

# Chapter III: Comprehensive Flood Hazard Management Plan Contents

WAC 173-145-040 describes the required elements of a comprehensive flood control management plan (CFCMP). Organizing the elements into a cohesive planning tool and determining the level of detail required for each element can be difficult. Below is outlined a suggested format for a Comprehensive Flood Hazard Management Plan (CFHMP), along with a brief narrative discussing the contents of key sections. Where applicable, the relevant steps and tasks described in Chapter 4 of this guidebook are referenced for further information on how to accomplish each element.

- I. Executive Summary
  - A. Statements of goals, problems, and issues.
  - B. Brief description of project methodology and public and agency participants.
  - C. Description of proposed solutions listed in an action plan with estimated costs, timing, participating agencies and priority for each recommended action.
- II. Introduction
  - A. Authority and Scope.
    - 1. Legal authority under Chapter 86.26 RCW
    - 2. Sponsorship of local government
  - B. Background.
    - 1. Need for plan
    - 2. Description of Flood Control Assistance Account Program (FCAAP)
    - 3. Historical background
  - C. Planning Process and Methodology.
    - 1. Role of the project committee (see page 35 Task 1-A)
    - 2. Public participation process (see page 36 Task 1-B)
    - 3. Agency, Tribal, and special interest coordination

#### 4. Overview of technical planning methods

### III. Short- and Long-Term Goals and Objectives

These should be organized into general goals supported by more specific objectives. Categorize these into short- and long-term goals (see page 38 Step 2).

### IV. Description of Planning Area Characteristics

- A. Planning area boundaries with map and a statement describing how the study area was defined and the boundaries determined.
- B. Climate: precipitation, temperature, etc.
- C. Topography, soils, geology, mineral resources.
- D. Hydrology including surface drainage patterns, channel morphology, geohydrology.
- E. Biological resources including fisheries and wildlife resources, forests, vegetation and habitat.
- F. Water resources including water quality, watershed, hydrology and groundwater systems.
- G. Land use including forestry, recreation, agriculture, aquaculture, and residential, commercial and industrial uses. Describe current land use, zoning and projected development trends.
- H. Population, current and projected trends.
- I. Transportation and utility systems including navigation characteristics of area.
- J. Scenic, aesthetic and historic/cultural resources.

### V. Description of Relevant Regulatory and Capital Improvement Programs

- A. Local.
  - 1. Comprehensive land use plan; open space, parks and trail plans; construction and improvement plans; and zoning of relevant jurisdictions.
  - 2. Flood damage prevention or reduction ordinance
  - 3. Shoreline Master Program
  - 4. Wetland ordinance/sensitive areas ordinance
  - 5. Local building code
  - 6. Stormwater management ordinance
  - 7. Dikes/drainage districts

B. State.

1. Flood Plain Management Act
2. Department of Natural Resources (DNR) lease or permit
3. Shoreline Management Act (SMA)
4. Centennial Clean Water
5. Stormwater Management
6. State Environmental Policy Act (SEPA)
7. Section 401 permit (Ecology)
8. Washington State Hydraulic Code
9. Growth Management Act
10. Forest Practices Act

C. National.

1. Army Corp of Engineers
  - a. Section 10 permit
  - b. Section 404 permit
2. National Environmental Policy Act (NEPA)
3. National Flood Insurance Program (NFIP)
4. National Pollutant Discharge Elimination System (NPDES)
5. Forest Practices Act

(see page 45 Task 3-C and Appendix A of this guidebook for a discussion of these programs)

VI. Flood Damage History, Flood Frequency Patterns and Current and Projected Problems (see page 45 Task 3-D)

- A. Record of historic flood events.
- B. Damage cost estimates by land use type, if available (e.g., commercial, residential, agriculture).
- C. Prior flood control investigations and actions.
- D. List of current and past problem areas and maintenance needs as well as a summary of implemented projects with cost and funding. Include environmental and resource utilization problems as well (The problems and maintenance areas should be identified on a map).
- E. Potential problems due to projected land development or resource utilization trends (this item is not explicitly called out in WAC 173-145-040 but it makes sense to plan for the future as well as current conditions) (see page 47 Task 3-E).

VII. Alternative Flood Hazard Management Measures

Here should be described structural and non-structural options for addressing the problems and issues identified above. The

location and extent of each measure should be defined and illustrated on a map. Also, it should be noted which problem(s) each measure would address, and the extent of its effectiveness. Both non-structural and structural solutions should be described in specifics. Alternatives combining structural and non-structural measures should be explored (see page 48 Step 4).

### VIII. Evaluation of Alternative Measures

For each alternative measure the following information should be provided:

A. Potential environmental impacts to:

1. Fish resources
  2. Wildlife resources
  3. Scenic, aesthetic and historic resources
  4. Navigation
  5. Water quality
  6. Hydrology
  7. Existing recreation
  8. Other as applicable
- (see page 78 Step 6-Item A)

B. Consistency with applicable regulations and policies  
(see page 80 Step 6-Item B).

C. Cost and method of payment.

Costs for operations, maintenance, administration and land acquisition should be factored into the estimates. The funding sources for each alternative should be identified (see page 80 Step 6-Item C).

D. Scheduling and Term of Benefit.

The proposed schedule for implementing each alternative should be discussed and the potential term of benefit projected. The intent of this is to identify which are short term, remedial actions and which are longer term, comprehensive solutions (see page 81 Step 6-Item D).

E. Conformance to Public Goals and Objectives.

A brief statement or summary table should be provided to indicate how each alternative responds to the individual objectives stated in Chapter III (see page 82 Step 6-Item E).

Note: For easy reference and alternative comparison, the evaluation analysis should be summarized into one or more charts or matrices (see page 78 Step 6 for several examples).

XI. Recommended Plan

- A. Discussion of the method of selecting and assembling the preferred alternatives into a comprehensive plan.
- B. List of recommended actions indicating:
  - 1. Costs and funding sources
  - 2. Scheduling
  - 3. Participating governments, agencies, groups
  - 4. Impacts and impact mitigation measures
  - 5. Benefits of programmed actions with respect to goals, objectives and problems
  - 6. Relationships to other planning efforts such as shoreline management, growth management, stormwater management, etc.
  - 7. The actions' relative priority
- C. Map illustrating actions.
- D. Diagrams and/or sketches of proposed actions

X. Appendices

- A. Certification from the Washington State Department and Community Development that the local emergency management organization is administering an acceptable comprehensive emergency operations plan.
- B. Environmental assessment documentation according to SEPA and/or NEPA regulations.
- C. Technical hydrological data and analysis.
- D. Other maps and information as applicable.
- E. Other exhibits as applicable.