

Overview of New Jersey's
Flood Hazard Program

**State of New Jersey
Department of Environmental Protection**

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September 20, 2012

Flooding in New Jersey

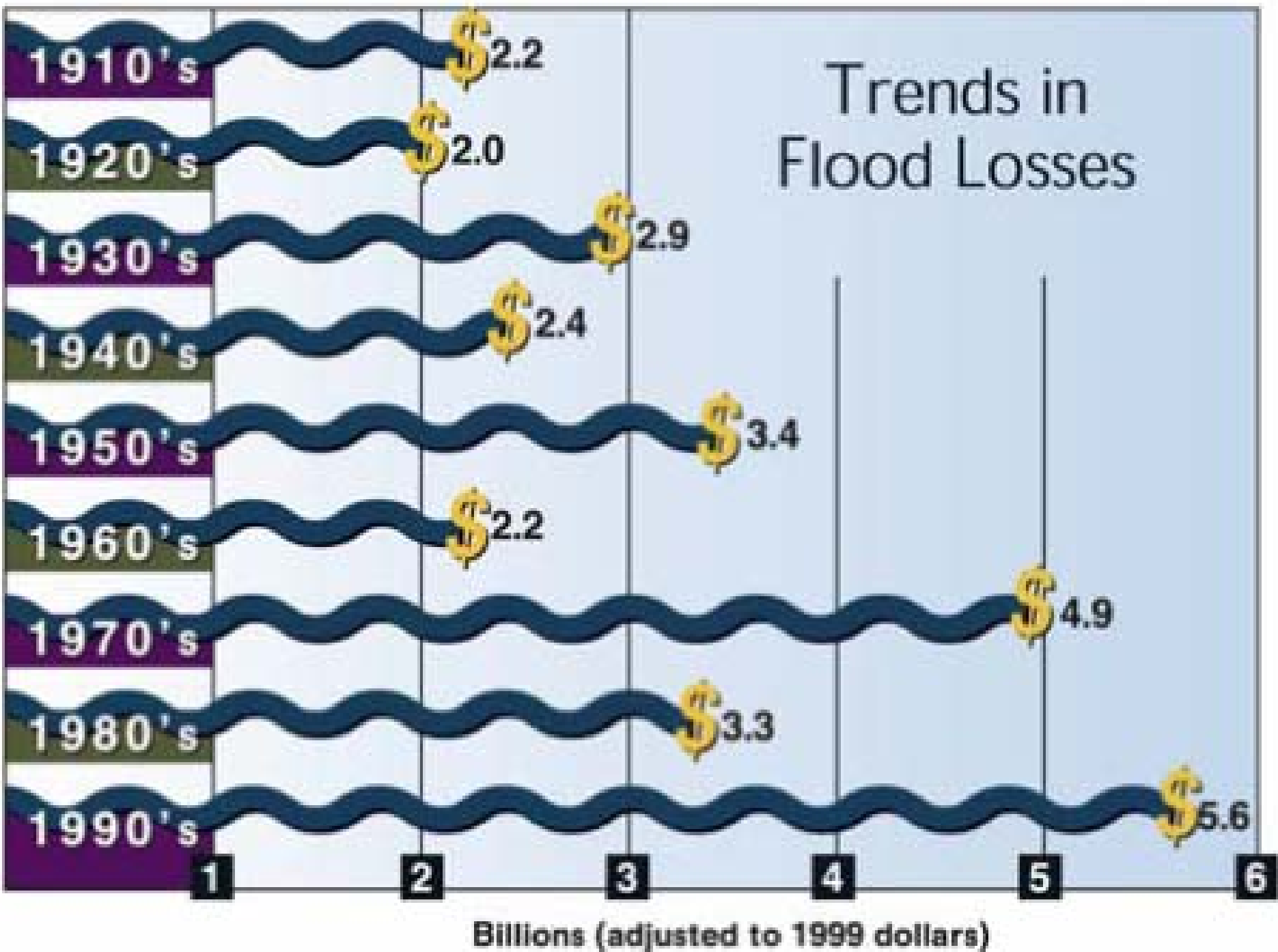
- Our location along the eastern seaboard **guarantees** periodic storms and flooding
- New Jersey contains thousands of miles of waterways, **all of which will eventually flood**
- It has been estimated that **35% of New Jersey** lies in a flood hazard area

Why Regulate NJ's Floodplains?

- Unwise development increases flooding
- Greater flooding leads to greater flood damage:
 - Loss of life and property
 - Strain on emergency services
 - Huge economic losses

**“Flooding
is New Jersey’s
#1 Natural Hazard”**

FEMA, August 4, 2004



Implications for New Jersey

- Most densely populated state**
 - + Chronic flooding issues**
 - + 35% of state lies in a flood hazard area**
 - + Enormous development pressure**
 - + Development increases flooding**
-
- = Unsustainable Condition**

Goals

- **Ensure flooding does not increase**
 - Preserve flood storage
 - Prevent obstructions to flow
- **Protect public safety**
 - Construct new buildings and roads above the flood hazard area elevation
- **Provide healthy riparian corridors**
 - Preserve vegetation & channel integrity
 - Protect habitat and water quality

**Q: How Do I Know if I Need a
Flood Hazard Area Permit?**

**A: See if what you're doing falls
under NJDEP's jurisdiction**

Jurisdiction

- **Step 1:** Determine if you are along a **regulated water**
- **Step 2:** Determine if you are within a **regulated area** along this water
- **Step 3:** Determine if you are proposing a **regulated activity**

Step 1: Regulated Waters

All surface waters in New Jersey are regulated except:

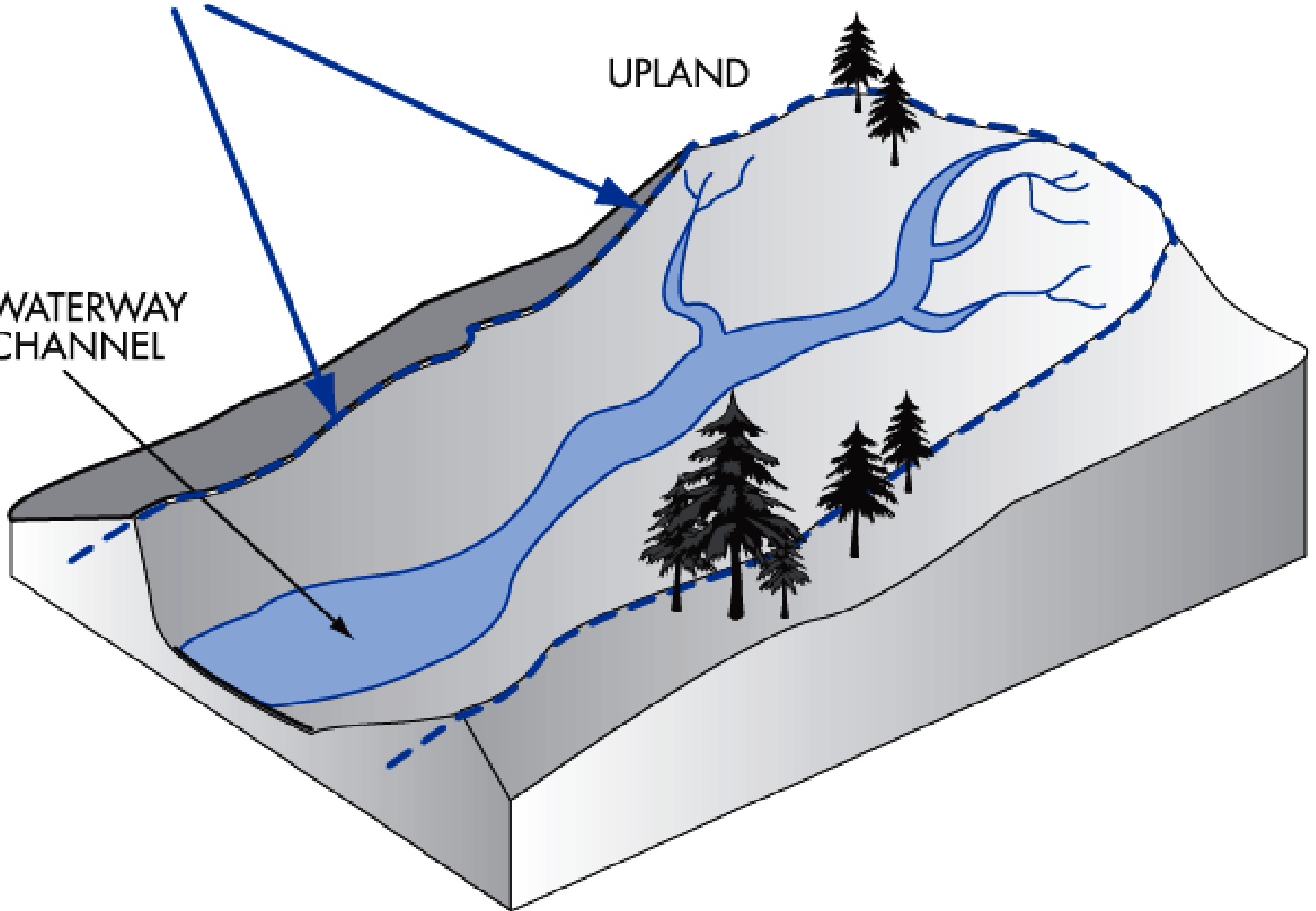
- 1. Manmade canals**
- 2. Coastal wetlands**
- 3. Swales, ditches, and isolated waters, which drain less than 50 acres**

SEE N.J.A.C. 7:13-2.2

WATERSHED BOUNDARY

UPLAND

WATERWAY CHANNEL



How Do I Compute Drainage Area?

- **StreamStats** - Extremely useful interactive online application – provides drainage areas (as well as basin characteristics and estimated peak flow rates)
- <http://water.usgs.gov/osw/streamstats/sonline.html> - click on New Jersey on U.S. map, then click on “interactive map”

SEE N.J.A.C. 7:13-1.2

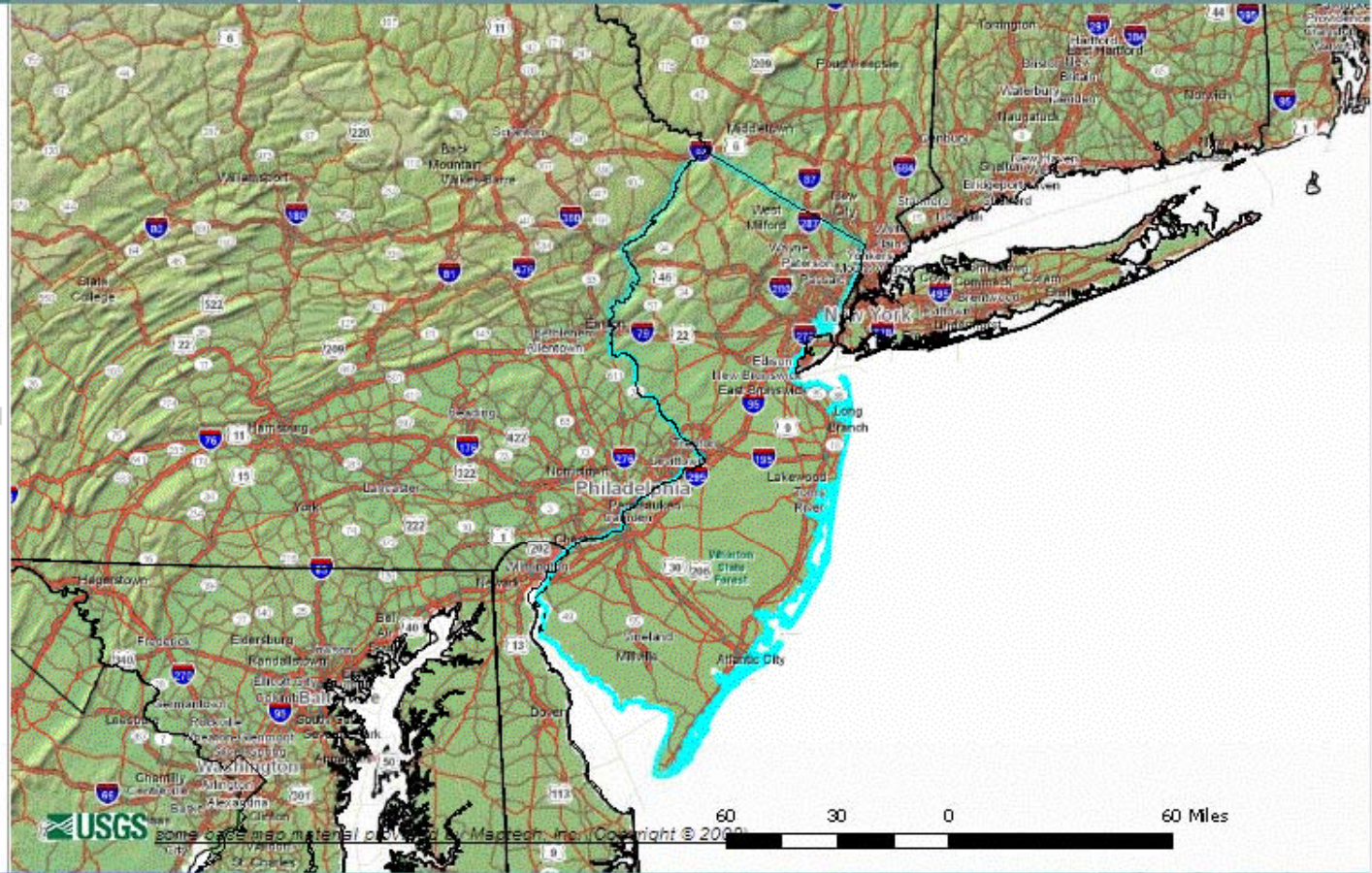


New Jersey StreamStats



Zoom To: 1:2,971,698

- Results >>
- Map Contents >>
- Navigation >>
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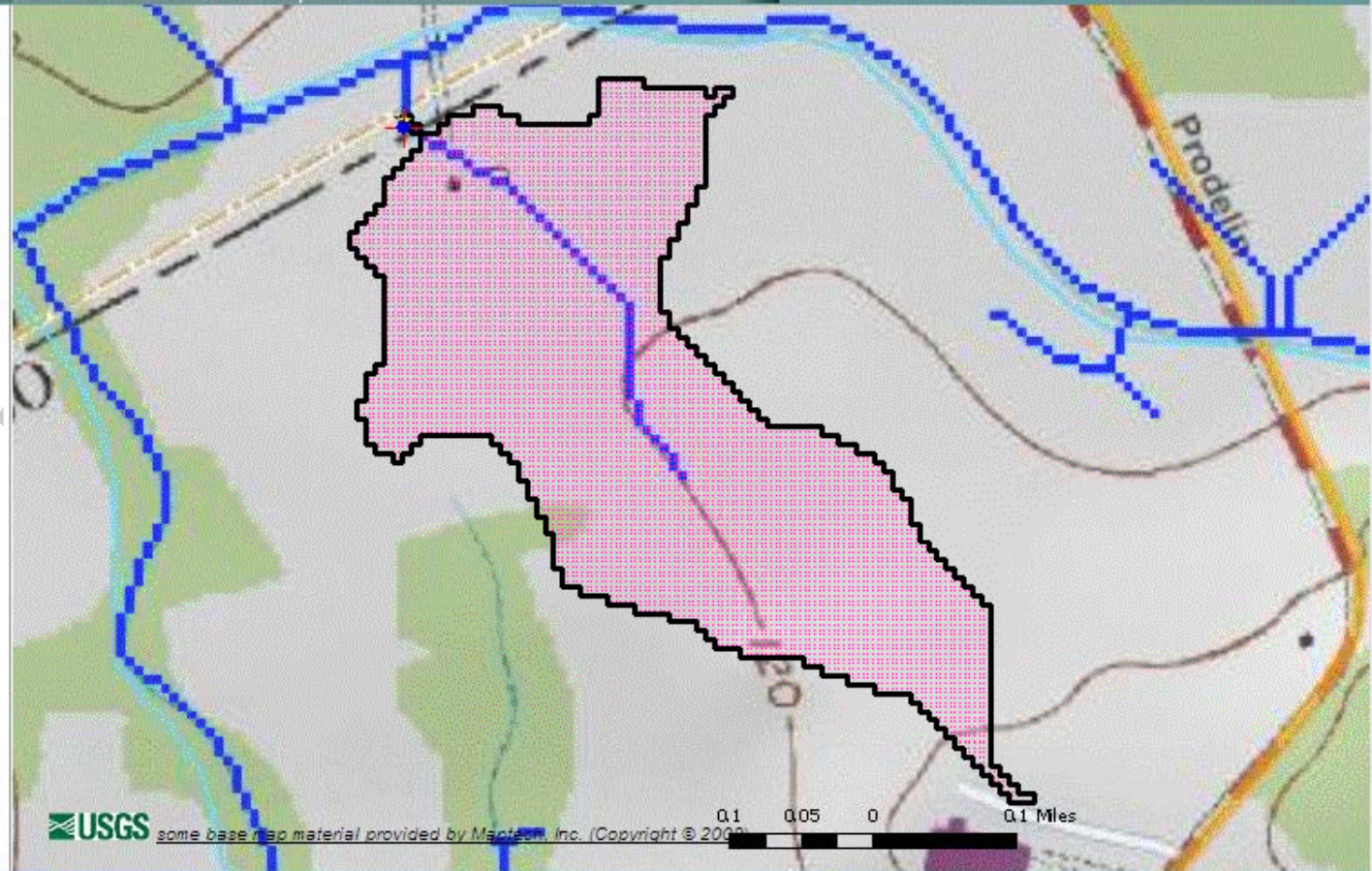
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New Jersey StreamStats

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- Results >>
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- Overview >>



Jurisdiction

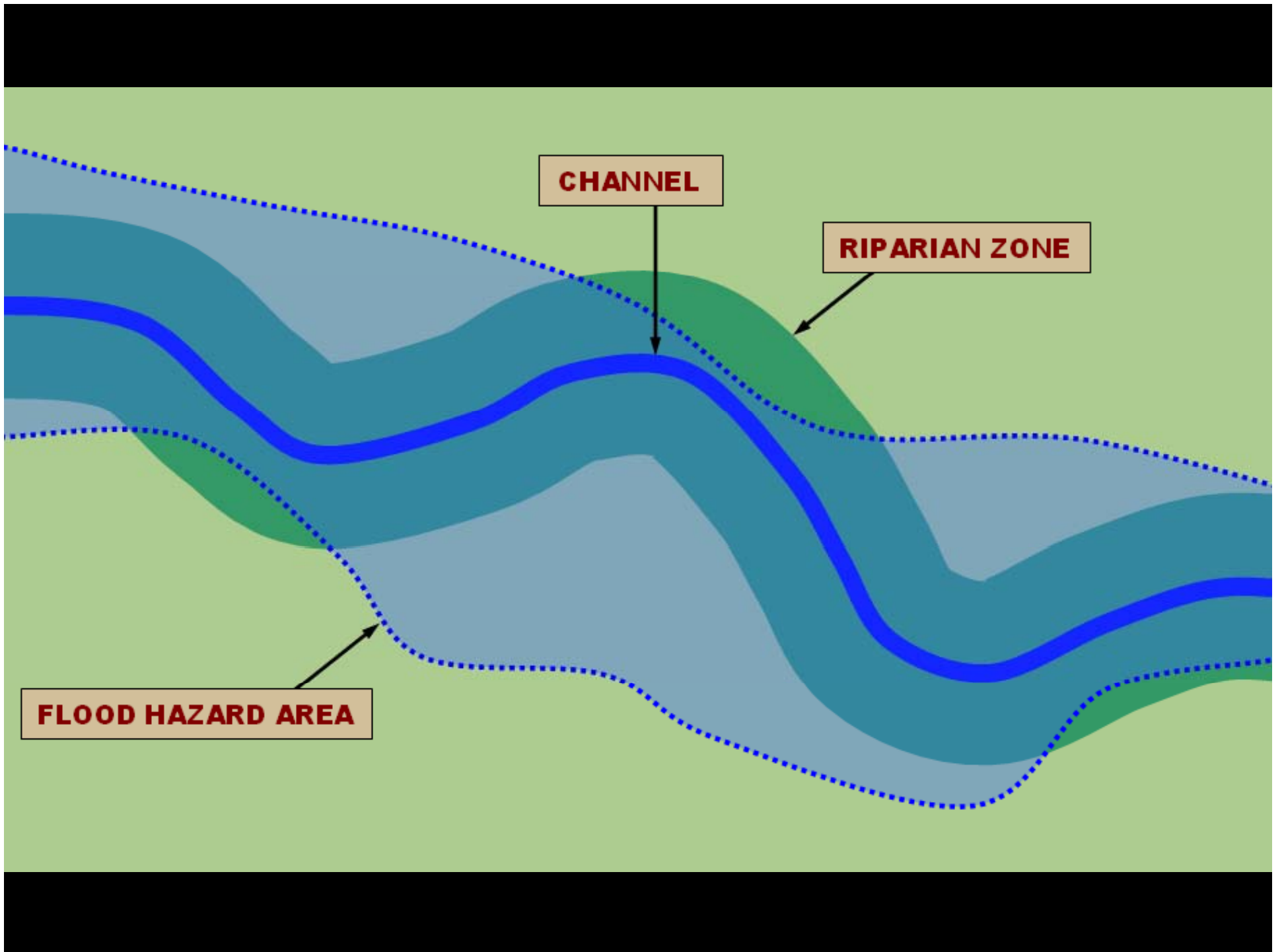
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Step 2: Regulated Areas

- **Along all regulated waters there are two distinct and overlapping areas of jurisdiction:**

- 1. The flood hazard area**
- 2. The riparian zone**

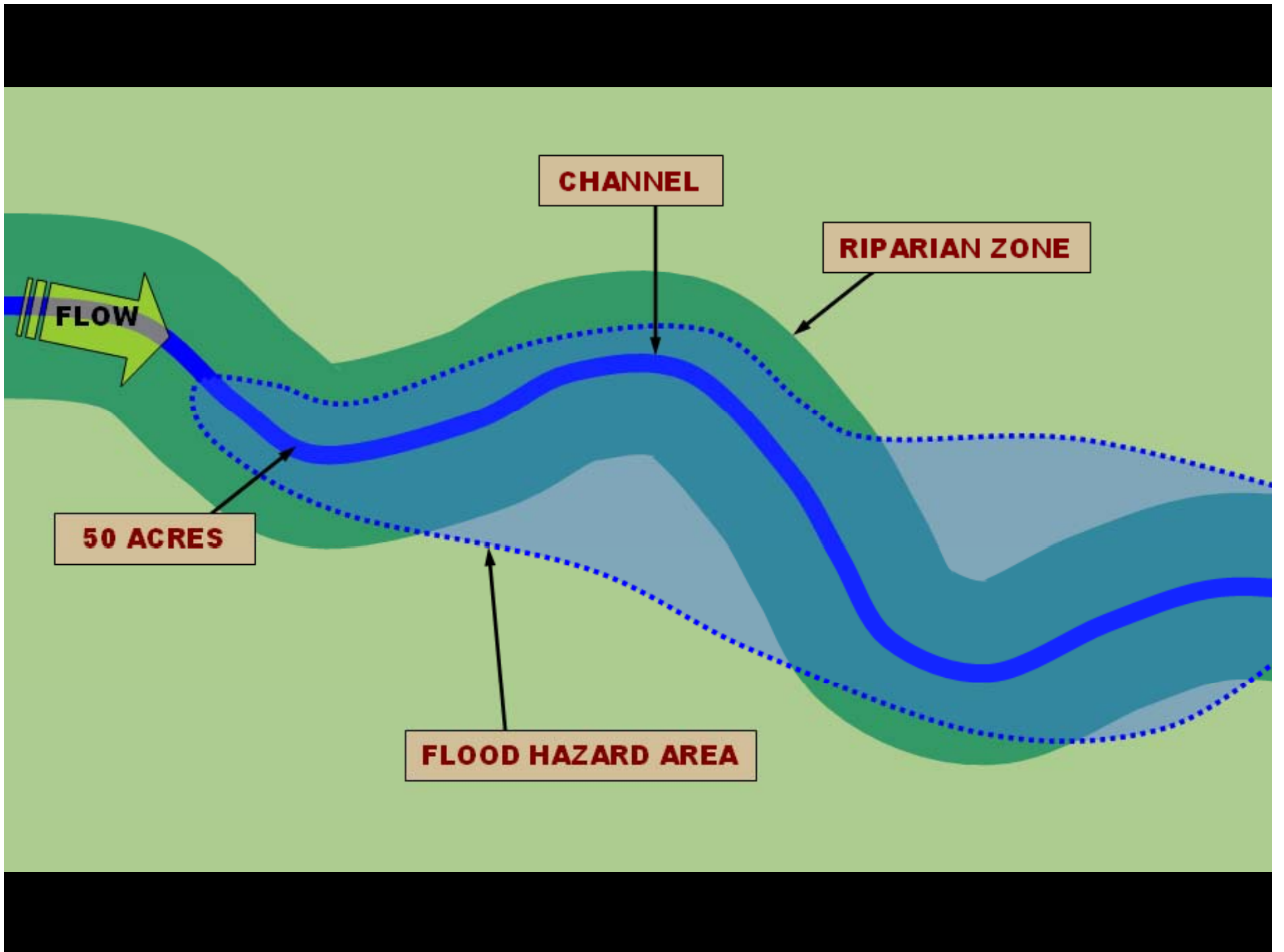
SEE N.J.A.C. 7:13-2.3(a)



Flood Hazard Area

- A **flood hazard area** exists along every regulated water that has a drainage area of **50 acres** or more
- If a water drains less than 50 acres, **it has no flood hazard area**
- The **flood hazard area** is the land along a regulated water that is inundated by the **flood hazard area design flood**

SEE N.J.A.C. 7:13-2.3(a)1



CHANNEL

RIPARIAN ZONE

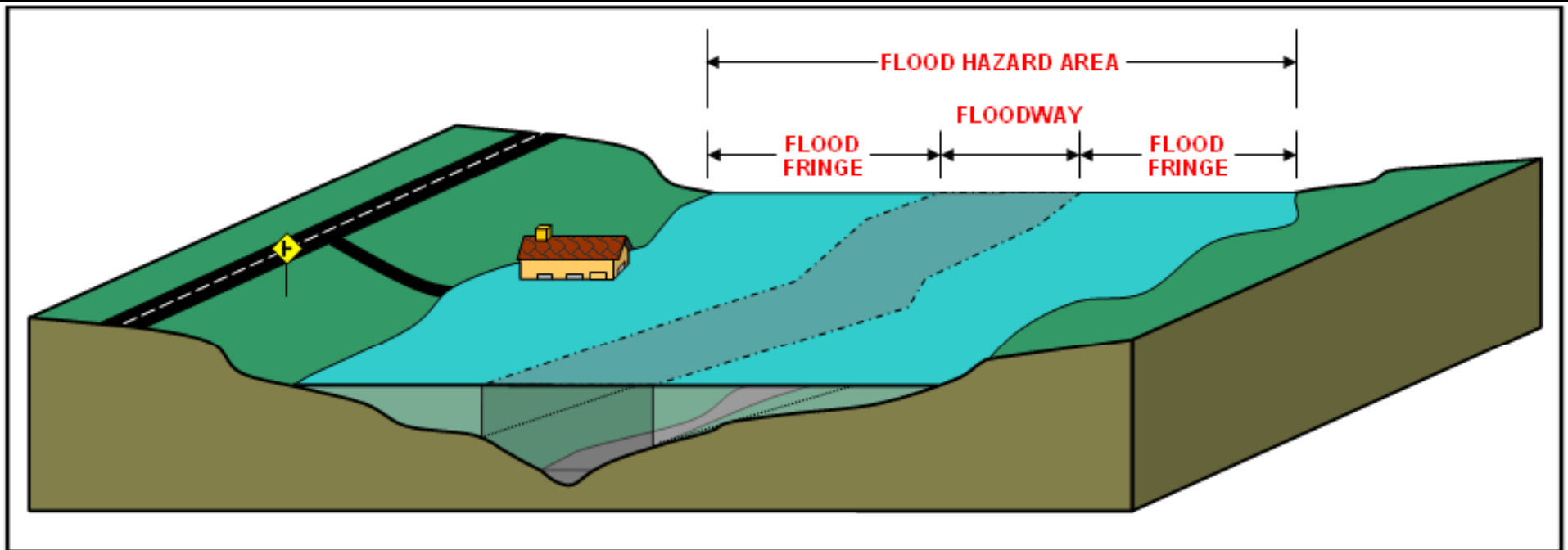
50 ACRES

FLOOD HAZARD AREA

FLOW

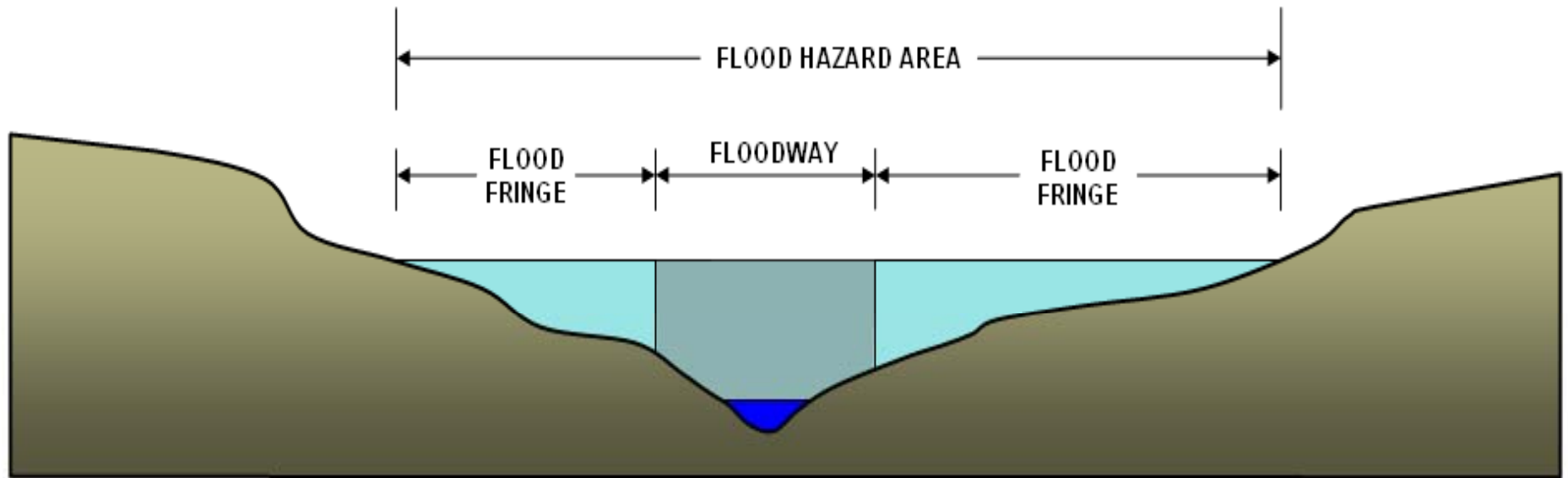
Flood Hazard Area

- The flood hazard area is comprised of the floodway and flood fringe



Flood Hazard Area

- The flood hazard area is determined by the flood hazard area design flood



Flood Hazard Area

- **Based on:** Flood Hazard Area Design Flood
- **In tidal areas:** equal to 100-yr flood
- **In fluvial areas:** equal to 100-yr flood plus a factor of safety

Floodway

- Conveys the majority of floodwaters
- Structures & other materials can obstruct flow and increase flooding
- Calculated using a 0.2-ft rise in the 100-year flood elevation

Flood Fringe

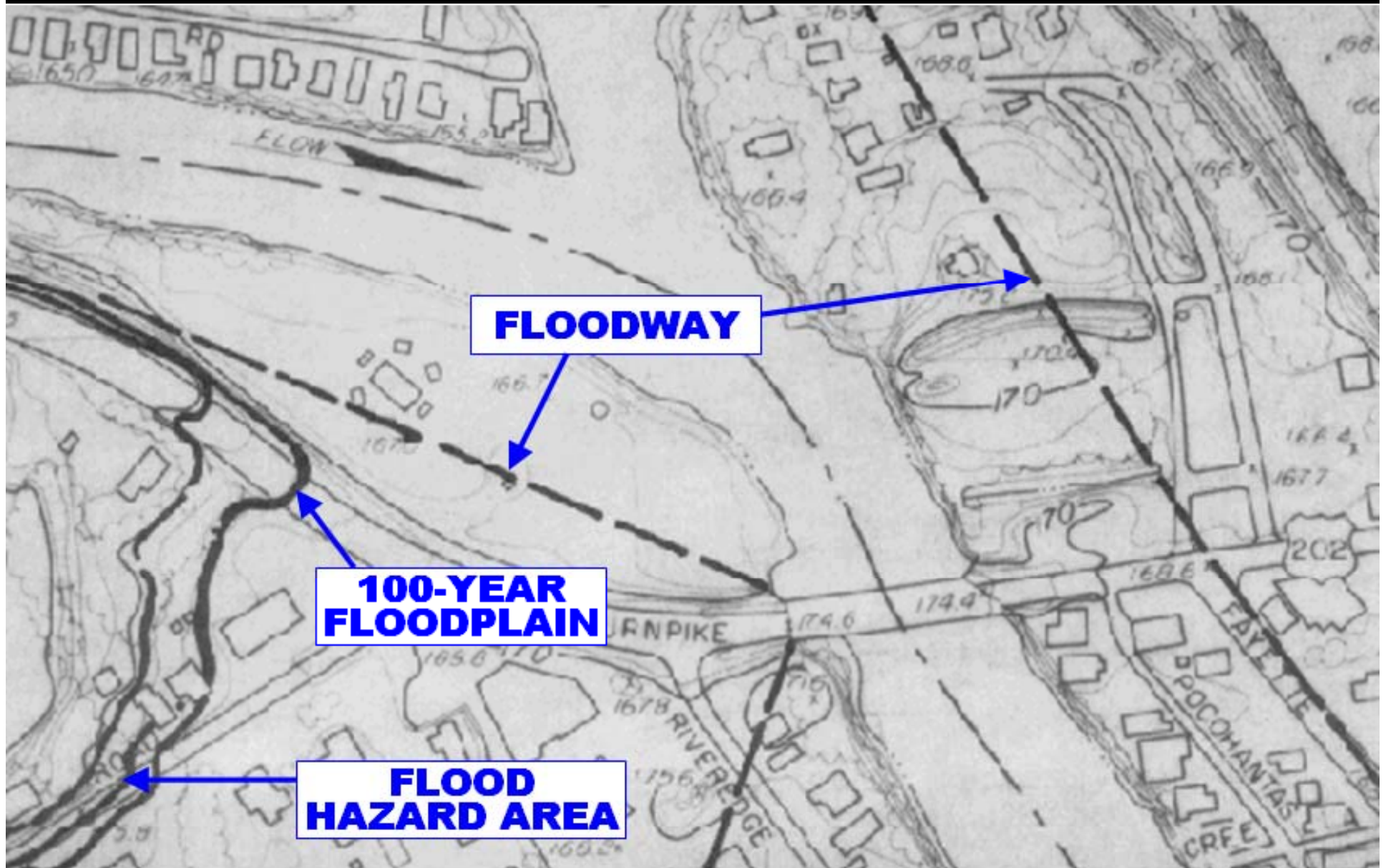
- The portion of the flood hazard area outside the floodway
- Waters are less deep and move slower than in floodway
- Structures, fill and other material can displace flood storage volume and increase flooding (hence 0% net-fill provision)

Flood Hazard Area

- How do I know if I am in a flood hazard area?
 1. Check for **State** flood mapping
 2. If no State mapping is available, check for **FEMA** flood mapping
 3. If no mapping exists at all, technically you need topography & calculations to determine flood hazard area. **But you can usually make a few basic assumptions to estimate whether construction is in the flood hazard area.**

SEE N.J.A.C. 7:13-3

State Flood Mapping



State Flood Mapping

- Use the floodway limits **exactly** as shown on the adopted maps
- Refer to the **profile** to find the flood hazard area design flood elevation, and determine the actual flood hazard area limit yourself

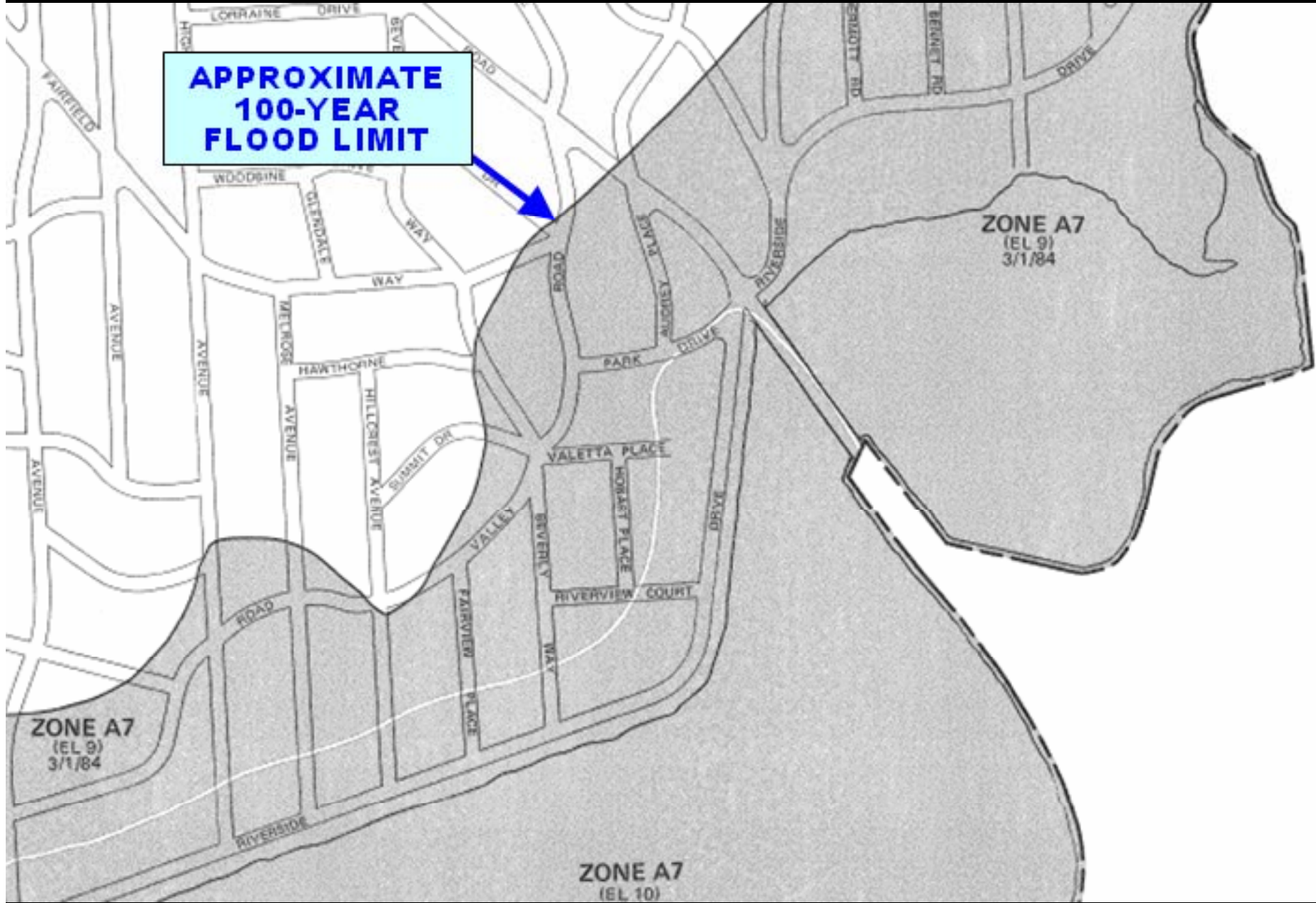
SEE N.J.A.C. 7:13-3

FEMA Flood Mapping

Tidal Areas

- Map must provide flood elevation
- “Unnumbered A-Zones” don’t provide enough data to be helpful
- NJDEP flood elevation **equal to FEMA 100-year elevation**
- Floodway limits exactly as shown on FEMA maps

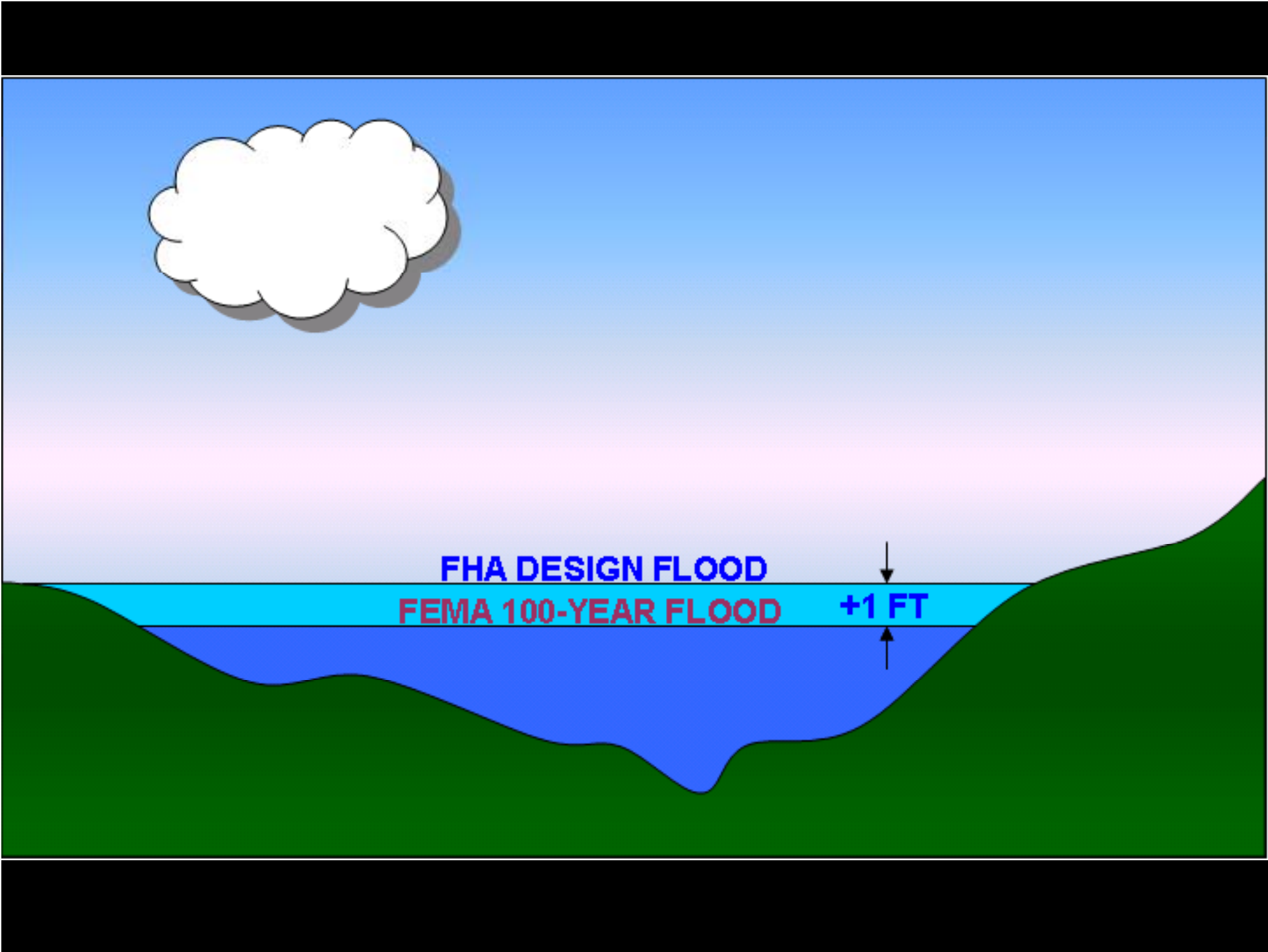
**APPROXIMATE
100-YEAR
FLOOD LIMIT**



FEMA Flood Mapping

Fluvial (non-tidal) Areas

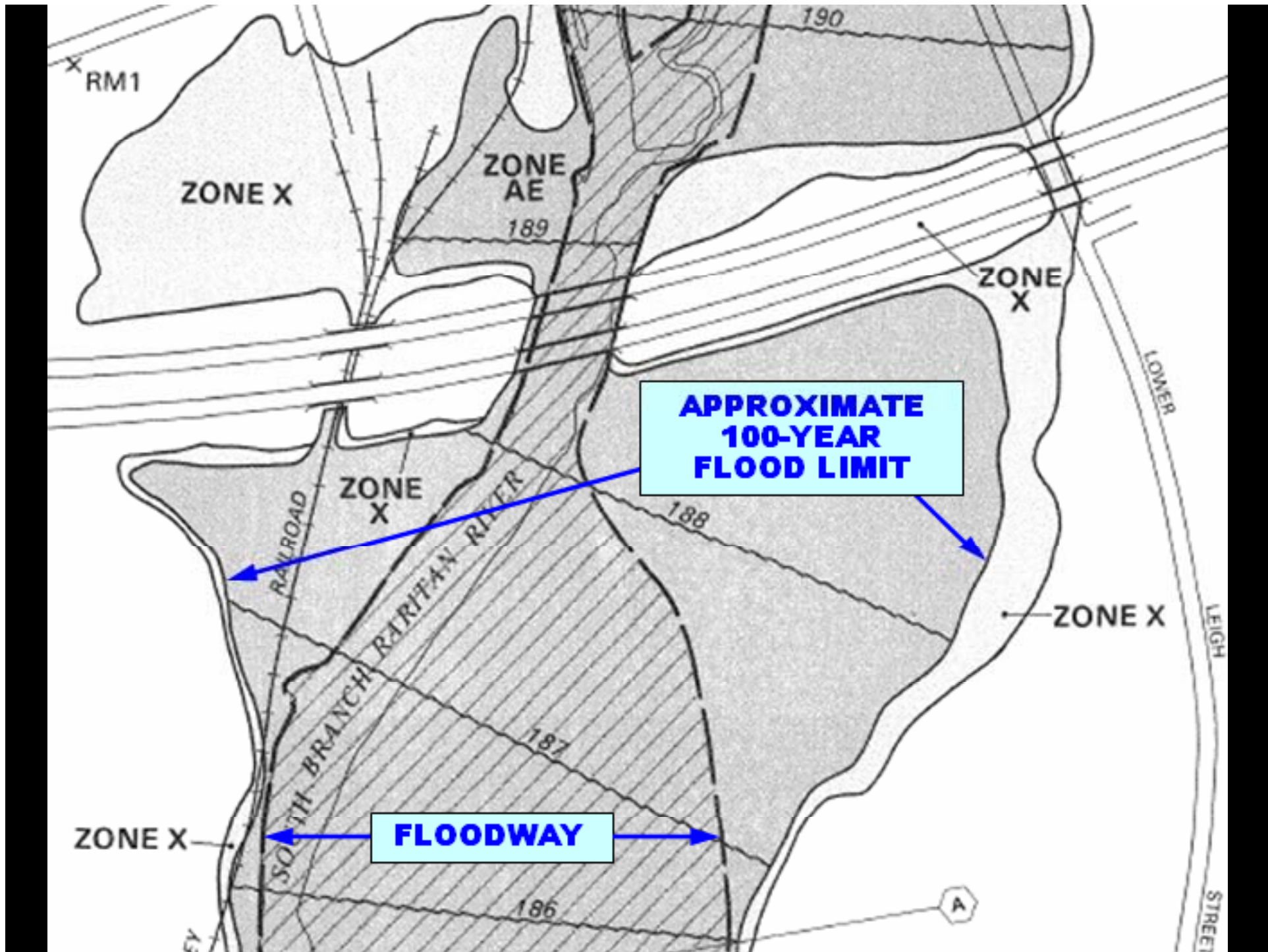
- Map must provide flood elevation
- “Unnumbered A-Zones” don’t provide enough data to be helpful
- NJDEP flood elevation **equal to one foot above FEMA 100-year elevation**
- Floodway limits exactly as shown on FEMA maps



FHA DESIGN FLOOD

FEMA 100-YEAR FLOOD

+1 FT



What if No State or FEMA Flood Mapping Exists?

- You can approximate the flood elevation using **Method 5** at N.J.A.C. 7:13-3.5
 - This requires topography, drainage area calculations, and elevation of nearby roads
 - Compare the elevation of proposed development with the elevation of flooding from two tables
 - Conservative estimate, which is good if you suspect you are outside the flood hazard area

Some Rules of Thumb:

- If development is within 50 feet of a stream, it is within NJDEP's jurisdiction
- If development is upstream of a bridge or culvert, and not much higher than the road surface, it's probably in the flood hazard area
- If the area has flooded before, there's a good chance it's in the flood hazard area
- You don't have to figure this out yourself – for any questions on jurisdiction, NJDEP will help

Riparian Zone

- A **riparian zone** exists along every regulated water, except there is no riparian zone along:
 - **The Atlantic Ocean**
 - **Manmade lagoons**
 - **Stormwater management basins**
 - **Any oceanfront barrier island, spit or peninsula**
 - **Piped section of a water**

SEE N.J.A.C. 7:13-2.3(a)2

Riparian Zone

- Provides important environmental functions:
 - Wildlife Habitat
 - Flood Reduction
 - Bank Stabilization
 - Temperature Moderation
 - Water Quality Enhancement

300-ft Riparian Zone

- **Category One** waters and all upstream tributaries within the same HUC-14 watershed
- Similar to **Special Water Resource Protection Area** – but not always equal

SEE N.J.A.C. 7:13-4.1(c)1

150-ft Riparian Zone

- **Trout production** waters and all upstream tributaries
- **Trout maintenance** waters and all tributaries within one mile upstream
- Waters containing **T&E habitat** (if critically dependent on the regulated water for survival) and all tributaries within one mile upstream
- Waters that flow through an area containing **acid producing soil deposits**

SEE N.J.A.C. 7:13-4.1(c)2

50-ft Riparian Zone

- All other streams
- Most common riparian zone width, especially in urbanized areas (except where acid producing soils exist)

SEE N.J.A.C. 7:13-4.1(c)3

How Do I Know How Big the Riparian Zone is?

- C1, TP & TM waters, watershed boundaries, acid soil coverage, and other data can be identified using New Jersey's internet mapping (iMap NJ) and i-MapNJ Geology at:
<http://www.nj.gov/dep/gis/newmapping.htm>

Jurisdiction

- **Step 1:** Determine if you are along a **regulated water**
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Regulated Activities

1. The alteration of topography through excavation, grading and/or placement of fill
2. The clearing, cutting and/or removal of vegetation in a riparian zone
3. The creation of impervious surface
4. The storage of unsecured material
5. The construction, reconstruction and/or enlargement of a structure
6. The conversion of a building into a private residence or a public building

SEE N.J.A.C. 7:13-2.4

Verification

N.J.A.C. 7:13-6.1

- Application to verify the extent of a **flood hazard area** and **riparian zone** on a given site
- Similar to a freshwater wetlands letter of interpretation
- Separate from a permit application (but can be obtained with a permit or prior to a permit)

APD vs. Verification?

N.J.A.C. 7:13-6.1

- An applicability determination tells you whether or not a project is regulated
 - The activity therefore needs to be clearly:
 - Outside any regulated areas or
 - Exempt from regulation or
 - Permitted-by-rule
- A verification tells you where the flood hazard area and riparian zone is located

Permits-by-Rule

N.J.A.C. 7:13-7

- The rules include 47 permits-by-rule
- For projects that NJDEP has determined will cause no adverse impacts to flooding or the environment if undertaken correctly
 - Minor repair and maintenance activities
 - Activities associated with an existing home or business
 - Other minor construction activities

Permits-by-Rule

N.J.A.C. 7:13-7

- No application necessary
 - The permit is automatically granted by the rules if certain conditions are met
 - However, eight of them require prior notification via mail or email so NJDEP can inspect work (see N.J.A.C. 7:13-7.2(a))

Coastal Permits

- Coastal rules now cross-reference the FHA rules, so that all coastal permits need to meet all FHA standards
- In other words: All Waterfront Development and CAFRA permits are subject to the same flood hazard area and riparian zone standards as a flood hazard area approval

Coastal Permits

- Since the standards are the same, getting a coastal permit satisfies all FHA permitting requirements
- You will not need a FHA permit if you get a waterfront development or CAFRA permit

Questions?

