

EXECUTIVE SUMMARY

The Upper Yakima River Comprehensive Flood Hazard Management Plan (CFHMP) has been prepared with funding provided jointly by Yakima County and the State of Washington Flood Control Assistance Account Program (FCAAP) as established under the authority of the Revised Code of Washington (RCW) Chapter 86.26.

This CFHMP responds to Yakima County's desire to identify flooding issues along the Yakima River from Yakima Canyon to Union Gap and along the Naches River from Twin Bridges to its mouth, to gain an understanding of flood hazard management alternatives so that appropriate and informed management proposals and decisions can be made, and to develop a flood hazard management program to address identified flooding issues.

The following mission statement describes the overall goal of the Upper Yakima River CFHMP:

The CFHMP is a systematic process to identify and establish priorities for areas and property susceptible to flood damages, select alternatives to solve identified flood problems, and implement management solutions.

Since 1894, the flow in the Yakima River has exceeded flood level 45 times. Since 1970, Yakima County has been declared a federal disaster area seven times due to flood events. Lessons learned from past floods should not be forgotten; flooding will occur again, and it could be worse than even the most severe historical floods. Past floods indicate the need for effective flood hazard management.

APPROACH

The Upper Yakima River CFHMP synthesizes available data relating to flood hazard management within the study area. The plan follows guidelines and requirements in Chapter 86.26 Revised Code of Washington (RCW) and Chapter 173-145 Washington Administrative Code (WAC).

For a CFHMP to be successful, community members and concerned governmental agencies must be involved throughout the planning process. To accomplish this, an Advisory Committee was formed to provide a public perspective on flood hazard management within the study area. The Advisory Committee was an integral participant and decision maker in identifying flood problems, proposing policies for flood hazard management, setting priorities for solutions to existing flood problems, and establishing short- and long-term goals and objectives.

Long-term goals established for the Upper Yakima River CFHMP include the following:

- Prevent the loss of life, creation of public health or safety problems, and damage to public and private property
- Maintain the varied uses of existing drainage pathways and floodplains within the County
- Establish and adopt a systematic and comprehensive approach to flood hazard management

- Minimize the expenditure of public funds through effective flood hazard management
- Prevent the degradation of surface and groundwater
- Establish a stable, adequate, and publicly acceptable long-term source of financing for a flood hazard management program.

Objectives established to reach CFHMP goals include the following:

- Implement flood hazard management measures as approved in the CFHMP
- Give preference to nonstructural measures such as regulations and preservation of existing drainage corridors
- Preserve floodplain uses that are compatible with periodic flooding. Discourage land uses in the floodplain that are incompatible with periodic flooding
- Adopt flood control measures that preserve or enhance existing fishery, wildlife, and other natural uses of the riparian zone
- Ensure that changes in land use within drainage corridors maintain or restore the natural character wherever possible
- Integrate water quality needs with flood control needs and minimize the impact of contaminants and sediment in stormwater entering receiving waters
- Pursue strategies for flood hazard management that balance engineering, economic, environmental, and social factors
- Maintain consistency with Yakima County and local comprehensive plans, the state Growth Management Act, and related policy plans
- Coordinate flood hazard planning with all interested and affected parties
- Improve public understanding of flood hazard management through public education
- Establish a funding mechanism to implement the CFHMP
- Develop structural and nonstructural measures to prevent or minimize existing flood problems
- Adopt regulations to prevent new development from causing or being susceptible to flood damage.

Flooding issues and concerns were identified by examining historical flooding patterns, reviewing previous studies, and collecting information from Advisory Committee members and County staff. Each flooding issue was discussed at Advisory Committee meetings to define the problem, evaluate related issues, and determine a range of solutions. Higher priority issues were discussed in greater detail. Specific flood hazard management options were then developed to address each flood issue.

The following were considered in selecting flood hazard management alternatives to address identified flooding issues:

- Cost effectiveness
- Potential for success in solving the issue
- Environmental impacts
- Applicable policies and regulations
- Potential for additional public benefit.

Potential flood hazard management alternatives included construction projects, new policy decisions, land use modifications, enhancements to regulations, and options for retrofitting existing structures. The alternatives that best met the goals and objectives of the CFHMP and received support from the Advisory Committee were selected for recommendation.

RECOMMENDED ACTIONS

The CFHMP recommendations, detailed in Chapter 8, Chapter 9, and Chapter 10, are summarized below and in Table ES-1.

Regulatory Measures

Expand the Flood Overlay Zone

The County should expand the Flood Overlay Zone (FOZ) to include the entire floodplain. This designation should be similar to the FOZ found in the Yakima Urban Area Zoning Code. It would reinforce requirements for new development to be constructed to National Flood Insurance Program (NFIP) standards identified in the Critical Areas Ordinance (CAO) and increase scrutiny of floodplain development.

Modify Ordinances to Reduce Flood Hazards and Increase Regulatory Consistency

The County's CAO should be modified to include the following:

- Require new construction and substantial improvement (with the exception of agricultural pole barns), regardless of intended land use, to be floodproofed 1 foot or more above the revised base flood elevations (BFEs), and to be accessible by emergency vehicles during a flood. This could be accomplished by providing dry land access at or above the base flood elevation..
- Requirements for siting utility lines in the floodway fringe and floodway should be consolidated.
- Surface mining in floodway fringes and floodways would change from a permitted use to a conditional use.
- A new section should be added defining and addressing critical facilities.
- Cite the 1995 revised Flood Insurance Study (FIS) and Flood Insurance Rate Maps (FIRMs) or the best available flood information.
- As much as possible, establish consistency between the CAO and the shoreline ordinances of the various jurisdictions in the County.

- City jurisdictions should integrate flood hazard items included in the County's CAO that are not specified in their respective Flood Hazard Ordinances (FHOs) or CAOs, or develop an inter-local agreement creating a FHO that applies across all jurisdictional boundaries.
- Add compensatory storage requirements.

The benefits of these actions include regulatory clarity, elimination of redundancy, consistent floodplain management, and a possible decrease in flood hazards if enhancements are adopted.

Adopt or Develop Flood Hazard Management Policies

The County should adopt or further develop the following flood hazard management policies:

- Manage the Yakima River floodplain to protect its natural hydrologic and hydraulic functions.
- Give preference to nonstructural flood management measures in future flood management decisions.
- Require new flood-control projects to define maintenance responsibilities and a funding source for operations, maintenance, and repairs before acceptance by the County.
- Develop a flood hazard management funding policy similar to policy statements in *Plan 2015*.

Land Use Recommendations

Modify Land Use Plans and Development Regulations

County and City land use plans and development regulations should be revised and enforced to ensure future reductions in flood hazards. Actions necessary to implement long-term land use changes include the following:

- Revise land use plans by removing urban zoning designations from the floodplain in some areas.
- Enforce the requirements of Chapter 5 of the CAO to any future development.
- Monitor cumulative effects of subdivisions and buildout in the FOZ.
- County and City land use plans and development regulations should be revised to ensure that urban areas within the floodplain are dedicated to long-term open space or low-density development with structural mitigation.
- Ensure that future Growth Management Act (GMA) comprehensive plan amendments are consistent with overall CFHMP goals and policies.
- Consider adopting the CFHMP as a comprehensive plan element.

Promote Open Space in the Floodplain

Preserving and promoting open space within the floodplain is consistent with the long-term CFHMP objective of promoting floodplain uses compatible with periodic flooding. Recommended actions to enhance open space within the floodplain include the following:

- The County should continue to operate and promote the Open Space Taxation Program. A public awareness campaign should be conducted to promote the program.
- Undeveloped County-owned parcels should be designated as open space or integrated into the Yakima Greenway master plan.
- The County should apply design standards of the Greenway Master Plan during Class 2 review of developments within floodplain or Greenway Overlay Zone.
- The County should extend the Greenway Overlay Zone beyond the Yakima Urban Area within conservation, recreation, and natural areas designated in the Greenway Master Plan.

Public Education and Awareness Recommendations

Staff Additional Flood Hazard Management Personnel

The County should hire additional flood hazard management personnel to direct the implementation of this plan and future surface water management plans or projects.

Enroll in the Community Rating System

The County should immediately enroll in the Community Rating System (CRS) using a "short form" (FEMA 1994). The County should submit the full application to update its CRS rating following adoption of the CFHMP. Full application will provide the greatest benefit when many of the structural and nonstructural recommendations of the CFHMP have been implemented. Many of the CFHMP recommendations would receive CRS credit.

Perform a Detailed Flood Audit of Floodplain Structures

The County should perform a detailed flood audit to provide information on specific flood hazards for structures within the floodplain and floodway. The flood audit would provide residents with information on actions to take prior to, during, and after a flood that are specific to their location and residence. The audit could also address specific public structures. The program could be similar to the U.S. Army Corps of Engineers' (COE's) flood audits.

Upon identifying high risk structures, the County should pursue funding through the Reigle Community Development and Regulatory Improvement Act, Robert T. Stafford Disaster Relief and Emergency Assistance Act, and Flood Control Assistance Account Program to provide cost-sharing to floodplain residents for floodproofing, elevation, and relocation of previously flood-damaged structures on a voluntary basis.

Disseminate Floodplain Information

The County should acquire from the Federal Emergency Management Agency (FEMA) and make available floodproofing references and fact sheets to citizens. Floodproofing materials could be distributed with flood information brochures to libraries, fire departments, chambers of commerce, and city offices throughout the County, and through other methods. Educational material distribution will increase property owners' knowledge of preventative flood-control measures.

Provide Guidance on Private Bank Protection Projects

Erosion of private property and agricultural land was identified as a flood-related issue in this CFHMP. To address this issue, the County should provide guidance for implementing private bank protection projects. Residents should continue to fund and implement bank protection projects as needed for their property. During project review, the County should continue to support bioengineering methods to address the hydraulic nature of Yakima River bank erosion and follow established bank protection guidelines (e.g., King County 1993). In addition, the County should adopt and enforce design standards, such as onsite detention, to limit or mitigate increased erosion resulting from new development.

Planning, Evaluation, and Data Collection Recommendations

Develop Long-term Gravel Management Plan

It is recommended that the Washington State Department of Natural Resources (DNR) act as a lead agency with support from the County to develop a workable gravel management plan to ensure a reliable source of gravel while maintaining the natural function of the Yakima River floodplain,. Gravel reclamation plans should be distributed to local agencies and interested parties. Comments on proposed plans should be discussed and issues resolved. If there is sufficient interest, a surface mining advisory committee could be formed. RCW 36.70A.020 codifies the goal of encouraging the involvement of citizens in planning processes and coordinating between communities and jurisdictions to reconcile conflicts. A surface mining advisory committee could be an efficient way to address this planning issue. The committee is not required to do so, but would provide a means of obtaining public acceptance and interjurisdictional coordination in developing countywide gravel management goals and policies. If additional information is required, the committee should recommend additional studies to determine flood protection benefits associated with gravel extraction. The goal of the committee should be to produce a long-term gravel management plan.

Obtain Accurate Floodplain Maps

FIRMs are critical to the management and planning of floodplains. Floodplain maps must reflect appropriate flood hazards to be used effectively. The extent of the 100-year floodplain and associated hazards has long been debated in Yakima County. Several areas on the FIRMs do not reflect flood hazards observed in historical floods.

Expand the CFHMP to Include Entire County

The County should expand the CFHMP to include the entire County, as funding becomes available, on a watershed basis. Comprehensive planning should concentrate on high-damage areas such as Ahtanum, Bachelor, Wide Hollow, and Wenas Creeks, and the Upper Naches and Lower Valley. The County should also continue CFHMP Advisory Committee meetings on an ad hoc basis and maintain a forum for coordination between cities and the Yakama Indian Nation since surface water does not follow jurisdictional or political boundaries but flows within natural watersheds. Funding arrangements should recognize the cross-jurisdictional nature of the natural watersheds. Officials should meet regularly to discuss flooding and surface water issues, funding options, and the progress of the implemented program.

Gather and Maintain Flood Hazard Data

The County does not have a system of collecting and archiving flood hazard data. These basic data are critical for planning and for determining program effectiveness over the long term. The following data management recommendations address several identified flood issues:

- The County should develop a high water elevation database to evaluate changes in river channels and trends in high water elevation.
- The County should continue to use their GIS system for flood hazard management.
- The County should continue to update and maintain the flood control facility inventory database that was developed as part of this CFHMP.

Consolidate Flood Facility Maintenance Requirements

The County should consolidate maintenance requirements following the steps listed below and described in Chapter 8:

1. Update the 1955 Operation and Maintenance Manual
2. Clearly define vegetation maintenance requirements
3. Combine maintenance requirements into one document
4. Standardize County inspection forms
5. Continually update the flood control works inventory.

Enhance Flood Warning and Emergency Response

The following actions are recommended to improve the level of flood preparedness in the Yakima Valley:

Short-term

- Formalize procedures for dispatching field teams and volunteers to critical locations along rivers and creeks to manually collect real-time river information
- Obtain from the Bureau of Reclamation (BOR) and compile time delays in flood peaks between locations along the Yakima River for various flood magnitudes

- Based on the county-wide road closure/damage database, develop an emergency response plan that includes maps displaying road closures and emergency routes at various river stages
- Develop and communicate to the public a policy on sandbag distribution during flood events.

Long-term

- Develop flood inundation maps for distribution to the public
- Install gauging stations within the upper watershed of tributary creeks
- Create an automatic telephone notification system.

Promote Fish Habitat Enhancement

Maintaining river channel complexity can enhance floodplain storage and channel conveyance and therefore reduce flood damage as well as enhance fish habitat. Opportunities are available in the Yakima Valley to enhance fish habitat as well as increase floodplain function to convey flood waters. The following are recommended to promote fish habitat enhancement:

- The County, the Washington State Department of Fish and Wildlife (WDFW), and the Yakama Indian Nation should identify and list specific fish habitat enhancement areas.
- The County should submit a letter of intent for participation in the COE 1135 program to obtain funding for fish habitat restoration.
- The County should incorporate fish habitat enhancements or mitigation into future flood hazard management projects.

Enhancements to Flood Control Structures and Roads

Flood control structures and roads within the Yakima River floodplain experience various degrees of flood damage. Mitigation measures were developed to reduce the potential for continued damage or the risk of future flooding, and are presented for the following structures:

- East Riverbank Levee downstream of SR 24
- Beech Street Gravel Pit Levee
- East Selah Gravel Pit Levee
- Gordon Lake Levee
- Roads within the CFHMP Study Area
 - I-82 at Selah Interchange
 - I-82 at Union Gap Interchange
 - I-82 South of Union Gap
 - SR 823 near Elks Golf Course, SR 12 near 16th Avenue, and Thorp Road
 - SR 24 East of Yakima River.

Funding Recommendation

The County should develop a county-wide flood control district, or flood control districts for high priority watersheds, initially funded through regular levies with additional funding from service charges, as needed. The establishment of a flood control district will create a dedicated source of revenue to implement the recommendations in this plan. Once such a dedicated source of revenue has been established, additional service charges or outside funding can supplement improvements or programs as the community desires. In addition, the County should continue to actively pursue outside funding in the form of federal and state grants and loans (see Table 9-2, Chapter 9).