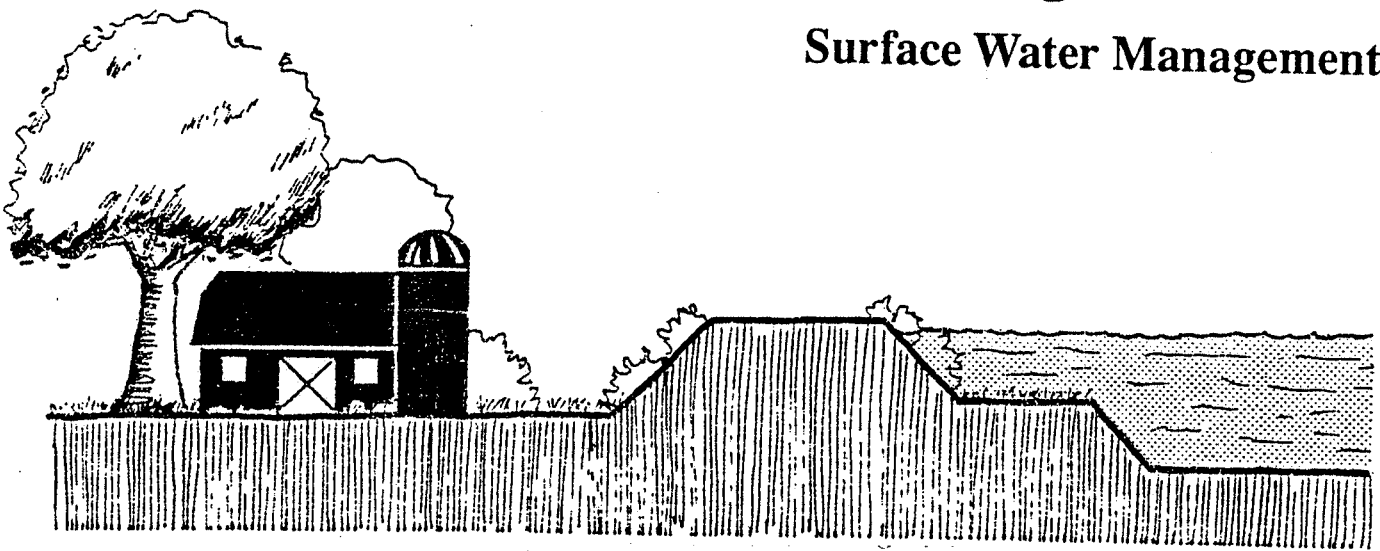


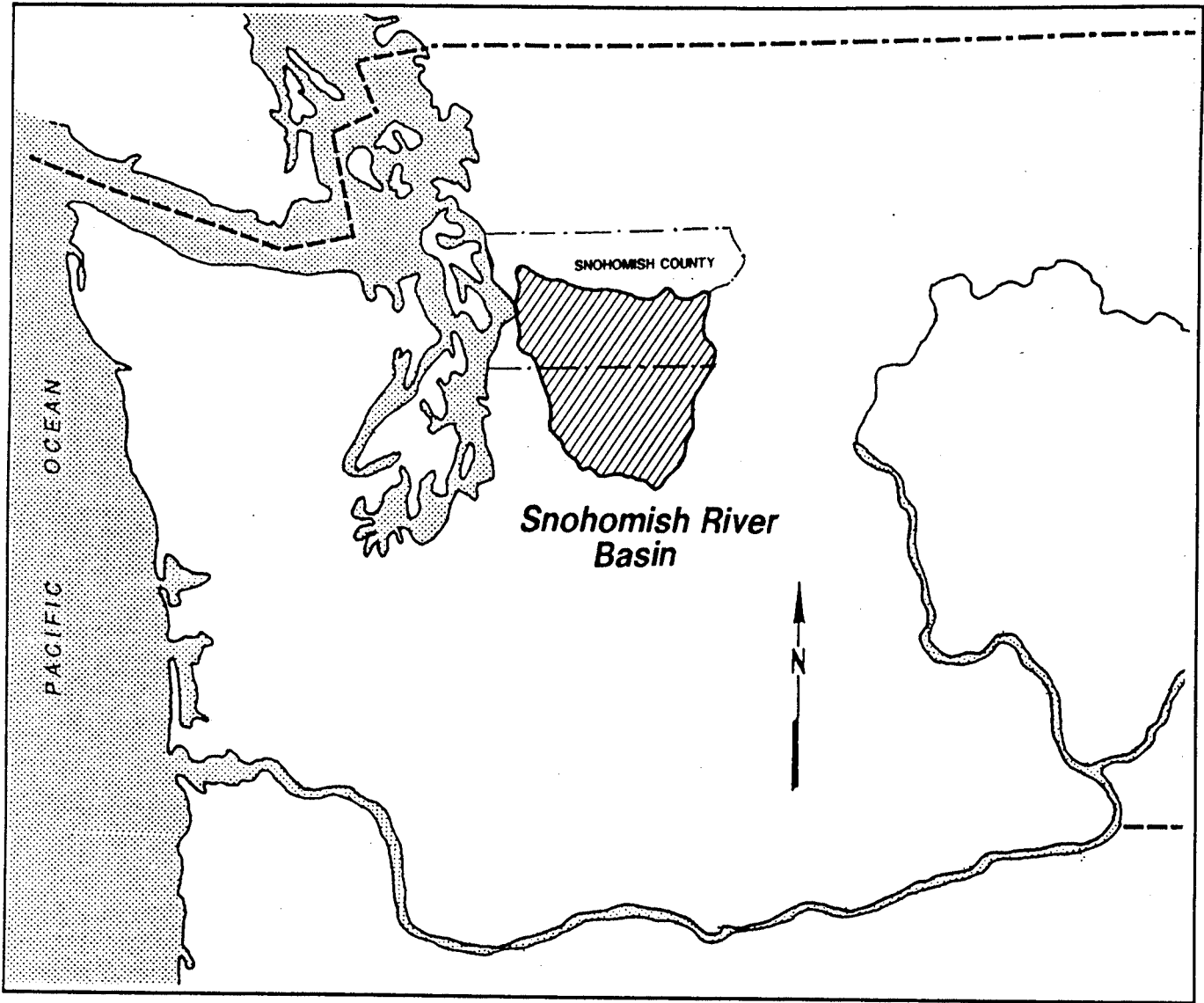
Snohomish River
Comprehensive Flood Control Management Plan
Surface Water Management



Final

December 1991

Snohomish County Public Works Department



Snohomish River Comprehensive Flood Control Management Plan



This report was prepared by:

Snohomish County Public Works
Surface Water Management
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Everett, WA 98201

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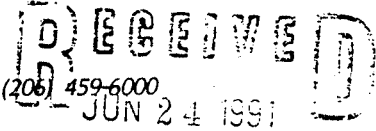
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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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June 20, 1991

DEPT. OF PUBLIC WORKS

Mr. John Engel
Snohomish County Public Works
Wall Street Building
2930 Wetmore Avenue
Everett, WA 98201

Dear Mr. Engel:

I am pleased to inform you that the Department of Ecology, in consultation with Departments of Fisheries and Wildlife, approves the Snohomish County's Lower Snohomish River Comprehensive Flood Control Management Plan. Consultation letters from Departments of Fisheries and Wildlife are enclosed for your information and consideration, particularly as components of your plan progress to more detailed planning and engineering stages.

While the plan meets requirements of WAC 173-145-040 of the Flood Control Assistance Account Program, we remind you that Ecology approval of this plan does not mean approval of any site-specific projects related to the plan or the associated environmental impact analyses. A more thorough analysis of site-specific projects, the site specific and cumulative environmental impact analyses and proposed mitigation, as well as permit requirements will be needed prior to implementation.

We look forward to a continued working relationship with you.

Sincerely,

Don Peterson (for)

D. Rodney Mack, Manager
Shorelands and Coastal Zone
Management Program

DRM:MG:del

Enclosures June 14, 1991, letter, Department of Wildlife
June 10, 1991, letter, Department of Fisheries

cc: Ted Muller, Department of Wildlife
Millard Deusen, Department of Fisheries



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ACKNOWLEDGEMENTS

The development of the Snohomish River Flood Control Plan was funded partly by a grant from the Washington State Department of Ecology's Flood Control Assistance Account Program (FCAAP) (Grant No. G0088089).

The plan was developed by the Snohomish County Public Works Department with close coordination with diking districts, the Tulalip Tribes, environmental organizations, valley cities, and other county departments. The plan recommendations were developed through a series of workshops involving these groups. We would like to thank the members of the workshop group for their help in developing the consensus recommendations in this plan.

WORKSHOP PARTICIPANTS

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Other Organizations:

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Tim Stocker	Agriculture at Large
Larry Adamson	Snohomish County Planning Department

SNOHOMISH COUNTY, DEPARTMENT OF PUBLIC WORKS PROJECT STAFF

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Charlotte Jackson	Secretary
Mary Auld	Graphics

Executive Summary

The study area for this plan is the Snohomish River valley, from the confluence of the Skykomish and Snoqualmie Rivers to the mouth of the Snohomish River delta, approximately 20 miles downstream in Everett. Consensus for this plan was accomplished through a workshop group formed from diking districts, the Tulalip Tribes, valley cities, environmental organizations, and other affected agencies.

The existing flood protection system consists of a series of levees built and maintained by independent diking and drainage districts. There are 9 organized districts and several private dike systems in the valley. Each district has a varying degree of flood protection, with differences in dike height, creating unequal flood protection. In addition, many levees are structurally weak which has resulted in numerous past levee breaches.

The purpose of this plan is to establish County policies which will guide future construction and maintenance of levees and the overall flood protection needs of the valley, including cities. A major objective is to define realistic goals for future levee heights (level of protection) which will be equitable for all diking districts. A parallel objective is to establish design and maintenance standards for levees which meet the flood control needs and give high priority to the needs of fish and wildlife habitat.

In developing this plan, a major assumption has been that levees cannot be built to keep out all floods because of the prohibitive costs. In addition, it is the desire of some of the diking districts to be eligible for Corps of Engineers' assistance to help rebuild levees damaged by floodwaters. The Corps requires that levees be at least as high as the 5-year flood with 1 ft of freeboard (5-year + 1 ft level). A 5-year flood is one which occurs about once every 5 years. Because levees will overtop for larger floods, design standards have been developed which allow for safe overtopping of levees when necessary. Overtopping sections are located where floodwater will cause the least damage, i.e., on the downstream areas of diking districts and between homes and other structures.

The Snohomish River valley has a great deal of unique fish and wildlife habitat. For this reason the plan has been developed giving high priority to preserving and enhancing riparian habitats.

The major elements of this plan are:

- Level of Protection - Establishes the 5-year flood level as the overtopping level for levees. Some areas will be 1 foot below the 5 year profile, others 1 foot above this profile.
- Design Standards - Establishes basic structural requirements for both overtopping and non-overtopping levees. Gives high priority to preserving and enhancing riparian habitat through levee setback, biotechnical bank stabilization, and recommended plant species for habitat enhancement projects.
- Maintenance Standards - Recommends mechanical vegetation management and minimum use of herbicides. Replacement of tide gates on salmonid streams must use designs which optimize fish passage, and borrow areas for materials should be left as open water habitat.
- Flood Fight Policies - Establishes uniform policies for flood fight activities in the Snohomish valley.
- Habitat Enhancement/ Flood Control Projects - Recommends projects which would jointly benefit flood control by providing off-channel flood storage and habitat, and by reestablishing or enhancing wetlands. Specific areas include Drainage District 6 and the Department of Wildlife property on Ebey Island.
- Levee Improvement Priorities - Establishes priority projects and identifies costs to bring levees up to the standards in this plan (total cost \$ 5.0 M). Recommends completion of the SCS project for lower Marshland.
- Land Use - Supports existing County land use policies which designate the floodplain primarily for agricultural uses.
- Implementation - Recommends continued monitoring of levee improvements with a formal review of the plan every 3 to 5 years. The Coordinated Diking Council would play an important role in this process. Recommends use of creative funding programs for levee improvements and habitat enhancement projects. Possible sources of funding include State FCAAP funds, County River Improvement funds, U.S. Army Corps of Engineers, U.S. Soil Conservation Service, U.S. Fish and Wildlife Service, and state and local wetland programs.