



Adopting Higher Regulatory Standards



Adopting Higher Regulatory Standards

French Wetmore, CFM
French & Associates, Ltd.
Steilacoom, WA

Chehalis River Basin
Flood Authority

Adopting Higher Regulatory Standards



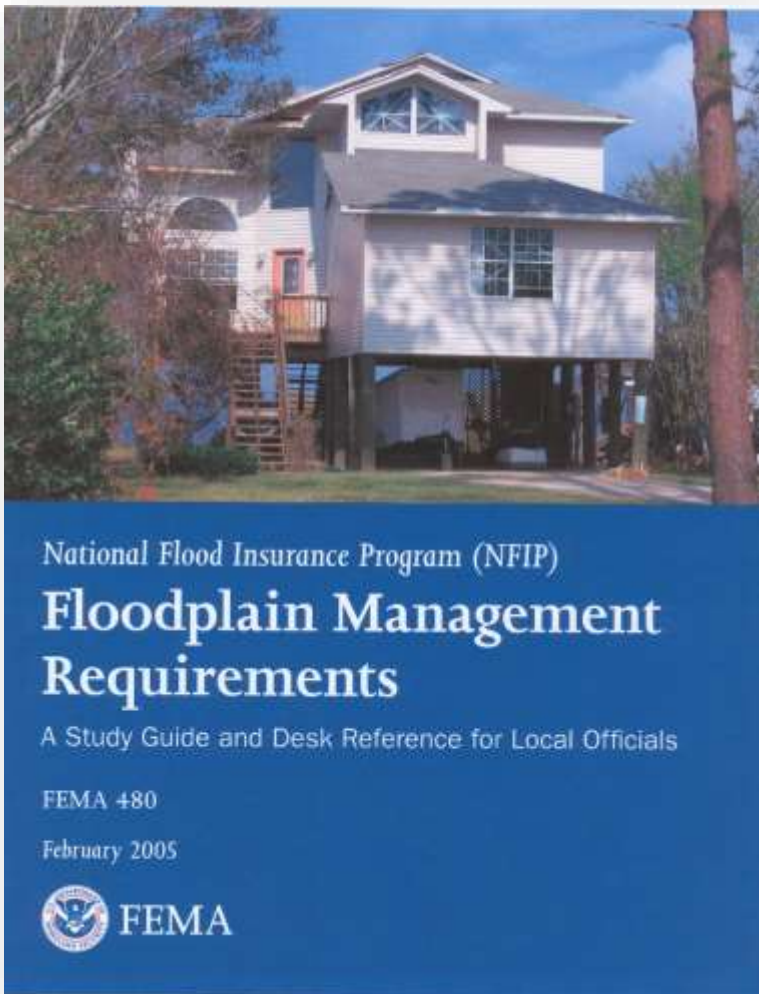
Adopting Higher Regulatory Standards

1. Why Go Higher?
2. Higher Standards
3. Getting Them Adopted

Adopting Higher Regulatory Standards

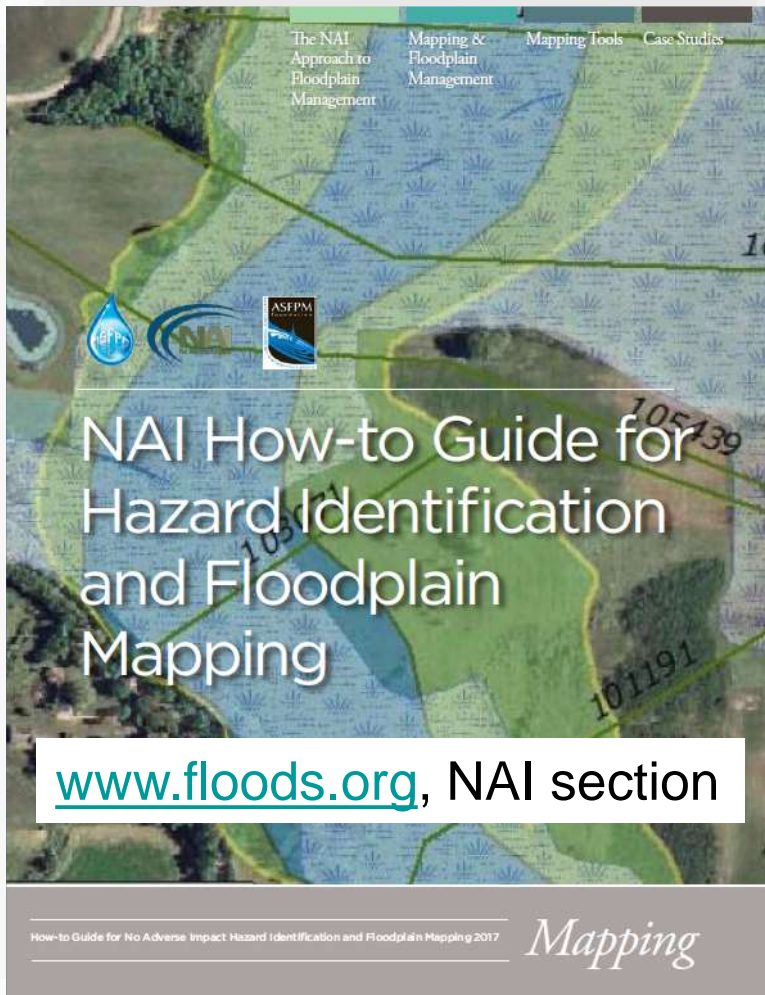
1. Why Go Higher?

1. NFIP mapping criteria
2. NFIP regulations





Adopting Higher Regulatory Standards



1. Why Go Higher?

1. NFIP mapping criteria

- Map accuracy trade off with costs
- 100-year flood standard
- Map areas already developed or expected to develop
- Urban: Watershed drains 1 sq. mi.
- Rural: Watershed drains 10 sq. mi.

Adopting Higher Regulatory Standards

FLOOD INSURANCE STUDY



GRAYS HARBOR COUNTY, WASHINGTON AND INCORPORATED AREAS

Community Name

ABERDEEN, CITY OF
CHEHALIS RESERVATION,
CONFEDERATED TRIBES OF THE
COSMOPOLIS, CITY OF
ELMA, CITY OF
GRAYS HARBOR COUNTY
(UNINCORPORATED AREAS)
HOQUIAM, CITY OF
MCCLARY, CITY OF
MONTESANO, CITY OF
OAKVILLE, CITY OF
OCEAN SHORES, CITY OF
WESTPORT, CITY OF

Community Number

530058
530334
530059
530060
530057
530061
530062
530063
530064
530065
530067



Effective: February 3, 2017

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
53027CV000A



1. Why Go Higher?

Current maps neglect:

- Smaller, local flooding problems
- Undeveloped areas
- Potential obstructions to flow
- Only look at “clear water” flooding
- Effects of urbanization
- Changing climate on storm events
- Changing climate on sea level

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FLOOD INSURANCE



Hoquiam, City of

The hydrologic and hydraulic analyses for this study were performed by the U.S. Army Corps of Engineers (USACE), Seattle District, for the FIA, under Interagency Agreement No. IAA-H-7-76, Project Order No. 11. This work, which was completed in May 1977, covered all significant flooding sources in the City of Hoquiam (Reference 5).

The following detailed flooding sources were not redelineated during the countywide analysis: Bush Creek, Cloquallum Creek (upstream of Cross-Section F), East Fork Wildcat Creek, Newman Creek (upstream of Cross-Section M), Satsop River (upstream of Cross-Section E), Wishkah River, and Wynoochee Creek. These reaches did not have new topographic data available so they were converted/fitted based on the effective FIRMs, new basemap data, and orthophotos.

1. Why Go Higher?

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FLOOD INSURANCE STUDY



GRAYS HARBOR COUNTY, WASHINGTON AND INCORPORATED AREAS

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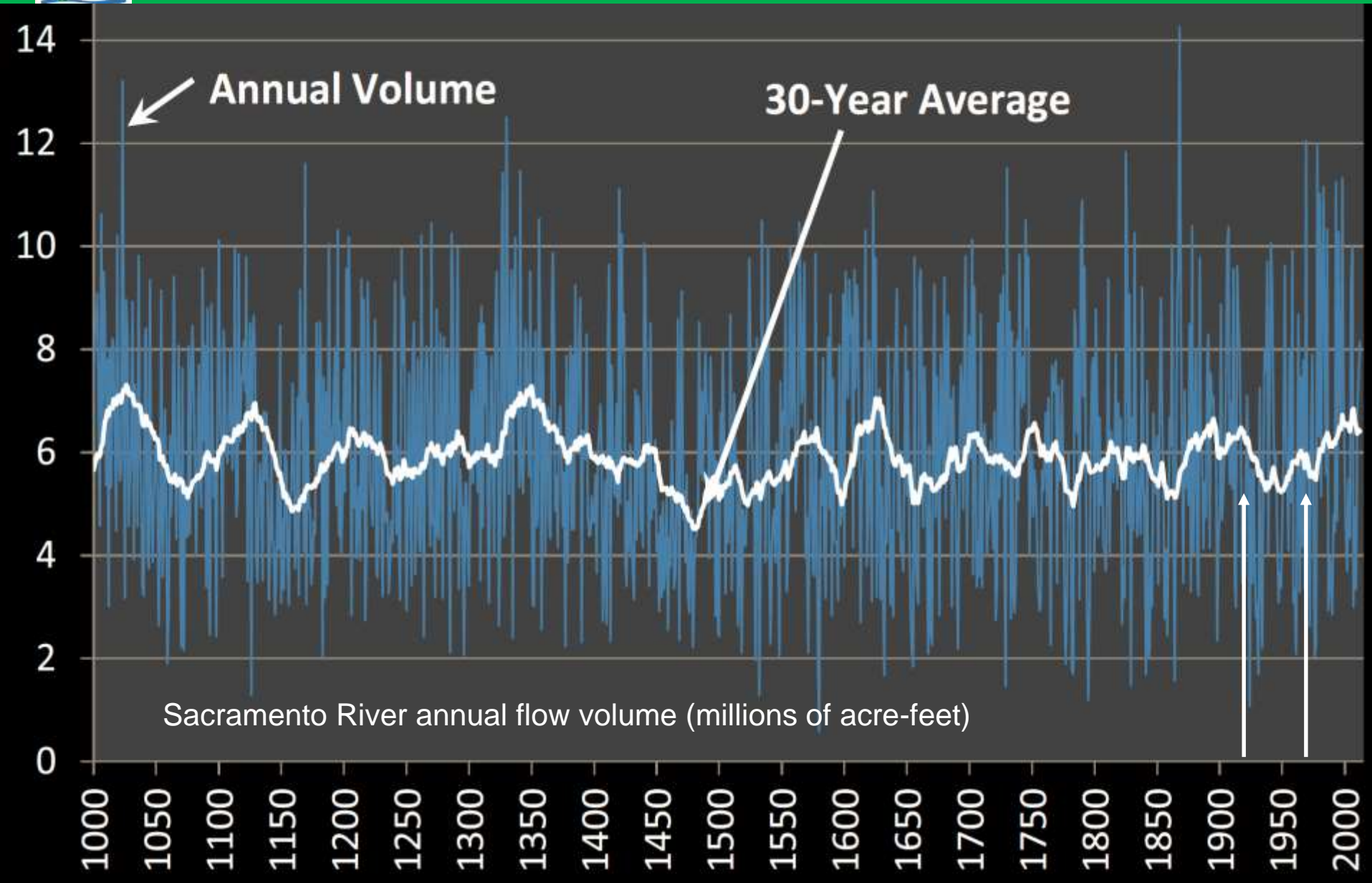
FLOOD INSURANCE STUDY NUMBER
53027CV000A

1. Why Go Higher?

- Check Flood Insurance Study
- Older hydrological data based on short time period – less data to extrapolate and estimate a 100-year discharge



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Adopting Higher Regulatory Standards

FLOOD INSURANCE STUDY



GRAYS HARBOR COUNTY, WASHINGTON AND INCORPORATED AREAS

Community Name	Community Number
ABERDEEN, CITY OF	530058
CHEHALIS RESERVATION, CONFEDERATED TRIBES OF THE	530334
COGMOPOLIS, CITY OF	530059
ELMA, CITY OF	530060
GRAYS HARBOR COUNTY (UNINCORPORATED AREAS)	530057
HOQUIAM, CITY OF	530061
MCCLEARY, CITY OF	530062
MONTESANO, CITY OF	530063
DAKVILLE, CITY OF	530064
OCEAN SHORES, CITY OF	530065
WESTPORT, CITY OF	530067



Grays Harbor County

Effective: February 3, 2017

Federal Emergency Management Agency



FLOOD INSURANCE STUDY NUMBER
53027CV000A

1. Why Go Higher?

- Check Flood Insurance Study
- Older hydrological data based on short time period – less data to extrapolate and estimate a 100-year discharge
- The period of gage records was dryer than normal
- Check your gage records – <http://water.weather.gov/ahps/>



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National Oceanic and Atmospheric Administration's
National Weather Service

Site Map News Organization

Local forecast by "City, St"
City, St Go

RSS RSS Feeds
Warnings
Current
By State/County...
UV Alerts
Observations
Radar
Satellite
Snow Cover
Surface
Weather...
Observed Precip
Forecasts
Local
Graphical
Aviation
Marine
Hurricanes
Severe Weather
Fire Weather
Text Messages
By State
By Message Type
National
Forecast Models
Numerical
Models
Statistical
Models...
MOS Prod
GFS-LAMP
Prod
Climate
Past Weather
Predictions
Weather Safety

National Observations

Warnings & Forecasts Graphical Forecasts National Maps Radar **Water** Air Quality Satellite Climate

River Observations River Forecasts Experimental Long-Range River Flood Risk Precipitation River Download Other Information

Auto Refresh: OFF

Print this map Permalink BOOKMARK

All Locations

Switch Basemap
Reset View

Click on the map or select one of the data views below:

United States
NWS Weather Forecast Offices
NWS River Forecast Centers
Water Resources Regions

Probability and forecasts available
 Observations only available
 Forecasts available

8565 total gauges
[Show all locations in flood \(74\)](#)

- 16 Gauges: Major Flooding
- 18 Gauges: Moderate Flooding
- 40 Gauges: Minor Flooding
- 47 Gauges: Near Flood Stage
- 5483 Gauges: No Flooding
- 2582 Flood Category Not Defined
- 21 At or Below Low Water Threshold
- 289 Gauges: Observations Are Not Current
- 69 Gauges: Out of Service

[Show all locations](#)

Last map update:
09/21/2017 at 12:14:18 am EDT

<http://water.weather.gov/ahps/>

Alaska Hawaii Puerto Rico



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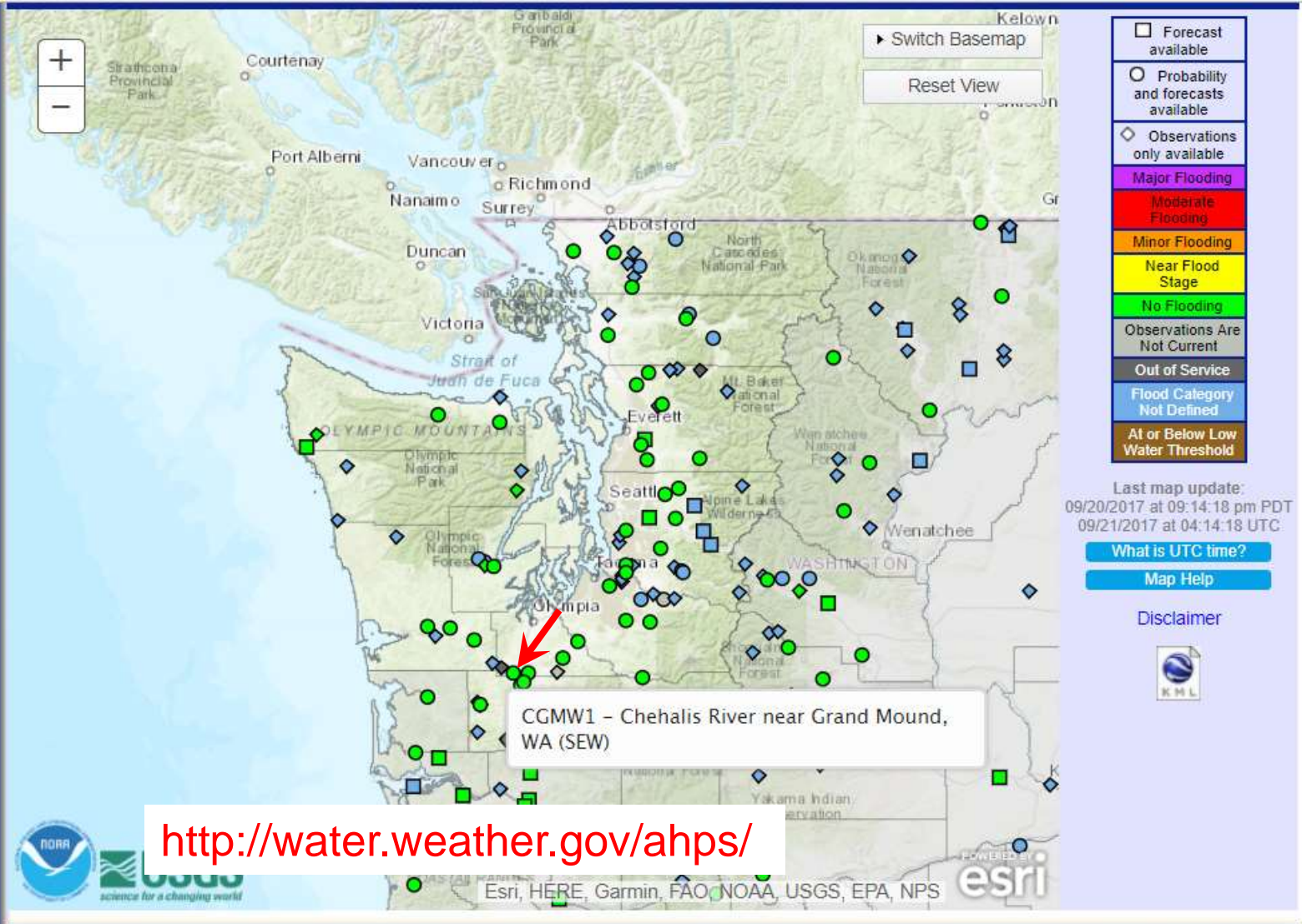
National Conditions
Rivers
Satellite
Climate
Observed Precip

Local Conditions
Warnings
Weather
Forecast
Radar
Radar

AHPS Documentation
User Guide
User Brochure

What is AHPS?
Facts
Our Partners

Feedback/Questions
Provide Feedback
Ask Questions



<http://water.weather.gov/ahps/>



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BFE = 142.85 NGVD

Stage = 19.2 ft

The odds are the BFE on your FIRM is too low to protect your community

Flood Categories (in feet)

Major Flood Stage: 17

Moderate Flood Stage: 15.5

Flood Stage: 14

Historic Crests

- (1) 20.23 ft on 12/04/2007
- (2) 19.98 ft on 02/09/1996
- (3) 19.34 ft on 01/10/1990
- (4) 18.41 ft on 11/25/1986
- (5) 18.39 ft on 12/29/1937

[Show More Historic Crests](#)

(P): Preliminary values subject to further review.

Recent Crests

- (1) 15.77 ft on 02/10/2017 (P)
- (2) 14.47 ft on 11/26/2016 (P)
- (3) 16.84 ft on 12/10/2015 (P)
- (4) 15.62 ft on 11/19/2015 (P)
- (5) 14.49 ft on 11/15/2015 (P)

[Show More Recent Crests](#)



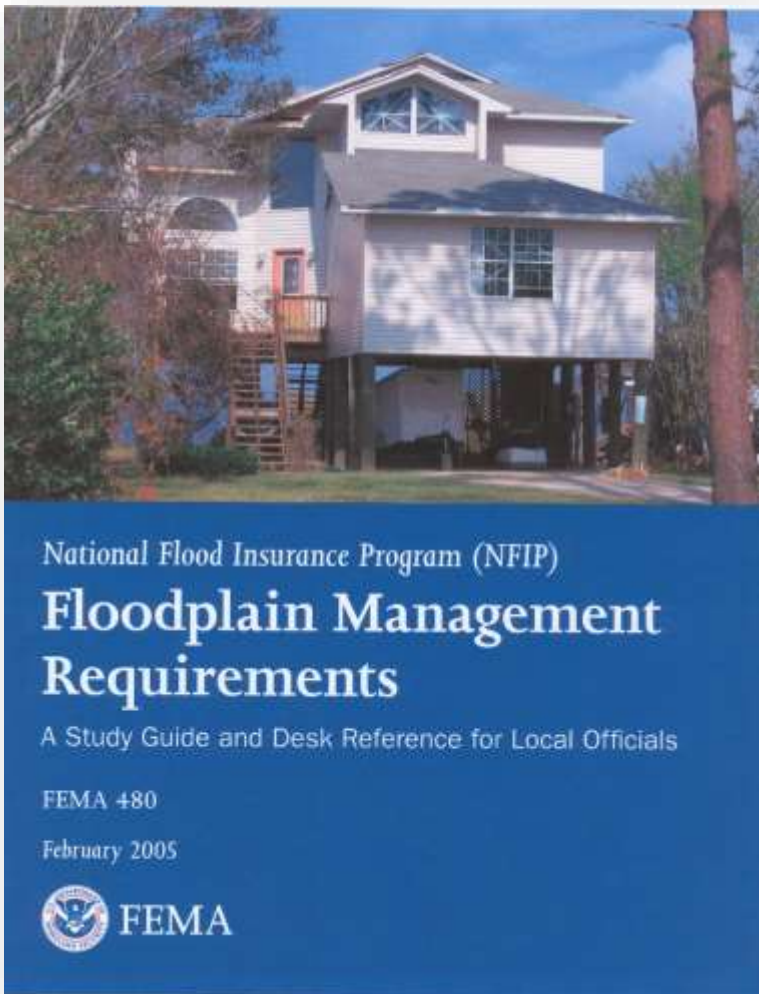
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1. Why Go Higher?

2. Regulatory standards

- National standards (not local)
- Standards on how to build, not incentives to avoid building
- Can fill and lose flood storage
- Can increase velocities
- Can increase flood heights up to one foot on other properties
- Same standards for critical facilities and hazardous materials as for other buildings



Adopting Higher Regulatory Standards



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1. Why Go Higher?

FEMA agrees

→ These are minimum standards

→ 44 CFR 60.1(d):

“...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”

→ FEMA 480 *Desk Reference*

→ Community Rating System

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1. Why Go Higher?
2. Higher Standards
3. Getting Them Adopted

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2. Higher Standards

- 12 recommendations
 - 3 – Mapping standards
 - 4 – Protect others
 - 4 – Protect buildings
 - 1 – Zoning
- All optional
- All credited by the CRS





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FOR = Stage 20.23 ft
Stage = 19.2 ft
BFE = 142.85 NGVD

Flood Categories (in feet)

Major Flood Stage: 17

Moderate Flood Stage: 15.5

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Historic Crests

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[Show More Recent Crests](#)

2. Higher Standards

1. Flood of record

- ✓ Highest recorded flood level
- ✓ 2007 flood map and profiles
- ✓ Future flood level, where higher than BFE

<http://water.weather.gov/ahps/>

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Existing study adopted
In the ordinance

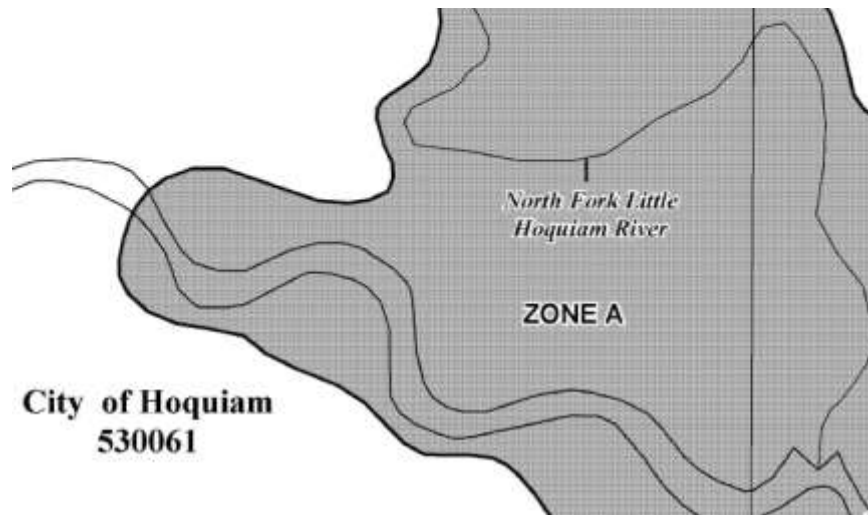


2. Higher Standards

2. Best available data in
Approximate A Zones



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2. Higher Standards

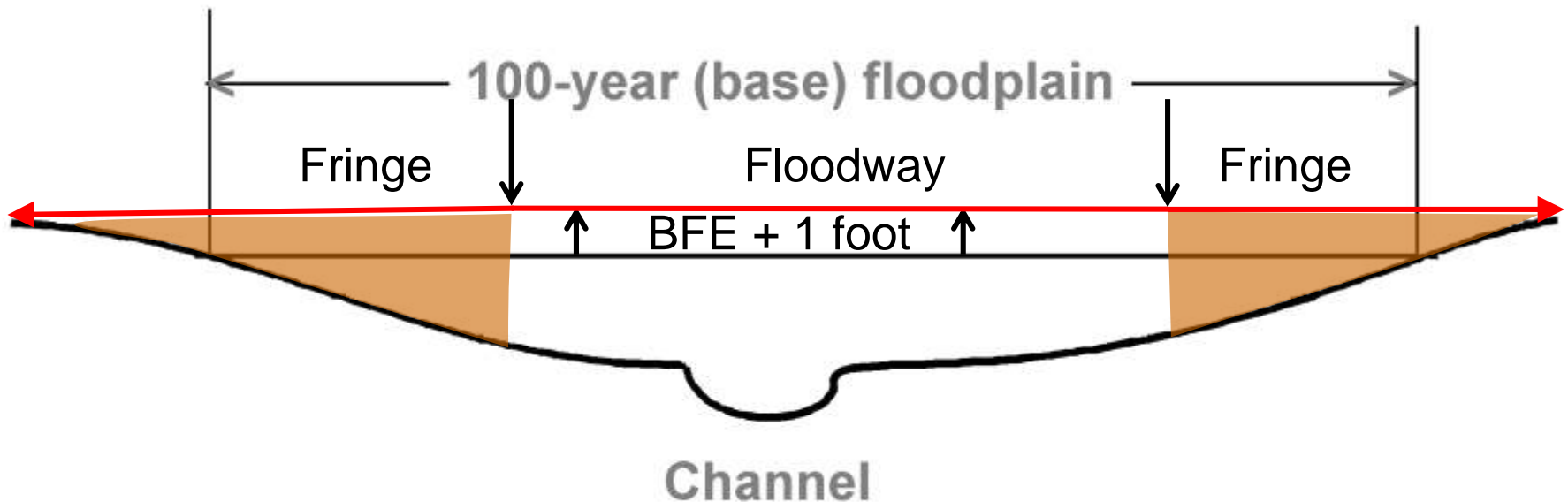
3. No available data in Approximate A Zones

In “Zone A” where the Flood Insurance Rate Map and the Flood Insurance Study do not provide a base flood elevation, the City Engineer shall obtain, review and reasonably utilize any base flood elevation data available from a Federal, State or other source. Where no such data are available, the base flood elevation shall be determined by the City Engineer using an approach approved by the Federal Emergency Management Agency for site-specific flood elevation determinations.

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2. Higher Standards

4. No adverse impact



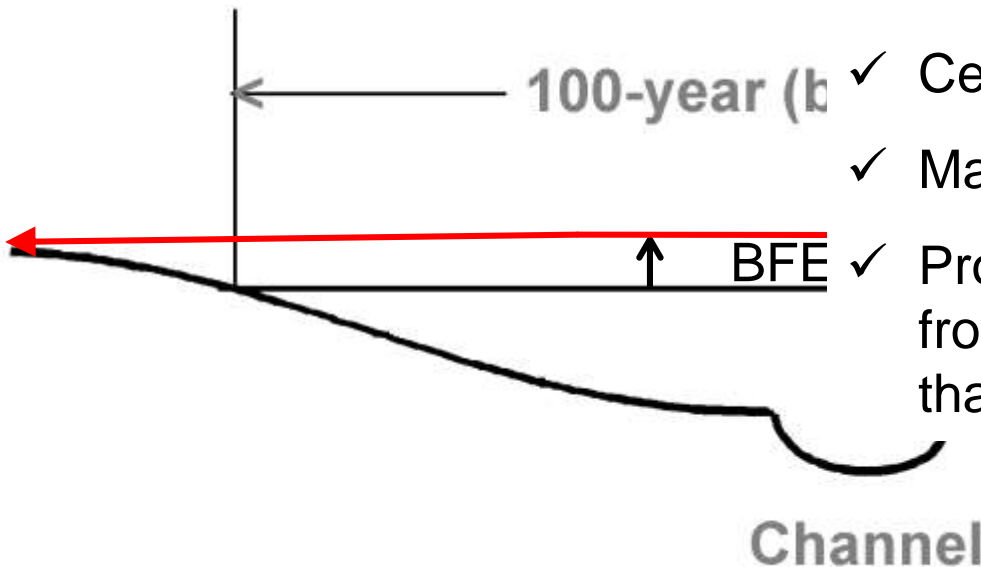
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2. Higher Standards

4. No adverse impact

Developer must:

- ✓ Certify no more than 1 ft increase
- ✓ Map the area affected by increase
- ✓ Provide notarized statements from the affected property owners that they do not object.



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Fill

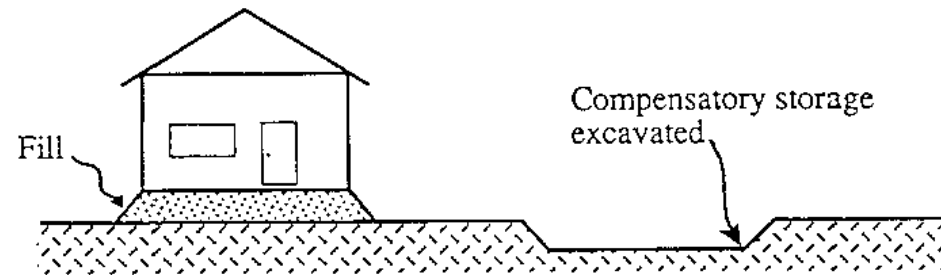
- + Cheap way to elevate
- + Keeps water away from buildings
- + Can get a LOMR-F
- + Easier for landscaping
- Reduces storage capacity (riverine floodplains)
- Kills native vegetation
- Redirects drainage onto others
- Adversely affects water quality



2. Higher Standards

5. Filling restrictions

- ✓ Prohibit all filling
- ✓ Require compensatory storage
- ✓ Limited to riverine floodplains



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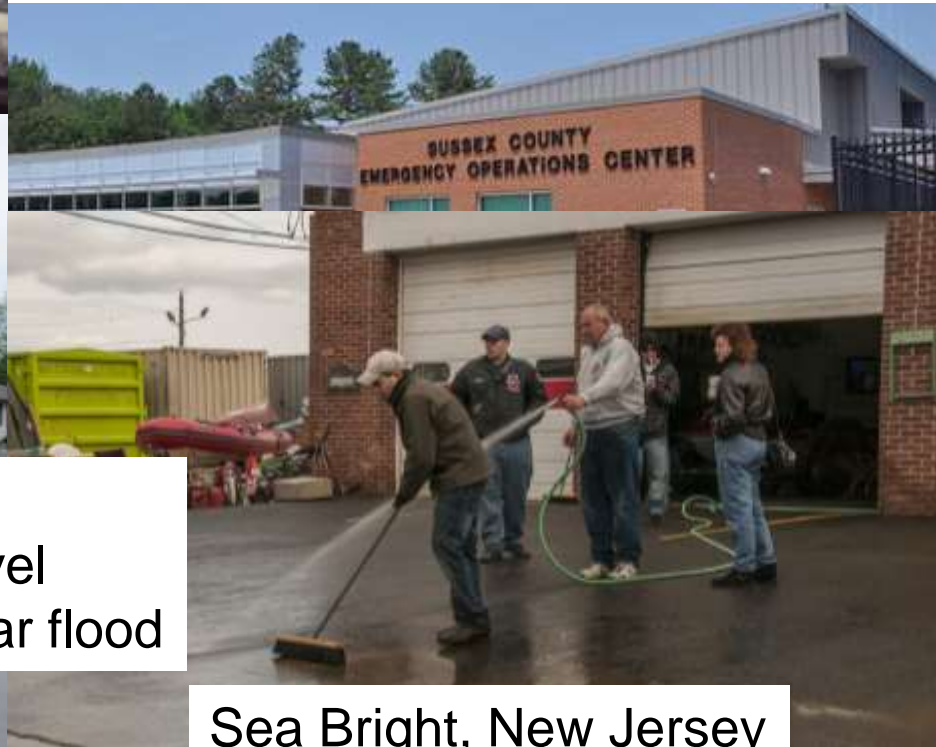


2. Higher Standards

6. Critical facilities



- ✓ Prohibit from floodplain
- ✓ Protect to 500-year flood level
- ✓ Keep access during 500-year flood



Sea Bright, New Jersey

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2. Higher Standards

7. Hazardous materials



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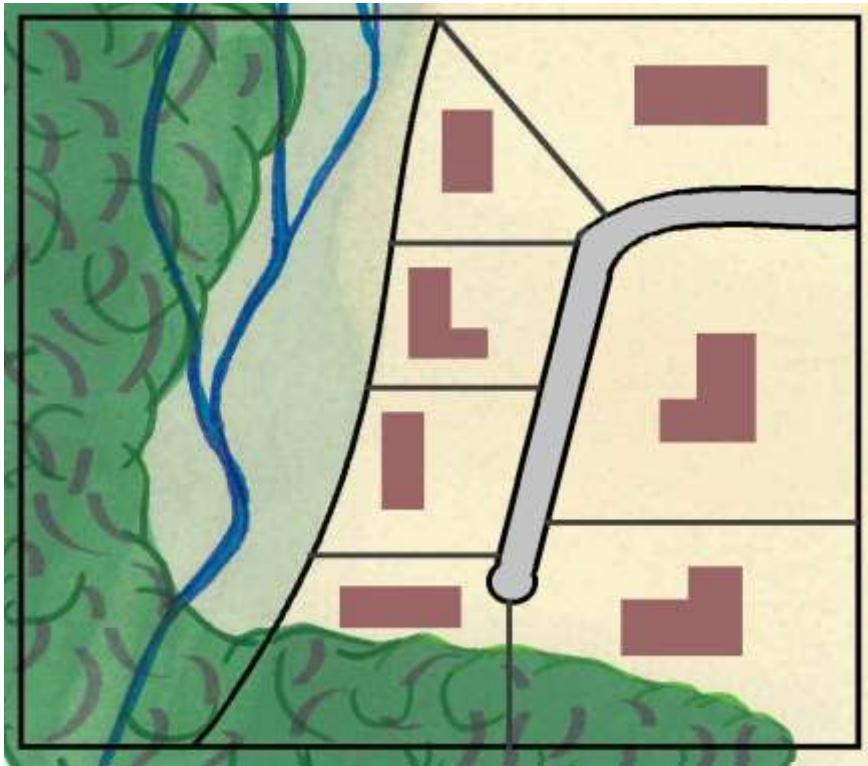


2. Higher Standards

7. Hazardous materials



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2. Higher Standards

8. Subdivision Set Asides

- ✓ Allow cluster development/PUDs
- ✓ Incentives, e.g., transfer of development rights
- ✓ Require all lots to have building site out of floodplain (where feasible)



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Higher Standards

9. Freeboard

Flood Insurance Premium Comparison		
Zone	Height	Premium
A	2 - 4 feet > grade	\$1,192
A	1 foot > grade	\$2,277
A w/BFE	2 or more feet > BFE	\$447
A w/BFE	0 - 1 foot > BFE	\$1,583
AE	<u>3 feet > BFE</u> →	\$343
AE	<u>2 feet > BFE</u> →	\$451
AE	<u>1 feet > BFE</u> →	\$748
AE	<u>At BFE</u> →	\$1,578
Premiums are for a new single family house, one floor, slab on grade foundation, \$100,000 in building coverage, \$1,000 deductible, no CRS discount		



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NONCONVERSION AGREEMENT FOR CERTAIN STRUCTURES IN THE FLOODPLAIN

Whereas, Permit # _____ has been issued to construct, improve, or repair the property at _____ [address] in the Town of Bucoda, WA, Parcel Number _____; and

Whereas, the permitted building has the lowest habitable floor elevated above the Base Flood Elevation (BFE) of _____ Ft. and the design and construction of the building meets current building code and flood damage prevention ordinance requirements; and

Whereas, as a condition of a Certificate of Occupancy, the owner must agree to not alter the building at a later date so as to violate the building code or flood damage prevention ordinance requirements,

Now, therefore, the undersigned owner of said property hereby agrees to the following:

1. That the enclosed area below the lowest habitable floor shall be used solely for parking of vehicles, limited storage, or access to the building and will never be used for human habitation without first becoming fully compliant with the flood damage prevention ordinance in effect at the time of conversion.
2. That all interior walls, ceilings, and floors below the BFE shall be unfinished or constructed of flood-resistant materials.
3. That mechanical, electrical, or plumbing devices that service the building shall not be installed below the BFE.
4. That the openings in the walls of the enclosed area below the lowest floor shall not be blocked, obstructed, or otherwise altered to reduce the size of the openings or restrict the automatic entry and exit of floodwater.
5. That any variation in construction beyond what is permitted shall constitute a violation of this agreement and the Town of Bucoda Floodplain Ordinance.
6. That the owner and subsequent owners understand that the Town of Bucoda has a right to inspect inside the premises at any time to verify compliance with this agreement.
7. That this Agreement shall be recorded with the Thurston County Auditor so that subsequent owners are made aware of these restrictions.

Signature of Property Owner

Witness

Printed name: _____ Printed name: _____

Date: _____ Date: _____



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2. Higher Standards

10. Non-conversion agreement

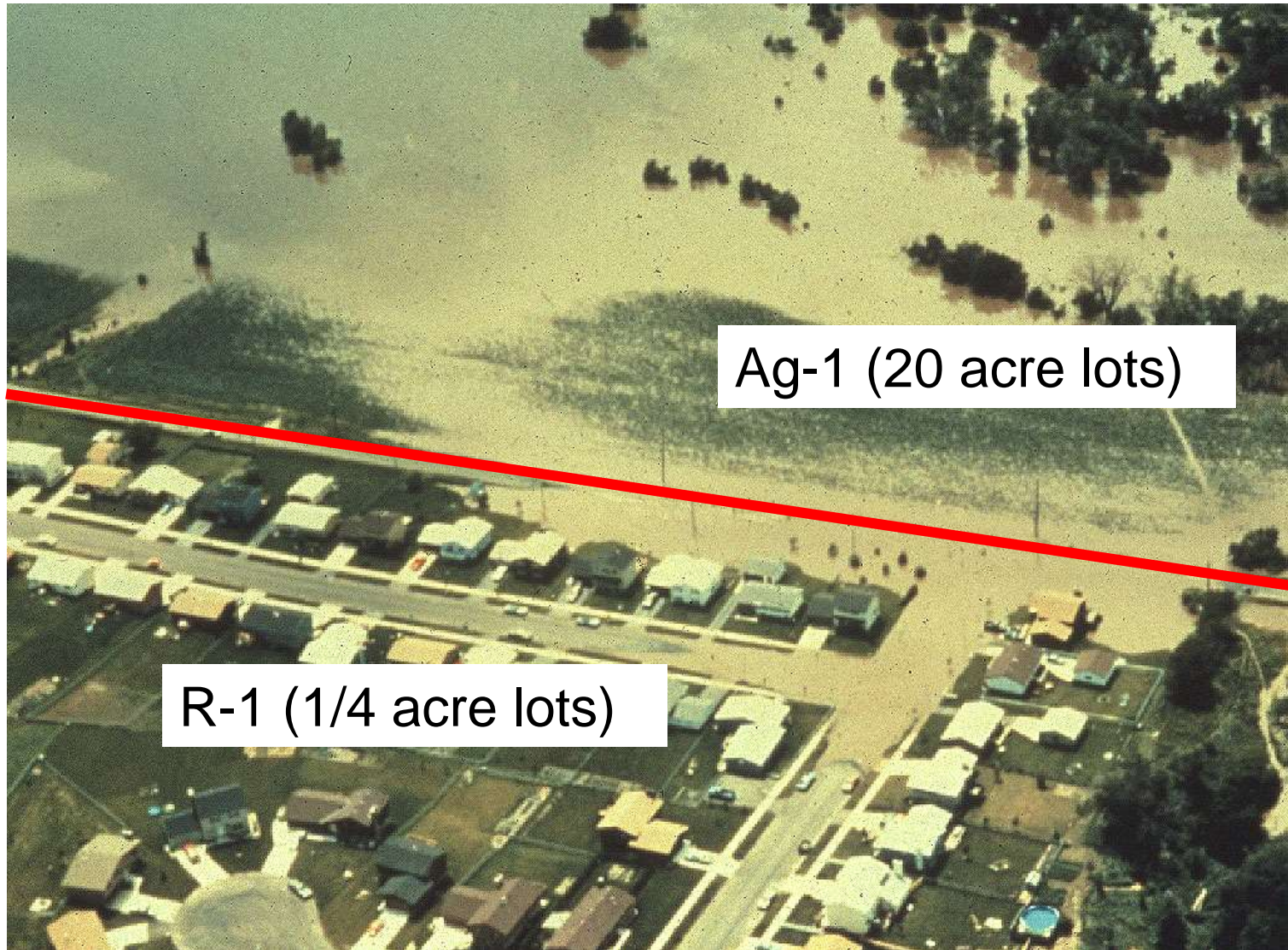
- ✓ No modifications below the freeboard level that will increase potential damage
- ✓ Community can inspect (with advance notification)
- ✓ Community will inspect (with advance notification)



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Adopting Higher Regulatory Standards



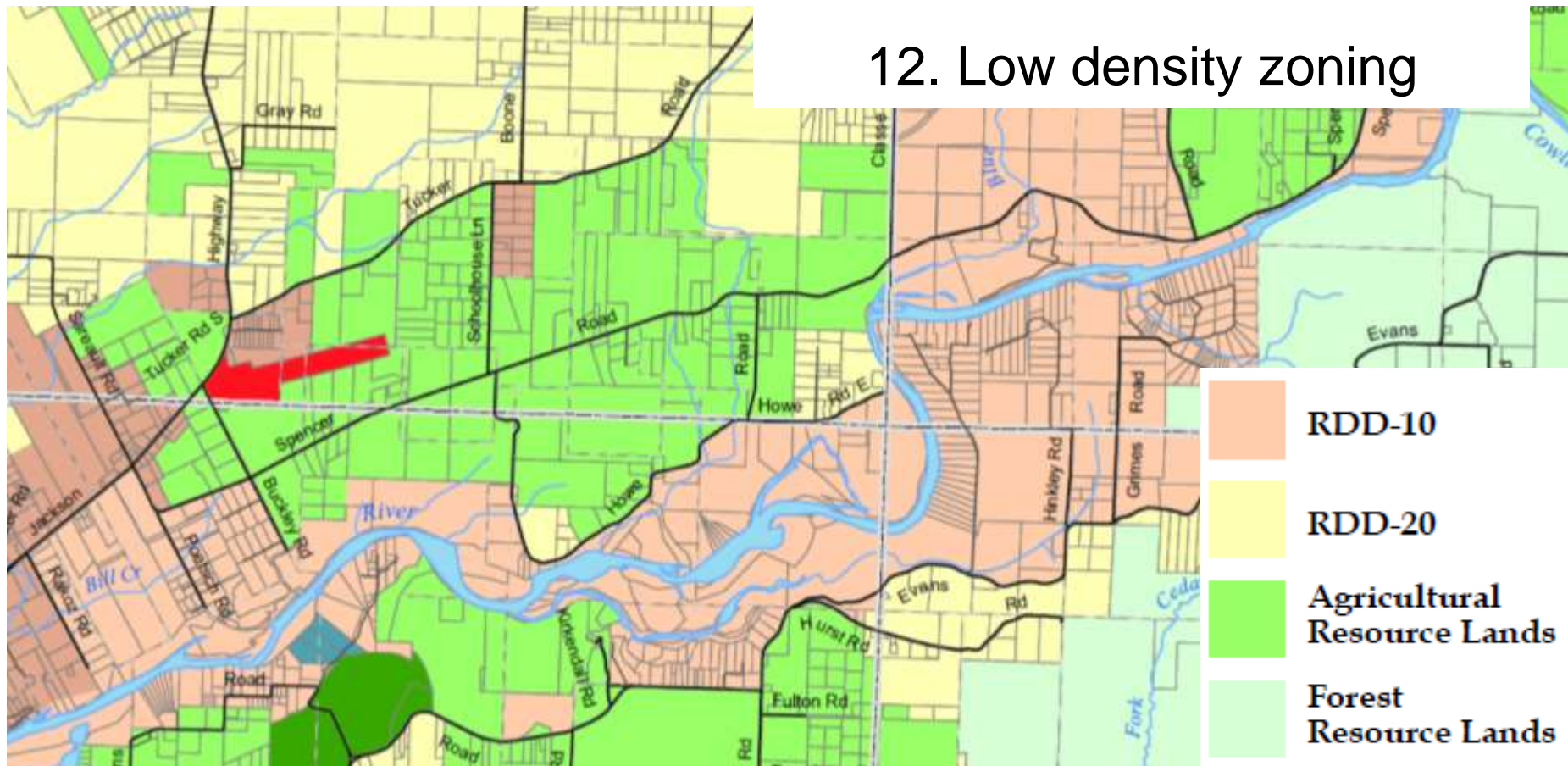
Ag-1 (20 acre lots)

R-1 (1/4 acre lots)

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2. Higher Standards

12. Low density zoning



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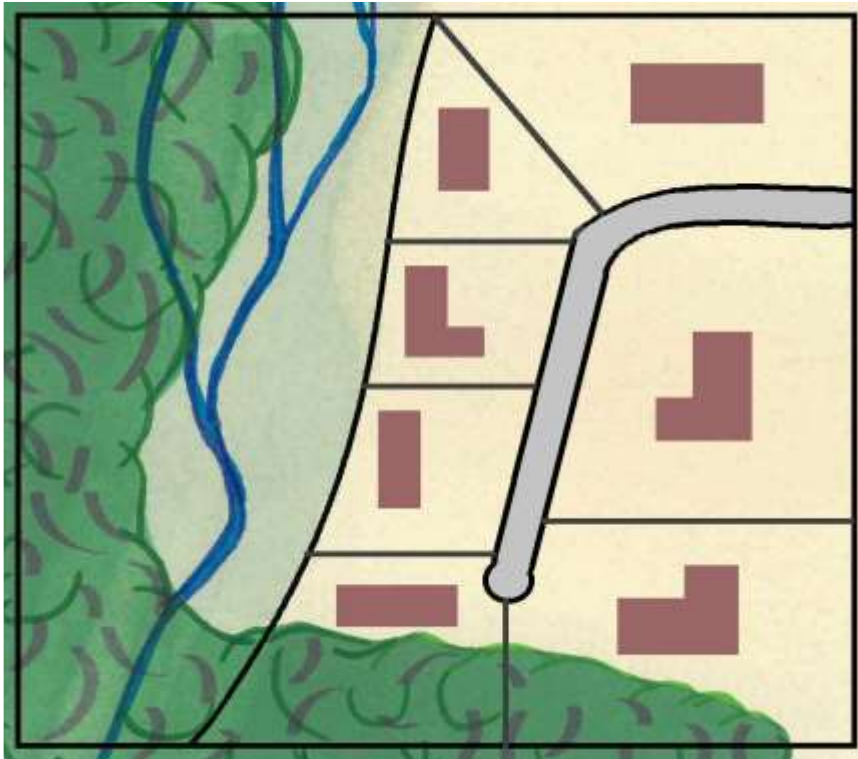
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1. Why Go Higher?
2. Higher Standards
3. Getting Them Adopted

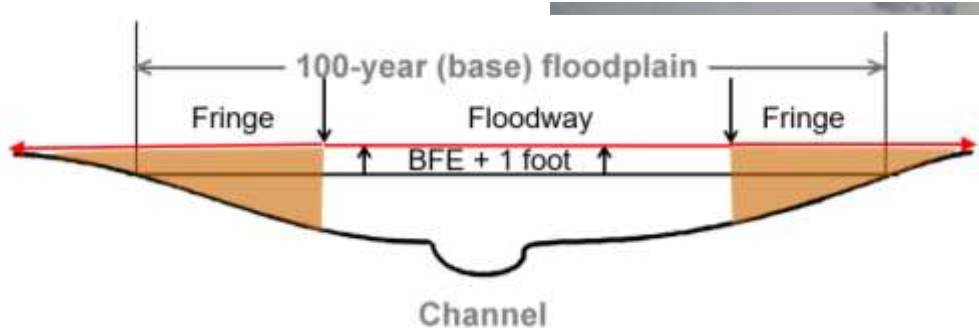
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3. Getting Them Adopted

1. Explain the problem



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Historic Crests

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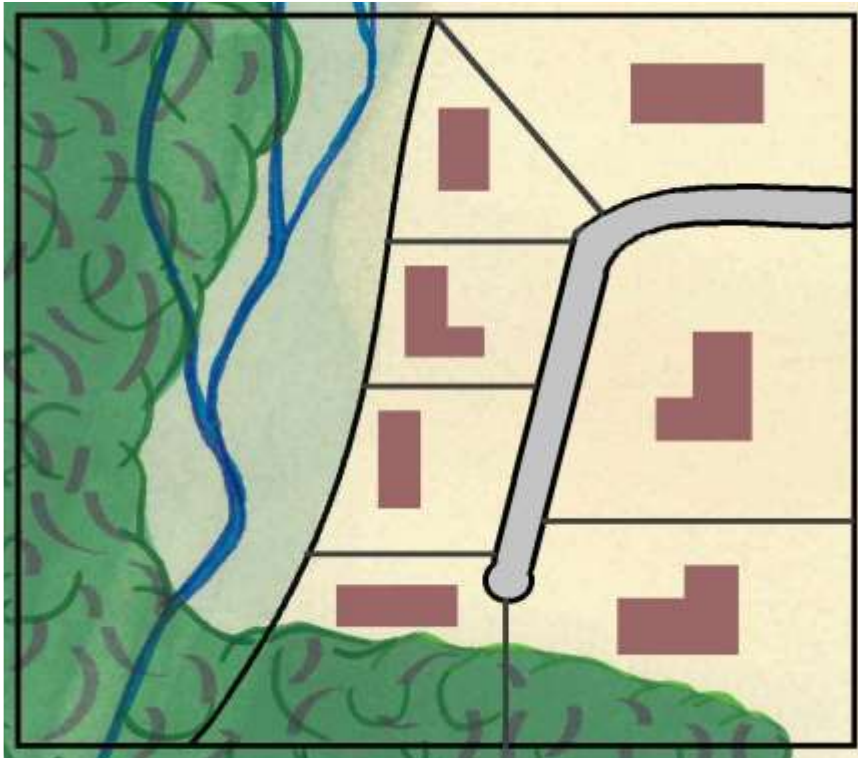
(P): Preliminary values



Adopting Higher Regulatory Standards

3. Getting Them Adopted

1. Explain the problem
2. Show the benefits





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3. Getting Them Adopted

Flood Insurance Premium Comparison		
Zone	Height	Premium
No A	2 - 4 feet > grade	\$1,192
BFE A	<u>1 foot > grade</u>	\$2,277
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Premiums are for a new single family house, one floor, slab on grade foundation, \$100,000 in building coverage, \$1,000 deductible, no CRS discount		

1. Explain the problem

2. Show the benefits

70% of A Zone rate

No available flood data

Best available flood data

Freeboard

Flood of record

47%, 29%, 22% of at BFE rate

Adopting Higher Regulatory Standards

The Costs & Benefits of Building Higher



Assn. of State Floodplain Managers

www.floods.org

3. Getting Them Adopted

Costs of Building Higher

Under the rules of the National Flood Insurance Program, buildings must be protected to the Base Flood Elevation (BFE). Therefore, the cost of freeboard is just the additional cost of building higher than the minimum NFIP standard.

A study conducted by ASFPM in February 2017 estimated the approximate cost of building higher for a 2,000-square foot house. The study assumed the house was constructed to NFIP standards and then estimated the additional cost of building higher than the BFE (see table below).

Foundation Type*	Cost per add'l foot
Concrete block piers	\$890
Crawlspace with concrete block walls	\$1,850
Crawlspace with poured concrete walls	\$2,155
Stem wall with fill	\$2,345
Fill only	\$4,470

Using a house on fill with a stem wall (as illustrated on the cover), here are the average construction costs for building higher:

Return on Investment

The owner of a building built higher will realize savings in two ways. The most important is when the area floods again and the building is not damaged. Also, the owner doesn't have to relocate, repair and rebuild.

Another form of savings is a reduced cost in flood insurance, which is required by most lenders. For example, using a 2,000-square foot home with a stem wall foundation with the floor 2 feet above the BFE (with fill underneath).

Additional cost of construction: \$4,690

Annual flood insurance premium built to the BFE: \$2,147

Annual flood insurance premium built 2 feet above the BFE: \$734

Annual flood premium savings: \$1,413

Number of years to pay off \$4,690 via premium savings: 3.3 years

Added savings realized during a 30-year mortgage: \$37,300*



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Community:

HOQUIAM, CITY OF

State:

WASHINGTON

County:

GRAYS HARBOR COUNTY ▼

CID:

530061

Current CRS Class = 10

[\[Printable Version\]](#)

	TOTAL	SFHA *	X-STD/AR/A99 **	PRP ***
PIF	905	896	5	4
PREMIUM	\$1,238,370	\$1,233,828	\$3,183	\$1,359
AVERAGE PREMIUM	\$1,368	\$1,377	\$637	\$340

CRS Class

09	Per Policy	\$68	\$69	\$32	\$0
	Per Community	\$61,851	\$61,691	\$159	\$0
08	Per Policy	\$137	\$138	\$32	\$0
	Per Community	\$123,542	\$123,383	\$159	\$0
07	Per Policy	\$205	\$207	\$32	\$0
	Per Community	\$185,233	\$185,074	\$159	\$0

“What If” CRS savings – get from ISO/CRS Specialist

05	Per Policy	\$341	\$344	\$04	\$0
	Per Community	\$308,775	\$308,457	\$318	\$0



Adopting Higher Regulatory Standards

The National Flood Insurance Management Agency (NFIP) requires that communities that residents, communities that floodplain. [The related se](#)

Improved Floodplain Regulations

While a good start, the NFIP's minimum criteria will not keep flood losses in the Chehalis River Basin from increasing. Here's why:

→ The NFIP criteria do not address the entire range of flood problems, only those areas mapped using FEMA's mapping criteria. For the most part, FIRMs in the Chehalis Basin

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→ The NFIP criteria do not address the entire range of flood problems, only those areas mapped using FEMA's mapping criteria. For the most part, FIRMs in the Chehalis Basin are based on data from the 1970s.

[11.16.250\(1\), \(2\)\(a\)](#)

5. If an existing building is substantially improved, it is the regulations: definition "as any reconstruction, addition, or other improvement the cost of which equals the market value of the building at the start of construction." This requirement also applies to buildings that have been substantially damaged [and 260\(1\) and \(3\)](#)

recommendations. Each community should review these options and select the standards that best fit their situation.

1. Flood of record: Adopt historical flood of record data where the flood of record is higher than the BFE shown on the FIRM. It doesn't make sense to protect people from a theoretical 100-year flood when actual flooding has been higher. [Ordinance section 11.16.235\(3\)](#)
2. No available flood data: Where there is no available flood elevation, a BFE must be calculated by either the permit applicant or the community before a permit is issued for a new building or substantial improvement. The new BFE becomes best available data and the building would have the same flood insurance rating benefit as "A w/BFE." [11.16.235\(2\)](#)



Adopting Higher Regulatory Standards

The National Flood Insurance Management Agency (NFIP) requires that communities that participate in the NFIP have basic floodplain regulations. [The related section](#)

The NFIP has five basic requirements:

1. The community must have a floodplain map showing its Flood Inundation Hazard (FIH) in the base (100-year) flood. The community's ordinance must address the shortcomings in its ordinance.
2. All development in the floodplain must be defined as any man-made structure, building, or drilling operations, or any other activity that requires a permit.
3. Development along a floodplain must be limited to a minimum of 10 feet from the base flood elevation. This requirement is cumulative with all other floodplain regulations.
4. New buildings must be elevated above the base flood elevation (BFE). The local ordinance must show three typical elevations: on piers, on a foundation, and on a non-residential building or floodproofed to or above the BFE. [11.16.250\(1\), \(2\)\(a\), and \(3\)](#).
5. If an existing building is substantially improved, it is considered a new building. The regulations defining "substantial improvement" as any reconstruction, addition, or other improvement that increases the cost of which equals or exceeds the market value of the building at the start of construction. The requirement also applies to buildings that have been substantially damaged. [and 260\(1\) and \(3\)](#).

While a good start, the NFIP's requirements are not sufficient to protect the Basin from increasing. Here's why:

- The NFIP criteria do not address local hazards that are not mapped using FEMA's Flood Inundation Hazard (FIH) maps.
- They neglect greater than mapped local hazard levels. For example, at the community's base flood elevation, the NFIP's base flood elevation is significantly higher than the NFIP minimum criteria.
- They focus on how to build, not on how to prevent damage.
- The NFIP minimum criteria are not sufficient to protect buildings that store hazardous materials.

For these reasons, the Chehalis River Basin Managers, and other knowledgeable floodplain regulatory officials in the basin, have adopted higher regulatory standards in their local floodplain regulations:

The criteria set forth in this ordinance are more comprehensive than the NFIP's. Floodplain regulatory officials may have access to more comprehensive floodplain maps. Therefore, any flood plain map that is more restrictive than the criteria set forth in the Code of Federal Regulations, shall be adopted.

The following higher standards are recommended. Each community should adopt the standard that best fits its situation.

1. **Flood of record:** Adopt the BFE shown on the FIR for the year flood when actual flood data is available.
2. **No available flood data:** W calculated by either the per capita population or substantial improvement building would have the same

3. **No adverse impact:** Where there are new developments to increase either prohibit any increase or to acceptably to the affected property flowage easement or otherwise. [11.16.250\(7\)\(a\)](#)
 4. **Filling restrictions:** Filling any compensatory storage would be required for coastal flooding. [11.16.250\(7\)\(d\)](#)
 5. **Freeboard:** Where new building improvements of existing buildings to the base flood elevation plus insurance rates are significantly higher. This is because insurance companies have proven that these buildings result in less flood damage. [11.16.250\(4\)\(2\)\(b\)\(i\), 260\(1\), 260\(3\)\(a\)](#)
 6. **Critical facilities:** New critical facilities prohibited from the 500-year flood. Examples of critical facilities include schools, hospitals, nursing homes, plants, hazardous materials sites, bridges, etc. [11.16.260\(4\) and \(5\)](#)
 7. **Non-conversion agreements:** As walls would be required to sign elevation will not be converted to damage. This could be limited to prevent a future owner to remodel.
 8. **Substantial improvement tracked:** tracked for five years or more. 1 improvement project, completion improvement, thereby getting a [11.16.200](#)
- The following standards are recommended:
9. **Subdivision set asides:** New subdivisions set aside all or part of their floodplain.
 10. **Low density zoning:** Existing zoning of 10 acres would not be amended. [review the zoning district maps](#)

It is also recommended that all permit plan reviews, final inspections, and project approvals be conducted by a **Certified Floodplain Manager**. The CFM could be a community employee, contractor, or circuit rider who helps several communities with floodplain management issues. This administrative measure does not have to be included in the ordinance.

Adoption of these standards is credited under the Community Rating System (CRS), which provides a discount on flood insurance premiums for properties in a participating community.

Additional materials are available on the CRS. The table below identifies the community's current amount of flood insurance coverage and the dollar savings for different CRS classes.

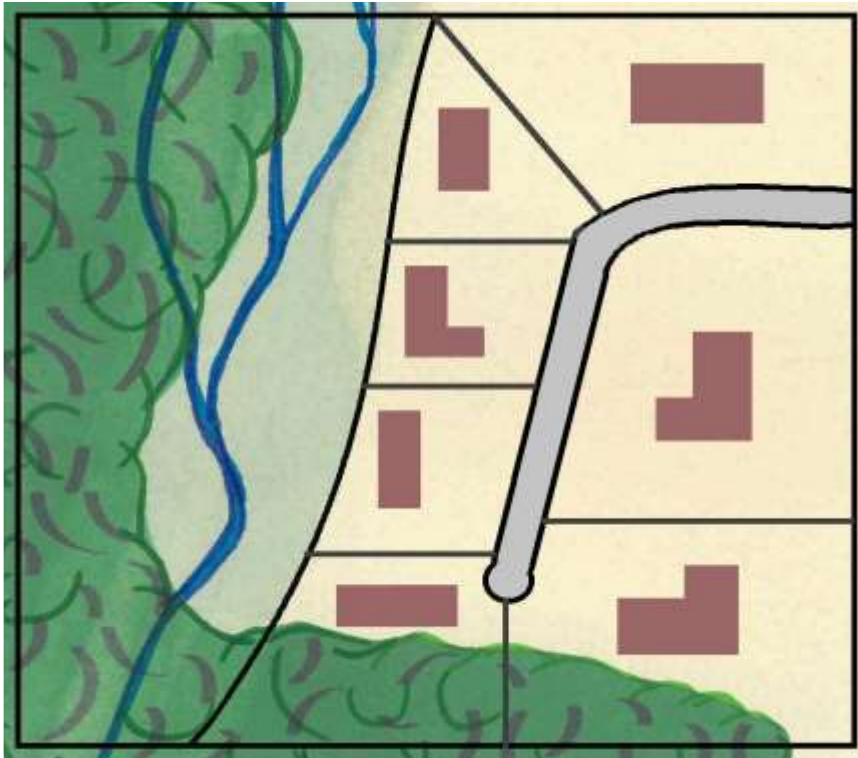
Community:	HOQUIAM, CITY OF	State:	WASHINGTON		
County:	GRAYS HARBOR COUNTY	CRS:	ED081		
Current CRS Class = 10					
		(Private Version)			
		TOTAL	SFHA **	X-STD/AR/A99 **	PRP ***
FIH	\$00	\$00	\$0	\$0	\$0
PREMIUM	\$1,298,370	\$1,233,829	\$64,541	\$1,200,000	\$1,200,000
AVERAGE PREMIUM	\$1,268	\$1,177	\$91	\$91	\$91
CRS Class					
09	Per Policy	\$68	\$69	\$12	\$0
	Per Community	\$61,691	\$61,691	\$118	\$0
08	Per Policy	\$137	\$138	\$22	\$0
	Per Community	\$123,643	\$123,383	\$156	\$0
07	Per Policy	\$206	\$207	\$32	\$0
	Per Community	\$185,233	\$185,074	\$168	\$0
06	Per Policy	\$273	\$275	\$44	\$0
	Per Community	\$247,284	\$246,786	\$218	\$0
05	Per Policy	\$341	\$344	\$54	\$0
	Per Community	\$308,775	\$308,497	\$278	\$0
04	Per Policy	\$409	\$413	\$64	\$0
	Per Community	\$370,467	\$370,148	\$318	\$0
03	Per Policy	\$478	\$482	\$74	\$0
	Per Community	\$432,158	\$431,840	\$318	\$0
02	Per Policy	\$546	\$551	\$84	\$0
	Per Community	\$485,849	\$483,531	\$318	\$0
01	Per Policy	\$614	\$620	\$94	\$0
	Per Community	\$555,541	\$553,223	\$318	\$0

** SFHA (Zones A, AE, A1-A30, V, V1-V30, AO, and AH): Discount varies depending on class.
 *** Preferred Risk Policies are not eligible for CRS Premium Discounts.

Adopting Higher Regulatory Standards

3. Getting Them Adopted

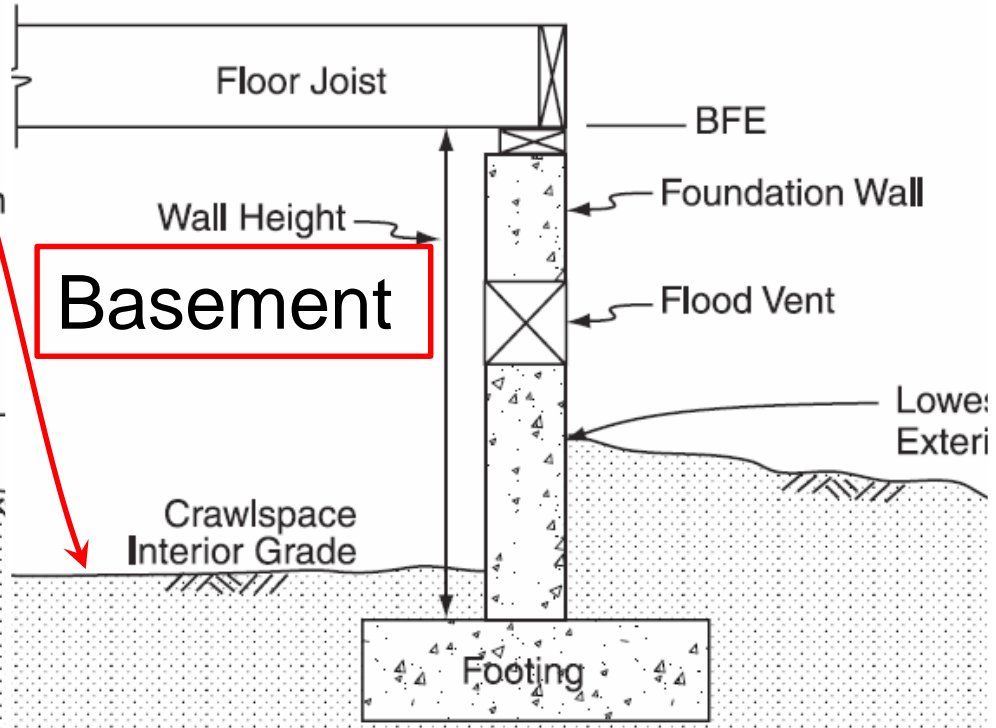
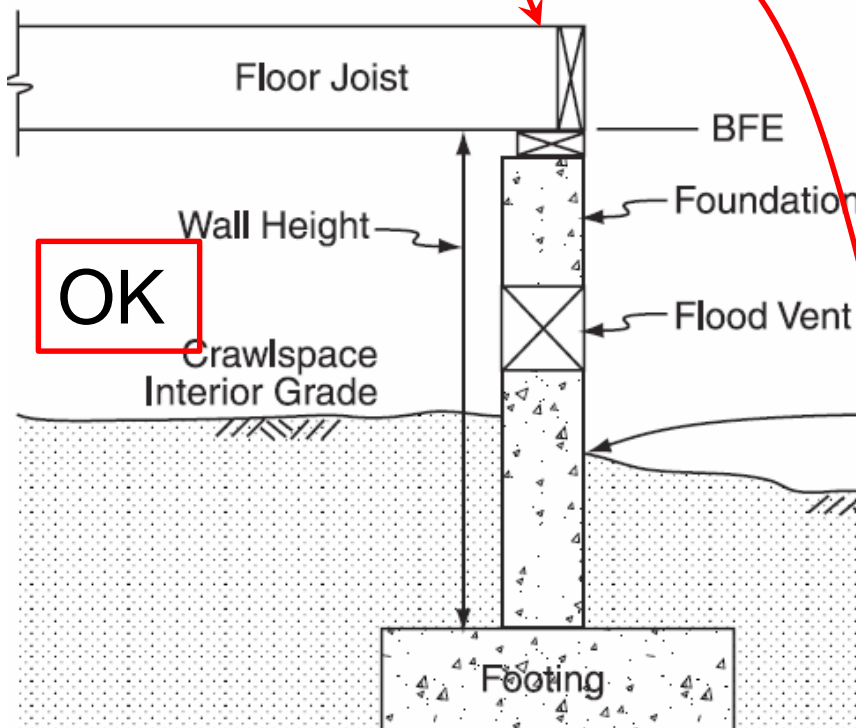
1. Explain the problem
2. Show the benefits
3. Make sure staff agrees
4. Work with those affected
5. Improve the ordinance at the same time



Adopting Higher Regulatory Standards

3. Getting Them Adopted

Lowest Floor

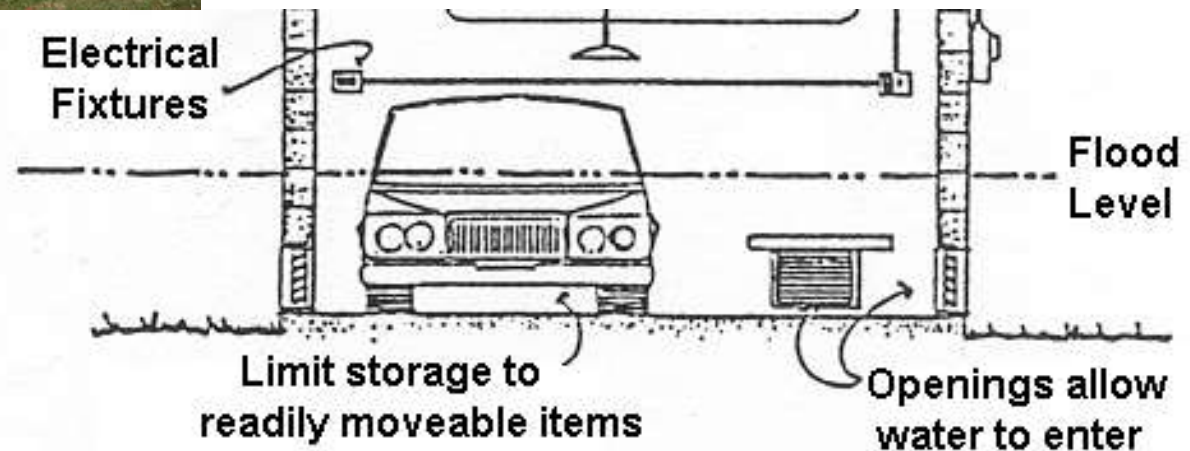


Adopting Higher Regulatory Standards



3. Getting Them Adopted

- ✓ Clarify projects that don't need a floodplain development permit
- ✓ Consistent standards for all manufactured homes
- ✓ Small accessory buildings





Adopting Higher Regulatory Standards

Status of Adoption of Improved Regulatory Standards – January 31, 2017

Recommended Standard		Grays Harbor County	Aberdeen	Cosmopolis	Elma	Hoquiam	Montesano	Oakville	Lewis County	Centralia	Chehalis	Napavine	Pe Ell	Thurston County	Bucoda
		1	Flood of record		A	A	A	A	A	A			A		
2	Best available data		NR	NR	A	NR	A	A		NR	NR	NR	NR		A
3	No available data		A	A	NR	A	NR	NR		NR	NR	NR	NR		NR
4	No adverse impact		A	A	A	A	A	A		NR		NR	NR		NR
5	Filling restrictions		A	A	A	A	A	A		P				A	A
6	Critical facilities		A	A	A	A	A	A	P	P	P	P	P	A	P
7	Hazardous materials		A	A	A	A	A	A							
8	Subdivision set asides		A	A	A	A	A	A	A	P	P			P	
9	Freeboard (3 feet)	P	P	A		A	A	A	P	P	P	P	P	P	P
10	Non-conversion agreements		A	A	A	A	A	A							
11	Substantial imprv't tracking		A	A	A	A	A	A	A	A				P	
	A = Adopted		9	10	9	10	10	10	3	1	1			3	2
	P = Partial adoption	1	1						1	4	3	2	2	3	2
	NR = Not relevant		1	1	1	1	1	1		3	2	3	3		2



Adopting Higher Regulatory Standards

3. **No adverse impact:** Where there is no floodway mapped along a river, the NFIP regulations allow new developments to increase flood heights up to one foot. The local ordinance can either prohibit any increase or require the developer to document that the increase is acceptable to the affected property owners. This may require the developer to purchase a flowage easement or otherwise pay the affected owners for the adverse impact. [Section 11.16.250\(7\)\(a\)](#)
4. **Filling restrictions:** Filling anywhere in the floodplain would either be prohibited or compensatory storage would be required. This does not need to apply to areas subject to coastal flooding. [11.16.250\(7\)\(b\)](#)
5. **Freeboard:** Where new buildings and substantial improvements of existing buildings are protected to the base flood elevation plus 2 or 3 feet, flood insurance rates are significantly lower (see table, right). This is because insurance claims experience has proven that these buildings suffer much less flood damage. [11.16.250\(4\)\(ii\)](#), [250\(5\)](#), [260\(1\)](#), [260\(3\)\(a\)](#)
6. **Critical facilities:** New critical facilities would be prohibited from the 500-year floodplain or protected from damage and loss of access during a 500-year flood. Examples of critical facilities include schools, hospitals, nursing homes, water treatment plants, hazardous materials sites, fire stations, key bridges, etc. [11.16.260\(4\)](#) and [\(5\)](#)
7. **Non-conversion agreements:** An applicant for a permit to elevate or improve a building on

Zone	Height	Premium
A	2 + 4 feet > grade	\$1,152
A	1 foot > grade	\$2,277
A w/BFE	2 or more feet > BFE	\$447
A w/BFE	0 - 1 foot > BFE	\$1,583
AE	3 feet > BFE	\$343
AE	2 feet > BFE	\$451
AE	1 foot > BFE	\$748
AE	At BFE	\$1,578

Premiums are for a new single-family house, one floor, slab on grade foundation, \$100,000 in building coverage, \$1,500 deductible, no CRCR discount

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tracked for five years or more. This prevents a property owner from applying for a 40% improvement project, completing the project, and then applying for another 40% improvement, thereby getting around the intent of the substantial improvement rule. [11.16.200](#)

The following standards are recommended for communities with **undeveloped floodplain areas**

9. **Subdivision set asides:** New subdivisions and other large developments would be required to set aside all or part of their floodprone area as open space. [11.16.250\(2\)\(a\)](#)
10. **Low density zoning:** Existing zoning districts that require minimum lot sizes of greater than 10 acres would not be amended to allow more dense development in the floodplain. [Need to review the zoning district map covering undeveloped areas.](#)

Adopting Higher Regulatory Standards

1. Why Go Higher?
2. Higher Standards
3. Getting Them Adopted