

No Adverse Impact – Regulations and Development Standards

A Common Sense Strategy
for Floodplain Management



Regulations and Development Standards

Where floodplain development cannot be avoided, it is important to have regulatory programs and standards that can fully protect structures from flood damage and help reduce the impact of that development on others.



Regulations and Development Standards: Basic

- Communities must adopt and enforce current standards of the National Flood Insurance Program
- Communities must abide by other Federal regulations
- Current standards don't consider all cumulative and environmental impacts
 - *Damages increase*
 - *Increased risk*
 - *Loss of ecological function*

Regulations and Development Standards

Basic Strategies – NFIP Regulations

- 1% chance risk floodplain is mapped
- Regulations address existing conditions only
- Floodway development is discouraged
- Minimum standards within floodplain (lowest floor above base flood elevation)
- No standards outside of floodplain

Regulations and Development Standards: Better



Regulations and Development Standards

Better Strategies – Why are they necessary?

- Current standards don't consider all impacts
 - ◆ Cumulative impacts
 - ◆ Environmental impacts
- Consequences of ignoring impacts are drastic
 - ◆ Damages increase
 - ◆ Increased risk
 - ◆ Loss of ecological function and water quality

Regulations and Development Standards: Better

Adopt National Flood Insurance Program regulations with higher standards

- Receive Community Rating System Credit for higher standards and lower insurance premiums for your community
- State Model Ordinances

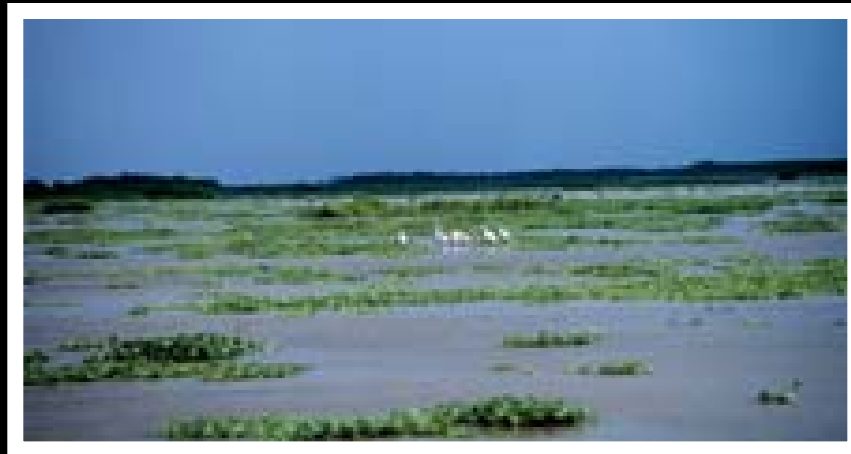
Credit Points	CRS Class	Premium Discount
4,500+	1	45%
4,000-4,499	2	40%
3,500-3,999	3	35%
3,000-3,499	4	30%
2,500-2,999	5	25%
2,000-2,499	6	20%
1,500-1,999	7	15%
1,000-1,499	8	10%
500-999	9	5%
0-499	10	0

Regulations and Development Standards

Better Strategies – Coastal Zone Enhancement (Start of CRS credits)

Coastal zone enhancement – a federal program providing incentives for states and territories to improve wetlands protection, hazard management, cumulative impacts management, and special area planning, among other actions.

- Funding
- Strategies



<http://coastalmanagement.noaa.gov/habitat.html>

Regulations and Development Standards: Better

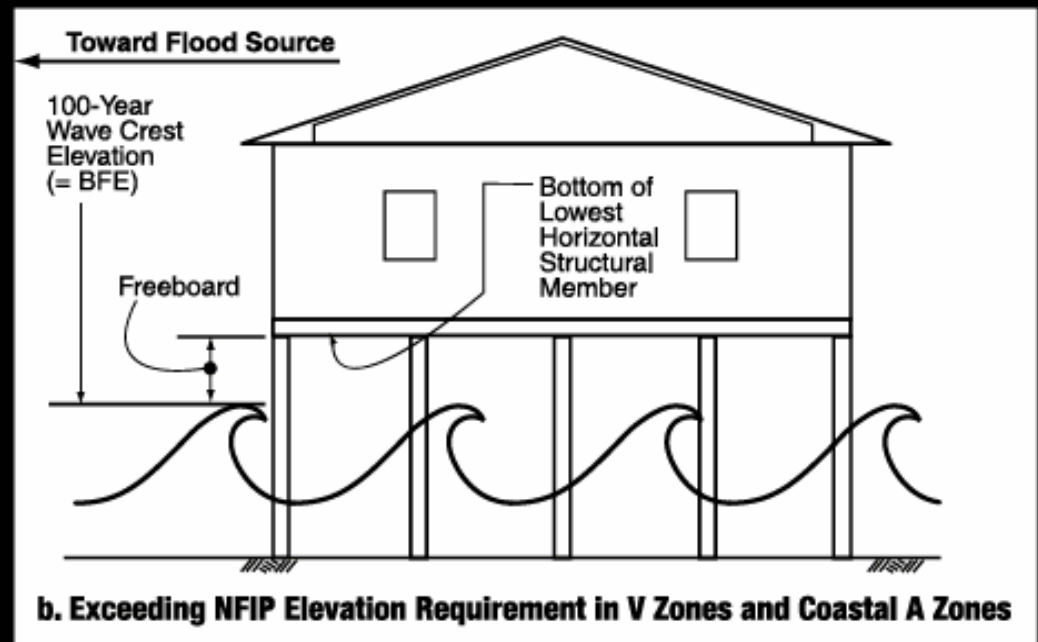
Freeboard

- Require additional height requirement above base flood elevation ("freeboard")
 - ◆ Accounts for uncertainties inherent in flood modeling
 - ◆ Results in significantly lower flood insurance rates (almost a 50% reduction in building and contents rates by adding one foot of freeboard)

Regulations and Development Standards

Better Strategies – Building Standards

- Require foundation protection
- Limit enclosures below the BFE (recorded on plats) or require non-supporting break away walls



Regulations and Development Standards: Better

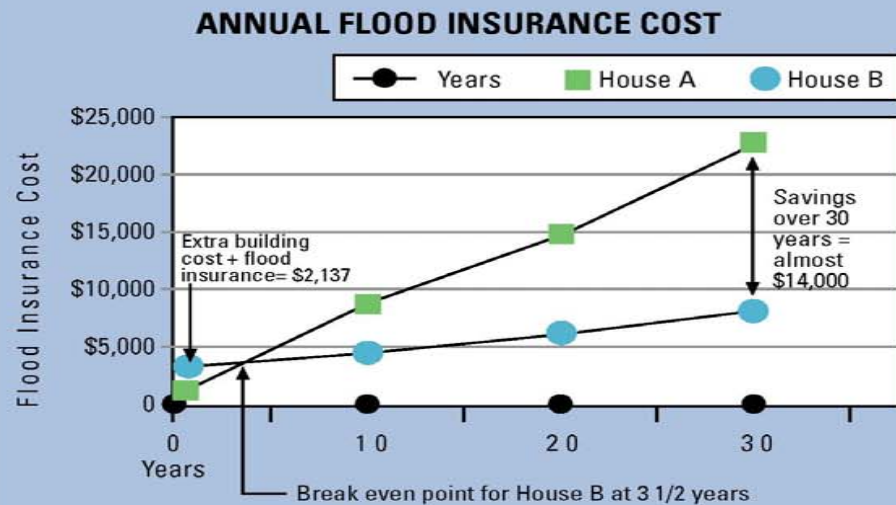
Higher Freeboard

=

Lower Insurance
(due to lower risk)

The cost of building an elevated foundation can be recovered in a surprisingly short time through lowered flood insurance costs. In fact, over the life of a 30-year mortgage, the cost savings will far exceed the cost of constructing an elevated foundation.

Example: For a typical new 2,400 square-foot home valued at \$200,000, the additional cost of building a two-foot high, eight-inch thick stem wall would be approximately \$1,900. The annual premium for flood insurance for this home without an elevated foundation would be about \$766. With a two-foot foundation elevation increase, the premium drops to \$237 per year, a savings of \$529. At this rate, the extra construction costs for the foundation are recovered after 3 ½ years, and the homeowner saves almost \$14,000 in insurance premiums during a 30-year mortgage.



YEARS	HOUSE A COSTS (no elevated foundation, higher insurance)	HOUSE B COSTS (elevated foundation cost, but lower annual insurance)
1	\$766	\$2,137
10	7,660	4,507
20	15,320	6,877
30	22,980	9,247

Regulations and Development Standards

Better Strategies – Building Standards

- Count improvements cumulatively
- Reduce threshold for substantial improvement or damage
- Ensure additions meet standards



Regulations and Development Standards: Better

Building Standards

- Coordinate flood hazard regulations with building code standards
- Include special hazard regulations, such as for channel migration zones
- Compensatory storage, including standards for flood fringe

Regulations and Development Standards: Better

Subdivision and Development Standards

- Dry land access for emergency vehicles (roads at or above base flood elevation)
- Easements along drainageways
- Building site above flood level, compensatory storage requirements
- Hazard areas recorded on plat
- Planned development and transfer of development rights

Regulations and Development Standards

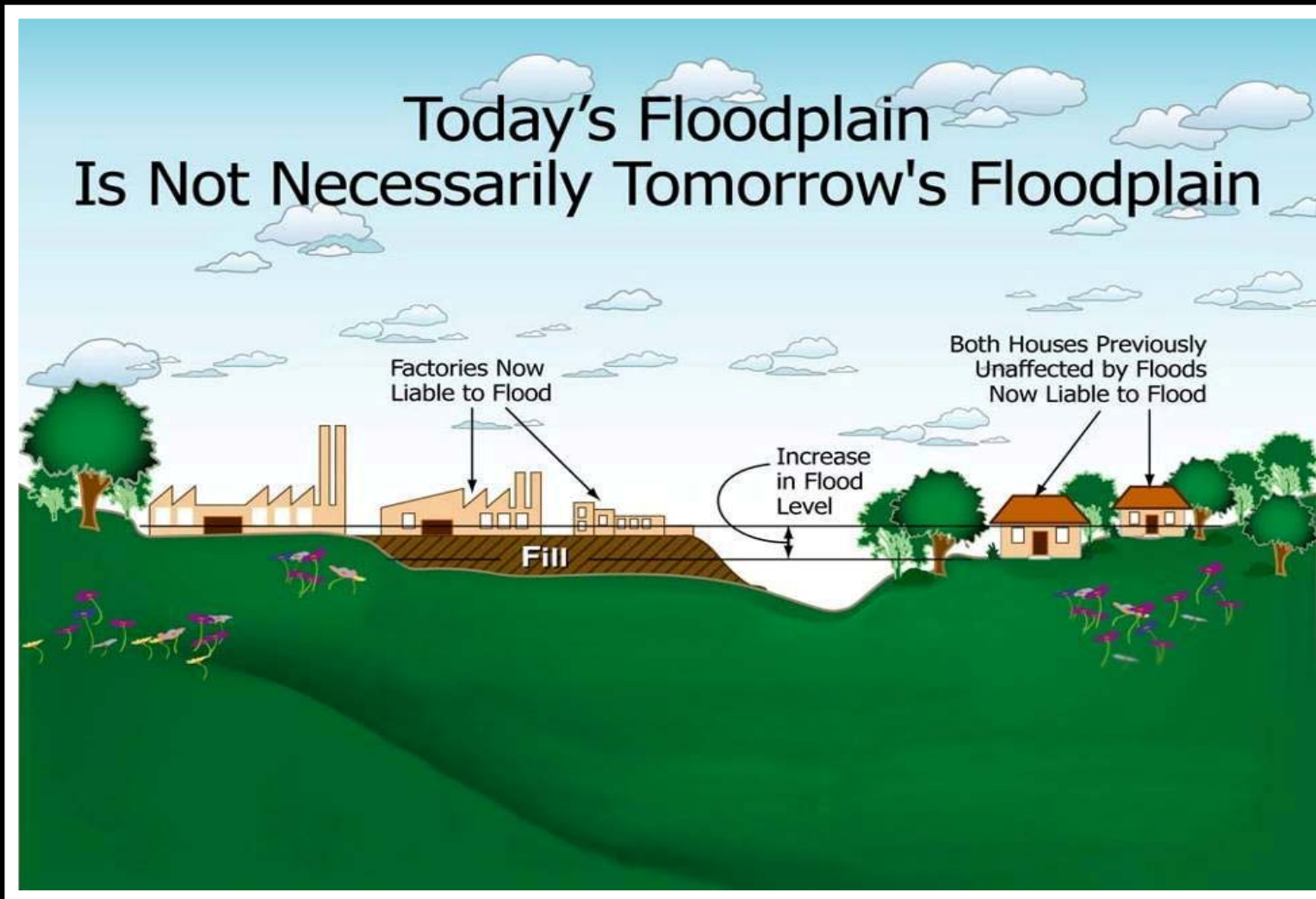
Better Strategies – Stormwater Regulations



- Focus on implementing stormwater management plan instead of retention/detention ordinance requirements
- Erosion and sedimentation control regulations

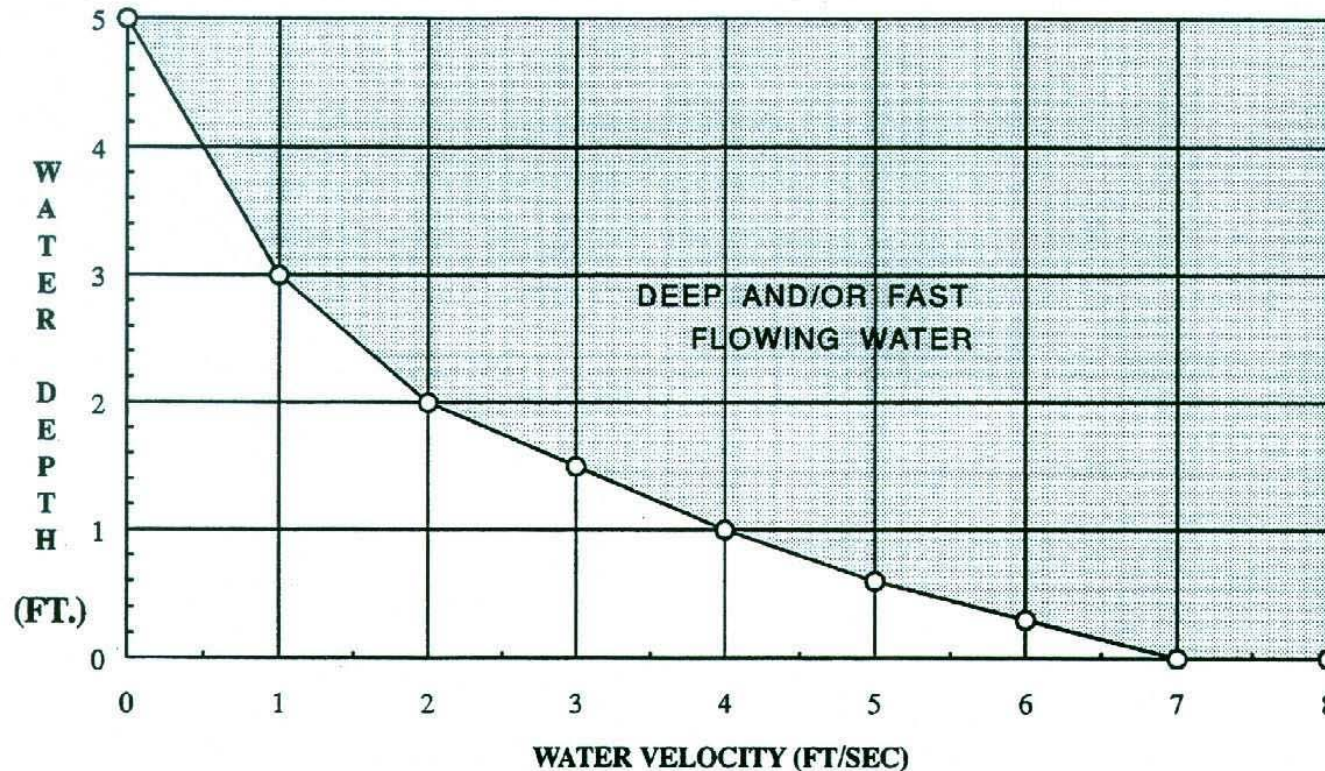
Regulations and Development Standards: Better

Floodway Standards – No rise floodways



Regulations and Development Standards: Better

Floodway Standards – Public Safety



Regulations and Development Standards

Better Strategies – Health and Safety

- Keep public health hazards (such as septic systems and landfills) out of the flood plain
- Keep hazardous materials (gasoline, pesticides, chemicals) out of the floodplain



http://coastalmanagement.noaa.gov/ene_gov.html

Regulations and Development Standards: NAI



Regulations and Development Standards: NAI

Preserve beneficial natural floodplain functions

- Adopt setback standards to establish minimum distances from river channels or shorelines
- Adopt buffer zone requirements between sensitive and developed areas
- Implement stream restoration programs



Regulations and Development Standards: NAI

■ Stormwater

- ◆ Best management practices
- ◆ Water Quality



Regulations and Development Standards: NAI

- Stormwater
 - ◆ Impervious surface limits per parcel, clearing restrictions
 - ◆ Low impact development
 - ◆ No increase in peak flow or total volume of flow



Regulations and Development Standards: NAI

- Riparian easements
- Wetlands restrictions
- Buffers or setbacks from streams and coastal areas
- Dune and beach protection



Regulations and Development Standards: NAI

- Utilize “green infrastructure”
 - ◆ Green space includes large metro and neighborhood parks, riparian buffers, linear parks and greenbelts
 - ◆ Green space is used as infrastructure just like roads, water lines and sewers
 - ◆ Green space provides services that are useful to humans, such as stormwater storage and conveyance

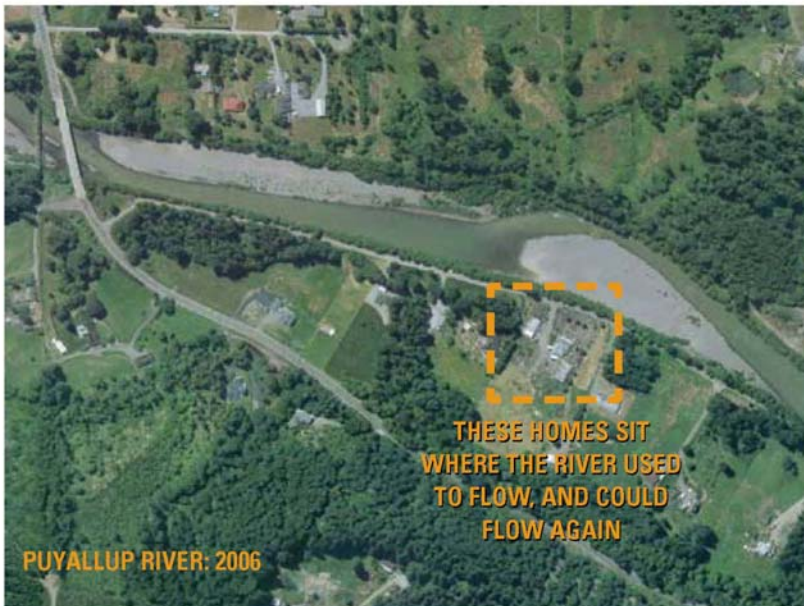
www.greeninfrastructure.net/





PUYALLUP RIVER: 1931

These photos of a channel migration zone along the Puyallup River show how the river has changed course from 1931 to 2006. Note that some homes in the recent photo sit where the river used to flow—and could flow again if the channel shifts. New regulations now prevent further development in such zones.



PUYALLUP RIVER: 2006

Regulations and Development Standards

NAI Strategies – Manage Channel Migration

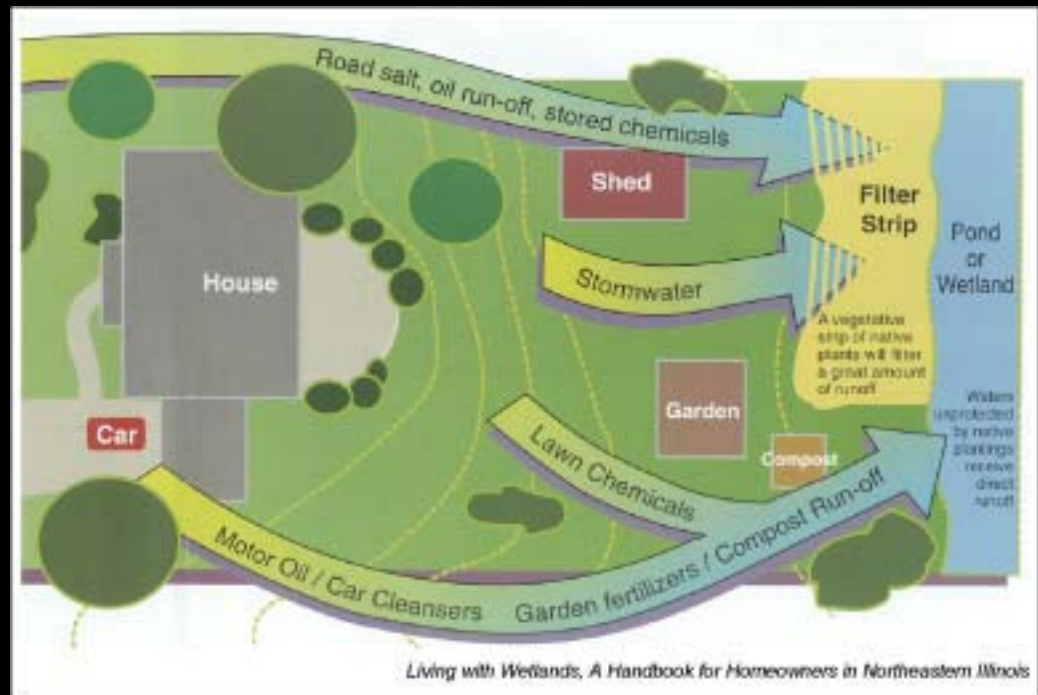
< Location of river in 1931

< Same river in 1996

Regulations and Development Standards

NAI Strategies

- Transfer/purchase of development rights
- Open space dedication
- Linear parks
- Coastal barriers
- Best management practices >>>



Conclusion



- Planning and addressing cumulative impacts
- Stormwater management
- Protection mechanisms and best management practices
- Restoration of natural functions

If we continue to facilitate at-risk development and ignore the impact to others, can we accept the consequences...



... and, are you willing to pay for it?