

FLOODPLAIN AND DRAINAGE ADVISORY COMMITTEE

February 21, 2012 Meeting

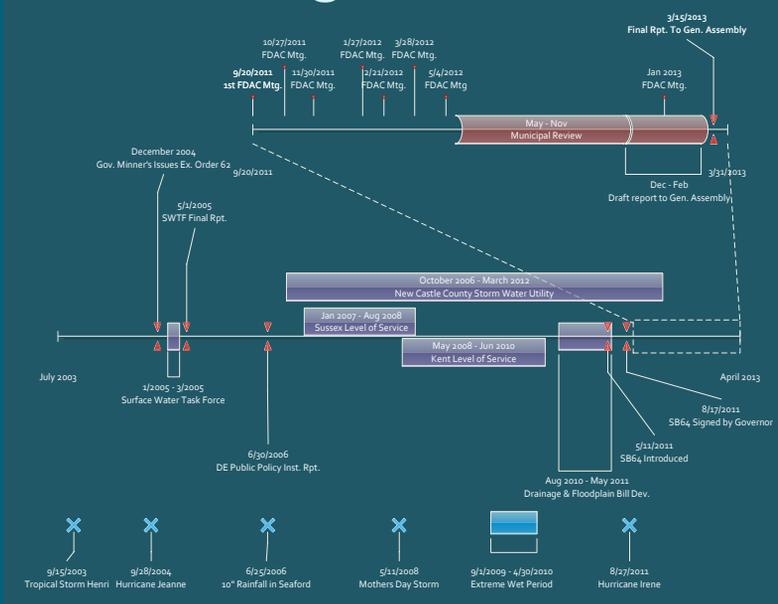


www.dnrec.delaware.gov/swc/Pages/FloodplainandDrainageCodeWorkGroupCommittee.aspx

Agenda

- Welcome Committee
- Recap of Previous Meeting
- Continuation of “Draft Standards and Recommendations”
- Framing and Format of Proposed Standards and Recommendations
- Public Comment
- Path Forward

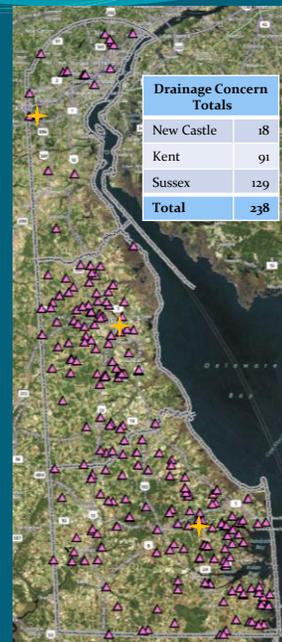
How did we get here?



Drainage Concerns Sept. 2009 – March 2010

Monthly Rainfall Totals (inches)			
	Harbeson (Sussex)	Dover (Kent)	Glasgow (New Castle)
Sep-09	5.93	5.24	5.30
Oct-09	8.03	6.04	6.19
Nov-09	5.19	6.56	3.33
Dec-09	7.28	7.62	7.54
Jan-10	2.93	2.85	2.84
Feb-10	2.91	2.16	4.94
Mar-10	7.28	6.51	6.01
Totals	39.55	36.98	36.15

- Average Annual Rainfall in Delaware is 45.7 inches.
- State saw over 80% of the average annual rainfall in 7 months.



21st Century Funds Requested for New Projects



Total Amount Requested	\$19,703,991
Total Funds Allocated	\$3,000,000
Total Funds Reverted	\$1,170,330
Net Funds Received	\$1,829,670
Shortfall	\$17,874,321

Development and Building

Lack of Enforcement of Existing Standards

Current Criteria: FEMA technical bulletins provide detailed descriptions of NFIP requirements for items such as breakaway walls, hydrostatic openings, elevators, crawl spaces, and flood-resistant materials in ground level enclosures. Compliance with the provisions of these technical bulletins is required for NFIP-participating communities.

Proposed Standard #1: Communities should adopt ordinance language which incorporates FEMA technical bulletins by reference into appropriate regulations.

Proposed Standard #2: Floodplain information including map used, flood zone delineations, base flood elevations, and proposed lowest floor elevations shall be required on record plans and building permits for all new construction or substantial improvements within a FEMA floodplain.

Proposed Standard #3: Elevation certificates shall be completed both pre- and post-construction. For buildings to be floodproofed, a FEMA Floodproofing Certificate form shall be completed both pre and post construction.

Development and Building

Lack of Enforcement of Existing Standards

Current Criteria: FEMA requires the inclusion of base flood elevation data for developments of 5 acres or 50 lots, whichever is greater.

Proposed Standard #4: FEMA requirements shall **be enforced**, with the clarification that flood studies be performed in compliance with FEMA's guidelines to develop base flood elevations, delineate them on proposed site plans, and have the effective FEMA map revised to show the results of these studies prior to plan approval.

Drainage and Grading

Drainage and Grading

Easements

Current Criteria: Drainage is mostly a local issue and therefore numerous standards exist which vary by county and municipality. Closed drainage conveyances (in pipes) are sometimes placed within an easement although easement widths and responsible parties are not always specified. Open drainage conveyances (swales and ditches) can be either natural or manmade and can differ in size and / or cross section. Sometimes open drainage is apparent but often times it is unapparent.

Proposed Standard #1: Easements of an adequate width shall be required over closed drainage conveyance systems and open drainage conveyance systems. Easements shall clearly designate responsible parties such that no obstructions can be placed within the eased areas without prior notice.

Alternate: Easements a minimum of _____ feet in width.

Grading and Drainage

Disruption of Existing Drainage Conveyances

Current Criteria: Drainage is mostly a local issue and therefore numerous standards exist which vary by county and municipality. Closed drainage conveyances (in pipes) are sometimes placed within an easement although easement widths and responsible parties are not always specified. Open drainage conveyances (swales and ditches) can be either natural or manmade and can differ in size and / or cross section. Sometimes open drainage is apparent but often times it is unapparent.

Proposed Standard #2: The blocking or placement of obstructions in open drainage shall be prohibited.

Proposed Standard #3: Conveyance systems in new developments or within a planned subdivision shall be adequate to handle runoff resulting from the 10-year event.

Grading and Drainage

Inadequate and Adverse Lot Grading

Current Criteria: Drainage is mostly a local issue and therefore numerous standards exist which vary by county and municipality.

Proposed Standard #1: A minimum amount of grading information shall be shown on site plans and building permit applications to demonstrate adequate drainage away from structures, protection of mechanical systems, and no adverse impacts to adjacent structures or lands. Submittals shall include topography that extends to a point of conveyance.

Alternate: Lots a minimum of _____ square feet in size need not demonstrate drainage to a point of conveyance but shall still demonstrate adequate drainage away from structures, protection of mechanical systems, and no adverse impacts to adjacent structures or lands.

Grading and Drainage

Inadequate and Adverse Lot Grading

Proposed Standard #2: A lines and grades plan submittal or spot grades submittal shall be required for all development or construction activity greater than 5,000 square feet. Information shall include finished floor elevation and road elevations and demonstrate that all first floor elevations are a minimum of 18 inches above existing ground elevation and _____ inches above road elevation. If floor elevation is lower than road elevation, adequate drainage away from structures, protection of mechanical systems, and no adverse impacts to adjacent structures or lands must be shown.

Alternate: First floor elevations shall be a minimum of 12 inches above existing ground elevation.

Proposed Standard #3: A lines and grades plan as-built submittal shall be required for all development or construction activity greater than 5,000 square feet. Information to be shown shall include floor elevation, road elevation, and a sufficient number of ground elevations to clearly demonstrate adequate drainage away from structures, protection of mechanical systems, and no adverse impacts to adjacent structures or lands.

Floodplain Recommendations

Floodplains Recommendations

Recommendation #1: A separate plan review or building permit process should be required for all development or construction activities in floodplains.

Recommendation #2: Memoranda of Agreement (MOA) should be encouraged between counties or other larger governments and smaller cities or towns for enforcement of floodplain regulations where local capabilities are insufficient.

Recommendation #3: A Certified Floodplain Manager should be on staff or under contract at each agency to review floodplain activities. DNREC can provide assistance by providing training to assist staff in becoming Certified Floodplain Managers, and proctor the exam periodically.

Floodplains Recommendations

Recommendation #4: The "Point on the Boundary Method" should not be used for major subdivisions or building projects but may be used for any minor (less than 5 acres / 5 lots) development and/or use of land where other acceptable information is not available. When no more suitable method of determining flood risk is available, location of flood prone areas may be determined by using the elevation of multiple points on the boundary of the identified floodplain which is nearest the proposed construction.

Recommendation #5: A separate zoning district for floodplains should be created such that buyers cannot purchase property without being aware of flood zone status and cannot change the floodplain without meeting zoning district notification requirements.

Recommendation #6: FEMA standards for manufactured (mobile) homes should be reviewed for consideration of adoption of higher standards. Local regulations should not permit manufactured homes to be on a 36 inch piers where base flood elevations are more than 36 inches above grade.

Floodplains Recommendations

Recommendation #7: Lending banks are currently required to review maps in FEMA's map service center and disclose flood risks at closing but this often does not occur. DNREC should meet with the Board of Realtors within six months to develop improved wording on seller disclosure forms, should investigate lending regulations to determine whether flood zone determinations are required in advance of settlement, and if so how far in advance.

Committee Discussion: What type of process can be created in areas where mapping exists so that buyers are made aware they are in or not in a floodplain? After the fact notifications are common. How can the disconnect be closed and when would be a better time in the process to notify home buyers?

Floodplains Recommendations

Recommendation #8: Communities should adopt floodplain maps by utilizing "effective map as last revised" terminology so that updated maps from FEMA are automatically adopted.

Alternate: Communities should adopt floodplain maps by date upon release of updated maps from FEMA.

Recommendation #9: Communities should review their codes to eliminate phrases such as "no land below the level of the 100-year flood may be developed . . ."

Recommendation #10: DNREC shall make it a priority to modernize floodplain maps.

Drainage Recommendations

Drainage Recommendations

Recommendation #1: The review of existing drainage patterns should be included not only in the subdivision stage but in the building permit process as well.

Recommendation #2: Permanent easements conveyed to a public entity should be considered whenever public dollars are spent to correct a drainage deficiency.

Recommendation #3: DNREC should oversee the preparation of a guideline similar to the Residential Lot Grading Guidelines from Deltona, Florida. County or municipal governments could then incorporate the guidelines into their codes and ordinances.

Development of Process for Proposed Standards and Recommendations

Develop Proposed Standards Around a Matrix of Different Scenarios.

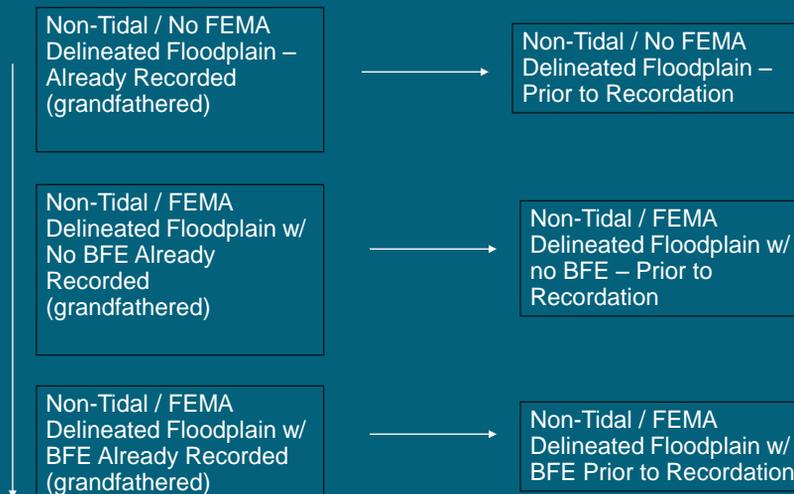
- Tidal vs. Non-Tidal Floodplains
- Mapped Floodplain vs. Not Mapped
- Base Flood Elevation (BFE) Determined or Not
- Already Recorded Lots vs. New Development
- Fill vs. Buildings and Structures
- Minor vs. Major Subdivision

Ask Questions Related to Development of Draft Standards – Do They Make Sense?

Tidal Floodplains

- What standards should apply in Tidal Floodplains relative to building above BFE?
- How many options for freeboard should we offer if any at all?
- Include hydrostatic vent standard?
- Will we ever need to have a flood study done in a Tidal Floodplain to set freeboard?
- Building Plans should show the BFE in a Tidal Floodplain?
- Should a no-fill standard be enforced in a Tidal Floodplain?
- Are there some jurisdictions without a history or tidal flooding that should have different standards?

Development of Draft Standards



Drainage and Grading Considerations for Standards

Major Subdivision/Minor Subdivision/Single Lots

- Easement Standards
- Conveyance Standards
- Inadequate Lot Grading Standards
- Adverse Lot Grading Standards

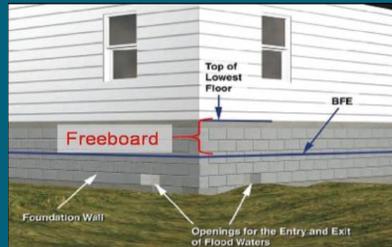
Alternate Standards (Choices)

- Non-Tidal / Delineated Floodplains – Prior to Recordation
 - All lots of record should be outside the mapped floodplain.
 - All lots of record should be designed such that buildings and structures are outside the mapped floodplain.



Alternate Standards (Choices)

- All new construction or substantially improved structures located within a FEMA mapped floodplain shall have **1.0 ft.** of freeboard for lowest floors, including basements and crawlspaces.
- All new construction or substantially improved structures located within a FEMA mapped floodplain shall have **1.5 ft.** of freeboard for lowest floors, including basements and crawlspaces.



Proposed Standard: Freeboard

Current Criteria:

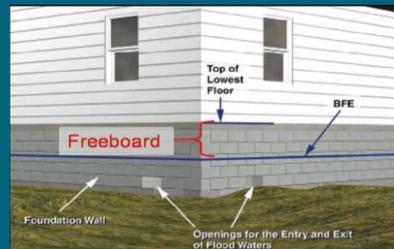
Lowest floor elevation, including basement, to be at or above B.F.E.

Proposed Standard:

All new construction or substantially improved structures located within or adjacent to a FEMA mapped floodplain shall have 1.5 feet (18 inches) of freeboard for lowest floors, including basements and crawl spaces.

Alternate:

Freeboard of 0.5 feet or 1.0 feet



		Lot Scenarios			FIRM Map Scenarios		
Tidal	Non-Tidal	Recorded Lots Grandfathered	Proposed Subdivision >= 50 lots or 5 acres	Proposed Subdivision <50 lots or 5 acres	Non-Delineated Floodplain	Delineated Floodplain No BFE (Zone A)	Delineated Floodplain with B.F.E. (Zone AE)
X	X	X	X	X		X	X

PUBLIC COMMENT

Path Forward

Dates/Times/Topics for next Committee meetings

March – Finalize proposed minimum standards
Wednesday 3/28/2012 Felton Farmington Rm.

May 4 – Vote on final recommendations

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