

***A Guide to Hurricane Preparedness Planning
for State and Local Officials***

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A Guide for Hurricane Preparedness Planning

For

State and Local Officials

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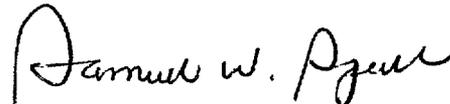
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This Civil Preparedness Guide (CPG) has been prepared to assist State and local officials in the development of emergency management capabilities which provide confidence that the jurisdiction can deal effectively with the unique characteristics of the hurricane hazard. It provides guidance on the conduct of a Quantitative Hurricane Preparedness Study which includes the organization, management, coordination system, planning methodology, and general information concerning objectives, funding, government roles, program maintenance, and evaluation. It also provides guidance for the integration of the results of a Quantitative Hurricane Preparedness Study into the jurisdiction's Emergency Operations Plan (EOP). All of the information is designed to enhance the successful completion of hurricane preparedness activities undertaken by State and local officials, especially in those areas identified as hurricane high-risk, high-population areas. The ultimate goal is to contribute to the development of State and local Emergency Operations Plans (EOP's) which thoroughly treat the unique requirements of hurricane preparedness while providing for broadly applicable capabilities in all emergency management functional areas. This exemplifies the Federal Emergency Management Agency's planning philosophy under the Integrated Emergency Management System (IEMS) approach which strives to improve the ability of government at all levels to cope with any type of disaster situation.



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CHAPTER 1

General Information

1-1. Purpose. This Civil Preparedness Guide (CPG) establishes the scope of the Federal Emergency Management Agency's (FEMA) Hurricane Preparedness (HP) Program and provides guidance and procedures to State and local governments on conducting hurricane preparedness activities.

1-2. Applicability and Scope. The provisions of this CPG are applicable to State and local officials engaged in the conduct of quantitative preparedness studies within FEMA's Hurricane Preparedness Program. The information contained herein is intended to supplement, but not replace, the guidance in CPG 1-32, Financial Assistance Guidelines. CPG 1-32 should be referred to throughout the application process.

1-3. Authorities.

a. The Federal Civil Defense Act of 1950, Public Law (P.L.) 81-920, as amended.

b. The Disaster Relief Act of 1974, Public Law (P.L.) 93-288.

c. Executive Order 12148, Federal Emergency Management, dated July 29, 1979.

1-4. References.

a. Civil Preparedness Guide 1-32, Financial Assistance Guidelines.

b. Civil Preparedness Guide 1-34, Hazard Identification, Capability Assessment, and Multi-Year Development Plan--Overview.

c. Civil Preparedness Guide 1-35, Hazard Identification, Capability Assessment, and Multi-Year Development Plan--For Local Governments.

d. Civil Preparedness Guide 1-35a, Hazard Identification, Capability Assessment, and Multi-Year Development Plan--Response Book for Local Governments.

e. Civil Preparedness Circular 84-2, A Conceptual Approach to State and Local Exercises.

f. Title 44, Code of Federal Regulations (CFR), Section 300.

g. FEMA 50, Preparing for Hurricanes and Coastal Flooding: A Handbook for Local Officials.

1-5. Objectives. The major objectives of the HP Program are to:

a. Provide for the development of special evacuation elements, for inclusion as appropriate annexes, or appendices to appropriate annexes, to the Emergency Operations Plan (EOP), for planned response to the approach and consequences of hurricanes in high-risk, high-population areas;

b. Provide technical and financial assistance to State and local jurisdictions to develop new or modified preparedness elements to cope with hurricane disasters;

c. Identify impacts on primary lifelines and services necessary to recover from the effects of a hurricane disaster in the shortest possible time;

d. Provide guidelines and strategies for long-term recovery and mitigation policies and procedures; and

e. Integrate special evacuation and other hurricane preparedness elements into the EOP as annexes or appendices to appropriate annexes.

1-6. Funding. FEMA fosters State and local efforts to improve their hurricane preparedness capability by providing financial support on a one-time basis to develop or improve hurricane-specific elements for EOP's. It is expected that these efforts will act as an incentive for States to provide additional financial support and actively involve local governments in the preparedness planning process.

a. Funds for the Hurricane Preparedness Planning program are appropriated annually by Congress. Awards in the past were normally made by the FEMA Regional Director to the States in form of grants. Beginning in fiscal year 1984, the Comprehensive Cooperative Agreement (CCA) became the primary mechanism for granting awards. When appropriate, certain projects may be financed through contracts or interagency agreements, pursuant to the definitions. Application, reimbursement, reporting, and auditing procedures will follow the guidelines in CPG 1-32, Financial Assistance Guidelines; 44 CFR, Section 300.5 (h) and (i); and other applicable regulations.

b. Funds for hurricane preparedness projects are transmitted to the FEMA Regional Office early in the fiscal year. Before funds are obligated there must be an agreement on the proposed work plan between the State, FEMA Regional Office, and FEMA Headquarters. In order to assist the State and facilitate the development of the application and work plan, a preapplication conference with affected State agencies, local government, and FEMA Regional Office is required to discuss the draft application proposal. FEMA technical assistance is available for application preparation and the FEMA Program Manager will attend the preapplication conference whenever possible.

c. Plan maintenance and conduct of hurricane exercises are activities that, except in special circumstances, will not be funded under the Hurricane Preparedness Program. These activities are important to the preparedness effort and FEMA will require a commitment from the State and local officials to undertake and complete these activities as part of the planning project.

d. Resources allocated under one or more of the following programs may also be used to work on planning activities related to hurricane preparedness; Disaster Preparedness Improvement Grants (DPIG), authorized by Public Law 93-288, State Planners authorized under the Population Protection Planning Program, and State and local emergency management employees funded under the Emergency Management Assistance Program. State and/or local governments, if appropriate, should consult with their FEMA Region staff to obtain the support detailed above. Additional sources of funding support might include the Small Business Administration, the Corps of Engineers, and State Coastal Management programs under the Coastal Zone Management Act.

1-7. Definitions. For the purpose of this guide, the following definitions apply:

a. Integrated Emergency Management System (IEMS). FEMA's strategy to implement comprehensive emergency management, which capitalizes on commonality of functions to be performed (warning, communications, evacuation, sheltering, mass care, etc.), regardless of the hazard, and brings a greater economy of effort to the emergency preparedness posture.

b. Hurricane Preparedness (HP) Program. FEMA's program to foster hurricane preparedness at high-risk, high-population areas by providing financial and technical assistance to State and local officials for the conduct of quantitative hurricane preparedness studies.

c. Quantitative Hurricane Preparedness Study. A comprehensive planning study of the hurricane vulnerability and necessary response for a high-risk, high-population region resulting in elements for State and local Emergency Operations Plans that provide the highest possible level of hurricane preparedness and evacuation capability. The study utilizes state-of-the-art hurricane hazard planning tools and emergency transportation planning techniques and normally is composed of two projects; first, a Population Preparedness Project and subsequently, a Property Protection Project.

d. Population Preparedness Project. The initial effort of a Quantitative Hurricane Preparedness Study that provides comprehensive hurricane evacuation and other population preparedness elements for integration into State and local Emergency Operations Plans.

e. Property Protection Project. The subsequent effort of a Quantitative Hurricane Preparedness Study, to be initiated after the completion of the Population Preparedness Project, that provides comprehensive hurricane recovery, mitigation, and other protection elements for integration into State and local Emergency Operations Plans.

f. Program Maintenance. Those activities undertaken, on a scheduled or as necessary basis, to maintain HP elements, documents, exhibits, etc., in current and accurate status.

g. Program Manager. The staff person(s) at FEMA Headquarters responsible for the financial and technical assistance management of the Hurricane Preparedness Program.

h. Project Manager. The person at the State, areawide, or local level Project Management Agency responsible for the conduct of the planning project.

i. Project Management Agency. The Agency at the State, areawide, or local level responsible for the conduct of the planning project.

j. Project Officer. The staff person(s) at the FEMA Regional office who has oversight and direct interface with State and local officials and the Project Manager during the lifetime of the planning project.

k. Region/Regional. The "R" in upper case, Region/Regional, refers to FEMA's geographical areas of responsibility.

l. region/regional. The "r" in lower case, region/regional, refers to specific geographical areas comprised of city, county, State, or combinations thereof engaged in a quantitative hurricane preparedness study.

m. State Emergency Management Agency (SEMA). The state agency that is responsible for ensuring that necessary plans, facilities, and equipment are available to respond to natural hazards, technological hazards, and nuclear attack contingencies that could affect local jurisdictions or the entire State. Responsibilities include, but are not limited to: coordination with Federal and other State agencies; providing program guidance, financial aid and administrative support to local jurisdictions; reviewing and approving local EOP's; and preparation of a State EOP. Within SEMA, the population

protection planning staff acts as the office of primary responsibility for the population protection planning program. This staff ensures that adequate planning, guidance, and management assistance is provided to local jurisdictions to allow them to develop and maintain viable EOP's.

n. Local Emergency Program Manager (EMP). The individual at the local level of government that is in charge of the office serving as the office of primary responsibility for all matters pertaining to emergency management. (Jurisdictions use various titles, such as Civil Defense Director/Coordinator; Chief, Office of Emergency Services; Director, Disaster Preparedness Office; etc., to describe this individual). This individual serves as the jurisdiction's point of contact for all matters pertaining to hurricane preparedness and other emergency management activities.

o. Emergency Operations Plan (EOP). A State or local jurisdiction's single generic plan which assigns tasks and details procedures for coping with the effects of natural hazards, technological hazards, and nuclear attack normally through annexes and appendices to the basic plan.

p. Technical Data Report. A detailed report that presents and documents the results of all investigations, analyses and studies of vulnerability and necessary response conducted in the quantitative hurricane preparedness study.

q. Evacuation Implementation Element. Based on the Technical Data Report, the Evacuation Implementation Element sets forth the operational resources and decision-making procedures for a local jurisdiction's evacuation and other response unique to the hurricane hazard. This element should serve as an annex or appendix(ces) to the appropriate annex(es) of the EOP.

r. Public Information Program. An on-going as well as emergency program of informing residents of their hurricane vulnerability and emergency instructions for evacuation and other protective measures through printed, audio and video information. This element should serve as an appendix to the Public Education and Emergency Information annex of the EOP.

s. Hurricane Operations Exercise. A simulation of a hurricane approach, landfall and/or recovery to test the validity and viability of the EOP as it applies to the hurricane hazard. One or all of three major types of exercises may be undertaken: full-scale exercise, functional exercise, and/or table top exercise.

t. Recovery Implementation Element. Based on the Technical Data Report, the Recovery Implementation Element sets forth the operational resources and procedures for a local jurisdiction's recovery unique to the hurricane hazard. This element should serve as an annex or appendix(ces) to the appropriate annex(es) of the EOP.

u. Hurricane Hazard Mitigation Plan. A document, based on the Technical Data Report, setting forth a logical or systematic identification of policies, programs, strategies and actions carried out by State and local governments to utilize their existing legal authorities, finances and leadership capability to reduce or avoid long-term vulnerability to hurricane hazards. This element of a Property Protection Project should be maintained consistent with any such Hazard Mitigation Plan for the jurisdiction(s) that was formulated under the requirements of Section 406 of P.L. 93-288.

v. Saffir/Simpson Scale. A scale developed by Herbert Saffir, Dade County, Florida, consulting engineer, and Dr. Robert H. Simpson, former National Hurricane Center director, that projects potential hurricane damage assessments from five storm intensities: category No. 1, the least damaging, through category No. 5, the most severe.

w. Technical Assistance. The provision of assistance to State and local officials, and others, to further their understanding and application of hurricane preparedness-related technologies. Also, to assist in the performance of administrative tasks including developing work plans associated with FEMA's Hurricane Preparedness Program.

x. SLOSH. The National Weather Service's Sea, Lake, and Overland Surges from Hurricanes (SLOSH) numerical storm surge prediction model used in basins that have irregular coastlines and contain large bays or estuaries.

y. SPLASH. The National Weather Service's Special Program to List the Amplitudes of Surges from Hurricanes (SPLASH) numerical storm surge prediction model used to obtain open coast surge height data for relatively smooth coastlines.

z. FEMA Facility Survey Program. A program to survey and identify the capacity and physical and architectural characteristics of existing buildings that can be used to protect the population against natural and technological hazards, including nuclear weapons effects. The survey also identifies the physical capacity and adaptability of facilities to provide emergency public lodging.

1-8. Program Policies. The following is a list of program policy requirements for the HP Program:

a. States and groups of local jurisdictions comprising high-risk, high-population regions are the recipients of FEMA HP funding to conduct a Quantitative Hurricane Preparedness Study. However, States and groups of local jurisdictions may designate another areawide agency as the "project management agency" to conduct the Study effort under FEMA funding. (Examples of designated "project management agencies" include regional planning councils, councils of government, Corps of Engineers districts, and university-based planning/engineering institutes). The project management agency may also supplement FEMA funding toward studies conducted under this Civil Preparedness Guide.

b. A population preparedness planning project (see Chapter 2) is the most essential component of the hurricane preparedness program and must produce, as a minimum, the following elements:

- (1) Technical Data Report;
- (2) Evacuation Implementation Element;
- (3) Public Information Program; and
- (4) A Hurricane Operations Exercise.

c. A property protection planning project (see Chapter 3) is eligible for FEMA funding if an acceptable population preparedness project has been completed.

d. A property protection planning project (See Chapter 3) is the second project of a quantitative hurricane preparedness study and must produce, as a minimum, the following elements:

- (1) Technical Data Report;
- (2) Recovery Implementation Element; and
- (3) Hurricane Hazard Mitigation Plan;

e. Where storm surge modeling is necessary, the Sea, Lake, and Overland Surges from Hurricanes (SLOSH) and/or Special Program to List the Amplitudes of Surges from Hurricanes (SPLASH) numerical storm surge models will be used.

f. Contact with the appropriate FEMA Regional Director will constitute the initial step in the application process for FEMA's HP funding.

g. Application for HP funding requires the submission of a proposed work plan by the State or group of local jurisdictions comprising the study area. Technical assistance in preparing the work plan is available from FEMA Headquarters.

h. The application work plan must include procedures for participation by practicing emergency professions, voluntary agencies, academic groups, commercial interests, and the public at large.

i. The jurisdiction(s) of the prospective study area should provide tangible proof of its commitment to the preparedness effort as evidenced by allocating money and/or resources for conducting a hurricane operations exercise, which is one of four elements of a population preparedness project.

j. The application work plan will be reviewed simultaneously by FEMA Headquarters, FEMA Regional Office, NOAA, and the U.S. Army Corps of Engineers. Agreement on the proposed study's work plan must be reached between the State, FEMA Regional Office, and FEMA Headquarters before funds can be obligated.

k. Where appropriate, multihazard shelter survey data may be used in the development of planning elements specific to the hurricane hazard. If these surveys have been accomplished, data may be obtained through the State Emergency Management Agency.

1-9. Project Management Considerations.

a. Conducting a successful Study requires the direct involvement and commitment of State and local governments as well as certain technical planning skills. To ensure a successful Study, the State and/or local jurisdictions (or their designated project management agency) should possess the following skills:

- (1) Engineering/technical expertise;
- (2) Plan preparation skills;
- (3) Contracts management capability; and
- (4) Mapping and graphic capabilities.

b. A hurricane preparedness project can be carried out at the Federal, state, regional, or local level, depending upon the task(s) to be accomplished. For example, the Technical Data Report must be developed by an agency with the requisite technical expertise (project management agency). However, it is the local jurisdictions' ultimate responsibility to integrate hurricane preparedness project elements into their EOP.

1-10. Responsibilities. For the purposes of this guide, the following responsibilities for the SEMA and local emergency program managers and project management agencies apply: (For projects in which the SEMA or local emergency management offices possess the skills listed in 1-9a. and elect to serve as project management agencies, the responsibilities listed under both a and b below apply.)

a. State and Local Emergency Managers will:

(1) Ensure viable planning elements by taking the lead in providing guidance, assistance, and coordination to the Project Management Agency;

(2) Provide reference documents as needed;

(3) Review and evaluate drafts, interim reports, and final plans; comments, suggestions, or approvals as appropriate;

(4) Support and participate in the preparation of an interjurisdictional coordination mechanism (see 4-5 and 4-6) for the project;

(5) Provide funding and conduct of the Hurricane Operations Exercise;

(6) If tasked, submit quarterly progress reports to FEMA; and

(7) Ensure that hurricane-specific planning elements are properly integrated into State and local EOP's.

b. Project Management Agency. The project management agency will:

(1) Conduct all technical investigations, analyses and studies of hurricane vulnerability and response;

(2) Provide the Technical Data Report;

(3) Assist State and Local Emergency Managers in developing the Evacuation Implementation Element and Recovery Implementation Element;

(4) Print and design public information materials;

(5) Assist in the development of the scenario for conduct of the Hurricane Operations Exercise;

(6) Ensure the coordination, participation, and involvement of all State and local emergency management officials and other concerned parties necessary to complete the project elements; and

(7) Prepare and submit quarterly progress reports.

c. Program Maintenance. An essential part of retaining the capability to provide for the safety and security of the people of the community and to lessen property damage is to maintain preparedness elements in current status. Evacuation implementation elements and recovery implementation elements, which are products of the study, must be integrated into the EOP of the affected jurisdictions and be accurately maintained through periodic updating and revision. This process should incorporate exercise "lessons learned," changes in population,

transportation networks, shelters, and new hurricane hazard analysis techniques. Such updating should be conducted at least biennially. State and local government officials are ultimately responsible for this continuing process. Support for it may be drawn from the program and other sources noted in paragraph 1-6d.

1-11 Reporting Requirements. The reporting requirements and information collections from State and local officials identified in this guide relating to hurricane preparedness planning have been assigned the following OMB approval numbers:

a. OMB 3067-0123 - State and Local Emergency Operations Plans.

b. OMB 3067-0154 - National Shelter Survey Program.

CHAPTER 2

Population Preparedness Project

2-1. General. State and local jurisdictions of hurricane high-risk, high-population areas must conduct a population preparedness project under their quantitative hurricane preparedness study effort. Appropriate results of this project must be incorporated into the jurisdictions' EOPs. This project must be undertaken first to be eligible for FEMA HP funding and must produce the four major elements listed below:

- a. Technical Data Report;
- b. Evacuation Implementation Element;
- c. Public Information Program; and
- d. A Hurricane Operations Exercise.

2-2. Planning Process. The population preparedness project of the hurricane preparedness planning effort must produce a Technical Data Report, Evacuation Implementation Elements for each participating jurisdiction, camera-ready Public Information materials, and a Hurricane Operations Exercise designed to evaluate the technical data report and test the planning elements. The Technical Data Report will present and document the results of all the various analyses conducted during the planning effort, identify the types and magnitude of activities that must be carried out to prevent large scale loss of life, and provide sufficient information to enable local and State governments to draft operating procedures for relocating populations-at-risk. From this Technical Data Report, simplified decisionmaking guides (Evacuation Implementation Elements) can be developed for each jurisdiction that serve as hurricane-specific annexes or appendix(es) to the appropriate annex of the local Emergency Operations Plan. The Public Information materials are designed to inform the general public of specific hurricane preparedness instructions. Finally, the Operations Exercise will test and validate the jurisdictions' capabilities to respond to and recover from the hurricane hazard.

2-3. Technical Data Report. The Technical Data Report is a detailed report presenting and documenting the results of investigations, studies, and analyses of what is needed to implement a safe hurricane evacuation in the coastal region. The report will include the essential maps, tables, and charts needed by those responsible for preparedness planning at the State, areawide, and local levels. The technical data report will consist of the following analyses:

- a. Hurricane Hazard Analysis. This is an analysis of the expected hazards that would require the temporary emergency

relocation of the population. The results of the analysis will form the basis for determining vulnerable areas that would require evacuation. The principal tool to be used in the hazard analysis is the National Weather Service's Sea, Lake, and Overland Surges from Hurricanes (SLOSH) numerical storm surge prediction model. The SLOSH model is used in basins that have irregular coastlines and contain large bays or estuaries such as Mobile Bay, Tampa Bay, or Galveston Bay. Normally, five storm intensities on the Saffir/Simpson scale are simulated by the SLOSH model. In addition to its intensity, any surge damage potential to a particular area depends on several other factors, including the track, size, forward speed of the hurricane, and the area's topography and offshore bathymetric configuration. As many as 200-300 simulation runs or model iterations are carried out representing various combinations of intensity, track, size, and forward speed. The model also incorporates the study area's unique topography and bathymetric configuration. Each hypothetical hurricane simulated by SLOSH would confront an area with one of many distinct hazard scenarios which, in turn, ultimately make up the evacuation scenarios, or levels. The output of the SLOSH model provides four major types of information on the effects of the simulated hurricanes. They are: (1) Surface envelope of highest surges above mean sea level; (2) Time histories of surges at selected gages or grid points; (3) Computed wind speeds at selected gages or grid points; and (4) Computed wind directions at selected gages or grid points. To obtain open coast surge height data for a relatively smooth coastline for which a SLOSH model has not been developed, the numerical storm surge prediction model, Special Program to List the Amplitudes of Surges from Hurricanes (SPLASH), can be utilized. Both the SPLASH and SLOSH computerized models are able to predict the tidal surge heights that result from hypothetical hurricanes with selected combinations of intensity, size, forward speed, track, and winds. The SPLASH model predicts the height and duration of only open coastline storm surge heights created by an approaching and landfalling hurricane. This model may be applied to any segment of the gulf or the Atlantic coast. It assumes a generally smooth coastline and the absence of amplification of the surge by a bay or estuary. With the SPLASH model, an inland routing technique would be used to delineate the vulnerable land areas.

b. Vulnerability Analysis. The identification of areas-at-risk to hurricane storm surges is the most important criterion for determining those residents who should evacuate. This requires an analysis of inundation areas obtained from a storm surge model, detailed topographic maps, and population demographic data from census tracts, enumeration districts,

traffic analysis zones, or projected daily/seasonal peak populations. By analyzing the results of individual surge model simulations (and/or groups of common intensity/track types, termed Maximum Envelopes of Water-MEOWs), vulnerability patterns will emerge to form the basis for several distinct evacuation levels.

c. Behavioral Analysis. In order to formulate a realistic and viable hurricane evacuation strategy (including the quantification of evacuation times), the human behavioral factors of hurricane response must be considered. The tendencies and choices of potential evacuees in the following types of response must be quantified:

(1) How the threatened population would respond to a hurricane threat given a storm's severity, position and track, forecast time period, and the NWS's probability of hurricane conditions issued for their location;

(2) When the threatened population would leave their residences in response to a given evacuation order/recommendation;

(3) The number of vehicles that the threatened households would use for evacuation;

(4) The number of threatened households that would require public transportation or other special assistance if ordered to evacuate;

(5) The preplanned destinations of the potentially threatened population segments; and

(6) The general hurricane history and experience of the threatened population.

d. Shelter Analysis. Structures that are vulnerable to storm surge, either because of elevation or geographic location, should not be used as hurricane shelters. For this reason, traditional public shelters may not be suitable shelters in hurricanes. An analysis of each structure's elevation and geographic location in relation to modeled surge must be conducted to determine whether particular structures are vulnerable to potential storm surge. An analysis of each proposed shelter's vulnerability to hurricane winds must also be conducted. The local emergency program manager should provide information or, if necessary, conduct an inventory of current

public shelters that identifies the following: location; type of structure; usable area in square feet in each facility; availability of emergency food supplies and services; shelter staff assignments; and emergency utilities and services (electricity, gas, water, waste disposal, and vehicle parking). FEMA has expanded its shelter survey criteria to determine a structure's acceptability as a shelter from all hazards--natural, man-made, and war time--that may threaten a community. This program started in 1984. Local emergency program managers should be contacted to determine the survey status for the study area.

e. Transportation Analysis. An analysis of the volume of vehicles to estimate the time required to complete a safe evacuation (evacuation time) is critical to the hurricane population preparedness effort. Certain information on evacuation routes may be available from State population protection planners in their crisis relocation plans. Also, assistance from Federal, State, county, or city Departments of Transportation may be requested to formulate the quickest and safest evacuation routing of residents. There are computer models of transportation networks available for most large metropolitan areas. Whatever the source of the information, consideration must be given, as a minimum, to identifying:

(1) Available air, water, and land transportation modes and the travel time defined by the volume of evacuating vehicles.

(2) Low-lying coastal roadways and low bridge sections that could become inundated by storm surge several hours before hurricane landfall (these sections should be programmed for time histories of surge height in the SLOSH model);

(3) Roadways that may be flooded by rain accompanying the hurricane;

(4) Roadway and bridge approaches that will be affected by gale force winds and make evacuation dangerous (these approaches should be programmed for time histories of windspeed in the SLOSH model); and

(5) Impact of adjacent jurisdictions' evacuation volumes on local evacuation times.

2-4. Evacuation Implementation Element. The data assembled in the Technical Data Report are used for writing the local jurisdiction's Evacuation Implementation Element. This element

should ultimately serve as the hurricane-specific annex or appendix(es) to the State and/or local EOP. The overall objective of the Evacuation Implementation Element is to ensure that practical, technically sound material is included in the EOP's of all jurisdictions of the study area to provide for effective and coordinated management of a hurricane evacuation. The evacuation implementation element identifies the areas-at-risk, population-at-risk, hurricane shelters, evacuation levels (scenarios), evacuation routes, evacuation time, the hurricane evacuation decision system, and mutual aid agreements for implementing inter-jurisdictional evacuation assistance and coordination.

a. Areas-at-Risk. The first result from the vulnerability analysis is the determination of evacuation areas or zones. The approximately 200-300 different hurricane simulations from the SLOSH computer model provide data for the planners to produce detailed maps showing the areas of greatest surge inundation and high risk areas for each storm-intensity category. Real-time wind speeds and surge elevations at selected locations in the area are indicated also, especially where bays or barrier islands exist.

b. Population-at-Risk. Once areas-at-risk have been determined, the next result of the vulnerability analysis that must be set forth is the most recent projected peak hurricane season population data for each vulnerable area. Population concentrations in hospitals, nursing homes, jails, college campuses, schools, and hotels that would require special evacuation procedures and for which longer evacuation times may be needed, must be given special consideration.

c. Shelters. From the technical data, the vulnerability and capacity of potential shelters can be determined. Based on the results of the behavioral survey and historical experience the following can be determined: numbers of people expected to use public shelters; or stay with a friend or relative; or a motel; or a destination outside the coastal area. Assignment of evacuees to particular public shelters is guided by accessibility, capacity, and availability for use under different storm intensities. These allocations will be guided by the goal of minimizing overall evacuation times and will be based on the expected destinations revealed by the behavioral survey. Inland areas where coastal evacuees are likely to find sheltering facilities should also be identified.

d. Evacuation Levels (Scenarios). Depending upon the type and intensity of hurricane that strikes an area, the geographic extent of the needed evacuation will differ. Based on the many individual hypothetical SLOSH simulations and resulting maximum envelopes of water (MEOW), several distinct extents or levels of evacuation should be identified and planned as operational options.

e. Evacuation Routes. From the technical data, evacuation routes that offer the shortest and most direct escape from the hazards of a hurricane can be selected. Preliminary information needed for these selections are such things as roadway capacity and roadway elevations. The actual assignment of traffic volumes to specific routes is a product of repeated testing of the evacuation roadway network utilizing a transportation model.

f. Evacuation Time. Based on the expected mobilization time, travel time, and pre-landfall hazards time computed and documented by the Technical Data Report; estimates of evacuation time should be a key emergency planning indicator set forth in the Evacuation Implementation Element.

g. Decision System. The final essential component of the Evacuation Implementation Element is a decision system for objective selection of appropriate evacuation level (scenario) and timing of evacuation orders/recommendations. Such a system should incorporate meteorological indicators, including the National Weather Service storm forecast track and probabilities of hurricane conditions.

h. Mutual Aid Agreements. Through mutual aid agreements, procedures to ensure cooperation and coordination in alert and warning, implementation of evacuation and sheltering, the sharing of emergency response personnel, equipment, and other resources to prevent duplication of operations, should be established. The development of these procedures should involve State, areawide and local emergency program managers and officials, as well as other public and private agencies, and should be included in the Evacuation Implementation Element.

2-5. Public Information Program. The population preparedness planning process should include formulation of written public information materials sufficient in scope to educate coastal residents to potential hazards and instruct them on evacuation protective actions. Planning should also include establishing the proper contacts with local print and broadcast media well in advance so that communication of those instructions during a hurricane emergency are facilitated. Meetings with representatives of the print media are needed to discuss the types of public information and the best way to disseminate it. It is also important to talk to the program directors of radio and television stations to determine the public information campaign materials that are most suitable for broadcast.

a. Pre-season Public Information Materials. The public information effort should produce two types of materials. First, public awareness literature (poster, brochures, tabloids, maps, etc.) for all residents should be prepared, printed, and disseminated at the beginning of the hurricane season. Input and cooperation from local media meteorologists should be sought to complete these materials. The materials should contain the following information:

- (1) Who will most likely have to evacuate;
- (2) How evacuees will be notified to evacuate;
- (3) Step-by-step instructions of what to do if evacuation is ordered/recommended;
- (4) Preparedness tips for the hurricane season;
- (5) Location of shelters and/or reception centers; and
- (6) Detailed maps and instructions on routes to leave the area, routes to shelter, and designated shelter areas outside the local jurisdiction.

b. Emergency Public Information Materials. The second product is a set of materials for use by local radio and television stations during the actual approach of a hurricane. The procedures for obtaining and disseminating this emergency public information will be detailed in the EOP. These will support and reinforce the information provided in the pre-season public information materials. Developing an effective emergency information campaign will involve establishing and maintaining another set of contacts with the broadcast media, because when a hurricane is approaching, it is the news chief who is responsible for the dissemination of emergency information.

- (1) At a minimum, radio and television scripts that reinforce the messages contained in the printed pre-season public awareness materials should be prepared. Scripts should be developed for distinct evacuation levels; maps suitable for television (or emergency video tape segments presenting the maps) should be produced before the season.

- (2) A mechanism for coordinating the release of public information and to initiate the dissemination of evacuation information by radio and television stations should be formulated. Each local public information officer should play an active role in developing these procedures, along with the key media representatives responsible for making broadcast decisions in an actual emergency.

- (3) As a minimum, these procedures should identify officials responsible for coordinating public information; identify local officials and media representatives who are to be notified; specify when to start dissemination; provide up-to-date contact lists; and include a detailed set of directions for emergency program managers and participating radio and television stations.

2-6. Hurricane Operations Exercise(s). A hurricane operations exercise, sufficient in scope to test all major elements of

evacuation and other critical functions such as direction and control, will be developed and conducted by State and local officials as part of the planning project. The exercise should be prepared and carried out by all jurisdictions included in the project area. The scope of the exercise should be the highest level achievable with available resources and should be planned, conducted and evaluated according to current FEMA guidance on exercises. Three work phases are necessary to effect a successful exercise:

a. Pre-exercise Planning and Training.

(1) Encourage the participation of county, areawide, State, and Federal agencies to allow for the development of a realistic exercise schedule. FEMA technical assistance is available to assist in this phase;

(2) Design an evacuation scenario with meteorological guidance on hurricane parameters and local weather statements from the National Hurricane Center and the National Weather Service;

(3) Develop messages for local and State agency response with guidance from the State and county agencies participating in the exercise;

(4) Conduct training sessions to brief key players in the exercise on the use of the planning elements in response to an approaching hurricane;

(5) Prepare news releases on the appropriate courses of action that should be taken as if it were actually happening; and

(6) Prepare a set of criteria to evaluate the elements as well as each jurisdiction's capability to implement evacuation.

b. Conduct of the Exercise. The exercise should be based on 72 hours of hurricane approach time and would consist of both real time and simulation-compressed time phases. The exercise should be conducted by and test the capability of State and local officials to identify the evacuation scenario it is being confronted with and the scenarios confronting neighboring jurisdictions. The exercise will also test the State and local jurisdictions' capability to effectively respond to that scenario. Response by the State(s) and counties during the exercise can be simulated in the areas of NWS warning, communications, public warning, manpower/equipment deployment, resource allocation, timing of evacuation, emergency transportation, and traffic control. Controllers should be

located at each activated EOC to monitor and evaluate response activity as well as to keep the exercise on schedule. Interjurisdictional communications should be monitored for evaluation of coordination during the post-exercise critique.

c. Post Exercise Critique. The SEMA and local emergency program managers (or their designated project management agency) will be responsible for conducting a post-exercise critique. Based on the prepared criteria for controllers to grade components of the exercise, post exercise briefing(s) should be held to evaluate effectiveness of the element in carrying out the needed hurricane evacuation. Representatives who participated in the exercise should be invited to attend. A critique report should be published that documents the exercise and critique session procedures, recommends needed revisions to the planning elements, and identifies areas where future preparedness activities, including training, may be necessary.

CHAPTER 3

Property Protection Project

3-1. General. After completion of a population preparedness project (as described in Chapter 2), State and local jurisdictions of hurricane high-risk, high-population areas should conduct a property protection project. Appropriate results of this project must be incorporated into the jurisdictions' EOPs. This project may be eligible for separate funding and must produce the three major elements listed below:

- a. Technical Data Report;
- b. Recovery Implementation Element; and
- c. Hurricane Hazard Mitigation Plan.

3-2. Planning Process. For property protection, elements which try to eliminate or reduce the impact of hurricanes prior to the event; emergency elements for immediate or short range recovery after the event; and elements for preventing increases in property vulnerability during long range restoration should be prepared. The property vulnerability analysis, documented by the Technical Data Report, is the basis for these elements. The population vulnerability analysis and the property vulnerability analysis should utilize the same SLOSH model as the major hazard analysis tool; however, the two analyses should be conducted separately. The major reason for this is that the SLOSH-generated data must be interpreted and analyzed differently for property protection than for population preparedness. Also, time should not be expended on a property analysis that would delay completion of the population analysis and evacuation elements. Further, the numerous agencies that must be introduced to and continuously review the analysis data for coordination purposes should concentrate on the unique concepts and criteria of evacuation alone until the evacuation element is completed. Subsequently, the hazard analysis output should be reanalyzed in terms of estimating projected property damage. The reanalysis, documented by the Technical Data Report, should then provide the basis for the recovery implementation element and hurricane hazard mitigation plan.

3-3. Technical Data Report. The overall objective of the Technical Data Report is to conduct investigations and analyze data to project future probable property losses from hurricanes. Property loss estimates then form the basis for the recovery element, the long-range hazard mitigation policies, and hazard-conscious land use decisions for the future. In addition, these investigations and analyses can be used to determine potential fiscal and social dollar losses that might occur.

a. Hazard Analysis. The technical objective of this task is to identify the property-at-risk based on a comprehensive

hazard analysis. The primary method used to measure the geographic extent and depth of coastal and inland inundation caused by hurricane storm surge and the potential speed of hurricane winds is the SLOSH model. As in the population preparedness project the property protection project may adopt the surge height categories of the Saffir-Simpson scale as the initial parameter toward defining damage scenarios. Where the SLOSH model is not available, the SPLASH model or the 100 year base flood elevations of the National Flood Insurance Program (NFIP) can be used to determine property-at-risk.

b. Vulnerability Analysis.

(1) Through analysis of the SLOSH results from hypothetical hurricanes of varying parameters, the geographic patterns of expected storm surge inundation should be identified. To maintain continuity between the definition of geographic zones for evacuation and damage assessment, the evacuation zones of the region may also be utilized as the hurricane loss zones for damage assessment purposes. These zones are generally homogeneous in land elevation and distance from major bodies of water. More importantly, the land area within each zone should receive a similar type and amount of storm surge based on results from the SLOSH modeling.

(2) The desirable method of projecting the potential structural loss to an area from a natural hazard is to examine actual past occurrences and apply those experienced-based loss quantities to the structures at risk. Over the last few decades, such data have been compiled after hurricane strikes in certain areas, and, more recently, quantified into "loss curves." Loss curves are results of compiled insurance claims and damage assessments that quantify the expected loss to a particular type of structure according to the specific magnitude of hazard experienced. Curves have been formulated by various public and private agencies using the cumulative experience of loss adjusters, surveyors, and structural engineers and quantifying this relationship for several types of structures for both flooding and wind velocity. These depth-damage curves and windspeed-damage curves are the basis for vulnerability coefficients to project hurricane loss. An example of a depth-damage curve, based on past hurricane/flooding data, is that a typical single unit residential structure experiences damage on an average of 18 percent of its total value from the effects of 1 foot of slowly rising flood waters. This would mean that the loss in dollar value of a single unit residential structure valued at \$50,000 would be approximately \$9,000. The vulnerability coefficient for the single unit is 0.18.¹

¹Tampa Bay Region Hurricane Loss and Contingency Planning Study-October 1983.

(3) Structures experiencing flooding along with a battering impact from quickly moving currents or wave action from past hurricanes incur greater structural loss than those experiencing slowly rising water. This type of velocity depth-damage relationship has also been formulated into loss curves for various types of structures.

(4) Finally, past structural damage from hurricane winds has also been compiled and formulated into windspeed-damage loss curves for various types of structures. The vulnerability coefficients from these curves are used to quantify the additional potential for structural loss throughout the region from specific wind velocity levels modeled and converted from the SLOSH model.

c. Inventories. An essential element of the technical data report is the inventory of structures (to include seawalls, bulkheads, etc.), lifelines, and critical facilities that are in jeopardy from hurricane hazards. Examples of these inventories are:

(1) Structural. Listing potential structural loss requires an inventory of the number and type of structures that exist within the loss zones predicted to receive common levels of storm surge flooding and/or high winds. The structural inventory can be accomplished through a survey of categories of types of structures utilizing real property assessment rolls. The multihazard survey of structures, now being conducted as part of FEMA's Integrated Emergency Management System, is also a potential source of data. A computer program which has a structural inventory as an output can be developed and the inventory geographically aggregated into loss zones.

(2) Hazardous Materials. The hazardous material inventory by hurricane loss zone is used by local emergency management officials to prepare plans for potential hurricane-caused hazardous materials exposures. The locational inventory is a way to quickly check specific potential exposure sites upon returning after evacuation.

(a) Hazardous Waste Sites. The Resources Conservation and Recovery Act of 1976 (RCRA) requires any person who generates or transports hazardous materials, or who owns a facility for the treatment, storage, or disposal of hazardous materials, to notify the U.S. Environmental Protection Agency (EPA) of their activity. The sites of such facilities can be located geographically and identified with the corresponding hurricane loss zones.

(b) Hazardous Materials Storage Sites. The RCRA Notifiers' list of hazardous waste generators/storage etc., can be supplemented by the identification of major (bulk) storage sites of potentially hazardous materials. This supplemental inventory should also be listed and geographically located by hurricane loss zone.

d. Socio-Economic Impacts Analysis.

(1) Service Disruption. (Loss of public facilities). Structural damage and loss from hurricane surge flooding and wind can greatly affect the operation of essential public facilities, immediately disrupting basic services such as water, wastewater, electricity, health care, and transportation. Hurricane contingency planning for such service disruption requires vulnerability analyses of the major service facility sites and structures throughout the region. Also, the loss of local government's ability to provide services can occur when the private taxable structural loss results in a decreased "ad valorem" tax revenue available to meet the cost of public service. A tax loss projection can be developed from the vulnerability analysis and can be used as a guide by local agencies to determine subsequent eligibility for disaster assistance.

(2) Social Disruption. (Temporary loss of employment and income). An indirect hurricane loss that could result from structural damage to nonresidential establishments is the temporary employment and income loss due to interruption of business, industry, or facility activity during damage repair and restoration. The length of interruption, in days, is estimated based on the magnitude of surge height and/or windspeed simulated to occur at each facility under the five hurricane damage scenarios. Temporary employment/income loss estimates are then determined based on the number of employment establishments, their average employment levels, and the average employee income.

3-4. Recovery Implementation Element. The data assembled in the technical data report are used for hurricane recovery planning.

a. Overview of the Recovery Process. The hurricane recovery planning process must provide strategies for the following periods:

- (1) Immediate emergency period;
- (2) Short-range restoration period; and
- (3) Long-range reconstruction period.

b. These periods overlap in time, yet are composed of different types of recovery activities:

(1) Immediate Emergency Period begins immediately after the hurricane has passed through the area and stretches through the first few days after hurricane landfall. Emergency activities focus on the dead, injured, homeless, and missing. The primary activities are search and rescue and emergency mass feeding and sheltering. The major resource needs are sustenance supplies such as water, food, medicine, ice, blankets, etc. Debris removal and efforts to restore essential public utilities

begin. During this period, normal social and economic activities are disrupted. Emergency management officials begin to survey the affected areas for needed recovery resources.

(2) Short-Range Restoration Period begins a few days after hurricane landfall, stretching several weeks depending upon the extent of damage. Restoration activities focus on returning the area to a relatively normal social and economic state. More detailed surveys of damage continue, with State and Federal disaster relief resources allocated and provided to victims needing assistance such as temporary housing, loans, grants, food coupons, and legal/crisis counseling. Restoration of all public utilities takes place and reconstruction of damaged or devastated housing, commercial, industrial, and public facilities begins.

(3) Long-Range Reconstruction Period stretches from several weeks after hurricane landfall until all physical property, social, and economic processes return to a stable and acceptable pre-hurricane level. The visible activities are demolition of partially devastated structures and complete major reconstruction projects. Victims return to repaired/rebuilt structures from temporary housing, and postdisaster hurricane hazard mitigation measures are formulated and implemented.

3-5. Hurricane Hazard Mitigation Plan. The vulnerability analysis for property protection permits development of forecasts of the severity, nature, and location of potential hurricane damages that would be caused by hurricanes of varying intensities. From this, it is possible to develop a Hurricane Hazard Mitigation Plan.

a. Hurricane Hazard Mitigation Plan Activities.

(1) Evaluation of Current Land Use and Construction Practices. Within the interjurisdictional hurricane planning area there will probably be a number of separate local and county governments that exercise independent control over land-use planning, zoning, and building. The land-use plans, zoning ordinance and building/subdivision codes of each of these jurisdictions should be reviewed to determine their effectiveness in limiting future property vulnerability. Special attention should be paid to currently undeveloped areas planned for future urbanization. The location and nature of future development will influence not only the number of additional structures vulnerable to hurricane damage, but also the capacity of road networks for evacuation.

(2) Changes in Land Use and Construction Practices that Are Necessary. The analysis of land-use plans and zoning ordinances along with the hazard analysis will suggest possible changes in local land-use and construction measures to avoid adding to the problems of hurricane hazard vulnerability through future development. It will also be appropriate to correct existing vulnerability problems through reconstruction following the occurrence of a hurricane.

(3) Structural and Nonstructural Projects. By identifying the location and extent of property damages that would be caused by a hypothetical hurricane, it will be possible to identify what corrective actions may be appropriate to initiate immediately to avoid the more critical or severe damages. Since the costs of potential damages will be known in relation to a given intensity (frequency) storm, it will be possible to assess the cost/effectiveness of various structural and nonstructural control measures. Structural measures, such as seawalls, groins, jetties, etc. should be considered. Also, nonstructural measures, such as dune and beach maintenance and nourishment programs or acquisition and relocation of vulnerable properties, should be considered.

(4) Responsibilities. The hazard mitigation plan should identify responsibilities of various levels of government for implementation.

(a) Local Governments. Local towns, cities, villages, townships, etc. generally have responsibility for enactment and enforcement of land-use and building ordinances that influence how and where urban development takes place. They also can raise funds and participate as local sponsors for structural and nonstructural projects that receive funding from other sources.

(b) County Governments. Counties generally perform the functions of local governments in unincorporated areas. In addition, counties should play an important role in coordinating the activities and plans of local governments. Counties generally are the focus for civil defense and emergency management activities for the communities in their jurisdiction.

(c) Substate Regional Agencies or Councils. Regional planning commissions, councils of government, department councils, etc. may be called upon by State and/or local governments to conduct hurricane hazard mitigation activities for group of counties and cities in a geographic area. They are usually controlled by a board of directors consisting of the chief elected official of the major member jurisdiction and have powers that are basically advisory in nature. They are the planning and coordinating mechanisms for ensuring that the actions and policies of individual jurisdictions are consistent with an areawide plan. The role of the substate regional agency in areawide hurricane mitigation planning is that of providing technical assistance to member jurisdictions, planning for functions that transcend political boundaries, and monitoring local activities to determine their impact on overall regional strategies. Substate regional agencies may take the lead in preparing hurricane mitigation plans even though many aspects of implementation will occur at other levels of government.

(d) States. In the absence of substate regional agencies, it is the responsibility of the State to fulfill the coordination roles of those agencies. In addition, States

create, through enabling legislation, the context for local governmental capabilities. In hurricane hazard mitigation, States will provide technical assistance, regulation of certain critical areas or functions that are of Statewide concern (e.g., State wetland laws or construction setback lines for beaches), and should provide funding support for structural and nonstructural projects what will provide benefits extending beyond the local area in which they take place.

(5) Schedules and Responsibilities for Implementation. The Hurricane Hazard Mitigation Plan should identify specific mitigation actions that are cost effective and needed to prevent increases in hurricane vulnerability, the specific governmental entity responsible for carrying it out, and a general timetable for accomplishment of the actions.

(6) Development Management. Development management to mitigate hurricane hazards is a concept that holds that all actions in coastal communities that relate in any way to development will effect, adversely or beneficially, vulnerability to hurricane hazards. The placement of roads or sewer and water lines, real estate taxation, zoning, etc. will either encourage or discourage development in hazard-prone areas. A management approach that recognizes this, and incorporates analysis of the hazard vulnerability impacts of development decisions, is the most desirable form of local hazard mitigation. In the most seriously hazard-prone communities, the plan should call for creation of comprehensive development management programs for hurricane hazard mitigation.

b. Post-Hurricane Hazard Mitigation Activities.

(1) The Disaster Declaration Process. If an area that has received planning assistance from FEMA to prepare a Hurricane Hazard Mitigation Plan has completed such a plan, FEMA will evaluate the progress that has been made in implementing the mitigation measures of the plan as part of the process of reviewing any request for disaster assistance submitted by the Governor on behalf of the effected area(s) resulting from the occurrence of a hurricane. If FEMA finds that implementation of measures to reduce or avoid hurricane vulnerability has not proceeded in accordance with the plan, some or all assistance for the repair or restoration of damaged facilities could be withheld.

(2) Assistance Under P.L. 93-288. As a condition of any assistance provided under P.L. 93-288 following declaration by the President that a disaster has occurred because of a hurricane, State and local grant recipients would be required to review the status of hurricane hazard mitigation measures and strengthen them on the basis of information brought to light by the disaster. If, for example, structures built in compliance with existing codes were to receive substantial damage from the storm, communities could be required to adopt more stringent

codes as a condition of assistance. The occurrence of a hurricane, while not desirable, should be used to point up and eliminate unanticipated deficiencies in existing land-use and construction practices.

CHAPTER 4

Project Management and Coordination

4-1. General. The many facets of a hurricane preparedness study require investigations, data collection, and analyses involving a number of agencies at the Federal, State, areawide, and local levels. As stated under HP Program Policies (paragraph 1-8), State and groups of local jurisdictions comprising high-risk, high-population regions are the recipients of FEMA HP funding to conduct a quantitative hurricane preparedness study. However, States and groups of local jurisdictions may designate another areawide agency as the "project management agency" to conduct the Study effort under FEMA funding. Continual communication and coordination with emergency response agencies is crucial if the planning effort is to succeed. Therefore, these agencies must participate in and guide the technical planning effort to ensure that the final projects are viable and accurate. Efficient use of resources is essential in order for the project to be cost-effective. A Study involves coordination among a host of State and local agencies and clearly demonstrates the need for a management technique that provides a centralized mechanism for disbursement of funds and for maintaining project integrity; as well as a decentralized mechanism to ensure the necessary participation of all concerned.

4-2. Local Emergency Program Agency (Emergency Program Manager -EPM). The local emergency program agency should provide primary input and guidance throughout the planning project and ensure the completion of the Evacuation Implementation Element, a Hurricane Operations Exercise, and the integration of appropriate planning elements into the EOP as appendix(es) or appropriate annexes.

4-3. The State Emergency Management Agency (SEMA). The state emergency management agency should share with the EPM the responsibility for conducting the Hurricane Operations Exercise of the population preparedness project. In addition, if the SEMA possesses the skills listed in paragraph 1-9a. and elects to serve as project management agency for the project, it shall also assume the responsibilities listed in paragraph 4-4 below.

4-4. Project Management Agency (Project Manager). The success of any project is largely dependent upon the technical, management, and coordination capabilities of the project manager in administering the planning effort. The SEMA and local emergency program offices are responsible for appointing a project manager. However, if the SEMA and local EPMS designate

another agency as the project management agency, the project manager from that agency must maintain close contact and coordination with State and local emergency management officials. Within the project management agency, the project manager's responsibilities should include:

- (1) Supervise and conduct all technical analyses;
- (2) Carry out overall administrative management and supervisory responsibilities for all technical analyses;
- (3) Maintain programmatic and fiscal accountability;
- (4) Supervise professional and clerical staff to support coordination and technical requirements;
- (5) Prepare, negotiate, approve, and monitor contracts for consultant work;
- (6) Maintain coordination with Federal, State, and local officials throughout the study;
- (7) Conduct meetings and develop correspondence to ensure the cooperation and participation of involved agencies;
- (8) Provide technical assistance as necessary;
- (9) Work with adjacent counties and, where applicable, State on the development of an interjurisdictional coordination mechanism (see 4-5 and 4-6);
- (10) Supervise development of all draft and final work products: Technical Data Report; Evacuation and Recovery Implementation Elements for inclusion in the EOP, Public Information Program, etc., ensure all products are coordinated with the appropriate State/local government agencies.
- (12) Respond to direction from the Executive Planning Committee (see 4-5).

4-5. Executive Planning Committee. Another part of an effective management system is an interjurisdictional coordination mechanism termed an Executive Planning Committee. It is strongly recommended that an executive planning committee be established to provide guidance to the project manager and coordinate within other jurisdictional entities. The committee should include local emergency program managers, FEMA (lead agency), and other involved Federal, State and local officials with decisionmaking authority for the project. It also serves to stimulate local and regional interest in the planning efforts and foster a good working relationship among local, State, and Federal representatives. The committee should also participate in the public information program, thereby gaining the widest possible local and regional support and cooperation for the planning effort.

4-6. Technical Advisory Committee. Another interjurisdictional coordination mechanism that will enhance the success of the project is the technical advisory committee. Therefore, a regional technical advisory committee (TAC), consisting of local emergency program managers and members of private, local, and State agencies with responsibilities in emergency preparedness and response, should be established. The purposes of the TAC are to discuss the study being developed, review generated data, ensure technical accuracy, and obtain information and key contacts for local information. Meetings should be held periodically to facilitate the sharing of ideas and exchange of data. All meetings should be documented and a newsletter summarizing the study's progress may be prepared and sent to committee members. Some specific duties of the technical advisory committee are:

a. Provide Direction and Guidance to the Study by:

(1) Reviewing data collected by the project management agency and/or consultant(s);

(2) Reviewing and commenting on analysis conducted by the project management agency and/or the consultant(s);

(3) Reviewing drafts of project elements;

(4) Recommending changes, revisions, or deletions to drafts; and

(5) Assisting in procuring data supporting the study.

b. Serve as the Study's Primary Technical Coordination Mechanism through:

(1) Periodic committee meetings and work sessions; and

(2) Providing a forum for the exchange of technical data and the sharing of ideas.