

CHEHALIS RIVER BASIN

Floodplain Management Assessment

*April 2015 Master Report – Executive Summary
And*

*September 2015 Draft Recommendations for Floodplain
Management Regulatory Standards*

Executive Summary

In 2014, the Chehalis River Basin Flood Authority initiated an analysis of local floodplain management programs in order to see how they could be supported and strengthened. “Floodplain management,” in this context, is defined as the nonstructural activities that can help prevent and reduce flood losses. While flood control projects seek to reduce flooding through the use of dams, levees and other structural measures to manage the flow of floodwaters, floodplain management seeks to reduce the exposure of human development to damage by floodwaters by avoiding hazardous areas or by protecting new development from damage by floodwaters.

The floodplain management firm of French & Associates of Steilacoom, Washington, was contracted to conduct the analyses. This Master Report is a summary of floodplain management assessment reports for each of the twelve Chehalis Basin communities (Aberdeen, Bucoda, Centralia, Chehalis, Cosmopolis, Montesano, Napavine, Oakville, Pe Ell, and Grays Harbor, Lewis, and Thurston counties) and three Basin-wide reports related to mitigating repetitively flooded properties, the Community Rating System, and an overall assessment and recommendations for improving floodplain management in the Basin.

The findings and recommendations are organized under four headings:

1. The Floodplain, which includes a description of current development in the basin and floodplain mapping needs.
2. Managing New Floodplain Development, which discusses planning, zoning, and construction regulations that guide new development and administration of those regulations.
3. Protecting Existing Development, which includes a review of regulatory, flood control, retrofitting, and public information tools that can reduce property exposure to flood damage. This section also discusses plans that help select appropriate tools for improved floodplain management, the benefits of flood insurance, one funding source for repairs, and mitigation of flooded buildings.
4. The Community Rating System, a program that can encourage and support the recommendations in this report.

The recommendations of the reports mentioned above are combined into 21 recommendations under the various headings of this report. They are also listed in a table on the last page. They call for a mix of initiatives by communities and by the Flood Authority to revise current programs and start some new activities. The primary role of the Flood Authority would be to support local efforts and staff.

Copies of the three Basin-wide reports are available at https://www.ezview.wa.gov/site/alias__1492/28124/library.aspx#GovWrkGrp. Those interested in reviewing an individual community’s report should contact their local floodplain management staff directly or their Flood Authority representative.

Recommendations

Each of the twelve community floodplain management assessment reports and the three Basin-wide reports have their own, more detailed, recommendations for the respective communities and the Flood Authority. This Master Report has 21 recommendations that are drawn from those reports. They are listed here, in tabular form, identifying the lead (“L”) and supporting (“S”) agency or agencies.

NO.	RECOMMENDATION	COMMUNITY	FLOOD AUTHORITY
Mapping Recommendations			
1.	Where the flood of record was higher than the FEMA base flood elevation, it should be used as the basis for regulating new development	<i>Lead</i>	
2.	FEMA should prepare new maps	<i>Lead</i>	<i>Support</i>
3.	The Flood Authority should provide technical assistance to these mapping efforts		<i>Lead</i>
Planning and Zoning Recommendations			
4.	Preserve the remaining open areas as open space.	<i>Lead</i>	<i>Support</i>
5.	When plans and zoning ordinances are up for revision, review them and add criteria to guide damage-prone development away from the floodplain.	<i>Lead</i>	<i>Support</i>
Flood Hazard Area Regulations Recommendations			
6.	Have a meeting to review appropriate standards for development and prepare example ordinance language	<i>Support</i>	<i>Lead</i>
7.	Communities should bring their ordinances up to NFIP requirements and ensure that their floodplain management regulatory standards are consistent	<i>Lead</i>	<i>Support</i>
Regulation Administration Recommendations			
8.	Provide technical support to the communities		<i>Lead</i>
9.	Provide a floodplain management expert available to help any community with permit, enforcement and CRS issues		<i>Lead</i>
Loss Reduction Plan Recommendations			
10.	Communities should update their hazard mitigation and FCAAP plans	<i>Lead</i>	
11.	Assist communities in conducting area analyses	<i>Support</i>	<i>Lead</i>
Flood Control Measure Recommendation			
12.	Mitigation plans and area analyses should include planned flood control projects	<i>Lead</i>	
Retrofitting Recommendations			
13.	The Flood Authority should budget \$1,400,000 of its mitigation funds for retrofitting elevated buildings with improper openings and buildings in repetitive loss areas	<i>Support</i>	<i>Lead</i>
14.	The Flood Authority should budget the remaining \$100,000 for technical assistance	<i>Support</i>	<i>Lead</i>
Public information Recommendations			
15.	Inform residents about the flood hazard, construction regulations, flood insurance, retrofitting possibilities, and retrofitting funding sources.	<i>Lead</i>	<i>Support</i>

NO.	RECOMMENDATION	COMMUNITY	FLOOD AUTHORITY
16.	Prepare and provide model public information materials	<i>Support</i>	<i>Lead</i>
Flood Insurance Recommendations			
17.	Advise residents of the historical and potential flood hazard and the benefits of having a flood insurance policy.	<i>Lead</i>	<i>Support</i>
18.	Prepare example public information materials		<i>Lead</i>
19.	Initiate an effort with insurance agents to promote flood insurance	<i>Support</i>	<i>Lead</i>
CRS Recommendations			
20.	Have a meeting to review the CRS	<i>Support</i>	<i>Lead</i>
21.	If several communities are interested in doing something together, the Flood Authority should provide technical assistance to support or coordinate their efforts	<i>Support</i>	<i>Lead</i>

**Recommended Floodplain Management Regulatory Standards
Developed by French and Associates
September 13, 2015
Draft**

Eleven of the 12 Chehalis River Basin communities participate in the National Flood Insurance Program (NFIP) and are required to meet the minimum standards of that program and the Washington Department of Ecology. These minimum standards are summarized on page 5.

These NFIP's minimum standards were designed for the purposes of an insurance program. These minimum standards are inadequate to stop and reverse the long-term trend toward increasing flood damage because:

- They do not address the entire flood problem, only those areas mapped using FEMA's criteria and, in many cases, using the data, technology, and standards of the 1970's.
- They neglect greater than 100-year floods, unpredicted obstructions to flow, unmapped local hazards, and the effects of urbanization and a changing climate on flood levels.
- They focus on how to build in a floodplain rather than how to avoid unsafe locations.
- They allow essential valley storage to be filled and/or velocities to be increased, which can adversely affect others.
- They treat all buildings the same – homes, businesses, critical facilities, and structures that store hazardous materials.
- They do not include specific administrative procedures that can ensure proper enforcement of the standards.

For these reasons, the Association of State Floodplain Managers, among other knowledgeable organizations, have concluded that relying on minimum national standards will not stop or even reduce flood losses. The National Flood Insurance Program regulations note

- (d) The criteria set forth in this subpart are minimum standards for the adoption of flood plain management regulations.... Any community may exceed the minimum criteria under this Part by adopting more

comprehensive flood plain management regulations ... In some instances, community officials may have access to information or knowledge of conditions that require, particularly for human safety, higher standards than the minimum criteria set forth in Subpart A of this part. Therefore, any flood plain management regulations adopted by a State or a community which are more restrictive than the criteria set forth in this part are encouraged and shall take precedence. (44 CFR Part 60, Subpart A, Section 60.1(d))

The NFIP further encourages higher standards with flood insurance premium discounts through the Community Rating System (CRS).

The French & Associates team has reviewed each of the twelve communities' floodplain management programs and has recommended in each of its assessment reports that they adopt higher standards "appropriate for flooding conditions in the area and local administrative capabilities."

This paper summarizes the most important of those recommended higher standards. The maximum CRS credits for adopting them are listed to convey FEMA's estimate of their relative impact on protecting lives and reducing flood losses.

Recommended Higher Regulatory Standards			
Name	How it Works	Benefits	Max CRS Points
Floodplain Data			
Flood of record	Flood of record data are used to determine the extent of the regulatory floodplain and the regulatory flood elevation where 1. There is no base flood elevation (BFE) shown on the Flood Insurance Rate Map, or 2. The flood of record is higher than the BFE.	Buildings and properties are protected to a known flood level, a safer protection level than statistically based hazard data developed up to 40 years ago. Reduced insurance rates for new buildings.	410 NS, up to 110 points
On-site flood studies	In approximate A Zones and, where there is no community determined BFE, the developer must conduct a study to calculate the BFE. The cost of a study can be avoided if no buildings are located in the floodplain.	The NFIP minimums do not require much protection where there is no protection elevation. This provision sets a protection level for all new buildings. The cost is borne by the permit applicant as part of the cost of building in a hazardous area. Reduced insurance rates for new buildings.	410 NS, up to 100 points
Floodplain preservation			
Filling restrictions	Fill anywhere in the floodplain is either 1. Prohibited or 2. The developer is required to remove an equal or greater amount of fill from a hydraulically equivalent site	1. Prevents filling, which removes valuable floodplain storage and destroys natural floodplain functions 2. Preserves floodplain storage. Loss of	430 DL1 1. Prohibition: up to 280 points 2. Compensatory storage: up to 195 points for 1:1.5 removal ratio,

Recommended Higher Regulatory Standards			
Name	How it Works	Benefits	Max CRS Points
		storage can increase flooding by 1 – 4 feet	up to 130 points for 1:1 ratio
Open space preservation	<p>1. Areas currently open are required to stay open (i.e., no buildings, filling, storage), or</p> <p>2. Subdivisions and larger developments must set aside the floodprone area of the development</p> <p>The rules can be targeted to certain areas, such as the floodway</p>	<p>Hazardous areas are not developed, so no new buildings are built exposed to the hazard and no development displaces floodwaters onto other properties. Natural floodplain functions are also preserved.</p>	<p>420 OSP, OSI</p> <p>1. Up to 1,000 points (OSP)</p> <p>2. Larger developments only: up to 250 points (OSI)</p> <p>Less credit for impacting smaller areas of the floodplain</p>
Low density zoning	Zoning ordinance establishes districts in the floodplain (e.g., agricultural, forestry, conservation, or rural estates) and sets minimum lot sizes	As an alternative to prohibition of buildings, this limits the number of buildings in the floodplain	420 LZ, up to 600 points, no credit for densities of more than one building for five acres
Construction standards			
Freeboard	Instead of the minimum NFIP protection standard, the BFE, new buildings must be protected to the BFE plus 3 feet. This also applies to substantial improvements of existing buildings.	<p>Accounts for flood study errors, floods greater than 100-year, increased flood heights due to climate change and watershed development.</p> <p>Reduced insurance rates for new buildings.</p>	<p>430 FRB</p> <p>3 feet of freeboard and no filling on the site: up to 500 points</p> <p>Less credit for lower freeboard and if filling is allowed</p>
Critical facilities	New critical facilities and substantial improvements to critical facilities must be prohibited from, or protected to, the 500-year flood level or other level higher than require for other buildings. Critical facilities include fire stations, hospitals, water works, hazardous materials sites, etc.	Facilities vital to public health and safety keep operating during and after a flood	<p>430 PCF</p> <p>Prohibition of critical facilities in the 500-year floodplain: up to 80 points</p> <p>Protection to the 500-year flood level plus 1 foot: up to 40 points</p>
Nonconversion agreements	If a building is elevated so the floodable lower area is four feet high or greater, the owner must sign an agreement to not improve the area to increase susceptibility to flood damage. This means no insulation, carpeting, plumbing, etc.	This removes the strong temptation to occupy or finish the lower, floodable, story of an elevated building, which is a common problem if it hasn't flooded for a while and can occur without the	<p>430 ENL</p> <p>Agreement plus annual inspections by the community: up to 90 points</p> <p>Agreement without community inspections: up to 30 points</p>

Recommended Higher Regulatory Standards			
Name	How it Works	Benefits	Max CRS Points
		knowledge of permit officials	
Improvements tracking	See #4 on page 5 on substantial improvements. This provision requires tracking improvements over 5 or 10 years or longer. When the cumulative value of the improvements exceed 50%, the building must be brought into compliance.	This prevents getting around the requirement by building a succession of smaller improvements that add up to be a major reconstruction of the building	430 CSI Tracking all improvements and repairs over 10 or more years: up to 80 points Less credit for tracking over 5 years and/or only tracking voluntary improvements, not tracking repairs of damage to the building
Administration			
Regulation coordination	Clear statement in the regulations that where a critical areas, shoreline management, storm-water management, or building code requirement is more restrictive than a flood hazard rule, the more restrictive rule takes precedence. A preferred approach would be to review all regulations to ensure there are no conflicting standards.	Removes debate with a permit applicant over what regulations apply. Reduces chances of mistakes by different staff members. Can simplify the work of the permit staff. Will facilitate CRS credit for the higher standards.	No related CRS credit
Certified Floodplain Manager	Require all permit plan reviews, final inspections, and project approvals to be conducted by a Certified Floodplain Manager (CFM). For small cities, the CFM could be an employee of the county, neighboring city or contractor.	Helps ensure proper enforcement of the flood hazard regulations	430 RA1 25 points