

New Castle County, DE Floodplain Regulations

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New Castle County, DE
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Today's Presentation

- Floodplain Protection and Uses
- Terms and Definitions
- Site Design Examples
- Building and Floodplains

Floodplain Protection

- 100% protected resource
 - Netted out of base site area (not buildable land)
- UDC restricts uses in resource areas

Uses in Floodplains

- Permitted: Field crops, orchards, pastures, ball fields, fishing areas, natural areas, trails

Uses in Floodplains

- Limited: Nursery, golf courses, day camps, playgrounds, pools, courts
(means they must comply with additional standards in Article 10)

Uses in Floodplains

- Certain uses require an Environmental Impact Assessment e.g. public/private roads, bridges, essential access, fish hatchery, sewage and water treatment plants, stormwater management practices

Uses in Floodplains

- EIA addresses:
 - Site character
 - Avoidance
 - Minimization
 - Mitigation
 - Conservation Design

Uses in Floodplains

- A variance may be sought from the Board of Adjustment after review by the environmental committee for any use not permitted by the UDC e.g. parking in the floodplain.

Terms

- UDC defines floodplain, floodway, flood fringe and non-delineated floodplain.
- UDC requires a 50 foot minimum riparian buffer area adjacent to all floodplains and wetlands of certain size and 100 foot buffer from all streams.

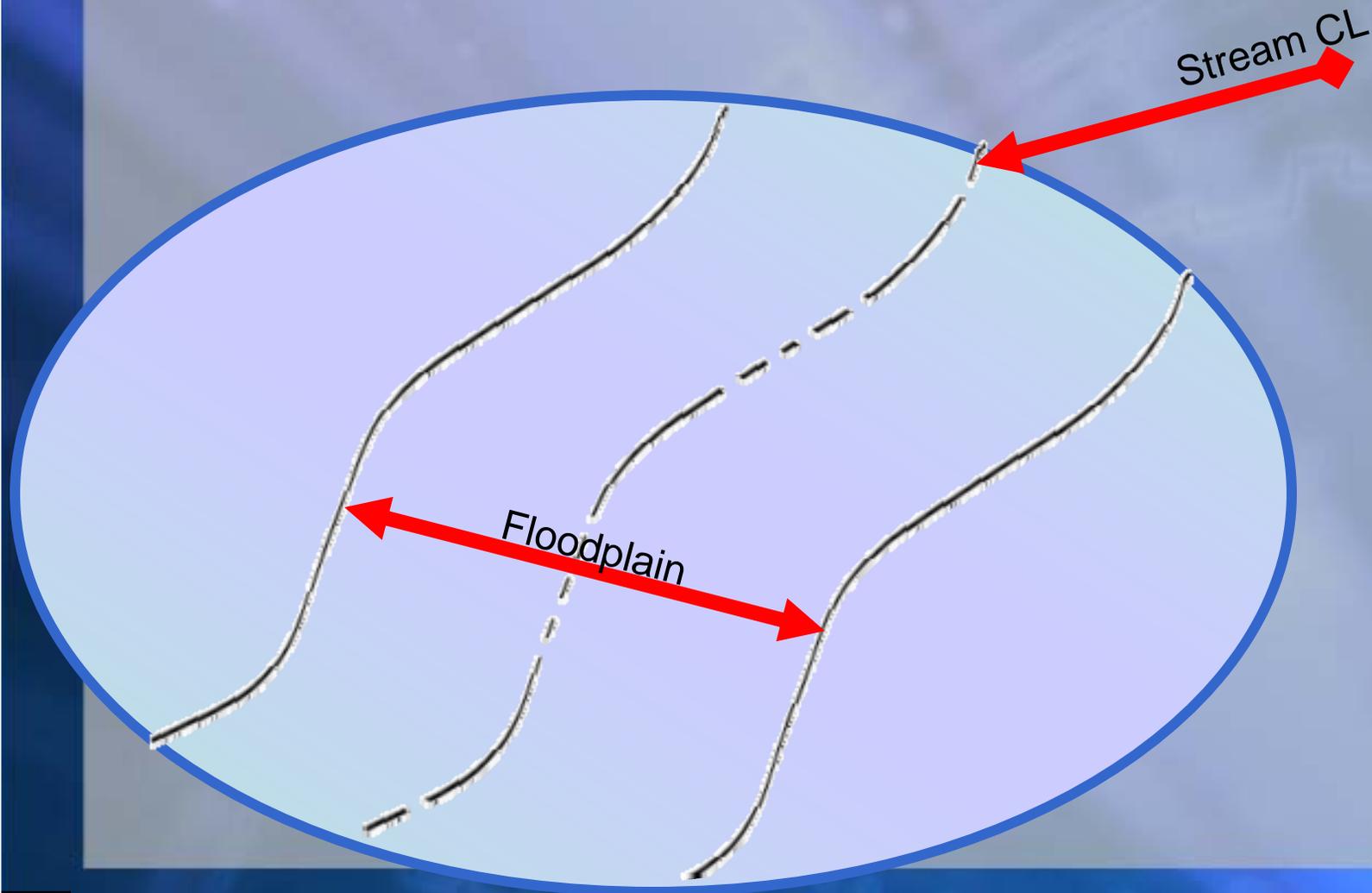
Definitions

- Floodplain
- Flood fringe
- Floodway
- Nondelineated floodplain
- Riparian Buffer Areas

Definitions

- Floodplain – A relatively flat or low-lying land area adjoining a river, stream or watercourse which is subject to periodic partial or complete inundation by water from any source during the base flood.

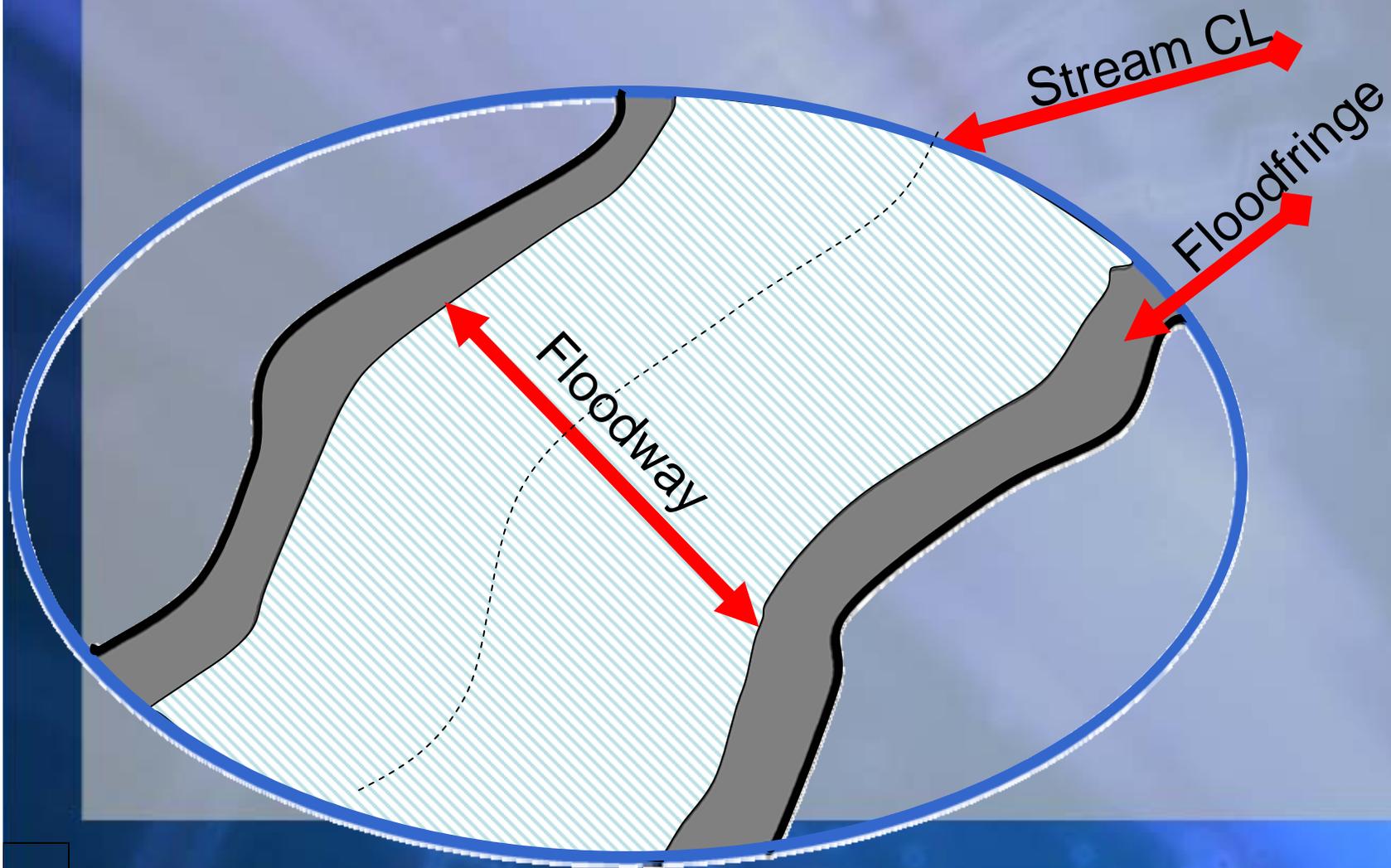
Floodplain



Definitions

- Flood fringe – Those portions of the Zone AE floodplain, outside of the floodway, subject to inundation by the 100 year recurrence interval flood or base flood and generally associated with standing or slowly moving water, rather than rapidly flowing water.
- Floodway – The portion of the floodplain district required to carry and discharge the waters of the 100 year flood or base flood without increasing the water surface elevation at any point more than one (1) foot above existing conditions as demonstrated in a Flood Insurance Study.

Floodway and Flood Fringe



Definitions

- Non-delineated floodplain – Area subject to a 100 yr. flood:
 - FEMA has not delineated a floodplain;
 - Adjacent to a watercourse as identified by a blue line on the current USGS topographic maps of the County,
 - Adjacent to a watercourse that is defined as a “stream” in the detailed maps of the NRCS NCC Soil Survey.

Definitions

- Riparian Buffer Area (RBA) – An RBA consists of land which forms a transition zone between aquatic and terrestrial environments. RBA's include:
 - 100 feet on either side of perennial or intermittent streams, lakes and tidal wetlands.
 - All of the floodplain plus an additional 50 feet of adjacent land.
 - All of a non-tidal wetland greater than 20000 sf in area plus an additional 50 feet of adjacent land.
 - All of any size non-tidal wetland classified as a Piedmont Stream Valley Wetland.

Site Design Examples

	100 YR FLOOD PLAIN
	WETLANDS
	RIPARIAN BUFFER
	REFORESTATION

**EXISTING
STORMWATER
DETENTION BASIN
1.58 AC**

TRUNKLINE
15.00' DIA

SEWER MAIN
18" DIA

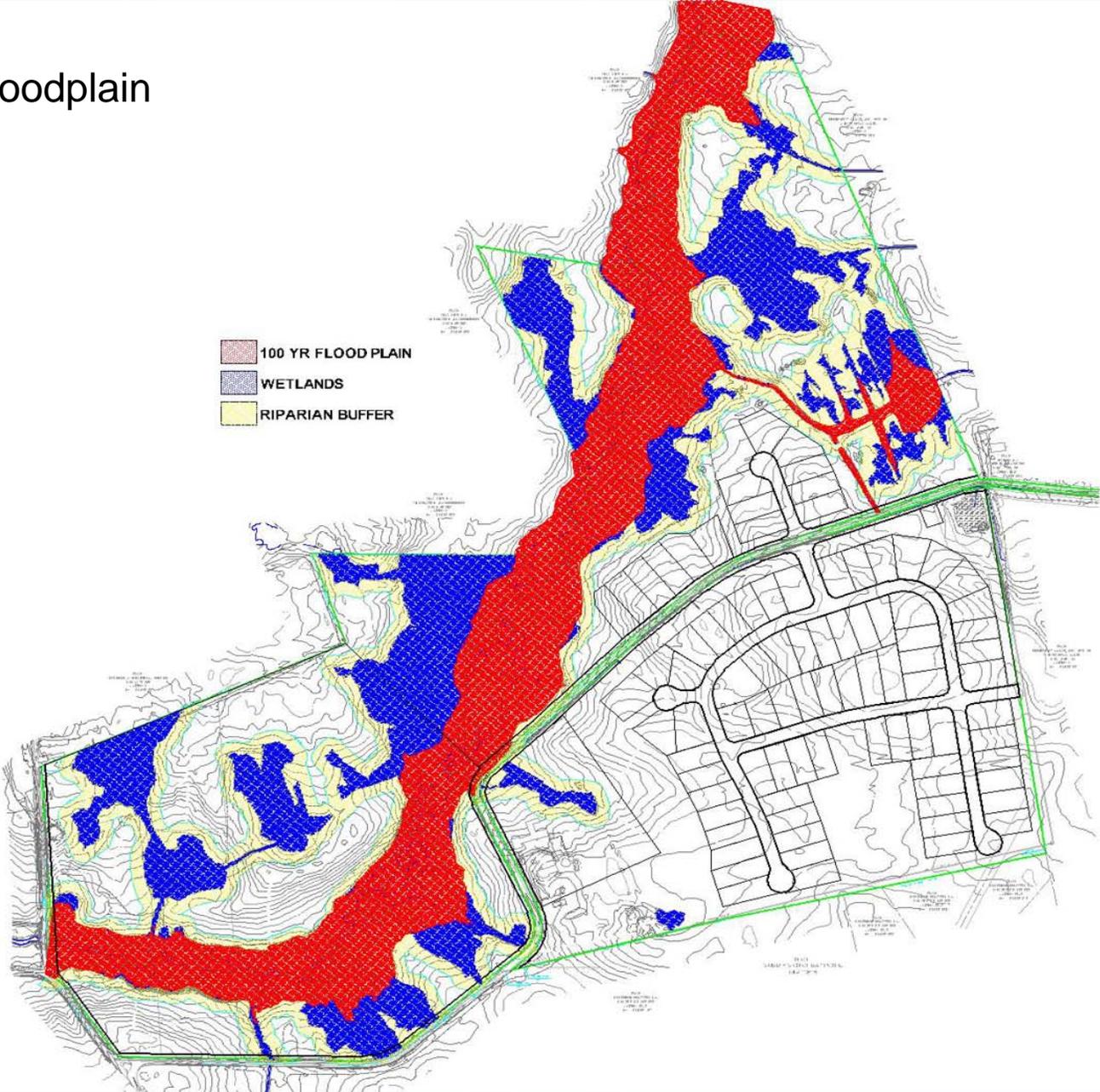
PROJECT NO. 1488-150
DATE: 08/14/14
SCALE: AS SHOWN
DRAWN BY: J. D. DUNN
CHECKED BY: J. D. DUNN
APPROVED BY: J. D. DUNN

100' ZONE
PRIVATE OPEN SPACE
10' 20' 30' 40' 50' 60' 70' 80' 90' 100'

EVANS
SPADY
PINE CREEK
ENGINEERING
1488-150
TEL: 208-224-0608

LOD
LOD
LOD

FEMA Floodplain



Buildings and Floodplains

Structures in the Floodplain

Permitted construction in floodplains:

- 1) Where approved as a Beneficial Use;
- 2) Replacement or substantial repair of an existing non-conforming structure.

Beneficial Use

- Floodplain Development Permit
- Compliance with sections in Article 10
- Beneficial Use application and Board of Adjustment hearing
- Typically used in coastal communities

Replacement of Non-conforming Structure

- Structure still must be elevated 18 inches above base flood elevation
- Applies to reconstruction and substantial repair and substantial improvement
- Can be expanded as long as footprint is not increased (i.e. second floor)

Criteria for Building in Floodplain

- No net fill
- Only areas below finished floor including basement to be used for parking, building access and storage may be wet flood proofed (one square inch per square foot)
- Wet flood proofing above the lowest floor is not permitted
- New and substantially improved non-residential buildings may be flood proofed (i.e. floodwalls and doors)

Criteria for Building in Floodplain *(continued)*

- All service utilities must be elevated or flood proofed in accordance with Chapter 6 of the New Castle County Code (Building Code).
- Any fill placed must be clean, compacted and stabilized to prevent erosion.

Building Adjacent to Floodplain

- Finished floors (including basements) elevated 18" above base flood elevation
- No new lots within floodplain unless sufficient buildable area provided outside of the floodplain
- Provisions for redevelopment in floodplains for Brownfield.

**No Adverse Impact – New Castle
County Perspective**

New Castle County Drainage Code Citations (June, 1998)

12.04.001 Conveyance System Stipulations

- A. Any person who engages in land disturbing activity shall control the contribution of off-site runoff through the site by adequately sizing the conveyance system. On-site runoff shall be collected and an adequate conveyance system provided to transport the runoff to an existing watercourse or pipe system of adequate capacity to accommodate the peak rate of stormwater flow for the maximum design storm of the drainage area.

New Castle County Drainage Code Citations (June, 1998)

12.04.001 Conveyance Systems Stipulations (cont.)

- D. Conveyance systems shall outfall to a stormwater management facility or watercourse capable of accepting the design runoff.

New Castle County Drainage Code Citations (June, 1998)

12.04.001 Conveyance System Stipulations (cont.)

- F. The drainage system shall be designed so that parcels over which the surface waters are conveyed from the development site to existing watercourses or pipe systems are not adversely affected and that the developed property may continue to discharge runoff without off-site modification...

Delaware Sediment and Stormwater Regulations (10/11/06)

- 10.3.1 It is the overall goal of the Department to utilize stormwater management as a means to minimize water quantity and water quality impacts due to land disturbing activities and to mimic pre-development hydrology, to the maximum extent practicable, in regards to the rate, **volume and duration of flow....**

Delaware Sediment and Stormwater Regulations (10/11/06)

- 10.3.4.4 In addition to the peak flow control design criteria contained in this Section, projects in the Mill Creek, Little Mill Creek, Red and White Clay Creeks, Persimmon Creek and Shellpot Creek watersheds shall demonstrate successful management of any increase in stormwater runoff from pre-development land use conditions. Successful management of increased stormwater volume shall include but not be limited to; recharge, infiltration and re-use where soils and site are applicable. For any increase in volume that cannot be recharged, infiltrated or re-used, volume management may be achieved by modifying the release rate for the increase in volume so as not to increase the flood elevation for all storms up to and including the 100 year return period.

Delaware Sediment and Stormwater Regulations (10/11/06)

- 10.3.8 Where ponds are the proposed method of control, the developer shall submit to the approving agency, when required, an analysis of the impacts of stormwater flows downstream in the watershed for the 100 year frequency storm event.

Delaware Sediment and Stormwater Regulations

- The Regulations are currently undergoing revision. The revisions will incorporate requirements to infiltrate the resource protection storm event (1 year storm) and further manage post-developed storm events to reduce impacts in watersheds.