the Executive Order was supported by nearly all responses. Especially strong support was received from the Governors and State agencies.
2. Executive Order 11988 is reducing exposure to potential flood losses by deterring unnecessary siting of activities in high hazard floodplain locations. However, significant improvements in Federal actions remain to be made to achieve the Executive Order's objectives of reducing both the number of structures and facilities unnecessarily exposed to flood risk and consequent flood losses.
3. The Executive Order itself contains several minor provisions and references which are obsolete or outdated, but are recognized by implementing agencies as such without any adverse effects on the implementation of the Executive Order.
4. Implementation procedures have not been adopted by all agencies and some agencies have adopted procedures which are inconsistent with the Executive Order.
5. While Federal agency implementation of the Executive Order has become more effective over time, significant opportunities exist to streamline and improve upon the implementation process, especially for small and repetitive actions.
6. Some segments of the private sector appear to have misperceptions about the scope and intent of the Executive Order. Some responses indicate a mistaken belief that the Executive Order Prohibits all development in the floodplain.

In receiving the report, OMB also accepted its recommendations.

Specifically, the report recommended that:

1. The Executive Order should be retained in its present form without modification.
2. Federal agencies should be advised that the policies contained in the Executive Order are sound and that the Executive Order is being retained.
3. The agencies and subagencies which have not already done so should adopt final implementing procedures for Executive order 11988. Final procedures would remove uncertainty and facilitate proper implementation of the Executive Order.
4. Those Federal agencies that have adopted implementing procedures that are inconsistent with the objectives of the Executive Order should bring their implementing procedures into full compliance.
5. The Federal agencies should review their implementing procedures and determine whether adoption of thresholds or limited categorical exclusions should be used to identify small actions in which the objectives of the Executive Order can be achieved more effectively through application of a simplified planning process, but they should not be used to exempt actions from compliance. Any changes should be forwarded to FEMA for comment prior to publication as a proposed rule.

6. The Federal agencies should ensure that their field offices are fully conversant with the Executive Order and its provisions. In those instances in which deficiencies are identified, Federal agencies should develop clarifying instructions or develop and conduct training programs for their field staff.

7. The Interagency Floodplain Management Task Force - should prepare a training document to assist agencies with implementation of the Executive Order. (emphasis provided)

8. The Federal agencies should advise groups in the private sector and State and local governments of the intent and provisions of the Executive Order to reduce uncertainties and misunderstandings about its application to actions in which they might be involved. It should be made clear that the intent of the Executive Order is not to prohibit floodplain development in all cases but rather to create consistent government policy against such development under most circumstances.

This document has been prepared to carry out Recommendation 7 above.

- ISSUES AFFECTING IMPLEMENTATION OF THE EXECUTIVE ORDER

A. When does Executive Order 11988 Apply?

The Executive Order is applicable to all Federal actions. The WRC Floodplain Management Guidelines define action for the purposes of the Executive Order. Action is any 'Federal activity including (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 use resources planning, regulating, and licensing activities.'

All proposed Federal actions, therefore, should be reviewed at the earliest possible stage to determine if they are in a floodplain. Any actions located in or impacting the base floodplain 100-year (500-year for critical actions) initiates part or all of the remaining Executive Order process. Part II, Decision Making Process, of the WRC Guidelines describes the eight-step decision making process that must be followed for actions in or impacting the base floodplain (500-year for critical actions).

While the Executive Order is applicable to those Federal actions which will occur in or which will impact upon floodprone areas the extent of its applicability may vary due to other considerations. Factors such as actions of limited impact, actions taken to reduce flooding, or those of a temporary nature may necessitate an altered or shortened decision-making process. These factors or considerations are addressed more fully in the discussion of issues which follows.

B. What is Required When Flood Hazard Identification is Inadequate?

During implementation of the Executive Order, two problems frequently arise when the flood hazard potential of the site is being investigated. First, detailed flood hazard data are not always readily available for every site. Persons responsible for implementation may need to investigate several sources before obtaining the best data available or in establishing that no data are available. Second, in light of increasing flood damages occurring outside of the designated 100-year floodplain, it may be appropriate to consider using a higher flood standard for proposed activities which are funded, either directly or indirectly by the Federal government.

The Federal Emergency Management Agency's Federal Insurance Administration (FIA) has published data for over 17,000 communities through the NFIP. (Note: Prior to 1978, those maps were produced by the Department of Housing and Urban Development (HUD) which at that time was FIA's parent agency.) Almost 10,000 of these communities have had detailed flood hazard data prepared for them in the form of flood insurance studies. Because of this national effort to provide such data and because maps prepared by

FEMA are designated as the maps for making flood hazard determinations in the implementation of the Executive Order, the availability of a flood boundary floodway map (published with the flood insurance study) for the area should be investigated first. FEMA has also prepared approximate flood hazard data, in the form of flood hazard boundary maps, for an additional 7,000 communities. The information contained on these latter maps was generally developed using available topographic maps and historical information. Some of the limitations of the information contained on these maps can be overcome with the use of additional data and investigations as discussed later. The FEMA maps also contain valuable information on the designation of undeveloped coastal barriers along coastal areas.

However, maps prepared by FEMA may not show the entire flood hazard potential which exists in the community. Predetermined cut-off points have been established for detailed flood hazard studies including stream reaches with drainage areas of less than one square mile and stream reaches which were not experiencing or expected to experience development pressure at the time the study was being conducted. Additionally, there still exist many areas, including streams within communities where flood insurance studies have been prepared, which have not had their flood hazard potential identified by FEMA. Even where flood boundary maps have been prepared, because of many of the above reasons, all areas subject to flooding may not often be indicated on these maps.

Therefore, persons responsible for implementing the Executive Order should not be satisfied with the flood hazard data shown solely on FEMA maps. Rather, if the flood hazard of the stream reach in question has not been identified in detail on these maps, i.e., through a flood insurance study, they should seek other flood data. Sources which merit investigation include the files and studies of other Federal agencies, such as the U. S. Army Corps of Engineers, the Tennessee Valley Authority, the Soil Conservation Service and the U. S. Geological Survey. These agencies have prepared flood hazard studies for several thousand localities and, through their technical assistance programs, hydrologic studies, soil surveys, and other investigations have collected or developed other floodplain information for numerous sites and areas. Information on the availability of floodplain data may be obtained by contacting the appropriate agency officer listed in Appendix A of this document. States and communities are also sources of information on past flood experiences within their boundaries and are particularly knowledgeable about areas subject to high risk flood hazards such as alluvial fans, high velocity flows, mudflows and mudslides, ice jams, subsidence and liquefaction. A chart setting forth the thought process for flood hazard identification immediately follows this discussion (see Figure 1).

Some Federal agencies offer site specific flood hazard evaluations to other Federal, State, or local government agencies on request. In particular, the U. S. Corps of Engineers, SCS, and TVA, offer this service, subject to some restrictions related to current workloads and budget limitations. If flood hazard data are not available from other sources or if existing data are not sufficiently detailed, requests for flood hazard evaluations may be made to the appropriate agency office listed in Appendix A. Evaluations that can be prepared with available data are usually furnished within 30 days without charge to the requesting agency. Depending on the complexity of the evaluation, time requirements, and the existing workload and budget situation of the office preparing the evaluation, the requesting agency may be required to furnish needed field surveys, topographic mapping or other field data. Extremely complex evaluations requiring extensive field surveys and/or complex hydrologic investigations can usually be accomplished on a reimbursable basis.

If detailed flood hazard information is not available from any source, persons responsible for implementing EO 11988 should utilize flood hazard boundary maps (FEMA) and soils maps as surrogates for early site evaluation. Soils maps are available throughout much of the nation and can be used to identify soil types, such as alluvial soils, which are typically found in floodplain areas. However, use of soil maps might not identify all areas subject to flooding. Although neither flood hazard boundary nor soils maps can be used to determine flood frequency, flood elevation, stream velocity or other specific flood information, they can be used to identify proposed project sites which will require further study. Because these maps will only provide a general indication of which areas in a community are subject to flooding, they should be supplemented with a visit to the site, use of aerial photography in stereoscopic pairs, and topographic information for the site.

In areas where no flood hazard information or flood elevation data are available, the amount of Federal investment and the potential flood damage to which it would be subject from various levels of flood risk should be considered when determining what degree of accuracy is required for flood elevation data which must be developed. For significant Federal investment in the floodplain or development which will attract additional development to the area, the person implementing the Executive Order may wish to have survey data developed for the site. For development involving a very minor Federal investment or which is not susceptible to appreciable flood damage, it is possible that elevations can be determined using the previously described approximate flood hazard information and simple surveying techniques. Because this process uses the elevation of the floodplain boundary to establish flood levels for location development, persons responsible for implementing the Executive Order should undertake to obtain sufficient data to determine the 100-year floodplain limit with some degree of accuracy.

Although the 100-year flood is generally used as the regulatory standard by communities participating in the NFIP and is designated as the flood standard for implementation of the Executive Order, recent studies of flood insurance claims data have revealed that significant damage is occurring to structures located in the 500-year floodplain and often in areas shown on FEMA maps as being areas of minimal flooding (Zone C). In addition to seeking the best available data from several sources, the Federal government should set an example and assure that proposed projects which would be subject to significant adverse effects if flooded, are not planned or assisted without considering the effects of floods greater than the 100-year flood and minimizing risks to the fullest extent practical. In this manner, Federal investment can best be protected from flood damage.

C. What Constitutes Public Notice?

Given potential impacts of unwise development of floodplains, public notice requirements were incorporated into the Executive Order. There are at least three purposes to be served by such public notice. First, people who may be affected by activities in floodplains and those who have an interest in the protection of the natural environment should be given an opportunity to express their concerns and provide information about these areas. Federal, State and local agencies with special experts, in floodplain management, wetland protection, emergency preparedness, resource conservation, land use planning and building regulation should be invited at the outset to participate in the scoping process and to provide technical data and advice relevant to the proposal prior to the issuance of any public notices and through out the decision-making process. Such communications can significantly improve the quality of governmental decisions about the use of floodplains. An adequate notice process may also diffuse objections by drawing them out and encouraging early consideration of their merits. Second, an adequate public notice program can be an important public educational tool. The dissemination of information about floodplains can facilitate and enhance Federal efforts to reduce the risks associated with the occupancy and modification of these special areas. Third, as a matter of fairness, when the Federal government determines it will participate in actions taking place in floodplains, it must inform those who may be put at greater or continued risk.

The Executive Order requires that Federal agencies as well as local governments which have been delegated responsibility for specific programs that require compliance with Section 9 of the Executive Order provide an opportunity for early public review of their proposed activities in floodplains. The Executive Order also requires agencies to prepare and circulate a notice containing an explanation of why an action is proposed to be located in a floodplain whenever that is the case. These two requirements have been incorporated in the decision making process as Steps 2 and 7 in the WRC Floodplain Management Guidelines.

Step 2 requires the Federal agencies to notify and to involve the public. An agency should notify or require notification of the public at the earliest possible time, which means as soon as a proposed action which would be located in or affect a floodplain can be identified. Step 1 always requires a determination of whether a proposed action is in or affects a floodplain. It is logical, therefore, that notice of such determinations, whether accomplished by using a FEMA map or other resources or by assumption, follows

immediately. Initial notice should always precede the beginning of the practicability and minimization analyses.

The test of whether a notice is adequate is whether the action is adequately described and sufficient time is provided to enable the public to have meaningful input into the decision making process. Therefore, this initial notice should be early enough so that alternatives to a proposed action are not precluded. The purpose of involving the public is to supplement the information to be gathered by the agency.

It is important to remember that this initial notice requirement applies to all actions except those which are completely exempt from the decision making process. It is also important to note that failure to comply with the notice requirements provides those who oppose particular projects with a convenient and effective tool for blocking them.

The agency needs to make some important judgments concerning what information is to be included in a notice; the vehicle for providing notice, i.e., whether to broadcast, publish, post, etc.; the length of the comment period; and whether to provide individual or cumulative notice. Many of these judgments should be made on the basis of the following nonexclusive list of factors. The first factor is the scale of the action. Obviously, more people will be affected by and concerned about a larger action. The second factor is the potential for controversy. An agency may need to gather information about whether particular projects may be controversial from the local government applicant and other community sources. Potentially controversial projects would indicate the need for a comprehensive notice requirement, especially to involved public interest groups. The number of affected agencies and individuals will often relate to the size and nature of the action. Finally, the agency must judge the anticipated potential impact of the proposed action. In other words, what are the nature and degree of the positive and negative impacts of the proposed actions in terms of risk to lives and property and maintenance of floodplain values?

Initial notice should contain a description of the action its purpose and a statement that an agency tends to fund, permit, assist, or directly carry out an action in or affecting a floodplain. The notice also needs to identify where a proposed action would be located. This may be done by the publication of a map and the provision of other information adequate to indicate the location. Where an analysis of the factors discussed above indicates that detailed and extensive notice is not required, the agency may, in lieu of publishing a map, state that a map is available and can be inspected at a specified location; a telephone number for information should also be provided. The notice must also contain a description of the type, extent and degree of hazard involved and the natural values present. The extent of this information is dependent on the factors set out above. Several notices with successively more information may be necessary. Finally, each notice should contain the name of the official or organization from which more information about projects can be obtained.

For actions with primarily local significance, there are a variety of vehicles. The selection of an appropriate vehicle or vehicles will also depend on the factors discussed earlier. The most often used means will be local newspapers of general circulation. Other local media, typically radio and TV, are also useful. Direct notice to and through local community organizations and direct mailings to owners, occupants and interested parties who have been identified may be effective. Another mechanism is to post a notice at the site of the action; this is the device used by most local zoning boards in giving notice of variance hearings. The agency may choose to hold a public hearing or meeting, especially for large or controversial projects or where additional information relating to the project should be obtained from the public.

The final aspects of the Step 2 requirement involves continuing public information. For actions with the potential for major adverse impacts, or for which an EIS is being prepared, the agency needs to provide additional notices as flood plain management information is gathered and as the agency moves through the decision making process. Finally, the agency should establish a mechanism to send the notices to the State single point of contact as required under Executive Order 12372, the successor to the A-95 clearinghouse process.

Step 7 of the decision making process requires an announcement along with an explanation of the final decision. Adequate compliance with this requirement serves the goal of public education.

The final public notice must include the following items. There must be a statement of what the action is and why the agency decided to fund, assist, permit or directly carry out the proposed action in a floodplain or in an area where the action will affect the floodplain. The notice needs to contain a description of all the significant facts considered in arriving at the decision and a list of alternatives considered. The notice must also include a statement about how the action will affect or will be affected by being located in a floodplain and what measures will be taken to minimize potential harm. The notice also must state that the action will be taken in compliance with State and local flood protection standards. Finally, the notice needs to contain a map showing the action's proposed location or a statement that such a map is available and where.

When an Environmental Impact Statement is prepared, it will serve as final notice unless it does not accurately describe the final decision and its factual foundation. Where a Notice of No Significant Impact is prepared, it will serve as a final public notice if it contains the required information. In other situations a separate document will have to be prepared and disseminated.

Issuance of a final public notice should precede the implementation of an action by at least 15 working days in order to permit any additional public comment except when there is reasonable explanation for reducing the 15 working day period.

Final notice may be accomplished for a number of proposed actions in a single document. A decision to provide cumulative notice may be made after analysis of the same factors used in Step 2. These include the scale of the action, the potential for controversy, the degree of public need, the number of affected agencies and individuals, and the anticipated potential impact of the proposed action. There is also one additional factor to be considered in determining whether cumulative notice is appropriate. That is the similarity of the actions to be included, i.e., the extent to which the actions are susceptible to common descriptions and assessments. As with cumulative notice under Step 2, the cumulative final notice authority is susceptible to abuse. Therefore, the agency must ensure that, whether accomplished by the individual or cumulative method, notice of the final decision is adequate in conveying the required items of information.

D. What is an "Unwise" Action or Use?

In the statement accompanying the Executive Order, there are three key references to the problems associated with "unwise" actions or uses which led to its issuance. These include:

1. Unwise land use and development of riverine, coastal, and other floodplains not only destroy many of the special qualities (i.e., floodwater storage, wildlife habitat, agricultural and forest products, stable ecosystems, and park and recreational areas) of these areas, but pose a severe threat to human life, health, and property.
2. The problems associated with the increase in annual losses from floods and adverse alteration of floodplains arise mainly from unwise land use practices.
3. Because unwise floodplain development can lead to the loss of human and other natural resources, it is simply a bad Federal investment and should be avoided.

Those individuals who are implementing the Executive Order are faced with the difficulty of determining if the decision they are about to make will become an "unwise action" resulting in "unwise uses" which one day may lead to the loss of lives and property as well as natural floodplain values and become a bad Federal investment or endorsement which should have been avoided.

Numerous questions have arisen as to what constitutes an unwise action. While it is easy for people to say with hindsight that an action taken was unwise (for instance during post-disaster analysis and evaluation), it is not easy for those making the decision when the decision is being balanced in the present sociopolitical and economic arena. For example, is every action taken in the 100-year floodplain or "V" zone considered to be unwise? Should housing or emergency facilities only be permitted to be located in "risk free" areas? While there is no one recognized answer, the following discussion offers assistance to make a "wise" floodplain management decision. An unwise action and unwise use are often used interchangeably; however, a distinction can and should be made between unwise actions and unwise uses of the floodplain.

UNWISE ACTIONS are those actions (e.g., construction or providing financial assistance) which are taken by a Federal agency which (1) are in conflict with the objectives of the Executive Order and/or, (2) are decisions which are based on a lack of information or incorrect or incomplete information. They are decisions made which have not gone through the eight-step decision making process (or a similar process) and do not promote an understanding and avoidance of the impacts and ramifications of an action and requires a thorough search for the best practicable alternative to the floodplain location.

UNWISE USES are those land and water uses which destroy special qualities of the floodplains without genuine efforts to mitigate adverse impacts; pose a severe threat or unnecessarily increase the risk to human life, health, and property; and lead to increases in flood losses or losses of natural and beneficial floodplain values. Thus, unwise actions (e.g., to fund a road, water main or interceptor sewer in a previously undeveloped floodplain) may lead to an unwise use, for example, the urbanization of the floodplain.

UNWISE ACTIONS

There are a number of characteristics relating to good decision making which can be used to avoid taking an unwise action. First, it is to one's advantage to have as much factual knowledge about a proposed action and its potential impacts as possible and/or be reasonably obtainable so that the alternatives can be properly evaluated and weighed. Important decisions relating to the uses of the floodplain should not be made in a vacuum. For example, in some instances flood risks were not being assessed adequately because flood data for remote or rural areas were not available and there was a lack of technical expertise. (See discussion beginning on page 9 for information on the responsibility to obtain flood data in the absence of its availability). Having the appropriate information is a key to making a wise decision. This information can usually be gathered using the eight-step decision making process for the Executive Order.

Types of information which should be sought include:

- What are the important floodplain management and environmental values involved?
- What are the important values associated with development?
- Is there an accommodation which will produce the values associated with development while protecting the values associated with the natural environment and floodplain?
- If not, what balance among competing values will best serve the public interest? Evaluate the risks involved?

Second, an unwise action is one that disregards a finding that there are practical alternatives to supporting activities in floodplain locations. Part IV, G. deals with defining practicable alternatives to locating in the floodplain and the importance of making a Practicable alternative the option of choice.

UNWISE USES

Improper decisions sometime increase the severity and frequency of floods or expose new areas to risk. Flood problems along streams are increased by:

- Urbanizing watersheds and covering large areas with pavements and rooftops which increase the amount and speed of runoff.
- Building drainage systems that accelerate flood flows to downstream areas.
- Erecting structures that deflect flows, or increase downstream erosion.
- Constructing bridges, culverts, landfills, buildings and other encroachments that reduce the size of the stream channel and natural conveyance and storage areas, thus raising flood heights.
- Financially supporting existing structures subject to repetitive flooding or built below the base flood elevation.
- Locating facilities producing or storing highly volatile, toxic, or water reactive materials.
- Locating hospitals, nursing homes and housing for the elderly and the mobility-impaired in flood hazard areas.

Flood problems in coastal areas are exacerbated by:

- Locating and investing in structures near the shoreline, thus increasing the potential for damage and interference with the natural replenishment of sand.
- Removing dunes which protect inland areas from storm surges and high waves.
- Constructing seawalls and bulkheads that sometimes increase erosion and lead to loss of protective beaches and dunes.⁵

These unwise uses may alter, diminish, or destroy the natural and beneficial values attributable to the floodplains. Floodplains in their natural or relatively undisturbed state provide three broad sets of natural and beneficial resources and hence resource values: (1) water resource values, including natural moderation of floods, water quality maintenance, and groundwater recharge; (2) living resource values, including large and diverse populations of plants and animals; and (3) cultural resource values, including archaeological, scientific, recreational, and esthetic sites in addition to sites generally highly productive for agriculture, aquaculture, and forestry.⁶

Generally, any type of construction which will be located in or immediately adjacent to the 100-year floodplain or use which may further induce growth (e.g., shopping centers, high rise buildings, employment facilities, garden apartments, roads, water, and sewer lines and other utilities are often the limiting factors to new development) and once in place provide the opportunity for new subdivision development has the potential of being an unwise use unless the impact of the development can be properly mitigated. One example of a potential unwise use is changing the zoning of the floodplain from agricultural or conservancy to residential or commercial.

While Federal agencies do not have zoning authority, they are often asked to support the new use of the floodplain with regulatory approval, financial assistance and infrastructure. One must be especially cautious to proposed uses of the floodplain which would be non-conforming or which would require a variance to existing land use practices which to date have been successful in minimizing losses from flood

damage and to floodplain values. Finally, it should be remembered that the Executive Order gives Federal agencies the right to say "no" to an applicant's request.

An additional standard regarding uses in the floodplain for the special purpose of protecting health and lives deals with critical actions (see next section) where future uses such as housing for the elderly or handicapped must meet the 500-year floodplain standard. Disregarding this standard will assuredly increase the risk of creating a severe threat to human lives and be considered an unwise action.

Further guidance regarding floodplain use provided by the "Unified National Program for Floodplain Management" states that:

1. Development in or adversely affecting floodplains should be avoided unless it is considered 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.
2. Existing and new developments should be treated differently. For much of the existing development, consideration should be given to appropriate modification of the flood hazard and restoration of floodplain values. In contrast, proposed development and new uses should be carefully regulated to insure the harmonious development of floodplains by minimizing the hazards present and preserving the natural values.
3. In selecting and implementing alternative actions, consideration must be given to immediate and long-term problems of developed and undeveloped floodplains in urbanized as well as rural areas.
4. An acceptable degree of hazard differs with type of flood plain use. Selected uses are or can be made harmonious with certain flood characteristics.
5. Consideration should be given to all tools to modify human occupancy of floodplains (nonstructural measures) and to modify flooding (structural measures) in seeking to manage flood losses and floodplain values. Some combination of these tools is often the desirable management strategy.
6. Actions taken in a floodplain area can affect flood characteristics in other areas. Conversely, actions taken outside the floodplain can affect flood characteristics within the floodplain.⁷

- What is a Critical Action?

A critical action is defined by the WRC Floodplain Management Guidelines to include any activity for which even a slight chance of flooding is too great.⁸ The term is not used in the Executive Order itself. The concept of critical action evolved during the drafting of the WRC Floodplain Management Guidelines and reflects a concern that the impacts of floods on human safety, health, and welfare for many activities could not be minimized unless a higher degree of protection than the base flood was provided. Although the WRC Floodplain Management Guidelines could be interpreted so that the activity must be located in an absolutely flood-free area, it was decided that those activities for which the 100-year base flood was demonstrably inappropriate due to the exposure to flooding should be subject to a higher standard - the 500-year flood. To assist in determining whether the proposed Federal action is a "critical one", there is a need to answer the following questions:

If flooded, would the proposed action create an added dimension to the disaster, as could be the case for liquefied natural gas terminals and facilities producing and storing highly-volatile, toxic, or water-reactive materials?

Given the flood warning lead-time available, would the occupants of buildings such as hospitals, schools, and nursing homes be insufficiently mobile to avoid loss of life and injury?

Would essential and irreplaceable records, utilities and/or emergency services be lost or become inoperative if flooded?

If any answer is in the affirmative, the proposed action is a "critical action: and therefore subject to a higher standard.

Clearly, the emphasis is on the increased hazard to life and health as opposed to property damage.

The minimum basic standard used to evaluate critical actions is the 500-year or 0.2 percent chance flood. While this flood is a less frequent event, there may be records of greater historical events. Therefore, as a standard, the greater of the two should be used to provide the adequate level of protection.

The following discussion of housing for the elderly and storage of hazardous materials in floodplain locations illustrate how this standard is applied to these critical actions.

Location of elderly housing in the floodplain is of greatest concern in those instances when short warning times and rapidly rising floodwaters would prevent evacuation of the elderly in a safe and orderly fashion, as well as instances in which suitable shelter is not available for elderly persons who are forced out of their homes. All elderly housing proposals need to be evaluated initially as critical actions. If a flood free location or a location outside of the 500-year floodplain is available and practicable, that location should be selected. A higher degree of flood protection consistent with the degree of flood risk, at a minimum; should be provided or a flood free site should be sought. However, if the location is not available but if a 500-year protection is practicable, it should provided. One hundred year protection should be permitted only when existing resources are to be used, all residents are relatively-mobile, and it clearly can be shown that there is sufficient warning time to evacuate residents safely to suitable shelters. In recent hurricane events, the evacuations have proven to be time consuming, costly, and personnel intensive, especially when the National Guard is ordered in to provide those services.

The storage of hazardous materials or hazardous waste is clearly a critical action and should be treated as such. A 100-year flood event is not an unusual occurrence. During the life of a disposal site protected to the 100-year level there is a high probability that it will be flooded at least once. The dangers posed by the disposal of hazardous waste warrants use of the 500-year floodplain as a basis of evaluation or, if avoidance is not practicable, protection of the site to the 500-year-level. In addition, there is no basis for storage of hazardous materials below the elevation of the 100-year flood even if there are plans to move the materials prior to a flood. Flood emergency plans can reduce damages significantly, but they should not be relied on to prevent hazardous waste from contaminating floodwaters and compounding already serious public health problems.

Any decision concerning critical actions requires expanded consultation. Other experts, including State floodplain managers and emergency managers, should be consulted.

F. What are Functionally Dependent Uses?

At issue is the perception in some sectors that the Executive Order prohibits all floodplain development. This perception is most prevalent with those individuals who propose floodplain uses referred to as 'functionally-dependent uses.' Such prohibition is neither the intent of the Executive Order nor the accompanying WRC Floodplain Management Guidelines. The concept of functionally-dependent uses is not exempted either from the need to examine practicable alternatives or from the need to comply with any other provisions of the Executive Order. The following discussion offers a definition for "functionally dependent uses"; provides a test for determining the appropriateness of the definition, provides examples of "functionally-dependent uses"; and offers ways in which to minimize the adverse impact of the functionally-dependent uses if located within the floodplain.

Simply stated, a functionally-dependent use is a use which cannot perform its intended purpose unless it is located or carried out in close proximity to water. To determine the adequacy of the locational dependence, two tests may suffice. First, is the purpose of the activity involved directly in the business of inserting and extracting goods into and out of waterborne vessels or inserting and extracting the vehicles themselves to and from the water or to provide public access and use of the shoreline for recreation? Second, for an industry classified as functionally-dependent under the first question, is an individual structure vital to day-to-day production?

Application of these two questions permits the distinction between functionally dependent structures, which must be located at waterside sites, and non-dependent structures, which may be located on sites outside the floodplain. This procedure suggests a means of limiting riverine and coastal development in high-hazard areas to those structures truly dependent on a floodplain location.

Two examples may provide some insight into resolving the question of what is or is not a functionally dependent use. One example is the grain terminal, a functionally-dependent use involving on- and off-loading, storage and processing. Using the two questions for determining functional dependence, the dock and its loading mechanism are functionally dependent structures while the grain elevator, processing equipment and offices are not dependent. A second example is the ship building industry, in which the structures for assembling and overhauling vessels are functionally dependent, while the warehouse, machine shop and offices are not dependent.

The test for and determination of functionally-dependent uses does not obviate the application of the Executive Order and of the eight-step decision making process. At a -minimum, any review should address the following considerations:

1. There can be a variety of possible floodplain locations subject to different degrees of hazard. Some sites may allow the location of part or all of the facility out of the floodplain.
2. There can be a variety of designs for a facility that could lessen or increase either hazards to the proposed facility or impacts on the floodplain, or both.
3. There are floodplain locations where the hazards or adverse impacts are so great that not even a functionally-dependent use is practicable.
4. There is a need to differentiate among various types of ancillary uses that are related to the functionally-dependent uses (for example, boat manufacturing, restaurants, marina club houses, warehouses and similar uses that may be related to functionally-dependent uses: these can be located beyond the floodplain with access to waterfront locations.

Section 3(a) of the Executive Order requires that the construction of Federal structures and facilities be in accordance with the standards and criteria, and be consistent with the intent of those promulgated under the National Flood Insurance Program. This requirement presents a major problem for functionally-dependent uses, particularly when their location is proposed within a community's regulatory floodway. If located within the regulatory floodway, flooding would be increased vertically or horizontally. This could result in an encroachment upon that floodplain area which was to be left free of any additional development in order to allow the flood waters to pass without exacerbating the existing properties. The proposed use must not endanger existing development without just compensation, must not encourage development which would result in harm to or within the floodplain or must not itself be vulnerable to flood damage. There are several minimizations options available, which if implemented, may resolve that apparent dilemma associated with encroachments and functionally-dependent uses.

The use may be designed so as to not create an encroachment. For instance, pilings and columns could be used in lieu of fill. Compensation for encroaching into the floodway could be provided by dedicating additional flow area outside the floodway. The floodway boundaries possibly could be revised so long as

the flood carrying capacity of the revised floodway was not diminished. Purchasing flooding easements upstream could compensate for the encroachment. Finally, permanent compensation, such as purchasing the affected upstream property, could be undertaken. Whatever minimization option is selected, it must be emphasized that the test for its success and acceptance is that existing development will not be endangered, that new development which would harm the floodplain will not be encouraged, and that the proposed use is not vulnerable to flood damages.

The term functionally-dependent use has value in that it recognizes that there are uses that by definition generally may be essential and must exist within the floodplain. A reasonable application of this term can prevent an overly restrictive interpretation not demanded by the Executive Order. Agency interpretations should acknowledge that functionally-dependent uses exist and that in these few cases proper application of the Executive Order probably will result in the selection of some floodplain locations. Agency guidance should limit functionally-dependent uses to those uses that clearly require a waterfront location, and should not include ancillary facilities that could be separated from the facilities that do require a waterfront location. However, it should be noted that if there are no practicable alternatives, it may be necessary to place the ancillary facility in the floodplain. It also should indicate that the fact of identifying a use as functionally-dependent should not eliminate the need to evaluate practicable alternatives or utilize hazard mitigation measures that are practicable.

G. What are Practicable Alternatives to Actions Proposed in Floodplains?

The key policy feature of Executive order 11988 is the basic requirement to conduct a floodplain management decision-making process for the purpose of avoiding locations and impacts to the base floodplain and to seek practicable alternatives that are "doable" outside the base floodplain. The Executive Order prohibits approving such activities for the locations within the base floodplain unless measures are taken to minimize the long and short term adverse impacts associated with the occupancy and modification of the floodplain. The Floodplain Management Guidelines describe this decision making process of which Steps 3 and 6 of the process in general discuss factors to be considered in identifying, evaluating, and re-evaluating practicable alternatives to actions proposed in the floodplains.

One of the two basic requirements of the Executive Order is that prior to conducting, supporting, or allowing an action in the floodplain, a Federal agency must determine that the floodplain is the only practicable location for that action. Section 2(a) of the Executive Order states:

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 affects 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.

The Floodplain Management Guidelines define "practicable" as follows:

Practicable - capable of being done within existing constraints. The test of what is practicable depends upon the situation and includes consideration of the pertinent factors, such as environment, cost or technology.

Practicable alternatives can include carrying out the proposed action outside of the floodplain, accomplishing the same objective using other means, or taking no action at all. There can be alternative sites within the floodplain that need to be evaluated if there are no practicable sites outside the floodplain.

Finally, the floodplain location itself must be shown to be practicable before the action can be taken, and the need to select a floodplain location must be clearly demonstrated.

The remainder of this discussion will address three recurring subjects: applications of Practicable alternatives to floodplain locations; practicable alternatives and locational constraints; and practicable alternatives and existing construction.

Application of Practicable Alternatives to Private Actions

Practicable alternatives under the Executive Order may vary in their application to actions that are primarily private actions in contrast to actions that are primarily Federal actions. Federal actions are those taken by a Federal agency on government land and those actions of other parties that are wholly or significantly regulated or financed by a Federal agency. Difficulties in application of the Executive Order appear to increase as the degree of Federal involvement in the activity declines. For instance, some actions are initiated and financed entirely by the private sector, and Federal agency involvement may be limited to the issuance of a permit, provision of insurance, or guarantee of a loan. Examples of these types of actions include activities requiring a Corps of Engineers Section 404 permit, EPA regulation of hook-ups to an existing EPA-financed sewerage system, and HUD's FHA mortgage insurance and VA mortgage guarantees. Although direct Federal financial assistance may not be involved or may be minimal, action by a Federal agency to deny a permit or approve a request for mortgage insurance or a hook-up to an existing sewerage system may have the effect of making that development infeasible.

Application of the Executive Order to these types of actions may result in the selection of a practicable alternative that is practicable for the Federal agency but not practicable or desirable for the non-Federal or private sector applicant. For instance, a Federal housing agency may determine that there is no housing shortage in a community and that there are practicable locations for residential subdivisions outside of the floodplain and so deny a permit or disapprove an application for floodplain housing. Some alternatives may be available to the private sector as a whole, but not to the specific applicant, who only owns floodplain property. Owners of non-floodplain property may be unable or unwilling to provide sites for the housing or other services required by the community. The issue raised is one of how restrictively the concept of practicable alternatives should be applied to actions that can be regarded as primarily private in nature and the extent to which an agency can limit its consideration of alternatives to the specific site proposal at hand versus other sites not controlled by or available to the applicant.

It should be emphasized that private financing does not necessarily mean that a project does not include costs to or have an impact on the Federal government and the public at large. One such cost to both the Federal government and the general taxpayers would be damages to adjacent properties insured by a Federal agency or eligible for some form of disaster assistance. Improperly designed or constructed floodplain development can increase upstream flood elevations, downstream peak flood discharges, or the velocity of floodwaters. Provisions of State and Federal tax codes also can have the effect of transferring at least some additional cost of flood damages to the taxpayer in general. In addition, it should be emphasized that the objective in the Executive Order to preserve and restore natural and beneficial floodplain values does not apply solely to wildlife habitat, aesthetics, or recreation. Natural and beneficial values also include the floodplain's capability to convey and store floodwaters, recharge groundwater, and preserve water quality. These values can have a direct and significant impact on public health and safety, property damages, and economic well-being of a community.

The Executive Order and the Floodplain Management Guidelines direct a Federal agency to examine all practicable alternatives even in cases where Federal involvement is somewhat limited. Practicable alternatives must be examined in the context of what is practicable to both the Federal agency and the applicant. The impacts of each of the alternatives must be balanced against the utility and advantages and disadvantages of choosing that alternative. It would not be practicable, for instance, for an agency to deny a permit or disapprove a project or activity if locations outside of the floodplain are demonstrably inferior, if the project can be adequately protected against flood damages, and if the adverse impacts on the floodplain are minor or can be minimized. On the other hand, it would not be practicable to grant a permit for an action that would adversely impact the floodplain or pose a threat to lives or property in the community solely to reduce construction costs or to benefit one property owner or interest. Clearly, permits and approvals also should not be granted if the applicants themselves have alternative ways to develop their

property so as to avoid adverse impacts on the floodplain and these alternatives are practicable. There appear, however, to be no clear cutoffs that can be established for this balancing process government-wide because of the almost infinite variety of actions and circumstances that are encountered. A balancing will have to be undertaken by Federal agencies when applying the Executive Order to actions that are privately financed; and the decisions arrived at are likely to be regarded as unsatisfactory by at least some interested parties.

Latitude in the Executive Order and the Floodplain Management Guidelines allows agencies to balance the degree of Federal involvement with the severity of adverse impacts associated with a proposed project. This balancing approach appears to be practiced by most Federal agencies as they apply the Executive Order to privately-funded actions. Inconsistencies will exist among the various agencies and within each individual agency as a result of this case-by-case balancing; and some interested parties will consider some actions to be overzealous or in violation of the intent of the Executive Order. However, discretion rather than rigid uniformity is contemplated by the Order. So long as a given agency's practices are consistent and support the objectives of the Executive Order, some diversity of practice among agencies is to be expected, given the variety of Federal programs subject to the Executive Order and the myriad circumstances they encounter.

Practicable Alternatives and Local Constraints

Examples of locations where sites outside the floodplain are generally not available include certain urbanized areas in Louisiana with its extensive floodplain in the Mississippi-delta and its coastal marshes, and Appalachia, where steep mountain slopes force development into the floodplain. The Executive Order clearly allows for locating actions in the floodplain if there are no practicable alternative locations beyond the floodplain, provided the impacts of the action can be minimized and provided that the importance of the action clearly outweighs other Executive Order requirements. However, the Federal agency must still examine the alternative floodplain sites which may be less hazardous or have fewer or less severe impacts and they must consider alternative ways to conduct the activity. An area subject to shallow low-velocity flooding, for instance, would be preferred over an area which is subject to deep flooding and high velocities, or which contains wetlands. In applying the Executive Order to projects or activities located in or adjacent to densely developed areas or central business districts, the fact that a proposal seeks to "in-fill" vacant lots with structures consistent with local land use or urban development plans does not eliminate the need to evaluate measures as practicable. Although in highly urbanized areas some proposals will be made to use vacant floodplain lands, the Executive Order requires avoidance of floodplain locations and impacts to the floodplain where practicable and also calls for the restoration and preservation of floodplains. A well-planned project involving some degree of Federal assistance may have significantly fewer adverse impacts than the strictly private development that might otherwise occur.

Practicable Alternatives and Existing Construction in Flood Hazard Areas

The Federal government has a direct concern for existing flood-prone housing that was constructed below the 100-year elevation in flood hazard areas. It recognizes the need to maintain, rehabilitate and modernize the existing housing stock in order to meet the nation's housing needs. However, the existing stock of flood-prone housing is probably the most difficult aspect of the nation's flood problem with which to deal.

Local ordinances adopted as a result of the NFIP are in place to regulate new construction, but have had only marginal effects on the number of existing flood-prone housing units that would gradually be eliminated over time and replaced by structures more resistant to flood damages. This assumes that these existing structures would eventually be damaged, deteriorate or become obsolete and be replaced.

However, federally-assisted repair, rehabilitation and modernization of structures subject to frequent flood damages has prevented this, thereby perpetuating this aspect of the Nation's flood problem.

A Federal agency decision to assist financially the repair, rehabilitation or modernization of a flood-prone structure must take into account not only the immediate cost to the Federal agency, but also the long range costs of maintaining that structure to the Federal government as a whole. The application of the Executive Order provides a mechanism for doing so.

For existing structures and facilities proposed for Federally-assisted acquisition, disposition, or improvement, which involves repair, rehabilitation, modernization or reconstruction, the range of practicable alternatives to consider should include an analysis of each of the following options for structures and facilities that are constructed below the 100-year flood elevation:

- (a) elevate and/or floodproof structures and facilities, especially where a substantial improvement is proposed;
- (b) acquire flood-prone structures and facilities and relocate them to flood-free locations and demolish substandard buildings and facilities that are beyond improvement thus reducing exposure to flood hazards;
- (c) build flood protection works and other water retention facilities to protect structures and facilities against periodic flooding;
- (d) floodproof individual sites with perimeter embankments or other techniques to stop flooding from reaching the home or other building or facility; and
- (e) prohibit the use of funds to structures that have suffered periodic flood damages because of their floodplain condition, since their occupancy is hazardous to life as well as property.

H. When is a general (area) review acceptable in lieu of site-specific reviews?

An area wide compliance process may be substituted for individual compliance actions where a series of individual actions is proposed or contemplated over an indefinite time period. In area wide compliance, the area for examination may include a sector of or the entire floodplain or wetlands relevant to the proposed anticipated actions. The area wide compliance process shall comply with the full decision-making process for avoiding floodplain locations.

Area wide compliance strategies are subject to the following safeguards and special provisions in order to provide checks and balances, and certain constraints on possible unwise actions.

1. They shall be initiated with a formal agreement of understanding with the local government(s) concerning mutual responsibilities governing the preparation, issuance, implementation and enforcement of the area wide strategy, and involving the local building permit and the environmental protection office.
2. They may be performed jointly with one or more Federal departments or agencies, or grant recipients which serve as the responsible Federal official;
3. They shall establish a mechanism to assure that the terms and approval of individual actions (e.g., concerning structures and facilities) will be consistent with area wide strategy and that the controls set forth in the area wide strategy are implemented and enforced in a timely manner; and that, where appropriate, if additional or other treatment for individual actions is necessitated, these will be established as a condition of approval for the individual action; and the mechanism will involve the local building permit and the environmental protection offices.
4. An opening scoping process shall be used for determining the scope of issues to be addressed and for identifying the significant issues for the entire floodplain or wetland sector.

5. Eligibility for participation in or the use of the area wide compliance method is limited to local government(s) that are in full compliance in the Regular Program of the NFIP and which have demonstrated a capacity and commitment to floodplain management standards.

6. There must be a continual review for changed circumstances, such as based on redefined floodplains or recurring flooding.

I. How are Actions with Limited Impact Addressed?

All activities proposed by Federal agencies that are located in or have an effect on floodplains must be conducted in accordance with the eight-step decision-making process in the Executive Order. The Executive Order applies to federally assisted or regulated activities as well as to those actually conducted by the Federal agencies.

Illustrations of actions with limited impact on the floodplain typically, but not in all cases, are those involving approval of financial assistance for signs, trails, walkways, bike paths, surface parking, land acquisition for parks and open space (but not for development of such facilities), weatherization or energy conservation improvements to a single family property previously elevated and floodproofed to the standard of the National Flood Insurance Program (44 CFR Part 60.3). Similarly, a "roll-over" of a loan from an existing to a new owner for a single family property may be considered an action of limited impact, if the house was previously elevated and floodproofed to the standard of the National Flood Insurance Program (44 CFR Part 60.3) and has not received any flooding.

When the proposed activity is temporary, incidental to the mission of the Federal agency, requires access to the floodplain and is easy to remove completely from the floodplain at the threat of flooding, the requirements of the Executive Order may be considered satisfied when a plan for evacuation of the activity from the floodplain is prepared and public notice is given of the intention to implement the evacuation plan in the event of a threat of flooding. Examples of these kinds of activities could include temporary survey towers, temporary stream gaging equipment, mobile construction offices, geological investigation equipment, etc.

However, practical considerations dictate that the intensity of the actions taken to comply with the Executive order should generally be commensurate with the expected degree to which the proposed activity increases flood hazards of risks or impacts the floodplain.

When the proposed activity has very limited exposure to flooding or causes rather insignificant impacts on the floodplain, some adjustments could be made in the intensity of analysis and extent of distribution of public notices.

If a judgmental examination of reliable information reveals that the proposed activity has such limited impact that any other practical alternative would cause equal or more serious impacts to the floodplain and its natural values, the requirements in Steps 3 and 6 of the decision-making process to develop and evaluate practical alternatives may be considered complete upon certification of that judgment by the decision-making official. The public notice requirements for such an activity may be considered satisfied when residents of the local community and State floodplain management agency have had sufficient opportunity to be informed and to comment on the proposed action.

If the proposed action is to install measures intended to reduce flood hazards, such as on site detentions or stream gaging components of flood warning systems, then fulfilling the requirements of the National Environmental Protection Act, the Clean Water Act, other environmental statutes, and following the planning procedures in the Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies will generally satisfy the requirements of the Executive Order, if consistent with the provisions of the Executive Order, the examination of practical alternatives to the floodplain location was completed as well as minimization, restoration and preservation was provided.

However, these public notices required in the project planning and development process should include the information that the Federal actions are in compliance with the Executive Order.

J. When would a Class Review of Certain Repetitive Actions be Permissible?

In considering whether to undertake a class review and which actions may be subject to such a review, agencies should consider those past activities that have been reviewed on an individual basis, pursuant to agency procedures, with public notice and opportunity to comment. If the results of individual reviews have indicated uniformly that the activities would not have an adverse impact on floodplain values placing property and persons at risk, and little or no public comments to the contrary have been received, use of a class review in a streamlining of agency coordination and processing efforts is a substantial reduction in overall time required for review of proposed actions.

In order to improve efficiency but yet maintain a desirable level of compliance with the Executive Order, a floodplain evaluation class review may be made of certain routine or recurring actions when:

1. consideration of whether to locate in a floodplain is substantially similar;
2. there is normally for each action within the class no practicable alternative(s), consistent with the Executive Order and applicable agency codes, to siting in a floodplain;
3. all practical measures to minimize harm to the floodplain have been included in the review criteria that, if followed, will minimize any adverse impacts that may be associated with the individual actions covered in the class review;
4. mortgage insurance or rehabilitation assistance for non-substantial improvement is being sought for existing structures.
5. weatherization or energy conservation assistance is being sought for existing structures;
6. land acquisition of floodplain property is intended for park open space when the assistance excludes any development cost;
7. land acquisition of floodplain property is for the purpose of preserving it from occupancy and modification.

For those actions for which a class review is appropriate the agency would no longer be required to make findings of no practicable alternative or to publish public notices for subsequent actions in the class. However, when evaluating those actions to comply with applicable codes or regulations, the agency must (1) establish that the action occurs in a floodplain and (2) take appropriate measures to minimize any adverse impacts to natural, and beneficial floodplain values.

However, there will be situations when a class review of certain repetitive actions cannot be undertaken. These will be situations when the action will result in an increased risk to itself or an increased risk to others. The following are situations or conditions which will trigger the entire 8-step decision-making process.

- The proposed action is located in a floodway or within 50 feet of a riverbank if the floodway has not been designated.
- The proposed action is located in a coastal high hazard area.

- The proposed action involves a structure whose lowest floor is two feet or more below the 100-year flood elevation.
- The proposed action involves a structure whose lowest floor has experienced flooding, or flood-induced damage reimbursed under the National Flood Insurance Program.

As a part of the class review, the agency should establish a set of review criteria which normally will ensure that natural and beneficial floodplain values are not significantly affected. If these criteria, which apply to all floodplain actions, are followed, floodplain impacts should be minimized; and further floodplain evaluation, as defined by the Executive Order, will normally not be required. The following are examples of review criteria that, at a minimum, should be considered.

- All facilities should be designed and constructed to withstand flooding with minimum damage.
- All activities will adhere to the minimum standards of the NFIP published at 44 CFR 60.3, and any future amendments thereto, and will comply with local floodplain management regulations. In accordance with these minimum standards, proposed actions will be evaluated to ensure that development (1) will not significantly increase 100-year flood elevations, and (2) will not involve placement of fill or other flow obstructions in the floodway portion of the floodplain unless compensatory adjustments are also included.
- Existing vegetation (ground cover and canopy) will be left in place and undisturbed to the maximum extent practicable.
- Best management practices will be used as a minimum to control surface water runoff and erosion. These practices are described in Guidelines for Erosion and Sediment Control Planning and Implementation (EPA Environmental Protection Technology Series Report No. EPS-R2-72-015, August 1972).⁹ Disturbed area will be reseeded as soon as possible with species adapted to existing conditions.
- Dredge spoil will be disposed of properly in accordance with local, State and Federal regulations at an inland site outside identified floodways.
- Riprap, as opposed to soil, will be utilized as fill material below the maximum normal pool elevation.
- Prior to crossing areas harboring threatened or endangered species, or areas specifically identified as "sensitive," biologists will be contacted and will assist in the determination of mitigative measures necessary to negate or minimize impacts to these areas.
- In areas where overhead structures were constructed, stream-banks will not be disturbed and equipment will not be driven in streams; selective cutting will be used to removing intruding vegetation; stumps will be left at a height which will encourage resprouting, retain soil, and reduce overland water-flow; and no areas will be stripped of vegetation.

Examples of actions that agencies may, as a result of a class review, determine there are no practicable alternatives that would avoid siting in floodplains include:

- private and public water-use facilities (e.g., docks, fixed piers, floats, fixed or floating boat slips, fixed or water-related dock buildings but not habitable structures, fuel-handling facilities, floodproofed buildings for dry boat storage, and minor dredging for boat channels and harbors);

- picnic tables, benches, grills, dune walkovers, other public access structures, and fences on agency lands;
- underground, overhead, or anchored utility and related lines and support structures (e.g., cable TV, electric, pipeline, sewer, telephone and water);
- water intake structures;
- outfalls; and
- small private, land-based storage sheds and buildings having less than 25 square feet of floor space and used for storage of water-use related equipment.

• SCENARIOS OF THE EXECUTIVE ORDER'S IMPLEMENTATION

A. Planning and Implementing Direct Federal Construction Projects

The Federal government administers many programs where construction activities could take place in the floodplain. These activities involve public and commercial buildings such as hospitals, schools, offices, libraries, homes, parks, roads and bridges, dams, dikes, levees, sewerage treatment plants or other construction. The planning process is very similar for most projects. Some parts of the process may require more details in some of the stages than in others.

For purposes of this document, assume that a growing community is in need of municipal and industrial water and water-based recreational facilities to satisfy the public demand. Further assume that indiscriminate floodplain development had already taken place before floodplain ordinances were enacted and that a flood problem exists.

Because the proposed project deals with water resources, implementation studies for the Corps of Engineers, Bureau of Reclamation, Tennessee Valley Authority, and the Soil Conservation Service are covered by the Economic and Environmental Principles and Guidelines for Water Related Land Resources Implementation Studies (P&G).¹⁰ The P&G has a planning process that consists of a series of six steps that identify or respond to problems and the opportunities in a systematic fashion. It is iterative in nature, in that it recycles as more information becomes available, which helps refine the data and eventual outcome. Although the example represented integrates the P&G planning process with the eight-step Executive Order process, any Federal action could utilize this process. The P&G fully integrates into its process the requirements of the National Environmental Policy Act of 1969 (NEPA). The P&G further states that for determining benefits of flood hazard reduction, "compliance with Executive Order 11988, Floodplain Management and Executive Order 11990, Protection of Wetlands, is assumed. (P&G Section 2.4.3(b) (3)).

This scenario is developed with these conditions in mind. Most water resource projects are normally located on or near the floodplain. As such, the Executive order 11988 is applicable. This scenario applies to federally-assisted projects as well as to federally-owned projects.

1. Determine if a Proposed Action is in the Base Floodplain

This step is also a part of Step I of the P&G which is the specification of water and related land resources problems and opportunities associated with the Federal Objective and specific State and local concerns. The WRC Floodplain Management Guidelines explain where to obtain information on floodplains and how to determine if a site is located within the floodplain. Hazards based on the risk to loss of life and other

perils are related to the depth and velocity of the floodwaters to be expected at any particular location. If detailed maps are available, it should be possible to assess the hazard of locating in the base floodplain.

2. Early Public Review

If it is determined that a proposed action is in- the base floodplain, public involvement must be considered early in the planning process. In this scenario, there is no doubt that it is so located. This step is also a part of P&G Step 1 and relates to "specific State and local concerns." This early public involvement is called for in the P&G and in NEPA requirements through a scoping process involving one or more scoping meetings throughout the study of a proposed project. This process must also follow the procedures for implementing Executive Order 12372 which is the inventory, forecast, and analysis of water and related land resource conditions within the planning area relevant to the identified problems and opportunities.

3. Identify and Evaluate Practicable Alternatives to Locating in the Base Floodplain.

This step is comparable to the third P&G step which is the Formulation of Alternative Plans. P&G requires that alternative plans be developed and refined through an iterative process.

A plan that reasonably maximizes net National Economic Development Benefits consistent with protecting the Nation's environment must be formulated. Other reasonable alternatives which address the problems to various degrees as well as offer alternative sittings should also be considered. In addition, the environmentally preferred alternative will be identified. The no-action alternative should present the future without project condition. Except for those features of a plan which must be located in or near a waterway to accomplish a needed function, this analysis of alternatives will include a consideration of the possibilities of locating facilities outside of the floodplain. However, this rarely occurs with water resource projects.

In this scenario, various alternatives could be considered for each of the purposes, individually or collectively. It could be possible to build a dam that would contain floodwater retarding storage, municipal and industrial (M&I) water storage, recreational water storage, and an adjacent recreational area. Alternatives for an M&I water source could be ground water pumping, pumping directly from the reservoir, releasing water from the reservoir into the stream for downstream recapture and pumping, an off-site water storage tank, an underground storage and water conservation applications. If some water exists in the area, a recreation development could be adjacent to a stream or river instead of a reservoir or pond. A swimming pool with an adjacent play area is an option that could be situated just about anywhere. For solving the flood problem, alternatives to consider besides a dam are dikes, levees, floodplain relocation of structures outside the floodplain, floodproofing and a flood warning system.

4. Identify Impacts of Proposed Action

Having tentatively identified the selection plan, a detailed and exhaustive part of the process must then be undertaken to identify and quantify all direct and indirect impacts of the proposed action. This is a reiteration of P&G Step 4 which concentrates on the proposed action. The WRC Floodplain Management Guidelines and the P&G procedures for this step are compatible. While performing this step, it may be found that the expected impacts of the other alternatives should be changed or adjusted. For instance, it may be found that some rare species of flora exists in the area that would preclude the use of an alternative recreation site. It might also be found that locating the recreation area in close proximity might create a hazard to life and property or that it might spur other development on the fringe of the floodplain. The possibility of water pollution from hazardous wastes or other pollutants could occur. In any case, a change in the flow regime can cause other impacts. Either relocation or some special precaution would have to be taken to protect any amenities that would be directly or indirectly affected, which leads to the next step.

5. Minimize, Restore, Preserve

This step is a refinement of the formulation process (P&G Step 3) whereby projected impacts can be adjusted by altering the project or using alternate construction methods to minimize impacts, restore previously lost values and preserve existing values. This is part of the NEPA process that also develops proposed means to mitigate adverse environmental impacts where necessary. In the example, it would mean protecting these amenities from the public or protecting the public from being exposed to hazards or potential hazards. In some cases, it would mean finding another site; this would require a recycling of the planning process which is the next step.

6 Reevaluate Alternatives

Having gone through a detailed evaluation of the proposed action, the other alternatives should be readjusted in light of any additional information obtained and a new comparison of alternatives should result in P&G Step 6. A recommendation is then made to proceed with the proposed action, an alternative action, a limitation or portion of any one of the proposed or alternative actions, or no action.

All displayed alternatives must be consistent with the Executive Order, other environmental laws, and other executive orders. They must consider the four criteria of completeness, effectiveness, efficiency and acceptability, where acceptability consists of the compatibility with existing laws, regulations and public policies. The "NED alternative" must be selected unless the secretary of a department or head of an independent agency grants an exception when there is some overriding reason for selecting another plan. A table should be prepared comparing all beneficial and adverse effects of the "NED alternative" and the selected alternative and displaying these differences. Assume now that the decision is to proceed with a multipurpose dam for M&I water and floodwater storage and to develop an offsite recreation area.

7. Finding and Public-Explanation

As part of the public participation process and in fulfilling the requirements of NEPA, local and interagency reviews should be conducted with proper filing of draft and final documents in local newspapers and the Federal Register along with proper public meetings or hearings. If it is decided that an Environmental Impact Statement (EIS) is not needed, then a Finding of No Significant Impact should be circulated. In this case, assume an EIS is needed.

Each agency has its own specific procedures to follow, but they generally require a public meeting. In this instance, the NEPA process is triggered and has this requirement. The comparison of alternatives prepared in item VI shall be the basis for public discussions. A Record of Decision shall be prepared and filed in the Federal Register on the comparison information and as a result of the public involvement. This is the final iteration of P&G Step 6.

Such public notices should include a statement that the selected plan is in accordance with all executive orders and public laws.

8. Implement Action

Once approved, implementation of a project can commence upon approval of funds for construction. Deviations should not be made from the plan that has been selected unless the described planning process is repeated. There must be agreements to provide assurances that some agency is responsible for the proper operation, maintenance, and replacement of project features in accordance with a described plan of action. There should also be binding agreements between the responsible agencies to protect the floodplain so that no alterations can be made that would adversely affect the operation of the selected action.

B Proposed Action Involving Financial Assistance to State and Local Governments and Federal Planning Approval

BACKGROUND

Outside of general revenue sharing, the Federal government provides two types of financial assistance to State, regional and local governments (hereinafter "applicants"); these include grants and loans. Grants can either be block grants or categorical grants and are listed in the Federal Domestic Assistance Catalogue. The degree of control and Federal oversight on the expenditure of these funds varies. Federal agencies have more control over categorical grants, which identify ahead of the time specific tasks and projects which are to be funded, than they have over block grants. Generally speaking, the more fiscal control an agency has over the disbursement of grants and loans, the greater responsibility and involvement the agency will have in meeting the compliance requirements of the Executive Order.

Federal agencies which administer programs providing financial assistance for planning, acquisition of lands or properties, or for construction purposes, are required to ensure that the purposes to which the financial assistance applies are consistent with the provisions of the Executive Order. This means that grant and loan applications must be reviewed for consistency with the Executive Order and related provisions of Federal laws and requirements. However, many questions may arise such as which applications or portions of applications are applicable or conversely, not applicable to the Executive Order's requirements. The purpose of this particular section is to provide guidance on these issues.

1. Screening Financial Assistance Applications for Non-Eligible Projects

One of the first things agencies should do is to screen applications for projects which may be non-eligible. There are currently three Federal laws, which under some circumstances, prohibit or limit the expenditure of Federal funds in floodprone areas. These include the National Flood Insurance Act and the Flood Disaster Protection Act of 1973, as amended, and the Coastal Barriers Resources Act (CBRA) P.L. 97-349).

Applicants should be made aware that any community listed by the Federal Insurance Administration (FIA) in their most current NFIP Community Status Book (published biannually) as being a community which is NOT PARTICIPATING in the NFIP, but which has an FIA flood map delineating the special flood hazard areas in the community, will not be eligible for any Federal financial assistance for the "acquisition or construction of buildings in the special flood hazard areas shown on the FIA map." This does not preclude the community, from applying for other types of Federal financial assistance both in the floodplain (e.g., acquisition of wetlands or other floodplains) or outside of it.

Financial assistance requests must also conform to the requirements of the CBRA within coastal areas. CBRA states Federal funds may only be used for projects on undeveloped coastal barriers designated in the CBRA system if they are consistent with the three purposes of the Act - to minimize the loss of human life, wasteful Federal expenditures, and damage to fish, wildlife and other natural resources. This is important since major portions of the coastal barriers are located in flood hazard areas. If a project is to be located in a designated undeveloped coastal barrier the agency is required to consult with the relevant regional office of the U.S. Fish and Wildlife Service (F&WS). This consultation process requires that the agency provide the F&WS with up to 30 days to render an opinion that the project is consistent with the purposes of CBRA, so some delays in awarding grants and loans can be anticipated. The agency, however, has the authority to make the final determination if a project is consistent with the purposes of the Act.

Agencies should provide this guidance to applicants prior to the submission of their financial assistance applications if time and effort is to be saved.

2. What Types of Financial Assistance Projects must Comply with the Executive Order?

An action must be "Federal" and must "affect" the "floodplain" before the Executive Order applies. While all actions "affecting" the floodplain must be considered, the Executive Order appears to impose its strictest protection for actions proposed to be located directly in the floodplain. Federal actions include actions by

applicants that are financed with Federal funds or that are otherwise assisted, regulated, or approved by the Federal government. This would include federally undertaken, financed, or assisted construction and improvements, or Federal activities and programs affecting land use, including Federal licenses, permits, loan or grants-in-aid programs.

Generally speaking, all financial assistance applications must be reviewed for compliance with the Executive Order, at the same time they are reviewed for compliance with the NEPA requirements (however, the Executive Order does not limit coverage to actions that are "major"), Historic Preservation Act, Endangered Species Act, and other environmental Grants and loans which are used by applicants for construction and improvement purposes (e.g., buildings, roads and infrastructure), the acquisition of and or property (e.g., for open space, recreation or development purposes) , or the development of plans (e.g. , Master Development Plans) which propose development or controls, or alters land and water uses in the floodplain should be reviewed for compliance. The Executive Order, Section 1, states that:

"...agencies shall take action to reduce the risk of flood loss to minimize the impact of floods on human health and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities for...(2) providing federally... financed, or assisted construction and improvements; and (3) conducting Federal activities affecting land use, including but not limited to water and related land resources planning..."

3. Which Applications can be Exempted?

As a rule, actions to be located in or which impact the floodplain are not exempt from the Executive Order.

4. Are Federal Agencies Permitted to Delegate Responsibility?

Federal agencies generally lack the discretion to delegate to non-Federal entities what are basically Federal responsibilities for complying with the applicable provisions of the Executive Order 11988, unless authorizing specifically to do so by law. The following paragraphs address: delegatability, assumption of Federal responsibility, and applicant submission of floodplain data.

Delegatability: There is no authority to delegate Federal responsibility for implementing any of the Executive Order's provisions applicable to Federal Programs, except for projects covered by Section 104(h) of the Housing and Community Development Act of 1974 applicable at this time only to the following four programs: Community Development Block Grant, Urban Development Action Grant, Rental Rehabilitation, and Housing Development Action Grant Programs.

Assumption of Federal Responsibility: Section 9 of the Executive Order allows units of general purpose, local governments which are authorized by Federal Law to assume the status of Federal agencies for the purposes of compliance with the NEPA, also to assume the responsibility for carrying out the provisions of Section 2(a) of the Executive Order for specific projects under the four above-cited programs as part of their overall NEPA responsibilities. All other non-Federal entities lack "legal capability" to assume Federal responsibility for implementing any of the Executive Order's provisions applicable to Federal Programs. Moreover, Section 6 of the Executive Order defines the term "agency."

Applicant Submission of Floodplain Data: Federal agencies may require that applicants provide certain kinds of floodplain information which is necessary for the Federal agency to undertake its responsibility for complying with the applicable provisions of Executive Order 11988.

Section 2(d) of the Executive Order authorizes that Federal agencies to the extent possible use existing processes of the Council on Environmental Quality (CEQ) to fulfill the requirements of the floodplain management Executive Order. However, CEQ regulations under 40 CFR Part 1506.5(b) relating to "Agency responsibility" state:

"If an agency permits an applicant to prepare an environmental assessment, the agency, besides fulfilling the requirements of paragraph (a) of this section, shall make its own evaluation of the environmental issues and take responsibility for the scope and content of the environmental assessment."

"Paragraph (a) reads in part:

"If the agency chooses to use the information submitted by the applicant...the names of the persons responsible for the independent evaluation shall be included in the list of preparers (Part 1502.17). It is the intent of this subparagraph that acceptable work not be redone, but that it be verified by the agency."

"Paragraph (c) reads in part:

"If the document is prepared by contract, the responsible Federal official shall furnish guidance and participate in the preparation and shall independently evaluate the statement prior to its approval for its scope and contents.

Generally, many Federal agencies which provide financial assistance delegate some, if not all, of the Executive Order's requirements to the applicants while retaining overall responsibility for compliance in the decision-making. Some agencies may find it more convenient or practical to have the applicant meet steps 1 and 2 (Identification and Early Public Review) prior to receiving a grant application but through their NEPA process meet the additional requirements themselves. In those cases where the applicant is required to also submit an environmental assessment or impact statement, the agency may have met all Executive Order requirements once the decision makers concur with the conclusions of the document and final public notice has been issued. For agencies with numerous grant requests and limited staff, this is a preferable method of meeting the Executive Order requirements as the time requirements between receiving a grant application and awarding the grant can be minimized. It is advantageous to delegate where possible, especially the early public review requirements as it usually involves a considerable amount of time to prepare and place ads in local newspapers and wait for any responses. As much as two months time may be saved by having the applicant meet this requirement during the preparation of their application. This, however, does not release the agency from reviewing and confirming that the information found in the application and/or assessment meets the intent of the Executive Order.

Regardless of the extent of the delegation practiced by Federal agencies, Federal grantees must be familiar with the terms of the Executive Order so that their pre-application planning is consistent with the required floodplain management goals. To insure that timely information is given to, prospective Federal applicants, the Executive Order requires that:

Agencies shall 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. (E.O. 2(c).)

The WRC Floodplain Management Guidelines amplify this requirement:

It is important that applicants be made aware early in their planning process of the floodplain management parameters which the agency must consider when reviewing the proposed action. In this way, applicants will not go to the trouble of putting together completed plans and submitting them formally before being made aware of the standards to which the agency is subject to reviewing such plans. (WRC Guidelines, interpretation of 2(c).)

5. When Should a Federal Agency Comply with the Executive Order?

Requirements for compliance can take place before an application is submitted (i.e., delegate all responsibilities to the applicant and require compliance prior to submission of the application) during the

approval process (i.e., the Federal agency places the application on hold until the eight-step decision-making process is completed by either the applicant or the agency); and, after the financial assistance request has been awarded (i.e., the grant or loan has been conditionally approved and funded for construction or acquisition cannot take place until the Executive Order requirements have been met). The latter is sometimes necessary as a single grant often has multiple projects or tasks, some of which may not need to comply with the Executive Order and must therefore be awarded on a timely basis. Also, some grants and loans are used to develop land and water use plans which may impact the floodplain and the eight-step process cannot be completed except during the development stages of the plan (e.g., reviewing alternatives and impacts). In such a case, compliance should take place after the plan has been funded but before it is approved.

The difficult question that often arises for some agencies who delegate responsibility is what practicable alternatives are still viable alternatives for the agency to choose from if the applicant has met the requirements. This deals with oversight and the question and the substance of compliance. Often the only options left to the agency are to either deny or approve the application. The agency is often unable, to consider "additional" practicable alternatives because the process has nearly been completed, permits are being processed or approved, and other actions taken.

While it is important to ensure the integrity of the eight-step decision-making process once delegated to the applicant, agencies should be aware that they still need to look at what practicable alternatives have been reviewed and what may exist if activities are located in the floodplain, especially those projects which are non-functionally dependent (Section III G Practicable Alternatives). The "minimization" requirements should also be reviewed as both the practicable alternatives and minimization requirements are demanding standards under the Executive Order. If the agency is not satisfied with the alternatives and minimization requirements reviewed and proposed by the applicant, then the process should be opened up and additional alternatives reviewed along with appropriate minimization requirements with the applicant.

Agencies should keep in mind that if a "practicable" alternative exists outside the floodplain, "the proposed action must not be located in the base floodplain" (or 500-year floodplain for critical actions). The practicability of an alternative is measured by the "general concept of site feasibility." The WRC Floodplain Management Guidelines state that site practicability shall be addressed in light of the following factors and clearly outweigh the requirements of the Executive Order:

- natural (topography, habitat, hazards, etc.);
- social (aesthetics, historic and cultural values, land use patterns, etc.);
- economic (cost of space, construction, services, relocation) ; and,
- legal (deeds, leases, etc.)

Consequently, the burden still rests on the agencies to ensure the practicability test has been substantively as well as procedurally met before a final decision is made on awarding a grant or allowing construction in the floodplain.

Example of Agency Compliance

The Office of Ocean and Coastal Resource Management (OCRM) in the National Oceanic and Atmospheric Administration (NOAA) provides several different grants and loans to coastal States and territories. The States in turn distribute the funding to State agencies, local and regional entities. Grants and loans are used:

- 1) to develop and implement comprehensive land and water resource management plans which impact development in coastal and interior floodplains;
- 2) for construction purposes for public facilities which are often located in parks and beaches in the floodplains;
- 3) for the acquisition of land to establish sanctuaries, public access to the shoreline, or for other purposes consistent with their management programs. Consequently, many of OCRM actions require the Executive Order's compliance.

1. Guidance from NOAA to OCRM

OCRM is guided in their decision-making by the following NOAA policy:

5. Policy - To the extent allowed by law:

- No proposed NOAA action may be located in a floodplain unless the responsible program official determines that there is no practicable alternative location outside the floodplain, there is no practicable alternative action that minimizes the risk of flood-caused loss of life or property, and there is no practicable alternative that minimizes any adverse impacts on natural and beneficial floodplain function and values.

(b) No proposed NOAA action may be located in a wet land unless the responsible program official determines there is no practicable alternative location outside the wetland and there is no practicable alternative action that minimizes the degradation or destruction of wetland habitat.

(c) No proposed NOAA action or alternative may be implemented unless all practicable mitigation measures are taken to:

- (1) Minimize the risks of loss of life and property caused by flood and storm damage;
- (2) Minimize the adverse impacts on natural and beneficial floodplain and wetland functions and values; and
- (3) Restore the natural and beneficial functions and values served by floodplains and wetlands.¹¹

2. OCRM Delegation

OCRM has delegated Executive Order requirements as much as possible to the applicants. If some applicants have not met the requirements or chosen not to, then OCRM assumes responsibility but notifies the applicant there will be delays in awarding the application. In either case, OCRM retains the responsibility for making a decision and notifying the public of the action (which is usually accomplished through the NEPA process).

Many State and local government projects require a Federal permit (e.g., a public access pier would require a Corps of Engineers Section 10 and possibly a Section 404 permit). In order to avoid duplication in such a case, where the applicant already has the permit and the Corps of Engineers has served as a lead agency under NEPA and has met the Executive Order's requirements, then OCRM takes no additional action under the Executive Order or NEPA and a categorical exclusion is prepared.

If the required COE permit has not been issued (and depending on the scope of the project), OCRM then takes steps to meet the Executive Order's requirements and conditionally awards the grant until all permits have been obtained, after which construction can begin. In this instance, the Executive Order's requirements

would have been duplicated by both OCRM and another lead agency such as the Corps of Engineers, so timing of the application is important to OCRM.

C. Proposed Action Involving Regulatory Programs and Permitting Actions

Background:

Federal agencies are responsible for regulating a wide variety of actions carried out by both public and private interests. Since regulatory programs cover such diverse fields as banking, communications, transportation, health, safety, environmental concerns, etc., the implementation procedures vary widely between agencies and even between different programs within an agency. However, most regulatory programs have a common thread in that the decision maker must evaluate proposed actions against established criteria.

The Executive Order is primarily concerned with those regulatory programs where the proposed action can be identified with specific sites. Regulatory programs dealing with products and non-site specific activities are generally not affected by the Executive Order. For example, granting a license to operate a commercial radio station would not normally be affected by the Executive Order. However, the Executive Order would be applicable in evaluating a permit to construct a tower for the same radio station.

The Corps of Engineers regulatory program is used as an example of a site specific program that is subject to the Executive Order requirements. This program regulates work within as well as the discharge of dredge or fill material into the waters of the United States. The requirements of NEPA, CZMA, and CWA are integrated into this permitting program. The decision making process is based on a determination of public interest. A permit will be granted unless its issuance is found to be contrary to the public interest. The permitting process incorporates an intensive public involvement program including issuance of public notices.

Situation:

An industrial firm applies to a Corps District Office for a permit to construct a new manufacturing plant on the bank of a river. The plant must have access to the river for raw water supply. Barges will be used to transport raw materials and finished products.

Solution:

1. Determine if a Proposed Action is in the Floodplain. This step is accomplished by the District Office processing the application or by the applicant seeking the permit. If the applicant makes this evaluation, his determination will be reviewed by the District office. The WRC Floodplain

Management Guidelines explain where to obtain information on floodplains and how to determine if a site is located within the floodplain. In this case, assume that the proposed manufacturing plant including water intake, docks, loading facilities, and other supporting activities is sited in the base floodplain. However, the main plant is located outside the boundaries of the regulatory floodway. The docks, water intake, loading facilities, and storage areas are located within the floodway boundaries.

2. Early Public Review. The existing public involvement procedures of the permitting process are used to notify the public and obtain comments. The public notice is the primary method of advising all interested parties of the proposed activity for which a permit is sought and of soliciting comments and information necessary to evaluate the probable impact on the public interest.

3. Identify and Evaluate Practicable Alternatives to Locating in the Floodplain. In compliance with the Executive Order, decision makers should avoid, to the extent practicable, long and short term significant

adverse impacts associated with the occupancy of floodplains, as well as the direct and indirect support of floodplain development whenever there is a practicable alternative. The decision maker should avoid authorizing floodplain developments whenever practicable alternatives exist outside the floodplain. Since the docks, loading facilities, water intakes, etc., must be located on the river, it may not be practicable to move the entire facility to a flood-free site. However, it may be practicable to move the main plant and storage area out of the base floodplain and leave the necessary water based facilities near the river. The practicability of this site must be evaluated including impacts on existing environmental, social, economic and legal issues.

4. Identify and Evaluate Impacts of the Proposal. The decision whether to issue a permit will be based on an evaluation of the probable impact, including cumulative impacts, of the proposed activity. This includes both direct and indirect impacts on the proposed project has on a floodplain. Although the proposed manufacturing facility may constitute a minor change to the floodplain, the cumulative impact of this and other potential changes, including the need for other services and housing in the area, may result in a significant increase in flood damages, degradation of the floodplain values, and in increased flood risks to upstream and downstream activities. Evaluation of the probable impact of the proposed activity on the public interest requires a careful weighing of all those factors which become relevant in each particular case. The benefits, which reasonable may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. The decision whether to authorize a proposal and, if so, the conditions under which it will be allowed to occur, are therefore determined by the outcome of the balancing process. That decision should reflect the national concern for both protection and utilization of important resources.

5. Minimize, Restore and Preserve. If there are no practicable alternatives within the floodplain, the decision maker may consider, as a means of mitigation, alternatives within the floodplain which will lessen any significant adverse impacts to the floodplain. For those activities which must occur in or impact upon floodplains, the decision maker shall insure to the maximum extent practicable that the impacts of potential flooding on human health, safety and welfare are minimized and the natural beneficial values served by floodplains are restored and preserved. If, in evaluating alternatives, it is determined that the main plant can be located outside the base floodplain, then those remaining facilities which must have a waterfront location should be designed to minimize flood damages and impacts on the floodplain. This could include use of elevated utilities, water resistant materials, and other design features compatible to a floodplain location.

6. Reevaluate Alternatives. The decision maker will consider all comments received in response to the public notice, as well as comments received from other Federal, State and local agencies. The applicant must be given the opportunity to furnish his proposed resolution or rebuttal to all objections. A permit application will require either an environmental assessment or environmental impact statement. All environmental procedures and documentation required by NEPA will be undertaken. The decision maker will also evaluate the application to determine the need for a public hearing.

7. Findings and Public Explanation. After all the above actions have been completed, the decision maker will be able to determine, in accordance with the record and applicable regulations, whether or not the permit should be issued. A statement of finding is prepared. If a permit is warranted, the decision maker will determine the special conditions, if any, and duration of these conditions for issuance of the permit which should be incorporated into the permit approval. The District Office maintains a list of permits issued or denied each month. This list will be furnished to any person expressing an interest in any of the public notices.

8. Implementation. The permit will either be issued or the applicant will be informed in writing of the reason(s) for denial.

Floodplain Services Available
from Listed Agencies

DEPARTMENT OF AGRICULTURE

Soil Conservation Service (SCS)

As part of the SCS's Floodplain Management Assistance Program each State Conservationist carries out cooperative Flood Hazard Analyses upon request of local governments, in accordance with a Joint Coordination Agreement with the responsible State agency. SCS flood hazard reports contain floodplain delineations on aerial photo maps, flood profiles, and discharge and floodway data. In addition, SCS provides continuing technical assistance to local governments, after completion of a flood hazard or insurance study, to help them implement their local floodplain management program. Each SCS State Office has additional flood elevation and related floodplain data on file from Watershed Project and Resource and Conservation Development Project Investigations, River Basins Surveys, and detailed soil surveys. If the State or field office address is not known contact: Chief, Floodplain Management and Special Projects Branch, River Basins Division, SCS: P.O. Box 2890, Washington, D.C. 20013. Telephone: (202) 447-76 97.

DEPARTMENT OF THE ARMY

Corps of Engineers

The Corps' separately funded Flood Plain Management Services Program has units in 47 District and Division offices located throughout the country which provide information and assistance in flood-related matters. They maintain a file of reports containing floodplain delineations, flood profiles, and data on flood discharges and hydrographs. Each office provides:

1. interpretations as to flood depths, velocities and durations from existing data;
2. develops new data through field and hydrologic studies for interpretation; and
3. provides guidance on adjustments to minimize the adverse effects of flood and floodplain development.

If the nearest District office address is not known, contact Chief, Flood Plain Management Services and Coastal Research Branch, U.S. Army Corps of Engineers, HQDA (DAEN-CWP-F), Washington, D.C. 20314, telephone (202) 272-0169, or the nearest Division office.

North Atlantic Division, New York, New York (212) 264-7482

South Atlantic Division, Atlanta, Georgia (404) 331-6702

Southwestern Division, Dallas, Texas (214) 767-2310

South Pacific Division, San Francisco, California (415) 556-5660

Lower Mississippi Valley Division, Vicksburg, Mississippi (601) 634-5827

Missouri River Division, Omaha, Nebraska (402) 221-2270

North Central Division, Chicago, Illinois (312) 353-6531

Ohio River Division, Cincinnati, Ohio (513) 684-3012

North Pacific Division, Portland, Oregon (503) 221-3823

New England Division, Waltham, Massachusetts (617) 647-8551

Pacific Ocean Division, APO San Francisco (808) 438-2883

DEPARTMENT OF COMMERCE

NOAA National Weather Service

Floodplain information and interpretation assistance for specific points on larger rivers of the United States can be obtained from the National Weather Service. The National Weather Service provides flood forecasts and warnings on larger rivers and provides flash flood warnings on smaller streams. Interested communities are assisted in establishing local Flood Warning Systems.

For further assistance, contact the following National Weather Service Regional Offices

Eastern Region, Garden City, New York (516) 228-5400

Southern Region, Ft. Worth, Texas (817) 334-2668

Central Region, Kansas City

Western Region, Salt Lake City, Utah (801) 524-5122

Alaskan Region, Anchorage, Alaska (907) 271-5136

Pacific Region, Honolulu, Hawaii (808) 546-5680

Storm surge frequency information and interpretative assistance are available for the Gulf of Mexico and Atlantic coasts. Studies have been completed for the Gulf of Mexico coast from the Alabama-Florida border to southern Florida; and along the Atlantic coast from southern Florida to Cape Henlopen, the southern boundary of Delaware Bay. The National Weather Service also provides warnings of storm surges associated with tropical and extratropical storms. For storm surge frequency information and interpretative assistance contact: Chief, Water Management Information, NWS Office of Hydrology (W/OHI), 8060 13th Street, Silver Spring, Maryland 20910. Telephone: (301) 427-7543.

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

Information and advice are available from Environmental Officers located in the HUD Regional and Field Offices to assist in making a determination that a proposal assisted under HUD programs is in a floodplain location. Contact the HUD Regional Environmental officer located at the nearest HUD Regional Office as follows:

Region I	Boston	(617) 835-5380	Sheldon Gilbert
Region II	New York City	(212) 264-0793	Marvin Krotenberg
Region III	Philadelphia	(215) 597-3903	Lawrence Levine
Region IV	Atlanta	(404) 242-3167	Ivar Iverson
Region V	Chicago	(312) 353-1696	Harry Blus

Region VI	Fort Worth	(817) 728-5482	I. J. Ramsbottom
Region VII	Kansas City	(816) 758-3192	Gary Ultican
Region VIII	Denver	(303) 564-3102	Howard Kutzer
Region IX	San Francisco	(415) 556-6642	Dale James
Region X	Seattle	(206) 399-0374	Richard Moore

If policy advice and assistance are needed, contact Richard H. Broun, Director, Office of Environment and Energy, Room 7154,

Department of Housing and Urban Development, 451 Seventh Street, SW. Washington, D.C. 20410, at (202) 755-7894. This is not a tollfree number.

FEDERAL EMERGENCY MANAGEMENT AGENCY Federal Insurance Administration

Requests for insurance maps or studies should be addressed as follows:

(1) Copies of new or revised Flood Hazard Boundary Maps (FHBM) or Flood Insurance Rate Maps (FIRM) can be requested either by telephone to:

National Flood Insurance Program

(800) 638-6000 (toll free)

(800) 492-6605 (toll free) in Maryland only.

or by mail to:

Federal Emergency Management Agency

Flood Map Distribution Center

6930 (A-F) San Tomas Road

Baltimore, Maryland 21227-6227

(2) Copies of Flood Insurance Study reports are distributed when a FIRM is initially published, to the applicable local community, State agencies, other Federal agencies and FEMA Regional Offices. The procedure for ordering copies at a later date is to send a request to the local community map repository. If the reports cannot be obtained from the local community, the Federal Emergency Management Agency Regional Offices should be contacted (see list below).

Region I Boston, Massachusetts (617) 223-4741

Region II New York, New York (212) 264-8980

Region III Philadelphia, Pennsylvania (215) 594-9416

Region IV Atlanta, Georgia (404) 347-4200

Region V Chicago, Illinois (312) 353-8661

Region VI Denton, Texas (817) 387-5811

Region VII Kansas City, Kansas (816) 374-5912

Region VIII Denver, Colorado (303) 235-4811

Region IX San Francisco, California (415) 556-8794

Region X Bothell, Washington (206) 481-8820

Requests for floodplain management services may be obtained from the Office of Loss Reduction, Federal Insurance Administration, FEMA, 500 C Street, SW., Washington, D.C. 20472. Telephone (202) 646-2717.

DEPARTMENT OF THE INTERIOR

Geological Survey

User Assistance Centers at 48 locations can provide:

- (a) factual information on flood peaks and discharges, flood depths, and velocities, profiles of the water surface during major floods, areas inundated during major floods, time-of-travel of flood wave, and sediment transport data;
- (b) interpretative information regarding flood-frequency relations, estimates of 10-, 50-, 100-, and 500-years flood discharges, computed water surface profiles, and flood-prone areas delineated on topographic maps, in most communities in the United States, with known flood problems; and
- (c) assistance in minimizing flood losses by quickly identifying areas of potential flood hazards. If User Assistance Center address is not known, contact: Chief, Surface Water Branch, Water Resources Division, U. S. Geological Survey, National Center, Reston, Virginia 22092. Telephone: (703) 860-6837.

Bureau of Land Management

The Bureau of Land Management (BLM) has District Offices located in the 11 western States and Alaska involved in land use planning for public lands. Floodplain protection and flood prevention is a significant element in the BLM planning system, and each District Office maintains a file of existing floodplain maps which are available for public inspection. If the location of the District Office is not known, contact: Bureau of Land Management, U. S. Department of the Interior, 18th & C Streets, NW., Washington, D.C. 20240. Telephone: (202) 343-5717.

Bureau of Reclamation

The flood hydrologist at the seven regional offices has knowledge of flooding and flood elevation for related locations associated with Bureau projects and can provide interpretive assistance for existing data.

For information contact one of the seven regional or nearby project offices or the Flood Hydrology Section, U. S. Bureau of Reclamation, P.O. Box 25007, Denver Federal Center, Denver, Colorado 80225. Telephone: (303) 234-2035.

Fish and Wildlife Service

The Fish and Wildlife Service provides expertise on questions relating to fish, wildlife, and habitat resource, preservation, and maintenance. It functions through six regional, area and field offices. For information contact any of these offices, U. S. Department of the Interior, 18th and C Streets, NW., Washington, D.C. 20240. Telephone: (202)343-5715

TENNESSEE VALLEY AUTHORITY

Activities in water resources are confined to portions of the seven States in the Tennessee Valley Watershed. Since 1953, TVA has conducted a program of floodplain management assistance to local governments. Reports have been published for more than 160 communities. Detailed information in files pertains to large floods which have occurred in the Valley since the 1930's, and in less detail, dating back to the large flood of 1867. TVA's floodplain management staff provides technical assistance to help those who propose developments to either avoid flood hazard areas or to use the floodplain wisely where development must occur. Contact: Tennessee Valley Authority, Flood Protection Branch, Floodplain Management Program, 200 Liberty Building, Knoxville, Tennessee 37902. Telephone: (615) 632-4455.

DELAWARE RIVER BASIN COMMISSION

The Commission maintains a file of floodplain information, delineation and flood data studies prepared by the Commission, Federal agencies and others. Where data exist, assistance with interpretation will be provided. Contact: Head, Branch of Operations, Delaware River Basin Commission, P.O. Box 7360, West Trenton, New Jersey 08628. Telephone: (609) 883-9500.

SUSQUEHANNA RIVER BASIN COMMISSION

The Commission maintains a file of detailed hydrologic and hydraulic information for 245 basin communities studied under the National Flood Insurance Program for HUD. Limited additional hydrological data for other areas also is available. The Commission can provide general information on guidance on floodplain management measures. Contact: Chief, Planning and Operations, Susquehanna River Basin Commission, 1721 North Front Street, Harrisburg, Pennsylvania 17102. Telephone: (717) 238-0425.

STATES

Many (but not all) States have active floodplain management programs. They have on file or access to most floodplain information generated by Federal and State agencies, regional organizations, special districts and private consultants. State agencies are usually staffed and funded to:

1. coordinate floodplain management activities;
2. develop minimum standards for floodplain regulations and other management measures;
- 3 assist local units of government (counties, cities, etc.) in developing floodplain management programs;
and
4. interpret available floodplain information.

For most States, the appropriate contact is the Department of Natural Resources or the Water Resources Division. At the substate level, regional agencies such as conservancy districts and multi-county planning agencies may be a source of floodplain data and interpretation.

Useful information on many of the subjects discussed in the document is found in the following publications. The list appeared as Appendix C - Floodplain Management publications in the report, A Unified National Program for Floodplain Management, FEMA, Washington, D.C., 1986. A list of these publications, their source and cost are provided hereafter. Those publications most frequently requested by local, State and Federal agencies are marked by an asterisk (*) and an abstract has been provided herein courtesy of the Natural Hazards Research and Applications Information Center, University of Colorado.

The following abbreviations have been used:

PC Paper Copy

MF Microfiche

GPO .U.S. Government Printing Office Superintendent of Documents Washington, D.C. 20402

NTIS National Technical Information Service 5285 Port Royal Road Springfield, VA 22151

FR Federal Register

UC University of Colorado; Natural Hazards Research and Applications Information Center, Campus Box 482, Boulder, CO 80309

FLOODPLAIN MANAGEMENT PUBLICATIONS

1. General

A Unified National Program for Flood Plain Management* (March 1986)

GPO 1986-620-902 \$5.50

Floodplain Management Guidelines for Implementing E.O. 11988* (February 10, 1978)

43 FR 6030 Federal Register

Floodplain Management Handbook,* H. James Owen and Glen R. Wall (September 1981)

GPO 008-022-00167-1 \$4.75

Evaluating the Effectiveness of Floodplain Management Techniques and Community Programs,*

Tennessee Valley Authority, (1984)

UC Special Publication No. 10 P.C. \$8.00

2. Regulation of Flood Hazard Areas

Regulation of Flood Hazard Areas to Reduce Flood Losses, Vol. III Jon A. Kusler (1982)

UC \$8.00

Strengthening State Floodplain Management *, Patricia A. Bloomgren

UC \$8.00

Local Innovations in Floodplain Regulation *, Jon A. Kusler (1982)

UC \$8.00

Floodplain Regulations and the Courts *, Jon A. Kusler (1984)

UC \$5.00

Regulation of Flood Hazard Areas, Vols. 1, and 2 (1971, 1972)

U.S. Water Resources Council

GPO Out of Print

3. Nonstructural Flood Loss Reduction

Nonstructural Floodplain Management Study: Overview

Gilbert F. White (October 1978)

NTIS PB 80 158538 PC \$ 6.00 MF \$4.00

Floodplain Acquisition: Issues and Options in Strengthening Federal Policy,

Jon A. Kusler (October 1978)

NTIS PB 80 158090 PC \$10.50 MF \$4.00

Improved Formulation and Evaluation of Nonstructural Elements for Water Resources Plans in Flood Hazard Areas;

Leonard A. Shabman (October 1979)

NTIS PB 80 160120 PC \$ 7.50 MF \$4.00

Options to Improve Federal Nonstructural Responses to Flood

Rutherford H. Platt (December 1979)

NTIS PB 80 160146 PC \$13.50 MF \$4.00

Nonstructural Measures in Flood Damage Reduction Activities

Gerald E. Galloway, Jr. (July 1980)

NTIS PB 81 180424 PC \$ 9.00 MF \$4.00

The Influence of Regulations and Practices on the Implementation of Nonstructural Flood Plain Plans

CME Associates, Inc. (November 1980)

NTIS PB 81 231763 PC \$ 9.00 MF \$4.00

4. Integrated Floodplain/Wetlands Management

State and Local Acquisition of Floodplains and Wetlands*

Ralph M. Field Associates (September 1981)

NTIS PB 82 184805 PC \$10,50 MF \$4.00

Analysis of Methodologies Used for the Assessment of Wetland Values, (includes Appendices A-B)
Environmental Laboratory, U.S. Army Waterways Experiment Station (September 1981)

NTIS PB 81 245664 PC \$10.50 MF \$4.00

Analysis of Methodologies used for the Assessment of Wetland Values

Appendices C-E (September 1981)

NTIS PB 82 110362 PC \$31.50 MF \$4.00

Sources of Wetlands/Floodplain Research Information (October 1980)

NTIS PB 81 112476 PC \$ 6.00 P4F \$4.00

Workshop Report on Bottomland Hardwood Wetlands

National Wetlands Technical Council (June 1-5, 1980)

NTIS PB 81 224974 PC \$16.50 MF \$4.00

Economic Aspects of Wildlife Habitat and Wetlands

Midwest Research Institute (February 1979)

NTIS PB 81 190654 PC \$12.00 MF \$4.00

Emerging Issues in Wetland/Floodplain Management - Summary Report of a Technical Seminar Series

Jon A. Kusler (September 1979)

NTIS PB 80 129802 PC \$7.50 MF \$4.00

Emerging Issues in Wetland/Floodplain Management - Supporting Materials for a Report of a Technical Seminar

Jon A. Kusler (September 1979)

NTIS PB 80 130404 PC \$15.00 MF \$4.00

5. Technical Studies

Cooperative Flood Loss Reduction: A Technical Manual for Communities and Industry *

H. James Owen (September 1981)

GPO 003-045-000501-1 \$5.50

Guidelines for Determining Flood Flow Frequency

Bulletin 17B (revised) Hydrology Committee (September 1981)

GPO 051-045-00084-3 \$6.75

An Assessment of Storm Surge Modeling

Hydrology Committee (1980)

NTIS PB 81 233785 PC \$7.50 MF \$4.00

Estimating Peak Flow Frequencies for Natural Ungagged Watersheds

(A Proposed Nationwide Test) Hydrology Committee (1981)

NTIS PB 81 239329 PC \$27.00 MF \$4.00

- Abstracts of Frequently Requested Publications

Federal Emergency Management Agency, 500 C Street, SW. Washington, D.C. 20472 A Unified National Program for Floodplain Management (Revised), 1986.

Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Stock Number is 1986-620-902.

Since it was first issued in 1976, a number of factors have prompted a revision of the report. These factors include: The President's 1977 Environmental Message; Executive Order 11988 on Floodplain Management; Executive Order 11990 on the Protection of Wetlands; and the President's Water Police Reform Message of 1978. The report describes a unified, cooperative effort by all levels of government and the private sector to minimize loss of life, property and environmental values within floodplains. A conceptual framework is set out to guide local, State and Federal decision makers toward balanced consideration of alternative goals, strategies, and tools. Improved comprehensive local floodplain management efforts under the National Flood Insurance Program, the Coastal Zone Management Program, the Clean Water Act, and other programs are also described. At all governmental levels, innovative floodplain management efforts encompassing a wide range of tools and stressing nonstructural mitigative approaches are being increasingly emphasized.

Executive Order 11988 - Guidelines for Federal Agencies. Federal Register 43, no. 29, February 10., 1978.

A set of guidelines for Federal agencies to use in implementing Executive Order 11988--Floodplain Management--has been issued by the Water Resources Council. The objectives of the Executive Order are "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 and indirect support of floodplain development where ever

there is a practicable alternative..." Through their regulations and procedures, the Federal agencies are required to take a leadership role in:

- avoiding the base (one per chance) floodplain if at all possible;
- acting to adjust to the base floodplain; and
- keeping the public informed of proposed actions in the base floodplain and encouraging public participation in floodplain decision making.

The Guidelines, the result of a 12-month effort of an interagency task force, spell out the responsibilities of the agencies to recognize that floodplains have unique and significant public values, and to evaluate the potential effects of any action which they may take in a floodplain. The agencies must take floodplain management into account both in formulating their own water and land use plans, and in evaluating the water and land use plans of others. Procedures for doing this are to be prepared in consultation with the Water Resources Council, the Federal Insurance Administration, and the Council on Environmental Quality.

Floodplain Management Handbook. Flood Loss Reduction

Associates. Prepared for the U.S. Water Resources Council.

1981. 69 pp. plus appendices. Available from the

Superintendent of Documents, U.S. Government Printing

Office, Washington, D.C. 20402. Stock # 008-022-00167-1.

This handbook summarizes flood problems, their causes and what can be done to reduce losses. It is intended to help local officials, public interest groups, and concerned citizens to assess the problems in their areas and initiate effective management of the floodplain. Guidelines for developing a floodplain management program are included and sources of technical and financial assistance are identified.

Special Publication #10, Evaluating the Effectiveness of Floodplain Techniques and Community Programs.

133 pp. \$8.00

This report grew out of a seminar sponsored in 1984 by the Tennessee Valley Authority with the cooperation of the Interagency Floodplain Management Task Force. The volume has five parts: an overview of the issues; two issue papers summarizing the state of knowledge on evaluating the effectiveness of nonstructural floodplain management programs and community programs; the papers presented by speakers and panelists at the seminar; and conclusions and recommendations. The papers were given by university researchers, Federal agency staff, State and local government representatives, and private consultants.

Special Publication #2, Regulation of Flood Hazard Areas to Reduce Flood Losses, Volume 3.

Jon A. Kusler. 1982.

300 pp. \$8.00

This volume was contracted for by the U.S. Water Resources Council to update and supplement Volumes 1 and 2 which were published by the Council between 1968 and 1971. Volume 3 reviews accomplishments and problems of the 1970s in the use of floodplain regulations as one element of floodplain management. Strategies are suggested for improving the quality of regulations and for combining regulations with other management tools to achieve multiple State and local goals during the 1980's.

Special Publication #3, Strengthening State Floodplain Management, Appendix A to Volume 3 (SP#2).

Patricia A. Bloomgren. 1982.

123 pp. \$8.00

SP #3 reviews existing State floodplain management, makes suggestions for strengthening existing programs, and provides a framework for developing new ones. State statutes, their enforcement, and litigation based on them are analyzed. Profiles of State floodplain management programs provide specific information.

Special Publication #4, Innovation in Local Floodplain Management, Appendix B to Volume 3 (SP#2).

Jon A. Kusler.

262 pp. \$8.00

SP #4 examines innovative community floodplain management regulations with nonregulatory techniques. The volume

APPENDIX C Related Programs and References

- Rules and Regulations for the National Flood Insurance Program - 44 CFR 59 et seq.
- Floodproofed Non-Residential Structures, Federal Emergency Management Agency, May 1986
- Coastal Construction Manual, Federal Emergency Management Agency, February 1986
- 4. Elevated Residential Structures, Federal Emergency Management Agency, March 1984
- 5. Design Guidelines for Flood Damage Reduction, FEMA, December 1981.
- 6. Flood-Proofing Regulations, Office of the Chief of Engineers, U.S. Army, Washington, D.C., June 1972
- 7. Flood-Proofing Systems and Techniques, Examples of Flood-Proofed Structures in the United States, U.S. Army Corps of Engineers, December 1984.

FOOTNOTES

- U.S. Water Resources Council, "Floodplain Management Guidelines for Implementing E. O. 11988", Federal Register, February 10, 1978 (44 FR 6030).
- Task Force on Federal Flood Control Policy. A Unified National Program for Managing Flood Losses, House Document 465, 89th Congress, 2nd Session, U.S. Government Printing Office, Washington, D.C. , 1966.
- 3. U. S. Water Resources Council, "Flood Hazard Evaluation, Guidelines for Federal Executive Agencies", Washington, D.C., 1967

4. General Accounting Office. "National Attempts to Reduce Losses from Floods by Planning for and Controlling the Uses of Flood-Prone Lands", Washington, D.C., 1975
5. U.S. Water Resources Council, "Floodplain Management Handbook", U.S. Government Printing Office, Washington, D.C., 1981.
6. Federal Emergency Management Agency, "A Unified National Program for Floodplain Management, Washington, D.C., March, 1986. (For more information on floodplain values, see Chapter 5.)
7. Federal Emergency Management Agency, "A Unified National Program for Floodplain Management," op cit.
8. U.S. Water Resources Council, "Floodplain Management Guidelines for Implementing E.O. 11988", op cit.
9. Environmental Protection Agency, "Guidelines for Erosion and Sediment Control Planning and Implementation," EPA Environmental Protection Technology Series Report No. EPS-R2-72-075, August, 1972.
10. U.S. Water Resource Council, "Economic and Environmental Principles and Guidelines for Water and Related Resources Implementation Studies", Washington, D.C., March 10, 1983.
11. U.S. Department of Commerce, "National Oceanic and Atmospheric Administration Directive 02-12 on Floodplain Management and Protection of Wetlands".