LIST OF ACRONYMS

CFCMP	Comprehensive Flood Control Management Plan
FCAAP	Flood Control Assistance Account Program
FEMA	Federal Emergency Management Association
FIRM	Flood Insurance Rate Map
HPA	Hydraulic Project Approval
NFIP	National Flood Insurance Program

EXECUTIVE SUMMARY

A comprehensive flood control management plan is required by the State Participation in Flood Control Maintenance Act (RCW 86.26) for jurisdictions desiring State assistance for flood control management. The plan helps to protect and guide the use and allocation of state and local funds for flood protective works. The purpose of the plan is to establish the need for flood control work, define alternatives, and develop actions to solve flood control problems that are consistent with existing regulations and flood control goals.

Skagit County has faced flooding problems with the Skagit and Samish Rivers throughout its history. In order to control damage, over 80 miles of dikes and levees, drainage pumps, tide gates, holding ponds, and bank stabilization have been constructed and maintained by many diking and drainage districts. These facilities are subject to wear, however, and require continual maintenance. Several of these facilities are in need of major maintenance now. After a flood event, the relative severity of flood control maintenance problems change, and new problem areas occur. New problem areas can develop in response to changes in the river course or upper basin timber activities. Within this plan, 5 general areas in which related flooding problems occur have been identified, along with 14 specific problems within these areas. These areas are discussed in Chapter 2.

There are many structural and non-structural options to control flooding. Levees, coastal control, flood storage, channel maintenance or modification, and control of contributing areas are general structural options, and floodplain regulations, risk management, public education, and emergency response measures are some non-structural methods of controlling flood damage. These options are discussed in detail in Chapter 5. Each of the flood control options has its specific in-stream impacts and applicability to geographic areas and specific problems. The options used must also be consistent with existing regulations. Impacts of these flood control options are discussed in Chapter 6 and related regulations are covered in Chapter 4. The County has used most of these options throughout its history.

The development of flood control management actions must take into consideration the County flood control goals in alternative analysis and prioritization. These goals, discussed in Chapter 3, include reducing threat and damage, protection of economic base, provision of effective emergency response, maintain and improve existing facilities, maintain local control of flood control works, and provide Countywide protection.

A detailed analysis of each flood control alternative with respect to these goals is presented in Chapter 7. The resulting preferred alternatives for each geographic location are presented in Table ES-1.

Table ES-1. Preferred Flood Control Alternatives by Area

Area	Alternative				
	Maintain existing flood control works	Bank stabilization	Debris removal	Holding pond	Specific education
Leveed area	✓	✓			
Coastal	✓	✓			
Urban/rural	✓	✓			
Upper Skagit/ Samish Valleys	✓	✓	✓		✓
Feeder streams	✓	✓	✓	✓	

Due to the changing nature of flooding problems, a framework for prioritizing flood control work was developed in the management plan. Assessment of all flood control facilities and floodplain areas after a flood event is important to update the project list. After alternatives have been selected for the project areas, each is prioritized according to problem severity and ability to accomplish the County's flood control goals. Table ES-2 contains a general guideline of the priority of flood control projects Countywide. The actual prioritized list also reflects the severity of the problems. Table ES-3 lists prioritized projects for the 14 current problem areas. Their locations are shown on Figure 8-1 in the text. With approval of this plan, these projects will be planned in further detail, and will be submitted to the appropriate County and state agencies for funding and approval. Implementation of the projects is subject to local agency cooperation and coordination as Skagit County does not have full authority over all of the project areas.

This project prioritization list is for the current problem areas identified within the plan. The project and prioritization list will be updated upon assessment after a flood event. Unexpected emergency situations would be solved immediately, and are subject to a separate planning and funding process.

Table ES-2. Countywide Prioritization

Priority	Action
1	Maintain existing flood control works in leveed area.
2	Maintain existing flood control works in feeder stream area.
3	Enhance all existing flood control works County-wide.
4	Stabilize banks in Upper Skagit/Samish Valleys.
5	Remove point bar accumulations in Upper Skagit/Samish Valleys.
6	Maintain existing flood control works in urban/rural areas.
7	Improve drainageways in urban/rural areas.
8	Maintain existing flood control in Upper Skagit/Samish Valleys.
9	Stabilize banks along feeder streams.
10	Maintain existing flood control along the coast.
11	Remove debris from feeder streams.
12	Specific education programs County-wide.
13	Install holding ponds along feeder streams.
14	Form additional districts where necessary.

Table ES-3. Current Prioritized Project List

Priority	Project	Area
1	No. 7--North Fork sloughed levee	Leveed area
2	No. 8--Padilla Dike piling	Coastal area
3	No. 12--Gages Slough drainageway	Urban/rural area
4	No. 5--Cape Horn road bank stabilization	Upper Skagit Valley
5	No. 6--Big Ditch underpass repair	Leveed area
6	No. 10--Highway 9 bridge bank stabilization	Upper Skagit Valley
7	No. 9--Hansen Creek holding pond	Feeder streams
8	No. 1--Friday Creek bank stabilization	Feeder streams
9	No. 15--Grady Creek debris removal	Feeder streams
10	No. 14--Specific education program for Hamilton	Upper Skagit Valley
11	No. 11--Burlington point bar accumulation removal	Upper Skagit Valley
12	No. 3--Remove point bar accumulations near Lyman	Upper Skagit Valley
13	No. 13--Specific education program for Cockreham Island	Upper Skagit Valley
14	No. 4--Remove point bar accumulation near Van Horn	Upper Skagit Valley
15	No. 2--Remove point bar accumulation near Gilligans Creek	Upper Skagit Valley

CHAPTER 1

INTRODUCTION

Flood protection and drainage of excess water have been concerns of the people of Skagit County since the earliest agricultural settlements were established. The County has a long history of flooding problems which have cost the County residents and businesses millions in damages. Substantial flood protection work and drainage facilities have been constructed and operated by local interests, both public and private, to help alleviate the problems.

Funding for many of the flood control projects was made available through the State Participation in Flood Control Maintenance Act (Chapter 86.26 Revised Code of Washington [RCW]) originally enacted in 1951. The Act had provided a funding mechanism to cost share with local jurisdictions in the construction of facilities for flood control maintenance. Typical projects included the installation of rock riprap on eroding streambanks or on failing existing riprap or levees. Funding was based on a legislative appropriation each biennium with the amount varying from a maximum of two million dollars per biennium, to no funding for approximately the last 10 years.

Significant modifications were made to the Act in 1984. The purpose of the amendments to the Flood Control Assistance Account Program (FCAAP; RCW 86.26.007) is to protect and guide the wise allocation of State and local funds for flood protective works. A new requirement of the Act is that each jurisdiction desiring State assistance for flood control maintenance must prepare a Comprehensive Flood Control Management Plan (CFCMP).

PROBLEM STATEMENT

The purpose of comprehensive flood control management planning is to establish the need for flood control maintenance work, define structural alternatives, identify and consider potential impacts of in-stream flood control work on in-stream resources, and identify the river's floodway.

In order to continue to be eligible to receive funds from the Flood Control Assistance Account Program, Skagit County must develop and adopt a CFCMP as specified in Washington Administrative Code (WAC) 173-145. The County retained Brown and

Caldwell to provide necessary engineering services in connection with the State requirements.

SCOPE OF WORK

Skagit County engaged the services of Brown and Caldwell to conduct the Comprehensive Flood Control Management Plan under an Agreement for Engineering Services dated February 23, 1987.

In compliance with WAC 173-145-040, the following tasks and subtasks will be performed in the development of the plan:

- Determination of the need for flood control work through a description of the watershed, identifying types of flood problems and potential damages, locating specific problem areas, determining goals and objectives for the planning area, and addressing the applicable regulations.
- Identify the areas that are subject to flooding.
- Examine flood control alternatives including structural and alternative in-stream flood control work.
- Identify potential impacts on in-stream uses and resources.
- Evaluate and prioritize the proposed flood control actions.
- Summarize proposed solutions.
- Provide a document ready for review and adoption.

BACKGROUND MATERIALS

The information for this plan has been condensed from several studies on the Skagit and Samish River systems. The studies cited are listed in the bibliography in Appendix A, and include those prepared by the Corps of Engineers, the Federal Emergency Management Agency (FEMA), Skagit County, and the Soil Conservation Service. Information was also obtained from County records and legislation, as well as interviews with staff engineers and planners.