Flood Risk Review (FRR) Meeting

Madison County, Virginia and Incorporated Communities
Web Meeting and Conference Call
February 5, 2018, 3 PM – 4 PM
3 Reasons We Are Here Today

▸ To preview and discuss updated Flood Insurance Study (FIS) report and Flood Insurance Rate Maps (FIRMs) for Madison County, Virginia and Incorporated Communities.

▸ To examine the new study areas, discuss how the analysis and mapping have changed since previous FIRMs, and work collaboratively to ensure that the needs of the community and its partners are met. **BECAUSE THE EARLIER YOU KNOW THE BETTER!**

▸ To present a timeline of next steps.
Project Status

- We met with you during the Discovery Process
- We listened to you
- Here is what we learned from you
- Here is what we are able to study
- And what we weren’t able to study

Robinson River near Syria VA
Source: By Ser Amantio di Nicolao - Own work, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=36239278
Project Timeline

- **Discovery Meeting**
  - 6/4/2014

- **Flood Risk Review Meeting**
  - 2/5/2018

- **Preliminary Flood Insurance Rate Maps (FIRMs) Issued**

- **Community Consultation (CCO) Meeting**

- **Appeal/Protest Period**
  - 90 Days (starts after second posting in the *Federal Register*)

- **LFD (start of 6-month ordinance adoption/compliance period)**

- **Effective Maps**
How to Read a Flood Plain Map

What Does a Flood Plain Map Tell You?
Current vs. New FIRM Panels
What We Studied

Communities:

▸ Town of Madison and the unincorporated areas of Madison County, Virginia

Streams:

▸ All streams in Madison County with a drainage area over 1 square mile were restudied and mapped as Zone A areas except the existing Zone AE studies (Hughes River, Robinson River, and Rose River)
Flood Study Data Collection

- **Elevation and Bathymetric Data:**
  - The USGS LiDAR collection titled USGS Shenandoah Valley was collected in 2014 and was used for this update

- **Hydrologic modeling:**
  - Historical gage station data was used to estimate flows on portions of the Rapidan River and Robinson River using data from the following gage stations
    - USGS 01666500 - Robinson River near Locust Dale, VA
    - USGS 01665500 - Rapidan River near Ruckersville, VA
    - USGS 01667500 - Rapidan River near Culpeper, VA
  - National Landcover Dataset 2011 was used to compute the percent urbanization of each watershed
Statistical analysis of historical gage station data was used to estimate flows on portions of Rapidan River and Robinson River

Hydrologic Analysis

Flood Study Updates - Scoped Reaches
Madison County, VA
Hydraulic Analysis

- USACE HEC-RAS Version 5.0.3 was used for hydraulic modeling for all studied stream
- Updated flood hazard data for all the streams within the study area with a drainage area of 1 square mile or greater. Streams that have previously been mapped using detailed methods were not included in these analyses
- Culpeper, Greene, Orange, and Rappahannock Counties have recently had their Zone A flooding sources restudied using similar methods to this study. Page County has not yet been updated.

Modeling Notes
- Models do not include bridges or culverts and the hydraulic impact of structures may not be fully represented by the models
- Models do include the impact of inline structures (eg. dams), but information is based on LiDAR or estimates from aerial photography
Significant Impacts

• Addition of Zone A Hazard Areas on Previously Unstudied Streams

  - Beautiful Run Tributaries
  - Beaver Run
  - Beaverdam Run Tributary
  - Bootens Run
  - Brokenback Run
  - Cedar Run
  - Conway River Tributary
  - Crooked Run Tributary
  - Dark Run
  - Dark Run Tributaries
  - Deep Run Tributaries
  - Elk Run Tributaries
  - Finks Run
  - Garth Run
  - Garth Run Tributary
  - Gilmore Run
  - Glebe Run
  - Great Run Tributaries
  - Hannah Run
  - Hannah Run Tributary
  - Hogcamp Branch
  - Hughes River Tributary
  - Kinsey Run
  - Kinsey Run Tributary
  - Laurel Prong
  - Leathers Run
  - Leathers Run Tributaries
  - Little Crooked Run
  - Little Crooked Run Tributary
  - Little Dark Run
  - Mill Prong
  - Muddy Run
  - Mulatto Run
  - Negro Run
  - Popham Run Tributary
  - Quaker Run
  - Ragged Run
  - Rapidan River Tributaries
  - Robinson River Tributaries
  - Rocky Run
  - Rose River Tributary
  - Rosson Hollow Run Tributary
  - Shotwell Run
  - Shotwell Run Tributary
  - Staunton River
  - Strother Run
  - Whetstone Run
  - White Walnut Run
  - Whiteoak Run Tributaries
Significant Impacts

- Extension of Zone A Hazard Upstream of Previous Study Limits
  - Beautiful Run
  - Beaverdam Run
  - Conway River
  - Crooked Run
  - Deep Run
  - Great Run
  - Hughes River
  - Popham Run
  - Rapidan River
  - Robinson River
  - Rose River
  - Rosson Hollow Run
  - Whiteoak Run
Significant Impacts (continued)

- Robinson Run – Significantly Enlarged Floodplain
Significant Impacts (continued)

- Hughes River – Significantly Enlarged Floodplain
Significant Impacts (continued)

- Conway River – Significantly Enlarged Floodplain
Significant Impacts (continued)

- Conway River – Significantly Enlarged Floodplain
Significant Impacts (continued)

- Conway River – Significantly Enlarged Floodplain
Significant Impacts (continued)

- Conway River – Significantly Enlarged Floodplain
Significant Impacts (continued)

- Rapidan River – Significantly Enlarged Floodplain
Significant Impacts (continued)

- Rapidan River – Significantly Enlarged Floodplain
How Did the Floodplain Map Change?

Change in Floodplain Extents:

Red – Increase
Blue – Still Floodplain
Green - Decrease

FEMA GeoPlatform CSLF Map Viewer for Madison County, Virginia: http://arcg.is/1njbv8
Flood Risk Products

What are Flood Risk Products?

- **Flood Risk Map**
  - Illustrates an overall picture of flood risk

- **Flood Risk Report**
  - Explains the concept of flood risk
  - Identifies useful tools and reference materials

- **Flood Risk Database**
  - GIS and tabular data useful for making more informed flood mitigation decisions
Types of Flood Risk Products

- Flood Depth & Analysis Grids
- Changes Since Last FIRM
- Water Surface Elevation Grids
- Flood Risk Assessment / Economic Loss Calculations
- Areas of Mitigation Interest
Where Can I Find Flood Risk Products?

www.msc.fema.gov
Flood Risk Products Use: Managing Community Development

- Structure-based Depth of Flooding Analyses
- Prioritization of Mitigation Action
- Residential/commercial density in the floodplain
- Location/inundation area of historic events
- Properties with insurance policies and as a percentage of the population
- Areas of increasing population growth
- Areas requiring protection
Flood Hazard Mitigation Planning

Coordinated and participative Planning Process

- Identify hazards that can affect the jurisdiction
- Assess the risks from these hazards
- Develop strategy to mitigate the risks
- Adopt the plan and implement the mitigation strategy
- Refer to the Plan & Keep it Current

Mitigation Planning Cycle

- We are here!
- It's time to start assessing the impacts of the new floodplain boundaries
- So that you can develop a strategy to reduce flood risk

RiskMAP
Increasing Resilience Together
Project Timeline

Discovery Meeting 6/4/2014

Flood Risk Review Meeting 2/5/2018

Preliminary Flood Insurance Rate Maps (FIRMs) Issued (Spring / Summer 2018)

Community Consultation (CCO) Meeting

Appeal/Protest Period 90 Days (starts after second posting in the Federal Register)

LFD (start of 6-month ordinance adoption/compliance period)

Effective Maps
Give Us Your Comments

We want to hear from you!

- 30 day comment period
- Changes Since Last FIRM viewer located at: [http://arcg.is/1njbv8](http://arcg.is/1njbv8)
- Review the materials we sent previously
- We are available to answer questions
- Talk about mitigation actions in your community

Thank you for your participation!
For More Information

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