



# Stream Encroachment

- What is stream encroachment?
  - Stream encroachment in the Land Use Program is a term that refers to development, construction and/or disturbance within the flood plain.
  - "Development" means any construction activity or other manmade land disturbance.



### Before you Buy, Before you Build

Anyone thinking of buying property by a river for a new office building, store or shopping center?

Or maybe building a little cottage by a pond, lake or stream?

Maybe expanding an existing building or home and a small stream is in the way, or crossing a stream with your new driveway.

In all these cases you are most likely in a flood plain and you probably need a Stream Encroachment Permit before you build. In New Jersey and throughout the country, building in areas subject to flooding is regulated to protect lives, property, and the environment.



# Flood Plain Regulations

• New Jersey regulates construction in the flood plain under the Flood Hazard Control Act (N.J.S.A. 58:16A-50 et seq)....

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<ol> <li>Stat. 1. Short little; declaration of advisability</li> <li>Take art shall be known and may be clead as the "Wate Fluid Control Facilities</li> </ol>
Act." Is. It is hereby declared that the Mate doesna it advisable to participate in a program of flood control in the Mate of Kew Jersey in the manner inervisation described.
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# **Flood Plain Regulations**

•and the implementing rules at N.J.A.C. 7:13



### **Flood Plain Regulations**

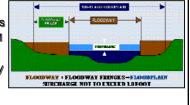
In legal terms... It is in the interest of the safety, health, and general welfare of the people of the State that legislative action be taken to empower the Department of Environmental Protection to delineate and mark flood hazard areas, to authorize the Department of Environmental Protection to adopt land use regulations for the flood hazard area, to control stream encroachments, to coordinate effectively the development, dissemination, and use of information on floods and flood damages that may be available, to authorize the delegation of certain administrative and enforcement functions to county governing bodies and to integrate the flood control activities of the municipal, county, State and Federal Governments.



# So what is the Flood Plain?

"Flood plain" means the area inundated by the regulatory flood including the watercourse that creates it. The extent of the flood plain is determined by the area that would flood in a 100 year storm.

(A 100 year storm is a storm that has a 1 in 100 chance of occurring during any particular year)



### Why does the Floodplain matter?

There are two main reasons the state regulates work in the floodplain.

- To minimize losses due to the estimated \$690 million in losses paid in NJ since 1978.
- When you build on a flood plain and the waters begin to rise, the buildings on your property displace water thus increasing the height of the rising waters and making the flooding worse everywhere along the banks.



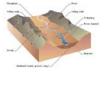
## Definitions

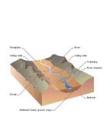
- The floodway the channel and portions of the flood plain adjoining the channel which are reasonably required to carry and discharge the regulatory flood. For the purpose of this chapter the term floodway shall refer to both the delineated floodway on State Adopted Studies and the area between the encroachment lines located on both sides of a nondelineated watercourse.
- **The flood fringe** means that portion of the flood plain outside of the floodway or encroachment lines.



# How to Determine if a Property is in the Floodplain

- Every body of water has a floodplain.
  - If there is a stream, lake, pond, or river on or near the property, it is likely in a flood plain.
  - If the land near the water body is flat it is more likely to be in the flood plain.
  - If there are steep slopes around the water bodies, the flood plain my be smaller and more restricted.





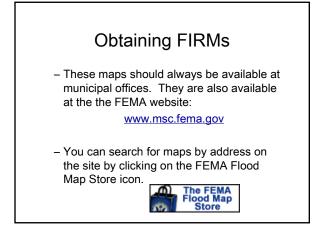
Since a flood plain's size depends on so many factors, it can be accurately determined only through a detailed engineering analysis, in which an engineer calculates and maps the flood plain based on water movement and topography.

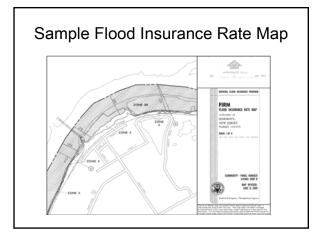
## Streams, Lakes or Ponds

If your stream, lake, or pond is not already mapped, you can obtain a jurisdictional determination from the DEP. To determine who to call, click the link below and locate the appropriate number for your county.

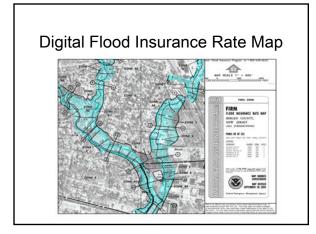


http://www.state.nj.us/dep/landuse/contact.html











# Does being in the Floodplain mean nothing can be built?

Building in the Flood Plain requires a permit. There are two types of permits:

major and minor



# **Regulatory Definitions**

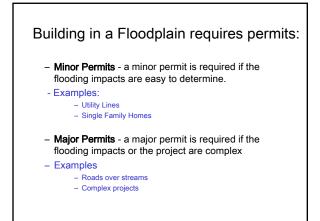
•A flood hazard area exists along every regulated water that has a drainage area of 50 acres or more. If a regulated water has a drainage area of less than 50 acres, the water does not have a flood hazard area that is regulated under this chapter. The flood hazard area is comprised of a flood fringe and a floodway, except for the Atlantic Ocean and other non-linear tidal waters such as bays and inlets, which do not have a floodway.

•Therefore, the entire flood hazard area along these tidal waters is considered to be a flood fringe.

•A riparian zone exists along every regulated water, except there is no riparian zone along the Atlantic Ocean nor along any manmade lagoon, stormwater management basin, or oceanfront barrier island, spit or peninsula. The regulated water itself is also part of the riparian zone.

#### Determining the Presence of a Floodway

There are six methods for determining the flood hazard area and floodway:along a regulated water: Method 1 (Department delineation method) 2 Method 2 (FEMA tidal method) Method 3 (FEMA fluvial method) Method 4 (FEMA hydraulic method) Method 5 (approximation method) Method 6 (calculation method)



# Applying for a permit

- · A form can be obtained from the NJ DEP website at http://www.state.nj.us/dep/landuse/forms/index.html# SE
- · An engineer would most likely prepare the permit application of the proposed work.

# Summary of Permit By Rule

Permit-by-Rule is a category of permits for developments, which the Department has determined have minimal potential for environmental impact.

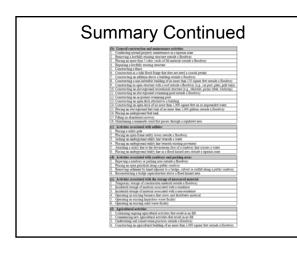
Table A SUMMARY OF PERMITS-BY-RULE This Table is for informational purposes only. See N.J.A.C. 7:13-7.2(a) through (f) for specific applicable limits and requirements for each permit-by-rule

#### (a) Activities that require 14-day prior notice to the Department

1.2. Construction and require terms prote momente of an exploration of the explorati

This	Table B SUMMARY OF GENERAL PERMITS Table is for informational purposes only. See N.J.A.C. 7:13-8.3 through 8.1 specific applicable limits and requirements for each general permit	2 for
Permit	Description	Citation
1	Channel cleaning by a public entity under the Stream Cleaning Act	83
2A	Agricultural: Soil erosion control, bank stabilization or bank restoration	8.4(c)1
2B	Agricultural: Channel cleaning	8.4(c)2
2C	Agricultural: Constructing a roadway across a water	8.4(c)3
2D	Agricultural: Filling a manmade water for freshwater wetlands restoration	8.4(c)4
2E	Agricultural: Creating a ford across a water to manage livestock	8.4(c)5
2F	Agricultural: Constructing a fence across or along a water to manage livestock	8.4(c)6
2G	Agricultural: Constructing a pump or water intake along a water for livestock	8.4(c)7
3	Bridge or culvert scour protection by a public entity	8.5
4	Stormwater maintenance by a public entity	8.6
5	Relocating a building to reduce flood damage	\$.7
6	Reconstructing a damaged or destroyed residence	8.8
7	Residential construction in a tidal flood hazard area	8.9
8	Utility line across or along a water draining less than 50 acres	8.10
8 9	Utility line across or along a water draining less than 50 acres Roadway or footbridge across a water draining less than 50 acres	8.10







# What is a Riparian Zone?



The riparian area of a watershed consists of the vegetation immediately adjacent to, and directly influenced by a stream, river or lake. The riparian area is very important to the health of the aquatic area and in general, the more intact the riparian area, the healthier the aquatic area, such as a stream.

## **Riparian Zone Protection**

• 300 feet on both sides of Category One water and upstream tributaries within the same HUC-14 watershed; (Hydrologic Unit Codes for 970 sub-watersheds);

•150 feet on both sides of an upstream tributary to a trout production water not in the HUC-14 watershed;

•A trout maintenance water body and all upstream tributaries within one mile;

•Any segment of water flowing through an area containing documented habitat for a threatened or endangered species of plant or animal;

•Any segment of water flowing through an area containing acid producing soils.

•50 feet along both sides of all other waters.

# Allowed Riparian Disturbances

The allowed riparian zone disturbances range from 300 square feet for reconstruction of a driveway in a 50-foot riparian zone to 5,000 square feet for construction of a private residence in a 300-foot buffer that received preliminary or final subdivision approval before October 2, 2006 and that meets the Stormwater Management Regulations.



#### Riparian Zone Disturbance Will Only be Allowed if:

- The basic purpose of the project cannot be accomplished on site without disturbing vegetation in the riparian zone;
- Disturbance to the riparian zone is eliminated where possible and minimized where not possible by relocating the project, reducing the size of the project, or situating the project in portions of the riparian zone where previous development or disturbance has occurred;
- Any temporarily cleared area of vegetation must be replanted with indigenous, non-invasive vegetation;
- An applicant must also meet the additional requirements for the specific proposed activity. The riparian zone regulations also set a limit on the amount of disturbance allowed for 69 specific activities.

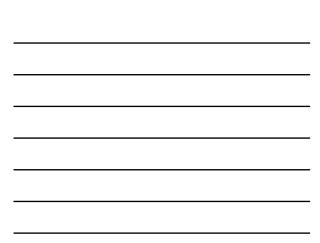
		See	O RIPARIAN ZONE VEGETATION Maximum Area of Vegetation Disturbance Based on the Width of the		
Proposed Regulated Activity	for Further Detail	50-door Riparian Zone	Riparian Zon 150-foot Riparian Zone		
· Railran	d or public roadway				
New	Crossing a water	10	5.000 ft <sup>2</sup>	15.000 #2	30.000 f
	Not crossing a water	(e)	2,000 ft	6,000 ft <sup>-1</sup>	12,000 f
Recognitiscied	Crossing a water	- 0	2,500 ft <sup>2</sup>	7,500 ft <sup>2</sup>	15,000 f
	Not crossing a water		1,000 ft	3,000 弁*	6,000 #
	roadway that serves a	s a driveway.			
New	Crossing a water	(g)	1,500 ft*	4,500 作	9,000 #
	Not crossing a water		600 計	1,500 余	3,600 弁
Reconstructed	Crossing a water	(h)	750 ft	2,250 市	4,500 ft
	Not crossing a water		300 fr	900 17	1,800 #
All other	r private roadways Crossing a water		3.000 ft <sup>2</sup>	9.000 ft <sup>2</sup>	18.000 ft
New	Not crossing a water	- 00	1,000 fr	3.600 fr	7,300 #
Ferromational	Crossing a water		1,500 ft	4.500 fr	9,000 #
PARTICIPAL DE LA CALIDA	Not crowing a water	(50)	600 ft <sup>2</sup>	1,800 #	3.600 #
<ul> <li>Bank tr</li> </ul>	tabilization or channel	restoration		1,000 0	
	with venetation alone	1	No limit	if disturbance i	a instified
Other permanent	at disturbance	1 0	2,000 ft	2,000 ft <sup>2</sup>	2,000 #
Other temporar		1	1,000 ft	3,000 11	6,000 ft
<ul> <li>Stormy</li> </ul>	sater discharge (includ	ing pipe and	conduit outlet	protection)	
Permanent dan		0	1,000 ㎡	1,000 ft	1,000 弁
Temporary dust		~	1,000 ft <sup>2</sup>	3,000 ft <sup>2</sup>	6,000 弁
	line (temporary distur!				
Crossing a wars	4	00	2,000 ft*	6,000 弁	12,000 #
Not crossing a		0	800 ft <sup>2</sup>	2,400 ft <sup>2</sup>	4,800 作
<ul> <li>Other p</li> </ul>	rejects				
Private resident		(98)	2,500 ㎡	5,000 弁	5,000 ft
Addition, garag	e, barn or shed	(0)	1,000 ft*	2,000 ft <sup>-1</sup> 9,000 ft <sup>-1</sup>	2,000 fr 13,000 fr
Flood control p	roject av or public access area	(0)	3,000 弁	9,000 ft*	
	ry or public access area it development	(p)		if disturbance i if disturbance	
Water depende All other regula	in or veropeared	(g) (r)	No lamat 1.000 ft <sup>-1</sup>	3.000 ft <sup>2</sup>	6.000 fr



C1 designation "targets water bodies that provide drinking water, habitat for Endangered and Threatened species, and popular recreational and/or commercial species, such as trout or shellfish. Waterways can be designated Category One because of exceptional ecological significance, exceptional water supply significance, exceptional recreational significance, exceptional shellfish resource, or exceptional fisheries resource. " clean and plentiful



ricted Time Pe with Fisheries	
Water and classification	Time period (inclusive) during whic activities are prohibited
. Trout Waters	
All trout production waters except rainbow trout	September 15 through March 15
Rainbow trout production waters	February 1 through April 30
Trout stocked waters	March 15 through June 15
<ul> <li>Trout maintenance waters</li> <li>Any water located within 1 mile upstream of a trout stocked or a trout maintenance water</li> </ul>	
Non-Trout Waters	
Waters that support general game fish	May 1 through June 30
Waters that support pickerel	Ice out through April 30
Waters that support walleye	March I through May 30
Anadromous Waters	
<ul> <li>All unimpeded tidal waters open to the Atlantic Ocean or any coastal bay</li> <li>All waters identified as anadromous migratory enthraces</li> </ul>	April 1 through June 30
<ul> <li>Delaware River upstream of U.S. Route 202</li> </ul>	April 1 through June 30 and
Delawate kives upstream of U.S. Koule 202	September 1 through November 30
<ul> <li>Delaware River between U.S. Route 202 and Interstate 276 (Pennsylvania Turnpike Bridge)</li> </ul>	March 1 through June 30
Delaware River between Interstate 276 (Pennsylvania Tumpike Bridge) and Interstate 295 (Delaware Memorial Bridge) Tidal portiens of Raccoen, Rancocas Creek, Crosswicks Creeks and Cooper River	March 1 through June 30 and Septemb 1 through November 30
<ul> <li>All unimpeded tidal waters open to the Delaware River downstream of Interstate 295 (Delaware Memorial Bridge)</li> </ul>	March 1 through June 30 and October 1 through November 30
<ul> <li>Tidal portions of the Maurice River, Cohansey River and Salem River</li> </ul>	



#### A number of permits allow disturbance in the riparian zone only 25 feet from the top of bank, including:

- New private residences on a lot that received preliminary or final approval before October 2, 2006;
- An addition to an existing building or construction of a building appurtenant to an existing building;
- A public access way along a tidal water;
- Construction of a water dependent project that requires clearing, cutting, removing vegetation in the riparian zone.

### Waivers

The New Jersey Department of Environmental Protection (NJDEP) will issue hardship waivers for projects that go beyond the limits set for riparian zone projects. The applicants must



•Provide 2:1 compensation in the form of re-vegetation;

•Place a deed restriction on the compensation area.

#### • The Stream Encroachment Administrative Checklist, found at http://www.state.nj.us/dep/lan duse/forms/chkstream.doc is required for

permits and guides you through the requirements for obtaining one



# Other Regulations?

In addition, the following regulatory programs administered by other agencies may affect projects in New Jersey flood plains: •NJ -IRC (International Residential Code) and NJ - IBC (International Building Code)

·Local flood damage prevention ordinances.

•The Federal Emergency Management Agency (FEMA) provides FIRMs Call (800) 358-9616. For flood insurance information call (888) 379-9531

 Federal Wetlands Program (404 Program). In some parts of New Jersey, in addition to a DEP freshwater wetlands permit, you may also need a federal wetlands permit, issued by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act. An Army Corps permit is needed in the Hackensack Meadowlands area, Greenwood Lake, and in any tidally flowed waters or wetlands. Contact the U.S. Army Corps of Engineers in Philadelphia at (215) 656-6500, or New York City at (212) 264-4185

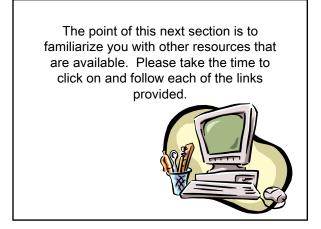








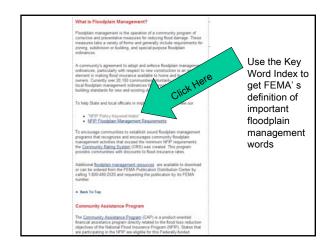














### dplain Management Publications Additional printed resources can be found at this FEMA website: www.fema.gov/pl an/prevent/flood plain/publication Enoblase. Menagement. In the United States. An Assessment Report Semmary, and Lind Report. Report Section 2018 (Section 2018) (Section 2018) (Section 2018) Enoblased Report Resetted Reportment Enoblased Report Resetted Reportment Manual Magnetic Gales Enough The Deal Market Area Manufactures United Institution (Section 2018) (Section 2018) Manufactures United Institution (Section 2018) Manufactures United Institution (Section 2018) Manufactures United Institution (Section 2018) Description ( <u>s.shtm</u> Erec.dl Hazard, Hazard, Homeon Manufan Mon.Rec Opening Protecta Protecta Protecta Erectoria Repairing

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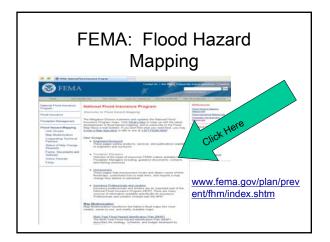
#### Available Technical Bulletins

- As of March 1998, the following Technical Bulletins are available:
- Guide-81 User's Guide to Technical Bulletins (<u>PDF</u> 174 KB) Proddes a list of available technical bulletins, a key wordhubject reference index for all the bulletins, and information about how to obtain copies of the bulletins
- 1:83 Openings in Foundation Walts (EQE 137 KB) Provides guidance on the IFIP regulations concerning the requirement for openings in below Base Flood Elevation foundation walls for buildings located in Zones A, AE, A1:A30, ARCAO, and AH.
- 2:33 Flood.Resistant Materials Requirements (E)E 455 KB) Provides guidance on the IFIP regulations concerning the required use of food damage revisitant construction materials the tubiding components located below the Base Flood Elevation in Special Flood Hazard Areas (toth A and V zones).
- 3:30 Non-Residential Floodgrooting Requirements and Certification (<u>CLE</u>: 10 N3) Provides guidance on the IPIP ingulations concerning waterlight construction and the repara-centification for bodynoide non-residential buddings in Zenes A, AE, AT-A30, AR, AO, and AH whose lowest floors are below the Base Flood Elevation.
- 4.93 Elevator Installation -- (PDE 93 KB) Provides guidance on the MFP regulations concerning the installation of elevators below the Base Flood Elevation in Special Flood Hazard Areas (both A and V zones).
- 5-93 Free-of-Obstruction Requirements (ECE 102 401)
   Provides guidance on the NPP regulations concerning obtractions to flood waters below elevated buildings and on building sites in Coastal High Hazard Ansas (Zones V, VE, and VI-V30).
- 6.93 Below Grade Parking Requirements (<u>PDE</u> 111 KB) Provides guidance on the NPIP regulations concerning the design of below-grade parking garages beneath buildings located in Zones A, AE, A1-A30, AR, AO, and AH
- 7.33 Wet Floodproofing Requirements (EDE 158 KB) Provides guidance on the NFIP regulations concerning wet floodproofing of certain types of structures located in Zones A. AE. A1-A30, AR. AO. and AH.
- LM Corresion Protection for Metal Connectors in Coastal Areas (PDF 381 KP)

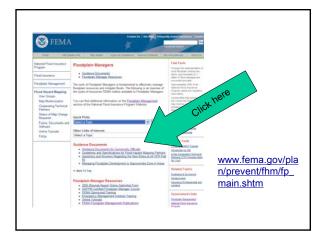
#### Technical

Bulletins can be found at this FEMA website: www.fema.gov/pl an/prevent/flood plain/publication s.shtm

These are just some of the



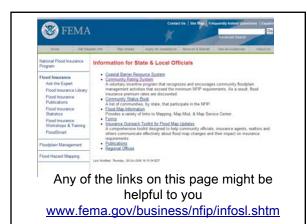












### Select FEMA Manuals

Answers to Questions About Substantially Damaged Buildings

www.fema.gov/hazard/flood/pubs/lib213.shtm

Protecting Building Utilities From Flood Damage http://www.fema.gov/hazard/flood/pubs/pbuffd.shtm

Reducing Damage from Localized Flooding http://www.fema.gov/hazard/flood/pubs/flood-damage.shtm

Increased Cost of Compliance Coverage http://www.fema.gov/plan/prevent/floodplain/ICC.shtm

Repairing Your Flooded Home www.redcross.org/services/disaster/0,1082,0\_570\_,00.html

## **Community Rating System**

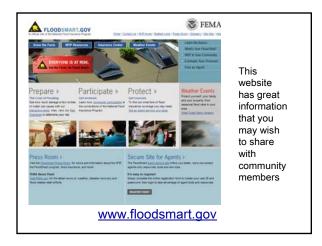
The National Flood Insurance Program's (NFIP) Community Rating System (CRS) is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. As a result, flood insurance premium rates are discounted to reflect the reduced flood risk resulting from the community actions meeting the three goals of the CRS: (1) reduce flood losses; (2) facilitate accurate insurance rating; and (3) promote the awareness of flood insurance



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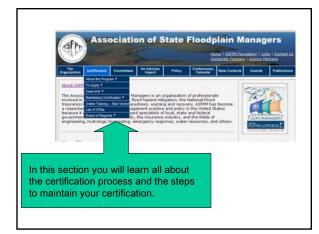
















•On behalf of the JCNERR we hope that you have learned from the information provided and will be able to use it in your profession.

•Your last quiz will be a survey to gauge your feelings about the course.

•Thank you for your participation!

www.surveymonkey.com/s.asp?u=1963344