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Rappahannock-Rapidan Regional Hazard Mitigation Plan Update to Commence

Following receipt of a Pre-Disaster Mitigation grant from the Federal Emergency Management Agency (FEMA) through the Virginia Department of Emergency Management (VDEM), the Rappahannock-Rapidan Regional Commission and local emergency management and planning stakeholders are holding a kickoff meeting on Wednesday, March 29, 2017 to review and update the Rappahannock-Rapidan Regional Hazard Mitigation Plan.

Hazard Mitigation plans must be reviewed and updated every five years and are a requirement for maintaining eligibility for project grant funding through FEMA's Pre-Disaster Mitigation, Hazard Mitigation Grant, and Flood Mitigation Assistance programs. A steering committee including representatives from each participating jurisdiction in the Rappahannock-Rapidan region will guide the update process. However, other interested stakeholders, including citizens, elected officials, planning professionals, and government representatives are invited to attend the kickoff meeting.

An agenda for the meeting, along with the adopted Regional Hazard Mitigation Plan can be found at <http://www.rrregion.org/mitigation.html>.

Please contact Patrick Mauney at (540) 829-7450 with any questions.

Hazard Mitigation Plan Update Kickoff

When

March 29, 2017

1:30 p.m. to 3:00 p.m.

Where

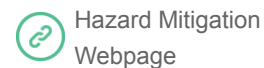
RRRC

420 Southridge

Parkway, #106

Culpeper, VA 22701

[Map](#)



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The Rappahannock-Rapidan Regional Commission is working with your local governments now to update the hazard mitigation plan and we need your help to make our plans even more personalized to the community!

How to Participate:

Attend the public meetings and forums to learn more about different plan focuses.

Answer our survey questions to help us better understand your areas hazards.

Tell us about your concerns you have with your home/land.
Let us know what strategies you already use!

Access your communities
current All-Hazard
Mitigation Plan & public
meeting schedule:

www.rrregion.org/mitigation

Access the community
surveymonkey.com/r/regionalhazard



420 Southridge Parkway
Suite 106
Culpeper, VA 22701
540 829 7450
planinfo@rrregion.org
www.rrregion.org

Developing/Updating hazard mitigation plans **enables the community** to:

- **Increase education and awareness** around threats, hazards, and vulnerabilities;
- **Build partnerships** for risk reduction involving government, organizations, businesses, and the public;
- **Identify long-term, broadly-supported strategies** for risk reduction;
- **Align risk reduction** with other state, tribal, or community objectives;
- **Identify implementation approaches** that focus resources on the greatest risks and vulnerabilities; and
- **Communicate priorities** to potential sources of funding.

It's time to update your Community's **ALL-HAZARD MITIGATION PLAN**

Hazard mitigation is the effort to reduce loss of life and property by lessening the impact of disasters. The Rappahannock-Rapidan Region uses a comprehensive, long-term mitigation plan (updated every 5 years) which is the most effective form of implementation!

Hazard mitigation planning helps identify risks and vulnerabilities associated with natural disasters, and develop long-term strategies for protecting people and property from future hazard events.

Mitigation plans are key to breaking the cycle of disaster damage, reconstruction, and repeated damage.

Planning Process

Gather
Input/Host
Forums

Analyze
Hazard
Risks

Develop
Mitigation
Strategies

Gather
Feedback

Implement
Plan

Appendix B: Page 3



1. Introducción

Necesitamos su ayuda!

El comission de Rappahannock-Rapidan está en proceso de planificación de mitigación de todos riesgos; empezó en Marzo 2017, y su participación es necesaria.

Culpeper, Fauquier, Madison, Orange, Rappahannock counties y los candados de Culpeper, Gordonsville, Madison, Orange, Remington, y Warrenton son trabajando juntos para actualizar el plan. El proposito del plan es identificar y evaluar los riesgos naturales de las comunidades y determinar la mejores formas de minimizar o manejar esos riesgos.

Al finalizar, el plan será presentado a cada grupo participando para su adopción y acuerdo. Y presentado a la División de Administración de Emergencias de Virginia y la Agencia Federal para el Manejo de Emergencias para su revisión y aprobación.

Este cuestionario es una oportunidad de compartir sus opiniones y participar en el proceso de planificar. La información que nos da nos ayudará a entender mejor sus preocupaciones de riesgo y puede iniciar actividades de mitigación que deberían ayudar a disminuir el impacto de futuros eventos de peligro.

Si tiene alguna pregunta con respecto a esta encuesta, o si desea conocer más formas de participar en proceso de planificar, comuníquese con Patrick Mauney a (540) 829-7450 o' visita <http://www.rrregion.org/mitigation.html>.

2. Q1

1. Dónde vive?

- ☐ Culpeper County
 ☐ Rappahannock County
 ☐ Town of Orange
☐ Fauquier County
 ☐ Town of Culpeper
 ☐ Town of Remington
☐ Madison County
 ☐ Town of Gordonsville
 ☐ Town of Warrenton
☐ Orange County
 ☐ Town of Madison
☐ Otro? Porfavor especifica...

2. ¿Qué tan preocupado está de la posibilidad de que nuestra comunidad sea afectada por un desastre?

- ☐ Muy preocupado
 ☐ Más o menos preocupado
 ☐ No preocupado

3. ¿Alguna vez ha sufrido o' sido afectado por un desastre?

- ☐ Si
☐ No

4. En caso afirmativo, indique el gravedad de preocupación por tipo de desastre:

	1	2	3	4	5
Inundación	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Huracán o Tormenta Tropical	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tornado	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fuego de Bosque	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tormenta de Nieve	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tormenta Fuerte / Lluvia Torrencial	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Otro? Especifica:

3. Q4

5. Porfavor selecciona los tres riesgos que piensa son lo mas fuerte en su comunidad:

- | | |
|---|---|
| <input type="checkbox"/> Sequía | <input type="checkbox"/> Terrorismo |
| <input type="checkbox"/> Terremoto | <input type="checkbox"/> Enfermedades transmitida por sancudos. |
| <input type="checkbox"/> Erosión | <input type="checkbox"/> Sumideros |
| <input type="checkbox"/> Temperaturas Extremas | <input type="checkbox"/> Tormenta Fuerte / Lluvia Torrencial |
| <input type="checkbox"/> Inundación | <input type="checkbox"/> Tornados |
| <input type="checkbox"/> Huracán o Tormenta Tropical | <input type="checkbox"/> Fuego de Bosque |
| <input type="checkbox"/> Deslizamiento de Tierra | <input type="checkbox"/> Tormenta de Nieve |
| <input type="checkbox"/> Otro? Porfavor especifica... | |

6. Su calle se inunda?

- ☐ Si
- ☐ No

7. Si? Porfavor especifica el nombre de calle.

8. Si? Cuántas veces inundó este año?

9. Tu hogar es localizada en un "Llanura de inundación"?

- ☐ Si
- ☐ No
- ☐ No sé

10. Tiene seguridad de inundación?

- ☐ Si
- ☐ No
- ☐ No sé

11. No? Por cuál razón no tiene seguridad de inundación?

- ☐ No esta localizada en un lugar que sufra de inundaciones.
- ☐ Muy cara
- ☐ No es necesario porque nunca se inundó.
- ☐ No es necesario porque mi propiedad esta elevado o' protegido de otro forma
- ☐ Nunca lo he considerado

Otro? Especifica...

4. Q8

12. Ha hecho algo para que su hogar o zona sea más resistente a los peligros?

☐ Si

☐ No

13. Si? Porfavor explica...

14. ¿Está interesado en hacer algo por hacer su hogar/zona más resistente a los peligros?

☐ Si

☐ No

15. Será que los incentivos como los descuentos de seguros, los incentivos fiscales a la propiedad o los préstamos hipotecarios de bajo interés le motivan a tomar medidas adicionales para proteger su propiedad de desastres naturales y inundaciones?

☐ Si

☐ No

☐ No Sé

16. No? Porque?

5. Q11

17. ¿Cuál será la forma más efectiva de recibir información sobre cómo hacer que su hogar/zona sean más resistentes a los peligros?

☐

Diario

☐

Correo electrónico

☐

Televisión

☐

Sito web de la comunidad

☐

Radio

☐

Reuniones públicas

☐

Correo

☐

Facebook, Twitter, o otros

☐

Otro? Cuáles?

18. En su opinión, ¿cuáles cosas puede hacer su gobierno local para reducir o eliminar el riesgo de daños futuros en su hogar/zona?

19. ¿Hay alguna otra problema relacionada con la reducción de riesgo o' con peligros o' desastres en la comunidad que usted piensa que son importantes?

6. Q14

20. Hay varias actividades-comunitario pueden reducir nuestro riesgo de peligros. En general, estas actividades se clasifican en una de las siguientes seis categorías. Por favor, indica como importante creas que son cada uno para que su comunidad considere la posibilidad de perseguir.

	Muy importante	Más o menos importante	no importante
Prevención: Acciones administrativas o regulatorias que influyen en la forma en que se desarrolla la tierra y se construyen los edificios. Los ejemplos incluyen planificación y zonificación, códigos de construcción, y más.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Protección de la Propiedad: Acciones que implicaron la modificación de edificios existentes para protegerlos de un peligro o remoción de la zona de peligro. Los ejemplos incluyen adquisición, reubicación, elevación y más.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Protección de Recursos Naturales: Acciones que, además de minimizar las pérdidas de peligros, también preservan o restauran las funciones de los sistemas naturales. Los ejemplos incluyen la protección de la llanura inundable, y más.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Muy importante

Más o menos importante

no importante

Proyectos

Estructurales: Acciones destinadas a disminuir el impacto de un peligro por medio de modificando la progresión natural del peligro. Los ejemplos incluyen presas, diques, cuencas de retención / retención, y más.

☐☐☐

Servicios de

Emergencia: Acciones que protegen a las personas y los bienes durante y inmediatamente después de un evento de peligro. Los ejemplos incluyen sistemas de alerta, planificación de evacuación, y más.

☐☐☐

Educación Pública y

Concientización: Acciones para informar a los ciudadanos sobre los peligros y las técnicas que pueden usar para protegerse a sí mismos y sus propiedades. Los ejemplos incluyen proyectos de extensión, y más.

☐☐☐

7. Wrapup

21. Gracias por su participación:

Esta encuesta puede ser presentada anónimamente. Sin embargo, si desea recibir información sobre próximas reuniones públicas para la actualización del plan de mitigación de riesgos, indique su nombre y información de contacto:

Nombre:	<input type="text"/>
Dirección:	<input type="text"/>
Correo electrónico	<input type="text"/>
Número de teléfono:	<input type="text"/>

Rappahannock-Rapidan Hazard Mitigation Plan Survey

1. Introduction

We need your help!

The Rappahannock-Rapidan Region is currently engaged in a hazard mitigation planning process beginning in March 2017, and your participation is important to us!

Culpeper, Fauquier, Madison, Orange, Rappahannock counties and the towns of Culpeper, Gordonsville, Madison, Orange, Remington, and Warrenton are working together to update the region's 2012 Hazard Mitigation Plan. The purpose of the plan is to identify and assess the community's natural hazard risks (such as floods, hurricanes, and ice storms), and determine how to best minimize or manage those risks.

Upon completion, the plan will be presented to each local governing body for adoption and submitted to the Virginia Division of Emergency Management and Federal Emergency Management Agency for review and approval.

This survey questionnaire provides an opportunity for you to share your opinions and participate in the mitigation planning process. The information you provide will help us better understand your hazard concerns and can lead to mitigation activities that should help lessen the impact of future hazard events.

If you have any questions regarding this survey, or would like to learn about more ways you can participate in the development of the regional Hazard Mitigation Plan Update, please contact Patrick Mauney at (540) 829-7450 or visit <http://www.rrregion.org/mitigation.html>.

Rappahannock-Rapidan Hazard Mitigation Plan Survey

2.

1. In what town or county do you live?

2. How concerned are you about the possibility of our community being impacted by a disaster?

3. How many times have you been impacted by the following disasters?

	0	1	2	3	4	5 or more
Flood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hurricane/Tropical Storm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tornado	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wildfire	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Winter Storm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Severe Thunderstorm/Hail	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

Rappahannock-Rapidan Hazard Mitigation Plan Survey

3.

4. Please select the top three hazards you think are the highest threat to your neighborhood:

- | | |
|---|---|
| <input type="checkbox"/> Drought | <input type="checkbox"/> Man-made Hazards (terrorism, hazardous chemical spill) |
| <input type="checkbox"/> Earthquake | <input type="checkbox"/> Mosquito Borne Disease |
| <input type="checkbox"/> Erosion | <input type="checkbox"/> Sinkholes |
| <input type="checkbox"/> Extreme Temperatures | <input type="checkbox"/> Severe Thunderstorms |
| <input type="checkbox"/> Flooding | <input type="checkbox"/> Tornadoes |
| <input type="checkbox"/> Hurricanes/Tropical Storms | <input type="checkbox"/> Wildfires |
| <input type="checkbox"/> Landslides | <input type="checkbox"/> Winter Storms (Ice, Snow) |
| <input type="checkbox"/> Other (please specify) | |

Rappahannock-Rapidan Hazard Mitigation Plan Survey

4.

5. Is your home located in a floodplain?

- ☐ Yes
- ☐ No
- ☐ Not Sure

6. Do you have flood insurance?

- ☐ Yes
- ☐ No
- ☐ Not Sure

7. Please select the main reason you do not have flood insurance:

- ☐ Not located in floodplain
- ☐ Too expensive
- ☐ Not necessary because it never floods
- ☐ Not necessary because I'm elevated or otherwise protected
- ☐ Never really considered it

Other (please specify)

Rappahannock-Rapidan Hazard Mitigation Plan Survey

5.

8. Have you taken any actions to make your home or neighborhood more resistant to hazards?

- ☐ Yes
- ☐ No

If yes, please specify.

9. Are you interested in making your home or neighborhood more resistant to natural hazards?

- ☐ Yes
- ☐ No

10. Would incentives motivate you to take additional steps to protect your property from natural hazards (e.g. insurance discounts, property tax breaks, low interest home loans)?

- ☐ Yes
- ☐ No
- ☐ Not Sure

Rappahannock-Rapidan Hazard Mitigation Plan Survey

6.

11. What is the most effective way for you to receive information about how to make your home and neighborhood more resistant to hazards?

- | | |
|---|--|
| <input type="checkbox"/> Newspaper | <input type="checkbox"/> Email |
| <input type="checkbox"/> Television | <input type="checkbox"/> Community website |
| <input type="checkbox"/> Radio | <input type="checkbox"/> Public meetings |
| <input type="checkbox"/> Direct Mailings | <input type="checkbox"/> Social Media |
| <input type="checkbox"/> Other (please specify) | |

12. Please provide any suggestions your local government could take to reduce the risk of future hazard damages in your neighborhood.

Rappahannock-Rapidan Hazard Mitigation Plan Survey

7.

13. Thank your for your participation!

This survey may be submitted anonymously. However, if you would like to receive information regarding upcoming public meetings for the hazard mitigation plan update, please provide your name and contact information:

Name:

Address:

Email Address:

Phone Number:



August 2017 RRRC Newsletter

Meetings this Month

August 8th

Foothills Housing Network
[RRRC Board Room](#) | 10am

August 15th

GO Virginia Region 9 Council
[Daniel Technology Center](#), Culpeper |
2:30pm

August 23rd

Regional Commission
[RRRC Board Room](#) | 1pm

August 29th (Tentative)

Hazard Mitigation Update Committee
[RRRC Board Room](#) | 10am

August 31st

Commuter Services & FAMS
Transportation Day
[7-11, Route 29](#), Warrenton | 5am to 10am

Land Use & Environment Committee
[RRRC Board Room](#) | 10am



RRRC on Facebook



RRRC on Twitter



RRRegion.org

SAVE THE DATE

2017 RRRC Annual Meeting
Wednesday, September 27th

Details Forthcoming

[View the Full Calendar of Past & Upcoming Meetings](#)

RRRC Accepting Nominations for 2017 Leadership Awards!

The Regional Commission is now accepting nominations for the 2017 Regional Distinguished Leadership Awards through **August 25th**. 2017 marks the 11th year of the awards program that recognize one citizen and one government leader for their service to the Rappahannock-Rapidan region. Both awards will be presented at the RRRC Annual Meeting on September 27th.

[Nominations may be submitted online](#) or you may contact Patrick Mauney at (540) 829-7450 or plmauney@rrregion.org with any questions.



RRRC Vice-Chair Robert Coiner Re-Elected as VAPDC President

Congratulations are in order to RRRC Vice-Chair and Town of Gordonsville Mayor Robert Coiner on his re-election as President of the Virginia Association of Planning District Commissions (VAPDC). Prior to being elected President for a second term, Coiner served as VAPDC's First Vice President, member of the VAPDC Legislative Committee, and member, now Chair, of the VAPDC Audit Committee.

Mayor Coiner is presently the longest-serving member of the Rappahannock-Rapidan Regional Commission, having been appointed to RRRC in April 2005.

RRRC & DCR to Host Floodplain Management Workshop October 11th

RRRC and the Virginia Department of Conservation and Recreation will host a one-day Floodplain Management Workshop on Wednesday, October 11th beginning at 9am. The workshop will be held at the Culpeper Community Room at 740 Old Brandy Road in Culpeper. Lunch will be provided.

To register, please send an email to Michelle Edwards at medwards@rrregion.org or call (540) 829-7450.

The workshop will cover a wide range of topics related to Floodplain Management, including:

- National Flood Insurance Program (NFIP) Overview
- Flood Ordinances & Permitting
- Flood Insurance Rate Maps (FIRMs)
- Accessing and Using Flood Hazard Data
- Pre- and Post-Disaster Considerations
- Community Rating System (CRS)
- Model Ordinance Updates
- Virginia Flood Risk Information System (VFRIS)
- Virginia Dam Safety Database

The workshop is open to all interested participants, but is specifically targeted to locally-designated floodplain administrators, zoning administrators, building officials, GIS managers, emergency management personnel, local planning and engineering staff, and planning commissioners.

The Regional Commission, in coordination with the Counties and Towns in the region, is in the process of updating the Rappahannock-Rapidan Regional Hazard Mitigation Plan.

A critical piece of the update process is public engagement, and we are gathering local information and input through public surveys related to natural hazards and their effect on the region. Please take a few minutes to complete the surveys at the links below:

English: <http://www.surveymonkey.com/r/regionalhazards>

Español: <http://www.surveymonkey.com/r/disastros>

Thank you in advance for your participation! If you have questions or would like more information on the Hazard Mitigation plan, please call the Regional Commission at (540) 829-7450.

DCR Seeking Input on Virginia Outdoor Survey



Since the 1970s, the Virginia Outdoors Survey (VOS) has been conducted as a random survey of Virginia residents. The survey assesses the popularity and needs for outdoor recreation facilities across the commonwealth. The results of the survey provide critical data points for the development of the Virginia Outdoors Plan by the Department of Conservation and Recreation (DCR).

For the first time, the 2017 survey is open to the general public. The Department of Conservation and Recreation invites you and all interested participants to take the 2017 Virginia Outdoors Survey. The survey is open through 5PM on Friday, August 24th.

[Click here to take the 2017 Virginia Outdoors Survey!](#)



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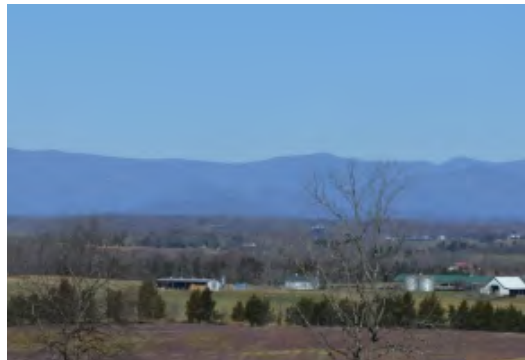


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June 2017 RRRC Newsletter

Meetings this Month

June 13th

Foothills Housing Network
[RRRC Board Room](#)

June 21st

Goose Creek TMDL Public Meeting
[Wakefield School](#), The Plains

June 28th

Regional Commission
[RRRC Board Room](#)



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Regional Commission Announces *Purely Piedmont* Local Food Brand

The Rappahannock-Rapidan Regional Commission recently unveiled a new brand name and logo to promote the region's locally-grown food and beverages. The ***Purely Piedmont*** brand will be used in a regional marketing campaign being funded by the United States Department of Agriculture.

This winter, the Commission launched a local foods branding study for the region with funding from the PATH Foundation. Following stakeholder interviews, a consumer survey and public input sessions, the Region's Food Policy Council unanimously voted to approve the *Purely Piedmont* brand name.

Feedback indicated that consumers strongly value knowing where their food comes from, with 75% of survey respondents stating it would make them much more likely to buy local food. The chosen name is intended to provide that knowledge and evoke the fresh and wholesome qualities survey respondents associated with the region's locally-grown food.

Initially, the brand will cover foods produced within the Commission's jurisdictions—Culpeper, Fauquier, Madison, Orange and Rappahannock Counties—with the opportunity for other counties in the Northern Piedmont of Virginia to participate in the future. The potential also exists for development of a regional label program similar to the state's Virginia Grown program.



FAMS One-Call Center Ribbon Cutting & Promotional Video

The [Foothills Area Mobility System](#) (FAMS) One-Call Center held its official opening, complete with ribbon-cutting, on March 30th. The One-Call Center is the region's one-stop information source for human services transportation options, including transit schedules, volunteer transportation, and also offers travel-training assistance to citizens in the Rappahannock-Rapidan region. FAMS and the One-Call Center are a direct result of a partnership between the Regional Commission, Rappahannock-Rapidan Community Services, Virginia Regional Transit, and numerous other regional partners. The collaboration continues to partner to implement recommendations from the Coordinated Human Services Mobility Plan, first developed in 2008.

In follow-up to the official opening, Culpeper Media Network developed a promotional video highlighting the FAMS One-Call Center, which can be seen here or on [YouTube](#).



Regional Hazard Mitigation Plan Update Needs Your Input!

Working with a steering committee made up area emergency managers, local planners and administrators, the Regional Commission has begun the five-year update to the Regional Hazard Mitigation Plan. A kickoff meeting to review the existing Hazard Mitigation plan and outline the update process timeline and responsibilities was previously held, with materials available at <http://www.rrregion.org/mitigation.html>.

Now, we are seeking your input on how hazard mitigation has affected you or your property, or may affect you in the future. A short survey is now open, and **available to all residents and business owners in the region** in English and Spanish. The surveys can be accessed at:

- English: <http://www.surveymonkey.com/r/regionalhazard>
- Español: <https://www.surveymonkey.com/r/disastros>

Information on future steering committee and public outreach meetings related to the Hazard Mitigation plan update will be posted to the RRRC website.

RRRC Welcomes New Planner to the Region

The Regional Commission is pleased to welcome Mr. Joe Costello to the Rappahannock-Rapidan region. Mr. Costello joined the Regional Commission as a Regional Planner on May 30th and will focus on a number of activities, including rural transportation projects and hazard mitigation planning. Mr. Costello is a recent graduate of the Master in Urban and Regional Planning program at Virginia Commonwealth University, where he took part in the Wilder Graduate Scholar Fellowship program in partnership with the Virginia Department of Social Services for two years. He also holds a Bachelor of Arts degree in Political Science and History from Christopher Newport University.

Joe can be reached at jcostello@rrregion.org or at (540) 829-7450 x14.

Foothills Housing Network Crafts Strategic Plan for Homelessness Response

The Regional Commission currently serves as lead agency for the Foothills Housing Network, which is a collaborative regional Continuum of Care partnership working to prevent and end homelessness in the region. The Commission has served in this role since 2009 and facilitates the efforts of homeless services providers in the region to coordinate responses and remain up to date on shifting requirements and

strategic planning effort involving FHN partners, stakeholders, and clients. The strategic planning process included a Leadership subcommittee focused on organizational governance and structure, a Homeless Systems subcommittee focused on data and analysis, and a Housing subcommittee focused on identifying housing options for FHN programs. An action plan from each subcommittee was created to identify short-term and long-term actions to be taken to ensure that FHN is positioned and structured to meet the needs of its clients, partner organizations, and funding partners moving forward. Questions about the Foothills Housing Network and the Regional Commission's role can be directed to Cathy Zielinski at cmzielinski@rrregion.org or (540) 829-7450.



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May 2018 RRRC News



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Meetings this Month

May 17thLand Use & Environment Committee
[RRRC Board Room](#) | 10amRegional Tourism Committee
[Culpeper Economic Center](#) | 10am**May 23rd**Hazard Mitigation Steering Committee
[RRRC Board Room](#) | 2pm**May 24th**Rural Transportation Committee
[RRRC Board Room](#) | 1:30pm**May 29th**Food Council
[RRRC Board Room](#) | 5:30pm

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Commuter Services Bike & Walk to Work Week Initiative Underway

RRRC Commuter Services is sponsoring the *Bike More, Drive Less* promotion in advance of National Bike to Work Day on May 18th. In the Rappahannock-Rapidan region, residents are encouraged to bike or walk to work or lunch, and provide feedback via a [short online survey](#). Those completing the survey by May 25th are eligible to win one of three custom Dutch Bicycles, similar to models used in bike-sharing programs across the country.

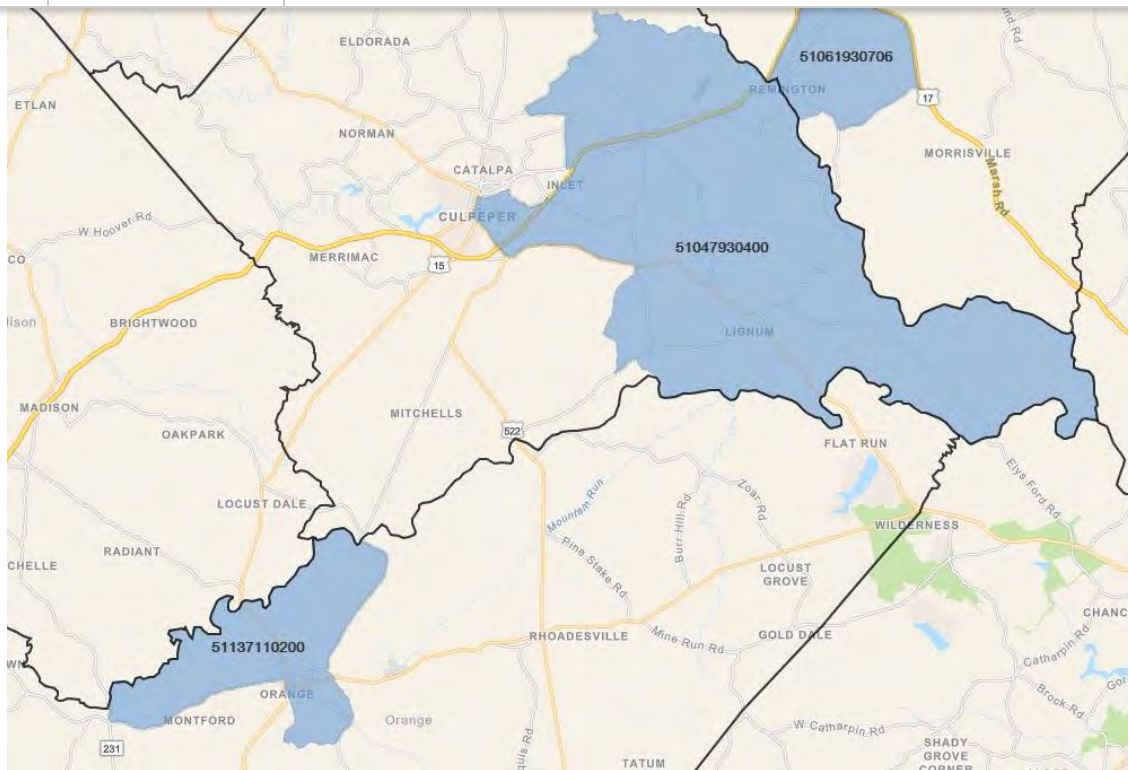
RRRC Commuter Services offers ride-matching services for commuters via carpools and vanpools, as well as other information on regional transit routes, commuter bus information, and multi-modal transportation. To reach Commuter Services, you may call Kristin Lam Peraza or Terry Snead at (540)



Three Census Tracts in the Region Nominated as Opportunity Zones

Three census tracts in the region - one each in Culpeper County, Fauquier County, and Orange County - were recently nominated as Opportunity Zones to the U.S. Department of Treasury, the Federal agency overseeing a new revitalization tool known as the Opportunity Zone and Opportunity Fund. The three tracts in the Rappahannock-Rapidan region are shown below, and a map of the nominated zones across the state is available via the [Department of Housing and Community Development](#). Areas including Remington, the Town of Orange, portions of the Town of Culpeper and Bealeton, are included in the nominated tracts.

As identified in the Federal Tax Cuts and Jobs Act of 2017, each state was allowed to submit nominations of qualified census tracts based on a proportional allotment across the country. In Virginia, 212 tracts were nominated and align with local and state economic incentives and priorities. The Opportunity Zone program will generally allow investors to receive tax benefits on unrealized capital gains through investment in qualified and designated census tracts. The nomination of opportunity zones by Virginia is an initial step in the implementation of this program.



GO Virginia Updates: Culpeper County Award and Council Nominations Sought

Governor Ralph Northam recently [announced approval of a GO Virginia grant award](#) to Culpeper County to support workforce training initiatives for machinists and welders at the Carver Center. The project was supported by contributions from Culpeper and Fauquier counties, and received strong support from the Regional Commission and Piedmont Opportunity Corridor Council (GO Virginia Region 9). New Pathways Tech Inc. will operate the facility in collaboration with Germanna Community College and the American Institute of Welding.

The award is the most recent for planned activities at the newly-renamed Carver Center, to include the ongoing work by Culpeper County, New Pathways, G.W. Carver Agriculture Research Center, G.W. Carver Food Enterprise Center, Rapidan Master Gardeners, Virginia State University, and Virginia Cooperative Extension, among others.

Also at this time, the Piedmont Opportunity Corridor Council (GO Virginia Region 9) is accepting nominations for Council members to serve terms beginning July 1, 2018. Members are sought to represent Chambers of Commerce in the area, as well as private sector at-large members. More information can be found at <http://www.govirginia9.org> and nominations are due by May 31, 2018.

Solar Workshop Presentations Now Available

More than 70 participants attended the Shedding a Light on Solar workshop hosted by RRRC and the Piedmont Environmental Council on April 13th near Remington, including local elected officials, planning commissioners, county and town staff, and interested citizens. Attendees heard from a diverse range of state agency representatives, solar energy professionals, and local planners from other areas of Virginia, and can take information back to their respective localities as solar energy projects from utility scale to rooftop installations continue to emerge in the region.

Presentations from the workshop are available on [RRRC's website](#), and a follow-up discussion is planned for the May 17th meeting of the [RRRC Land Use and Environment committee](#). Please contact Michelle Edwards (medwards@rrregion.org) or Joe Costello (jcostello@rrregion.org) at (540) 829-7450 with



Six-Year Improvement Program Public Hearing Scheduled for May 7th

The Commonwealth Transportation Board, Virginia Department of Transportation (VDOT), and the Department of Rail and Public Transportation (DRPT) are holding the annual Six-Year Improvement Program (SYIP) [Public Hearings](#) across Virginia for transportation projects recommended for funding for the FY 2019-2024 SYIP. The SYIP allocates public funds for highway, road, bridge, rail, bicycle, pedestrian, and public transportation projects.

In Culpeper, the SYIP Public Hearing will be held on Monday, May 7th beginning at 4:00 p.m. at the VDOT Culpeper District Auditorium. Meeting materials may be found on the [Commonwealth Transportation Board website](#).

Comments may also be submitted on road/highway projects to six-yearprogram@vdot.virginia.gov or on rail/public transportation projects to drptpr@drpt.virginia.gov by May 30, 2018.

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MailChimp



PRESS RELEASE

Date: Friday, May 8, 2018

Contact Information:

Patrick Mauney
plmauney@rrregion.org
(540) 829-7450

RRRC Accepting Comments on 2018 Regional Hazard Mitigation Plan Through June 29th

The Rappahannock-Rapidan Regional Commission, in coordination with local emergency management, public works, and planning staff, has completed revisions to the Rappahannock-Rapidan Regional Hazard Mitigation Plan and is currently accepting public comments on the draft plan. The Hazard Mitigation plan is a mandated plan for local governments to ensure eligibility for several grant programs through the Federal Emergency Management Agency (FEMA), including the Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation (PDM) programs.

Beginning in March 2017, regional and local stakeholders reviewed the most recent Hazard Mitigation plan that was adopted in 2012 and added information on recent natural hazard events including the 2011 earthquake, 2012 derecho, tornadoes and severe wind storms in 2016 and 2017, and winter storms in 2016. In addition, RRRC staff completed an update to the plan's vulnerability assessment utilizing FEMA's HAZUS modeling software for hurricanes, tornadoes, and earthquakes, and local staff provided new information related to local capabilities and new strategies to mitigate the effects of natural hazards on the region's residents and property.

The draft plan can be accessed on RRRC's Mitigation Planning webpage at <http://www.rrregion.org/mitigation.html>. Comments are requested by **June 29, 2018** and can be sent via email to planinfo@rrregion.org or to the attention of Patrick Mauney at RRRC, 420 Southridge Parkway, Suite 106, Culpeper, VA 22701.

About the Rappahannock-Rapidan Regional Commission

The Rappahannock-Rapidan Regional Commission serves the counties of Culpeper, Fauquier, Madison, Orange, and Rappahannock, and the towns of Culpeper, Gordonsville, Madison, Orange, Remington, The Plains, Washington, and Warrenton. The 21-member RRRC board includes elected and appointed officials appointed by each member jurisdiction. Localities with greater than 3,500 residents appoint two members to the regional commission, while localities with fewer than 3,500 residents appoint one member to the regional commission.

The Rappahannock-Rapidan Regional Commission facilitates a collaborative approach to regional cooperation, and serves as a convening forum for the interaction of appointed and elected local

government officials, regional stakeholders and citizen members. The Regional Commission coordinates a broad range of regional planning activities – including multi-modal and human services transportation, environmental planning, homelessness and affordable housing coordination, regional tourism, agricultural, and economic development activities. The Rappahannock-Rapidan Regional Commission is located in Culpeper, VA, and can be found online at <http://www.rrregion.org/>.

...of weatherford, Okla. and Eddy Wiles Sr. of Albright, W.Va.; a step grandmother, Marie Wiles of Albright, W.Va., and many aunts, uncles, and cousins. He was preceded in death by a sister, Ariana Marie; and three grandmothers, Clara Wiles, Melanie Thomashunis, and Patricia "Gert" Bolyard.

Friends called at the Field Funeral Home in Masontown on Sunday, June 24, 2018, from 2 until 9 p.m. Funeral services were held 11 a.m., Monday, June 25, 2018, at the Field Funeral Home, with the Rev. Ray Frankhouser officiating. Interment followed at the Mt View Cemetery in Tunnelton.

In lieu of flowers, memorial donations can be made to the Field Funeral Home, 10537 Veterans Memorial Hwy., Masontown, WV 26542, to help the family with funeral expenses.

Condolences may be extended online to the family at www.fieldfuneralhome.com.



Matthew Ian Kulenguski

Matthew Ian Kulenguski, beloved son of Beverly Gay Nichols of Charlottesville, and Michael A. Kulenguski of Madison, Va., and brother to Kimberly A. Kulenguski of Madison, Va., died on Thursday, June 14, 2018 in Nashville, Tenn. He is also survived by a large loving family of numerous aunts, uncles and cousins.

Ian was born on July 3, 1990, in Fort Worth, Tex. In 1998, he moved with his family to Madison, Va., where he graduated from Madison County High School. He also attended Radford University in southern Virginia.

He was an accomplished musician and used those talents to entertain his friends and family. He also shared his love of music as a D.J. at numerous events. He was a gentle soul with a special place in his heart for his many young relatives. He will sorely missed by his friends and family.

In celebration of his life, a memorial service will be held on Friday, June 29, 2018, from 6 to 8 p.m. at the Blue Ridge Café in Ruckersville, Va.

RRRC comments due Friday

Input sought on hazard mitigation plan

The Rappahannock-Rapidan Regional Commission, in coordination with local emergency management, public works, and planning staff, has completed revisions to the Rappahannock-Rapidan Regional Hazard Mitigation Plan and is currently accepting public comments on the draft plan. The Hazard Mitigation plan is a mandated plan for local governments to ensure eligibility for several grant programs through the Federal Emergency Management Agency (FEMA), including the Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation (PDM) programs.

Beginning in March 2017, regional and local stakeholders reviewed the most recent Hazard Mitigation plan that was adopted in 2012 and added information on recent natural hazard events including the 2011 earthquake, 2012 derecho, tornadoes and severe wind storms in 2016 and 2017, and winter storms in 2016. In addition, RRRRC staff completed an update to the plan's vulnerability assessment utilizing FEMA's HAZUS modeling software for hurricanes, tornadoes, and earthquakes, and local staff provided new information related to local capabilities and new strategies to mitigate the effects of natural hazards on the region's residents and property.

The draft plan can be accessed on RRRRC's Mitigation Planning webpage - <http://www.rrregion.org/mitigation.html>. Comments are requested by June 29 and can be sent via email to planinfo@rrregion.org or to the attention of Patrick Mauney at RRRRC, 420 Southridge Parkway, Suite 106, Culpeper, VA 22701.

Never leave your grill unattended. Electric Shock Drowning (ESD): Electric Shock Drowning happens when marina or onboard electrical systems leak electric current into the water. The current then passes through the body and causes paralysis. When this happens, a person can no longer swim and ultimately drowns. Here are tips for swimmers and boat owners:

Tips for swimmers

- Never swim near a marina, dock or boatyard, or near a boat while it's running.

- Obey all "no swimming" signs on docks.

Tips for boat owners

- Avoid entering the water when launching or loading a boat. Docks or boats can leak electricity into the water causing water electrification.

- Each year, and after a major storm that affects the boat, have the boat's electrical system inspected by a qualified marine electrician to be sure it meets the required codes of your area, including the American Boat & Yacht Council. Make the necessary repairs if recommended.

MADISON FARMERS' MARKET

EVERY SATURDAY AT HOOVER RIDGE PARK

Upcoming Events

All Blues Day

June 30th
8am - 12pm

- Mystery Blue Foods To Sample

Sassy Salad Saturday

July 7th
8am - 12pm

- Free Kids Activities
- Lawn Management & Soil Testing
- 'What Is Bugging Your Garden?' Workshop

Our Other Weekly Markets!

July 14th
8am - 12pm

July 21st
8am - 12pm

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Madison Farmers' Market

MadisonFarmersMarket.info

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[madfarmers](https://www.instagram.com/madfarmers) • (540) 948-6881

Community briefs

Community briefs

Jun 17, 2018



Town officials gathered last fall for the official opening of the Lake Pelham Connector Trail. The trail will be closed all this week for utility work.

STAR-EXPONENT FILE PHOTO

Lake Pelham Connector Trail to close for utility repairs

The Lake Pelham Connector Trail linking Lakeview to Yowell Meadow Park will be closed starting Monday for sewer line repairs. It will be closed all week through Friday, according to the town of Culpeper.

During these operations, work zones will be established for routing vehicular and pedestrian traffic safely through the corridor.

Dementia Conference

Rappahannock-Rapidan Community Services is hosting an all-day conference, "Helping Throughout the Journey of Dementia," 8:30 a.m. to 4:30 p.m. on Tuesday at Germanna Community College Daniel Technology Center in Culpeper. The featured speaker will be international expert Teepa Snow. The \$30 registration fee includes breakfast and lunch with limited scholarships available for unpaid family caregivers. For information, call 540/829-6405.

Sumerduck Ruritan Buffet Breakfast

The Sumerduck Ruritan Club will serve a country buffet breakfast 7:30 to 10 a.m. on Saturday June 23. All-you-can-eat eggs, bacon, sausage, hash browns, pancakes, fruit and sausage gravy and biscuits for \$8/adults, \$3.50/children ages 4 to 10 and children and younger eat free. For information, contact 540/445-1714.

Voices of Addiction & Recovery

Windmore Foundation for the Arts will host a "Voices of Addiction & Recovery Symposium" at 6:30 p.m. on June 27 at Culpeper Baptist Church, 318 S. West St. in the town of Culpeper. The free public event will focus on the disease of addiction, what community leaders are doing to help and resources that are available.

There will be poetry performances, recovery art displays, a panel discussion with civic leaders and community coalition resources. Sponsors include Rappahannock Electric Cooperatives and Rappahannock-Rapidan Community Services. For information, contact 540/547-4333.

Regional Hazard Mitigation Plan input sought

The Rappahannock-Rapidan Regional Commission, in coordination with local emergency management, public works, and planning staff, has completed revisions to the Rappahannock-Rapidan Regional Hazard Mitigation Plan and is currently accepting public comments on the draft plan. The Hazard Mitigation plan is a mandated plan for local governments to ensure eligibility for several grant programs through FEMA.

Beginning in March 2017, regional and local stakeholders reviewed the most recent Hazard Mitigation plan that was adopted in 2012 and added information on recent natural hazard events including the 2011 earthquake, 2012 derecho, tornadoes and severe wind storms in 2016 and 2017, and winter storms in 2016.

In addition, RRRC staff completed an update to the plan's vulnerability assessment utilizing FEMA's modeling software for hurricanes, tornadoes, and earthquakes, and local staff provided new information related to local capabilities and new strategies to mitigate the effects of natural hazards on the region's residents and property.

The draft plan can be accessed at <http://www.rrregion.org/mitigation.html>. Comments are requested by June 29 and can be sent via email to planinfo@rrregion.org or to the attention of Patrick Mauney at RRRC, 420 Southridge Parkway, Suite 106, Culpeper, VA 22701.

'Chasing the Dragon' community education event

The Warrenton Recovery Center will host a community education event and free screening of the documentary, "Chasing the Dragon," at 6 p.m. on June 26 at the center, 30 John Marshall St. in Warrenton.

Present for the movie about the surge in opioid overdoses will be Katrina King, who was interviewed for the documentary. For information, contact 540/428-5415 or 540/308-3729.

Green Applications job fair

The Orange Workforce Center will hold a job fair for Gordonsville-based Green Applications from 1 to 4 p.m on June 28 at the center, 127 Belleview Ave. in the town of Orange.

The company is looking to hire for all shifts in the positions of press operator, screens room attendant, press helpers, shipping technicians, bindery technicians, industrial maintenance mechanics and customer service representatives. For information, contact 571/762-0640.

Culpeper County High School 40th Class Reunion

Planning is underway for the Culpeper County High School Class of 1978 Reunion being held Sept. 22 at Pepper's Grill in the town of Culpeper beginning with a social hour at 5:30 p.m. A group picture will be taken at 6:45 p.m., buffet dinner at 7 p.m. followed by music and dancing until 11.

Tickets are \$40 or \$75/couple. Make checks payable to Class of 1978 and send to Terri Brown, Treasurer at 11491 Fox Hill Rd. Culpeper, Va. 22701.

Extra reunion activities will include the Sept. 21 football game at Culpeper County High School and a tour of CCHS sometime on Sept. 22, time to be announced, and golfing.

For information, contact classof1978culpeper@gmail.com.



RAPPAHANNOCK-RAPIDAN REGIONAL HAZARD MITIGATION PLAN UPDATE STEERING COMMITTEE MEETING AGENDA

Wednesday, March 29, 2017 | 1:30 p.m.

<u>Agenda Item</u>	<u>Lead</u>	<u>Schedule</u>
1. Welcome and Introductions	Committee Members	1:30 – 1:35
2. Regional Hazard Mitigation History	Patrick Mauney, RRRC	1:35 – 1:50
3. State Hazard Mitigation Status	Amy Howard, VDEM	1:50 – 2:10
4. Proposed Plan Update Timeline	Patrick Mauney, RRRC	2:10 – 2:20
5. Plan Update Responsibilities	Committee Members	2:20 – 2:40
<ul style="list-style-type: none"> - Role of the Regional Commission - Local Jurisdiction Responsibilities - Data Needs 		
6. Plan Integration & Coordination	Patrick Mauney, RRRC Committee Members	2:40 – 2:50
<ul style="list-style-type: none"> - Local Emergency Operation Plans - Local Comprehensive Plans - State Hazard Mitigation Plan - Others? 		
7. Next Steps	Committee Members	2:50 – 2:55
8. Future Meetings & Additional Questions	Committee Members	2:55 – 3:00

Additional information available at <http://www.rrregion.org/mitigation.html>



**RAPPAHANNOCK-RAPIDAN REGIONAL HAZARD MITIGATION PLAN UPDATE
STEERING COMMITTEE
MEETING AGENDA**

Monday, August 28, 2017 | 2:00 p.m.

<u>Agenda Item</u>	<u>Lead</u>	<u>Schedule</u>
1. Welcome and Introductions	Committee Members	2:00 – 2:05
2. Plan Update Activities & Status	RRRC	2:05 – 2:30
<ul style="list-style-type: none">- Local Request Status- Data and Mapping Updates- Integration/Coordination with State Hazard Mitigation Plan		
3. Presentation: iFlows and Rappahannock River Stream Gauge Monitoring	Mark Slauter, VDEM	2:30 – 3:10
4. Local Input	Committee Members	3:10 – 3:25
<ul style="list-style-type: none">- Local Capability Assessment- Unique Hazards per Locality- Significant Events		
5. Next Steps	RRRC	3:25 – 3:30
<ul style="list-style-type: none">- Local Meetings- Mitigation Strategy Discussions- Floodplain Management Workshop Announcement		

Additional information available at <http://www.rrregion.org/mitigation.html>



**RAPPAHANNOCK-RAPIDAN REGIONAL HAZARD MITIGATION PLAN UPDATE
STEERING COMMITTEE
MEETING AGENDA**

Wednesday, May 23, 2018 | 2:00 p.m.

<u>Agenda Item</u>	<u>Lead</u>	<u>Schedule</u>
1. Welcome and Introductions	Committee Members	2:00 – 2:05
2. Plan Update Activities & Status <ul style="list-style-type: none">- Hazard Mitigation Overview- Status of Local Requests- Draft Plan Overview	Patrick Mauney, RRRC	2:05 – 2:20
3. Vulnerability Assessment Overview <ul style="list-style-type: none">- Flood Vulnerability- Wildfire	Joe Costello, RRRC	2:20 – 2:50
4. Capability Assessment & Mitigation Strategy Review	Patrick Mauney, RRRC	2:50 – 3:10
5. Next Steps <ul style="list-style-type: none">- Public Comment Period- Submission to VDEM & FEMA- Local Adoption Process	Committee Members	3:10 – 3:30

Additional information available at <http://www.rrregion.org/mitigation.html>

RAPPAHANNOCK-RAPIDAN REGIONAL HAZARD MITIGATION PLAN UPDATE - MEETING SIGN-IN

GRANT # PDM-2016-002

MEETING DATE: MARCH 29, 2017 - KICKOFF MEETING

NAME	JURISDICTION/ORGANIZATION	PHONE	EMAIL ADDRESS
Patrick Mawney	RRRC/PD9	570 829-7452	pmawney@rrregion.org
Amy Howland	VDEN	804 897 9974	Amy.Howland@den.virginia.gov
Bill Oaten	Culpeper Emergency Services	540-737-7161	boaten@culpepercounty.gov
Warren Jenkins	Culpeper Emergency Services	540-727-7161	wjenkins@culpepercounty.gov
Rosset Finks	Madison County	540-718-0474	rfinks@madisonva.virginia.gov
Richie Burke	Rappahannock Co.	540-522-2288	rburke@rappahannockcounty.gov
Joey Blankenship	Town of Culpeper	540-229-7810	jblankenship@culpeperva.gov
Michelle Edwards	KKRC	540 829 7450	medwards@rrregion.org
Catherine Hughes	VDEN	804-629-5700	catherine.hughes@den.virginia.gov
Brennan Godfrey	Town of Manassas	540-347-1109	bgodfrey@manassasva.gov
LeAnn Perez	RRRC	—	—
Alexa Hussar	VDEN	804-624-1100	alexa.hussar@den.virginia.gov
John G Cooky	Town of Orange	540-672-6517	townplanner@townoforangeva.org
Dellée Randall	Town of Gordonsville	(540) 832-2233	dkerndall@gordonsville.org

RAPPAHANNOCK-RAPIDAN REGIONAL HAZARD MITIGATION PLAN UPDATE - MEETING SIGN-IN

GRANT # PDM-2016-002

MEETING DATE: AUGUST 28, 2017 - STEERING COMMITTEE MEETING

NAME	JURISDICTION/ORGANIZATION	PHONE	EMAIL ADDRESS
Patrice Mawry	PRR/PD9	829-7800	plmawry@rrregis.org
John G. Cully	Town of Orange	540-692-6917	Planner@townoforangeva.org
Michelle Edwards	RRRC		
Joe Costello	RRRC		
Mark Slanfor	VDWM	804 877 9189	mark.slantfor@vdm.virginia.gov
Catherine Hughes	VDWM	804-604-5700	catherine.hughes@vdm.virginia.gov
Bo Tucker	Town of Culpeper	540-347-1858	etucker@townofculpeperva.org
Kathy Hatten	VDH-Rapahannock-Rapidan Health District	540-718-1851	kathy.hatten@vdm.virginia.gov
Alexa Hussar	VDWM	804-624-1100	alexa.hussar@vdm.virginia.gov
Sarah Makiely	Fauquier Co. DHEM	540-422-8803	sarah.makiely@fauquiercountyva.org
Mr. Ganselquist	RRRC Co. OEM	540-270-4249	AG.9735@cs.com
Jim Hox	Town of Culpeper	(540) 825-0285	jim@culpeperva.org
Marken Jenkins	Culpeper Emergency Services	540-727-7161	wtjenkins@culpepercounty.gov
Bill Doten	Culpeper Emergency Services	540-727-7161	bdoten@culpepercounty.gov
Greg Nielsen	Hospice of the Piedmont	434-817-6913	greg.nielsen@hospice.org

GRANT # PDM-2016-002

MEETING DATE: AUGUST 28, 2017 – STEERING COMMITTEE MEETING

[illegible]

RAPPAHANNOCK-RAPIDAN REGIONAL HAZARD MITIGATION PLAN UPDATE - MEETING SIGN-IN

GRANT # PDM-2016-002

MEETING DATE: MAY 23, 2018 - STEERING COMMITTEE MEETING

NAME	JURISDICTION/ORGANIZATION	PHONE	EMAIL ADDRESS
Patrick Mauser	RRR	825-7450	plmauser@rrr.org
Catherine Hughes	VDEN	804-604-5700	catherine.hughes@vdem.virginia.gov
Nathan Maest	Orange	540-406-1454	nmaest@orangecountyva.gov
Jim Hoy	Town of Culpeper	540.826.0285	jhay@culpeperva.gov
Bill Doten	Culpeper County Emergency Services	540-727-7161	bdoten@culpeper-county.gov
Thomas Deussen	Culpeper County Emergency Services	540-423-2002	tdeussen@culpepercounty.gov
Kevin Williams	Rappahannock County Emergency Services	540-675-5340	kwilliams@RappahannockCountyVA.gov
Brian Gordon	Madison Emergency Management	540-948-5144	bgordon@madison.virginia.gov
Jimmy Stewart	Town of Remington	540-439-3826	jstewart@Remington-VA.Gov
Jeannette Smith	Town of Warrenton	540-347-2405	jsmith@warrentonva.gov
Kathy Hatter	VDH	540-718-1851	kathy.hatter@vdh.virginia.gov
AJR Caudenquist	Rappahannock County	540.270.4849	AJR9795@cs.com
Sara Madely	Fauquier Co. Fire/Rescue	540-428-1882	sara.madely@fauquiercounty.gov
Roger Wilson	Orange	540-406-9045	rwilson@orange-countyva.gov
Michelle Edwards	RRR		

Rappahannock-Rapidan Regional Commission Floodplain Management Workshop

740 Old Brandy Road Culpeper, VA 22701
October 11, 2017 | 9:00 AM to 4:00 PM



AGENDA

8:45 AM	Registration/Sign In/Introductions	
9:00 AM	Overview of the National Flood Insurance Program	Charley Banks, CFM NFIP Coordinator
9:30 AM	Floodplain Ordinances and Permitting <ul style="list-style-type: none">• Floodplain Management Regulations• Accessory Structures• Floodplain Ordinances and Administrative Procedure	Kristin Owen, AICP, CFM Floodplain Program Planner
11:00 AM	Break	
11:15 AM	Floodplain Ordinances and Permitting <ul style="list-style-type: none">• Floodplain Ordinances and Administrative Procedures• Permitting Development• Elevation Certificates	Kristin Owen, AICP, CFM
12:00 PM	Lunch	
12:30 PM	Flood Hazard Maps and Data <ul style="list-style-type: none">• Flood Insurance Rate Maps and Flood Insurance Studies• Accessing and Using Flood Hazard Data• Changing FIRMs and FIS Reports• Non-regulatory Products and Other Resources	Gina DiCicco, AICP, CFM Floodplain Program Planner
2:15 PM	Break	
2:30 PM	Pre-& Post-Disaster Considerations	Charley Banks, CFM
3:00 PM	Community Rating System	Kristin Owen, AICP, CFM
3:30 PM	DCR Division of Dam Safety and Floodplain Management Update <ul style="list-style-type: none">• Floodplain Management Program Overview• Dam Safety Database	Charley Banks, CFM Gina DiCicco, AICP, CFM
4:00 PM	Questions & Answers	
4:30 PM	Adjourn	

Rappahannock-Rapidan Regional Hazard Mitigation Plan Update

Steering Committee Kickoff Meeting
March 29, 2017



Kickoff Meeting Agenda

- Introductions
- History of Hazard Mitigation Planning in the Region
- Overview of Hazard Mitigation – VDEM
- The Plan Update Process
- Roundtable Discussion
 - Other organizations to formally include in the update process
 - Other existing plans to review and/or incorporate
- Brief Exercise: Hazard Risk Assessment
- Next Steps

Introductions

- Name
- Jurisdiction/Organization you Represent
- Past Experience with Hazard Mitigation?
- Any specific issues/concerns?
- Any specific goals/outcomes?

Why Are We Here?

- A hazard mitigation plan is a stakeholder-driven document that a state, tribal, or local government uses to describe risks and vulnerabilities as well as long-term strategies and implementation approaches for reducing loss of life and property from natural disasters. Mitigation plans are key to breaking the cycle of disaster damage, reconstruction, and repeated damage.
- FEMA Requirement: State, Tribal, Local governments must develop and adopt hazard mitigation plans as a condition for receiving certain non-emergency disaster assistance
- Plan must be updated and resubmitted to FEMA for approval every five years in order to maintain eligibility

Grant Eligibility Matrix for Hazard Mitigation Plans

https://www.fema.gov/hazard-mitigation-plan-requirement	Mitigation Plan Required?	
FEMA Assistance Program	State	Local
Individual Assistance (IA)	No	No
Public Assistance (PA) Categories A & B (Debris Removal, Emergency Protective Measures)	No	No
Public Assistance (PA) Categories C to G (Repairs to Damaged Infrastructure, Publicly Owned Buildings)	Yes	No
Fire Mitigation Assistance	Yes	No
Hazard Mitigation Grant Program (Planning Grant)	Yes	No
Hazard Mitigation Grant Program (Project Grant)	Yes	Yes
Pre-Disaster Mitigation Grant (Planning Grant)	No	No
Pre-Disaster Mitigation Grant (Project Grant)	Yes	Yes
Flood Mitigation Assistance (Planning Grant)	Yes	No
Flood Mitigation Assistance (Project Grant)	Yes	Yes

Rappahannock-Rapidan Regional Hazard Mitigation Planning History

- The first regional plan was developed from 2004 – 2005 and adopted by ten participating jurisdictions
- Use of consultant to drive planning process
- This initial plan remains the foundation of the current plan
- The required five-year update began in 2009
- Local staff worked with RRRC staff to review and update the previously adopted plan
- Plan Effective Date: September 23, 2012
- Lessons learned from the update process

RRRC Regional Hazard Mitigation Plan Update
Kickoff Meeting
March 29, 2017



Considerations with Multi-Jurisdictional Hazard Mitigation Plans

- Enhanced coordination and communication among local and regional entities
- Avoids duplication of efforts
- Shared costs/resources and effective economies of scale
- Multi-Jurisdictional Plans must:
- Assess each jurisdiction's risk where it may vary from the risk facing the entire planning area
- Include identifiable actions specific to each jurisdiction requesting FEMA approval of the plan
- Include documentation of formal adoption by each jurisdiction requesting FEMA approval

Overview of Existing Regional Hazard Mitigation Plan

*Indicates Requirement from CFR § 201.6

- Background
- Planning Process*
- Regional Profile
- Hazard Identification*
- Hazard Analysis*
- Vulnerability Assessment*
- Capability Assessment
- Mitigation Strategies*
- Plan Maintenance*
- Appendices (Including Adoption Resolutions*)



RRRC Regional Hazard Mitigation Plan Update
Kickoff Meeting
March 29, 2017



Hazard Mitigation Plan Update Scope of Work

Primary Goal: Complete required five-year review and update of Hazard Mitigation Plan and ensure continued compliance with FEMA requirements (§ CFR 201.6)

Secondary Goal: Review and incorporate information from other plans into updated Hazard Mitigation Plan

Secondary Goal: Improve mitigation strategies to better identify potential projects and more closely align with planned local projects

Proposed Hazard Mitigation Update Timeline

Project Tasks	Month											
	4/2017	5/2017	6/2017	7/2017	8/2017	9/2017	10/2017	11/2017	12/2017	1/2018	2/2018	3/2018
Hazard Analysis												
Hazard Identification												
Event Profiles												
Critical Asset Inventory												
Hazard Mapping												
Risk Assessment												
Loss Estimates												
GIS Analysis (HAZUS)												
Capability Assessment												
Plan, Policy, Program Review												
Resource Identification												
Mitigation Goals & Strategies												
Evaluate existing Goals & Strategies												
Research Alternatives												
Develop Updated Goals & Strategies												
Planning Coordination												
Plan Updates												
Public Outreach Activities												
Plan Adoption Process												
Meetings, Progress Reports & Deliverables												
Kickoff Meeting												
Project Management Team Meeting												
Draft Plan Review												
Progress Reports to VDEM/FEMA												
Final Plan Approval & Adoption												

RRRC Regional Hazard Mitigation Plan Update
Kickoff Meeting
March 29, 2017



Roles & Responsibilities - RRRC

- Project Management & Reporting to VDEM/FEMA
 - Public Involvement (Survey, Committee Meeting Announcements)
 - Documentation of Planning Process
 - Facilitate local engagement (staff/stakeholders)
 - Review and draft plan document revisions
-
- Update Hazard Events (past five years)
 - Update Plan Hazard Maps
 - Update Vulnerability Analysis (GIS analysis, when possible; National Climatic Data Center past event losses as an estimate for other hazards)

Roles & Responsibilities – Local Governments

- Internal Coordination: RRRC staff will reach out to each jurisdiction to schedule meetings with local staff/stakeholders
- Match Hours Tracking: Per the Letter of Intent from each jurisdiction, local staff time (including travel) will be tracked and utilized as part of the in-kind match for this grant project
- Local Review and Input Needed:
 - Critical Facilities
 - Review/Update and Develop New Mitigation Strategies
 - Local Capacity/Capability Assessment
 - Risks Unique to your Jurisdiction (when risk varies from that of the region)
- Share Plan Update information with Staff and Public (Social Media, Website links)
- Advertise Public Hearing for Adoption of the Plan once conditional approval from FEMA is granted
- Participate in Steering Committee meetings (bi-monthly)

Exercise: Risk Assessment Ranking

Hazard	Likelihood	Spatial Extent	Potential Impact
Dam/Levee Failure			
Drought			
Earthquake			
Erosion			
Flood			
Hurricane/Tropical Storm			
Landslide			
Severe Thunderstorm/Tornado			
Sinkholes			
Wildfire			
Winter Storm			

Should some hazards be combined? Missing Hazards?

Risk Assessment Ranking (2012 Plan)

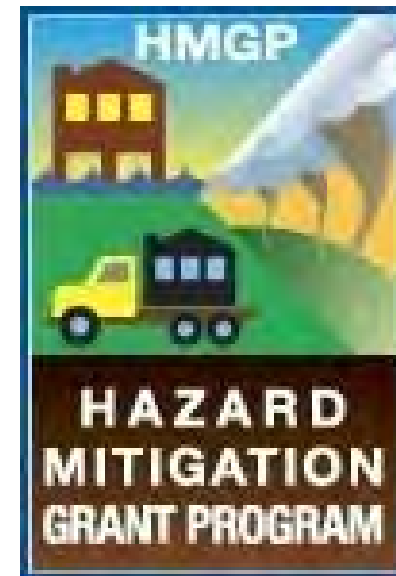
Hazard	Likelihood	Spatial Extent	Potential Impact	Total
Dam/Levee Failure	1	2	2	5
Drought	1	3	2	6
Earthquake	1	3	1	5
Erosion	2	1	1	4
Flood	3	2	3	8
Hurricane/Tropical Storm	1	3	3	7
Landslide	2	1	1	4
Severe Thunderstorm/Tornado	3	1	2	6
Sinkholes	1	1	1	3
Wildfire	3	2	1	6
Winter Storm	2	3	2	7

Next Steps: Short-Term Data Requests

- RRRC will send formal request by April 7, 2017
- GIS: Parcels, E-911 Address Points, Building Footprints as available
- Critical Facilities
 - List of facilities in existing plan – Please review locally
- Mitigation Strategies
 - Locally-identified Strategies in existing plan
 - Review and provide status of existing strategies (i.e., completed, in progress)
- Responses requested by **Friday, April 28**

Commonwealth Priorities

Hazard Mitigation Assistance Grants



Virginia Department of
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Pre-Disaster Mitigation Grant



- Annual grant focused on climate resilience, infrastructure, and non-flood related projects.



Flood Mitigation Assistance Grant



- Annual grant focused on mitigation structures that are insured through the NFIP and have sustained numerous flood claims.



Hazard Mitigation Grant Program



- Post-disaster grant, designed to reduced future risk for impacted areas. Available statewide.



Commonwealth Priorities

- Strategic level projects that have multiple benefits
 - Climate resilience mitigation activities
 - Large scale projects with whole community impacts
 - Holistic mitigation measures (protects multiple hazards)
 - Infrastructure protection projects
 - Alert and warning projects
 - State level projects
 - Improved data in mitigation plans to drive project development



HMA Programs

- Designed to reduce long term risk and break the repetitive cycle of damage, repair, damage.



Priority Project Types Tier 1



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Flood Risk Reduction Projects



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Emergency Management

Infrastructure Retrofit

- Measures to reduce risk to existing utility systems, roads, and bridges



Flood Diversion and Storage



- These projects involve diverting floodwaters from a stream, river, or other body of water into a conduit such as a canal, pipe, or wetland and storing them in an above-ground storage facility.



Floodplain and Stream Restoration



- Projects that restore and enhance the floodplain, stream channel and riparian ecosystem's natural function.



Soil Stabilization

- Projects to reduce the risk to structures or infrastructure from erosion and landslides.
 - Installing geotextiles
 - Stabilizing sod
 - Installing vegetative buffer strips
 - Decreasing slope angles
 - Stabilizing with rip rap and other means





2



Emergency Management

Site



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Green Infrastructure



- Flood risk reduction and drought mitigation actions that also incorporates ecosystem benefits and helps build a community's resilience to the impacts of climate change.



Aquifer Storage and Recovery



- Drought Management Tool, but can also be used to reduce flood risk.



Wildfire Mitigation



- Creation of defensible space
- Application of ignition resistant construction
- Hazardous fuels reduction



Generator Acquisition and Installation



- Must protect a critical facility
 - Hospitals/Nursing Homes
 - Police/Fire/EOCs
 - Public/Private Utility
 - HazMat production/storage facilities



Priority Project Types Tier 2



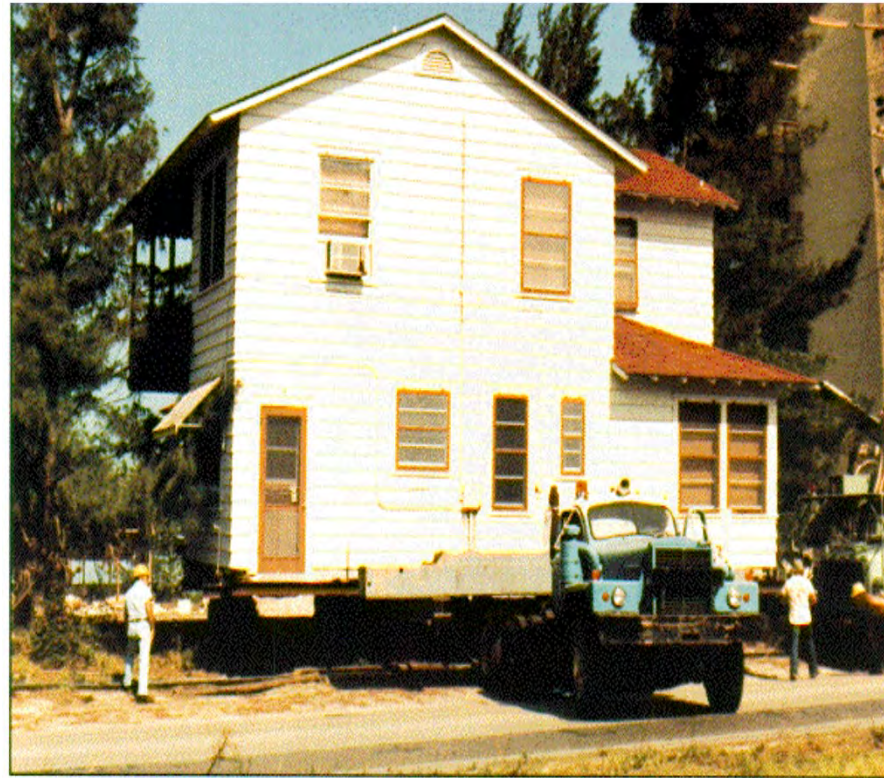
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Property Acquisition and Structure Demolition



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Property Acquisition and Structure Relocation



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Structure Elevation



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Mitigation Reconstruction



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Floodproofing



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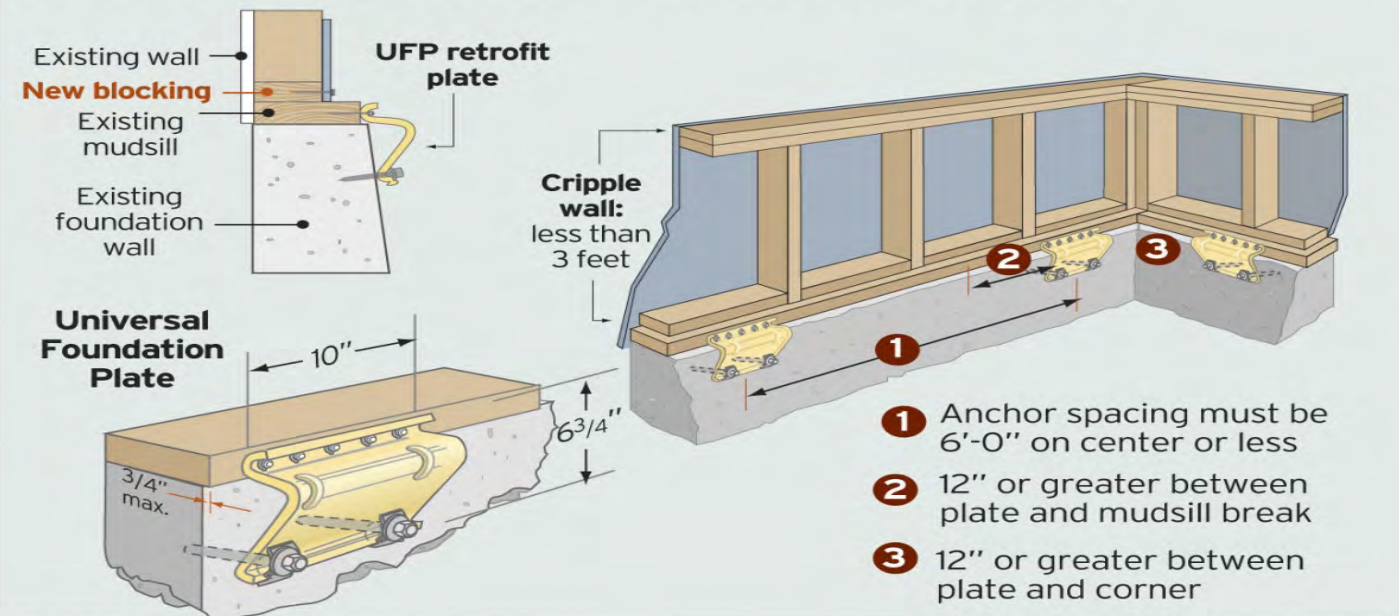
Retrofitting for Earthquakes

Protecting against earthquakes

Quake effects on homes on raised foundations



Anchoring the mudsill to foundation with Universal Foundation Plate



Source: Simpson Strong-Tie

DAN AGUAYO/THE OREGONIAN



Virginia Department of
Emergency Management

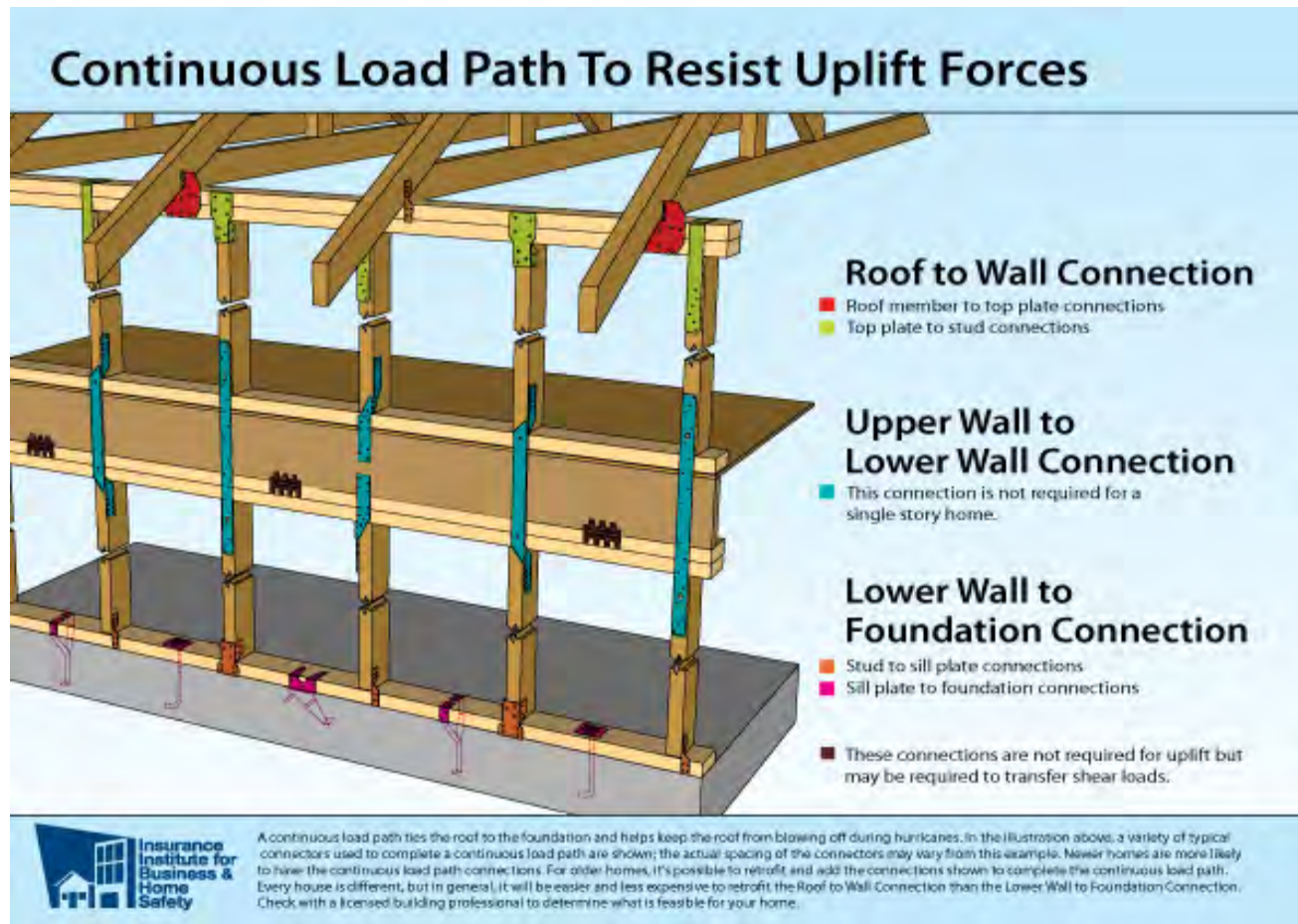
Safe Room Construction



- Residential, non-residential, and community safe rooms (hurricane and tornado).



Residential Wind Retrofits



Post Disaster Code Enforcement

- Projects designed to support the post-disaster rebuilding effort by ensuring that sufficient expertise is on hand to ensure appropriate codes and standards, including NFIP local ordinance requirements, are used and enforced.



Hazard Mitigation Planning



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Emergency Management

5% Initiative Projects

- Projects that do not require benefit cost analysis
 - Alert and warning systems
 - Reverse 911
 - River Gauges
 - Tornado Sirens
 - Purchase of generators or quick connects
 - Public awareness or education campaigns
 - Hazard identification/mapping equipment for implementation of mitigation activities



Benefit Cost Breakdown

- Required for all structural projects
- Determines future dollar losses avoided by mitigation activity
- Based on FEMA determined project useful life
- Requires documentation of damage history and/or current conditions (current elevation of structure with respect to 100 year flood levels)





PDM Breakdown

- FEMA Priorities
 - Climate Resilient Mitigation Activities
 - Wildfire Mitigation Activities
 - Non-flood mitigation activities
 - Flood mitigation activities
 - Generator projects
 - Mitigation Planning
- Funding
 - \$90M in FY 2016, \$4M fed share cap on projects
 - Each state gets a \$575k set-aside





FMA Breakdown

- FEMA Priorities
 - Projects that mitigate flood damage for at least 50% of the structures that are Severe Repetitive Loss (SRL)
 - Projects that mitigate flood damage for at least 50% of the structures that are Repetitive Loss (RL)
 - Projects that will mitigate flood damage to the largest number of NFIP-insured properties at the neighborhood level
- Funding
 - **\$199M for FY 2016, up to 100% fed share**





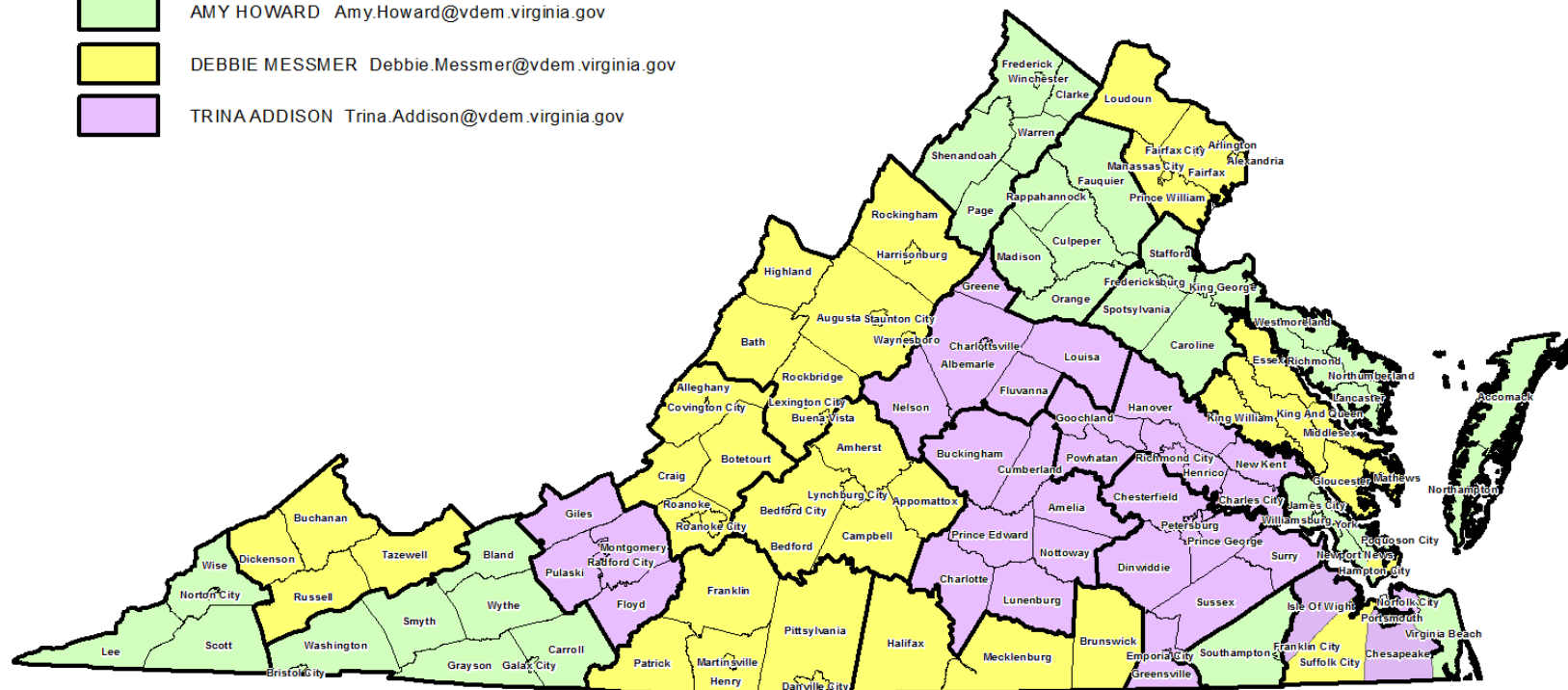
HMGP Breakdown

- State Sets Priorities
- 15% of total disaster costs (PA and IA)
 - 88% of funds must be structural projects (BCA required)
 - 7% of funds may be used for mitigation planning projects
 - 5% of funds may be used for initiative projects (no BCA required)



Mitigation Grant Administrators

- AMY HOWARD Amy.Howard@vdem.virginia.gov
- DEBBIE MESSMER Debbie.Messmer@vdem.virginia.gov
- TRINA ADDISON Trina.Addison@vdem.virginia.gov



Robbie Coates Recovery and Resilience Grants Manager - Robert.Coates@vdem.virginia.gov



Virginia Department of
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Questions



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Emergency Management

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Rappahannock-Rapidan Regional Hazard Mitigation Plan Update

Steering Committee Meeting
August 28, 2017



Meeting Agenda

- Introductions
- Plan Update Status Report
 - Complete: Draft revisions to Chapters 1, 3, 4
 - Ongoing: Mapping/GIS updates for Chapters 5, 6
- Presentation on iFlows & Rappahannock River Stream Gauge Monitoring
- Local Input Roundtable
 - Unique Hazards
 - Significant Events since 2012
- Next Steps

Plan Update Status

- RRRC staff have completed draft updates for:
 - Chapter 1: Introduction & Background
 - Chapter 3: Community Profile
 - Demographics & Socio-economic data updated
 - Additional mapping and data included from 1-meter resolution Land Cover data collected by Virginia Geographic Information Network
 - Chapter 4: Hazard Identification
 - Combined Erosion & Landslide sections
 - Tornadoes & Severe Thunderstorms are now considered separately
 - Mapping updated
 - Data Tables updated

Plan Update Status

- Ongoing Updates:
 - Chapter 5: Hazard Analysis
 - Analysis and mapping of hazards directly affecting the Rappahannock-Rapidan region
 - Floodplain mapping updates using most recent floodplain data from FEMA
 - New earthquake data obtained from Department of Mines, Minerals, and Energy (DMME) from recent statewide earthquake analysis
 - Communication with Department of Forestry on updated wildfire information
 - Coordination with Department of Conservation & Recreation on Dam information
 - How many of your jurisdictions have Dam Inundation Zone maps and/or GIS available?
 - Additional discussion of Karst per FEMA recommendation from 2012 review
 - Historic Hazard Events updated (2011-present)
 - Recent Tornado/Microburst events (April, August 2017)
 - Hurricane Sandy (2012)
 - Derecho (2013)
 - Other significant events in past five years?

Plan Update Status

- Coordination with State Hazard Mitigation Plan
- State Plan most recent update in 2013
 - Staff reviewed the Hazard types identified in the existing regional plan versus Statewide Plan
 - Addition of Karst (into existing sinkholes section) ensures that the hazards identified in the Statewide Plan are also those addressed in the regional plan
 - Several other hazards are included in other sub-state plans
 - Lightning, Hail, Extreme Heat, Extreme Cold, Tsunami, HazMat, Terrorism
 - Those hazards are discussed as part of other identified hazards or are outside the scope of this update

Plan Update Status

- Comparison of State Hazard Rankings with R-R Hazard Rankings

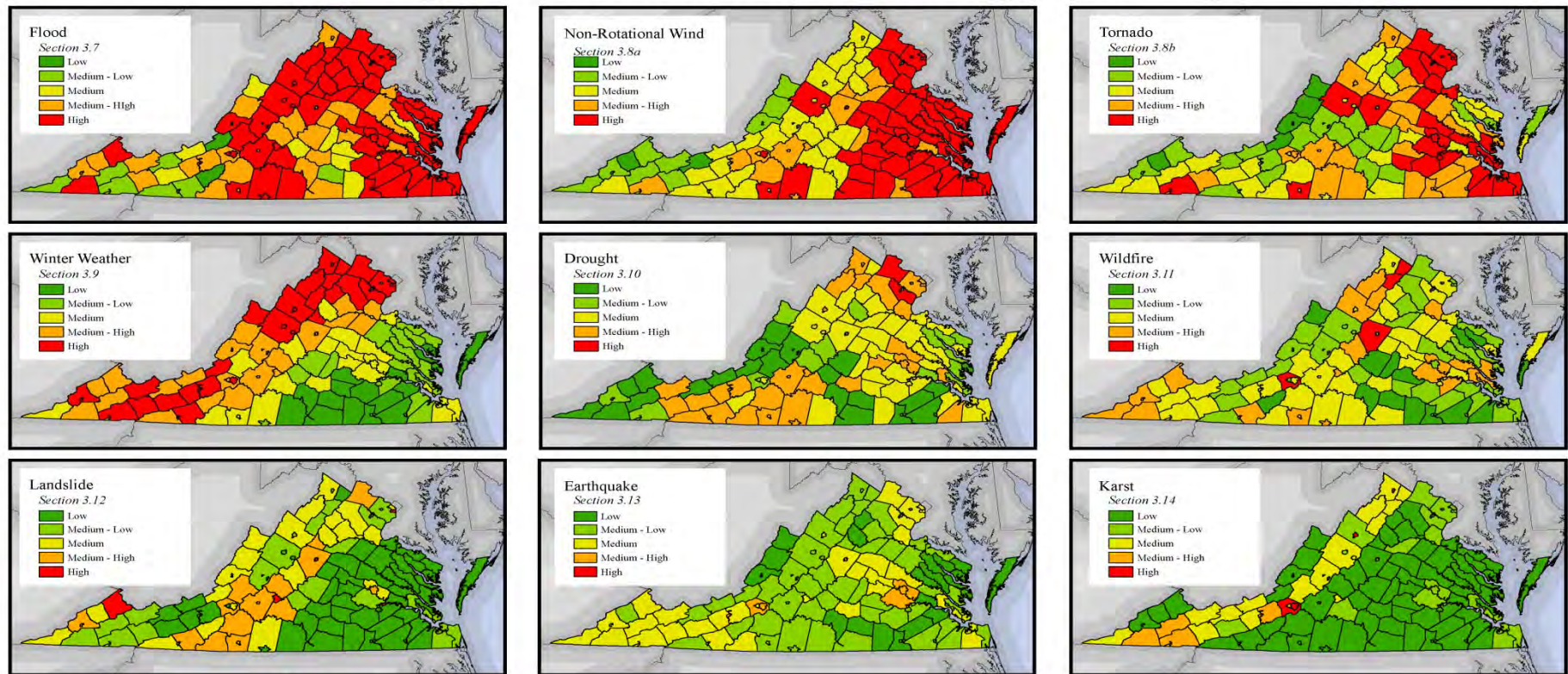
Hazard	Existing 2012 Plan	March 29 Meeting	2013 Statewide Plan
Dam/Levee Failure	Low	Low (Locally Higher for Town of Culpeper)	Low
Drought	Medium	Medium	Medium
Earthquake	Low	Low (Locally Higher in Culpeper)	Medium-Low
Erosion & Landslide	Low	Low	Medium-Low
Flood	High	High	High
Hurricane/Tropical Storm (Non-Rotational Wind)	High	Medium	Medium-High
Severe Thunderstorm/Tornado	Medium	High	Medium-High
Sinkholes/Karst	Low	Low	Low
Wildfire	Medium	Medium (Locally Higher in Madison/Rappahannock)	Medium
Winter Storm	High	High	Medium-High

RRRC Regional Hazard Mitigation Plan Update
Steering Committee Meeting
August 28, 2017



Statewide Plan Hazard Rankings

Figure 3.16-1: Hazard Ranking Risk Maps



PROJECTION:
VA Lambert Conformal Conic
North American Datum 1983

DATA SOURCES:
CGIT Ranking Methodology
VGIN Jurisdictional Boundaries
ESRI State Boundaries

DISCLAIMER: Majority of available hazard data is intended to be used at national or regional scales. The purpose of the data sets are to give general indication of areas that may be susceptible to hazards. In order to identify potential risk in the Commonwealth available data has been used beyond the original intent.

HAZARD RANKING:

This is a summary of the individual hazard risk maps found in Section 3.7 through Section 3.14. The parameters used to create the Hazard Ranking Parameters and Risk Maps are explained in Section 3.5.



Commonwealth of Virginia Hazard Mitigation Plan 2013

RRRC Regional Hazard Mitigation Plan Update
Steering Committee Meeting
August 28, 2017



Local Data Requests

- RRRC requested the following in April/May
- GIS: Parcels, E-911 Address Points, Building Footprints as available
- Critical Facilities
 - List of facilities in existing plan – Please review locally
- Mitigation Strategies
 - Locally-identified Strategies in existing plan
 - Review and provide status of existing strategies (i.e., completed, in progress)
- If not already provided, please coordinate with RRRC staff as soon as possible

Need for Local Input

- Locally Unique Hazards
 - Opportunity to Identify hazards that may impact your locality to a greater degree than the regional hazard ranking
 - Existing Locally Identified Hazards
 - Wildfire: Madison & Rappahannock counties identify wildfire as a high-risk hazard for their jurisdictions due to western boundary with Shenandoah National Park
 - Earthquake: Culpeper County identifies earthquake as a high-risk hazard in response to the 2011 earthquake and aftershocks
 - Dam Failure: Town of Culpeper identifies dam failure as a high-risk hazard due to the location of dams at Lake Pelham and Mountain Run Lake and the potentially-impacted populations, property, and critical facilities
 - Haz Mat/Railroad: Town of Orange identifies the railroad and potential transport of hazard materials as a high-risk hazard impacting the Town.
- Other hazards that differ from regional hazard rankings as of today?

Need for Local Input

- Local input meetings (RRRC with local staff in your jurisdiction)
 - Opportunity to review and report out on existing Mitigation Strategies from current Plan & begin formulating new strategies
 - FEMA review in 2012 requested that the next plan update include a “thorough report out on the progress of mitigation actions and activities.”
 - Strategies for each hazard analyzed in the Plan must be included, although can be addressed regionally
 - Review of Capability Assessment for each locality
 - Capability Assessment identifies the existing unique capabilities (planning/regulatory, administrative/technical, financial, education/outreach) available to each participating locality to reduce long-term vulnerability.
 - Current Plan includes:
 - National Flood Insurance Program participation
 - Community Rating System participation
 - Disaster Recovery Plan
 - Comprehensive Plan
 - Floodplain Management Plan
 - Stormwater Management Plan
 - Emergency Operations Plan
 - Continuity of Operations Plan
 - Radiological Emergency Plan
 - SARA Title III Plan
 - Evacuation Plan
 - Transportation Plan
 - Capital Improvement Program
 - Zoning Ordinance
 - Subdivision Ordinance
 - Flood Damage Prevention Ordinance
 - Building Code
 - Fire Code
 - Riparian Buffer/Wetland Preservation
 - Open Space Preservation

Next Steps

- Upcoming Tasks
 - RRRC to coordinate with local points of contact on local strategy/capability meetings
 - October/November timeframe
 - Would include participation by other staff, including planning/zoning
 - Plan updates
 - Chapter 5: Hazard Analysis
 - Chapter 6: Vulnerability Analysis (Need local GIS data for portion of this analysis)
 - Chapter 7: Capability Assessment (following consultation with local staff)
 - Chapters 2 & 9: Plan Process & Maintenance procedures
- Need for steering committee/local governments to share Survey links with public and other stakeholders
 - English: <http://www.surveymonkey.com/r/regionalhazards>
 - Spanish: <http://www.surveymonkey.com/r/disastros>
- October 11: Floodplain Management/DCR Dam Safety Division Workshop

Hazard Mitigation Update Timeline (As of 8/28/2017)

Project Tasks	Month											
	4/2017	5/2017	6/2017	7/2017	8/2017	9/2017	10/2017	11/2017	12/2017	1/2018	2/2018	3/2018
Hazard Analysis												
Hazard Identification												
Event Profiles												
Critical Asset Inventory												
Hazard Mapping												
Risk Assessment												
Loss Estimates												
GIS Analysis (HAZUS)												
Capability Assessment												
Plan, Policy, Program Review												
Resource Identification												
Mitigation Goals & Strategies												
Evaluate existing Goals & Strategies												
Research Alternatives												
Develop Updated Goals & Strategies												
Planning Coordination												
Plan Updates												
Public Outreach Activities												
Plan Adoption Process												
Meetings, Progress Reports & Deliverables												
Kickoff Meeting												
Project Management Team Meeting or Local Meetings												
Draft Plan Review												
Progress Reports to VDEM/FEMA												
Final Plan Approval & Adoption												

RRRC Regional Hazard Mitigation Plan Update
Steering Committee Meeting
August 28, 2017



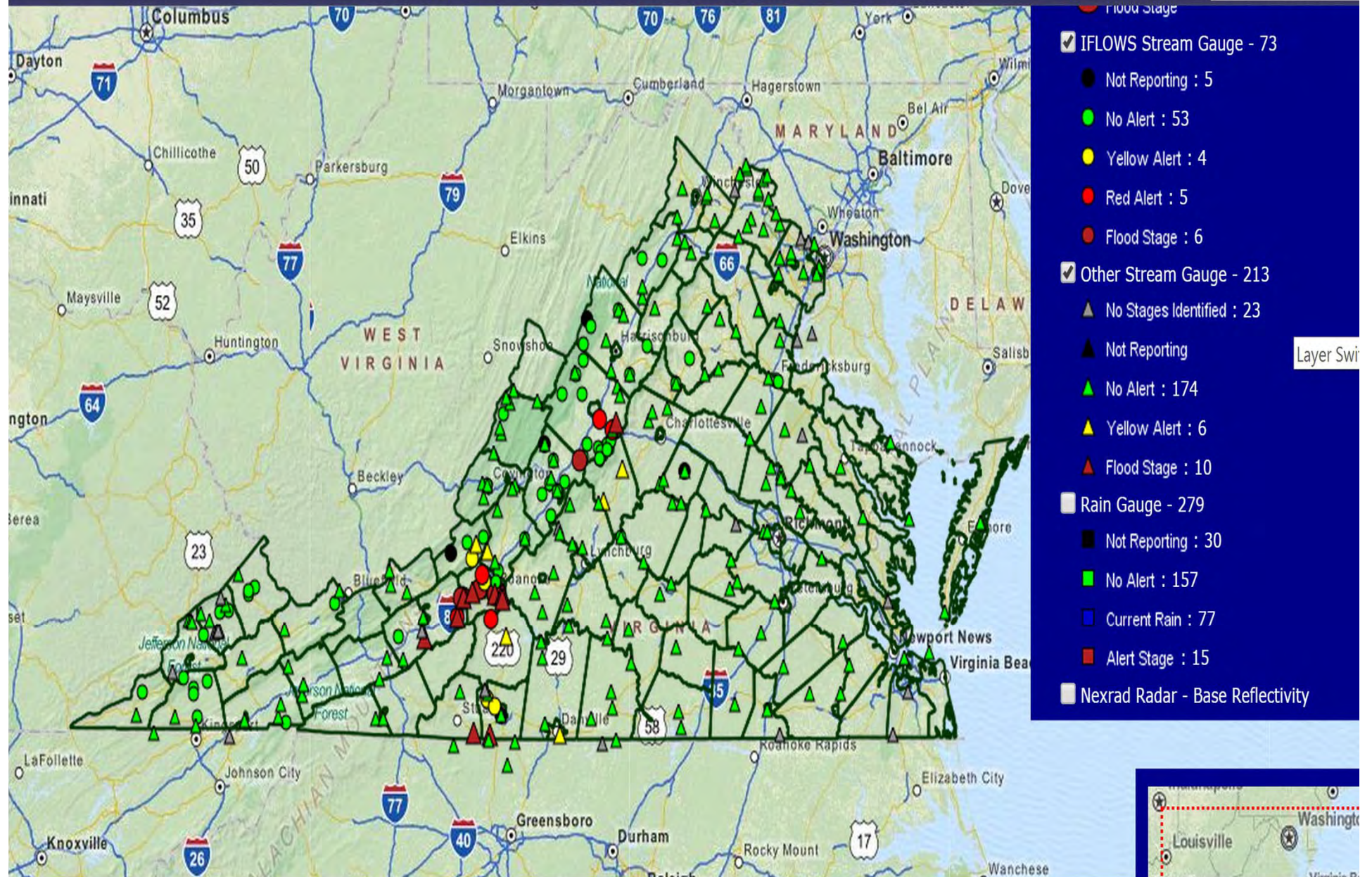
Virginia Flood Observation and Warning Network

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





[Online Services](#) | [Commonwealth Sites](#) | [Help](#) | [Gove](#)

s | How To

IS CURRENTLY AT: 9.300FT - RED STATUS. 2018500 CATAWBA CREEK NEAR CATAWBA, Jump to Jurisdiction: -- Not Selected --



Precipitation and Stream Gauges in Henry Co.

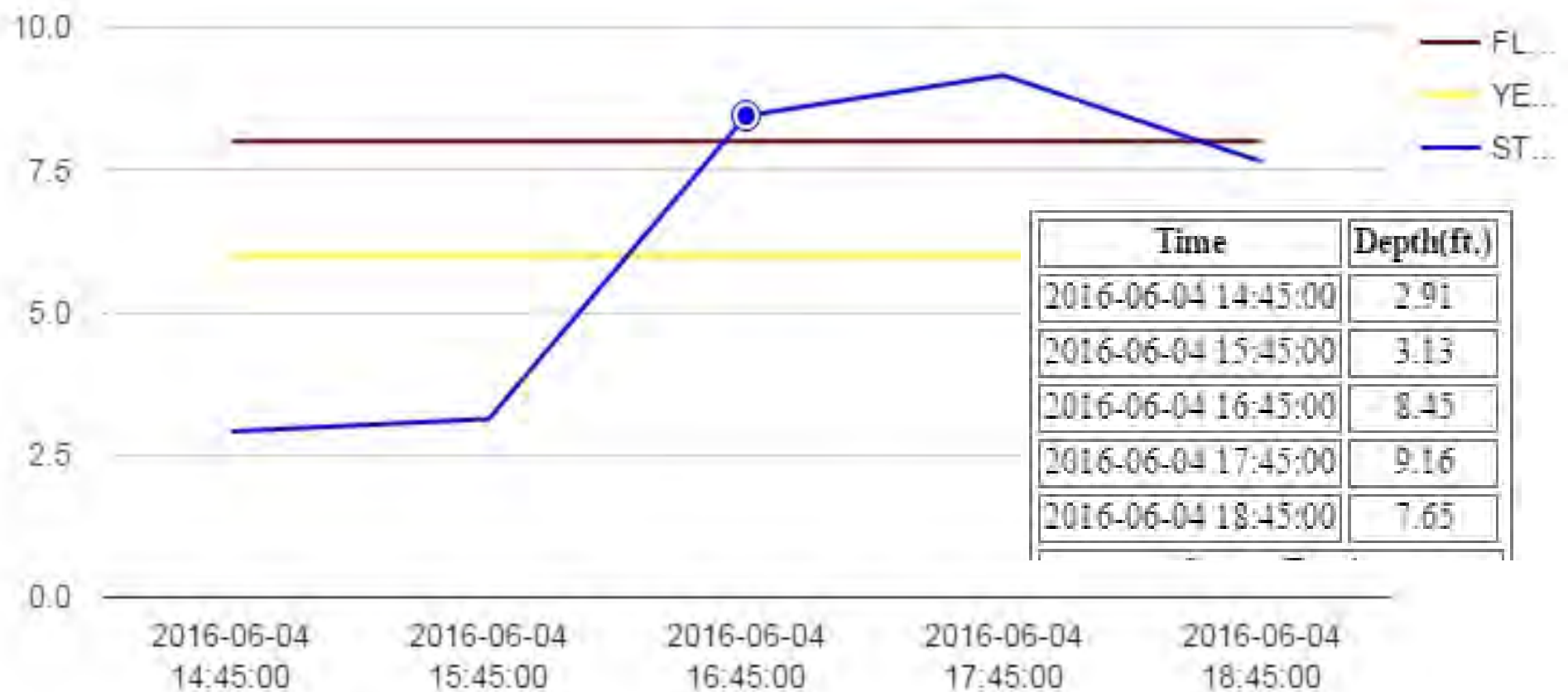
		Precipitation Gauges							Stream Gauges				
Gauge Name		15 Min	30 Min	1 Hr	3 Hrs	6 Hrs	12 Hrs	24 Hrs		Current	Yellow Alert	Red Alert	Flood Stage
Blackberry Bridge		0.00 in.	0.00 in.	0.00 in.	0.00 in.	0.88 in.	3.52in.	3.76in.		5.9 ft.	4.0 ft.	5.0 ft.	6.0 ft.
Blackberry Creek		0.00 in.	0.00 in.	0.00 in.	0.00 in.	0.64 in.	2.80 in.	3.04 in.					
Chestnut Knob		0.00 in.	0.00 in.	0.00 in.	0.00 in.	1.28 in.	5.52in.	5.92in.					
Hydro Electric Plant		0.00 in.	0.00 in.	0.00 in.	0.00 in.	1.44 in.	5.45in.	5.73in.		696.4 ft.	696.8 ft.	697.2 ft.	697.5 ft.
Jones Creek		0.00 in.	0.00 in.	0.00 in.	0.00 in.	2.12 in.	7.31in.	7.75in.					
Lower Smith		0.00 in.	0.00 in.	0.00 in.	0.12 in.	0.24 in.	0.28 in.	0.32 in.					
Marrowbone Res.		0.00 in.	0.00 in.	0.00 in.	0.00 in.	1.40 in.	6.99in.	7.51in.					
Meadows Church		0.00 in.	0.00 in.	0.00 in.	0.00 in.	0.04 in.	0.12 in.	0.20 in.					
Mt Hermon Church		0.00 in.	0.00 in.	0.00 in.	0.04 in.	0.08 in.	0.08 in.	0.16 in.					
Prilliman		0.00 in.	0.00 in.	0.00 in.	0.00 in.	1.00 in.	3.24in.	3.40in.					
Providence Churc		0.00 in.	0.00 in.	0.00 in.	0.00 in.	0.76 in.	3.68in.	3.88in.					
Rangeley Branch		0.00 in.	0.00 in.	0.00 in.	0.00 in.	0.92 in.	3.88in.	4.16in.					
Sanville		0.00 in.	0.00 in.	0.00 in.	0.00 in.	0.28 in.	0.84 in.	1.08 in.					
North Mayo River Near Spencer										6.48 ft.	6.0 ft.		8.0 ft.
Smith River At Bassett										5.29 ft.	8.0 ft.		13.7 ft.
Smith River At Martinsville										9.89 ft.	10.0 ft.		

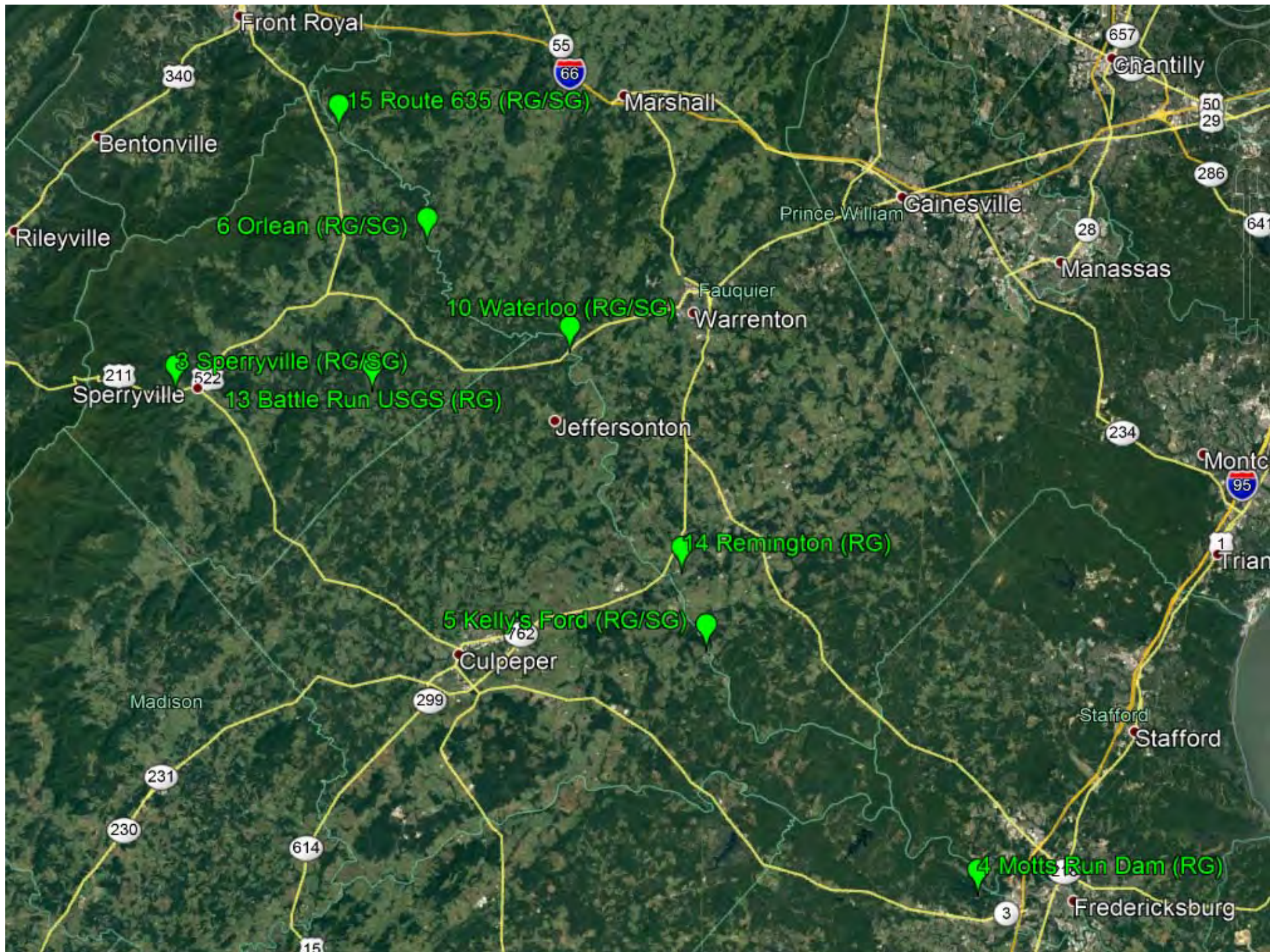
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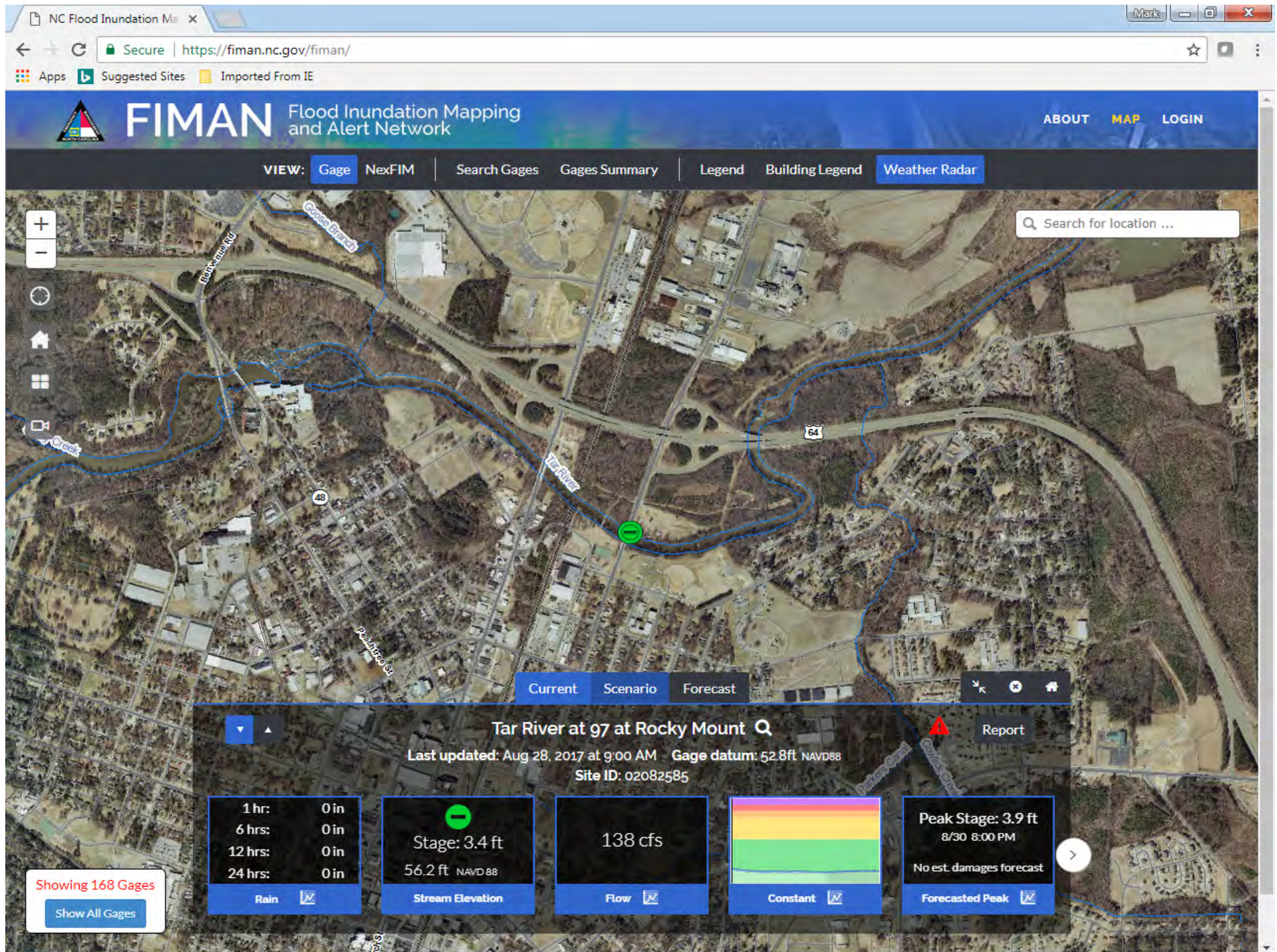


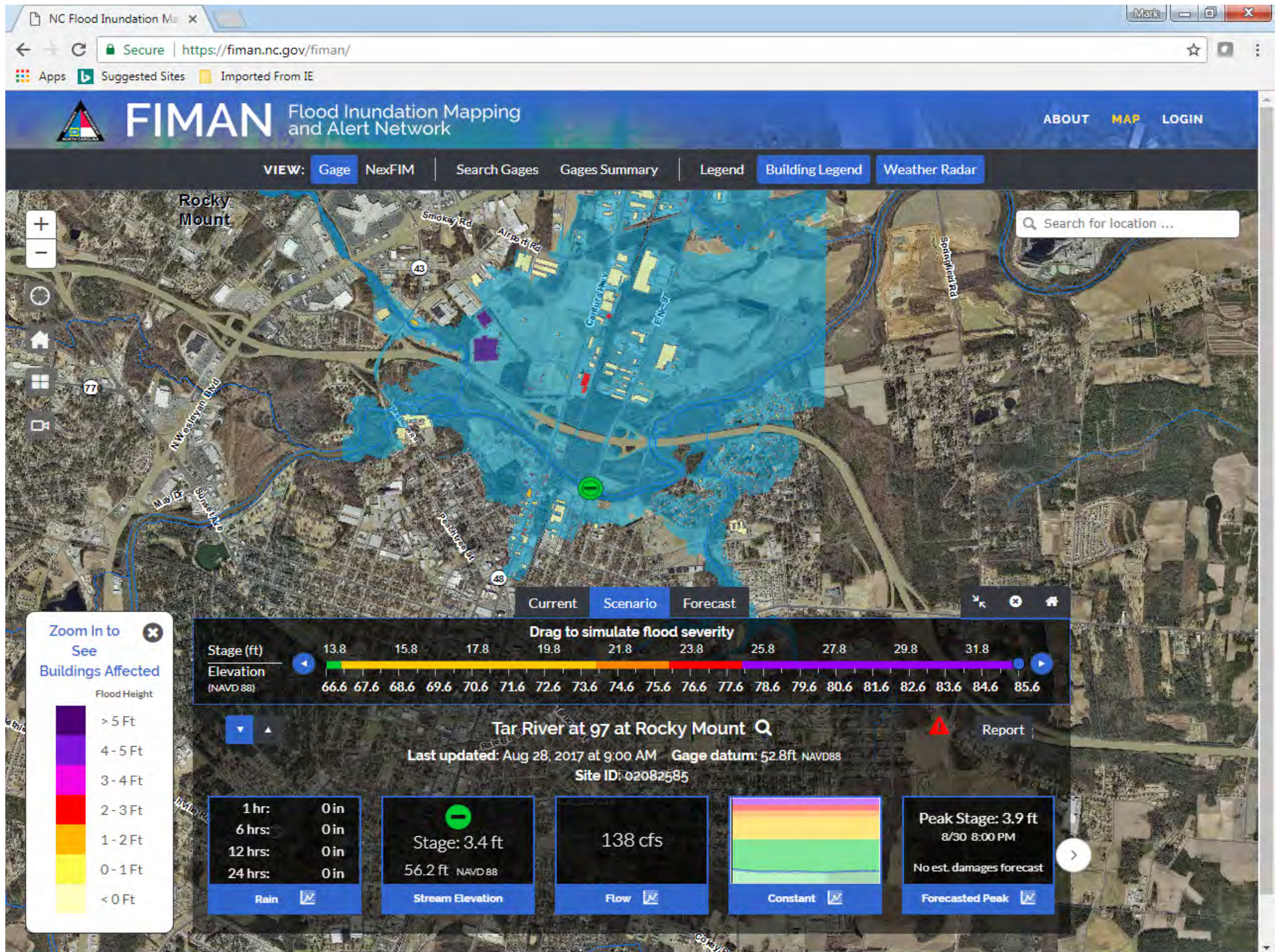


MUDDY CREEK AT MOUNT CLINTON
 06/04/2016 14:00 - 06/04/2016 19:00









Rappahannock-Rapidan Regional Hazard Mitigation Plan Update

Steering Committee Meeting
May 23, 2018



Meeting Agenda

- Introductions
- Plan Update Status Report
 - Sections in Draft Form
 - Status of Local Information Requests
- Vulnerability Assessment Overview: Flood & Wildfire Hazards
- High-Level Review of Draft Plan Sections
- Next Steps & Final Requests to Localities

Hazard Mitigation Overview

- Hazard Mitigation Plan Mandate
 - Primary goal is to identify strategies and implementation approaches to address risks and vulnerabilities that impact jurisdiction(s) in order to reduce loss of life and property related to natural disasters
 - Adoption ensures jurisdiction is eligible for funding via Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation (PDM) sources available from FEMA
 - Five-Year Review and Revision requirement in order to maintain eligibility
- RRRC provides technical assistance for Hazard Mitigation in the region, to include administering/managing the plan update process
- Localities committed to committee participation, data review and revision, and responding to local information requests via signed MOUs

Plan Update Process to Date

- March 29, 2017: Kickoff Meeting
 - Local data requests for GIS, Critical Facility Review, Mitigation Strategy Status Report
 - RRRC Staff Complete Initial Revisions to Hazard Identification, Historical Hazards, Hazard Analysis sections
- August 28, 2017: Steering Committee Meeting
 - Review of Hazard History
 - Comparison of Regional Hazard Impacts to State Hazard Mitigation Plan
 - RRRC Staff Completes Vulnerability Assessment updates via HAZUS software and historical data compilation, GIS mapping updates for relevant hazards with new data, as available

Plan Update Process to Date

- February to April 2018: Local Contact Meetings
 - Review Mitigation Strategies and Discuss Recommended Additions related to new FIRMs in development for all jurisdictions by FEMA Region III, Incorporation of Hazard Mitigation planning with other local plans, etc.
 - Request Information on Capability Assessment updates
 - Opportunity to Identify Additional Unique Hazards for each locality

Plan Update Status

- Plan remains in Draft Status
- Sections 1 through 6 & 9 are in Final Draft form
 - I: Introduction & Background
 - II: Planning Process
 - III: Regional Profile
 - IV: Hazard Identification
 - V: Hazard Analysis
 - VI: Vulnerability Analysis
 - IX: Plan Maintenance

Plan Update Status

- Plan remains in Draft Status
- Section 7 and 8 are in Draft form, awaiting final information from localities
 - VII: Capability Assessment
 - VIII: Mitigation Strategies – Status & Updates
- Appendix Documents to Include:
 - Meeting Agendas/Presentations
 - Locality Responses for Capability Assessment, Mitigation Strategies, Unique Hazards
 - Community Rating System *What-If* Scenarios
 - Dam Inundation Zone maps
 - Public Input Documentation (Website Posts, Newsletters, Social Media, Flyers, etc.)

Vulnerability Assessment Overview

- Purpose: Describe the community's vulnerability to identified hazards, including summary of the hazard and impact on the community
 - Describe in terms of existing and future infrastructure within hazard areas, estimate of potential losses due to potential impact of hazard, and general description of land uses and development trends in relation to hazard impacts
- Qualitative Review
 - Existing Plan Ranked Hazards in terms of likelihood, spatial extent, and potential impact
 - Committee Reviewed and Updated in 2017
- Quantitative Review
 - HAZUS Modeling for Flood, Earthquake, Hurricane hazards
 - Historical Impacts for other identified hazards (as available)

Vulnerability Assessment Overview

- RRRC Staff Combined two rankings into Estimated Risk Level

Hazard	2012 Plan	Steering Committee Review (2017)	Quantitative Analysis (2017)	As Proposed in 2018 Plan
Dam Failure	Low	Low (Locally Higher for Town of Culpeper)	Low/Unknown	Low
Drought	Medium	Medium	High	Medium
Earthquake	Low	Low (Locally Higher in Culpeper)	Medium	Low
Erosion & Landslide	Low	Low	Low/Unknown	Low
Flood	High	High	High	High
Hurricane/Tropical Storm (Non-Rotational Wind)	High	Medium	Medium	Medium
Severe Thunderstorm/Tornado	Medium	High	Medium	High
Sinkholes/Karst	Low	Low	Low/Unknown	Low
Wildfire	Medium	Medium (Locally Higher in Madison/Rappahannock)	Medium	Medium
Winter Storm	High	High	Medium	High

RRRC Regional Hazard Mitigation Plan Update
Steering Committee Meeting
May 23, 2018



Unique Hazards

- Opportunity to Identify hazards that may impact your locality to a greater degree than the overall regional hazard ranking
 - Existing Locally Identified Hazards
 - Wildfire: Madison & Rappahannock counties identify wildfire as a high-risk hazard for their jurisdictions due to western boundary with Shenandoah National Park
 - Earthquake: Culpeper County identifies earthquake as a high-risk hazard in response to the 2011 earthquake and aftershocks
 - Dam Failure: Town of Culpeper identifies dam failure as a high-risk hazard due to the location of dams at Lake Pelham and Mountain Run Lake and the potentially-impacted populations, property, and critical facilities
 - Haz Mat/Railroad: Town of Orange identifies the railroad and potential transport of hazard materials as a high-risk hazard impacting the Town.
- Additional Unique Hazards Identified
 - Fauquier County & Town of Remington: Railroad/Transportation Infrastructure/Hazardous Materials

Other Significant Changes from Adopted Plan

- Data Updates
 - Section 3 through 6: Updated Demographics, Land Use/Land Cover information
 - Additional detail on growth trends that have changed since the initial plan was developed in the mid-2000's
- Sections 4 & 5: Hazard Identification & Analysis
 - All hazards reviewed for historic events and economic impacts
 - Section 5 includes references to the 2012 Derecho and recent trends of severe thunderstorms/microbursts, etc.

Other Significant Changes from Adopted Plan

- Section 6: Vulnerability Analysis
 - HAZUS Assessment as referenced
 - Previous versions of HAZUS software utilized 2000 Census data
 - Updated version includes 2010 Census data → Results in changes to the Quantitative loss estimates in the Vulnerability Assessment
 - Non-HAZUS GIS Analysis for Flood Loss Estimates
 - Local GIS data availability and use continues to be a positive factor for Hazard Mitigation overall

Capability Assessment Overview

- Measures and Assesses Local/Regional Capacity to Implement Mitigation Strategies
 - Planning/Regulatory
 - Administrative/Technical
 - Fiscal
 - Education & Outreach
- Overall capability varies due to the relative size of jurisdictions and services provided (Town versus County, shared services, etc.)
- Overall goal is to tie local/regional capacity to achievable mitigation strategies

Capability Assessment Changes

- Locally-identified plan updates
 - Emergency Operations Plans
 - Comprehensive Plans
 - Recommended goal of incorporating Hazard Mitigation plan references into other local plans as future updates allow
- State Uniform Code requirements
 - Initial plan was heavily reliant on local building/fire codes.
 - Now reference to Statewide codes and local enforcement requirements
- In general, format will remain similar but will have additional details from Capability Worksheets completed by local staff

Mitigation Strategy Updates

- Requested Input from local staff on progress on existing strategies and any newly-identified strategies or ongoing projects that may be relevant to the Hazard Mitigation plan
- Ongoing FIRM updates are one item that should be added to each locality's strategies (or as an update to an existing strategy)
 - Need for public outreach and education given changes to the flood zone designations
- Structural projects are not likely a great fit in this region, given lack of repetitive loss properties, but should still be identified as a strategy

Mitigation Strategy Updates

- Existing projects identified in local Capital Improvement Plans
- Reference VDEM presentation from March 2017 for project possibilities
 - Flood Diversion
 - Floodplain & Stream Restoration
 - Soil Stabilization (Erosion/Landslide Hazard) – Would need historical trend and evidence of subsidence
 - Infrastructure Retrofits
- 5% Initiative Projects (no cost-benefit requirement)
 - Generators/Quick Connects
 - Public Awareness/Education
 - Identification/Mapping Equipment for Implementation
 - Alert & Warning Systems

Commonwealth Priorities

- Strategic level projects that have multiple benefits
 - Climate resilience mitigation activities
 - Large scale projects with whole community impacts
 - Holistic mitigation measures (protects multiple hazards)
 - Infrastructure protection projects
 - Alert and warning projects
 - State level projects
 - Improved data in mitigation plans to drive project development



Next Steps

- May 23 to June 1, 2018
 - Finalize Capability Assessments and Mitigation Strategies
 - Release of Draft Plan for local/public review
- June: Public Review Period
 - Request for Localities to share via Websites, Newsletters, Social Media
 - Please let RRRC staff know when items are shared with the Public for documentation and inclusion in the plan appendix
 - Any comments from local staff and/or public to be reviewed and incorporated into plan, as necessary
- July: Submission to VDEM & FEMA for review
 - Incorporate any requested changes or clarifications from VDEM & FEMA
 - Conditional Approval from FEMA: *September/October (Tentative)*
- Following Conditional Approval from FEMA, Localities may begin adoption process via Resolution
 - RRRC staff can provide Summary Memo documents and/or be present at Board/Council meetings as needed

Thank you for your efforts to date!

Rappahannock-Rapidan Regional Commission

Patrick Mauney, Executive Director

plmauney@rrregion.org

Joe Costello, Regional Planner

jcostello@rrregion.org

(540) 829-7450

Plan webpage: <http://www.rrregion.org/mitigation.html>



Wildfire & Flood Hazard Data



5/23/18

Flood Regional Vulnerability Assessment

- HAZUS Flood Modeling
- HAZUS Inventory
- Flood Depth Grids
- Population Density
- Residential Flood Exposure
- Commercial Flood Exposure
- Industrial Flood Exposure
- Critical Facilities and Utilities
- Dam Inventory & Classification
- Estimated Losses
- Planning Applications



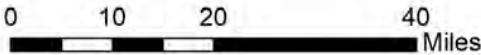
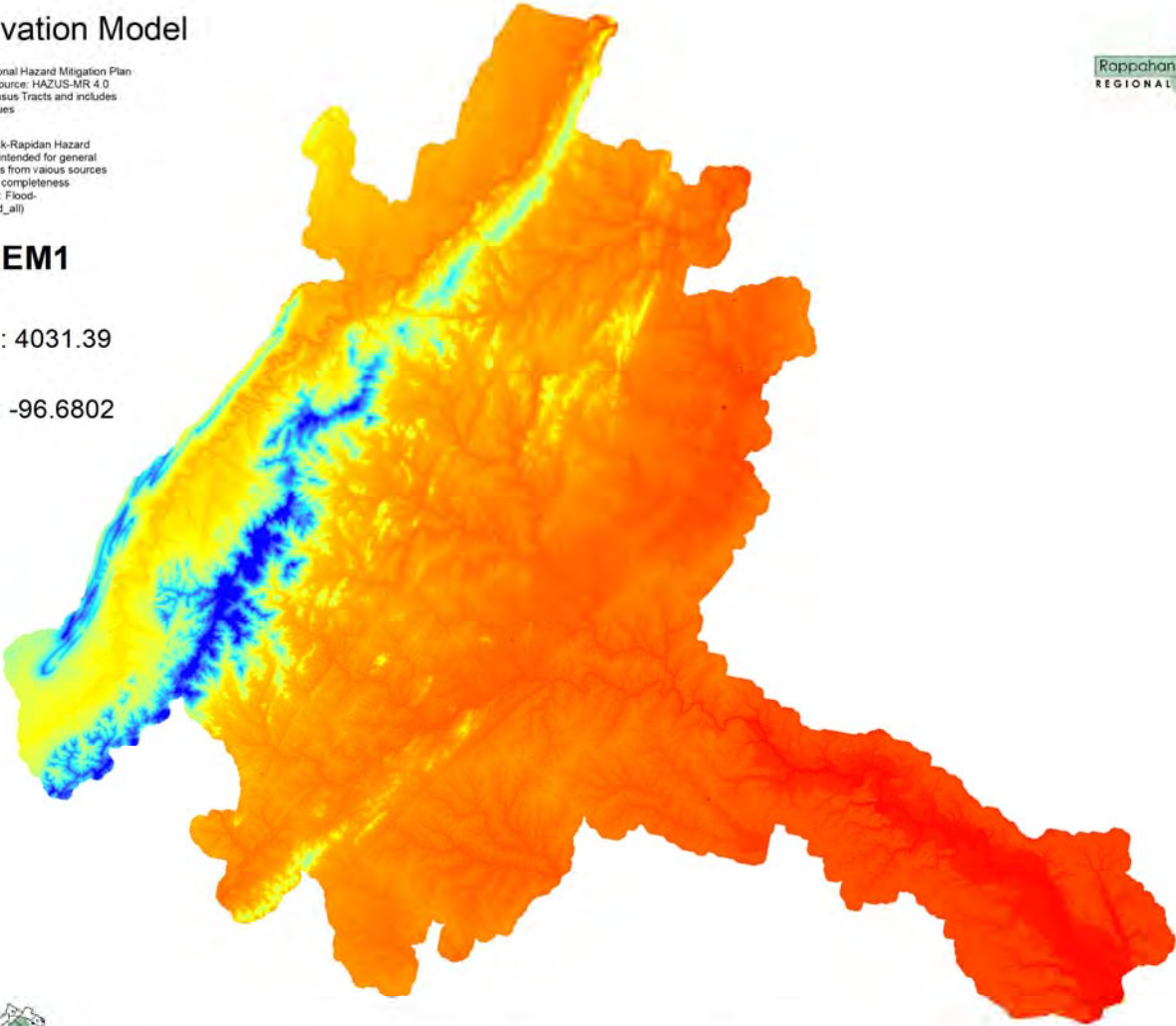
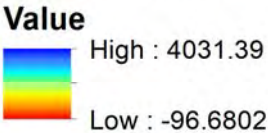
Digital Elevation Model

Rappahannock-Rapidan Regional Hazard Mitigation Plan
Residential Dollar Exposure Source: HAZUS-MR 4.0
Data is shown using 2010 Census Tracts and includes
building stock and content values

Map created for Rappahannock-Rapidan Hazard
Mitigation Plan Update and is intended for general
planning purposes only. Data is from various sources
and may vary in accuracy and completeness
Data: 11/2017 File: Hazus-MH: Flood-
RapRapRegion (Flood_Hazard_all)



Region DEM1



Stream Network Used to Delineate Floodplain

Rappahannock-Rapidan Regional Hazard Mitigation Plan
Residential Dollar Exposure Source: HAZUS-MR 4.0
Data is shown using 2010 Census Tracts and includes building stock and content values

Map created for Rappahannock-Rapidan Hazard Mitigation Plan Update and is intended for general planning purposes only. Data is from various sources and may vary in accuracy and completeness.
Data: 11/2017 File: Hazus-MH Flood
RapRapRegion (Flood_Hazard_all)



Riverine Hydraulic Analysis

Analysis type: **Full Suite of Return Periods** Fill Down

Output cell size: **24.8356750189616**

River reaches

Reach ID	Return Periods (yrs)	n-value
23	10, 25, 50, 100, 500	0.033
31	10, 25, 50, 100, 500	0.033
32	10, 25, 50, 100, 500	0.033
34	10, 25, 50, 100, 500	0.033
36	10, 25, 50, 100, 500	0.033
37	10, 25, 50, 100, 500	0.033
38	10, 25, 50, 100, 500	0.033
39	10, 25, 50, 100, 500	0.033
51	10, 25, 50, 100, 500	0.160
52	10, 25, 50, 100, 500	0.160
57	10, 25, 50, 100, 500	0.160
58	10, 25, 50, 100, 500	0.160
60	10, 25, 50, 100, 500	0.160
61	10, 25, 50, 100, 500	0.160
64	10, 25, 50, 100, 500	0.160

OK Cancel

Valuation Parameters

☒ Square Footage

☒ First Floor Elevations

☒ Building Count

By Occupancy By Building Type

Building Count

By Occupancy By Building Type

Table Type:
 General Occupancy Type Culpeper, VA (51047)

☐ Show Scenario Census Blocks

	CensusBlock	Total	Residential	Commercial	Industrial	Agriculture	Relig
1	510479301011000	144	139	3	1	1	
2	510479301011001	0	0	0	0	0	
3	510479301011002	0	0	0	0	0	
4	510479301011003	0	0	0	0	0	
5	510479301011004	83	81	1	1	0	
6	510479301011005	81	76	3	1	1	
7	510479301011006	0	0	0	0	0	
8	510479301011007	4	4	0	0	0	
9	510479301011008	0	0	0	0	0	
10	510479301011009	0	0	0	0	0	
11	510479301011010	13	11	1	1	0	
12	510479301011011	0	0	0	0	0	
13	510479301011012	2	2	0	0	0	
14	510479301011013	4	4	0	0	0	
15	510479301011014	75	68	6	0	1	
16	510479301011015	1	1	0	0	0	
17	510479301011016	0	0	0	0	0	

Sqft Factors Close Map Print OK

100-Year Flood Zone

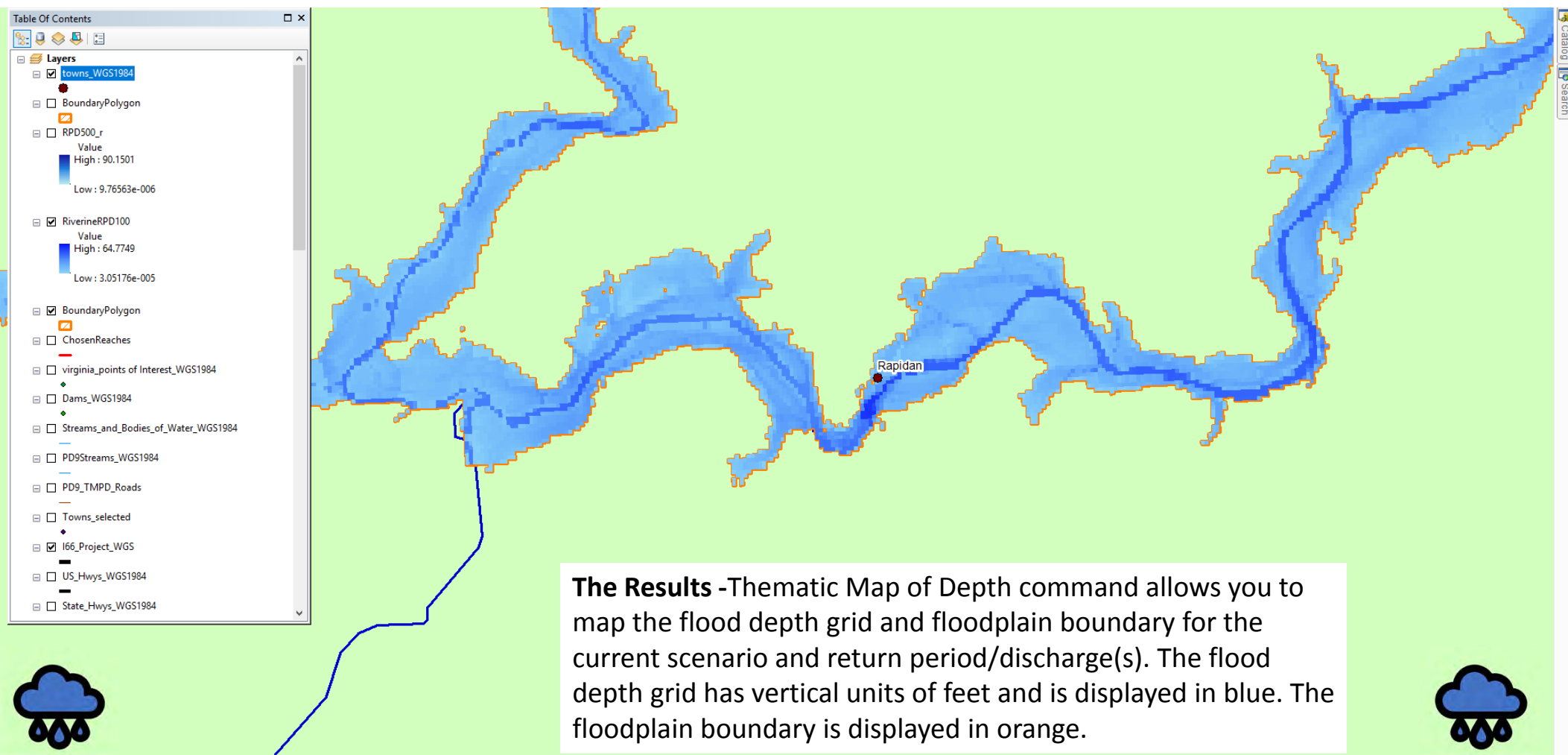
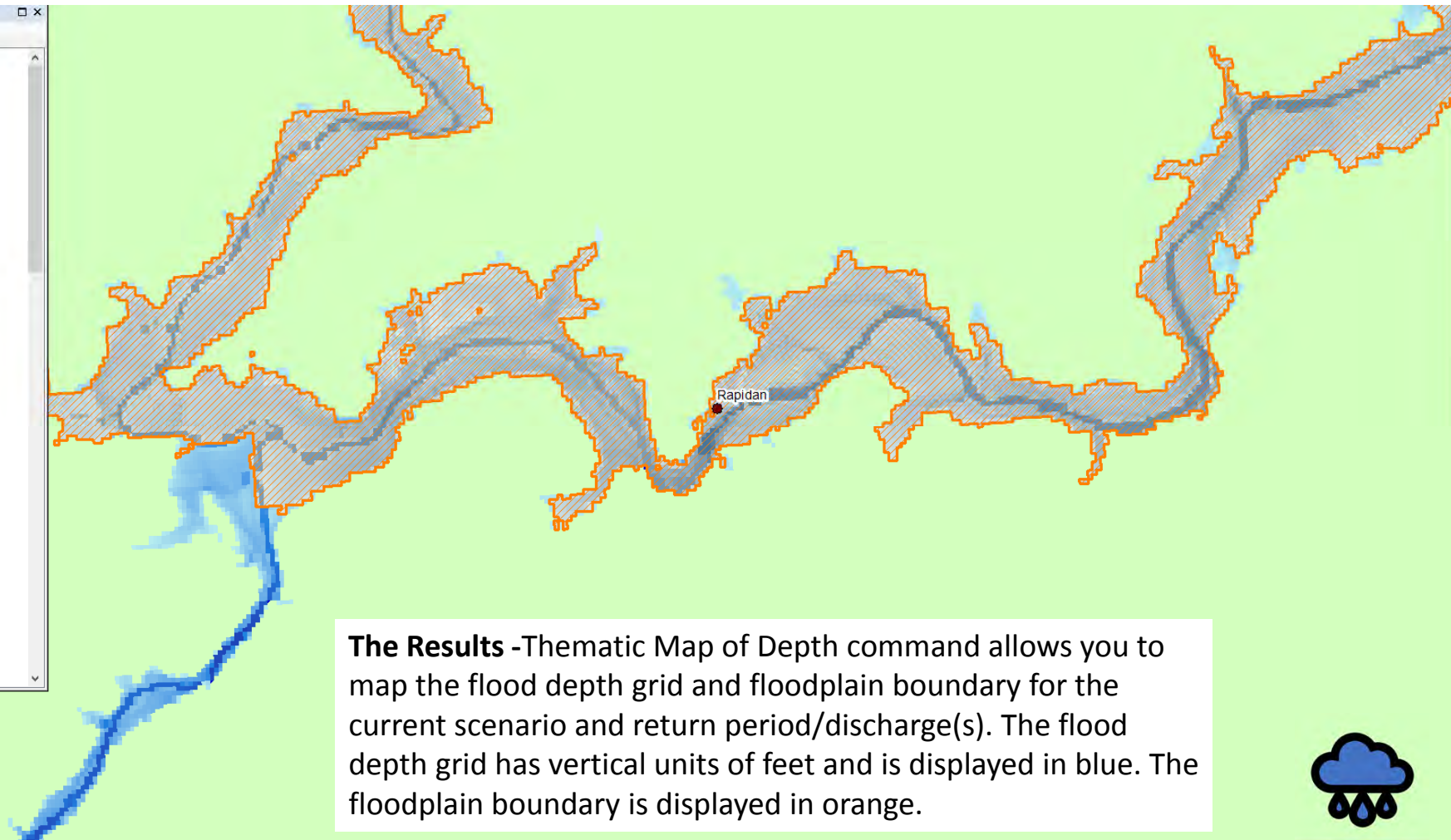


Table Of Contents

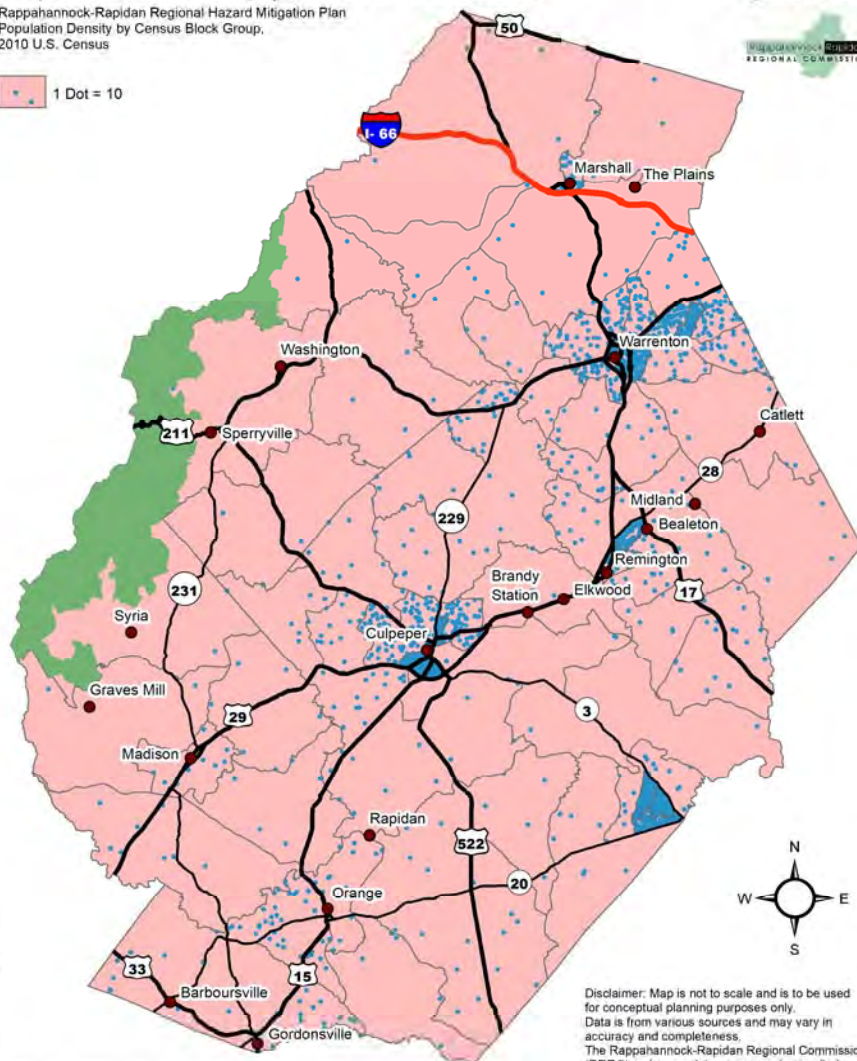
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 - ☒ BoundaryPolygon
 - ☒ RiverineRPD100
 - Value
 - High : 64.7749
 - Low : 3.05176e-005
 - ☒ RPD500_r
 - Value
 - High : 90.1501
 - Low : 9.76563e-006
 - ☐ BoundaryPolygon
 - ☐ ChosenReaches
 - ☐ virginia_points of Interest_WGS1984
 - ☐ Dams_WGS1984
 - ☐ Streams_and_Bodies_of_Water_WGS1984
 - ☐ PD9Streams_WGS1984
 - ☐ PD9_TMPD_Roads
 - ☐ Towns_selected
 - ☒ I66_Project_WGS
 - ☐ US_Hwys_WGS1984
 - ☐ State_Hwys_WGS1984



Population Density | 2010 U.S. Census

Rappahannock-Rapidan Regional Hazard Mitigation Plan
Population Density by Census Block Group,
2010 U.S. Census

1 Dot = 10



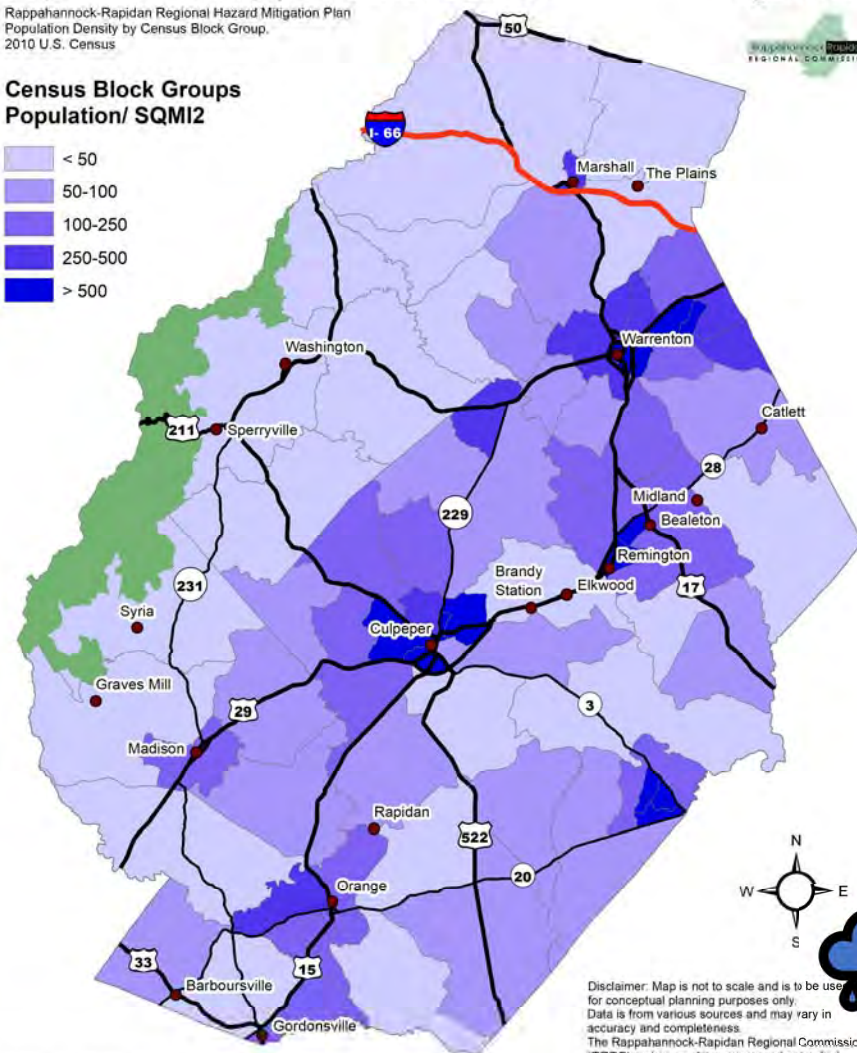
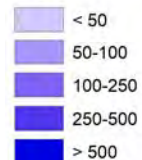
Disclaimer: Map is not to scale and is to be used for conceptual planning purposes only. Data is from various sources and may vary in accuracy and completeness. The Rappahannock-Rapidan Regional Commission (RRRC) makes no claim, expressed or implied.

Figure 6.2

Population Density | 2010 U.S. Census

Rappahannock-Rapidan Regional Hazard Mitigation Plan
Population Density by Census Block Group,
2010 U.S. Census

Census Block Groups Population/ SQMI2



Disclaimer: Map is not to scale and is to be used for conceptual planning purposes only. Data is from various sources and may vary in accuracy and completeness. The Rappahannock-Rapidan Regional Commission (RRRC) makes no claim, expressed or implied.

Figure 6.2

Residential Flood Exposure by Census Tract

Rappahannock-Rapidan Regional Hazard Mitigation Plan
Residential Dollar Exposure Source: HAZUS-MR 4.0
Data is shown using 2010 Census Tracts and includes
building stock and content values

Residential Dollar Exposure by Census Tract



Map created for Rappahannock-Rapidan Hazard Mitigation Plan Update and is intended for general planning purposes only. Data is from various sources and may vary in accuracy and completeness
Data: 11/2017 File: Hazus-MH: Flood-RapRapRegion (Flood_Hazard_all)

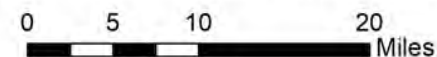
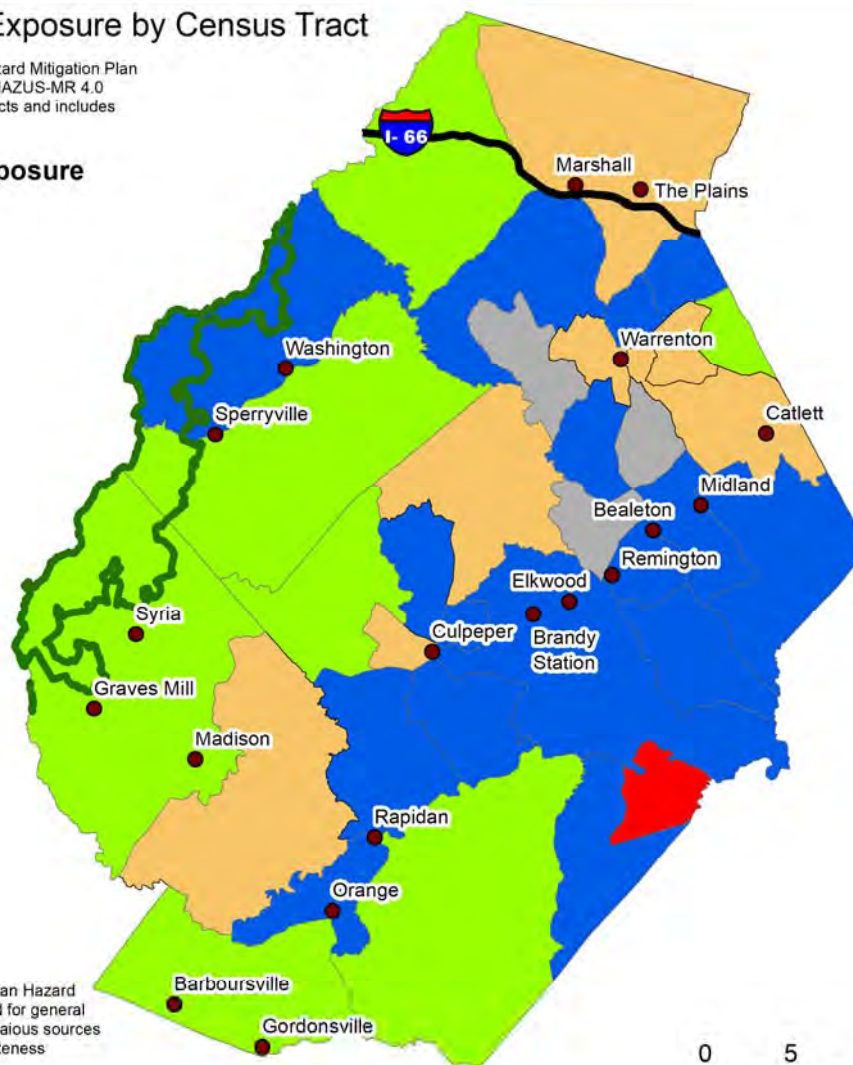


Figure 6.3

Rappahannock-Rapidan
REGIONAL COMMISSION

Commercial Flood Exposure by Census Tract

Rappahannock-Rapidan Regional Hazard Mitigation Plan
Residential Dollar Exposure Source: HAZUS-MR 4.0
Data is shown using 2010 Census Tracts and includes
building stock and content values

Commercial Dollar Exposure by Census Tract

- <\$20 Million
- \$20M-\$50M
- \$50M-\$100M
- \$100M- \$200M
- >\$200 Million



Map created for Rappahannock-Rapidan Hazard Mitigation Plan Update and is intended for general planning purposes only. Data is from various sources and may vary in accuracy and completeness
Data: 11/2017 File: Hazus-MH: Flood-RapRapRegion (Flood_Hazard_all)

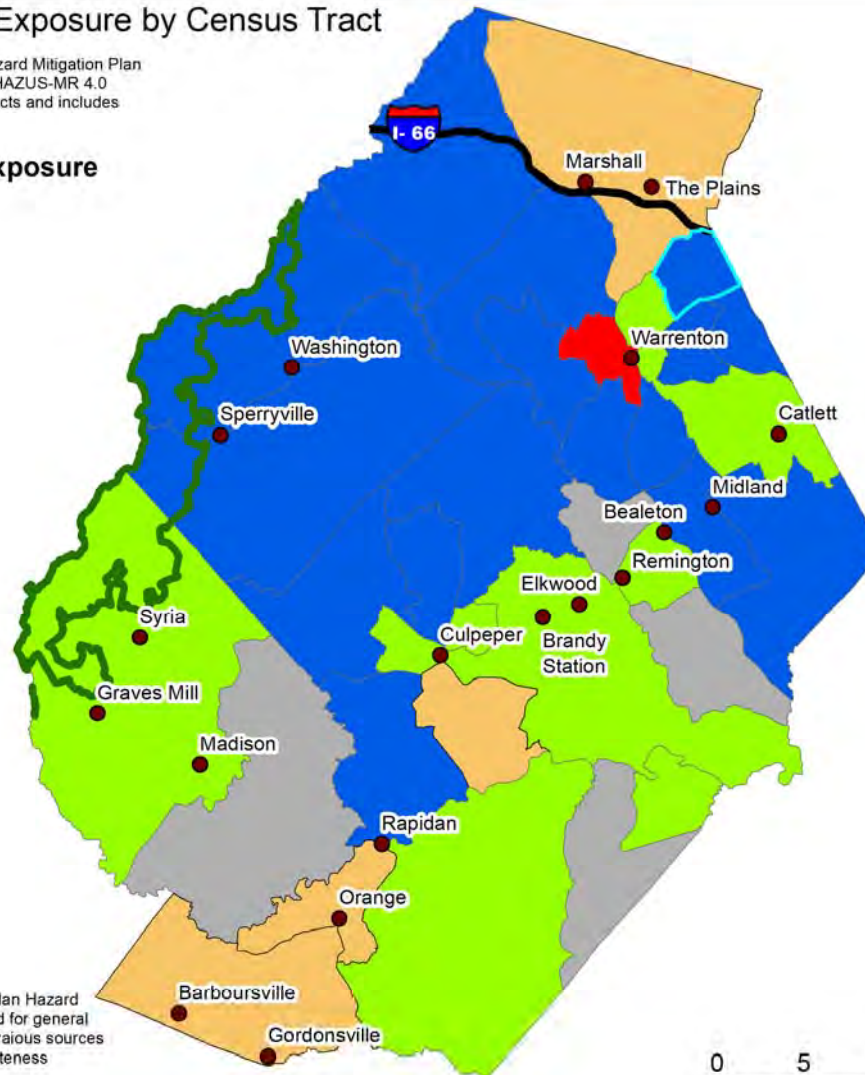


Figure 6.4



0 5 10 20 Miles

Industrial Flood Exposure by Census Tract

Rappahannock-Rapidan Regional Hazard Mitigation Plan
 Residential Dollar Exposure Source: HAZUS-MR 4.0
 Data is shown using 2010 Census Tracts and includes
 building stock and content values

Industrial Dollar Exposure by Census Tract

- <\$10 Million
- \$10M-\$15M
- \$15M-\$20M
- \$20M-\$25M
- >\$25M



Map created for Rappahannock-Rapidan Hazard Mitigation Plan Update and is intended for general planning purposes only. Data is from various sources and may vary in accuracy and completeness.
 Date: 11/2017 File: Hazus-MH: Flood-RapRapRegion (Flood_Hazard_all)

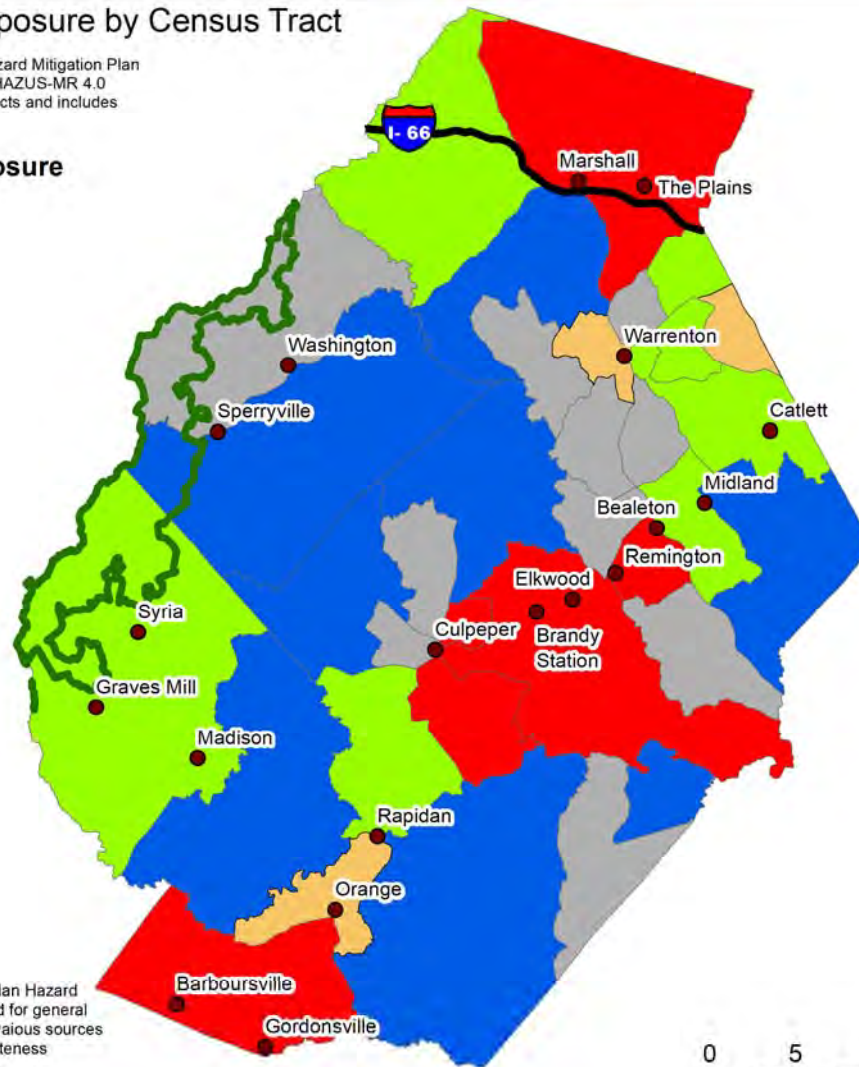


Figure 6.5

Rappahannock-Rapidan
REGIONAL COMMISSION



0 5 10 20
Miles

Critical Facilities

Rappahannock-Rapidan Regional Hazard Mitigation Plan
Critical Facilities include fire stations, police stations, schools and hospitals identified by HAZUS-MH 4.0
Data is shown using 2010 Census Tracts

Legend

-  Schools
-  Hospitals
-  Police Stations
-  Fire Stations
-  Shenandoah National Park
-  Census Tracts
-  Counties

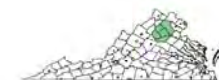


Map created for Rappahannock-Rapidan Hazard Mitigation Plan Update and is intended for general planning purposes only. Data is from various sources and may vary in accuracy and completeness data: 11/2017
File: Hazus-MH: Flood-RapRapRegion (Flood_Hazard_all)



Figure 6.6

Rappahannock-Rapidan
REGIONAL COMMISSION



0 5 10 20 Miles

Critical Utilities

Rappahannock-Rapidan Regional Hazard Mitigation Plan
Critical Utilities include Water, Wastewater, Oil, Electric,
Natural Gas and Communications facilities
identified by HAZUS-MH 4.0
Data is shown using 2010 Census Tracts

Legend

-  Communications Facility
-  Electric Power Facility
-  Natural Gas Facility
-  Oil Facility
-  Waste Water Facility
-  Potable Water Facility
-  Shenandoah National Park
-  Census Tracts
-  Counties



Map created for Rappahannock-Rapidan Hazard
Mitigation Plan Update and is intended for general
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and may vary in accuracy and completeness
data: 11/2017
File: Hazus-MH: Flood-RapRapRegion (Flood_Hazard_all)



Figure 6.7

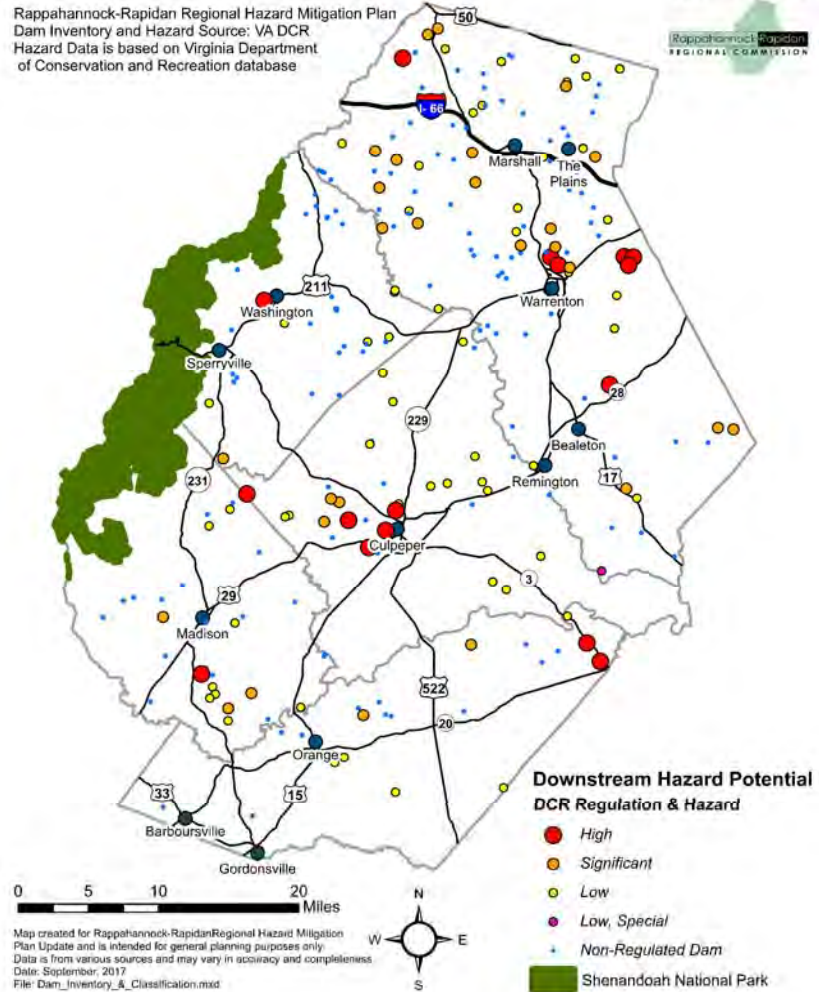


0 5 10 20 Miles

Dam Inventory & Classification

Figure 5.23

Rappahannock-Rapidan Regional Hazard Mitigation Plan
 Dam Inventory and Hazard Source: VA DCR
 Hazard Data is based on Virginia Department
 of Conservation and Recreation database



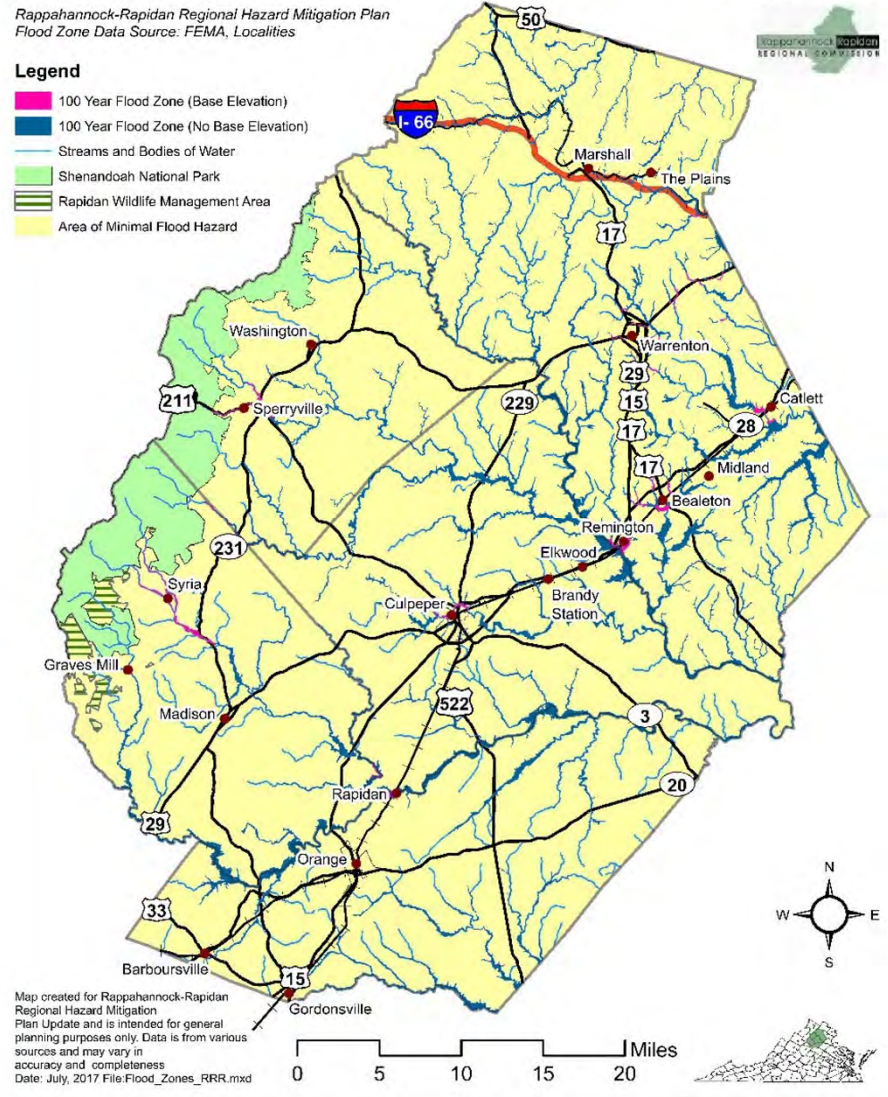
Flood Hazard Areas

Figure 5.1

Rappahannock-Rapidan Regional Hazard Mitigation Plan
Flood Zone Data Source: FEMA, Localities

Legend

- 100 Year Flood Zone (Base Elevation)
- 100 Year Flood Zone (No Base Elevation)
- Streams and Bodies of Water
- Shenandoah National Park
- Rapidan Wildlife Management Area
- Area of Minimal Flood Hazard



Approximately 92.11% of the buildings (and
84.53% of the building value)
Are associated with residential housing

Virginia				
Madison	13,308	1,470,929	149,703	1,620,632
Culpeper	46,689	4,597,580	932,647	5,530,227
Orange	33,481	3,433,089	623,595	4,056,684
Fauquier	65,203	8,421,630	1,619,543	10,041,173
Rappahannock	7,373	1,033,776	143,930	1,177,706
Total	166,054	18,957,004	3,469,418	22,426,422
Total Study Region	166,054	18,957,004	3,469,418	22,426,422



	Total Damage Cost (buildings and content)	Moderately Damaged buildings count	Completely Destroyed buildings count	Essential Facilities Damage
500 Year Flood Event	\$219 million	201	45	0

153 hospital beds available!

Classification	Total	# Facilities		
		At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	34	0	0	0
Hospitals	2	0	0	0
Police Stations	14	0	0	0
Schools	61	0	0	0

County	NFIP Flood Insurance Policy Count	Effective FEMA Flood Insurance Study	Parcels with Flood Insurance	100-Year Floodplain (Zones AE and A)			
				Parcels with Flood Insurance	Structures with Flood Insurance	Number of Insured Losses	Mitigated
Jurisdiction							
Madison		AE		2		No	
Culpeper		A		2		No	
Orange		A		1		No	
Warrenton		A		1		No	
TOTAL				6			
Kappanannock County		37		\$10,274,600.00		\$36,755.00	
Washington		0					
REGION TOTALS:		407		\$109,882,700.00		\$327,652.00	
Washington	1/3/2007	1/3/2007	13	0	0	0	0
REGIONWIDE TOTALS			9,224	934	1,750	\$313,032,900	\$3,130,329

-Outside HAZUS analysis

About 9.6% of parcels!

Natural Infrastructure for Water Management

Investing in nature for multiple objectives



Natural or semi-natural infrastructure provides services for water resources management with equivalent or similar benefits to conventional (built) 'grey' water infrastructure.

The composition, structure, and function of natural infrastructure assets in river basins, and the way they interplay with built 'grey' infrastructure will determine the primary services and co-benefits produced.

Further information can be found in UNEP (2014) *Green Infrastructure Guide for Water Management: Ecosystem-based management approaches for water related-infrastructure projects*.

Wildfire Regional Vulnerability Assessment

- Wildfire Incidents
- Risk Maps
- Overlay agricultural and forestal districts
- Planning Applications



County	# of Incidents 2010-2016	Total Acres
Culpeper	23	88
Fauquier	76	350
Madison	52	79
Orange	40	143
Rappahannock	24	148
Total	215	808



#

Agriculture and Forestral Districts

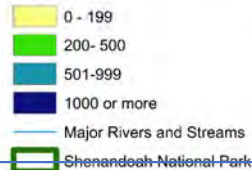
Rappahannock-Rapidan Regional Hazard Mitigation Plan
Wildfire Risk Data Source: Va. Dept. of Forestry



- VA DEPT OF FORESTRY FIRE INCIDENTS (2010-2016)

Virginia Agricultural & Forestral Districts

Acres

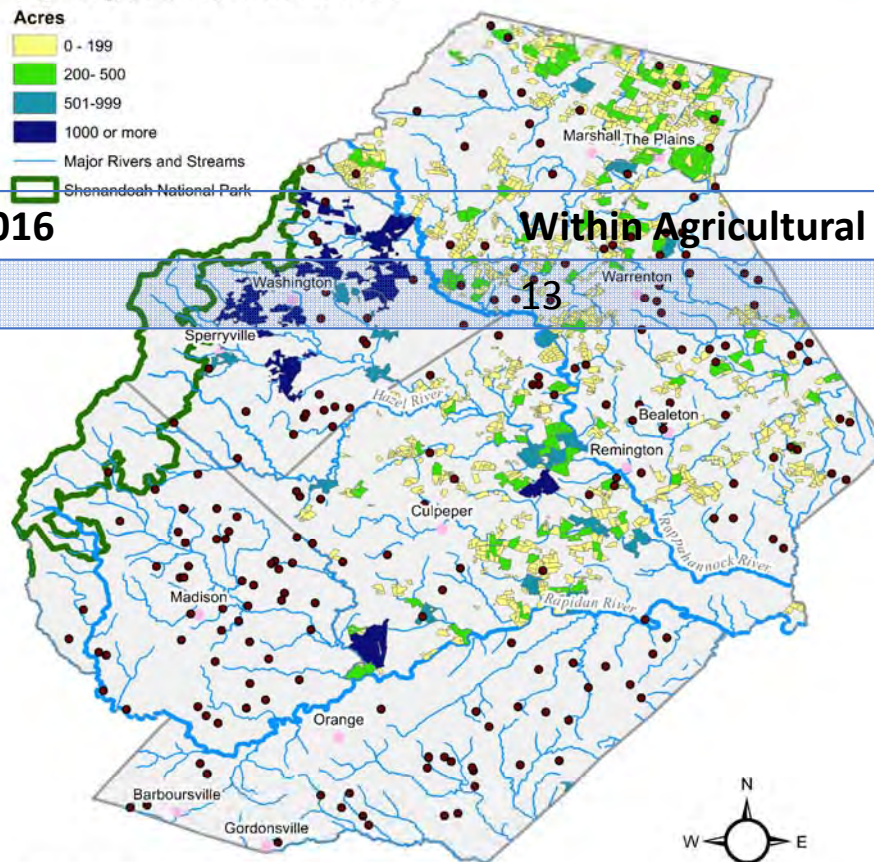


Fire Incidents 2010-2016

215

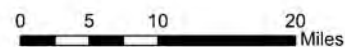
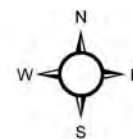
Within Agricultural or Forestral Districts

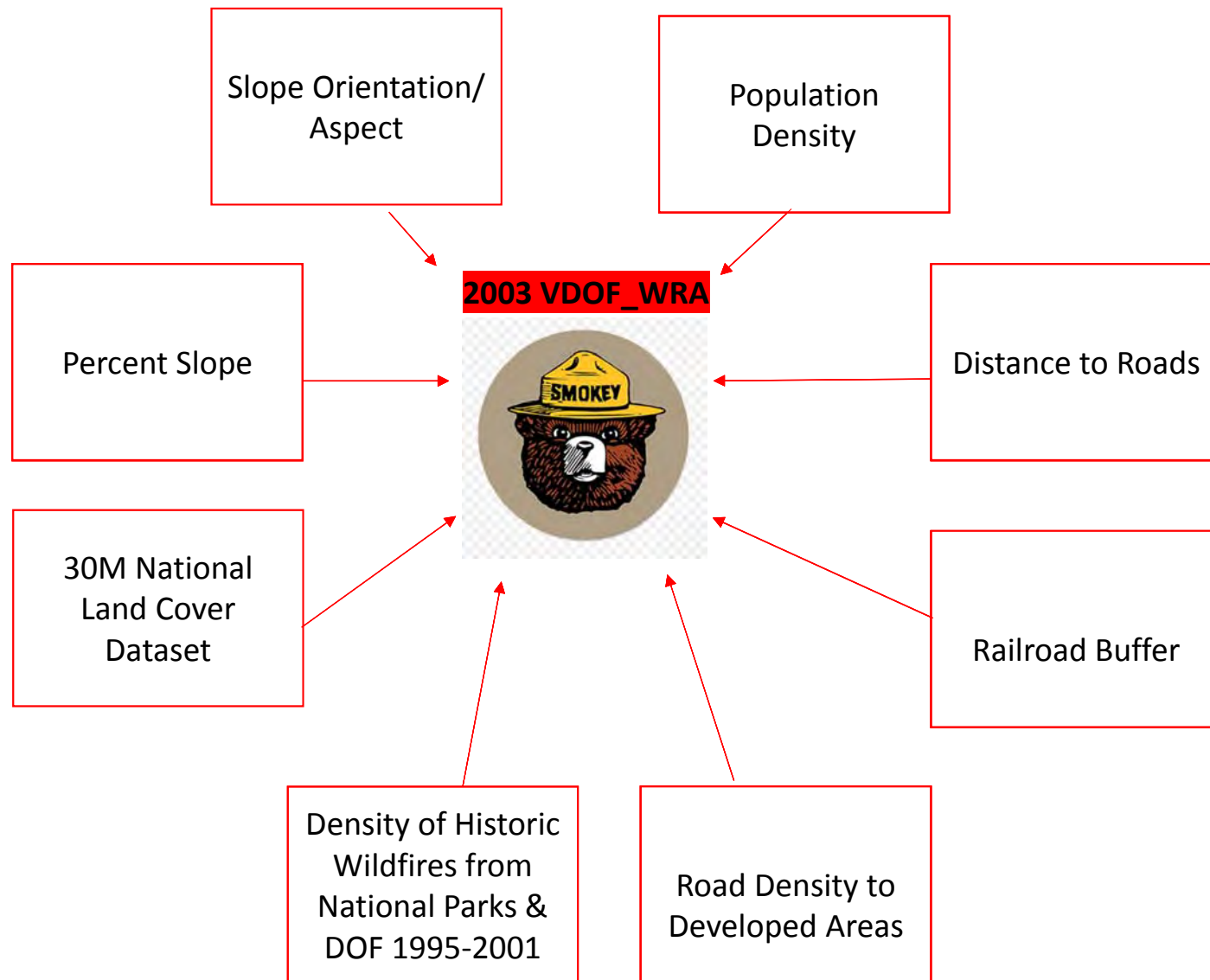
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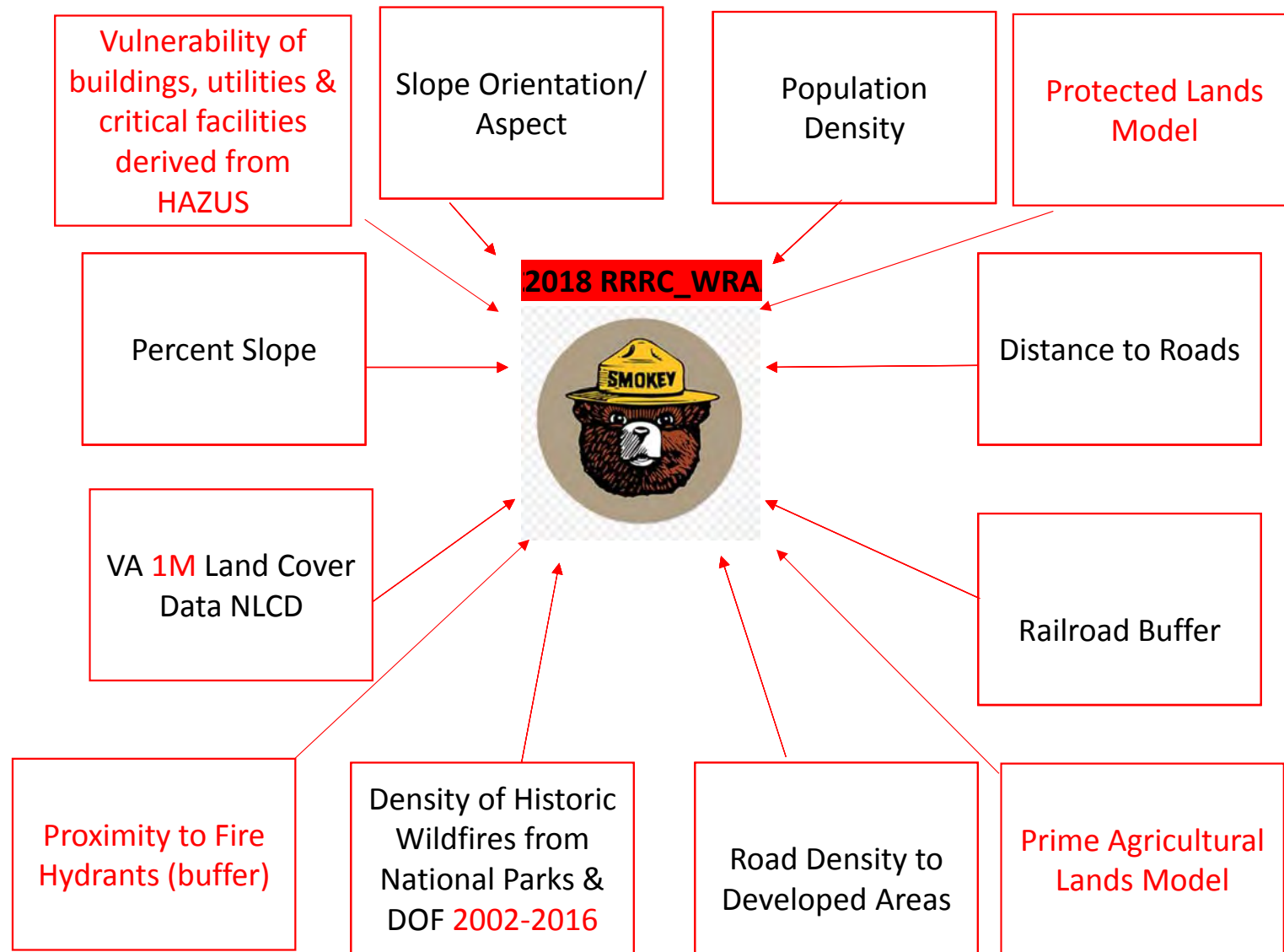
Fire Incidents (2010-2016)	Within Agricultural or Forestral Districts
215	13

Map created for Rappahannock-Rapidan Regional Hazard Mitigation Plan Update and is intended for general planning purposes only.
Data is from various sources and may vary in accuracy and completeness
Date: September, 2017 File: Ag_&_forestral_districts





County	# of Incidents in High Risk Area (2002-2016)	# of Incidents in Moderate Risk Area (2002-2016)	# of Incidents in Low Risk Area (2002-2016)
Culpeper	28	60	23
Fauquier	27	87	31
Madison	90	51	6
Orange	32	97	14
Rappahannock	30	39	1



Examples of Community Tools

Landscaping Regulations require property owners to manage hazardous vegetation and maintain their properties.

Watershed Management Plans reduce wildfire through fuel treatments, protecting vital water resources.

Forest Management Projects reduce fuels within the wildland-urban interface (WUI).

Building Codes require ignition-resistant construction materials for new developments and retrofits.

Land Preservation Tools encourage agricultural lands to buffer development from wildfires.

Steep Slope Ordinances restrict development within high wildfire-risk areas.

Land Use and Development Codes incentivize developers to plan open space and recreational trails, creating fuel breaks.

Subdivision Design Standards require risk reduction features, such as minimum road widths, secondary access, and adequate water supply.

Local Governments support fire adapted communities through good land use planning.



Planning Can Help Mitigate Impacts of Wildfires & Floods !

- Transportation plan
- Comprehensive Land Use Plans
- Zoning Ordinance
- Building Code
- Fire code
- Evacuation Plan
- Open Space Preservation
- Disaster Recovery Plan

- Floodplain Management Plan
- Stormwater Management Plan
- Floodplain Management Plan
- Emergency Operations Plan
- Continuity of Operations Plan
- Riparian Buffer/Wetland Preservation
- Flood Damage Prevention Ordinance



Planning Can Help Mitigate Impacts of Wildfires & Floods !

- **Prevention**
 - Drainage System Maintenance
 - Hazard Mapping
- **Protection of Personal Property**
 - Building Elevation
 - Insurance
 - Retrofitting
- **Natural Resource Protection**
 - Riparian Buffers
 - Fire Resistant Landscaping
 - Habitat Preservation
 - Floodplain Protection
- **Structural Projects**
 - Reservoirs/Dam Stabilization
 - Storm Sewer Management
- **Emergency Services**
 - Warning systems
 - Search and Rescue
- **Information**
 - Training
 - Outreach and Education



Floodplain Management Workshop

Rappahannock-Rapidan Regional Commission

Charley Banks, CFM
Kristin Owen, AICP, CFM
Gina DiCicco, AICP, CFM

October 11, 2017
Culpeper, VA



Introduction

- DCR Staff Introductions
- Community Introductions
 - Name
 - Community name
 - Title
 - What you hope to gain from the workshop



2



Workshop Goals

- Remind communities of the basics of the National Flood Insurance Program, addressing community-specific questions and comments.
- Ensure that communities understand their roles and responsibilities in floodplain management.
- Provide communities with NFIP and DCR program updates.
- Establish a closer relationship between DCR and PDCs, to facilitate future collaboration.





3








Agenda

- Overview of the NFIP
- Floodplain Ordinances and Permitting
 - Floodplain Management Regulations
 - Accessory Structures
 - Floodplain Ordinances and Administrative Procedures
 - Permitting Development
 - Elevation Certificates
- Flood Hazard Maps and Data
 - Flood Insurance Rate Maps and Flood Insurance Studies
 - Accessing and Using Flood Hazard Data
 - Changing FIRMs and FIS Reports
 - Non-regulatory Products and Other Resources
- Pre- & Post-Disaster Considerations
- Community Rating System
- DCR Division of Dam Safety and Floodplain Management Update
 - Floodplain Management Program Overview
 - Dam Safety Database

Overview of the National Flood Insurance Program

National Flood Insurance Program (NFIP) Milestones

- 1968 – National Flood Insurance Act
- 1969, 1972 – Tropical Storms Camille and Agnes
- 1973 – Flood Disaster Protection Act of 1973 – mandatory purchase
- 1979 – FEMA created – NFIP moved
- 1988 – Stafford Act
- 1994 – National Flood Insurance Reform Act – creates Flood Mitigation Assistance grants, codifies mandatory purchase, lender penalties established
- 2003 -- DHS created, FloodSmart program, Hurricane Isabel
- 2004 – FIRA 2004 (BBB Act) – Reformed claims process, plain language mailings, appeals process, Florida hurricanes
- 2005 – Katrina, Rita, Wilma – \$14 billion in the hole
- 2012 – Biggert-Waters Flood Insurance Reform Act, Hurricane Sandy - \$20 billion in the hole
- 2014 – Homeowner Flood Insurance Affordability Act of 2014

NFIP Background

- Created by National Flood Insurance Act of 1968
- Participation is **voluntary**
 - Adopt and enforce regulations
 - Eligible for flood insurance
- **Benefits** of participation
 - Flood insurance
 - Grants and loans
 - Disaster assistance
 - Federally-backed mortgages
- **Goals** of the NFIP include
 - Save lives and protect property
 - Encourage a comprehensive approach to floodplain management

The Base Flood:
The flood having a 1% chance of being equaled or exceeded in a given year. Used by the NFIP as the basis for mapping, insurance rating, and regulating development.



7



NFIP Background

- The NFIP is a **voluntary program**
 - Voluntary agreement between FEMA and the local government.
 - Elements and requirements of the program are in 44 CFR 59 – 75.
 - A locality complies with **44 CFR 60.3** by adopting a floodplain ordinance that meets or exceeds the minimum requirements and by implementing proper floodplain management. FEMA then provides the flood insurance rate maps (FIRMs) and authorizes the sale of flood insurance in the community.



8



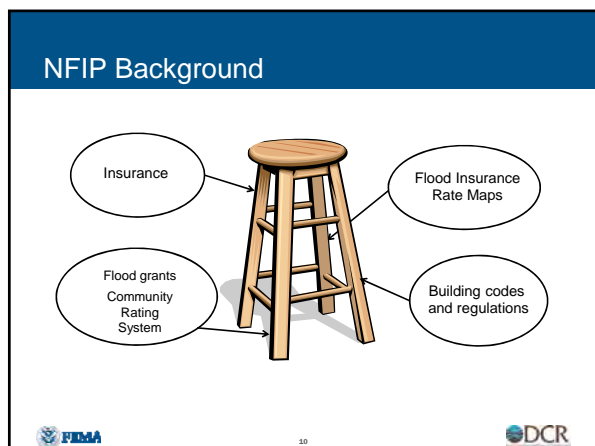
Joining the NFIP

- Without mapped SFHA (NSFHA)
 - Resolution to join the NFIP Process
 - Submit application to DCR → FEMA
- With mapped SFHA
 - Resolution to join the NFIP Process
 - Adopt floodplain ordinance in compliance with 44 CFR
 - Submit application to DCR → FEMA
 - Communities have one year after their first FIRM to join the NFIP
 - If a community applies after that year, a Community Assistance Visit is required to ensure that all post-FIRM development in the SFHA complies with 44 CFR



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NFIP Flood Insurance Basics

- Sold by licensed insurance agents through
 - "Write Your Own" insurance companies
 - FEMA's Direct Servicing Agent
- Essential elements of rating include
 - Flood Zone
 - Elevation Difference (BFE, LFE)
 - Building/Occupancy Type
 - Construction Date (pre-FIRM vs. post-FIRM)
 - Coverage Limits & Deductible

	Emergency Program	Regular Program
Residential (1-4 family)		
Building	\$35,000	\$250,000
Contents	\$10,000	\$100,000
Other Residential		
Building	\$100,000	\$500,000
Contents	\$ 10,000	\$100,000
Non-Residential		
Building	\$100,000	\$500,000
Contents	\$100,000	\$500,000

NFIP Flood Insurance Basics

- Increased Cost of Compliance
 - Included in policy to help property owners in SFHA to pay for mitigation measures to bring NFIP insured structures into compliance
 - Provides up to \$30,000* for mitigation
 - Floodproofing (non-residential)
 - Relocation
 - Elevation
 - Demolition

**ICC coverage applies solely to buildings and only covers the cost of the compliance measures undertaken.*

NFIP Roles: Federal and State

▪ Federal

- National program oversight
- Risk identification (mapping)
- Establish development/building standards
- Provide technical assistance to state/communities/agencies
- Provide insurance coverage

▪ State

- State program oversight
- Establish development/building standards
- Provide technical assistance to local communities/agencies
- Evaluate and document floodplain management activities



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NFIP Roles: Local

▪ Local Officials and Floodplain Administrators

- Adopt and enforce floodplain management ordinance compliant with Federal/State laws
- Permit or deny development
- Inspect development and maintain records
- Make substantial damage/substantial improvement determinations

- Development oversight is a **local responsibility**



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NFIP in Virginia

- There is no state-level floodplain regulation. The VA USBC contains standards for buildings in flood-prone areas and a statement that the local floodplain ordinance is not superseded by the VA USBC.
- VA Flood Damage Reduction Act, Section 10.1-600 to 10.1-603 of the Code of Virginia directs all state agencies to comply with floodplain regulations.
- Executive Memo 2-97 requires state projects in the SFHA to comply with the local floodplain ordinance.



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NFIP in Virginia

- Currently, 290 Virginia communities participate in the NFIP.
- DCR is charged by the General Assembly in the VA Flood Damage Reduction Act, Section 10.1-600 to 10.1-603 of the Code of Virginia, to be the liaison between FEMA and communities.
- DCR assists communities with their floodplain ordinances and maps, and provides floodplain workshops and guidance.



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NFIP Program Updates

- Impacts of recent reform legislation
 - Annual premium increase caps of 15-18%
 - Certain pre-FIRM subsidize-rated buildings in Zone A's, and V's increase 25% until reach full-risk rate*:
 - Non-primary residences
 - Commercial buildings
 - Repetitive loss structures
 - Substantially damaged buildings



*Rate using information from Elevation Certificate



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NFIP Program Updates

- Impacts of recent reform legislation (cont.)
 - Properties newly mapped into SFHA can get lower-cost Preferred Risk Policy (PRP) rates first year if purchased within 12 months of map change
 - Will then increase no more than 15-18% until reach standard Zone X rate or rated using current map, whatever is cheaper
 - Lapsed policies more than 90 days will be rewritten using full-risk rates
 - This affects pre-FIRM subsidize-rated and Newly Mapped policies



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NFIP Program Updates

■ Premium Increases and Surcharges

- Overall, premiums will increase from an estimated \$827 per policy to \$878, for an average increase of 6.3%
- When the HFIAA surcharge and the Federal Policy Fee are included, the total amount billed to the policyholder will increase from \$953 to \$1,005, an average of 5.4%
- Annual premium increases continue to comply with all the requirements of BW-12 and HFIAA 2014
 - No less than 5%-no more than 15% per rating class
 - Individual PH premiums no more than 18%-some exceptions
 - Specific 25% mandatory increase for certain categories



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NFIP Program Updates

■ Premium Increases and Surcharges-Pre-FIRM Subsidized Policies

- Primary Residences: The combined premium increase for all primary residence policies in SFHA is 5%, with a total increase of 5%
- Non-Primary Residences: The combined premium increase for non-primary residence policies in SFHA is 24%, with a total increase of 21%
- Pre-FIRM subsidized policies subject to 25% annual increases as required by BW-12 (non-primary residential, business, SRL, and SD/SI) will increase slightly less than 25%



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Overview of the National Flood Insurance Program



Questions?






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Floodplain Ordinances and Permitting



Floodplain Ordinances and Permitting

FLOODPLAIN MANAGEMENT REGULATIONS


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Floodplain Management Regulations

- Minimum NFIP requirements are found in the Code of Federal Regulations, Title 44, Chapter 1, Subchapter B
 - Definitions: 44 CFR 59.1
 - Development Standards for flooding: 44 CFR 60.3
 - Variances: 44 CFR 60.6
- Land use authority granted to localities by the state (VA Code §15.2-2280 and §10.1-600 et seq.)
- Designed to address public health, safety, and welfare of citizens


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Regulation “Staircase”

- Regulations build cumulatively in increments according to mapping and flood zone designations.
- Each step adds more stringent requirements as risk increases.

FEMA DCR

44 CFR §60.3(a): No Flood Map

- Applies to communities for which FEMA:
 - Identified no Special Flood Hazard Areas.
 - Prepared no flood map.

FEMA DCR

60.3(a) Floodplain Management Criteria

- The community shall:
 - Require permits for all proposed development.
 - Ensure all necessary permits are received.
 - Review permit applications for building sites to be reasonably safe from flooding.

FEMA DCR

60.3(a) New Construction Criteria

- All new construction/substantial developments:
 - Are designed (or modified) and adequately anchored to prevent flotation, collapse, or lateral movement.
 - Are constructed with flood-resistant materials.
 - Use methods and practices to minimize flood damage.
 - Protect utilities and other service facilities from intrusion of floodwaters.



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Protecting Utilities

- Raise HVAC components.
- Install backflow valve.
- Elevate electrical components.
- Anchor fuel tanks.
- Waterproof veneer.



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New Development: 60.3(a)(4) and (5)

- (4) Review subdivision and other new development proposals for:
 - i. Need to minimize flood damage.
 - ii. Location/construction of public utilities/facilities.
 - iii. Adequate drainage.
- (5) Require new and replacement water supply systems be designed to minimize or prevent infiltration of flood waters.



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Sewage/Waste Disposal Systems: 60.3(a)(6)

- Within floodprone areas, require:
 - i. New/replacement sewage systems that minimize or eliminate infiltration of floodwaters.
 - ii. Location of onsite waste disposal systems to avoid impairment to them or contamination from them.



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60.3(b): Approximate Zone A

- FIRMs identify edges of Special Flood Hazard Areas (approximate Zone A).
- No maps/studies to determine:
 - Base Flood Elevations.
 - Regulatory floodways.
 - Coastal high hazard areas.



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60.3(b) Requirements (1)–(4)

1. Require permits for ALL development in mapped SFHAs.
2. Apply 60.3(a) (2)–(6) standards to development.
3. Require that subdivision and other development proposals include BFE data.
 - Subdivisions: 50 lots or 5 acres
4. Use available BFE and floodway data.



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Review Subdivision Proposals: 60.3(b)(3)

Zone A

(can the project be designed differently?)

FEMA DCR

60.3(b) Requirements (5) - (8)

5. Document lowest floor or floodproofing elevation.
6. Provide notification of watercourse alterations.
7. Ensure the flood-carrying capacity within an altered watercourse is maintained. (proper permits and adjacent jurisdiction/owner notification required)
8. Require that manufactured homes be elevated and anchored.

FEMA DCR

60.3(b) Requirements: Review

- Meet 60.3(a) requirements.
- Obtain BFE and floodway data.
- Elevate lowest floor to or above BFE.
- Install openings in enclosed spaces below lowest floor.
- Include BFE in subdivision proposals over 50 lots or 5 acres.

FEMA DCR

60.3(c): A Zones With BFEs

- FIRMs identify:
 - Special Flood Hazard Areas
 - Base Flood Elevations
- Not determined by maps or studies:
 - Regulatory floodways
 - Coastal High Hazard Areas



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A Zones With BFEs

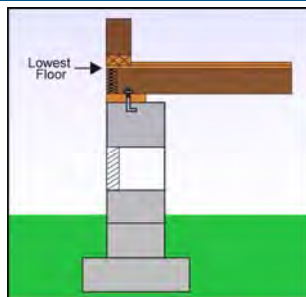
- 1-percent flood:
 - AO: Shallow sheet flow, depths 1–3 feet, average **depths** shown on FIRM
 - AH: Shallow ponding, depths 1–3 feet, **BFE** shown on FIRM
 - A1–A30, AE: BFEs determined
 - A99: Protected by flood protection system under construction



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Lowest Floor, Zone AE: 60.3(c)(2) and(3)



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Manufactured Homes

- Difference between 60.3(c)(6) and (12)
 - (6) Anywhere; manufactured home has been substantially damaged; replacement is required to be at or above the BFE.
 - (12) Only in a manufactured home park with no substantial damage from flooding; new or replacement can be on 3' reinforced piers regardless of the BFE.



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Recreational Vehicles, 60.3(c)(14)

- Must be on site for less than 180 consecutive days,
- Be fully licensed and ready for highway use(wheels & tires, quick disconnects, no attached decks), or
- Meet the elevation and anchoring requirements for manufactured homes [60.3(c)(6)].



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60.3(c) Requirements: Review

- Apply 60.3(b) requirements, including:
 - Elevate lowest floor to or above BFE.
 - Install openings in enclosed spaces below lowest floor.
- Development cannot cumulatively raise the BFE by more than 1 foot
 - 1 foot of rise includes existing and anticipated development
 - Community-wide
 - If development will increase the BFE by more than a foot, apply for a CLOMR (and subsequent LOMR).



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60.3(d): A Zones With BFE and Floodway

- FIRMs/FIS identify:
 - Special Flood Hazard Areas.
 - Base Flood Elevations.
 - Floodways.



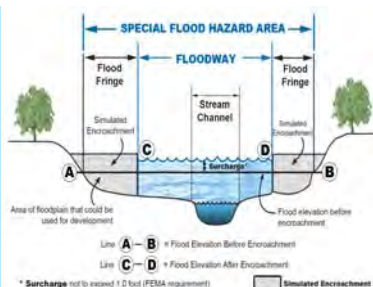
43



Floodways

Floodway is the channel designated to convey the fastest deepest moving waters during the base flood.

Also designed to help floodplain management — no federal minimum requirement for development outside the floodway to submit studies about BFE impacts.



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60.3(d) Requirements: Review

- Meet 60.3(c)(1)-(14) requirements
- Prohibit encroachments in the floodway, unless shown to cause no increase in BFE.
 - If development will increase the BFE, apply for a CLOMR (and subsequent LOMR).

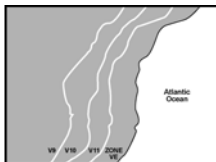


45



60.3(e): Zones VE and V1-30

- FIRMs/studies identify:
 - Special Flood Hazard Areas.
 - Base Flood Elevations.
 - Coastal High Hazard Areas.



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Zones VE and V1-30

- SFHA
- Areas of 1-percent chance coastal flood with velocity hazards (wave action >3 feet or seaward of landward toe of primary frontal dune)
- Base Flood Elevations and flood hazard factors determined



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Transect Schematic

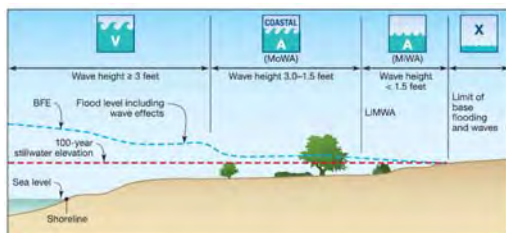


Figure 3-53. Typical shoreline-perpendicular transect showing stillwater and wave crest elevations and associated flood zones

COASTAL CONSTRUCTION MANUAL

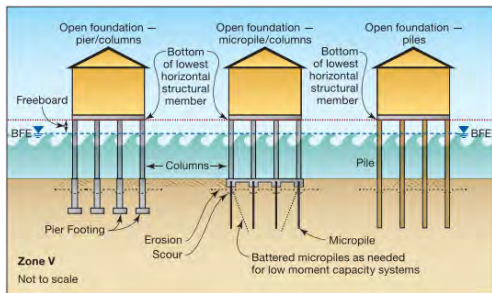
3-57



48



Lowest Horizontal Structural Member: 60.3(e)(2)



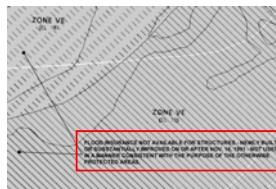
49



Coastal Barrier Resources Act (CBRA)



Federal law discourages development in these coastal areas by severely restricting federal assistance (flood insurance, disaster assistance).



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60.3(e) Requirements: Review

- Meet 60.3(c)(1)-(14) requirements
- Elevate the bottom of the lowest structural member to or above BFE
- Certify that structures are anchored to resist flotation, collapse, and lateral movement resulting from both high velocity wind and water loads
- Require that the space below the lowest floor be free of obstruction (except for break away walls, lattice, etc.)
- Prohibit the use of structural fill
- Prohibit man-made alterations to sand dunes



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NFIP Sanctions of program deficiencies and violations

- Probation
 - \$50 surcharge per policy
 - Help offset future claims
 - Apply pressure to comply
- Suspension
 - No new policies or renewals
 - No Federally related financing
 - No Federal financial assistance or aid



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Floodplain Ordinances and Permitting

ACCESSORY STRUCTURES



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Types of Development

- Residential Development
 - Non-Residential Development
 - Other Development
- *APPURTENANT STRUCTURE: A structure which is on the same parcel of property as the principal structure to be insured and the use of which is incidental to the use of the principal structure. (44CFR 59.1)*



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Accessory or Appurtenant Structures

- Considered non-residential structures
- 44 CFR 60.3(c)(3) & (e)(1) requires:
 - Must be at or above the BFE, or
 - Dry flood-proofed



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Wet-Floodproofing Exception

- FEMA guidance has been that small, low cost accessory structures can be wet-floodproofed
 - TB 7-93
 - TB 5-08
 - FEMA 480
- PROBLEM: What is small and low cost?



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What is Small & Low Cost?

- FEMA Region 3 has recently defined accessory structures as **600 ft² or less**.
- Wet-floodproofing Exception:
 - Certain conditions must be met.
 - Variances may be required.
 - Variances may not be issued for an accessory structure exceeding 600 ft².



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Accessory Structure Requirements

1. Not for human habitation
1. Be limited to no more than 600 ft² in total floor area
2. Be useable only for parking of vehicles or limited storage
3. Be constructed with flood damage-resistant materials below the base flood elevation
4. Be constructed and placed to offer the minimum resistance to the flow of floodwaters



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Accessory Structure Requirements (cont.)

6. Be anchored to prevent flotation
7. Have electrical service and mechanical equipment elevated to or above the base flood elevation
8. Shall be provided with flood openings (specific standards defined)
9. *A signed Declaration of Land Restriction (Non-Conversion Agreement) shall be recorded on the property deed*



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Accessory Structure Requirements (cont.)

- Variances
 - Not allowed for accessory structures exceeding 600 ft²
- Higher Standards
 - A community could choose a higher standard and limit accessory structures to a size less than 600 ft², such as 200 ft²
 - In that case, a variance could be issued for larger accessory structures, not to exceed 600 ft (i.e. between 200 ft² -600 ft²)



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Ordinance Compliance

- Local ordinances must be in compliance with this accessory structure definition.
- Three options for compliance
 - Prohibit accessory structures in the SFHA
 - Allow accessory structures in the SFHA and identify minimum requirements in your ordinance
 - Don't address accessory structures and require a variance for all accessory structures

NOTE: This is only for wet-floodproofing. You can still permit these structures in the SFHA if they meet the requirements of a non-residential structure (elevated or dry-floodproofed).



61



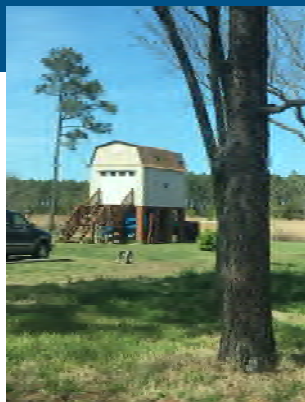
Model Ordinance Update

- New Definition
 - **Appurtenant or accessory structure** - A non-residential structure which is on the same parcel of property as the principal structure and the use of which is incidental to the use of the principal structure. Accessory structures are not to exceed *600 square feet*
- Two options for compliance
 - Prohibit accessory structures
 - Address accessory structures and limit to 600 square feet



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Floodplain Ordinances and Permitting



FLOODPLAIN ORDINANCES AND ADMINISTRATIVE PROCEDURES


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Floodplain Management Ordinance



The Ordinance

- NFIP participating municipalities in VA agreed to **adopt and enforce** an ordinance meeting the minimum requirements of the NFIP
- Ordinance must
 - Be legally enforceable
 - Applied uniformly throughout the community
- Floodplain regulations are usually found in one of, or a combination of, five types of regulations: "stand alone", zoning ordinances, building codes, subdivision regulations, and sanitary regulations


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Stand Alone Ordinances

- One ordinance contains all NFIP requirements for development standards
- Developers and officials can easily see the requirements in **one place**
- Ensure that all offices/agencies are aware of floodplain standards when inconsistent
- May not be coordinated with other regulations or codes – regulations **could be in conflict**


66




Contents of an Ordinance

- **Purpose:** Why was the ordinance adopted? What are its objectives?
- **Definitions:** What technical terms are needed?
- **Adoption of effective flood data**
- **Requirement for a floodplain development permit**
- **Development standards:** Must include provisions for
 - Building protection standards (elevation, floodproofing, anchoring) commensurate to the flood zones in your community
 - Standards for manufactured homes and manufactured home parks
 - Standards for subdivisions
 - Substantial damage/improvements
 - Construction in the floodway and standards for encroachments where floodways are not mapped


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Contents of an Ordinance

- **Designation of an administrator**
- **Variance and Appeals process**
- **Enforcement:** Clear penalties for violations must be specified
- **Abrogation and greater restriction:** Higher standard takes precedence
- **Severability:** One provision ruled invalid does not invalidate the rest


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VA Model Floodplain Management Ordinance

- Includes the provisions to comply with the NFIP
- Also includes recommended higher standards
- Refers to the VA Uniform Statewide Building code and other sources


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Common Higher Regulatory Standards

- Freeboard
- Community Identified Flood Hazard Areas
- Restrictions to Subdivision of Land
- Non Conversion Agreement
- Location Restrictions
- Prohibition
 - Development in SFHA or Floodway
 - Manufactured Homes
 - Fill
- Flood Protected Setback
- Certificate of Compliance
- Historic Structures

Higher Standards

- Recommended higher standards in the model ordinance
 - 1.5 feet (18") of freeboard for residential and nonresidential construction
 - Manufactured homes required to meet new construction standards
 - Prohibition of manufactured homes outside of existing manufactured home parks
 - Size limit for enclosed space below lowest floor in VE Zone
 - Cumulative substantial damage
 - Different elevation requirements in Coastal A and VE Zones
 - Prohibition of critical facilities in Shaded X Zone
 - Non-conversion agreement requirement for accessory structures






Higher Standards Reduce...

...**work** and administrative burden

...**risk** and response/recovery efforts

...**costs** for insurance and rebuilding

Elevating Above the BFE Saves Money

- NFIP premiums based on April 2016 rates
- One-floor residential structure with no basement built Post-FIRM in SFHA
- \$200,000 coverage for the building and \$80,000 for contents
- At BFE Insurance Premium: \$2,136

Zone AE	Annual NFIP Insurance Savings	Savings Over 30 Year Mortgage*
1 ft. below BFE	-\$2,650	-\$79,500
At BFE	0	0
1 ft. freeboard	\$1,063 (50%)	\$31,890
2 ft. freeboard	\$1,426 (67%)	\$42,780
3 ft. freeboard	\$1,545 (72%)	\$46,350

*Estimate based on April 2016 rates only



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Ordinance Enforcement

Discovering and Investigating Potential Violations

- Violations can be found through
 - Periodic inspections
 - Reports by other government agencies
 - Citizen's complaint
- Violations not remedied can result in
 - Increased risk to life and property
 - Increased insurance premiums
 - Probation – increased insurance rates for everyone
 - Suspension – NFIP insurance and many grants/loans unavailable

Investigate potential violations and take appropriate action!



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Ordinance Enforcement Options

- **Check your ordinance for the enforcement procedures that have already been outlined**
- May include
 - Voluntary compliance by property owner
 - Written Notice of Violation or stop work order and/or revoke permit
 - Per day fine
 - Withhold certificate of occupancy
 - Record on Deed
 - Injunction – court order to stop non-compliant activity
 - Municipal housing court or building court
 - **Coordinate with your solicitor**



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Community Liability

- Flood problem awareness with no action
- Failure to warn citizens of known flood hazard
- Improper development that increases flood risk
- Inconsistent administration of floodplain provisions



(PEMA)



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Legal Backing

State and local governments are more likely to be successfully sued for permitting development that causes increased flooding than they are for prohibiting such development.

Ordinances that meet the NFIP minimum requirements have not been found to be a "taking."

State laws

- Provide communities with the authorities necessary to adopt and enforce floodplain management ordinances
- Establish procedural and other requirements that communities must follow in adopting and implementing land use ordinances
- State floodplain management laws and regulations establish additional requirements that communities must include in their floodplain management ordinances



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When You've Exhausted All Legal Recourse...

Your community can consider the use of Section 1316

No new flood insurance coverage shall be provided for any property that has been declared to be in violation of State or local laws, regulations, or ordinances which are intended to discourage or otherwise restrict land development or occupancy in flood-prone areas

Denying flood insurance means:

- Risk of flood losses with no insurance coverage
- Property may be difficult to sell
- Market value of the property may fall
- Lending institutions holding a mortgage could foreclose
- Some disaster assistance will be denied

Work with your State NFIP Coordinator and FEMA contact



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Floodplain Ordinance Resources

- VA DCR website
 - [Floodplain Management](#)
- FEMA 480, NFIP Floodplain Management Requirements
 - http://www.floods.org/ace-files/documentlibrary/CFM-Exam/FEMA_480_Complete.pdf
- Virginia Uniform Statewide Building Code:
 - <http://www.dhcd.virginia.gov/index.php/va-building-codes/building-and-fire-codes/regulations/uniform-statewide-building-code-usbc.html>
- FEMA Building Code Resource page
 - <http://www.fema.gov/building-code-resources>



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Administrative Requirements

- Generally, the NFIP requires an administrative process but does not detail what these administrative processes must look like
- Communities must establish administrative procedures that work and are compatible with other regulations and ordinances
- Other requirements not detailed in the regulations
 - Duties of the Floodplain Administrator
 - Appeals process
 - Issuance of variances
 - Permitting systems
 - Recordkeeping systems



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Duties of the Floodplain Administrator

- | | |
|---|--|
| ▪ Review applications | ▪ Notification of watercourse alterations |
| ▪ Make floodplain determinations | ▪ Maintain and help update flood data and maps |
| ▪ Make Substantial Improvement / Damage determination | ▪ Inspect development |
| ▪ Issue or deny permits | ▪ Recordkeeping |
| ▪ Review plans and specifications | ▪ Remedy violations |
| ▪ Ensure all other permits are obtained | |



Keep good records! A project file should be kept for each development permit application to demonstrate that the project was built in compliance with your regulations.



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Duties of the Floodplain Administrator

- **Training and education:** Understand the NFIP regulations, State regulations, and local ordinances
- **Community Outreach:** Educate residents on the need for permits, the benefits of floodplains, the economic sustainability of good floodplain management, and the benefits of flood insurance
- **Coordinate with other agencies:** State agencies, adjacent communities, public works, zoning, code enforcement, or building dept.
- **Apply ordinances consistently:** Get specific guidance from your community's legal counsel as necessary

Common legal questions and answers about floodplain regulations in the courts can be found in **Appendix C of ASFPM's No Adverse Impact: A Toolkit for Common Sense Floodplain Management.**



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Appealing a Floodplain Admin's Decision

- Appeals are typically **administrative** in nature (could be to a floodplain determination, substantial improvement/damage determination, etc.)
- Appeals apply to the application of an administrative decision of a floodplain administrator ordinance
- Communities must establish a **process** and an **entity** for applicants to appeal an administrative decision when they disagree
- Basic appeals process



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Issuance of Variances

- Granting relief from ordinance requirements
- Establish a process and an entity for applicants to request variances
- Conditions of the property NOT the person
- Notice of increase to risk and insurance premiums
- Patterns of variances may result in sanctions



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Evaluate the Merits of a Variance

- General rule – **Do not grant variances**
- Very specific conditions must be satisfied to justify a variance
 - Good and sufficient cause
 - Unique site conditions (personal considerations do not apply)
 - Hardship – must be exceptional
 - No threat to public safety
 - Minimum necessary to afford relief



Think carefully before granting a variance to build below the BFE. The property will be more likely to suffer damage and insurance will be costly. Communities with patterns of issuing variances may face sanctions – costing all property owners more!



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Appealing an Appeal/Variance

If you **disagree** with the decision of the board to grant the appeal or variance...

...**appeal** the appeal/variance

- Why appeal? Granted for reasons inconsistent with criteria in ordinance
- Become familiar with the timeframe to file the appeal (30 days?)
- FEMA expects communities to exhaust all legal avenues



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Record Keeping Requirements

- Requirement to maintain compliance documentation **indefinitely**
- What records?
 - Permit application
 - Inspections
 - As-built documentation
 - Other compliance documentation (for instance, certifications)
 - Flood map changes and updates
- Best practices
 - Store permits by address (rather than property owner name)
 - Use colored file folders to identify floodplain properties



For a structure located in the SFHA, FEMA and the State will require data to prove a potential violation is compliant.



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Floodplain Ordinances and Permitting



PERMITTING DEVELOPMENT


88


Permits are Required for ALL Development

ALL development in the SFHA requires a permit

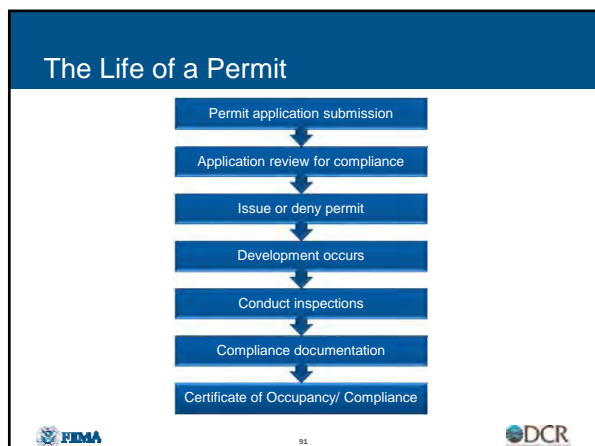
- Definition of development (as per 44 CFR 59)
 - Any manmade change to improved or unimproved real estate**, including, but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, or storage of equipment or materials.
- Before any kind of development in the SFHA is allowed, the project must be permitted by the local floodplain administrator.
- **Ensure you have a process for capturing all floodplain development**


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Permits are Required for ALL Development

- Federal, state, and local government agencies must also adhere to floodplain management requirements.
- Executive Memorandum 2-97 requires:
 - State projects in the SFHA must comply with the local floodplain ordinance, if working in a participating community. This means obtaining permits from the community's floodplain administrator.
 - When doing a project in a community that does not participate in the NFIP, state agencies are still required to meet the minimum NFIP criteria as outlined in 44 CFR 60.3.


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Application Should Include...

- A good permit application should **capture all information** needed to evaluate the proposed work for compliance with required building/development standards of proposed work
- Application **MUST** include a **floodplain determination** and a **substantial improvement determination** (for modifications to an existing building)

For Official Use Only:

Floodplain Determination: _____

Base Flood Elevation: _____

Cost of Improvement: \$ _____

Market Value of Structure: \$ _____

Improvement Percentage: _____ %

FEMA DCR

Application Review

Who are the people typically responsible for reviewing permits?

- Floodplain Administrator
- Building Code Officer
- Zoning Officer
- Community Engineer
- Third-party permitting/inspection company



Coordination with other reviewers:

- Is one person responsible for all aspects of floodplain development?
- If not, are all parties aware of the floodplain requirements?
- How is the permit application routed and either approved or denied?


FEMA DCR

Building Codes and the NFIP



- VA Uniform Statewide Building Code establishes building standards for new and substantially-improved buildings
- VA USBC incorporates parts of the ICC Codes
- Not all** NFIP requirements appear in the VA USBC
 - Does not establish site or location requirements
 - Other types of development (non-structures)
- Challenges of Administration**
 - Regulating development beyond buildings
 - Designate responsible party for meeting **all** NFIP requirements
 - Establish administrative procedures to assure coordination
 - Do not assume** that the flood provisions of the VA USBC will be carried out by the community building official or third party

Building Codes and the NFIP





- REMEMBER!**
 - You must adhere the most restrictive code, provision, or requirement
 - The absence of certain floodplain management requirements from existing building codes does not absolve the community from applying the requirements of its floodplain management ordinance and vice versa

VA Uniform Statewide Building Code

- The 2012 USBC (adopted in 2015) is currently in place.
- The 2015 USBC will likely be adopted in the spring of 2018.
 - The new USBC is expected to include some additional higher standards for building construction in floodplains, based on the 2015 International Codes.
- While the USBC excludes certain types of smaller development from requiring a building permit (section 108.6), this does not exclude them from needing a floodplain permit of some kind.
 - Currently, because these 15 activities are exempt from building permit requirements, a building permit may not be used for these types of development. Communities must use a different kind of permit to capture this development (such as a zoning or floodplain permit).


Application Review



Review for completeness

- Forms filled out
- Site plan
 - Floodplain delineation
 - Elevations
- Building plans
- Certifications
- All other permits obtained

Review for compliance

- Proposed building elevations
- Proposed design standards
- Building/fill/material placement
- Mechanical elevations
- Compliant openings
- Flood resistant materials






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Review Permits For...


- Location/Siting**
 - Floodplain determination
 - Zone and BFE identification
- Use**
 - Residential
 - Non-residential
- Type of work**
 - New construction/addition
 - Non-structural development
 - Placement of fill, etc.
- Cost of improvement**
 - Substantial improvement?
- Design standards**
 - Compliance with minimum and higher standards?
 - Is a variance necessary?



Elevated utilities (PEMA)




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Considerations for Zone A



Benefits of Requiring Detailed studies:

- Properly elevating structures to or above the BFE will reduce future flood losses, and will provide savings to the individual, community, and NFIP.
 - Simplified methods of BFE estimation are not suitable for insurance rating.
- Having a BFE determined will likely lower insurance premiums.
- Determining the BFE may allow the property to be removed from the requirement to obtain flood insurance, if it is elevated about the BFE.
- This is less work and less liability for floodplain administrators.
- Communities can get CRS credit for requiring detailed studies.


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Considerations for Zone A

Other possible sources of elevation data:

- Check other sources: federal, state, and local
- H&H study may be available – FEMA Engineering library
- Simplified methods of estimation:
 - Contour interpolation: point on boundary
 - Data extrapolation: estimating from the FIS
- In some cases, FEMA may be able to provide a BFE for a property when a LOMA is submitted.
 - Property must be less than 50 lots or 5 acres
 - The property owner may be asked to have their property surveyed.



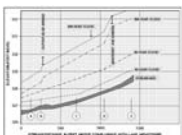
100



Considerations for Zone AE, AH, and AO

Zone AE

- Provide the necessary elevation data for effective permitting
- Use the flood profile to determine site-specific water surface elevations



101



Zone AH and AO

- Represent areas subject to shallow flooding and sheet flow where average depths range from 1-3 feet
- Average whole-foot elevation/depth derived from the FIRM
- Lowest floor \geq flood depth
or
Lowest floor \geq 2' when no depth is specified

Considerations for Zone AE

AE Zones without Floodways

- Where FEMA has provided BFEs but no floodway, the community must review all development to **track cumulative rise**
- Ensure development does not increase the BFE more than 1.0 foot
- Once allowable rise is reached, **no further rise** is permitted
- Administrative procedure to track and collect cumulative impact



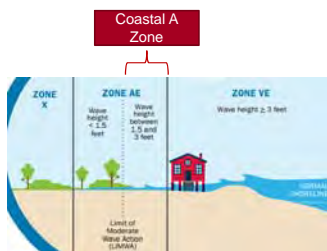
102



Considerations for Zone AE

Zone AE in Coastal Areas

- Use LiMWA to identify Coastal A Zone
- NFIP regulations do not have provisions for Coastal A Zones
- The 2015 VA USBC will include standards for Coastal A Zone construction



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Considerations for Zone VE

Zone VE

- Fill for structural support of buildings is prohibited
- Man-made alteration of sand dunes and mangrove stands that would increase potential flood damage is prohibited
- Buildings must be elevated on pilings with space below lowest floor free from obstructions
- Bottom of lowest structural member of lowest flood must be at or above BFE
- For construction and/or floodplain management purposes use elevations in the FIS Coastal Transect Parameters table when they are higher than the whole-foot elevation on the FIRM, otherwise use whole-foot BFE on FIRM



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Considerations for Floodways

Development must prove "no rise"

- No rise = zero foot (0.00')
- Rise is tracked both upstream and downstream of development location

Documentation requirement

- H&H study
- If existing structure, site plan showing footprint will not expand

Ensure "no rise" certificate is prepared and certified by a qualified and licensed engineer. Read the certification; ensure it shows no rise.



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Issue/Deny Permit

▪ Issue the permit

- Include any conditions (i.e. required inspections)
- Start of work must commence within 180 days from the issuance of the permit

▪ Deny the permit

- Provide written explanation citing the specific provisions of the ordinance not met in the application
- Citation of specific provisions point out how to resubmit application in compliance with regulations
- Provide instructions regarding appeal or a variance



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Conduct Inspections

▪ Importance of coordination: Check for compliance with the NFIP minimum standards

- Inspect frequently during construction
- Check openings and mechanicals

▪ Recommend a **minimum** of three inspections

1. After site is staked but before permanent foundation work
2. After foundation is complete
3. Before issuing certificate of occupancy



Schoharie, NY (FEMA photo library)

Identifying compliance issues prior to construction will be much easier – and cheaper – to correct than correcting compliance issues post-construction.



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Considerations During Inspections

Address Non-Compliance Early

- If inspections reveal violations, take steps to bring into compliance
 - Voluntary option
 - Provide written notice
 - Issue fines or penalties
 - Withhold final approvals
- Refer to ordinance for specific enforcement procedures
- Insurance for non-compliant structures is available, **but it's very expensive!**

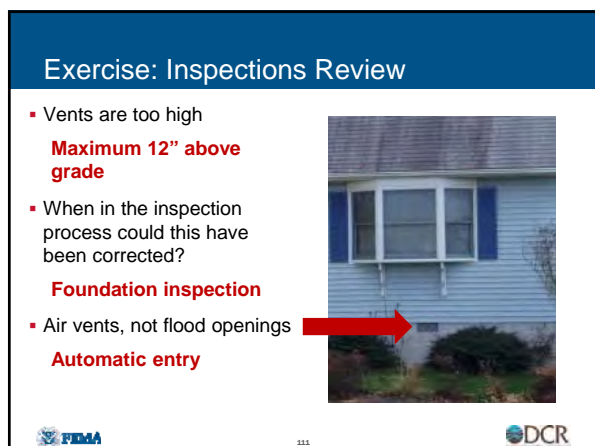


308









Exercise: Inspections Review

Most significant issues nationwide:

- Insufficient venting
 - Insurance rating heavily impacted
- Equipment not elevated
 - Expensive to replace
- Propane tanks not secured
 - Become explosive projectiles



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Collecting Compliance Documentation

- Permit file **must contain as-built** or finished construction data for all new structures or substantial improvements in SFHA
- Required to prove compliance with the floodplain ordinance
- Must be **signed and sealed** by the design or certifying professional
- Examples of compliance documentation
 - Site plans and surveys
 - Building/architectural plans
 - FEMA Elevation Certificate (EC)
 - Floodproofing certificate
 - Engineered openings
 - Non-conversion agreement



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Non-Conversion Agreement


- For enclosed spaces below BFE, uses are limited to parking, access, some storage
- Gives community official authority to revisit potential violations
- Consider requiring in ordinance
- Collect in advance of C.O.
- Attach to deed
- [Example non-conversion agreements on FEMA's website](#)



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Other Types of Development




(FEMA Region III)
Floodplain tour revealed unpermitted trailer storage in floodway, about 10 feet from top of bank.

- Other types of development require inspections
 - Placement of fill
 - Installation of fences
 - Storage of equipment and materials
 - Placement of recreational vehicles
 - Etc.
- Develop **administrative procedures** to permit for and inspect non-building development

FEMA DCR

Other Types of Development

- Develop a permitting and inspection process for manufactured homes and recreational vehicles
- Manufactured homes must be elevated on a permanent foundation and securely anchored
- Recreational vehicles are required to
 - Be licensed and road-ready
 - Be on site less than 180 days **or**
 - Meet the requirements of a manufactured home



(FEMA Region III)
A recreational vehicle washed into a manufactured home unit

FEMA DCR

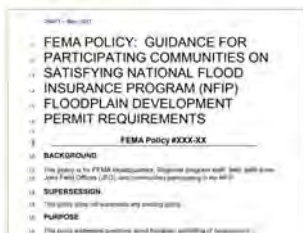
Certificate of Occupancy/Compliance

- Final step in the permit process
- After final inspection, construction/development is completed, and all as built compliance documentation is received
- Certificate of Occupancy is key to
 - Utility connection
 - Property sale
 - Occupancy
- Compliance checks do not end with occupancy
 - Periodic "windshield" inspections are encouraged
 - Enclosure/full foundation wall issues

FEMA DCR

FEMA Draft Permitting Policy

- FEMA draft policy is available online.
- Public comment period has ended. FEMA received comments from 37 entities.
 - Comments are currently being reviewed and adjudicated.



<https://www.fema.gov/media-library/assets/documents/131010>

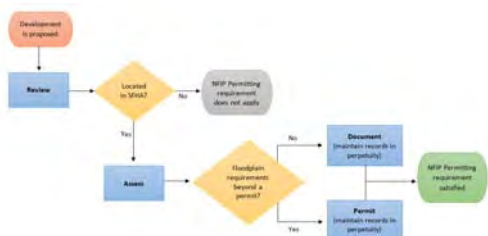


118



FEMA Draft Permitting Policy

- FEMA draft policy requires that development be reviewed, assessed, and documented.



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FEMA Draft Permitting Policy

- Classes of activities may be reviewed upfront and considered to be permitted, without requiring an individual permit for each case.





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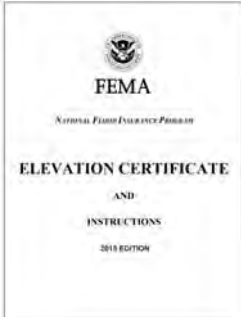
Floodplain Ordinances and Permitting



ELEVATION CERTIFICATES


121


The Elevation Certificate (EC)

- Administrative tool used to provide elevation information necessary to
 - **Ensure compliance with community floodplain management ordinances**
 - Determine the proper insurance premium rate
 - Support requests for certain Letters of Map Change






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Reviewing an Elevation Certificate

- Floodplain Administrators should review for accuracy
- Incomplete form received? Send it back for revision
- **Considerations for EC Review**
 - Lowest floor in comparison to BFE
 - Lowest floor in comparison to LAG and HAG
 - Bottom of lowest horizontal structural member (Zone VE)
 - Building diagram
 - Mechanicals elevations
 - Openings requirement (engineered require certification)

A surveyor's mistake can lead to a very expensive insurance rate, and a less safe and non-compliant structure.


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Section E: Elevations Without Survey

SECTION E - BUILDING ELEVATION INFORMATION (SURVEY NOT REQUIRED) FOR ZONE AO AND ZONE A (WITHOUT BFE)

For Zones AO and A (without BFE), complete Items E1-E5. If the Certificate is intended to support a LOMA or LOMR if request, complete Sections A, B, and C. For Items E1-E4, use natural grade, if available. Check the measurement used. In Puerto Rico only, enter meters.

E1. Provide elevation information for the following and check the appropriate boxes to show whether the elevation is above or below the highest adjacent grade (HAG) and the lowest adjacent grade (LAG).

a) Top of bottom floor (including basement, crawlspace, or enclosure) is: feet ☐ meters ☐ above or ☐ below the HAG.

b) Top of bottom floor (including basement, crawlspace, or enclosure) is: feet ☐ meters ☐ above or ☐ below the LAG.

E2. For Building Diagrams 6-9 with permanent flood openings provided in Section A Items 8 and/or 9 (see pages 8-9 of Instructions), the next higher floor (elevation C2) is in the diagrams of the building is: feet ☐ meters ☐ above or ☐ below the HAG.

E3. Attached garage (top of slab) is: feet ☐ meters ☐ above or ☐ below the HAG.

E4. Top of platform of machinery and/or equipment servicing the building is: feet ☐ meters ☐ above or ☐ below the HAG.

E5. Zone AO only. If no flood depth number is available, is the top of the bottom floor elevated in accordance with the community's floodplain management ordinance? ☐ Yes ☐ No ☐ Unknown. The local official must certify this information in Section G.

Who can fill out
Section E?



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Section F: Owner's Certification

SECTION F - PROPERTY OWNER (OR OWNER'S REPRESENTATIVE) CERTIFICATION

The property owner or owner's authorized representative who completes Sections A, B, and E for Zone A (without a FEMA-issued or community-issued BFE) or Zone AO must sign here. The statements in Sections A, B, and E are correct to the best of my knowledge.

Property Owner or Owner's Authorized Representative's Name:

Address: City: State: ZIP Code:

Signature: Date: Telephone:

Comments:

☐ Check here if attachments.

Who can fill out
Section F?



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Section G: Community Information

SECTION G - COMMUNITY INFORMATION (OPTIONAL)

The local official who is authorized by law or ordinance to administer the community's floodplain management ordinance can complete Sections A, B, C (or E), and G of this Elevation Certificate. Complete the applicable item(s) and sign below. Check the measurement used in Items G4-G10. In Puerto Rico only, enter meters.

G1. ☐ The information in Section C was taken from other documentation that has been signed and sealed by a licensed surveyor, engineer, or architect who is authorized by law to certify elevation information. Indicate the source and date of the elevation data in the Comments area below.

G2. ☐ A community official completed Section E for a building located in Zone A (without a FEMA-issued or community-issued BFE) or Zone AO.

G3. ☐ The following information (Items G4-G10) is provided for community floodplain management purposes.

G4. Permit Number: G5. Date Permit issued: G6. Date Certificate of Compliance/Concurrence issued:

G7. This permit was issued for: ☐ New Construction ☐ Substantial improvement

G8. Elevation of as-built lowest floor (including basement) of the building: feet ☐ meters Datum:

G9. BFE, or (in Zone AO) depth of flooding at the building site: feet ☐ meters Datum:

G10. Community's design flood elevation: feet ☐ meters Datum:

Local Official's Name: Title:

Community Name: Telephone:

Signature: Date:

Comments:

Who can fill out
Section G?



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Exercise: What Building Diagram is this?



133



Exercise: What Building Diagram is this?



134



Exercise: What Building Diagram is this?



135



Exercise: What Building Diagram is this?

Building Diagram 3



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Exercise: What Building Diagram is this?

Building Diagram 4



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Exercise: What Building Diagram is this?

Building Diagram 5



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Exercise: What Building Diagram is this?



139



Exercise: What Building Diagram is this?



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Floodplain Ordinances and Permitting




Questions?



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Flood Hazard Maps and Data

Flood Hazard Maps and Data

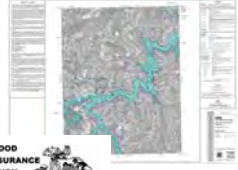


Flood Hazard Maps and Data



FLOOD INSURANCE RATE MAPS AND FLOOD INSURANCE STUDIES


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Key Terms Refresher

- Flood Insurance Rate Map (**FIRM**)
- Flood Insurance Study (**FIS**) Report
- Special Flood Hazard Area (**SFHA**)
- Flood Zone
- Base Flood Elevation (**BFE**)
- Regulatory Floodway
- Cross Section
- Coastal High Hazard Zone (Zone V and VE)
- Limit of Moderate Wave Action (**LiMWA**)


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Flood Insurance Rate Maps

- FEMA identifies flood hazards from rivers, coasts, ponding, lakes, etc., through scientific and engineering methods. Computer models consider the size of the watershed, roughness coefficient, etc.
- FEMA maps those hazards on a Flood Insurance Rate Map (FIRM).
- The FIRM is used for floodplain management, flood insurance, and to help communicate flood risk to communities and the public.



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Special Flood Hazard Area

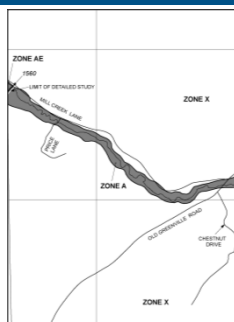
- The special flood hazard area (SFHA) is the land in the floodplain subject to a 1% percent or greater chance of being flooded in any given year.
 - Also referred to as 100-year floodplain.
- The elevation of 1% chance flood is the base flood elevation (BFE).
- Zoning and building code requirements are tied to the special flood hazard area.
- During the average 30-year mortgage, there is a 26% chance of a base flood occurring.



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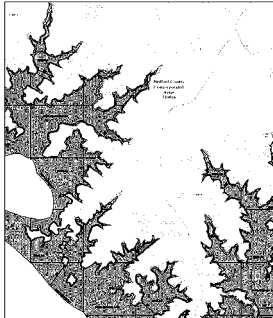
FIRM – Zone A



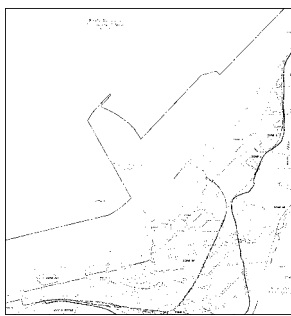
547



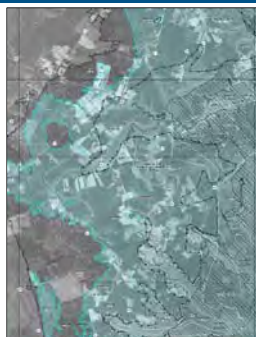
FIRM With Elevations – Zone AE



FIRM With Floodway



FIRM - V Zones



Flood Hazard Maps and Data

ACCESSING AND USING FLOOD HAZARD DATA



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The National Flood Hazard Layer (NFHL)

- FEMA's nationwide geospatial database of all digital **effective** FIRM data
 - [National Flood Hazard Layer](#)
 - Integrates FIRM data including LOMCs
 - Available in GIS format
 - FIRM and FIS are still the official source of data



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Virginia Flood Risk Information System (VFRIS)

BACKGROUND

- In March 2015, the General Assembly amended §10.1-602 of the Code of Virginia, tasking DCR to develop a web-based flood protection plan for the Commonwealth that includes (among other things):
 - An inventory of flood-prone areas
 - The collection and distribution of information relating to flooding and floodplain management
 - Assist localities in their management of floodplain activities



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What is VFRIS?

- Interactive map tool that brings together information from FEMA, FWS, ESRI, VGIN, and others to provide an understanding of flood risk.
- Developed by the Virginia Institute of Marine Science and DCR.
- No longer managed by the State of North Carolina.



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VFRIS Goals

- Provide local officials, home owners, realtors, and developers with an understanding of a property's flood risk.
- Create a mapping tool that is more flexible and current than what was afforded on the old VFRIS, maintained by the State of North Carolina.
- Develop a mapping tool that is specific to Virginia and can be customized to the needs of the commonwealth.



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VFRIS Timeline

- Phase I of VFRIS was rolled out in February, 2017.
- Phase II was completed in October, 2017.
- An additional phase or two expected, in addition to continued maintenance over the lifetime of VFRIS.

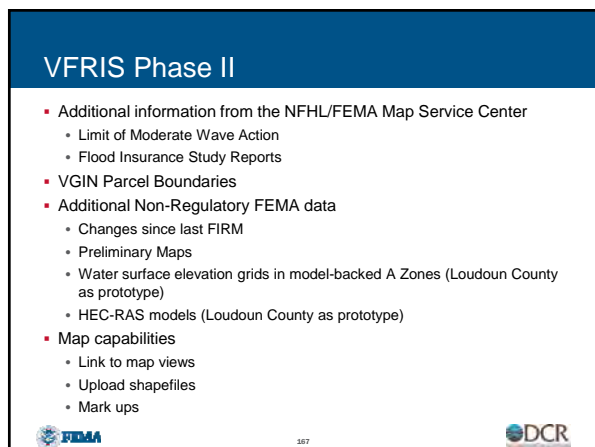


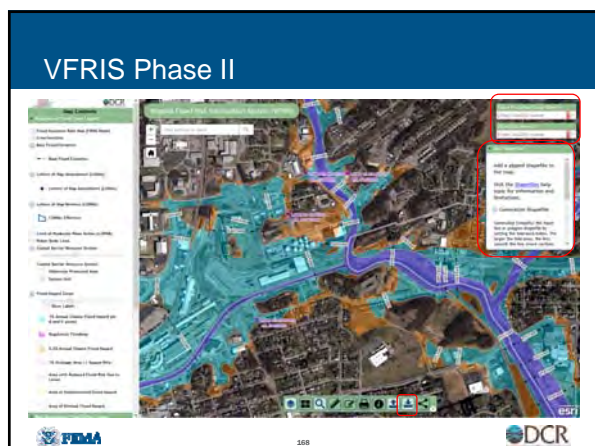
156

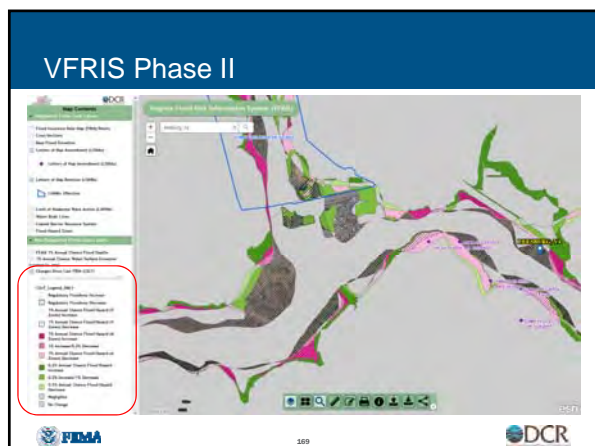


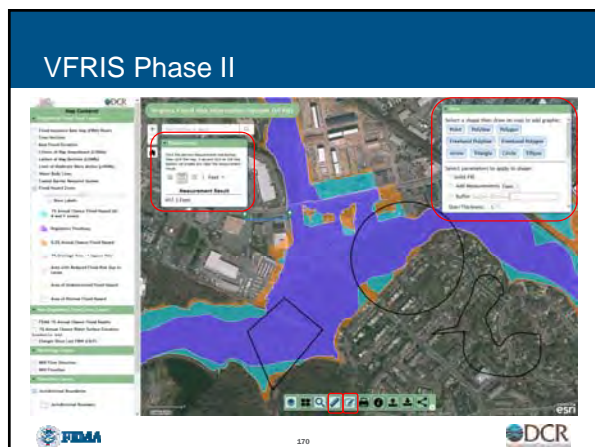


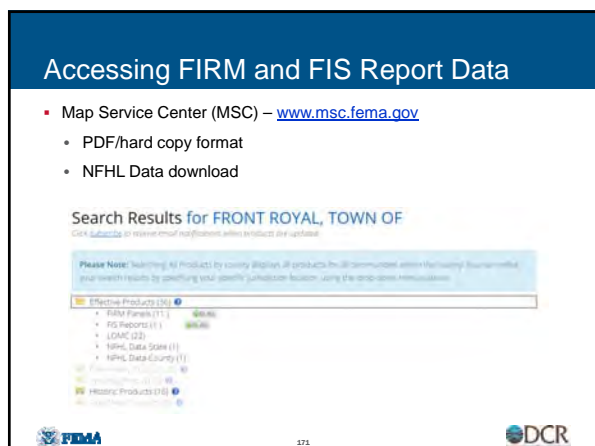













Using the Flood Insurance Study

- Use the FIS report for
 - Flood determinations for specific sites
 - Finding the **most accurate BFE** data
 - DO NOT** use the FIRM for riverine elevation determinations. **DO** use the FIRM for coastal flooding elevation determinations.
 - Red flag when reviewing riverine elevation data from surveyors – whole number BFEs



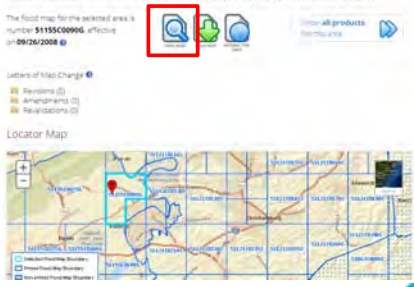
FEMA DCR

Making a FIRMette

- Map Service Center (MSC) FIRMette – www.msc.fema.gov

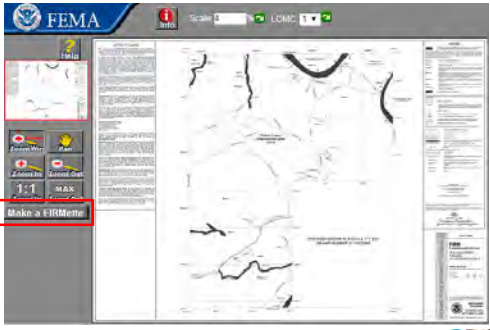
Search Results—Products for PULASKI COUNTY UNINCORPORATED AREAS

The flood map for the selected area is number 51155C0005, effective 09/26/2005



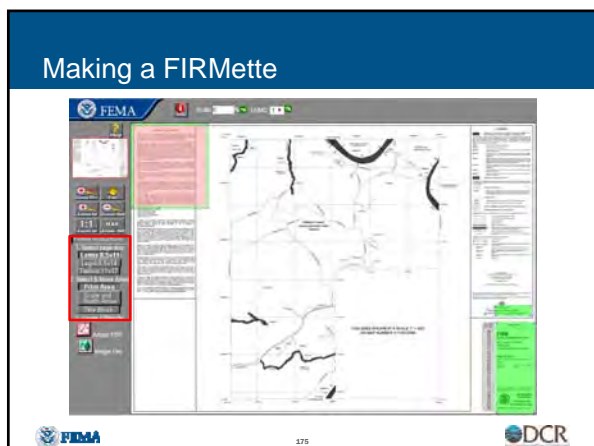
FEMA DCR

Making a FIRMette

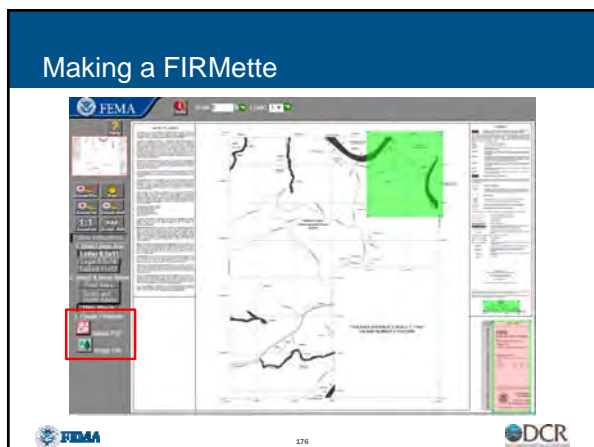


FEMA DCR

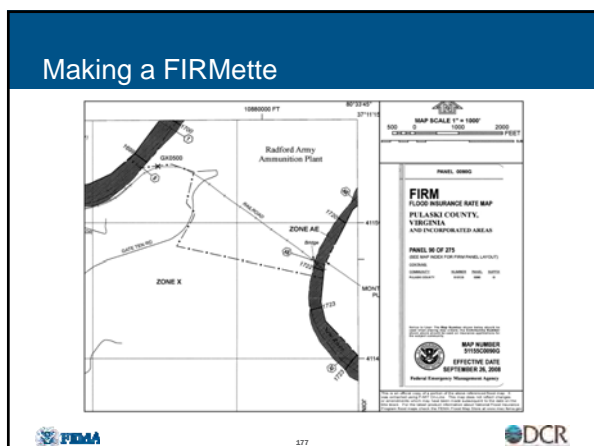
Making a FIRMette



Making a FIRMette



Making a FIRMette



Making a FIRMette

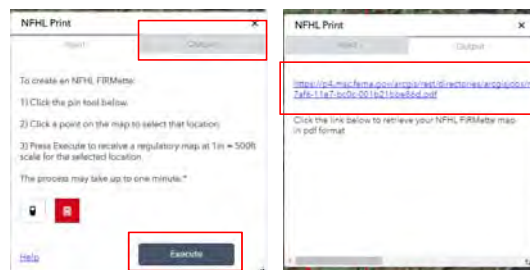
- NFHL FIRMette builder – <http://fema.maps.arcgis.com/apps/webappviewer/index.html?id=49069b91c14a411fa8defccf5c1f6266>



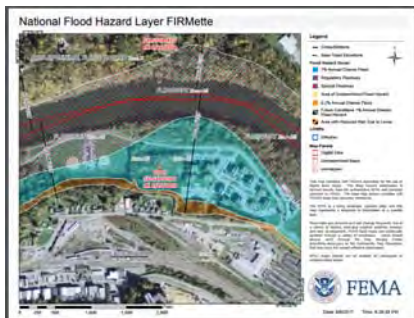
Making a FIRMette



Making a FIRMette



Making a FIRMette



181



Approximate A Zone Elevations

- Detailed studies are not available.
- Simplified methods can provide estimated BFEs.
- If you lack confidence in simplified estimation methods, require property owners to provide BFEs based on detailed studies.
- Simplified methods:
 - Contour interpolation
 - Data extrapolation (rarely applicable)



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Contour Interpolation & Data Extrapolation

- Both are simplified methods, and cannot be used to support LOMA and LOMR-F applications.
- Contour interpolation overlays topographic maps on the FIRM.
- Data extrapolation extends flood profiles beyond the detailed study area.
- At least one other method plus previous flooding history should be used.
- See FEMA 265.



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Contour Interpolation Steps

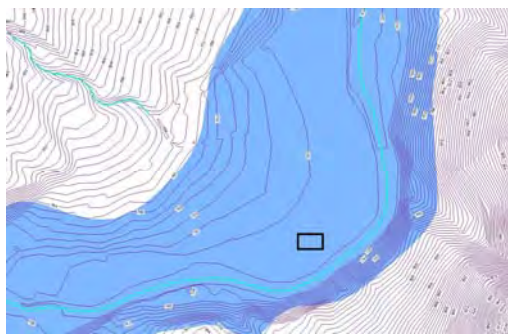
- Identify the contour interval.
 - Note that a smaller contour interval will yield a more accurate BFE estimate.
- Draw a line through the SFHA at the site of the structure, perpendicular to the river.
- Identify the elevation where this line crosses each side of the SFHA.
- Determine if this method is appropriate.
 - The floodplain boundary must generally conform with the contour lines along the flooding source.
 - The difference between the elevation on both sides of the SFHA must be equal to or less than $\frac{1}{2}$ of the contour interval.
- If acceptable, estimate the BFE by adding half of the contour interval to the elevation of the lower side of the SFHA.



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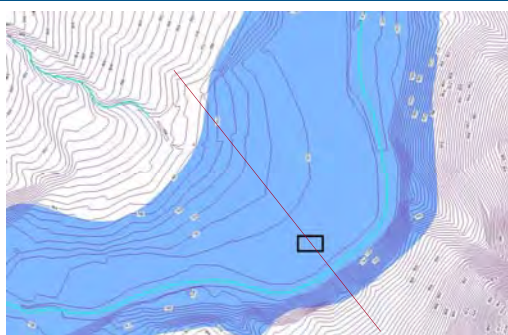
Contour Interpolation Example 1



185



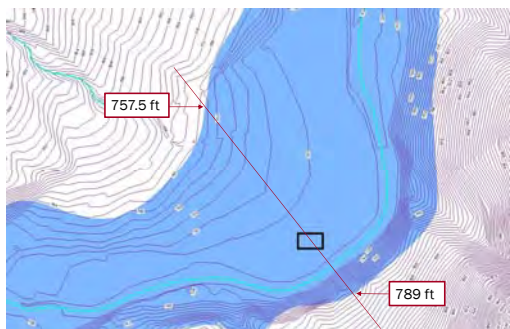
Contour Interpolation Example 1



186



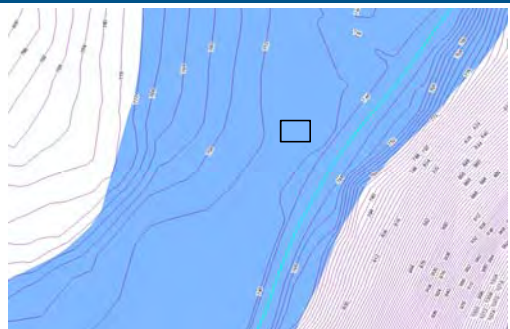
Contour Interpolation Example 1

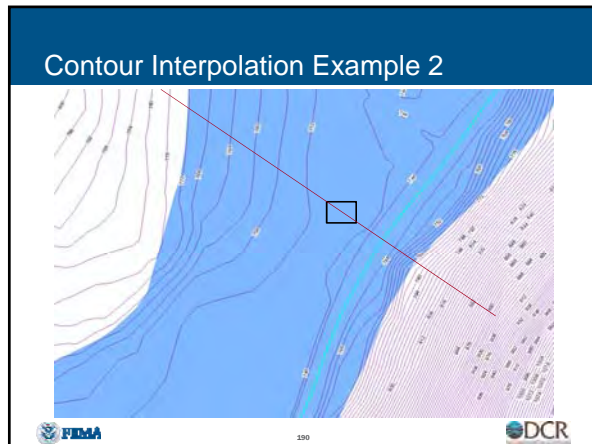


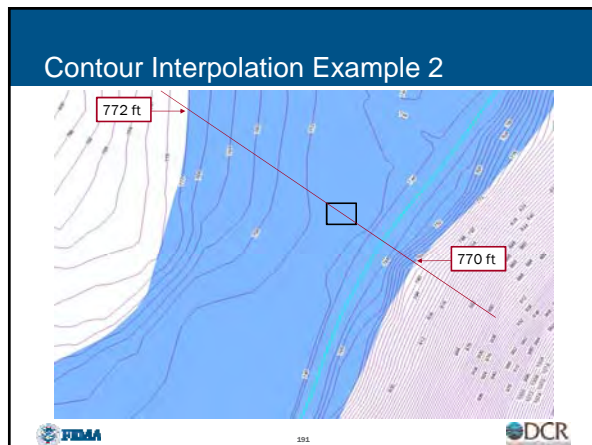
Contour Interpolation Example 1 Answers

- Contour interval: 4 ft
 - $\frac{1}{2}$ contour interval: $5 \text{ ft} / 2 = 2 \text{ ft}$
- Elevation of the northwest SFHA boundary: 757.5 ft
- Elevation of the southeast SFHA boundary : 789 ft
- Difference between elevations: $789 - 757.5 = 31.5 \text{ ft}$
- Method acceptable?: $31.5 > 2 \text{ ft}$, so method is not acceptable

Contour Interpolation Example 2





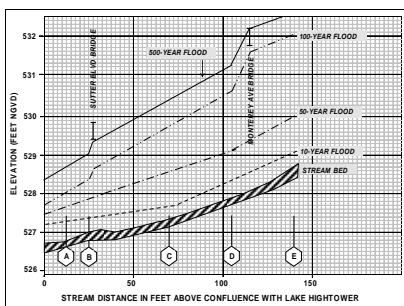


Contour Interpolation Example 2 Answers

- Contour interval: 4 ft
 - $\frac{1}{2}$ contour interval: $5 \text{ ft} / 2 = 2 \text{ ft}$
- Elevation of the northwest SFHA boundary: 772 ft
- Elevation of the southeast SFHA boundary : 770 ft
- Difference between elevations: $772 - 770 = 2 \text{ ft}$
- Method acceptable?: $2 \text{ ft} = 2 \text{ ft}$, so method is acceptable
- Estimated BFE: $770 \text{ ft} + 2 \text{ ft} = 772 \text{ ft}$

FEMA DCR

Data Extrapolation: Extend Profile



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Data Extrapolation Criteria

- Site must:
 - Be within 500 feet of the detailed study area.
 - Have floodplain characteristics similar to the detailed study area—for example:
 - The valley does not narrow rapidly upstream.
 - There is no waterfall.
 - Have no hydraulic structures such as dams and bridges.



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Data Extrapolation Steps

- Determine the location of the site on the flood profile for the detailed study area.
- Extrapolate the last segment of the flood profile that has a constant slope to the location of the site.
- Determine the BFE from the extrapolated profile.



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Data Extrapolation – Figures 11 and 12

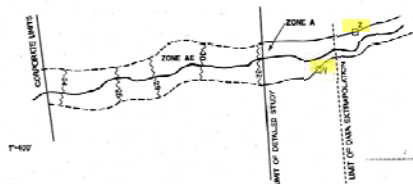


Figure 12 - Data Extrapolation Method - Plan View

*Property Y is approximately 75% upstream of the limit of detailed study (as measured along the streamline). Using the profile below, we can extrapolate the 100-year flood profile to determine that the BFE for property Y is equal to 33'.

*Property Z is approximately 100% upstream of the limit of detailed study (as measured along the streamline), and is therefore beyond the limit of data extrapolation.



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Data Extrapolation – Figures 11 and 12

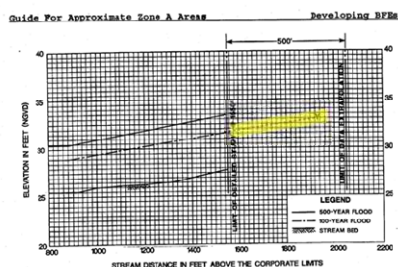


Figure 11 - Data Extrapolation Method - Profile



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Data Extrapolation – Figures 13 and 14

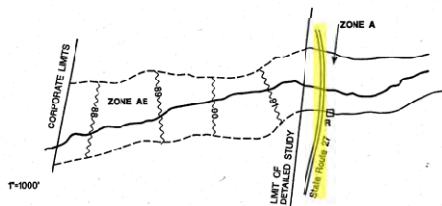


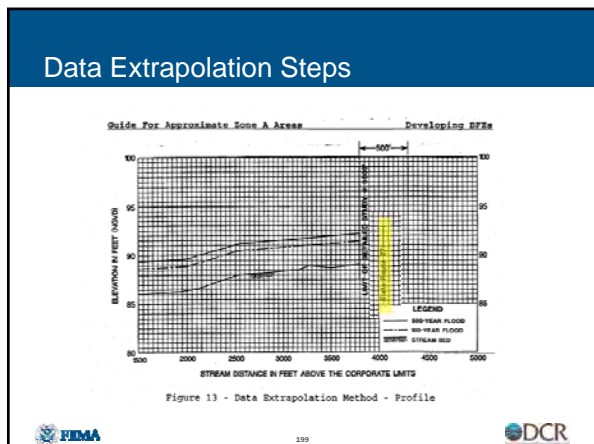
Figure 14 - Data Extrapolation Method - Plan View

*State Route 27 may have an effect on the 100-year water-surface elevations. Therefore, data extrapolation should not be used to obtain a BFE for property A.



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New Model-Backed A Zones

- FEMA is starting to provide communities with model-backed A Zones
- To generate these, automated H&H studies are run for A Zones
 - Not detailed enough to be included on the FIRMs but can be used to approximate a 1% flood elevation
 - Another method to compare estimated methods
- Caveats:
 - Bridges and culverts not taken into consideration
 - Requires special skills to interpret data

Zone A cross sections will be available in the future

FEMA DCR

Flood Hazard Maps and Data

CHANGING FIRMS AND FIS REPORTS

FEMA DCR

When to Use the LOMC Process



- To update the map due to better topographic data, a physical change in the floodplain, or better modeling (LOMR)
- To remove the mandatory federal flood insurance requirement
 - Inadvertent inclusions – structures built on natural high ground (LOMA)
 - Structures elevated on fill* (LOMR-F)

* **Caution:** Placement of fill around an existing foundation to increase the LAG could result in a low floor violation.

Note: LOMAs are not issued in Zone VE based on Primary Frontal Dune



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Requirement to Submit New Data

When is a community **required** to initiate a revision?

- Development occurring in Zones A1-30 and AE without a designated floodway for proposed increases of more than 1.0 foot
- Floodway encroachment (no rise requirement)
- Alteration or relocation of a stream (including but not limited to installing culverts and bridges)
- Submission of new technical or scientific data within 6 months of receipt/completion
 - Proposals greater than 50 lots or 5 acres
 - Better topographic information

The Coordinated Needs Management Strategy (CNMS) (<https://msc.fema.gov/cnms/>) tracking tool is used by FEMA to track map update needs. Communities can share needs with FEMA using this tool.



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Requirement to Submit New Data

Role of the Floodplain Administrator

- Review CLOMR and LOMR applications
 - Appropriate revision and in line with ordinance?
 - Make use of local resources, such as an engineer or legal counsel
 - Pass the cost along to the applicant
- Make use of conditional process to ensure compliance
- Clearly communicate to developers their responsibility in the revision process
- Follow-up: ensure a LOMR is completed for final projects before issuance of certificate of occupancy/compliance



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LOMCs and Community Responsibility

- Community Acknowledgement Form
 - FEMA requires the community acknowledgement for approval of a LOMR-F and may request it for other LOMCs.
 - But...you do not have to sign!
 - Consider signing for projects that the community supports.
- Assist applicant (review required for C/LOMR-F and C/LOMR)
- Requirement to submit new technical data within 6 months
- Tracking and storing information
 - LOMC determinations
 - Elevation Data
 - Permit and Inspection Data



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LOMC Exercise: Timing is Critical

Example

- A permit application is received for a proposed structure currently located on a site currently shown in the SFHA
- The building site is on naturally high ground and the lowest adjacent grade is above the current BFE
- The applicant is proposing a single-story residential structure with a basement

Question: Since the ground elevations are above the corresponding BFE can the floodplain management requirements be waived?



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LOMC Exercise: Importance of Timing

Answer: No

- For both regulatory and insurance purposes the site is considered to be in the SFHA
- The structure must be constructed in compliance with the floodplain ordinance – no basements (if the lowest floor of the basement will be below BFE)

Recommended Action: Recommend that the applicant obtain a LOMA

- A LOMA for the land will remove the structure from the SFHA and the requirements of the floodplain ordinance will not apply
- A LOMA for the land will remove the requirement to purchase flood insurance, and insurance will be available at reduced rates
- Single and multiple lot or structure LOMA applications are no cost



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Exercise LOMC: Importance of Timing

Example 2

- A permit application is received for a proposed structure on a site currently located within the SFHA. Structural fill will be placed, elevating the structure above the corresponding BFE.
- A CLOMR-F has been received by the applicant stating the property, including the building pad, will be above the BFE if built as proposed. There is no floodway and no other fill restrictions.

Question: Since the applicant has a conditional letter from FEMA stating the property will be outside of the SFHA when filled as proposed, they want to waive the lowest floor requirement for structures built within the SFHA and propose adding a basement. Is this allowable?



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Exercise LOMC: Importance of Timing

Answer: No

- For both regulatory and insurance purposes the site is considered to be in the SFHA until the effective map is officially revised through a LOMR-F. Even then, having a lowest floor below the adjacent BFE is strongly discouraged.
- The structure must be constructed in compliance with the floodplain ordinance – no basements

Recommended Action: If the LOMR-F is received removing the land from the SFHA, use FEMA Technical Bulletin 10-01 to ensure the structure is reasonably safe from flooding.

Potential issues:

- Flood insurance covers limited damages in basements from overland flow
- Foundation damage/collapse from subsurface flow



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LOMC and Permit Resources

- Application Instructions: <https://www.fema.gov/letter-map-changes>
- Elevation Certificate: <http://www.fema.gov/media-library/assets/documents/160?id=1383>
- LOMC Tutorials: <https://www.fema.gov/online-lomc-training>
- FEMA Map Service Center (MSC): <http://msc.fema.gov>
- FIRMeTte Resources: <https://www.fema.gov/media-library/assets/documents/34930>
- Orthometric Height Conversion (VERTCON): http://www.ngs.noaa.gov/cgi-bin/VERTCON/vert_con.pr1



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Flood Hazard Maps and Data

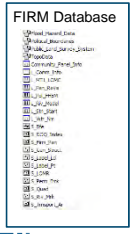


NON-REGULATORY PRODUCTS AND OTHER RESOURCES



 

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Non-Regulatory Products and Other Resources

- Through the Risk Mapping Assessment and Planning (Risk MAP) Program, FEMA provides communities with both regulatory and non-regulatory products.
- Traditional regulatory products:

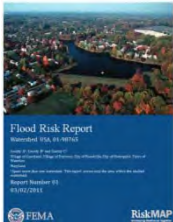
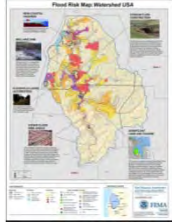





 

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Non-Regulatory Products and Other Resources

- New non-regulatory products:

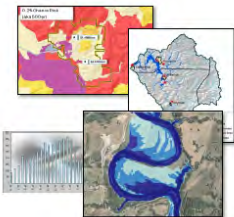




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Non-Regulatory Products and Other Resources

- The Flood Risk Database includes 4 datasets:
 - Changes Since Last FIRM
 - Flood Depth & Analysis Grids
 - Flood Risk Assessments
 - Areas of Mitigation Interest



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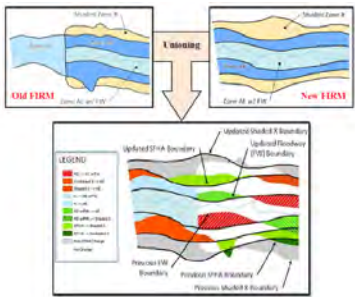
Flood Risk Database

- Changes Since Last FIRM**
 - Horizontal Changes and Results
 - Structure/Population counts impacted by change
- Depth & Analysis Grids**
 - Depth (10, 04, 02, 01, 0.2 percent chance)
 - Percent Annual Chance
 - Percent 30-Year Grid
 - Delivery of Water Surface Elevation (multi-freq)
 - Water Surface Elevation Change Grid (1%)
- Velocity Grids**
- Multi Freq Grids for Coastal Areas, etc.**
- Flood Risk Assessment**
 - Average Annualized Loss – 2010
 - Refined Flood Risk Assessment
 - HAZUS or Non-HAZUS with improved data/assumptions
- Areas of Mitigation Interest**
 - Areas of Mitigation Opportunity or Awareness

*Red = Enhanced Flood Risk Database

FEMA DCR

Changes Since Last FIRM



FEMA DCR

Flood Depth and Analysis Grids

- Flood Depth and Analysis Grids include:
 - Flood Depths for multiple flood frequencies
 - Water Surface Elevation for multiple flood frequencies
 - Water Surface Elevation Change Since Last FIRM (1%)
 - Percent Annual and 30-yr Percent Chance of Flooding
 - Velocity
 - Hillshade

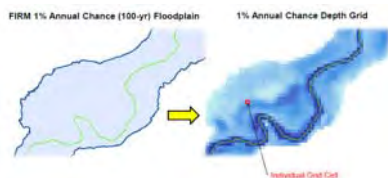


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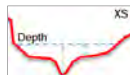


Flood Depth and Analysis Grids

- Each square of the Flood Depth and Analysis Grid has a value:



- Calculated by subtracting the elevation of the ground from the elevation of the water surface during a given flood event.

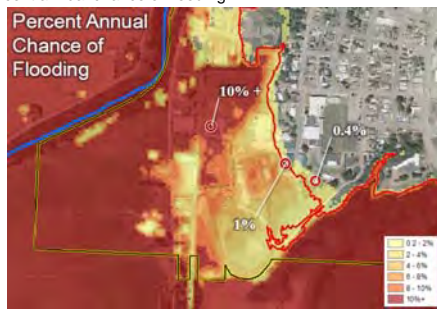


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Percent Chance of Flooding Grids

- Percent annual chance of flooding



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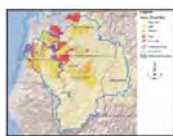
Percent Chance of Flooding Grids

- Percent chance of flooding over a 30-year period



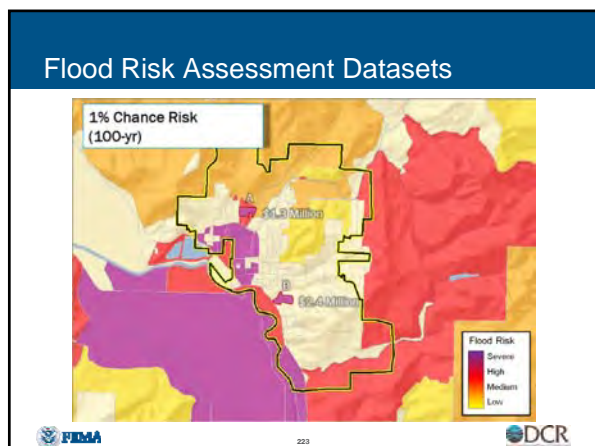
Flood Risk Assessment Datasets

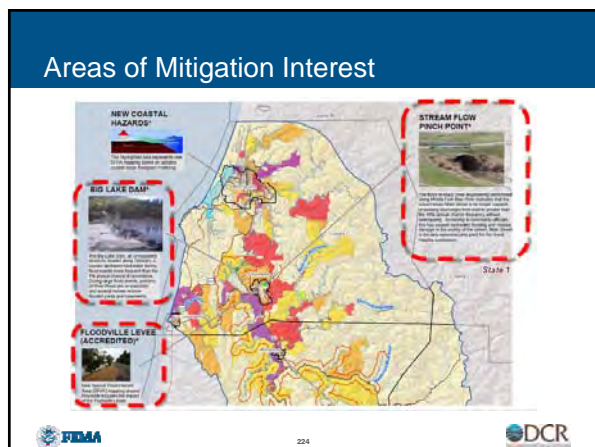
- 2010 HAZUS Average Annualized Loss (AAL) Study Data
- Refined HAZUS and Other Risk Analyses Data
- Composite Data

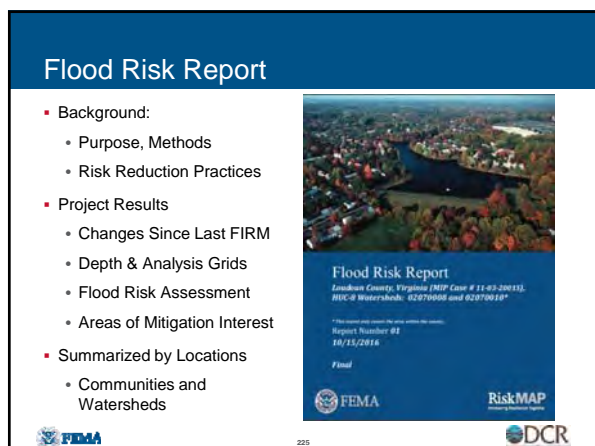


Flood Risk Assessment Datasets

- Identify Areas and Communicate Relative Flood Risk:
 - Flood prone areas
 - Vulnerable people and property
- Provide Flood Risk \$:
 - Potential damage severity for different flood frequencies
 - Identify locations with possible cost effective mitigation options
- Improve Estimates for Flood Risk \$:
 - Losses from Average Annualized Loss (AAL) Study
 - Refined losses from new flood study depth grids
 - Refined general building stock data from local sources







Where to Find Non-Regulatory Products

- FEMA Map Service Center: Search All Products - <https://msc.fema.gov/portal/advanceSearch>

FEMA Flood Map Service Center: Welcome!

Looking for a Flood Map?

Enter an address, a place, or longitude/latitude coordinates:

Enter an address, a place, or longitude/latitude coordinates

Search



Looking for more than just a current flood map?

Visit [Search All Products](#) to access the full range of flood risk products for your community.



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Where to Find Non-Regulatory Products

FEMA Flood Map Service Center: Search All Products

Choose one of the three search options below and optionally enter a posting date range.

Jurisdiction	Jurisdiction Name	Product ID
State	Jurisdiction Name or FEMA ID	Product ID
Virginia	(E) - Prefill Countywide on EICSD	(B) - Prefill Number LOMC Code
County		
Loudoun County		
Community		
Loudoun County All Jurisd		

Filter By Posting Date Range (Optional)

Search Clear All Fields



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Where to Find Non-Regulatory Products

Search Results for LOUDOUN COUNTY ALL JURISDICTIONS

(Due to security concerns, not all products are visible)

Please Note: Searching All Products by county displays all products for all communities within the county. You can refine your search results by searching your specific jurisdiction location using the dropdown menu above.

Effective Products (E)

Regulatory Products (R)

Non-Regulatory Products (N)

Please Note: Flood Risk Products have purposes that are different from regulatory flood hazard products (i.e., Flood Risk Report, Flood Risk Database, Regulatory Flood Hazard products are mandated by law and used by the National Flood Insurance Program (NFIP) for rating flood insurance policies and informing the federal regulatory insurance purchase requirements. Flood Risk Products are supplementary resources for communicating flood risk to communities and are not intended to replace regulatory flood maps. The information in these products reflects what was produced by the FEMA Risk Map Study in that state. Depending on the requirements of the study, the Flood Risk Products available for your community may consist of a Flood Risk Map, Flood Risk Report or Flood Risk Database.

Flood Risk Maps (F)

Flood Risk Reports (R)

Flood Risk Database (D)

Product ID	File Format	MSC Posting Date	Size	Download
FDL_S110TC_GeoDatabase	GeoDatabase	10/15/2016	359KB	Get
FDL_S110TC_GeoTIFFs	GeoTIFFs	10/15/2016	344KB	Get
FDL_S110TC_Shapefiles	Shapefiles	10/15/2016	35KB	Get





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Flood Hazard Maps and Data

Questions?


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Pre- and Post-Disaster Considerations








Increase Your Capacity Pre-Disaster



- Know your areas of risk
- Obtain training (Floodplain management training, SD Estimator)
- Educate residents on the ordinance and substantial damage requirements
- Ensure ordinance is compliant
- Enter into a Mutual Aid Agreement
- Pre-load data onto SDE Tool
- Pre-identify an alternative site for permit office
- Contractor vetting
- Develop a Mitigation Plan




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Hazard Mitigation Plans

- Hazard mitigation plans help to prepare communities for disasters and guide post-disaster response and recovery efforts.
- The Federal Disaster Mitigation Act of 2000 requires localities to adopt a local or regional hazard mitigation plan in order to be eligible for funding through FEMA's Hazard Mitigation Grant Program and Pre-Disaster Mitigation Grant Program.
 - VDEM provides PDCs with funding to assist their member localities in developing regional hazard mitigation plans.
 - Most communities in Virginia choose to participate in regional hazard mitigation plans.
- Hazard mitigation plans are required to be updated every five years, but should be reviewed annually and after each disaster.
 - Floodplain managers should be included in annual reviews, to advocate for mitigation projects and help identify what mitigation has occurred.


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Hazard Mitigation Plans


- Almost universally, flooding is the number one disaster facing communities. Floodplain managers are the local experts on flooding and should be involved in gathering and vetting the data that will be included in the hazard mitigation plan.
- Hazard mitigation plans are required to include the number of NFIP policies and repetitive loss/severe repetitive loss claims. Floodplain managers should play a key role in increasing NFIP participation and reducing the number of vulnerable structures in the community.
- In CRS communities, the floodplain managers and CRS coordinator should work together closely to make sure that the hazard mitigation plans gets as much CRS credit as possible.
 - Communities wishing to get CRS credit for their hazard mitigation plans need to meet additional requirements.


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Post-Flood Disaster Checklist

- Review floodplain management ordinance
- Tour floodplain to ensure development/rebuilding is compliant
- Require permits for all development, not just for substantial damage
- Notify property owners of permit and building requirements
- Perform substantial damage determination
- Notify property owners of determination results and subsequent building requirements in writing






(PEMA)





(PEMA)



Permits Are Required


- A permit is required **regardless** of whether or not the repairs rise to the level of substantial damage.
 - Permits are required for repairs
 - The permit fee can be waived
 - The permit requirement **cannot be waived**
- Non-compliance post-disaster will have negative insurance implications and could result in sanctions.



Substantial Improvement/Damage

Definition:

- Cost to restore the structure to its **pre-damaged** condition equals or exceeds **50%** of its **pre-damage market value**





(PEMA) (PEMA)

Substantial Damage Determination Process

```

graph TD
    A[Assess Damage] --> B[Make Substantial Damage Determinations]
    B --> C[Notify Damaged Structures of Ordinance Requirements]
    C --> D[Less Than Substantially Damaged]
    C --> E[Substantially Damaged]
    D --> D1[Use Flood Resistant Materials Below BFE]
    D --> D2[Elevate/Floodproof Utilities At or Above BFE]
    E --> E1[Use Flood Resistant Materials Below BFE]
    E --> E2[Elevate/Floodproof Utilities At or Above BFE]
    E --> E3[Elevate Lowest Floor At or Above BFE]
    
```

Making Substantial Damage Determinations

- Substantial damage determinations are a **local responsibility**
- Ways to determine market value:
 - Tax assessed value
 - Appraisal (licensed professional)
 - Actual cash value, including depreciation
 - Qualified estimates based on professional judgment of local official
- Look at the Substantial Improvement/Substantial Damage Desk Reference (FEMA P-758) for guidance on what costs to include



Foundation failure (FEMA Region III)



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Substantial Damage Estimator

- Pre-populate property information pre-disaster in preparation for post-disaster substantial damage determinations
 - Basic structure characteristics, market value, etc.
- Downloadable for free at
 - [Substantial Damage Estimator Tool \(2.0\)](http://www.fema.gov/media-library/assets/documents/18692?id=4166)
(<http://www.fema.gov/media-library/assets/documents/18692?id=4166>)
 - [Substantial Damage Estimator Best Practices](http://www.fema.gov/media-library/assets/documents/26753)
(<http://www.fema.gov/media-library/assets/documents/26753>)



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Substantial Damage Implications

Benefits of bringing structures into compliance with current codes:

- Reduces exposure to flood risk
- Reduces the cost of flood insurance and future damages
- Fulfills one prerequisite for ICC eligibility
- Cost beneficial for HMGP grants

Challenges to achieving compliance:

- Cost of addressing compliance issues
- Typically requires significant changes to design of structure



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Post-Flood Opportunities

- Increase awareness of flood risk
- Encourage residents to build back safer and stronger
- Share low cost mitigation actions with property owners
- Distribute information on grant opportunities
- Capture high water marks



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VDEM Regional Contacts

VDEM Regional Field Offices



Regional Planner (Region 2):
Catherine Hughes
catherine.hughes@vdem.virginia.gov



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Pre- and Post-Disaster Considerations


Questions?



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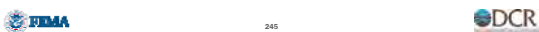


The Community Rating System (CRS)



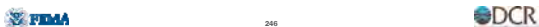
The Community Rating System (CRS)

- Voluntary program for communities participating in the NFIP
- Recognizes activities beyond the minimum NFIP requirements by **reducing the cost of flood insurance from 5 to 45 %**
- Goals
 - Reduce flood damage to insurable property
 - Encourage a comprehensive approach to floodplain management
 - Strengthen/support the insurance aspects of the NFIP

Benefits of CRS

- Money stays in the community
- Insurance savings offset costs
- Improved flood protection
- Better organized programs
- Technical assistance
- Public information builds constituency
- Incentive to keep implementing



CRS Premium Savings

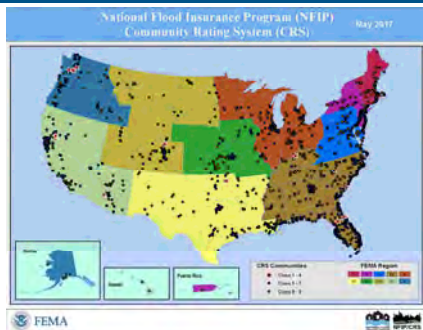
CRS Classes, Credit Points, and Premium Discounts			
CRS Class	Credit Points	Premium Reductions	
		In SFHA	Outside SFHA
1	4,500 +	45%	10%
2	4,000 – 4,499	40%	10%
3	3,500 – 3,999	35%	10%
4	3,000 – 3,499	30%	10%
5	2,500 – 2,999	25%	10%
6	2,000 – 2,499	20%	10%
7	1,500 – 1,999	15%	5%
8	1,000 – 1,499	10%	5%
9	500 – 999	5%	5%
10	0 – 499	0	0



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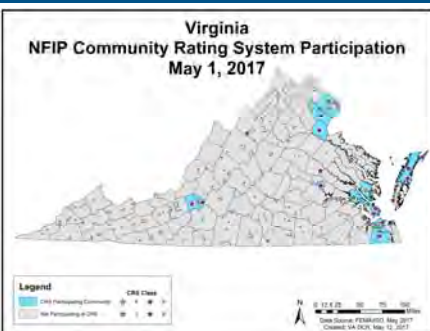
CRS Communities in the US



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CRS Communities in Virginia



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CRS Communities in Virginia

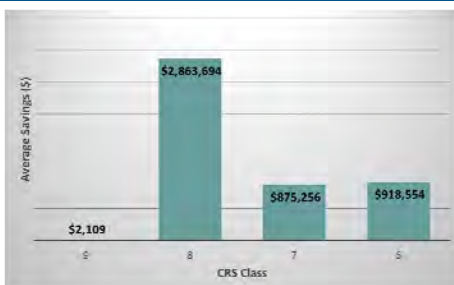
- ACCOMACK COUNTY
- CITY OF ALEXANDRIA
- ARLINGTON COUNTY
- TOWN OF ASHLAND
- TOWN OF BRIDGEWATER
- TOWN OF CAPE CHARLES
- CITY OF CHESAPEAKE
- TOWN OF CHINCOTEAGUE
- FAIRFAX COUNTY
- CITY OF FALLS CHURCH
- GLOUCESTER COUNTY
- CITY OF HAMPTON
- JAMES CITY COUNTY
- CITY OF NORFOLK
- CITY OF POQUOSON
- CITY OF PORTSMOUTH
- PRINCE WILLIAM COUNTY
- CITY OF RICHMOND
- CITY OF ROANOKE
- ROANOKE COUNTY
- STAFFORD COUNTY
- TOWN OF VIENNA
- TOWN OF VINTON
- TOWN OF WACHAPREAGUE
- YORK COUNTY



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CRS Classes & Savings in Virginia



Number of
Communities
per Class

4	15	4	4
---	----	---	---



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What If – Example

	TOTAL	SFHA	X-STD/ARIA99	PRP
PRP	11,505	8,924	1,580	3,621
PREMIUM	\$9,361,000	\$7,060,212	\$662,000	\$1,432,190
AVERAGE PREMIUM	\$784	\$1,021	\$621	\$366
CRS Class				
05	Per Policy	\$54	\$53	\$0
	Per Community	\$417,306	\$371,609	\$45,490
06	Per Policy	\$66	\$107	\$0
	Per Community	\$789,211	\$743,811	\$45,400
07	Per Policy	\$87	\$169	\$82
	Per Community	\$1,181,128	\$1,116,725	\$64,403
08	Per Policy	\$132	\$215	\$83
	Per Community	\$1,570,429	\$1,407,620	\$162,809
09	Per Policy	\$183	\$269	\$86
	Per Community	\$1,856,301	\$1,696,530	\$159,771
10	Per Policy	\$116	\$322	\$84
	Per Community	\$2,322,238	\$2,231,459	\$90,779
11	Per Policy	\$326	\$376	\$50
	Per Community	\$7,884,141	\$7,620,541	\$263,600
12	Per Policy	\$257	\$430	\$81
	Per Community	\$3,308,042	\$2,976,263	\$331,779
13	Per Policy	\$206	\$493	\$80
	Per Community	\$3,437,958	\$3,347,159	\$90,799



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Costs to Community

- Pass a Community Assistance Visit
 - Letter of Good Standing
- Designate a CRS Coordinator
- Implement activities
- Maintain records
- Recertify each year
- Participate in verification visits



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Prerequisites to Participate

1. Be in Regular Phase of the NFIP at least 1 year
2. In full compliance with the NFIP
3. Agree to maintain Elevation Certificates
4. Assess and address repetitive loss properties
5. Maintain all flood insurance policies required for community-owned buildings
6. Coastal communities agree to show LiMWA on FIRM



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Higher Class Prerequisites

- Class 6
 - Receive and maintain a classification of 5/5 or better Building Code Effectiveness Grading Scale (BCEGS)
- Class 4
 - Receive and maintain a classification of 4/4 or better BCEGS
 - Demonstrate programs that minimize flood losses, minimize increases in future flooding, protect natural floodplain functions, and protect people from the dangers of flooding.
- Class 1
 - Successful CAV within the previous 12 months
 - Demonstrate that it has a "no adverse impact" program

NOTE: Each class must meet the prerequisites required for the class(es) below it




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Application Process

- Program Prerequisites
 - Activity Credit Points
- CRS Quick Check
- Letter of Interest
- ISO Verification Visit & Report
- FEMA approval
- Effective May 1 or October 1



NOTE: This process may take several months or even a year.

FEMA DCR

Maintaining CRS

- Recertify annually
- Cycle verification visits every 3-5 years
 - By ISO/CRS Specialist
- Modifications
 - Follow cycle verification process

FEMA DCR

Four Categories of Activities

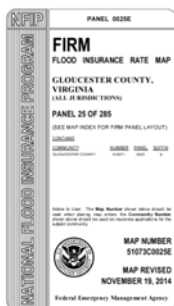
- 300 Series – Public Information
- 400 Series – Mapping and Regulations
- 500 Series – Flood Damage Reduction
- 600 Series – Warning and Response

19 Activities
94 Elements

FEMA DCR

Public Information Activities

- 310 – Elevation Certificates
- 320 – Map Information Service
- 330 – Outreach Projects
- 340 – Hazard Disclosure
- 350 – Flood Protection Information
- 360 – Flood Protection Assistance
- 370 – Flood Insurance Promotion



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Mapping and Regulations Activities

- 410 – Additional Flood Data
- 420 – Open Space Preservation
- 430 – Higher Regulatory Standards
- 440 – Flood Data Maintenance
- 450 – Stormwater Management



260



Flood Damage Reduction Activities

- 510 – Floodplain Management Planning
- 520 – Acquisition and Relocation
- 530 – Flood Protection
- 540 – Drainage System Maintenance



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Warning and Response Activities

- 610 – Flood Warning & Response
- 620 – Levee Safety
- 630 – Dam Safety



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CRS Activity Examples

- Preserving open land in the floodplain
- Having/enforcing statewide building codes
- Adding freeboard provision to ordinance
- Low density zoning
- Letters to property owners in floodprone areas
- Retrofitting floodprone buildings
- Removing floodprone buildings from floodplain
- Having/enforcing stormwater management regulations
- Maintaining drainage systems



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Helpful Hints

- Most communities apply for credit for activities that they're already implementing
- Most communities can join as a Class 8 based on existing activities
- "New" community CRS initiatives for additional credit are often less expensive, public information activities
- To be successful, all the offices and departments that are responsible for flood-related activities should be involved





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The Community Rating System

Questions?



 

DCR Division of Dam Safety and Floodplain Management Update

DCR Division of Dam Safety and Floodplain Management Update

**FLOODPLAIN MANAGEMENT
PROGRAM OVERVIEW**

Floodplain Management Program Overview

- DCR is charged by the General Assembly in the VA Flood Damage Reduction Act, Section 10.1-600 to 10.1-603 of the Code of Virginia, to serve as the coordinator of all flood protection programs and activities in the Commonwealth.
- DCR acts as a liaison between FEMA and communities for the National Flood Insurance Program.
- DCR assists communities with their floodplain ordinances and maps, provides floodplain workshops and trainings, and provides technical assistance and guidance.
- DCR works closely with FEMA Region III, VA state agencies, other state NFIP offices in the Region, and the VA Silver Jackets team.



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Silver Jackets Program Goals

- Facilitate strategic life-cycle flood risk reduction.
- Create or supplement a continuous mechanism to collaboratively solve state-prioritized issues and implement or recommend those solutions.
- Improve processes, identifying and resolving gaps and counteractive programs.
- Leverage and optimize resources.
- Improve and increase flood risk communication and present a unified interagency message.
- Establish close relationships to facilitate integrated post-disaster recovery solutions.



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The Floodplain Management Plan for the Commonwealth of Virginia

- The plan will be a web-based resource that serves as a one-stop-shop for flood information in Virginia.
 - This is a departure from the 2005 plan, which was a 226 page document.
- The new Virginia Flood Risk Information System (VFRIS) is one major element of the website. Phase 1 of VFRIS was rolled out in February 2017.
- The draft website layout is complete and two pages are in the initial draft phase.
- Legal information and analysis has been provided by the Virginia Coastal Policy Center.



270



State Model Floodplain Ordinance

- DCR updated the state model floodplain ordinance to incorporate new FEMA guidance on accessory structures.
 - DCR has been working with communities to understand this accessory structure guidance and incorporate it into their ordinances.
 - No statewide deadline for community adoption. DCR works with communities on a rolling basis.
- DCR is currently working to ensure the ordinance aligns with the current and future VA Uniform Statewide Building Code.



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DCR Division of Dam Safety and Floodplain Management Update

DAM SAFETY UPDATE

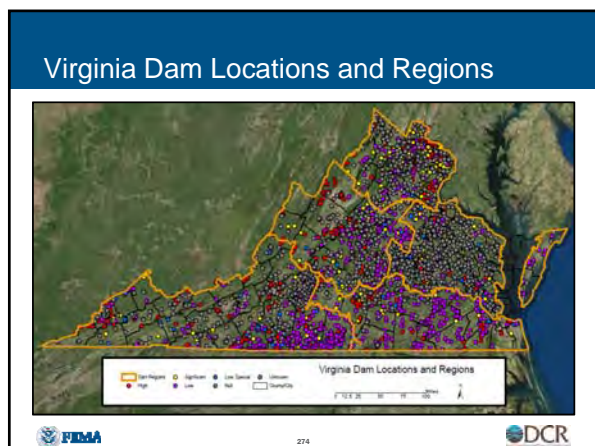


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Dam Safety Inventory System (DSIS)





- ### Dam Safety Inventory System Goals
- Digital Files and Attachments
 - Centralized Database
 - Simplified Tracking
 - Quickly Find Data
 - Export Reports and Files for Sharing
 - Public Facing
 - Quickly Respond to Emergency Requests
 - Effective Response During Emergencies
- 275

- ### Dam Safety Inventory System Information
- Contact information
 - Technical Specifications
 - Inspections
 - Permits
 - Certificates
 - Emergency Action Plans
 - Map location and additional map layers (including dam break inundation zones and SFHA)
- 276

Dam Safety Inventory System

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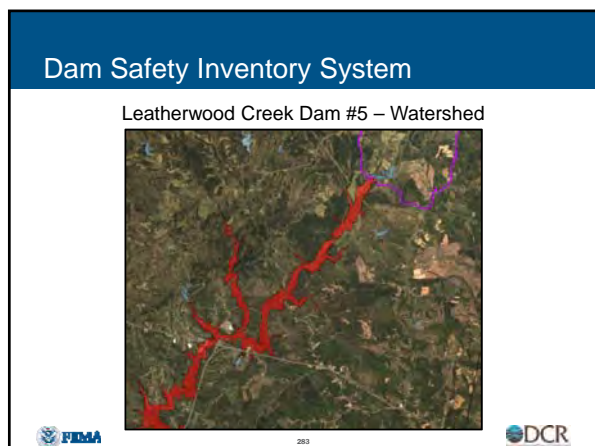
Dam Safety Inventory System

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Dam Safety Inventory System

Leatherwood Creek Dam #5 – Watershed

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DCR Division of Dam Safety and
Floodplain Management Update


Questions?

Floodplain Management Contacts



DCR Floodplain Management

- Charley Banks, CFM
 - Floodplain Program Manager
 - (804) 371-6135
 - Charley.Banks@dcv.virginia.gov
- Gina DiCicco, AICP, CFM (VFRIS)
 - Floodplain Program Planner
 - (804) 786-6523
 - Gina.DiCicco@dcv.virginia.gov
- Kristin Owen, AICP, CFM (CRS)
 - Floodplain Program Planner
 - (804) 786-2886
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Floodplain Management Contacts

- FEMA Region III
 - Zane Hadzick - Lead Mitigation Specialist for VA
 - Zane.Hadzick@fema.dhs.gov
 - Charlie Baker - Backup Mitigation Specialist for VA
 - Charles.Baker@fema.dhs.gov
 - Rich Sobota - Insurance and CRS Specialist
 - Richard.Sobota@fema.dhs.gov
- ISO/CRS Specialist
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 - Christina.Groves@verisk.com

Capability Assessment Worksheet

Jurisdiction: Culpeper County

Local mitigation capabilities are existing authorities, policies, programs, and resources that reduce hazard impacts or that could be used to implement hazard mitigation activities. Please complete the tables and questions in the worksheet as completely as possible. Complete one worksheet for each jurisdiction.

Planning and Regulatory

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards. Please indicate which of the following your jurisdiction has in place.

Plans	Yes/No Year	Does the plan address hazards?
		Does the plan identify projects to include in the mitigation strategy? Can the plan be used to implement mitigation actions?
Comprehensive/Master Plan	Yes	
Capital Improvements Plan	Yes	
Economic Development Plan	Yes	
Local Emergency Operations Plan	Yes 2015	Yes to all. Update on EOP in 2019
Continuity of Operations Plan	Yes 2015	Yes to all. Part of the County EOP
Transportation Plan	Yes	
Stormwater Management Plan	Yes	
Community Wildfire Protection Plan		
Other special plans (e.g., brownfields redevelopment, disaster recovery, coastal zone management, climate change adaptation)		

Worksheet 4.1

Capability Assessment Worksheet

Building Code, Permitting, and Inspections	Yes/No	Are codes adequately enforced?
Building Code	Yes	Version/Year:
Building Code Effectiveness Grading Schedule (BCEGS) Score		Score:
Fire department ISO rating	Yes	Rating:
Site plan review requirements	Yes	
Land Use Planning and Ordinances	Yes/No	Is the ordinance an effective measure for reducing hazard impacts? Is the ordinance adequately administered and enforced?
Zoning ordinance	Yes	
Subdivision ordinance	Yes	
Floodplain ordinance	Yes	
Natural hazard specific ordinance (stormwater, steep slope, wildfire)		
Flood insurance rate maps	Yes	
Acquisition of land for open space and public recreation uses		
Other		
How can these capabilities be expanded and improved to reduce risk?		

Administrative and Technical

Identify whether your community has the following administrative and technical capabilities. These include staff and their skills and tools that can be used for mitigation planning and to implement specific mitigation actions. For smaller jurisdictions without local staff resources, if there are public resources at the next higher level government that can provide technical assistance, indicate so in your comments.

Administration	Yes/No	Describe capability Is coordination effective?
Planning Commission	Yes	
Mitigation Planning Committee	Yes	
Maintenance programs to reduce risk (e.g., tree trimming, clearing drainage systems)		
Mutual aid agreements	Yes	
Staff	Yes/No FT/PT ¹	Is staffing adequate to enforce regulations? Is staff trained on hazards and mitigation? Is coordination between agencies and staff effective?
Chief Building Official	Yes	
Floodplain Administrator		
Emergency Manager	Yes	
Community Planner	Yes	
Civil Engineer		
GIS Coordinator	Yes	
Other		

1 Full-time (FT) or part-time (PT) position

Worksheet 4.1

Capability Assessment Worksheet

Technical	Yes/No	Describe capability Has capability been used to assess/mitigate risk in the past?
Warning systems/services (Reverse 911, outdoor warning signals)	Yes	Rave Alert System, Reverse 911
Hazard data and information	Yes	Local Emergency Planning Commission
Grant writing	Yes	
Hazus analysis		
Other		
How can these capabilities be expanded and improved to reduce risk?		

Financial

Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.

Funding Resource	Access/ Eligibility (Yes/No)	Has the funding resource been used in past and for what type of activities? Could the resource be used to fund future mitigation actions?
Capital improvements project funding	Yes	
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric services	Yes	
Impact fees for new development		
Storm water utility fee		
Incur debt through general obligation bonds and/or special tax bonds		
Incur debt through private activities		
Community Development Block Grant		
Other federal funding programs	Yes	
State funding programs	Yes	
Other		
How can these capabilities be expanded and improved to reduce risk?		

Worksheet 4.1

Capability Assessment Worksheet

Education and Outreach

Identify education and outreach programs and methods already in place that could be used to implement mitigation activities and communicate hazard-related information.

Program/Organization	Yes/No	Describe program/organization and how relates to disaster resilience and mitigation. Could the program/organization help implement future mitigation activities?
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	Yes	Local VOAD, LEPC
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Yes	Emergency Services, local Fire/Rescue
Natural disaster or safety related school programs	Yes	Local School Safety Committee
StormReady certification		
Firewise Communities certification		
Public-private partnership initiatives addressing disaster-related issues	Yes	Partnerships with VDEM
Other		
How can these capabilities be expanded and improved to reduce risk?		

Capability Assessment Worksheet

Jurisdiction: _____

Local mitigation capabilities are existing authorities, policies, programs, and resources that reduce hazard impacts or that could be used to implement hazard mitigation activities. Please complete the tables and questions in the worksheet as completely as possible. Complete one worksheet for each jurisdiction.

Planning and Regulatory

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards. Please indicate which of the following your jurisdiction has in place.

Plans	Yes/No Year	Does the plan address hazards?
		Does the plan identify projects to include in the mitigation strategy?
		Can the plan be used to implement mitigation actions?
Comprehensive/Master Plan		
Capital Improvements Plan		
Economic Development Plan		
Local Emergency Operations Plan		
Continuity of Operations Plan		
Transportation Plan		
Stormwater Management Plan		
Community Wildfire Protection Plan		
Other special plans (e.g., brownfields redevelopment, disaster recovery, coastal zone management, climate change adaptation)		

Worksheet 4.1

Capability Assessment Worksheet

Building Code, Permitting, and Inspections	Yes/No	Are codes adequately enforced?
Building Code		Version/Year:
Building Code Effectiveness Grading Schedule (BCEGS) Score		Score:
Fire department ISO rating		Rating:
Site plan review requirements		
Land Use Planning and Ordinances	Yes/No	Is the ordinance an effective measure for reducing hazard impacts? Is the ordinance adequately administered and enforced?
Zoning ordinance		
Subdivision ordinance		
Floodplain ordinance		
Natural hazard specific ordinance (stormwater, steep slope, wildfire)		
Flood insurance rate maps		
Acquisition of land for open space and public recreation uses		
Other		
How can these capabilities be expanded and improved to reduce risk?		

Administrative and Technical

Identify whether your community has the following administrative and technical capabilities. These include staff and their skills and tools that can be used for mitigation planning and to implement specific mitigation actions. For smaller jurisdictions without local staff resources, if there are public resources at the next higher level government that can provide technical assistance, indicate so in your comments.

Administration	Yes/No	Describe capability Is coordination effective?
Planning Commission		
Mitigation Planning Committee		
Maintenance programs to reduce risk (e.g., tree trimming, clearing drainage systems)		
Mutual aid agreements		
Staff	Yes/No FT/PT ¹	Is staffing adequate to enforce regulations? Is staff trained on hazards and mitigation? Is coordination between agencies and staff effective?
Chief Building Official		
Floodplain Administrator		
Emergency Manager		
Community Planner		
Civil Engineer		
GIS Coordinator		
Other		

1. Full-time (FT) or part-time (PT) position

Worksheet 4.1

Capability Assessment Worksheet

Technical	Yes/No	Describe capability Has capability been used to assess/mitigate risk in the past?
Warning systems/services (Reverse 911, outdoor warning signals)		
Hazard data and information		
Grant writing		
Hazus analysis		
Other		
How can these capabilities be expanded and improved to reduce risk?		

Financial

Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.

Funding Resource	Access/ Eligibility (Yes/No)	Has the funding resource been used in past and for what type of activities? Could the resource be used to fund future mitigation actions?
Capital improvements project funding		
Authority to levy taxes for specific purposes		
Fees for water, sewer, gas, or electric services		
Impact fees for new development		
Storm water utility fee		
Incur debt through general obligation bonds and/or special tax bonds		
Incur debt through private activities		
Community Development Block Grant		
Other federal funding programs		
State funding programs		
Other		
How can these capabilities be expanded and improved to reduce risk?		

Worksheet 4.1

Capability Assessment Worksheet

Education and Outreach

Identify education and outreach programs and methods already in place that could be used to implement mitigation activities and communicate hazard-related information.

Program/Organization	Yes/No	Describe program/organization and how relates to disaster resilience and mitigation. Could the program/organization help implement future mitigation activities?
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.		
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)		
Natural disaster or safety related school programs		
StormReady certification		
Firewise Communities certification		
Public-private partnership initiatives addressing disaster-related issues		
Other		
How can these capabilities be expanded and improved to reduce risk?		

Capability Assessment Worksheet

Jurisdiction: ~~COMMUNITY DEVELOPMENT~~ Fauquier County

Local mitigation capabilities are existing authorities, policies, programs, and resources that reduce hazard impacts or that could be used to implement hazard mitigation activities. Please complete the tables and questions in the worksheet as completely as possible. Complete one worksheet for each jurisdiction.

Planning and Regulatory

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards. Please indicate which of the following your jurisdiction has in place.

Plans	Yes/No Year	Does the plan address hazards?
		Does the plan identify projects to include in the mitigation strategy? Can the plan be used to implement mitigation actions?
Comprehensive/Master Plan	Yes 2015	Drought Management Plan. Yes - mitigation actions in time of drought.
Capital Improvements Plan	No	
Economic Development Plan		
Local Emergency Operations Plan	Yes	Currently being updated for Oct 18
Continuity of Operations Plan	Yes	Dec 2014
Transportation Plan	2017 Yes	Recommends road improvements for safety-related conditions
Stormwater Management Plan	2014 Yes	Ordinance related to water quantity and quality; off-site impacts
Community Wildfire Protection Plan		
Special plans (e.g., brownfields, disaster recovery, coastal zone, climate change adaptation)		

Worksheet 4.1

Capability Assessment Worksheet

Building Code, Permitting, and Inspections	Yes/No	Are codes adequately enforced?
Building Code	Yes	Version/Year: 2012 USBC Yes
Building Code Effectiveness Grading Schedule (BCEGS) Score		Score: 3 for residential; 2 for all others
Fire department ISO rating	Yes	Rating: 2017 - 86.7 Building ISO rating depends on fire dept. area
Site plan review requirements	Yes	For most building projects.
Land Use Planning and Ordinances	Yes/No	Is the ordinance an effective measure for reducing hazard impacts? Is the ordinance adequately administered and enforced?
Zoning ordinance	Yes	Addressed floodplain; well septic setbacks; Railroad/Powerline setbacks.
Subdivision ordinance	Yes	
Floodplain ordinance	Yes	More restrictive than FEMA requirements
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	Yes	
Flood insurance rate maps	Yes	Works with Floodplain ordinance
Acquisition of land for open space and public recreation uses	Yes	Incorporate environmentally sensitive areas in easement areas & open space.
Other		
How can these capabilities be expanded and improved to reduce risk?		

Administrative and Technical

Identify whether your community has the following administrative and technical capabilities. These include staff and their skills and tools that can be used for mitigation planning and to implement specific mitigation actions. For smaller jurisdictions without local staff resources, if there are public resources at the next higher level government that can provide technical assistance, indicate so in your comments.

Administration	Yes/No	Describe capability Is coordination effective?
Planning Commission	No	
Mitigation Planning Committee		
Maintenance programs to reduce risk (e.g., tree trimming, clearing drainage systems)		
Mutual aid agreements	Yes	w/ surrounding jurisdictions for fire and rescue support
Staff	Yes/No FT/PT ¹	Is staffing adequate to enforce regulations? Is staff trained on hazards and mitigation? Is coordination between agencies and staff effective?
Chief Building Official	Yes	Yes
Floodplain Administrator	Yes	Yes
Emergency Manager	Yes FT	1. NO 2. Yes 3. Yes
Community Planner	Yes	seek to minimize and mitigate impacts and hazards thru legislative review of projects
Civil Engineer	Yes	
GIS Coordinator	Yes	1. Yes 2. Yes 3. Yes
Other		

¹ Full-time (FT) or part-time (PT) position

Worksheet 4.1

Capability Assessment Worksheet

Technical	Yes/No	Describe capability Has capability been used to assess/mitigate risk in the past?
Warning systems/services (Reverse 911, outdoor warning signals)	Yes	Everbridge, used to warn public of incidents impacting their area (weather, flooding, road closures, law enforcement incidents, evacuation orders, shelter information)
Hazard data and information		
Grant writing		
Hazus analysis		
Other		
How can these capabilities be expanded and improved to reduce risk?		

Financial

Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.

Funding Resource	Access/ Eligibility (Yes/No)	Has the funding resource been used in past and for what type of activities? Could the resource be used to fund future mitigation actions?
Capital improvements project funding	Yes	Capital facilities and utility construction
Authority to levy taxes for specific purposes		
Fees for water, sewer, gas, or electric services	Yes	Through individual utilities
Impact fees for new development	No	
Storm water utility fee	Yes	Funding used for staff to implement program. Could be used for future mitigation.
Incur debt through general obligation bonds and/or special tax bonds		
Incur debt through private activities		
Community Development Block Grant		
Other federal funding programs		
State funding programs		
Other		
How can these capabilities be expanded and improved to reduce risk?		

Worksheet 4.1

Capability Assessment Worksheet

Education and Outreach

Identify education and outreach programs and methods already in place that could be used to implement mitigation activities and communicate hazard-related information.

Program/Organization	Yes/No	Describe program/organization and how relates to disaster resilience and mitigation. Could the program/organization help implement future mitigation activities?
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	Yes	Soil & Water Conservation District among others. County undertakes environmental education related to MS-4 program,
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Yes	including on-going workshops for hazardous materials disposal for
Natural disaster or safety related school programs	Yes	protection of surface and groundwater. Educate County employees tasked
StormReady certification	Yes	with facilities management. Recert due June 2018
Firewise Communities certification		
Public-private partnership initiatives addressing disaster-related issues	Yes	Red Cross, Salvation Army, Christ In Action
Other		
How can these capabilities be expanded and improved to reduce risk?		
★ Schools conduct drills on regular basis (fire, lockdown, tornado, earthquake)		

Capability Assessment Worksheet

Jurisdiction: Town of Bemington

Local mitigation capabilities are existing authorities, policies, programs, and resources that reduce hazard impacts or that could be used to implement hazard mitigation activities. Please complete the tables and questions in the worksheet as completely as possible. Complete one worksheet for each jurisdiction.

Planning and Regulatory

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards. Please indicate which of the following your jurisdiction has in place.

Plans	Yes/No Year	Does the plan address hazards?
		Does the plan identify projects to include in the mitigation strategy? Can the plan be used to implement mitigation actions?
Comprehensive/Master Plan	Y	use Fauquier Co. Plan
Capital Improvements Plan	N	
Economic Development Plan	N	
Local Emergency Operations Plan	Y	use Fauquier Co. Plan
Continuity of Operations Plan	N	
Transportation Plan	Y	Fauquier Co.
Stormwater Management Plan	Y	Fauquier Co
Community Wildfire Protection Plan	N	
Other special plans (e.g., brownfields redevelopment, disaster recovery, coastal zone management, climate change adaptation)	N	

Worksheet 4.1

Capability Assessment Worksheet

Building Code, Permitting, and Inspections	Yes/No	Are codes adequately enforced?
Building Code	N	Version/Year: Fauquier Handles
Building Code Effectiveness Grading Schedule (BCEGS) Score	N/A	Score:
Fire department ISO rating	N/A	Rating:
Site plan review requirements	N/A	
Land Use Planning and Ordinances	Yes/No	Is the ordinance an effective measure for reducing hazard impacts? Is the ordinance adequately administered and enforced?
Zoning ordinance	Y	Yes - Yes
Subdivision ordinance	Y	Follow Fauquier Co
Floodplain ordinance	Y	Follow state
Natural hazard specific ordinance (stormwater, steep slope, wildfire)		
Flood insurance rate maps	Y	
Acquisition of land for open space and public recreation uses	Y	Follow Fauquier
Other		
How can these capabilities be expanded and improved to reduce risk?		

Administrative and Technical

Identify whether your community has the following administrative and technical capabilities. These include staff and their skills and tools that can be used for mitigation planning and to implement specific mitigation actions. For smaller jurisdictions without local staff resources, if there are public resources at the next higher level government that can provide technical assistance, indicate so in your comments.

Administration	Yes/No	Describe capability Is coordination effective?
Planning Commission	Y	Fauquier Co
Mitigation Planning Committee	Y	" "
Maintenance programs to reduce risk (e.g., tree trimming, clearing drainage systems)	No	
Mutual aid agreements	Y	Police only
Staff	Yes/No FT/PT ¹	Is staffing adequate to enforce regulations? Is staff trained on hazards and mitigation? Is coordination between agencies and staff effective?
Chief Building Official	No	
Floodplain Administrator	No	
Emergency Manager	No	
Community Planner	No	
Civil Engineer	No	
GIS Coordinator	No	
Other		

1 Full-time (FT) or part-time (PT) position

Worksheet 4.1

Capability Assessment Worksheet

Technical	Yes/No	Describe capability Has capability been used to assess/mitigate risk in the past?
Warning systems/services (Reverse 911, outdoor warning signals)	Yes	THRU FAUQUIER CO
Hazard data and information	No	
Grant writing	No	
Hazus analysis	No	
Other		
How can these capabilities be expanded and improved to reduce risk?		

Financial

Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.

Funding Resource	Access/ Eligibility (Yes/No)	Has the funding resource been used in past and for what type of activities? Could the resource be used to fund future mitigation actions?
Capital improvements project funding	NO	
Authority to levy taxes for specific purposes	NO	
Fees for <u>water</u> , sewer, gas, or electric services	Yes	
Impact fees for new development	NO	
Storm water utility fee	NO	
Incur debt through general obligation bonds and/or special tax bonds	NO	
Incur debt through private activities	NO	
Community Development Block Grant	NO	
Other federal funding programs	NO	
State funding programs	NO	
Other		
How can these capabilities be expanded and improved to reduce risk?		

Worksheet 4.1

Capability Assessment Worksheet

Education and Outreach

Identify education and outreach programs and methods already in place that could be used to implement mitigation activities and communicate hazard-related information.

Program/Organization	Yes/No	Describe program/organization and how relates to disaster resilience and mitigation. Could the program/organization help implement future mitigation activities?
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	NO	
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	NO	
Natural disaster or safety related school programs	NO	
StormReady certification	NO	
Firewise Communities certification	NO	
Public-private partnership initiatives addressing disaster-related issues	NO	
Other		
How can these capabilities be expanded and improved to reduce risk?		

Capability Assessment Worksheet

Jurisdiction: Town of Warrenton

Local mitigation capabilities are existing authorities, policies, programs, and resources that reduce hazard impacts or that could be used to implement hazard mitigation activities. Please complete the tables and questions in the worksheet as completely as possible. Complete one worksheet for each jurisdiction.

Planning and Regulatory

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards. Please indicate which of the following your jurisdiction has in place.

Plans	Yes/No Year	Does the plan address hazards?
		Does the plan identify projects to include in the mitigation strategy? Can the plan be used to implement mitigation actions?
Comprehensive/Master Plan	Yes/ 2002; 2009 Comp. Supplement	Yes, Yes, Yes
Capital Improvements Plan	Being Updated	Yes, Yes, Yes
Economic Development Plan	Yes/ 2009 Comp. Supplement	Within Comprehensive Plan. No, No, No
Local Emergency Operations Plan	Yes/ 2014	Town incorporated within Fauquier County Plan. Yes, Yes, Yes
Continuity of Operations Plan	No	Under development.
Transportation Plan	Yes/2009 Comp. Supplement	Within Comprehensive Plan. Yes, Yes (Broadview), No
Stormwater Management Plan	No	Under development.
Community Wildfire Protection Plan	No	
Other special plans (e.g., brownfields redevelopment, disaster recovery, coastal zone management, climate change adaptation)	No	

Worksheet 4.1

Capability Assessment Worksheet

Building Code, Permitting, and Inspections	Yes/No	Are codes adequately enforced?
Building Code	Yes	Version/Year: ICC Virginia 2012
Building Code Effectiveness Grading Schedule (BCEGS) Score		Score:
Fire department ISO rating		Rating:
Site plan review requirements	Yes	Yes
Land Use Planning and Ordinances	Yes/No	Is the ordinance an effective measure for reducing hazard impacts? Is the ordinance adequately administered and enforced?
Zoning ordinance	Yes	
Subdivision ordinance	Yes	
Floodplain ordinance	Yes	
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	Yes	
Flood insurance rate maps	Yes	
Acquisition of land for open space and public recreation uses	Yes	Yes, Yes. There is a process; open space required in some development scenarios.
Other	No	
How can these capabilities be expanded and improved to reduce risk?		
<p>Stormwater Management process is being updated and refined to include best management practices and processes in accordance with Fauquier County's adopted process and state law. This may include the adoption of a Plan and accompanying ordinance updates.</p> <p>Community Wildfire Protection is a portion of the education and outreach currently undertaken by the Warrenton Volunteer Fire Company and the Building Official. This could be coordinated by means of a Plan.</p>		

Administrative and Technical

Identify whether your community has the following administrative and technical capabilities. These include staff and their skills and tools that can be used for mitigation planning and to implement specific mitigation actions. For smaller jurisdictions without local staff resources, if there are public resources at the next higher level government that can provide technical assistance, indicate so in your comments.

Administration	Yes/No	Describe capability Is coordination effective?
Planning Commission	Yes	Planning Commission reviews land use decisions and makes recommendations to Town Council. Yes
Mitigation Planning Committee	No	
Maintenance programs to reduce risk (e.g., tree trimming, clearing drainage systems)	Yes	Not a proactive program. Staff coordinates when issues arise.
Mutual aid agreements	No	
Staff	Yes/No FT/PT ¹	Is staffing adequate to enforce regulations? Is staff trained on hazards and mitigation? Is coordination between agencies and staff effective?
Chief Building Official	Yes/ FT	Staffing is improving. No. Yes.
Floodplain Administrator	Yes/ FT	Yes. Yes. Yes.
Emergency Manager	No	Risk Manager assignment or appointment under consideration.
Community Planner	Yes/ FT	Yes. No. Yes.
Civil Engineer	Yes/ FT	N/A. No. Yes
GIS Coordinator	Yes/ FT	N/A. No. Yes.
Other	No	

Worksheet 4.1

Capability Assessment Worksheet

Technical	Yes/No	Describe capability Has capability been used to assess/mitigate risk in the past?
Warning systems/services (Reverse 911, outdoor warning signals)	Yes	Coordinate with County on system. Yes.
Hazard data and information	No	Utilize National Weather Service and other public sources for data.
Grant writing	Yes	Staff able to write, apply, and manage grants. No.
Hazus analysis	No	
Other	No	
How can these capabilities be expanded and improved to reduce risk?		
Continuing education and outreach.		

Financial

Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.

Funding Resource	Access/ Eligibility (Yes/No)	Has the funding resource been used in past and for what type of activities? Could the resource be used to fund future mitigation actions?
Capital improvements project funding	Yes	Yes, various community and public works projects. Possibly.
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric services	Yes	
Impact fees for new development	No	
Storm water utility fee	No	
Incur debt through general obligation bonds and/or special tax bonds	No	
Incur debt through private activities	Yes	
Community Development Block Grant	Yes	Yes, for housing and community development projects. Possibly.
Other federal funding programs	Yes	Possibly.
State funding programs	Yes	Possibly.
Other		
How can these capabilities be expanded and improved to reduce risk?		

Worksheet 4.1

Capability Assessment Worksheet

Education and Outreach

Identify education and outreach programs and methods already in place that could be used to implement mitigation activities and communicate hazard-related information.

Program/Organization	Yes/No	Describe program/organization and how relates to disaster resilience and mitigation. Could the program/organization help implement future mitigation activities?
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	Yes	Piedmont Environmental Council; PATH Foundation; Fauquier Community Action
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Yes	Small Scale initiatives through Department of Public Works and Community Development.
Natural disaster or safety related school programs	Yes	Fire Department visits classes "Prevention Through Education Program"
StormReady certification	Yes	Fauquier County is a Storm-Ready Community, the Town of Warrenton participates through them.
Firewise Communities certification	Yes	The Warrenton Fire Department provides information on this program.
Public-private partnership initiatives addressing disaster-related issues	No	
Other		

How can these capabilities be expanded and improved to reduce risk?

Continue and improve outreach through schools and other public and private opportunities. Look for ways to incorporate public education into current and ongoing processes.

Capability Assessment Worksheet

Jurisdiction: Madison County

Local mitigation capabilities are existing authorities, policies, programs, and resources that reduce hazard impacts or that could be used to implement hazard mitigation activities. Please complete the tables and questions in the worksheet as completely as possible. Complete one worksheet for each jurisdiction.

Planning and Regulatory

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards. Please indicate which of the following your jurisdiction has in place.

Plans	Yes/No Year	Does the plan address hazards?
		Does the plan identify projects to include in the mitigation strategy? Can the plan be used to implement mitigation actions?
Comprehensive/Master Plan		
Capital Improvements Plan	yes	No
Economic Development Plan	yes	No
Local Emergency Operations Plan	yes 2016	yes
Continuity of Operations Plan	no	
Transportation Plan	no	
Stormwater Management Plan	yes	yes
Community Wildfire Protection Plan	no	
Other special plans (e.g., brownfields redevelopment, disaster recovery, coastal zone management, climate change adaptation)		

Worksheet 4.1

Capability Assessment Worksheet

Building Code, Permitting, and Inspections	Yes/No	Are codes adequately enforced?
Building Code	y	Version/Year: 2012
Building Code Effectiveness Grading Schedule (BCEGS) Score	y	Score: 2
Fire department ISO rating	y	Rating: 5/5Y
Site plan review requirements	y	y
Land Use Planning and Ordinances	Yes/No	Is the ordinance an effective measure for reducing hazard impacts? Is the ordinance adequately administered and enforced?
Zoning ordinance	y	No
Subdivision ordinance	y	No
Floodplain ordinance	y	yes
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	N	
Flood insurance rate maps	y	yes
Acquisition of land for open space and public recreation uses	N	
Other		
How can these capabilities be expanded and improved to reduce risk?		

Administrative and Technical

Identify whether your community has the following administrative and technical capabilities. These include staff and their skills and tools that can be used for mitigation planning and to implement specific mitigation actions. For smaller jurisdictions without local staff resources, if there are public resources at the next higher level government that can provide technical assistance, indicate so in your comments.

Administration	Yes/No	Describe capability Is coordination effective?
Planning Commission	y	
Mitigation Planning Committee	N	
Maintenance programs to reduce risk (e.g., tree trimming, clearing drainage systems)	N	
Mutual aid agreements		
Staff	Yes/No FT/PT ¹	Is staffing adequate to enforce regulations? Is staff trained on hazards and mitigation? Is coordination between agencies and staff effective?
Chief Building Official	y-FT	
Floodplain Administrator	y FT	
Emergency Manager	yes PT	
Community Planner	No	
Civil Engineer	No	
GIS Coordinator	y FT	
Other		

¹ Full-time (FT) or part-time (PT) position

Worksheet 4.1

Capability Assessment Worksheet

Technical	Yes/No	Describe capability Has capability been used to assess/mitigate risk in the past?
Warning systems/services (Reverse 911, outdoor warning signals)	yes Code Red	Code Red
Hazard data and information	yes	Tier II
Grant writing	yes	VDEM Grants / State Grants
Hazus analysis	N	
Other		
How can these capabilities be expanded and improved to reduce risk?		

Financial

Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.

Funding Resource	Access/ Eligibility (Yes/No)	Has the funding resource been used in past and for what type of activities? Could the resource be used to fund future mitigation actions?
Capital improvements project funding	y	No / Potentially
Authority to levy taxes for specific purposes	N	
Fees for water, sewer, gas, or electric services	N	
Impact fees for new development	N	
Storm water utility fee	N	
Incur debt through general obligation bonds and/or special tax bonds	N	
Incur debt through private activities	N	
Community Development Block Grant	N	
Other federal funding programs	N	
State funding programs	N	
Other		
How can these capabilities be expanded and improved to reduce risk? 		

Worksheet 4.1

Capability Assessment Worksheet

Education and Outreach

Identify education and outreach programs and methods already in place that could be used to implement mitigation activities and communicate hazard-related information.

Program/Organization	Yes/No	Describe program/organization and how relates to disaster resilience and mitigation. Could the program/organization help implement future mitigation activities?
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	N	
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	N	
Natural disaster or safety related school programs	N	
StormReady certification	N	
Firewise Communities certification	✓	
Public-private partnership initiatives addressing disaster-related issues	✓	
Other		
How can these capabilities be expanded and improved to reduce risk?		

Capability Assessment Worksheet

Jurisdiction: Orange County

Local mitigation capabilities are existing authorities, policies, programs, and resources that reduce hazard impacts or that could be used to implement hazard mitigation activities. Please complete the tables and questions in the worksheet as completely as possible. Complete one worksheet for each jurisdiction.

Planning and Regulatory

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards. Please indicate which of the following your jurisdiction has in place.

Plans	Yes/No Year	Does the plan address hazards?
		Does the plan identify projects to include in the mitigation strategy? Can the plan be used to implement mitigation actions?
Comprehensive/Master Plan	Yes 2013	No . No. No.
Capital Improvements Plan	Yes 2018	Yes. Yes. Yes.
Economic Development Plan	Yes 2016	No. No. No.
Local Emergency Operations Plan		
Continuity of Operations Plan		
Transportation Plan	Yes 2013	No. No. No.
Stormwater Management Plan	No	
Community Wildfire Protection Plan	No	
Other special plans (e.g., brownfields redevelopment, disaster recovery, coastal zone management, climate change adaptation)		

Worksheet 4.1

Capability Assessment Worksheet

Building Code, Permitting, and Inspections	Yes/No	Are codes adequately enforced?
Building Code	Yes	Version/Year: <i>USBC , 2012</i>
Building Code Effectiveness Grading Schedule (BCEGS) Score		Score:
Fire department ISO rating		Rating:
Site plan review requirements	Yes	Yes
Land Use Planning and Ordinances	Yes/No	Is the ordinance an effective measure for reducing hazard impacts? Is the ordinance adequately administered and enforced?
Zoning ordinance	Yes	<i>In some regards, yes. Yes.</i>
Subdivision ordinance	Yes	<i>" "</i>
Floodplain ordinance	Yes	<i>Yes. Yes.</i>
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	No	
Flood insurance rate maps	Yes	<i>Yes. Yes.</i>
Acquisition of land for open space and public recreation uses	No	<i>Reliance on state program.</i>
Other		
How can these capabilities be expanded and improved to reduce risk?		

Administrative and Technical

Identify whether your community has the following administrative and technical capabilities. These include staff and their skills and tools that can be used for mitigation planning and to implement specific mitigation actions. For smaller jurisdictions without local staff resources, if there are public resources at the next higher level government that can provide technical assistance, indicate so in your comments.

Administration	Yes/No	Describe capability Is coordination effective?
Planning Commission	Yes	Review and approve recommend approval of land use + development ordinances
Mitigation Planning Committee	No	
Maintenance programs to reduce risk (e.g., tree trimming, clearing drainage systems)		
Mutual aid agreements	Yes	
Staff	Yes/No FT/PT ¹	Is staffing adequate to enforce regulations? Is staff trained on hazards and mitigation? Is coordination between agencies and staff effective?
Chief Building Official	Yes FT	Yes. Yes. Yes.
Floodplain Administrator	Yes FT	Yes. Moderately. Yes.
Emergency Manager		
Community Planner	Yes FT	Yes. Moderately. Yes.
Civil Engineer	No	
GIS Coordinator	Yes PT	Yes. Moderately. Yes → Note: Planning Director serves as GIS Coordinator
Other		

1 Full-time (FT) or part-time (PT) position

Worksheet 4.1

Capability Assessment Worksheet

Technical	Yes/No	Describe capability Has capability been used to assess/mitigate risk in the past?
Warning systems/services (Reverse 911, outdoor warning signals)		
Hazard data and information		
Grant writing		
Hazus analysis		
Other		
How can these capabilities be expanded and improved to reduce risk?		

Financial

Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.

Funding Resource	Access/ Eligibility (Yes/No)	Has the funding resource been used in past and for what type of activities? Could the resource be used to fund future mitigation actions?
Capital improvements project funding	Yes	Yes. General capital facilities funding, Yes.
Authority to levy taxes for specific purposes	Yes	No. Yes.
Fees for water, sewer, gas, or electric services	Yes	No. Yes.
Impact fees for new development	Yes	No. Yes.
Storm water utility fee	Yes	No. Yes.
Incur debt through general obligation bonds and/or special tax bonds	Yes	Yes. New New capital facilities construction. Yes.
Incur debt through private activities		
Community Development Block Grant	Yes	No. Yes.
Other federal funding programs		
State funding programs		
Other		
How can these capabilities be expanded and improved to reduce risk?		

Worksheet 4.1

Capability Assessment Worksheet

Education and Outreach

Identify education and outreach programs and methods already in place that could be used to implement mitigation activities and communicate hazard-related information.

Program/Organization	Yes/No	Describe program/organization and how relates to disaster resilience and mitigation. Could the program/organization help implement future mitigation activities?
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	Yes	
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)		
Natural disaster or safety related school programs		
StormReady certification		
Firewise Communities certification		
Public-private partnership initiatives addressing disaster-related issues		
Other		
How can these capabilities be expanded and improved to reduce risk?		

Capability Assessment Worksheet

Jurisdiction: Town of Gordonsville

Local mitigation capabilities are existing authorities, policies, programs, and resources that reduce hazard impacts or that could be used to implement hazard mitigation activities. Please complete the tables and questions in the worksheet as completely as possible. Complete one worksheet for each jurisdiction.

Planning and Regulatory

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards. Please indicate which of the following your jurisdiction has in place.

Plans	Yes/No Year	Does the plan address hazards?
		Does the plan identify projects to include in the mitigation strategy? Can the plan be used to implement mitigation actions?
Comprehensive/Master Plan	Yes 2017	-not specifically -no -yes
Capital Improvements Plan	No	
Economic Development Plan	n/a	
Local Emergency Operations Plan	yes	Part of Orange County's plan
Continuity of Operations Plan	n/a	
Transportation Plan	Yes	Part of Town's comprehensive plan
Stormwater Management Plan	n/a	
Community Wildfire Protection Plan	n/a	
Other special plans (e.g., brownfields redevelopment, disaster recovery, coastal zone management, climate change adaptation)	n/a	

Worksheet 4.1

Capability Assessment Worksheet

Building Code, Permitting, and Inspections	Yes/No	Are codes adequately enforced?
Building Code	Yes	Version/Year: Through Orange County
Building Code Effectiveness Grading Schedule (BCEGS) Score	n/a	Score:
Fire department ISO rating	n/a	Rating:
Site plan review requirements	Yes	Yes
Land Use Planning and Ordinances	Yes/No	Is the ordinance an effective measure for reducing hazard impacts? Is the ordinance adequately administered and enforced?
Zoning ordinance	Yes	Yes, for both
Subdivision ordinance	Yes	Yes, for both
Floodplain ordinance	Yes	Yes, for both
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	n/a	n/a
Flood insurance rate maps	Yes	
Acquisition of land for open space and public recreation uses	Yes	
Other		
How can these capabilities be expanded and improved to reduce risk?		

Administrative and Technical

Identify whether your community has the following administrative and technical capabilities. These include staff and their skills and tools that can be used for mitigation planning and to implement specific mitigation actions. For smaller jurisdictions without local staff resources, if there are public resources at the next higher level government that can provide technical assistance, indicate so in your comments.

Administration	Yes/No	Describe capability Is coordination effective?
Planning Commission	Yes	-ordinance, land use review -yes
Mitigation Planning Committee	No	
Maintenance programs to reduce risk (e.g., tree trimming, clearing drainage systems)	Yes	-Public Works Department; yes
Mutual aid agreements	Yes	-yes
Staff	Yes/No FT/PT ¹	Is staffing adequate to enforce regulations? Is staff trained on hazards and mitigation? Is coordination between agencies and staff effective?
Chief Building Official	No	-Through Orange County
Floodplain Administrator	Yes/FT	Town Manager
Emergency Manager	Yes/FT	Town Manager
Community Planner	Yes/FT	Town Manager
Civil Engineer	No	
GIS Coordinator	No	
Other		

1 Full-time (FT) or part-time (PT) position

Worksheet 4.1

Capability Assessment Worksheet

Technical	Yes/No	Describe capability Has capability been used to assess/mitigate risk in the past?
Warning systems/services (Reverse 911, outdoor warning signals)	No	
Hazard data and information	No	
Grant writing	No	
Hazus analysis	No	
Other		
How can these capabilities be expanded and improved to reduce risk?		

Financial

Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.

Funding Resource	Access/ Eligibility (Yes/No)	Has the funding resource been used in past and for what type of activities? Could the resource be used to fund future mitigation actions?
Capital improvements project funding	Yes	none of these resources have been used to fund mitigation actions
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric services	Yes	
Impact fees for new development	No	
Storm water utility fee	No	
Incur debt through general obligation bonds and/or special tax bonds	Yes	
Incur debt through private activities	Yes	
Community Development Block Grant	Yes	
Other federal funding programs	Yes	
State funding programs	Yes	
Other		
How can these capabilities be expanded and improved to reduce risk?		

Worksheet 4.1

Capability Assessment Worksheet

Education and Outreach

Identify education and outreach programs and methods already in place that could be used to implement mitigation activities and communicate hazard-related information.

Program/Organization	Yes/No	Describe program/organization and how relates to disaster resilience and mitigation. Could the program/organization help implement future mitigation activities?
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	No	
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Yes	Information is available through the Town PD and Public Works departments
Natural disaster or safety related school programs	No	
StormReady certification	No	
Firewise Communities certification	No	
Public-private partnership initiatives addressing disaster-related issues	No	
Other		
How can these capabilities be expanded and improved to reduce risk?		

Capability Assessment Worksheet

Jurisdiction: Town of Orange

Local mitigation capabilities are existing authorities, policies, programs, and resources that reduce hazard impacts or that could be used to implement hazard mitigation activities. Please complete the tables and questions in the worksheet as completely as possible. Complete one worksheet for each jurisdiction.

Planning and Regulatory

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards. Please indicate which of the following your jurisdiction has in place.

Plans	Yes/No Year	Does the plan address hazards?
		Does the plan identify projects to include in the mitigation strategy? Can the plan be used to implement mitigation actions?
Comprehensive/Master Plan	Yes 2011	No / No / Possibly
Capital Improvements Plan	Yes 2018	No / Yes / Possibly
Economic Development Plan	No	
Local Emergency Operations Plan	Yes	Orange County
Continuity of Operations Plan	No	
Transportation Plan	Yes	In Comp Plan No / Yes / No
Stormwater Management Plan	Yes	No / Yes (Kind of) / No
Community Wildfire Protection Plan	No	
Other special plans (e.g., brownfields redevelopment, disaster recovery, coastal zone management, climate change adaptation)	No	

Worksheet 4.1

Capability Assessment Worksheet

Building Code, Permitting, and Inspections	Yes/No	Are codes adequately enforced?
Building Code	yes	Version/Year:
Building Code Effectiveness Grading Schedule (BCEGS) Score	NO	Score:
Fire department ISO rating	yes	Rating: 4
Site plan review requirements	yes	In Zoning Ordinance
Land Use Planning and Ordinances	Yes/No	Is the ordinance an effective measure for reducing hazard impacts? Is the ordinance adequately administered and enforced?
Zoning ordinance	yes	NO / yes
Subdivision ordinance	yes	NO / yes
Floodplain ordinance	NO	
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	NO	
Flood insurance rate maps	yes	Current FEMA maps indicate no flood plains in TAO - Updated FEMA maps may show some flood
Acquisition of land for open space and public recreation uses	yes	Plans to TAO No plans - As opportunity presents itself
Other		
How can these capabilities be expanded and improved to reduce risk?		

Administrative and Technical

Identify whether your community has the following administrative and technical capabilities. These include staff and their skills and tools that can be used for mitigation planning and to implement specific mitigation actions. For smaller jurisdictions without local staff resources, if there are public resources at the next higher level government that can provide technical assistance, indicate so in your comments.

Administration	Yes/No	Describe capability Is coordination effective?
Planning Commission	Yes	
Mitigation Planning Committee	No	
Maintenance programs to reduce risk (e.g., tree trimming, clearing drainage systems)	Yes	Public Works ongoing
Mutual aid agreements	Yes	With Town of Clapper regarding water sharing
Staff	Yes/No FT/PT ¹	Is staffing adequate to enforce regulations? Is staff trained on hazards and mitigation? Is coordination between agencies and staff effective?
Chief Building Official	Yes	Orange County
Floodplain Administrator	Yes	Orange County
Emergency Manager	Yes	Orange County
Community Planner	Yes	
Civil Engineer	Yes	On Call Consultant
GIS Coordinator	Yes	Orange County
Other		

1 Full-time (FT) or part-time (PT) position

Worksheet 4.1

Capability Assessment Worksheet

Technical	Yes/No	Describe capability Has capability been used to assess/mitigate risk in the past?
Warning systems/services (Reverse 911, outdoor warning signals)	? No	
Hazard data and information	? No	
Grant writing	No	
Hazus analysis	? No	
Other		
How can these capabilities be expanded and improved to reduce risk?		

Financial

Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.

Funding Resource	Access/ Eligibility (Yes/No)	Has the funding resource been used in past and for what type of activities? Could the resource be used to fund future mitigation actions?
Capital improvements project funding	Yes	
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric services	Yes	
Impact fees for new development	Yes	No / Potentially
Storm water utility fee	No	
Incur debt through general obligation bonds and/or special tax bonds	Yes	
Incur debt through private activities	No	
Community Development Block Grant	Yes	
Other federal funding programs	Yes	
State funding programs	Yes	
Other		
How can these capabilities be expanded and improved to reduce risk?		

Worksheet 4.1

Capability Assessment Worksheet

Education and Outreach

Identify education and outreach programs and methods already in place that could be used to implement mitigation activities and communicate hazard-related information.

Program/Organization	Yes/No	Describe program/organization and how relates to disaster resilience and mitigation. Could the program/organization help implement future mitigation activities?
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	No	
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	No	
Natural disaster or safety related school programs	No	
StormReady certification	No	
Firewise Communities certification	No	
Public-private partnership initiatives addressing disaster-related issues	No	
Other		
How can these capabilities be expanded and improved to reduce risk?		

Capability Assessment Worksheet

Jurisdiction: Rappahannock

Local mitigation capabilities are existing authorities, policies, programs, and resources that reduce hazard impacts or that could be used to implement hazard mitigation activities. Please complete the tables and questions in the worksheet as completely as possible. Complete one worksheet for each jurisdiction.

Planning and Regulatory

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards. Please indicate which of the following your jurisdiction has in place.

Plans	Yes/No Year	Does the plan address hazards?
		Does the plan identify projects to include in the mitigation strategy? Can the plan be used to implement mitigation actions?
Comprehensive/Master Plan	Y 2004	
Capital Improvements Plan	N	
Economic Development Plan	N	
Local Emergency Operations Plan	Y 2006	
Continuity of Operations Plan	N	
Transportation Plan	N	
Stormwater Management Plan	Y 2011	
Community Wildfire Protection Plan	N	
Other special plans (e.g., brownfields redevelopment, disaster recovery, coastal zone management, climate change adaptation)	N	

Worksheet 4.1

Capability Assessment Worksheet

Building Code, Permitting, and Inspections	Yes/No	Are codes adequately enforced?
Building Code	Y	Version/Year: YES 2012 VA. Int. Code
Building Code Effectiveness Grading Schedule (BCEGS) Score	Y	Score: Res CLASS 4 / Comm. CLASS 3
Fire department ISO rating	N	Rating:
Site plan review requirements	Y	YES
Land Use Planning and Ordinances	Yes/No	Is the ordinance an effective measure for reducing hazard impacts? Is the ordinance adequately administered and enforced?
Zoning ordinance	Y	Yes / yes
Subdivision ordinance	Y	Yes / yes
Floodplain ordinance	Y	yes / yes
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	Y	YES / YES
Flood insurance rate maps	N	
Acquisition of land for open space and public recreation uses	N	
Other		
How can these capabilities be expanded and improved to reduce risk?		

Administrative and Technical

Identify whether your community has the following administrative and technical capabilities. These include staff and their skills and tools that can be used for mitigation planning and to implement specific mitigation actions. For smaller jurisdictions without local staff resources, if there are public resources at the next higher level government that can provide technical assistance, indicate so in your comments.

Administration	Yes/No	Describe capability Is coordination effective?
Planning Commission	Y	Yes
Mitigation Planning Committee	N	
Maintenance programs to reduce risk (e.g., tree trimming, clearing drainage systems)	Y	Yes
Mutual aid agreements	Y	YES / IN progress currently Warren County only
Staff	Yes/No FT/PT ¹	Is staffing adequate to enforce regulations? Is staff trained on hazards and mitigation? Is coordination between agencies and staff effective?
Chief Building Official	Y/FT	
Floodplain Administrator	N	
Emergency Manager	Y PT PT	County Administrator is Director PT Employee is Coordinator
Community Planner	N	
Civil Engineer	Y	County Administrator
GIS Coordinator	Y/PT	E-911 Coordinator is our GIS Coordinator. Rapp is in the process becoming GIS.
Other		

1 Full-time (FT) or part-time (PT) position

Worksheet 4.1

Capability Assessment Worksheet

Technical	Yes/No	Describe capability Has capability been used to assess/mitigate risk in the past?
Warning systems/services (Reverse 911, outdoor warning signals)	Y	Code Red Phone System
Hazard data and information	Y	Supplied from commercial RUS. As Required
Grant writing	N	
Hazus analysis	Y	Supplied by RRPM
Other		
How can these capabilities be expanded and improved to reduce risk?		

Worksheet 4.1

Capability Assessment Worksheet

Financial

Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.

Funding Resource	Access/ Eligibility (Yes/No)	Has the funding resource been used in past and for what type of activities? Could the resource be used to fund future mitigation actions?
Capital improvements project funding	Y	Not used in past Could be used to help w future mitigation
Authority to levy taxes for specific purposes	Y	Help pay for fire-rescue Probably not a future mitigation fund source
Fees for water, sewer, gas, or electric services	N	
Impact fees for new development	N	
Storm water utility fee	N	
Incur debt through general obligation bonds and/or special tax bonds	N	
Incur debt through private activities	N	
Community Development Block Grant	N	
Other federal funding programs		Grants
State funding programs		
Other		
How can these capabilities be expanded and improved to reduce risk?		

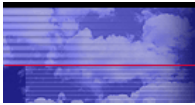
Worksheet 4.1

Capability Assessment Worksheet

Education and Outreach

Identify education and outreach programs and methods already in place that could be used to implement mitigation activities and communicate hazard-related information.

Program/Organization	Yes/No	Describe program/organization and how relates to disaster resilience and mitigation. Could the program/organization help implement future mitigation activities?
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	Y	Rapp. League for Environmental protection RAPP. Friends and Lovers of our Watersheds.
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Y	Fire Safety Programs
Natural disaster or safety related school programs	Y	
StormReady certification	N	
Firewise Communities certification	N	
Public-private partnership initiatives addressing disaster-related issues	N	
Other		
How can these capabilities be expanded and improved to reduce risk?		



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CRS What-If

Application CRS Coord. 2ndPOC Activity Points Chronology Comments What If GTA

Community:	CULPEPER COUNTY*	State:	VIRGINIA
County:	CULPEPER COUNTY ▼	CID:	510041

Current CRS Class = 10

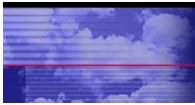
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		TOTAL	SFHA *	X-STD/AR/A99 **	PRP ***
PIF		43	6	1	36
PREMIUM		\$25,148	\$10,618	\$629	\$13,901
AVERAGE PREMIUM		\$585	\$1,770	\$629	\$386
CRS Class					
09	Per Policy	\$13	\$88	\$31	\$0
	Per Community	\$562	\$531	\$31	\$0
08	Per Policy	\$25	\$177	\$31	\$0
	Per Community	\$1,093	\$1,062	\$31	\$0
07	Per Policy	\$38	\$265	\$31	\$0
	Per Community	\$1,624	\$1,593	\$31	\$0
06	Per Policy	\$51	\$354	\$63	\$0
	Per Community	\$2,187	\$2,124	\$63	\$0
05	Per Policy	\$63	\$442	\$63	\$0
	Per Community	\$2,717	\$2,655	\$63	\$0
04	Per Policy	\$76	\$531	\$63	\$0
	Per Community	\$3,248	\$3,185	\$63	\$0
03	Per Policy	\$88	\$619	\$63	\$0
	Per Community	\$3,779	\$3,716	\$63	\$0
02	Per Policy	\$100	\$708	\$63	\$0
	Per Community	\$4,310	\$4,247	\$63	\$0
01	Per Policy	\$113	\$796	\$63	\$0
	Per Community	\$4,841	\$4,778	\$63	\$0

* SHFA (Zones A, AE, A1-A30, V, V1-V30, AO, and AH): Discount varies depending on class.

** SFHA (Zones A99, AR, AR/A, AR/AE, AR/A1-A30, AR/AH, and AR/AO): 10% discount for Classes 1-6; 5% discount for Classes 7-9.

*** Preferred Risk Policies are not eligible for CRS Premium Discounts.



CRS What-If

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Application	CRS Coord.	2ndPOC	Activity Points	Chronology	Comments	What If	GTA
Community: CULPEPER, TOWN OF		State: VIRGINIA					
County: CULPEPER COUNTY ▼		CID: 510042					

Current CRS Class = 10

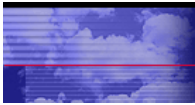
[\[Printable Version\]](#)

		TOTAL	SFHA *	X-STD/AR/A99 **	PRP ***
PIF		42	23	2	17
PREMIUM		\$44,736	\$34,213	\$1,893	\$8,630
AVERAGE PREMIUM		\$1,065	\$1,488	\$946	\$508
CRS Class					
09	Per Policy	\$43	\$74	\$47	\$0
	Per Community	\$1,805	\$1,711	\$95	\$0
08	Per Policy	\$84	\$149	\$47	\$0
	Per Community	\$3,516	\$3,421	\$95	\$0
07	Per Policy	\$124	\$223	\$47	\$0
	Per Community	\$5,227	\$5,132	\$95	\$0
06	Per Policy	\$167	\$298	\$95	\$0
	Per Community	\$7,032	\$6,843	\$189	\$0
05	Per Policy	\$208	\$372	\$95	\$0
	Per Community	\$8,743	\$8,553	\$189	\$0
04	Per Policy	\$249	\$446	\$95	\$0
	Per Community	\$10,453	\$10,264	\$189	\$0
03	Per Policy	\$290	\$521	\$95	\$0
	Per Community	\$12,164	\$11,975	\$189	\$0
02	Per Policy	\$330	\$595	\$95	\$0
	Per Community	\$13,874	\$13,685	\$189	\$0
01	Per Policy	\$371	\$669	\$95	\$0
	Per Community	\$15,585	\$15,396	\$189	\$0

* SFHA (Zones A, AE, A1-A30, V, V1-V30, AO, and AH): Discount varies depending on class.

** SFHA (Zones A99, AR, AR/A, AR/AE, AR/A1-A30, AR/AH, and AR/AO): 10% discount for Classes 1-6; 5% discount for Classes 7-9.

*** Preferred Risk Policies are not eligible for CRS Premium Discounts.



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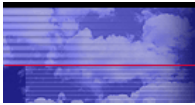
Application	CRS Coord.	2ndPOC	Activity Points	Chronology	Comments	What If	GTA
Community: FAUQUIER COUNTY *		State: VIRGINIA					
County: FAUQUIER COUNTY ▼		CID: 510055					

Current CRS Class = 10					[Printable Version]
		TOTAL	SFHA *	X-STD/AR/A99 **	PRP ***
CRS Class	PIF	140	29	4	107
	PREMIUM	\$107,110	\$63,611	\$4,087	\$39,412
	AVERAGE PREMIUM	\$765	\$2,193	\$1,022	\$368
09	Per Policy	\$24	\$110	\$51	\$0
	Per Community	\$3,385	\$3,181	\$204	\$0
08	Per Policy	\$47	\$219	\$51	\$0
	Per Community	\$6,565	\$6,361	\$204	\$0
07	Per Policy	\$70	\$329	\$51	\$0
	Per Community	\$9,746	\$9,542	\$204	\$0
06	Per Policy	\$94	\$439	\$102	\$0
	Per Community	\$13,131	\$12,722	\$409	\$0
05	Per Policy	\$117	\$548	\$102	\$0
	Per Community	\$16,311	\$15,903	\$409	\$0
04	Per Policy	\$139	\$658	\$102	\$0
	Per Community	\$19,492	\$19,083	\$409	\$0
03	Per Policy	\$162	\$768	\$102	\$0
	Per Community	\$22,673	\$22,264	\$409	\$0
02	Per Policy	\$185	\$877	\$102	\$0
	Per Community	\$25,853	\$25,444	\$409	\$0
01	Per Policy	\$207	\$987	\$102	\$0
	Per Community	\$29,034	\$28,625	\$409	\$0

* SHFA (Zones A, AE, A1-A30, V, V1-V30, AO, and AH): Discount varies depending on class.

** SFHA (Zones A99, AR, AR/A, AR/AE, AR/A1-A30, AR/AH, and AR/AO): 10% discount for Classes 1-6; 5% discount for Classes 7-9.

*** Preferred Risk Policies are not eligible for CRS Premium Discounts.



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Application CRS Coord. 2ndPOC Activity Points Chronology Comments What If GTA

Community:	REMINGTON, TOWN OF	State:	VIRGINIA
County:	FAUQUIER COUNTY ▼	CID:	510056

Current CRS Class = 10

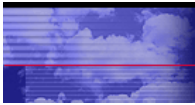
[\[Printable Version\]](#)

		TOTAL	SFHA *	X-STD/AR/A99 **	PRP ***
PIF		37	34	0	3
PREMIUM		\$47,358	\$46,522	\$0	\$836
AVERAGE PREMIUM		\$1,280	\$1,368	\$0	\$279
CRS Class					
09	Per Policy	\$63	\$68	\$0	\$0
	Per Community	\$2,326	\$2,326	\$0	\$0
08	Per Policy	\$126	\$137	\$0	\$0
	Per Community	\$4,652	\$4,652	\$0	\$0
07	Per Policy	\$189	\$205	\$0	\$0
	Per Community	\$6,978	\$6,978	\$0	\$0
06	Per Policy	\$251	\$274	\$0	\$0
	Per Community	\$9,304	\$9,304	\$0	\$0
05	Per Policy	\$314	\$342	\$0	\$0
	Per Community	\$11,630	\$11,630	\$0	\$0
04	Per Policy	\$377	\$410	\$0	\$0
	Per Community	\$13,957	\$13,957	\$0	\$0
03	Per Policy	\$440	\$479	\$0	\$0
	Per Community	\$16,283	\$16,283	\$0	\$0
02	Per Policy	\$503	\$547	\$0	\$0
	Per Community	\$18,609	\$18,609	\$0	\$0
01	Per Policy	\$566	\$616	\$0	\$0
	Per Community	\$20,935	\$20,935	\$0	\$0

* SHFA (Zones A, AE, A1-A30, V, V1-V30, AO, and AH): Discount varies depending on class.

** SFHA (Zones A99, AR, AR/A, AR/AE, AR/A1-A30, AR/AH, and AR/AO): 10% discount for Classes 1-6; 5% discount for Classes 7-9.

*** Preferred Risk Policies are not eligible for CRS Premium Discounts.



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Application CRS Coord. 2ndPOC Activity Points Chronology Comments What If GTA

Community:	WARRENTON, TOWN OF	State:	VIRGINIA
County:	FAUQUIER COUNTY ▼	CID:	510057

Current CRS Class = 10

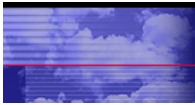
[\[Printable Version\]](#)

		TOTAL	SFHA *	X-STD/AR/A99 **	PRP ***
PIF		22	5	2	15
PREMIUM		\$29,592	\$18,497	\$5,590	\$5,505
AVERAGE PREMIUM		\$1,345	\$3,699	\$2,795	\$367
CRS Class					
09	Per Policy	\$55	\$185	\$140	\$0
	Per Community	\$1,204	\$925	\$280	\$0
08	Per Policy	\$97	\$370	\$140	\$0
	Per Community	\$2,129	\$1,850	\$280	\$0
07	Per Policy	\$139	\$555	\$140	\$0
	Per Community	\$3,054	\$2,775	\$280	\$0
06	Per Policy	\$194	\$740	\$280	\$0
	Per Community	\$4,258	\$3,699	\$559	\$0
05	Per Policy	\$236	\$925	\$280	\$0
	Per Community	\$5,183	\$4,624	\$559	\$0
04	Per Policy	\$278	\$1,110	\$280	\$0
	Per Community	\$6,108	\$5,549	\$559	\$0
03	Per Policy	\$320	\$1,295	\$280	\$0
	Per Community	\$7,033	\$6,474	\$559	\$0
02	Per Policy	\$362	\$1,480	\$280	\$0
	Per Community	\$7,958	\$7,399	\$559	\$0
01	Per Policy	\$404	\$1,665	\$280	\$0
	Per Community	\$8,883	\$8,324	\$559	\$0

* SHFA (Zones A, AE, A1-A30, V, V1-V30, AO, and AH): Discount varies depending on class.

** SFHA (Zones A99, AR, AR/A, AR/AE, AR/A1-A30, AR/AH, and AR/AO): 10% discount for Classes 1-6; 5% discount for Classes 7-9.

*** Preferred Risk Policies are not eligible for CRS Premium Discounts.



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CRS What-If

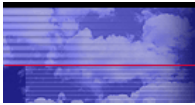
Application	CRS Coord.	2ndPOC	Activity Points	Chronology	Comments	What If	GTA
Community: MADISON COUNTY *		State: VIRGINIA					
County: MADISON COUNTY ▼		CID: 510094					

Current CRS Class = 10					[Printable Version]
		TOTAL	SFHA *	X-STD/AR/A99 **	PRP ***
PIF		36	11	0	25
PREMIUM		\$23,341	\$14,226	\$0	\$9,115
AVERAGE PREMIUM		\$648	\$1,293	\$0	\$365
CRS Class					
09	Per Policy	\$20	\$65	\$0	\$0
	Per Community	\$711	\$711	\$0	\$0
08	Per Policy	\$40	\$129	\$0	\$0
	Per Community	\$1,423	\$1,423	\$0	\$0
07	Per Policy	\$59	\$194	\$0	\$0
	Per Community	\$2,134	\$2,134	\$0	\$0
06	Per Policy	\$79	\$259	\$0	\$0
	Per Community	\$2,845	\$2,845	\$0	\$0
05	Per Policy	\$99	\$323	\$0	\$0
	Per Community	\$3,556	\$3,556	\$0	\$0
04	Per Policy	\$119	\$388	\$0	\$0
	Per Community	\$4,268	\$4,268	\$0	\$0
03	Per Policy	\$138	\$453	\$0	\$0
	Per Community	\$4,979	\$4,979	\$0	\$0
02	Per Policy	\$158	\$517	\$0	\$0
	Per Community	\$5,690	\$5,690	\$0	\$0
01	Per Policy	\$178	\$582	\$0	\$0
	Per Community	\$6,402	\$6,402	\$0	\$0

* SFHA (Zones A, AE, A1-A30, V, V1-V30, AO, and AH): Discount varies depending on class.

** SFHA (Zones A99, AR, AR/A, AR/AE, AR/A1-A30, AR/AH, and AR/AO): 10% discount for Classes 1-6; 5% discount for Classes 7-9.

*** Preferred Risk Policies are not eligible for CRS Premium Discounts.



CRS What-If

Application CRS Coord. 2ndPOC Activity Points Chronology Comments What If GTA

Community:	ORANGE COUNTY *	State:	VIRGINIA
County:	ORANGE COUNTY ▼	CID:	510203

Current CRS Class = 10

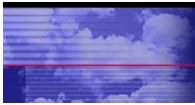
[\[Printable Version\]](#)

		TOTAL	SFHA *	X-STD/AR/A99 **	PRP ***
PIF		49	1	3	45
PREMIUM		\$24,026	\$1,445	\$4,723	\$17,858
AVERAGE PREMIUM		\$490	\$1,445	\$1,574	\$397
CRS Class					
09	Per Policy	\$6	\$72	\$79	\$0
	Per Community	\$308	\$72	\$236	\$0
08	Per Policy	\$8	\$144	\$79	\$0
	Per Community	\$381	\$144	\$236	\$0
07	Per Policy	\$9	\$217	\$79	\$0
	Per Community	\$453	\$217	\$236	\$0
06	Per Policy	\$16	\$289	\$157	\$0
	Per Community	\$761	\$289	\$472	\$0
05	Per Policy	\$17	\$361	\$157	\$0
	Per Community	\$834	\$361	\$472	\$0
04	Per Policy	\$18	\$434	\$157	\$0
	Per Community	\$906	\$434	\$472	\$0
03	Per Policy	\$20	\$506	\$157	\$0
	Per Community	\$978	\$506	\$472	\$0
02	Per Policy	\$21	\$578	\$157	\$0
	Per Community	\$1,050	\$578	\$472	\$0
01	Per Policy	\$23	\$650	\$157	\$0
	Per Community	\$1,123	\$650	\$472	\$0

* SHFA (Zones A, AE, A1-A30, V, V1-V30, AO, and AH): Discount varies depending on class.

** SFHA (Zones A99, AR, AR/A, AR/AE, AR/A1-A30, AR/AH, and AR/AO): 10% discount for Classes 1-6; 5% discount for Classes 7-9.

*** Preferred Risk Policies are not eligible for CRS Premium Discounts.



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CRS What-If

Application	CRS Coord.	2ndPOC	Activity Points	Chronology	Comments	What If	GTA
Community: ORANGE, TOWN OF		State: VIRGINIA					
County: <input type="text" value="ORANGE COUNTY"/>		CID: 510366					

Current CRS Class = 10					[Printable Version]
		TOTAL	SFHA *	X-STD/AR/A99 **	PRP ***
PIF		3	0	0	3
PREMIUM		\$904	\$0	\$0	\$904
AVERAGE PREMIUM		\$301	\$0	\$0	\$301
CRS Class					
09	Per Policy	\$0	\$0	\$0	\$0
	Per Community	\$0	\$0	\$0	\$0
08	Per Policy	\$0	\$0	\$0	\$0
	Per Community	\$0	\$0	\$0	\$0
07	Per Policy	\$0	\$0	\$0	\$0
	Per Community	\$0	\$0	\$0	\$0
06	Per Policy	\$0	\$0	\$0	\$0
	Per Community	\$0	\$0	\$0	\$0
05	Per Policy	\$0	\$0	\$0	\$0
	Per Community	\$0	\$0	\$0	\$0
04	Per Policy	\$0	\$0	\$0	\$0
	Per Community	\$0	\$0	\$0	\$0
03	Per Policy	\$0	\$0	\$0	\$0
	Per Community	\$0	\$0	\$0	\$0
02	Per Policy	\$0	\$0	\$0	\$0
	Per Community	\$0	\$0	\$0	\$0
01	Per Policy	\$0	\$0	\$0	\$0
	Per Community	\$0	\$0	\$0	\$0

* SFHA (Zones A, AE, A1-A30, V, V1-V30, AO, and AH): Discount varies depending on class.

** SFHA (Zones A99, AR, AR/A, AR/AE, AR/A1-A30, AR/AH, and AR/AO): 10% discount for Classes 1-6; 5% discount for Classes 7-9.

*** Preferred Risk Policies are not eligible for CRS Premium Discounts.

Community:	RAPPAHANNOCK COUNTY *	State:	VIRGINIA
County:	RAPPAHANNOCK COUNTY ▼	CID:	510128

Current CRS Class = 10

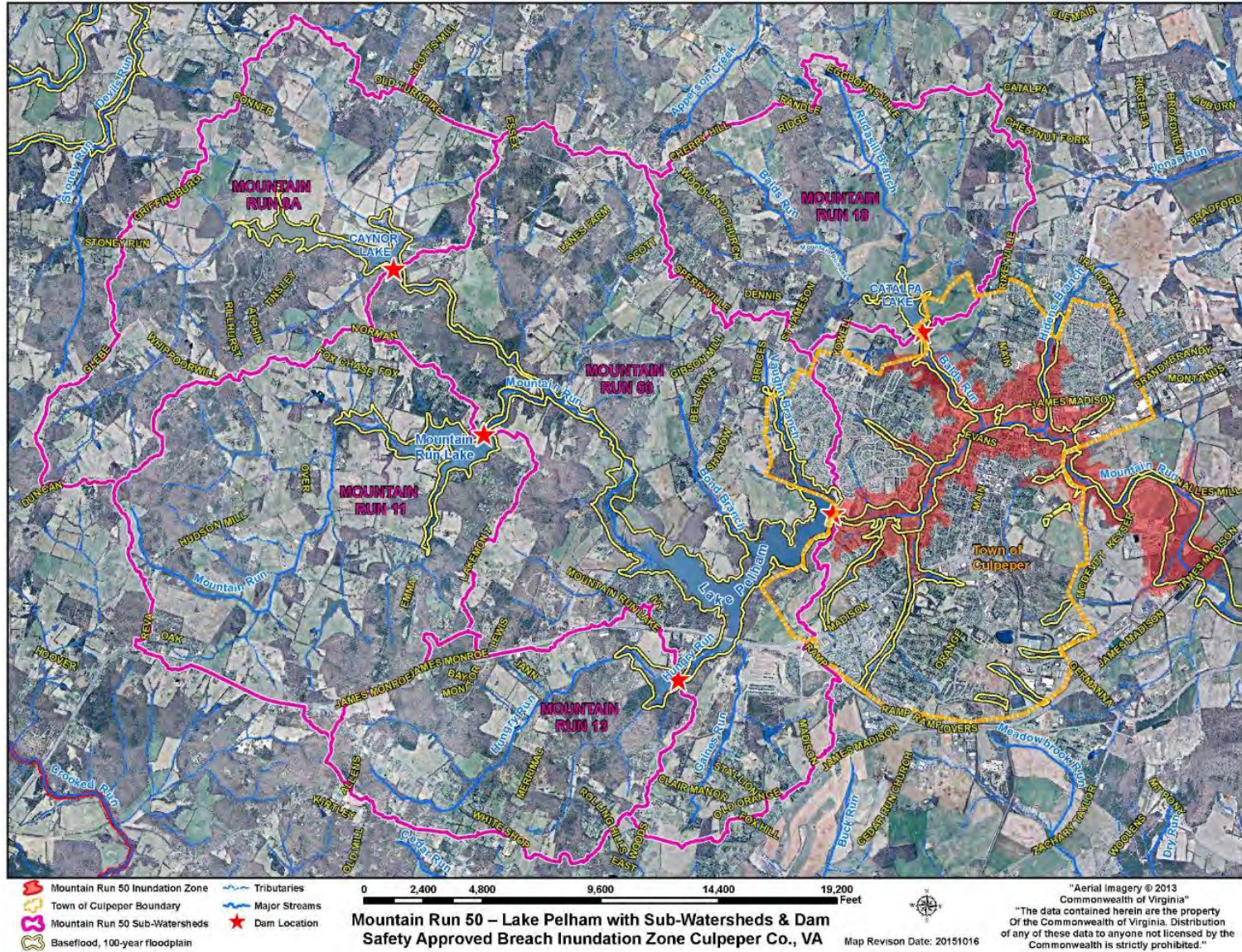
[\[Printable Version\]](#)

		TOTAL	SFHA *	X-STD/AR/A99 **	PRP ***
	PIF	38	20	3	15
	PREMIUM	\$37,221	\$28,700	\$3,008	\$5,513
	AVERAGE PREMIUM	\$980	\$1,435	\$1,003	\$368
CRS Class					
09	Per Policy	\$42	\$72	\$50	\$0
	Per Community	\$1,585	\$1,435	\$150	\$0
08	Per Policy	\$79	\$144	\$50	\$0
	Per Community	\$3,020	\$2,870	\$150	\$0
07	Per Policy	\$117	\$215	\$50	\$0
	Per Community	\$4,455	\$4,305	\$150	\$0
06	Per Policy	\$159	\$287	\$100	\$0
	Per Community	\$6,041	\$5,740	\$301	\$0
05	Per Policy	\$197	\$359	\$100	\$0
	Per Community	\$7,476	\$7,175	\$301	\$0
04	Per Policy	\$234	\$430	\$100	\$0
	Per Community	\$8,911	\$8,610	\$301	\$0
03	Per Policy	\$272	\$502	\$100	\$0
	Per Community	\$10,346	\$10,045	\$301	\$0
02	Per Policy	\$310	\$574	\$100	\$0
	Per Community	\$11,781	\$11,480	\$301	\$0
01	Per Policy	\$348	\$646	\$100	\$0
	Per Community	\$13,216	\$12,915	\$301	\$0

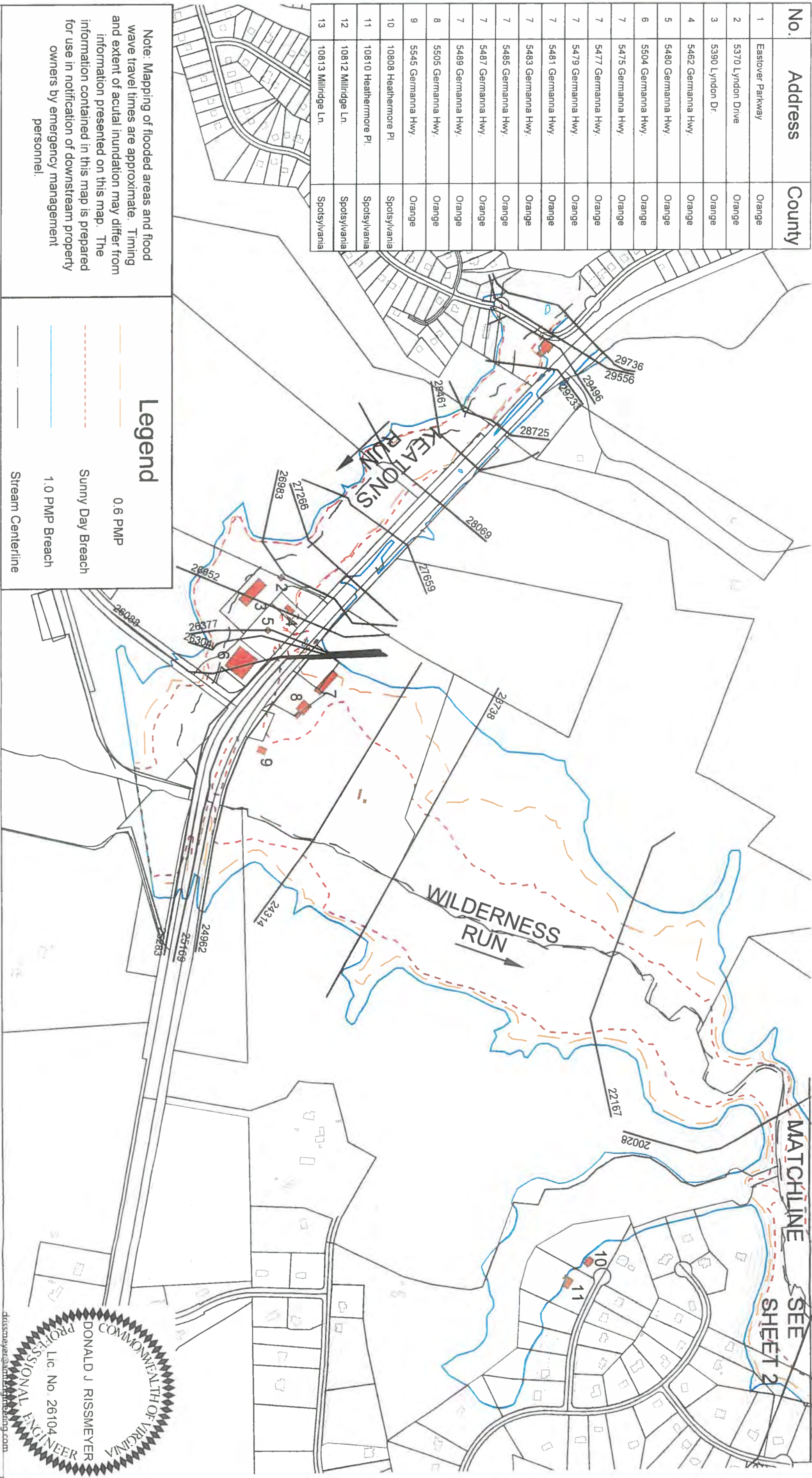
* SHFA (Zones A, AE, A1-A30, V, V1-V30, AO, and AH): Discount varies depending on class.

** SFHA (Zones A99, AR, AR/A, AR/AE, AR/A1-A30, AR/AH, and AR/AO): 10% discount for Classes 1-6; 5% discount for Classes 7-9.

*** Preferred Risk Policies are not eligible for CRS Premium Discounts.



No.	Address	County
1	Eastover Parkway	Orange
2	5370 Lyndon Drive	Orange
3	5390 Lyndon Dr	Orange
4	5462 Germanna Hwy	Orange
5	5480 Germanna Hwy	Orange
6	5504 Germanna Hwy	Orange
7	5475 Germanna Hwy	Orange
7	5477 Germanna Hwy	Orange
7	5479 Germanna Hwy	Orange
7	5481 Germanna Hwy	Orange
7	5483 Germanna Hwy	Orange
7	5485 Germanna Hwy	Orange
7	5487 Germanna Hwy	Orange
7	5489 Germanna Hwy	Orange
8	5505 Germanna Hwy	Orange
9	5545 Germanna Hwy	Orange
10	10808 Heathermore Pl	Spotsylvania
11	10810 Heathermore Pl	Spotsylvania
12	10812 Millidge Ln	Spotsylvania
13	10813 Millidge Ln	Spotsylvania



Lake of the Woods Flood Inundation Study

Flood Inundation Limits

Sheet 1 of 3



Note: Mapping of flooded areas and flood wave travel times are approximate. Timing and extent of actual inundation may differ from information presented on this map. The information contained in this map is prepared for use in notification of downstream property owners by emergency management personnel.

Legend

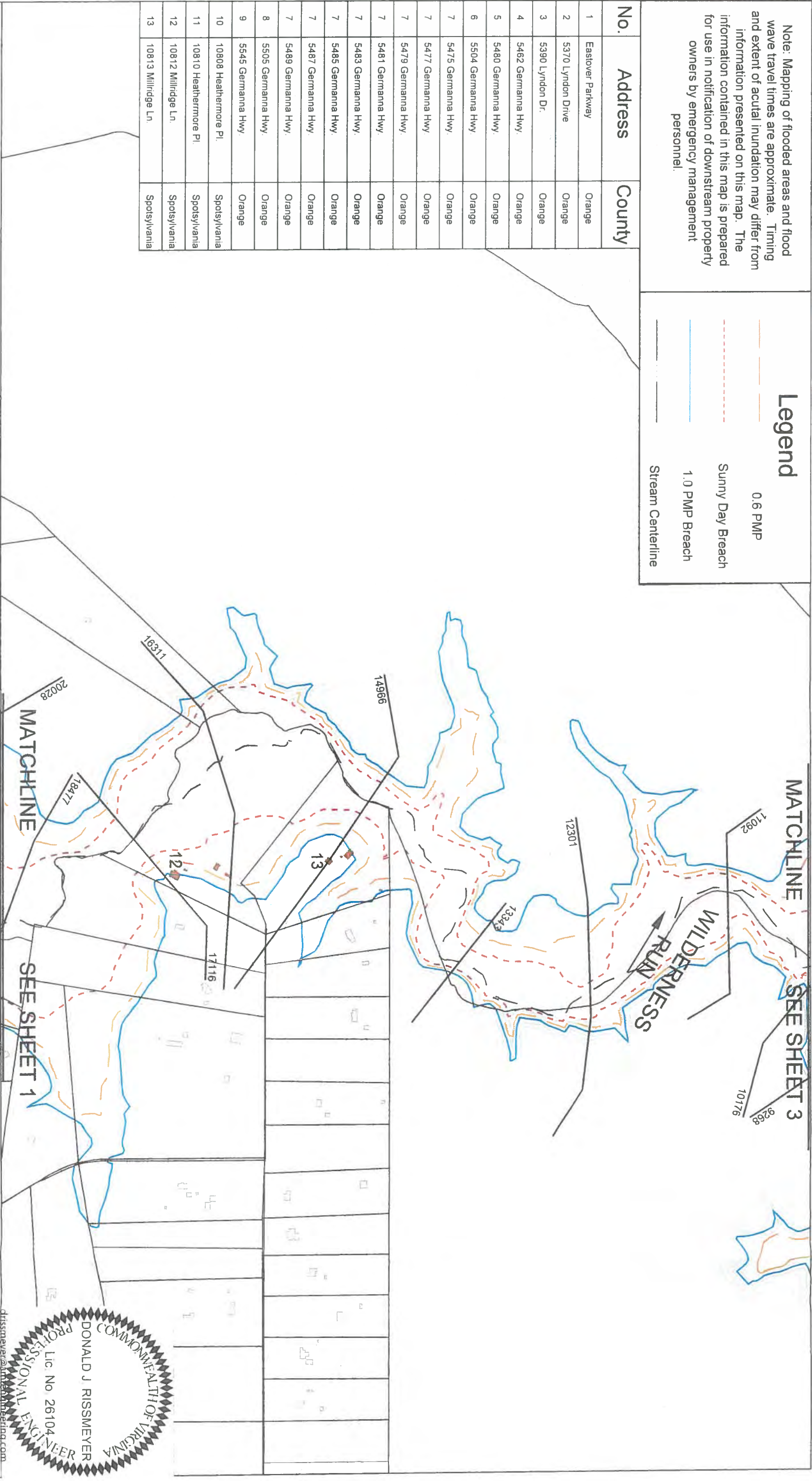
0.6 PMP

Sunny Day Breach

1.0 PMP Breach

Stream Centerline

No.	Address	County
1	Eastover Parkway	Orange
2	5370 Lyndon Drive	Orange
3	5390 Lyndon Dr.	Orange
4	5462 Germanna Hwy.	Orange
5	5480 Germanna Hwy.	Orange
6	5504 Germanna Hwy	Orange
7	5475 Germanna Hwy.	Orange
7	5477 Germanna Hwy	Orange
7	5479 Germanna Hwy.	Orange
7	5481 Germanna Hwy.	Orange
7	5483 Germanna Hwy.	Orange
7	5485 Germanna Hwy.	Orange
7	5487 Germanna Hwy.	Orange
7	5489 Germanna Hwy.	Orange
8	5505 Germanna Hwy.	Orange
9	5545 Germanna Hwy.	Orange
10	10808 Heathermore Pl.	Spotsylvania
11	10810 Heathermore Pl.	Spotsylvania
12	10812 Millidge Ln.	Spotsylvania
13	10813 Millidge Ln.	Spotsylvania



Lake of the Woods Flood Inundation Study

Flood Inundation Limits

Sheet 2 of 3



drissmeyer@amtebengineering.com
2016.09.23 08:14:29 -04'00'



Note: Mapping of flooded areas and flood wave travel times are approximate. Timing and extent of actual inundation may differ from information presented on this map. The information contained in this map is prepared for use in notification of downstream property owners by emergency management personnel.

Legend

0.6 PMP

Sunny Day Breach

1.0 PMP Breach

Stream Centerline

COMMONWEALTH OF VIRGINIA

DONALD J. RISSMEYER

PROFESSIONAL ENGINEER

PROF. Lic. No. 26104

driismeyer@amtengineering.com

2016.09.23 08:14:54 -04'00'

No.	Address	County
1	Eastover Parkway	Orange
2	5370 Lyndon Drive	Orange
3	5390 Lyndon Dr.	Orange
4	5462 Germanna Hwy.	Orange
5	5480 Germanna Hwy.	Orange
6	5504 Germanna Hwy.	Orange
7	5475 Germanna Hwy.	Orange
7	5477 Germanna Hwy.	Orange
7	5479 Germanna Hwy.	Orange
7	5481 Germanna Hwy.	Orange
7	5483 Germanna Hwy.	Orange
7	5485 Germanna Hwy.	Orange
7	5487 Germanna Hwy.	Orange
7	5489 Germanna Hwy.	Orange
8	5505 Germanna Hwy.	Orange
9	5545 Germanna Hwy.	Orange
10	10808 Heathermore Pl.	Spotsylvania
11	10810 Heathermore Pl.	Spotsylvania
12	10812 Millidge Ln.	Spotsylvania
13	10813 Millidge Ln.	Spotsylvania

Lake of the Woods Flood Inundation Study

Flood Inundation Limits

Sheet 3 of 3

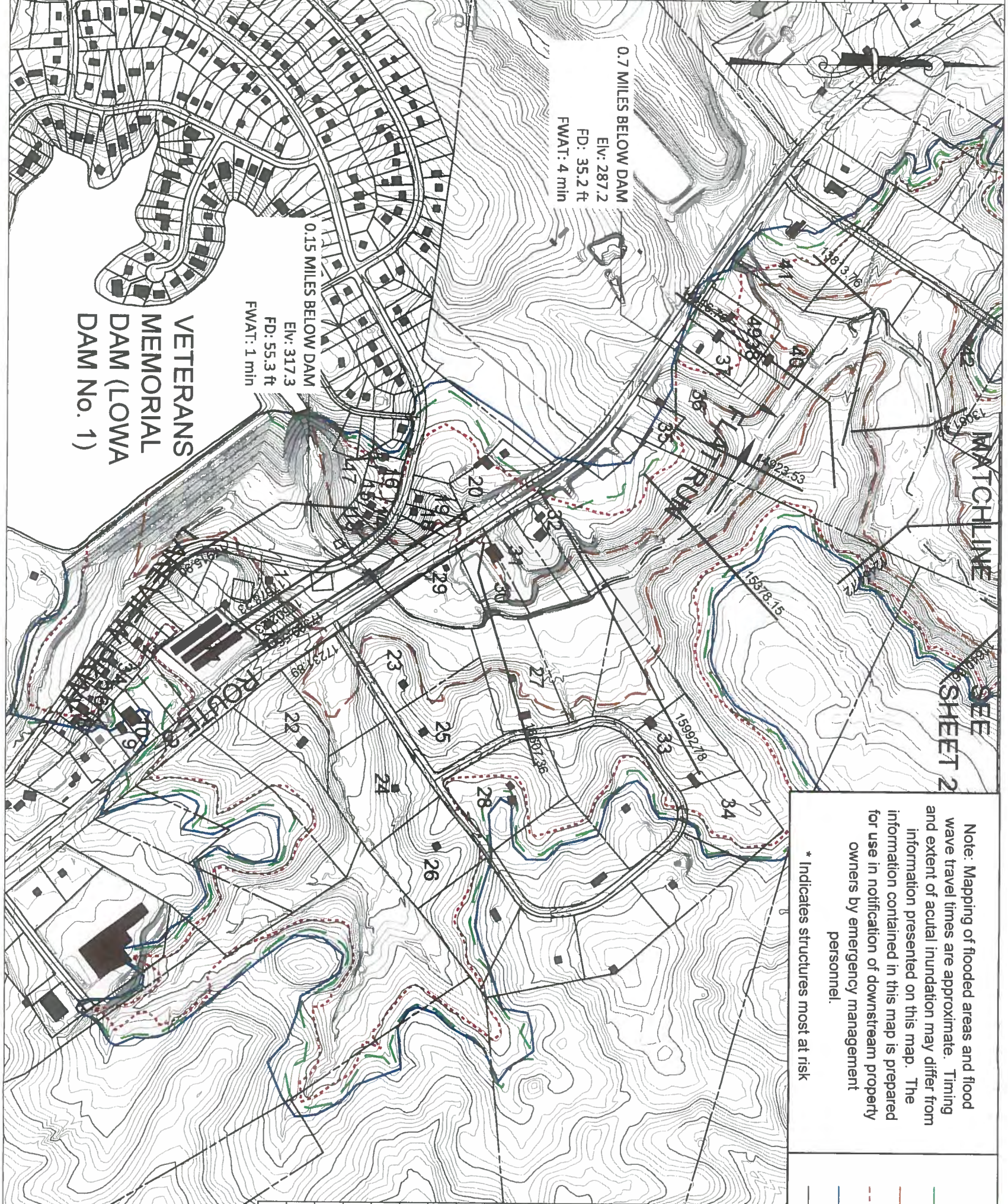
AMT

A Morton Thomas and Associates, Inc.
Consulting Engineers

LAKE OF THE WOODS

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No.	Address	County
1*	100 Shoosmith Rd.	Orange
2	200 Lakeview Pkwy.	Orange
3	118 Lakeview Pkwy.	Orange
4	116 Lakeview Pkwy.	Orange
5	114 Lakeview Pkwy.	Orange
6	112 Lakeview Pkwy.	Orange
7	110 Lakeview Pkwy.	Orange
8	108 Lakeview Pkwy.	Orange
9	4084 Germanna Hwy.	Orange
10	4062 Germanna Hwy.	Orange
11	4014 Germanna Hwy.	Orange
12	3638 Germanna Hwy.	Orange
13*	403 Lakeview Pkwy.	Orange
14	405 Lakeview Pkwy.	Orange
15	407 Lakeview Pkwy.	Orange
16	411 Lakeview Pkwy.	Orange
17	413 Lakeview Pkwy.	Orange
18	408 Lakeview Pkwy.	Orange
19	410 Lakeview Pkwy.	Orange
20	3494 & 3492 Germanna Hwy	Orange
21	36097 Goodwin Dr.	Orange
22	3663 Germanna Hwy.	Orange
23	14 Rapidan Rd.	Orange
24	2 Rapidan Rd.	Orange
25	13 Rapidan Rd.	Orange
26	3 Rapidan Rd.	Orange



Note: Mapping of flooded areas and flood wave travel times are approximate. Timing and extent of acutal inundation may differ from information contained in this map. The for use in notification of downstream property owners by emergency management personnel.

* Indicates structures most at risk

Legend

- 0.6 PMP Breach (SDF)
- 0.6 PMP (SDF)
- Sunny Day Breach
- 1.0 PMP Breach
- Stream Centerline

No.	Address	County
27*	12 Rapidan Rd.	Orange
28	15 Rapidan Rd.	Orange
29*	3543 Germanna Hwy.	Orange
30*	3543 Germanna Hwy.	Orange
31*	3543 Germanna Hwy	Orange
32	3489 Germanna Hwy	Orange
33	10 Rapidan Rd.	Orange
34	9 Rapidan Rd.	Orange
35*	3427 Germanna Hwy.	Orange
36	3409 Germanna Hwy	Orange
37	3375 Germanna Hwy.	Orange
38	3363 Germanna Hwy.	Orange
39	3351 Germanna Hwy.	Orange
40	3359 Germanna Hwy.	Orange
41*	3281 Germanna Hwy.	Orange
42	3127 Germanna Dr.	Orange
43	2390 Pilgrim Church Rd.	Orange



Lake of the Woods Flood Inundation Study

Flood Inundation Limits

Sheet 1 of 2



1 inch = 600 ft



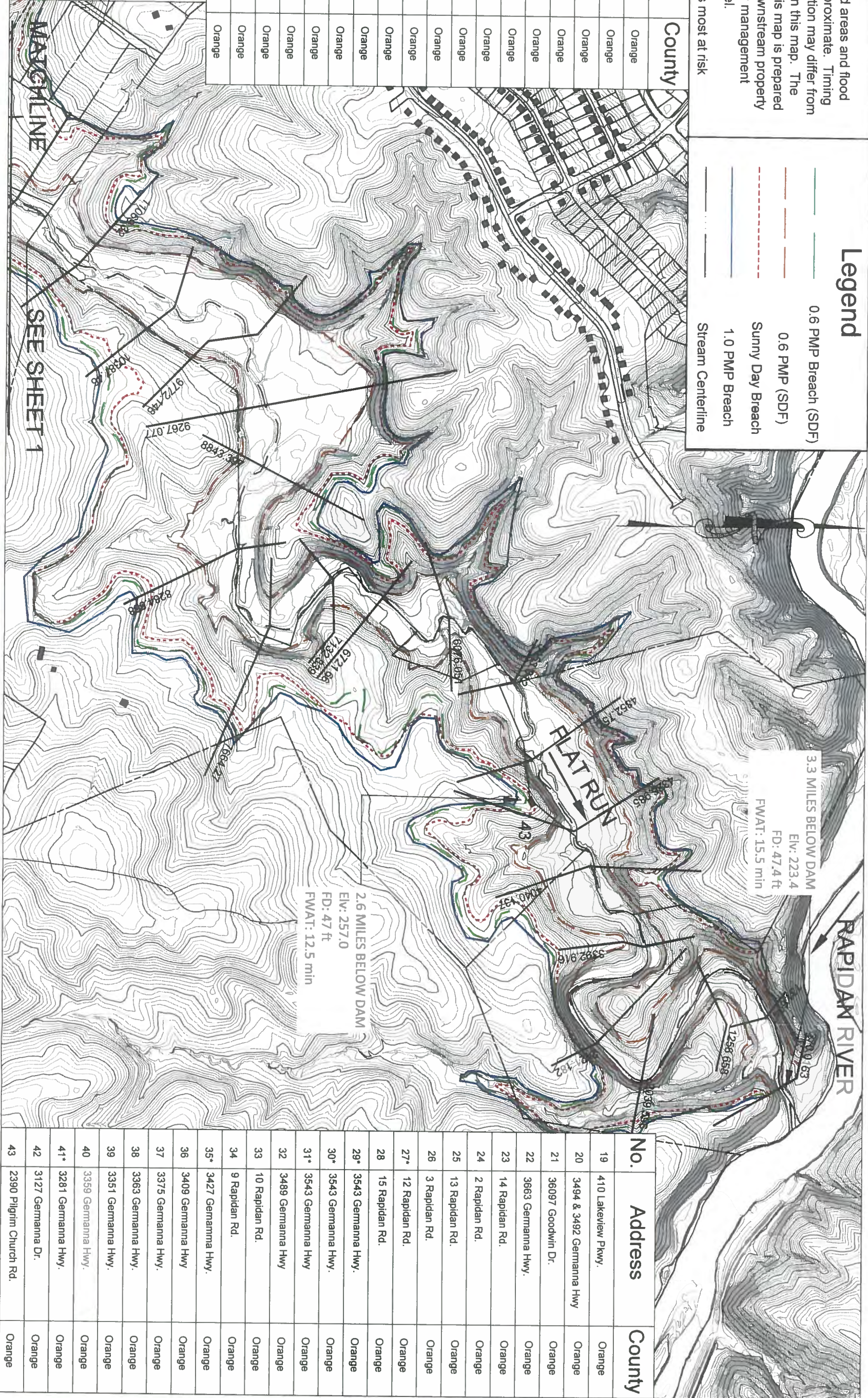
Note: Mapping of flooded areas and flood wave travel times are approximate. Timing and extent of actual inundation may differ from information presented on this map. The information contained in this map is prepared for use in notification of downstream property owners by emergency management personnel.

* Indicates structures most at risk

Legend

- 0.6 PMP Breach (SDF)
- 0.6 PMP (SDF)
- Sunny Day Breach
- 1.0 PMP Breach
- Stream Centerline

No.	Address	County
1*	100 Shoosmith Rd.	Orange
2	200 Lakeview Pkwy.	Orange
3	118 Lakeview Pkwy.	Orange
4	116 Lakeview Pkwy.	Orange
5	114 Lakeview Pkwy.	Orange
6	112 Lakeview Pkwy.	Orange
7	110 Lakeview Pkwy.	Orange
8	108 Lakeview Pkwy.	Orange
9	4084 Germanna Hwy.	Orange
10	4062 Germanna Hwy.	Orange
11	4014 Germanna Hwy.	Orange
12	3638 Germanna Hwy.	Orange
13*	403 Lakeview Pkwy.	Orange
14	405 Lakeview Pkwy.	Orange
15	407 Lakeview Pkwy.	Orange
16	411 Lakeview Pkwy.	Orange
17	413 Lakeview Pkwy.	Orange
18	408 Lakeview Pkwy.	Orange



No.	Address	County
19	410 Lakeview Pkwy.	Orange
20	3494 & 3492 Germanna Hwy	Orange
21	36097 Goodwin Dr.	Orange
22	3663 Germanna Hwy.	Orange
23	14 Rapidan Rd.	Orange
24	2 Rapidan Rd.	Orange
25	13 Rapidan Rd.	Orange
26	3 Rapidan Rd.	Orange
27*	12 Rapidan Rd.	Orange
28	15 Rapidan Rd.	Orange
29*	3543 Germanna Hwy.	Orange
30*	3543 Germanna Hwy.	Orange
31*	3543 Germanna Hwy	Orange
32	3489 Germanna Hwy	Orange
33	10 Rapidan Rd.	Orange
34	9 Rapidan Rd.	Orange
35*	3427 Germanna Hwy.	Orange
36	3409 Germanna Hwy	Orange
37	3375 Germanna Hwy.	Orange
38	3363 Germanna Hwy.	Orange
39	3351 Germanna Hwy.	Orange
40	3359 Germanna Hwy.	Orange
41*	3281 Germanna Hwy.	Orange
42	3127 Germanna Dr.	Orange
43	2390 Pilgrim Church Rd.	Orange

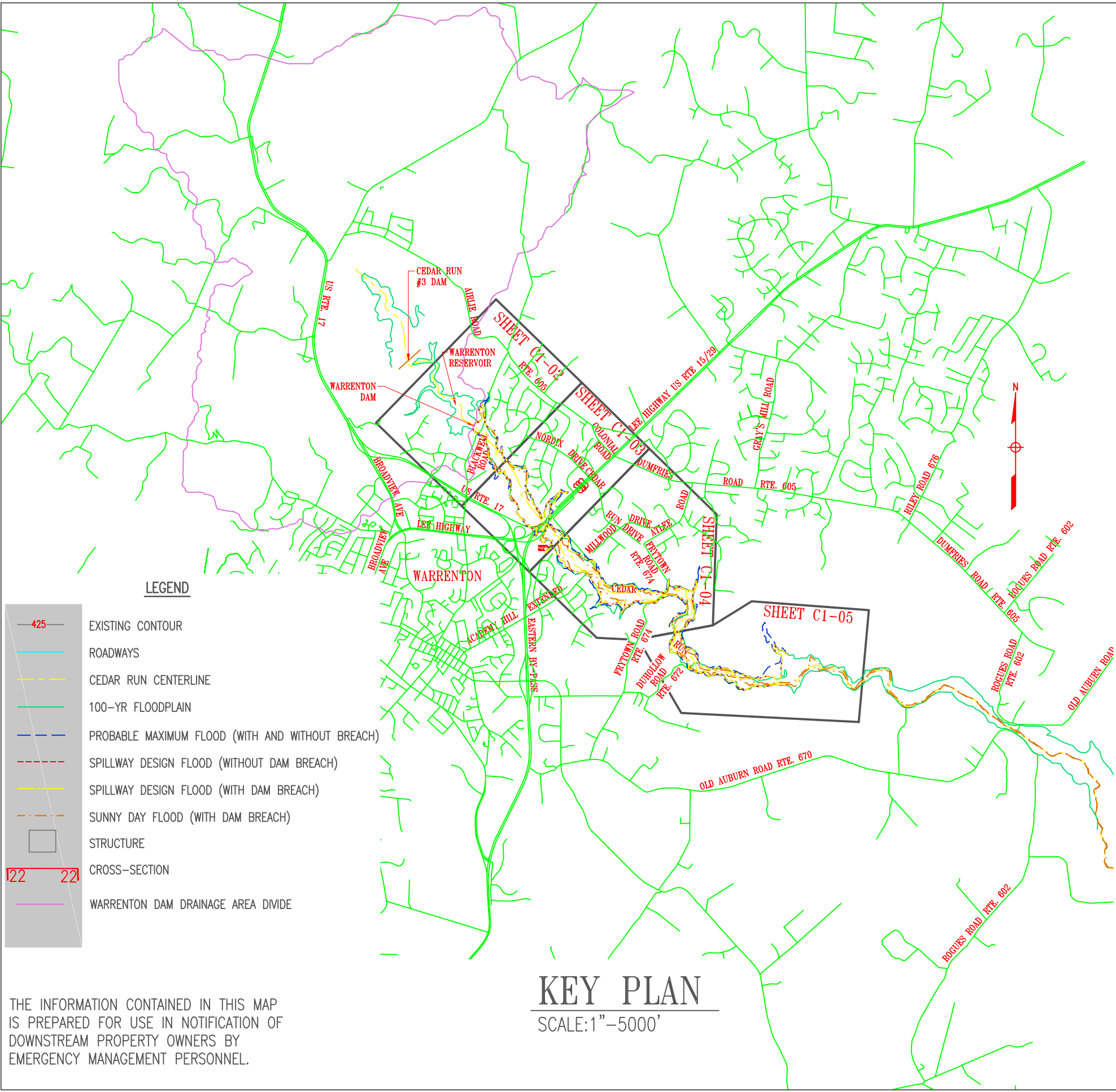
Lake of the Woods Flood Inundation Study

Flood Inundation Limits

Sheet 2 of 2



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June 24, 2016 - 3:12pm

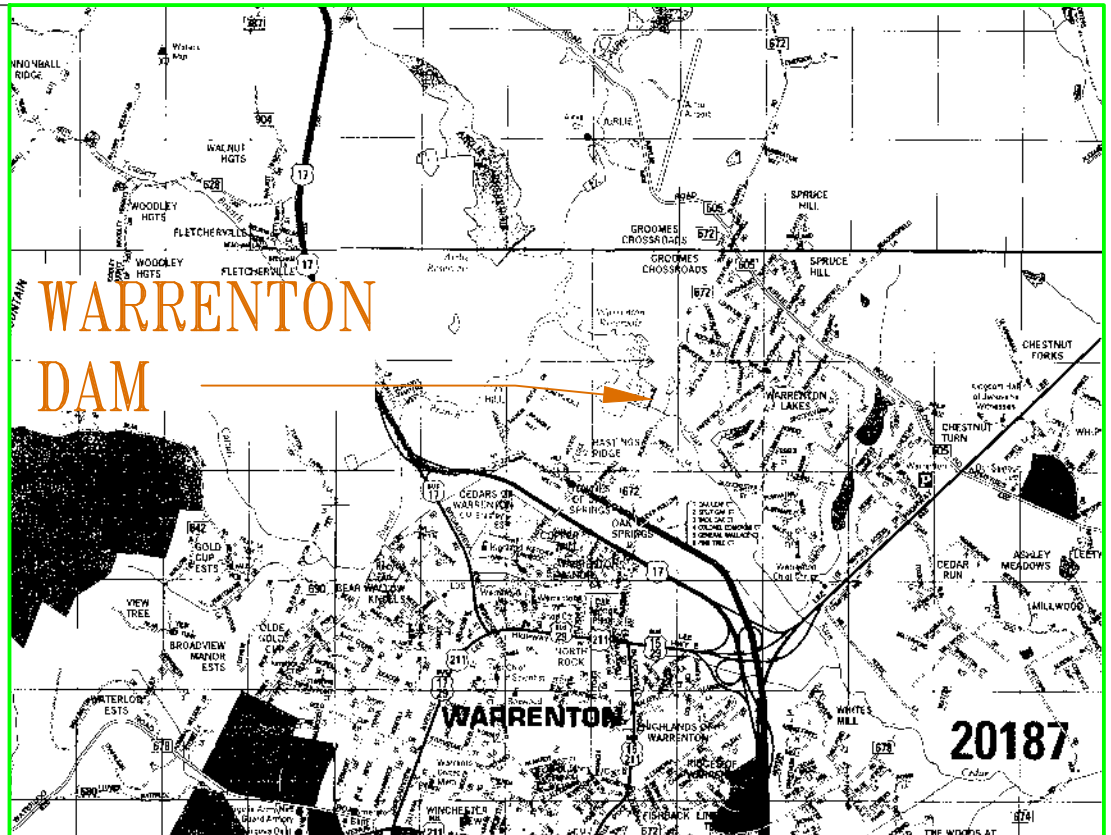


LEGEND

- 425 EXISTING CONTOUR
- ROADWAYS
- CEDAR RUN CENTERLINE
- 100-YR FLOODPLAIN
- PROBABLE MAXIMUM FLOOD (WITH AND WITHOUT BREACH)
- SPILLWAY DESIGN FLOOD (WITHOUT DAM BREACH)
- SPILLWAY DESIGN FLOOD (WITH DAM BREACH)
- SUNNY DAY FLOOD (WITH DAM BREACH)
- STRUCTURE
- CROSS-SECTION
- WARRENTON DAM DRAINAGE AREA DIVIDE

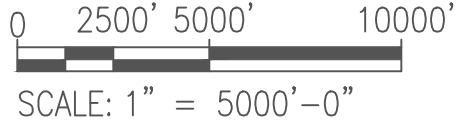
KEY PLAN
SCALE:1"=5000'

THE INFORMATION CONTAINED IN THIS MAP
IS PREPARED FOR USE IN NOTIFICATION OF
DOWNSTREAM PROPERTY OWNERS BY
EMERGENCY MANAGEMENT PERSONNEL.



VICINITY MAP

SCALE:1"=4000'
ADC MAP PERMIT USE NO. 21002216



Whitman, Requardt & Associates, LLP
3701 Pender Drive, Suite 450, Fairfax, Virginia 22030

TOWN OF WARRENTON
DEPARTMENT OF UTILITIES

WARRENTON DAM BREACH ANALYSIS AND INUNDATION MAPPING

SCALE: 1" = 5000' DESIGNED: MH CHECKED: AUO DRAWN BY: AKC

TITLE:
KEY MAP

SUBMITTED DATE: JUNE, 2016 SHEET C1-01 DRAWING NO. 1 OF 5