NRV Hazard Mitigation Plan 2016 Update Working Group: Winter Hazards

November 10, 2016, 10:30 am - 12:00 pm

New River Room, New River Valley Business Center
Fairlawn, VA

Agenda

1. Welcome ..... Christy Straight
   New River Valley Regional Commission
2. Climatology and Weather ..... Phil Hysell
   National Weather Service
3. Data Review ..... Zach Swick
   New River Valley Regional Commission
4. Regional Mitigation Strategy Review ..... Michael Gottfredson
   New River Valley Regional Commission
5. Wrap Up
   a. Question and answer
   b. Next meeting- December 1, 2016 – Geologic Hazards

HAZARD MITIGATION Working Group – Winter Weather
Meeting Notes
November 10, 2016

Attending: <see list>

Notes

1. Welcome, Introductions and Recap
    a. Reviewed schedule of future working groups – please send contact information to Christy Straight for any stakeholders and subject matter experts that should be invited to participate
2. Presentation by Phil Hysell of National Weather Service
    a. Presentation included in Part 2 for the November 10 meeting on the website
3. Reviewed data for winter weather
    a. Average annual number of days with snowfalls of 6-inches or more
    b. Average annual number of days with highs of 32°F or less
    c. Winter weather related accidents/crash density
    d. Winter temperature trends
    e. Consideration of precision in mapping this information with discussion of what would suit mitigation planning purposes
4. Goals and Strategies
    a. Reviewed 2011 goals, objectives and strategies
    b. Group discussion for any changes and additions to the list – changes to the 2011 list are included in this file after the presentation
5. Next Meeting: December 1 at 10:30 AM, topic – Geologic Hazards

Adjourned

NRV Hazard Mitigation Plan - 2016 Plan Update

November 10, 2016 - 10:30 am

	Name	Organization/Representing	Email (if new)
1	Melissa Skeen	City of Radford	
2	Sara Harrington	VDEM Reg. 4	
3	Todd BRANDOM	Radford OEP	
4	CALEB TAYLOR	NRV REG. WTR. AUTH.	
5	PHIL LOYSELL	NWS Blacksburg	
6	Jim Hudgins	NWS Blacksburg	
7	Grady DeWitt	Radford University	
8	Jonathan T. Simmons	VDEM Region 4	
9	Rudy Hamad	RADFORD FIRE DEPT.	
10	Kali Casper	Town of Blacksburg	
11	Andrew Worrell	Town of Christiansburg	
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NRV Hazard Mitgation Plan - 2016 Plan Update

November 10, 2016 - 10:30 am

	Name	Organization/Representing	Email (if new)
1	JOHN ROSS	GILES CO.	
2			
3	Danny Wilson	Pulaski County	
4			
5	Lydeane Martin	Floyd Co.	
6			
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Regional Hazard Mitigation Plan Update

Working Group – Winter Hazards

November 10, 2016

Definition

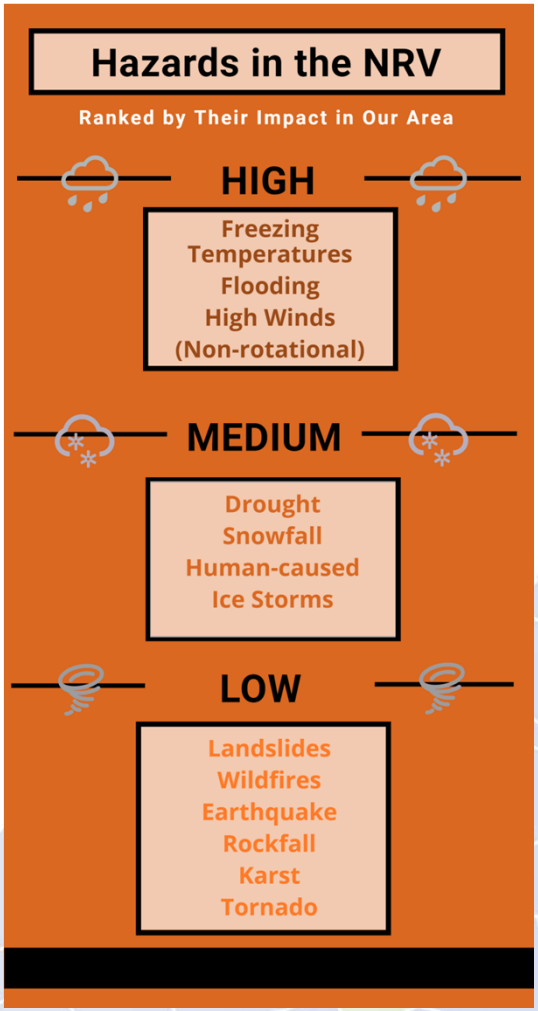
- Hazard Mitigation

...is a sustainable action that will reduce or eliminate injury to citizens, damages to structures and allow continuity of critical society functions...

This is different from response and recovery.

Project overview

- Update every 5 years
- Must be FEMA-approved
  - Maintains participants' eligibility for mitigation funds
- Covers natural hazards with potential impact in NRV
  - Floods, drought, wildfire, geologic hazards, severe weather, etc.
  - And considers human-caused hazards
- Project website - http://nrvrc.org/hazardmitigation/



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Working groups

- Steering committee and staff will
  - Invite stakeholders with technical expertise
  - Invite community representatives to participate
- Participants will
  - Provide input on hazard issues and impacts
  - Develop mitigation goals and regional strategies
  - Further identification and input on
    - Mitigation options
    - Resources

Working groups

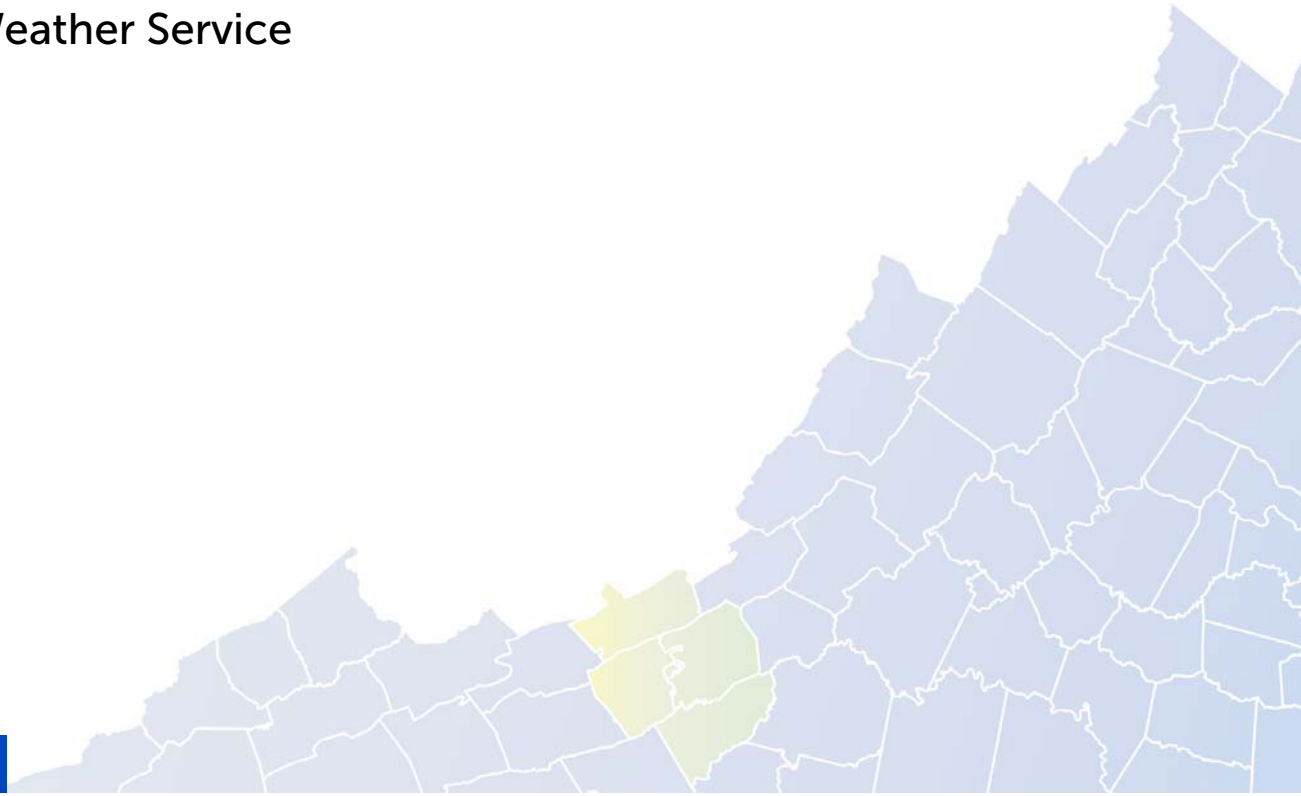
- High Wind and Tornado Hazards | October 6, 2016
- **Winter Hazards | November 10, 2016**
- Geologic Hazards | December 1, 2016
- Human-caused, Wildfire, & Drought Hazards | January 5, 2016
- Flooding Hazards | February 2, 2016

Today we will

- Hear a presentation on
  - Weather and Climatology
    - Phil Hysell, National Weather Service
- Review latest available data
- Review and update mitigation strategies

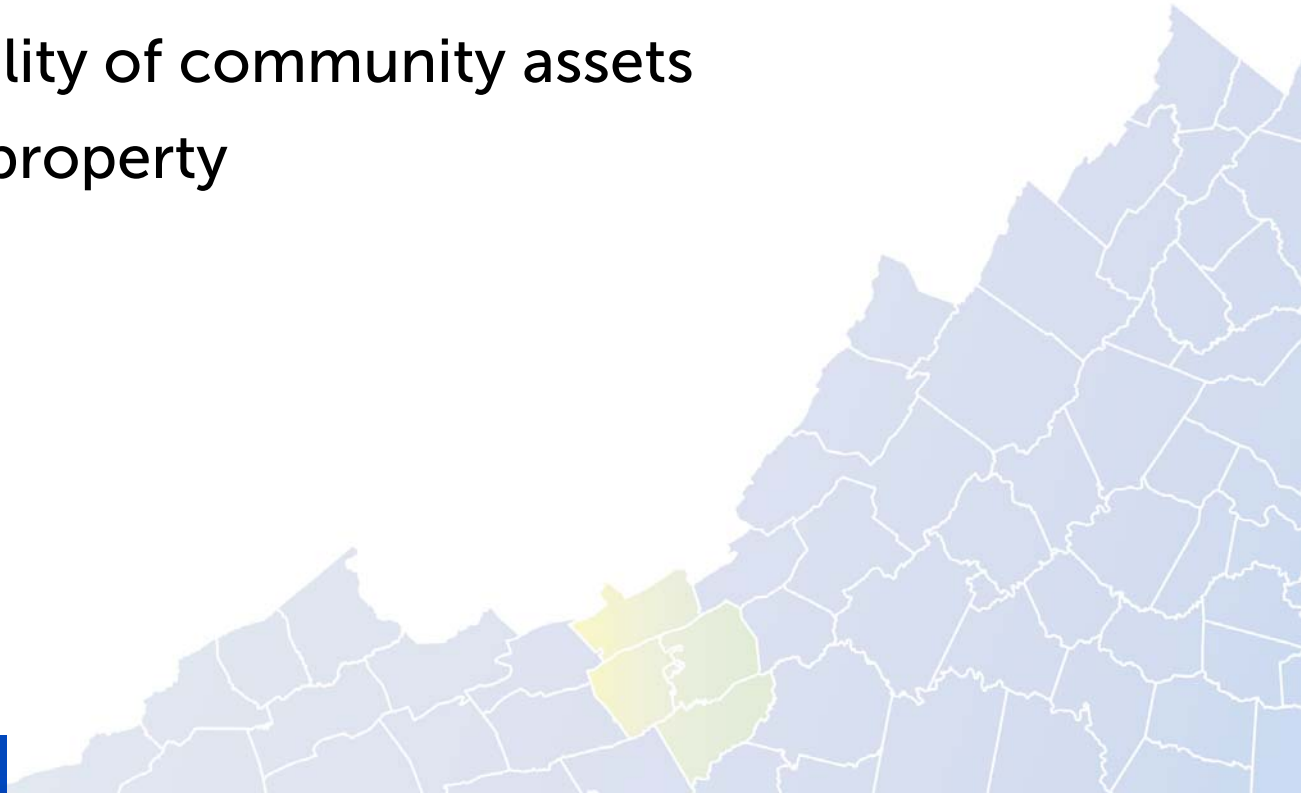
Presentation

- Weather and Climatology
  - Phil Hysell, National Weather Service



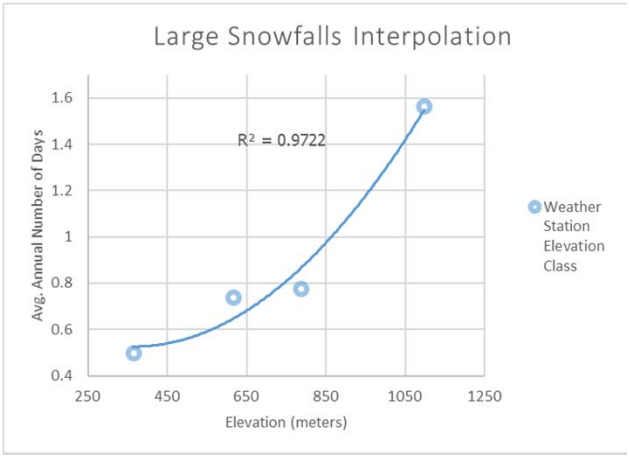
Risk Assessment

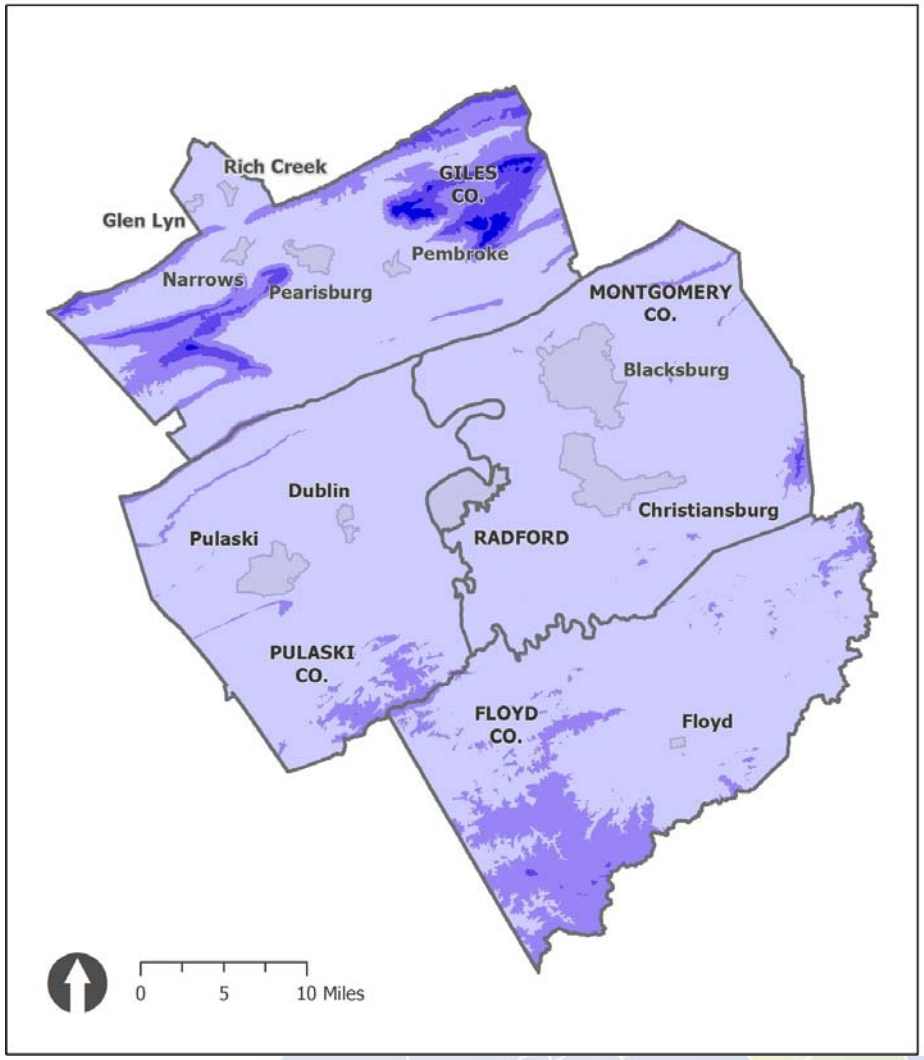
- Probability (area affected & frequency)
- Impact to & vulnerability of community assets
- Risk to population & property



Data

- 2011 Hazard Mitigation Plan
  - Winter Weather Hazards
    - Average annual number of days with snowfalls of 6-inches or more
    - Average annual number of days with highs of 32°F or less
- 2016 Update
  - Revise previous maps
  - Winter weather related accidents
  - Winter temperature trends





Snowfalls of Six Inches or More

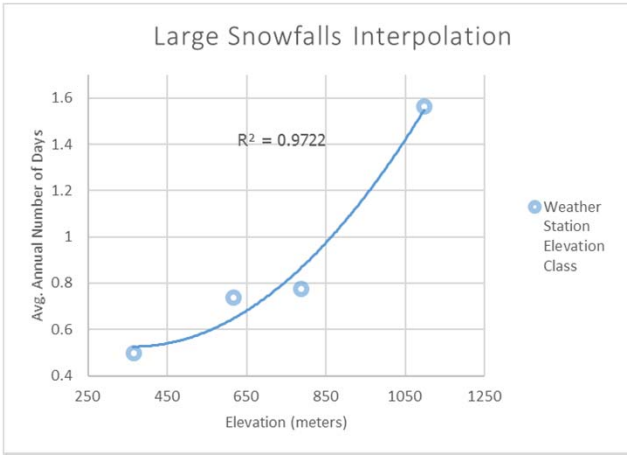
New River Valley

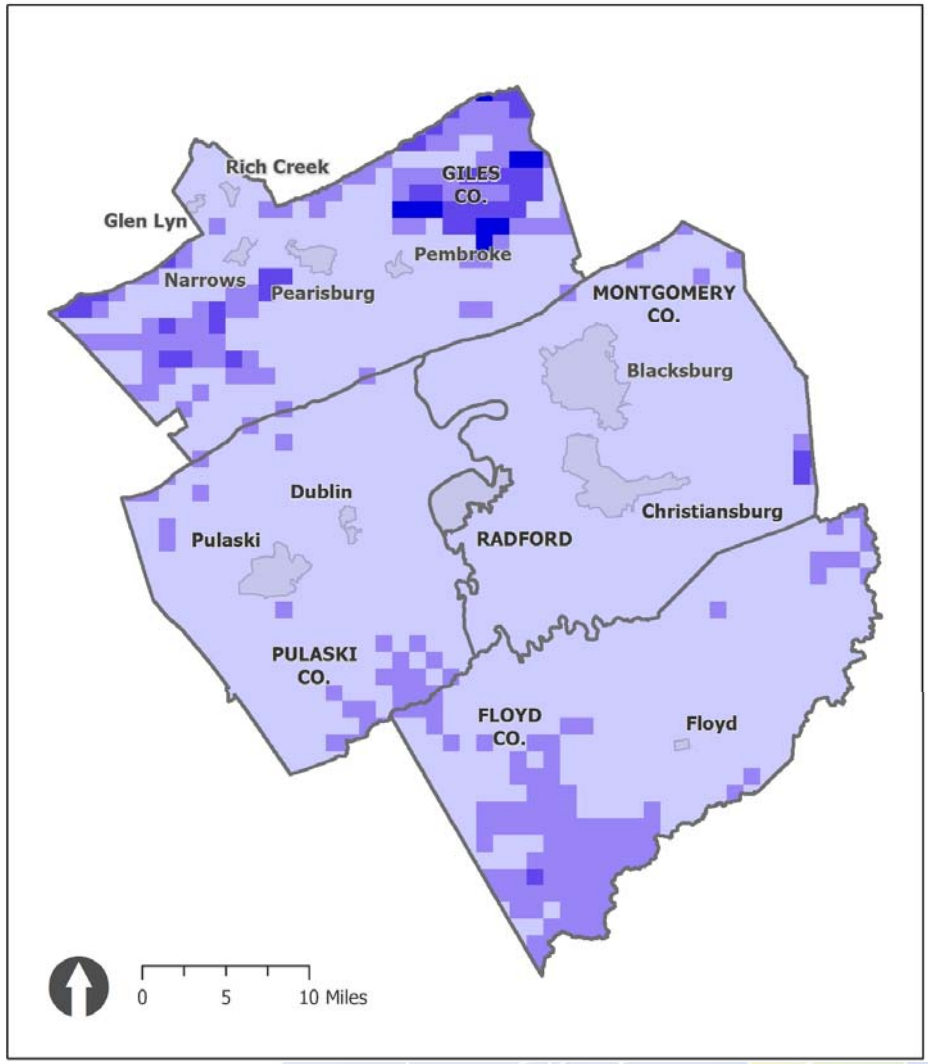
Average Annual Number of Days (1986-2015)

- 0.5 - 1.0
- 1.1 - 1.5
- 1.6 - 2.0
- 2.1 - 2.4

Snowfall figures calculated using a polynomial interpolation based on elevation classes. Weather stations with less than five years of records were excluded. Equal interval distribution.

Created by NRVRC, 2016. Sources: National Oceanic and Atmospheric Administration; U.S. Census Bureau; U.S. Geological Survey; Virginia Geographic Information Network.





Snowfalls of Six Inches or More

New River Valley

Average Annual Number of Days (1986-2015)

- 0.5 - 1
- 1.1 - 1.5
- 1.6 - 1.9
- 2 - 2.4

Snowfall figures calculated using a polynomial interpolation based on elevation classes. Weather stations with less than five years of records were excluded. Equal interval distribution.

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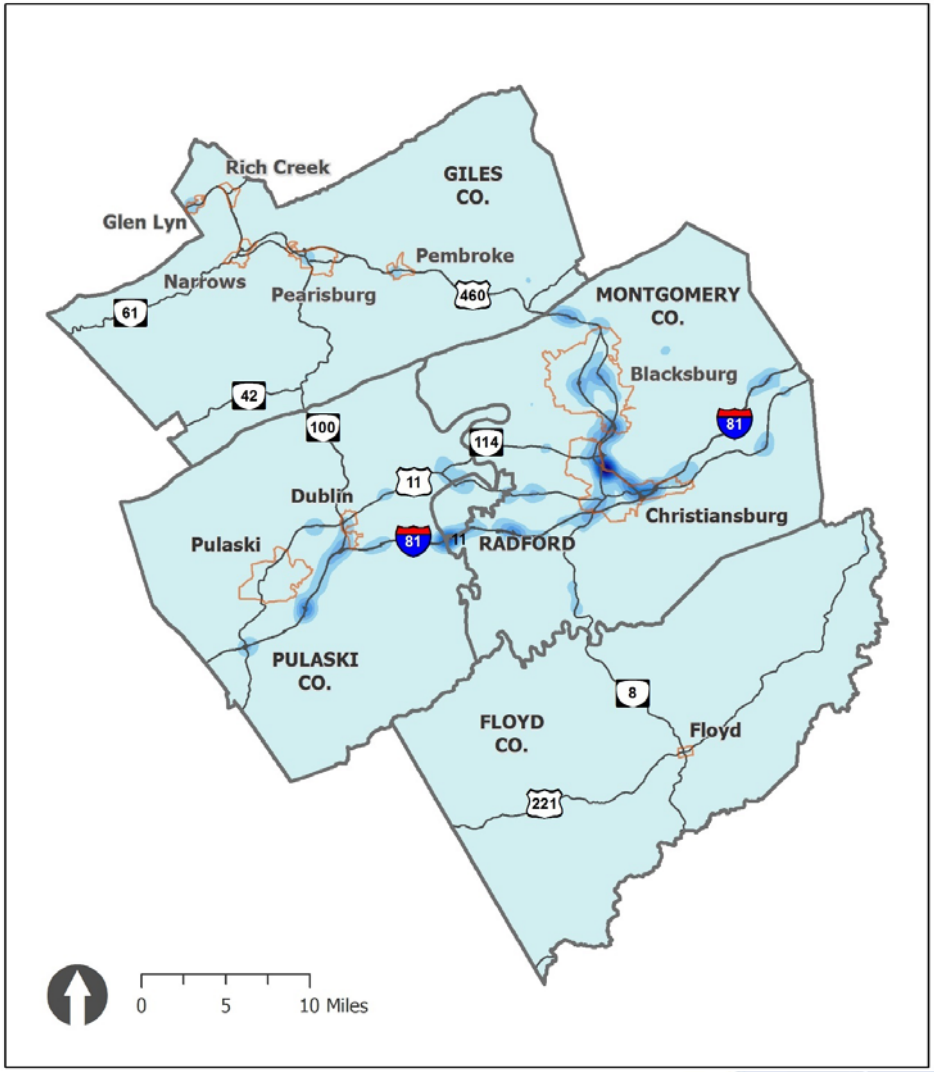

Winter Weather Crash Density (2010-2014)

New River Valley

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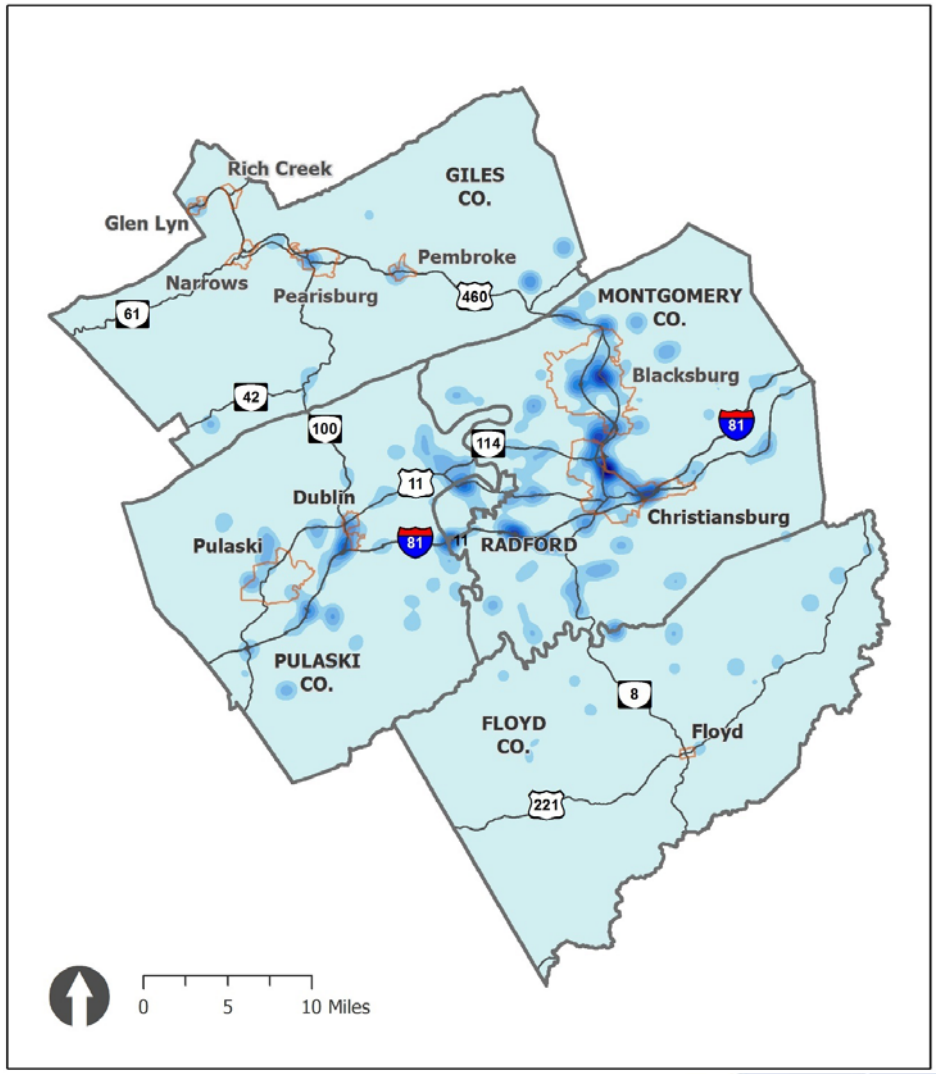
Crash Incident Density

High

Low

Crash incident occurrence. Kernel density, 1 mile search radius. Equal interval distribution.

Created by NRVRC, 2016. Sources: U.S. Census Bureau; Virginia Department of Transportation; Virginia Geographic Information Network.



Winter Weather Crash Density (2010-2014)

New River Valley

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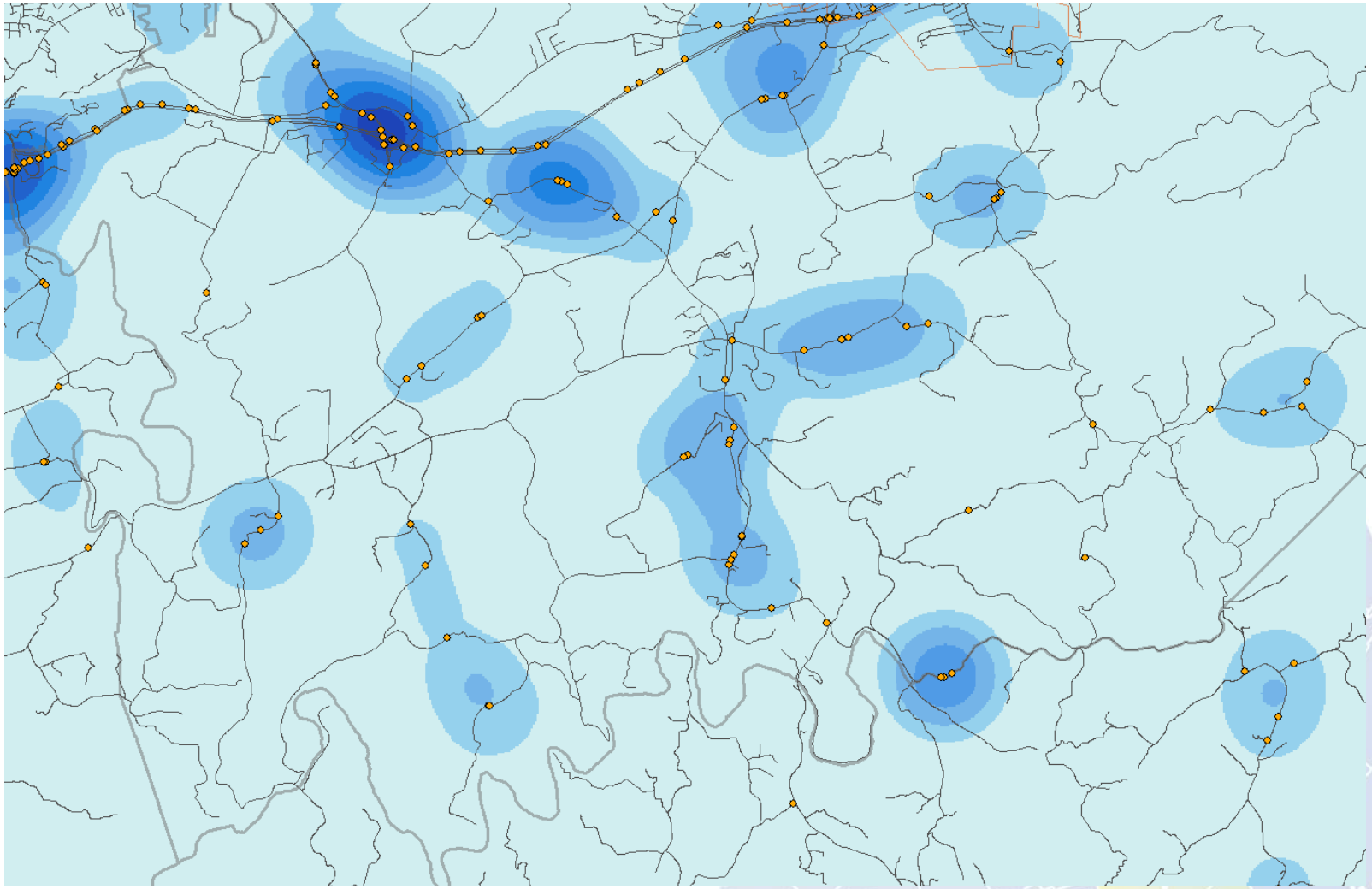
Relative Crash Incident Density

High

Low

Crash incident occurrence normalized by road type. Kernel density, 2 mile search radius. Equal interval distribution.

Created by NRVRC, 2016. Sources: U.S. Census Bureau; Virginia Department of Transportation; Virginia Geographic Information Network.



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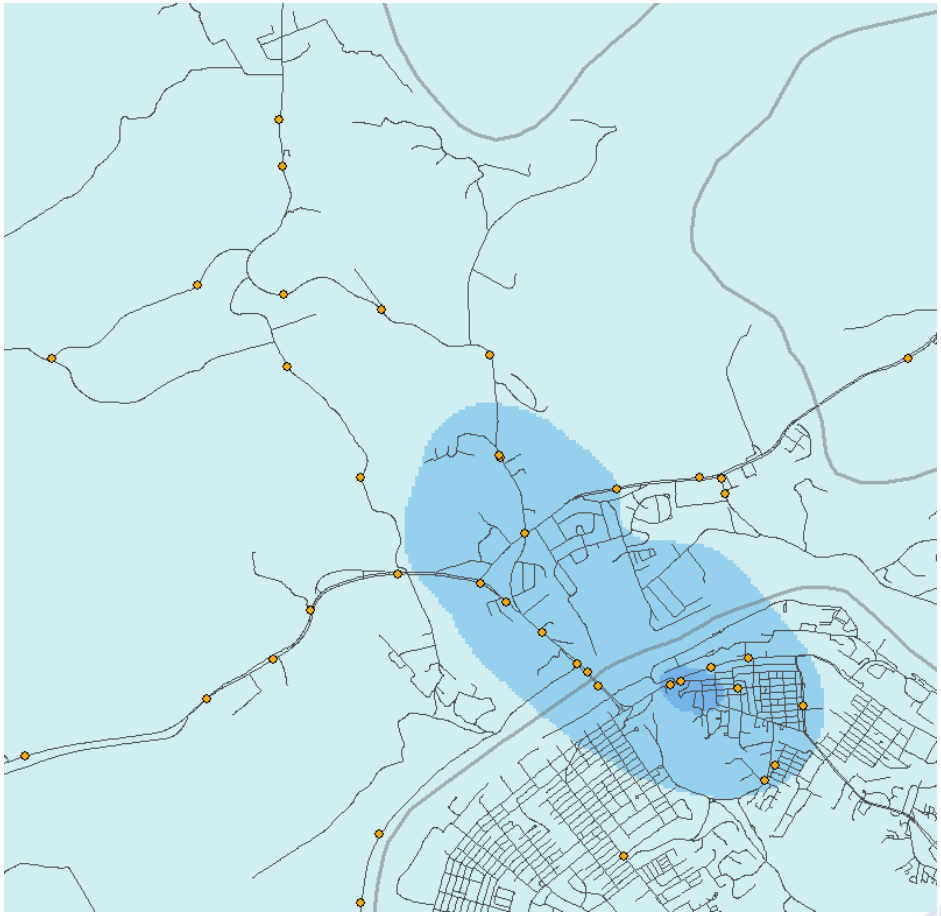
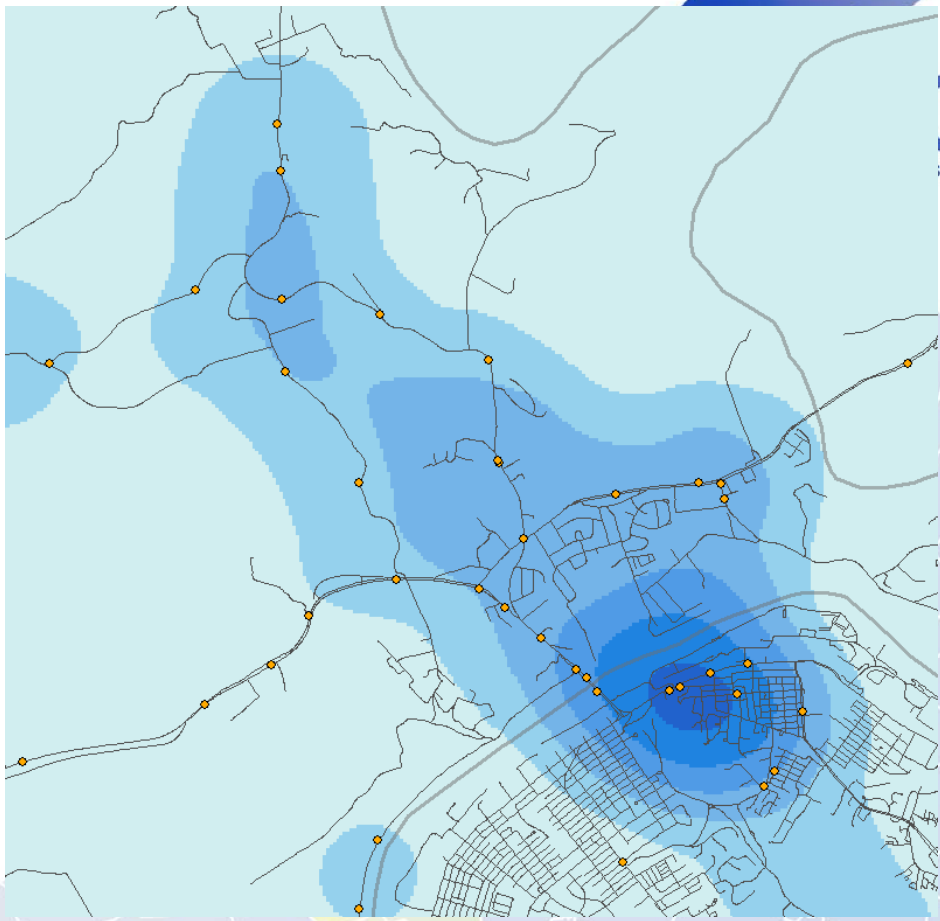
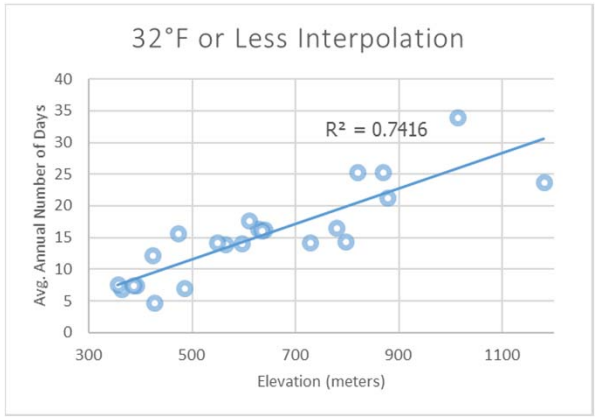
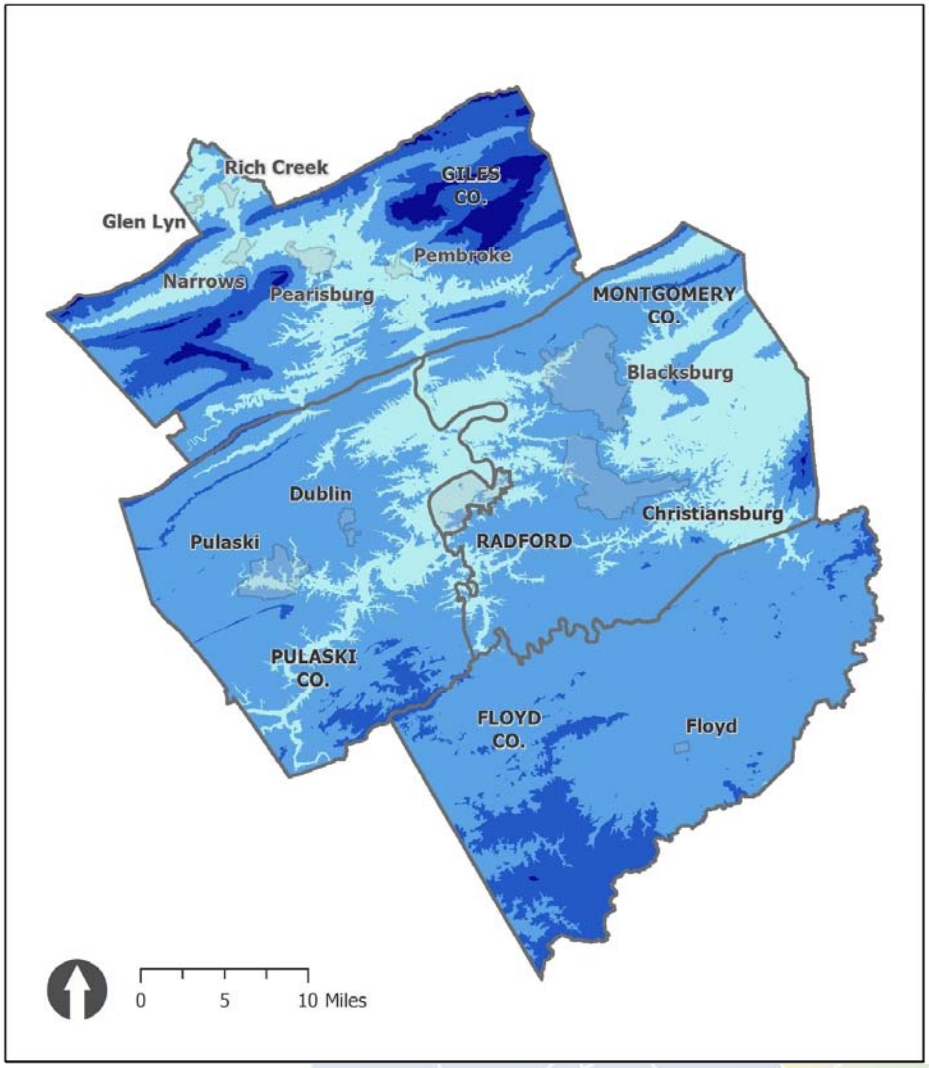








Maximum Temperature 32°F or Below (1986-2015)

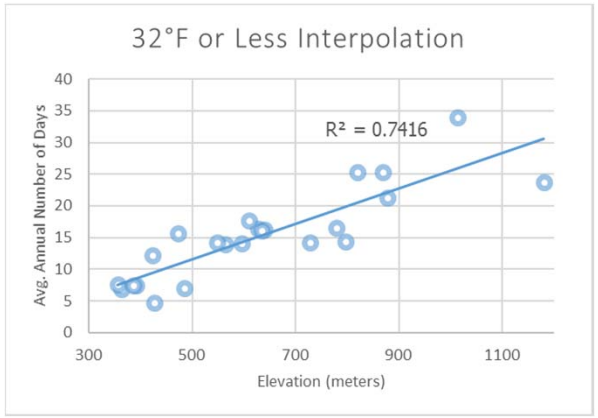
New River Valley

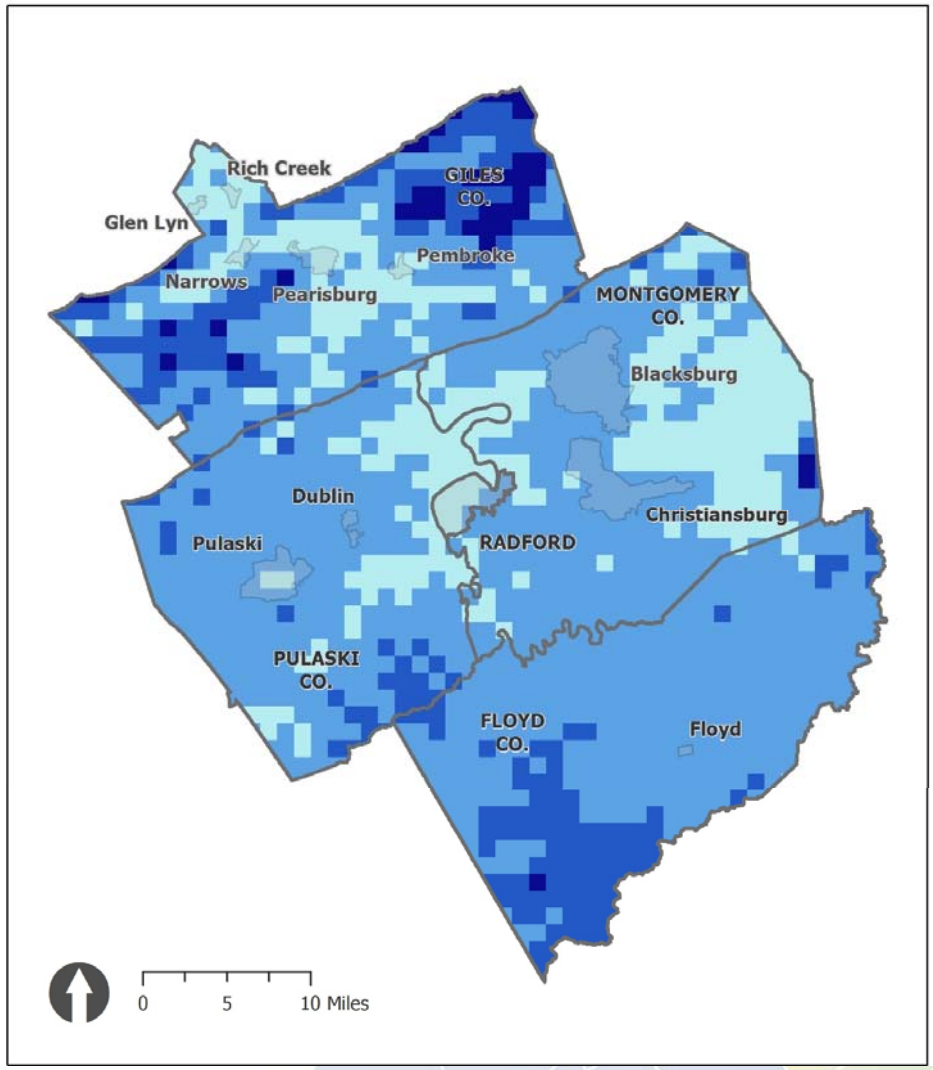
Average Annual Number of Days

- 8 - 14
- 15 - 21
- 22 - 28
- 29 - 35

Temperature figures calculated using a linear interpolation based on elevation. Weather stations with less than five years of records were excluded. Equal interval distribution.

Created by NRVRC, 2016. Sources: National Oceanic and Atmospheric Administration; U.S. Census Bureau; U.S. Geological Survey; Virginia Geographic Information Network.





Maximum Temperature 32°F or Below (1986-2015)

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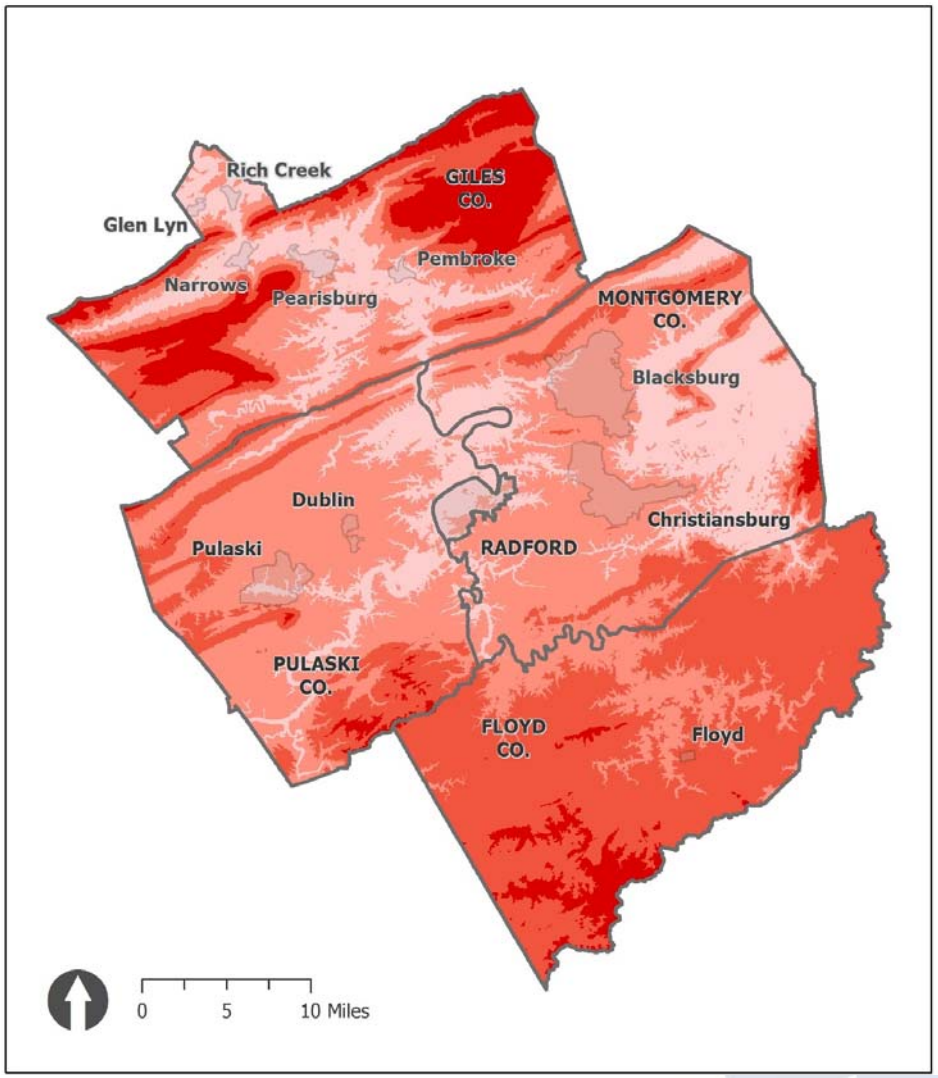

Warming Winter Weather: Days with a Maximum Temperature of 32°F or Below

New River Valley

Decrease in Average Annual Number of Days (1960-1987 vs. 1988-2015)

- 1 - 1.7
- 1.8 - 2
- 2.1 - 2.5
- 2.6 - 3.7

Temperature figures calculated using a linear interpolation based on elevation. Weather stations with less than five years of records were excluded. Jenks natural breaks distribution.

Created by NRVRC, 2016. Sources: National Oceanic and Atmospheric Administration; U.S. Census Bureau; U.S. Geological Survey; Virginia Geographic Information Network.

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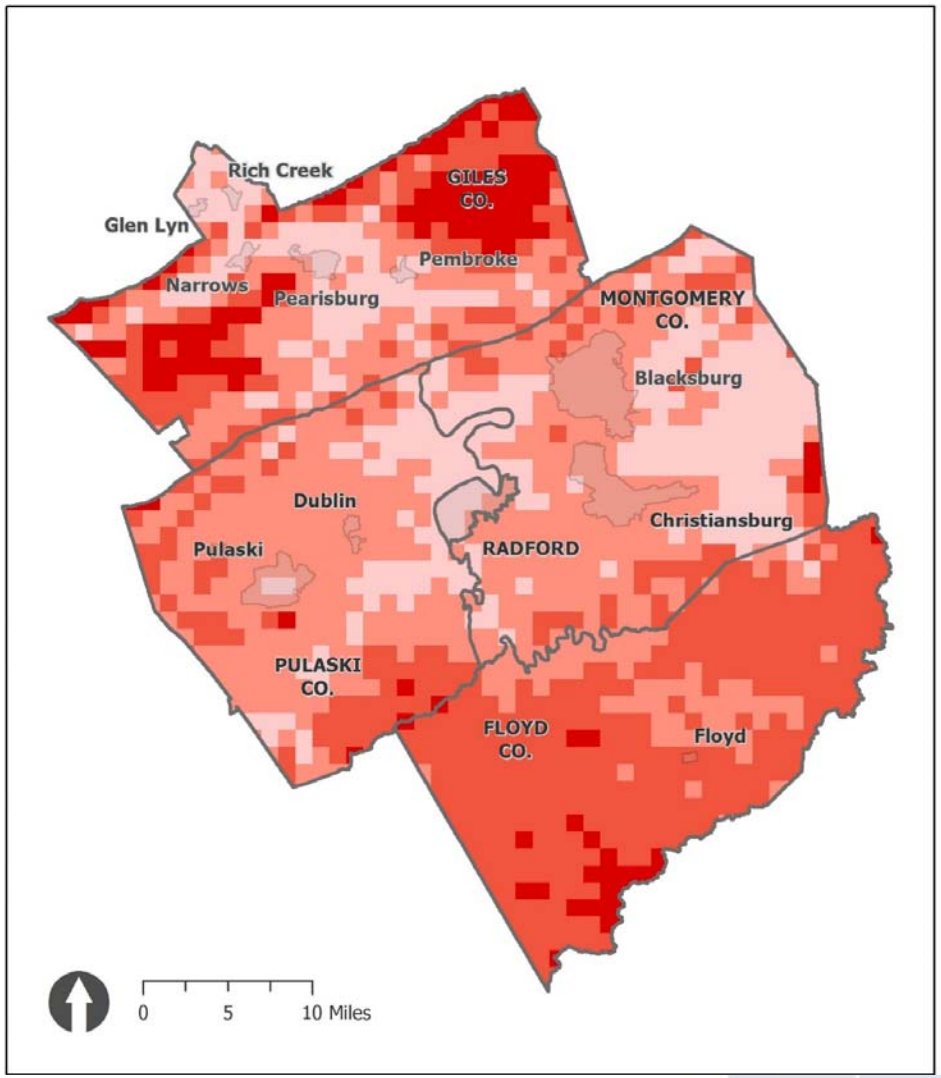

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Goals & Strategies

- **Mission:** Minimize the loss of life and property to natural hazards by focusing on likely events, high-risks areas, and cost-effective mitigation opportunities.
- Regional and local strategies in support of goals
- Strategies can include
  - Education
  - Regional Cooperation
  - Capital improvement projects
  - Development and planning guidelines

Regional Mitigation Strategy Review

- Severe Weather
- Winds
- Other

Wrap up

- Questions?
- Next steps
- Next meeting – December 1, 10:30 am

- Contact information for NRVRC

  Christy Straight (cstraight@nrvrc.org)
  Michael Gottfredson (michaelg@nrvrc.org)
  Zach Swick (zswick@nrvrc.org)
  540.639.9313

Thank you for coming!

Severe Weather: 2011 Goals, Objectives, Strategies

Minimize impacts of significant weather events, such as winter weather and severe weather events in the NRV.

v. *Encourage activities to ~~prevent~~ reduce impacts during storm events.*

i. Promote the installation and maintenance of drift fences to maintain access during snow events.

ii. Emphasize that all treatment of roads ~~maintenance~~ be done prior to storms to prevent access issues.

iii. Ensure necessary resources are available in advance of storms and weather events.

~~ii.~~iv. Improve collaboration and coordination with VDOT to create opportunities for dialogue on treatment and clearing of roads.

w. *Develop educational materials and events to prevent loss of life and property in severe weather events.*

i. Continue educational efforts during times when events are not occurring (i.e., brochures, websites, social media, awareness weeks-promotions coordination).

~~i.~~ii. Emphasize what should be done during a storm event (i.e., lightning) to maintain safety.

~~ii.~~iii. Educate landowners about how overhanging utility lines and trees can cause property damage during a storm.

~~iii. Continue educational efforts during times when events are not occurring (i.e., brochures, websites, awareness weeks-promotions coordination).~~

iv. Create a brochure or handout of local hazards to provide to the community.

v. Pursue and/or maintain Storm Ready designation for the region's communities.

x. *Encourage preparation and planning activities that ~~ensure minimal~~ minimize impacts to life and property.*

i. Encourage personal planning for storm events and their impacts.

ii. Inventory public and critical facilities to determine the need for back-up power generation.

iii. Inventory and assess critical facilities for ~~of~~ possible roof collapses ~~through an analysis of building permits~~ to determine need for future mitigation efforts.

iv. Engage in regional emergency management exercises (table-top and field) to train responders.