

## 1.0 Jurisdiction Executive Summary

Jurisdiction executive summaries highlight some of the background data gathered and analysis completed for the 2011 Richmond-Crater Multi-Regional Hazard Mitigation Plan Update with emphasis on the results from the Hazard Identification and Risk Assessment (HIRA). Additional details on the region, specifics on analysis methodologies and mitigation action details can be found in the Hazard Mitigation Plan.

### 1.1 Hazards

The information below summarizes the effects of the region's 10 top hazards on Prince George County.

#### (1) Flooding (Significant Threat)

- Repetitive Loss (RL) Structures = 3; Severe Repetitive Loss (SRL) Structures = 0; Number of Claims = 8; Total Building and Contents Payment on RL and SRL Properties = \$166,578 (as of 3/22/2011)
- NFIP Flood Policies = 75; Insurance In-Force = \$20,218,800; Number of Claims = 21; Total Building and Contents Payment on Claims = \$186,840 (as of 2/28/2011)
- There are no critical facilities located in the floodplain.
- High Prone Flood Areas =
  - The James River borders this county to the north, causing up to \$10,000 in flood damages along its banks, and nearly \$20,000 in annualized damages in one small area.
  - Smaller tributaries such as Bull Hill Run, James River, Warwick Creek, and Cattail Creek cause annual damages of up to \$10,000 throughout much of the county.

**Critical Facilities:** No critical facilities are located within mapped floodplains. For this analysis, critical facilities are defined as a facility in either the public or private sector that provides essential products and services to the general public, is otherwise necessary to preserve the welfare and quality of life in the County, or fulfills important public safety, emergency response, and/or disaster recovery functions. Critical facilities examined for Prince George County fall into six categories including: Medical Facilities/Hospitals, Police Stations, VDOT Fuel Tanks, VDOT Facilities, Fire/EMS Stations, and Cell/Radio Towers.

**Significant Historical Events:** Several severe flooding events have had a widespread impact in Prince George County; these include:

- September 2003: Flash flooding during Hurricane Isabel caused approximately 300 homes to be damaged and 8 homes to be condemned. At Jordan Point Marina, 100 boats were displaced, buildings were destroyed and docks sunk. Route 460 was closed and there was no power for weeks. Estimated damages at \$14 million.

Additional information on flooding can be found in Section 5.6, starting on page 5-9.

**(2) Wind (Moderate Threat)** This category includes hurricane, thunderstorm and tornado winds.

- Total tornado touchdowns reported at 2 for past 60 years; 1-F2, and 1-F0
- Annualized losses from tornado wind events = \$231,691
- Annualized losses from hurricane wind events = \$140,265
- Annualized losses from thunderstorm and other wind events (excluding tornadoes and hurricanes) = \$6,338

**Significant Historical Events:** Wind events have had a widespread impact in Prince George County; these include:

- April 2008: A tornado lifted and crossed Temple Avenue from Colonial Heights into Prince George County. The tornado touched down briefly near Flexon Drive, Fine Drive and Puddleduck Drive. Several trees were uprooted, a few were snapped off, and several homes were damaged.
- September 1999: Hurricane Floyd brought high winds and rain, causing US Route 301 and I-95 to be closed. Three state routes were closed for several weeks. Walton Lake Road and the homes along it were flooded, and trees collapsed onto 15 homes. 50 residents sought shelter.
- August 1993: On August 6, tornadic thunderstorms tracked across southern Chesterfield County through the Tri-Cities and Prince George County and north into Charles City. In Prince George County, a tornado collapsed a concrete plant in Tarmac severely injuring one person.

Additional information on wind can be found in Sections 5.7, 5.8 and 5.9, starting on pages 5-9, 5-50, and 5-91, respectively.

### **(3) Winter Weather (Moderate Threat)**

- 17 National Weather Service Alerts during past 5 years for winter weather
- Annualized all winter weather losses = \$14,561

#### **Significant Historical Events**

- January 2000: Two winter storms during a one-week period produced major snowfall (13 to 18 inches with 3.5-foot drifts), blizzard conditions and damaging ice accumulations. This event iced and uprooted trees, disrupted power, closed schools for seven days. Cold temperatures froze and burst pipes.
- January 1996: From January 6 through January 15, two snow storms, striking first from the south and then from the north, produced large and prolonged snowfall. School systems were closed for 5 days in the county.
- December 1993: On December 23 and 25, the Crater region received 14 inches of snow with freezing rain on December 27. This event caused 30 traffic accidents in the county. The County government closed early.

Additional information on winter weather can be found in Section 5.10, starting on page 5-95.

### **(4) Thunderstorm (Moderate Threat)**

- Annualized losses from thunderstorms including hail and lightning = \$876
- The NCDC database shows that at least two people in the region have been killed and three others injured as a result of lightning since 1993. None of these people were in Prince George County.

#### **Significant Historical Events**

- August 2001: Hail to the size of baseballs was reported near Disputanta. An estimate of damage was not available.

Additional information on thunderstorms can be found in Section 5.9, starting on page 5-91.

### **(5) Drought (Moderate Threat)**

- Annualized losses from drought = \$86,626
- An extended period of abnormally dry weather occurred over a period of four years, from 1998 to 2002.
- This period saw rainfall levels well below normal and caused many communities throughout the state to institute water restrictions.
- Value of agricultural products sold (in \$1,000) in Prince George County is \$5,488.

**Significant Major Events:**

- 2007: Unusually dry conditions persisted through a significant portion of the year through much of southern and central Virginia. Virginia as a whole experienced its tenth driest year on record.
- December 2001 – November 2004: Beginning in the winter of 2001, the mid-Atlantic began to show long-term drought conditions. The National Weather Service made reports of moisture-starved cold fronts that would continue throughout the winter. Stream levels were below normal with record lows observed at gages for the York, James, and Roanoke River Basins. By November 2002, the US Secretary of Agriculture had approved 45 counties for primary disaster designation, while 36 requests remained pending.
- June – November 1998: A heat wave over the southeast produced warm and dry conditions over much of Virginia. Unusually dry conditions persisted through much of the fall. The drought produced approximately \$38.8 million in crop damages over portions of central and south-central Virginia.
- November 1976 – September 1977: Ten months of below-average precipitation. The drought began in November of 1976 when rainfall totaled to only 50 to 75% of normal rates. During the rest of the winter, storms that would normally bring moisture tracked across the gulf. During the spring and summer, the storms tracked across the Great Lakes. These weather patterns created significant drought throughout most of Virginia.

Additional information on drought can be found in Section 5.11, starting on page 5-109.

**(6) Wildfire (Limited Threat)**

- Annualized losses from wildfire = \$1,768
- Total acres burned in Prince George County (1995-2008) = 533.6
- Total dollar damage in Prince George County (1995-2008) = \$22,990
- Annualized number of events = 9.62
- 24 woodland communities in high fire rank
- 1,397 homes in woodland communities in high fire rank

**Critical Facilities:** Sixteen critical facilities are located within high potential wildfire areas. For this analysis, critical facilities are defined as a facility in either the public or private sector that provides essential products and services to the general public, is otherwise necessary to preserve the welfare and quality of life in the County, or fulfills important public safety, emergency response, and/or disaster recovery functions. Critical facilities examined for Prince George County fall into ten categories including: Medical Facilities/Hospitals, Police Stations, Airports, VDOT Fuel Tanks, VDOT Facilities, E911 Centers, Fire/EMS Stations, Cell/Radio Towers, Utilities, and Public Schools.

**Significant Major Events:** Within Prince George County, wildfires have been experienced every year; counts are provided by year below.

- 2008 – 6
- 2007 – 5
- 2006 – 17
- 2005 – 12
- 2004 – 10
- 2003 – 2
- 2002 – 10
- 2001 – 17
- 2000 – 6
- 1999 – 8
- 1998 – 7
- 1997 – 9
- 1996 – 4
- 1995 – 12

Additional information on wildfire can be found in Section 5.13, starting on page 5-117.

### **(7) Earthquake (Limited Threat)**

- Annualized losses from earthquake = \$52,905
- Significant earthquakes were first recorded in Virginia in 1774. Virginia has had over 160 earthquakes since 1977, of which 16% were felt. This averages to approximately one earthquake every month, with two felt each year.
- There have been five significant earthquakes centered in the region.

Additional information on earthquake can be found in Section 5.16, starting on page 5-141.

### **(8) Landslide and Shoreline/Coastal Erosion (Limited Threat)**

- The greatest landslide hazards are found in the higher elevations of western and southwestern Virginia. Analysis of the hazard here is limited by the availability of data. There is no comprehensive database documenting all landslide occurrences within the Commonwealth.

Additional information on landslide and shoreline/coastal erosion can be found in Section 5.14, starting on page 5-132.

### **(9) Land Subsidence/Karst/Sinkholes (Limited Threat)**

- According to the Virginia State Hazard Mitigation Plan, there have been no Federal Declared Disasters or NCDC recorded events for karst related events in the Commonwealth. Land subsidence is very site-specific. There is no comprehensive long-term record of past events in Virginia.

Additional information on land subsidence/karst/sinkholes can be found in Section 5.15, starting on page 5-138.

### **(10) Mass Evacuation (Moderate Threat)**

- Mass evacuations from urban areas can strain a community's resources and cause gridlock on major transportation routes, overcrowding of hospitals and shelters, and increased load on local utility infrastructures leading to potential failure.

Additional information on mass evacuation can be found in Section 5.12, starting on page 5-115.

## **1.2 Demographic Characteristics<sup>1</sup>**

- Population (2010): 35,725
- Land Area (2010): 265.16 sq miles
- Density (2010): 134.7 persons per sq. mile
- Median household income (2009): \$59,349
- Percent below poverty level (2009): 10.2%
- Race characteristics (2010):
  - White: 61.1%
  - Black: 32.0%
  - American Indian and Alaska native: 0.6%
  - Asian: 1.5%
  - Native Hawaiian and other Pacific Islander: 0.3%
  - Persons reporting two or more races: 2.8%(of the abovementioned races 5.8% are of Hispanic or Latin origin)

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<sup>1</sup> Source U.S. Census Bureau: State and County QuickFacts.

### 1.3 Prince George County Mitigation Actions

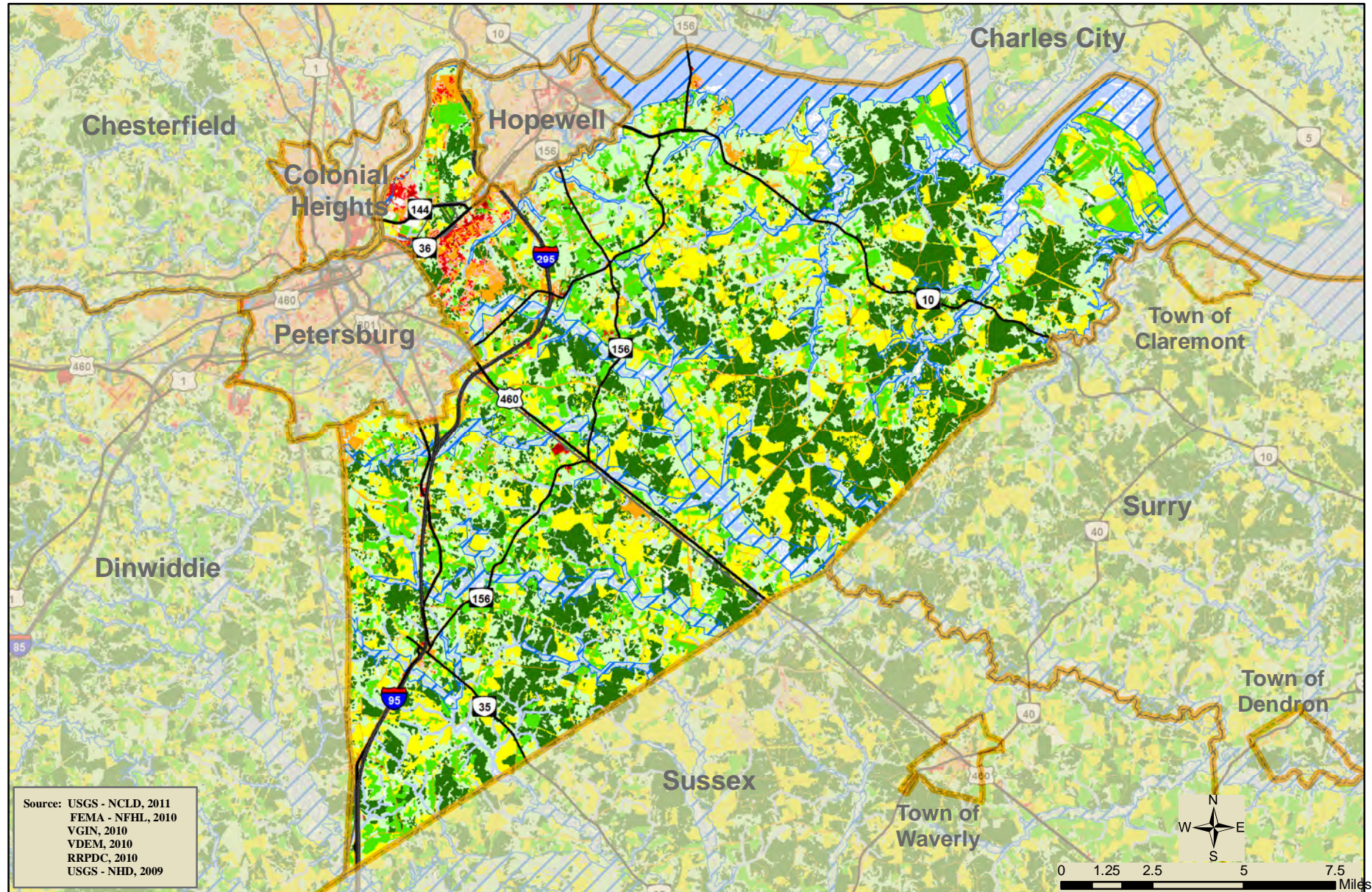
Number in 2011 Plan	Strategy	Addresses Goals?	Hazards Addressed	Responsible Department	Resources	Timeframe	Priority
Prince George-1	Continue to enforce zoning and building codes, with emphasis on floodplain management.	1, 2, 4	Flood, wind, earthquake, land subsidence, winter weather	Building Department	Staff time	Ongoing	High
Prince George-2	Include an assessment and associated mapping of the municipality's vulnerability to location-specific hazards and make appropriate recommendations for the use of these hazard areas in a future Comprehensive Plan.	4	Flood, land subsidence, landslide/coastal erosion, land subsidence, earthquake	Planning Department	Staff time	Short-term	Medium
Prince George-3	Support mitigation of priority structures through promotion of acquisition/demolition, elevation, flood proofing and other types of projects where feasible using FEMA HMA programs where appropriate.	1, 2	Flood	Emergency Management	Staff time	Short-term	Medium
Prince George-4	Evaluate existing stormwater system to determine if it is adequate for existing (or future) flood hazard.	2	Flood	Public Works	Staff time	Ongoing	Medium
Prince George-5	Target FEMA's Repetitive Loss Properties for specialized outreach and mitigation activities.	1	Flood	Emergency Management	Staff time	Short-term	Medium

*Richmond-Crater Multi-Regional Hazard Mitigation Plan*

<b>Number in 2011 Plan</b>	<b>Strategy</b>	<b>Addresses Goals?</b>	<b>Hazards Addressed</b>	<b>Responsible Department</b>	<b>Resources</b>	<b>Timeframe</b>	<b>Priority</b>
Prince George-6	Consider participating in the StormReady program sponsored by the National Weather Service.	3, 4	Flooding, Wind, Winter Weather, Thunderstorm, Wildfire, Drought	Emergency Management	Staff time	Short-term	Low
Prince George-7	Identify means to coordinate, collect and store damage assessment data in GIS format for each natural hazard event, which causes death, injury and or property damage.	4	All hazards	Emergency Management	County funds	Short-term	Low
Prince George-8	Increase capacity of fire department by purchasing additional specialized wildfire units (4-wheel drive vehicle with water tank and foam supplies) and pre-position around the county.	1, 4	Wildfire	Emergency Management	FEMA/US Fire Administration funds	As Funding Becomes Available	Medium
Prince George-9	Coordinate drought contingency plans with County Extension Office.	3, 4	Drought	Emergency Management	Staff time	Ongoing	Low
Prince George-10	Distribute brochures and use other means to educate the public regarding preparedness and mitigation.	3	All hazards	Emergency Management	Staff time, free FEMA and other agency publications	Ongoing	Medium
Prince George-11	Staff Emergency Management Office, Building Inspections Office and/or Zoning Office at adequate levels.	4	All hazards	County Administrator, agency heads	County funds, Grant funds	As Funding Becomes Available	Low

Number in 2011 Plan	Strategy	Addresses Goals?	Hazards Addressed	Responsible Department	Resources	Timeframe	Priority
Prince George-12	Request list from VDEM/DCR and conduct annual review of repetitive loss and severe repetitive loss property list to ensure accuracy. Review will include verification of the geographic location of each repetitive loss property and determination if mitigated and by what means. Provide corrections if needed by filing form FEMA AW-501.	1	Flood	Emergency Management	Staff time	Ongoing	Low
Prince George-13	Review locality's compliance with the National Flood Insurance Program with an annual review of the Floodplain Ordinances and any newly permitted activities in the 100-year floodplain.	4	Flood	Emergency Management	Staff time	Ongoing	Medium

Figure . Prince George County: Land Coverage and FEMA Mapped Floodplains



Source: USGS - NCLD, 2011  
 FEMA - NFHL, 2010  
 VGIN, 2010  
 VDEM, 2010  
 RRPDC, 2010  
 USGS - NHD, 2009

**Land Coverage Categories**

- Developed Open Space
- Low Intensity Development
- Medium Intensity Development

- High Intensity Development
- Barren Land
- Deciduous/Mixed Forest
- Evergreen Forest

- Grassland/Pasture
- Argiculture

- Jurisdictional Boundary

- Stream
- Waterbody
- Swamp/Marsh
- FEMA Floodplain

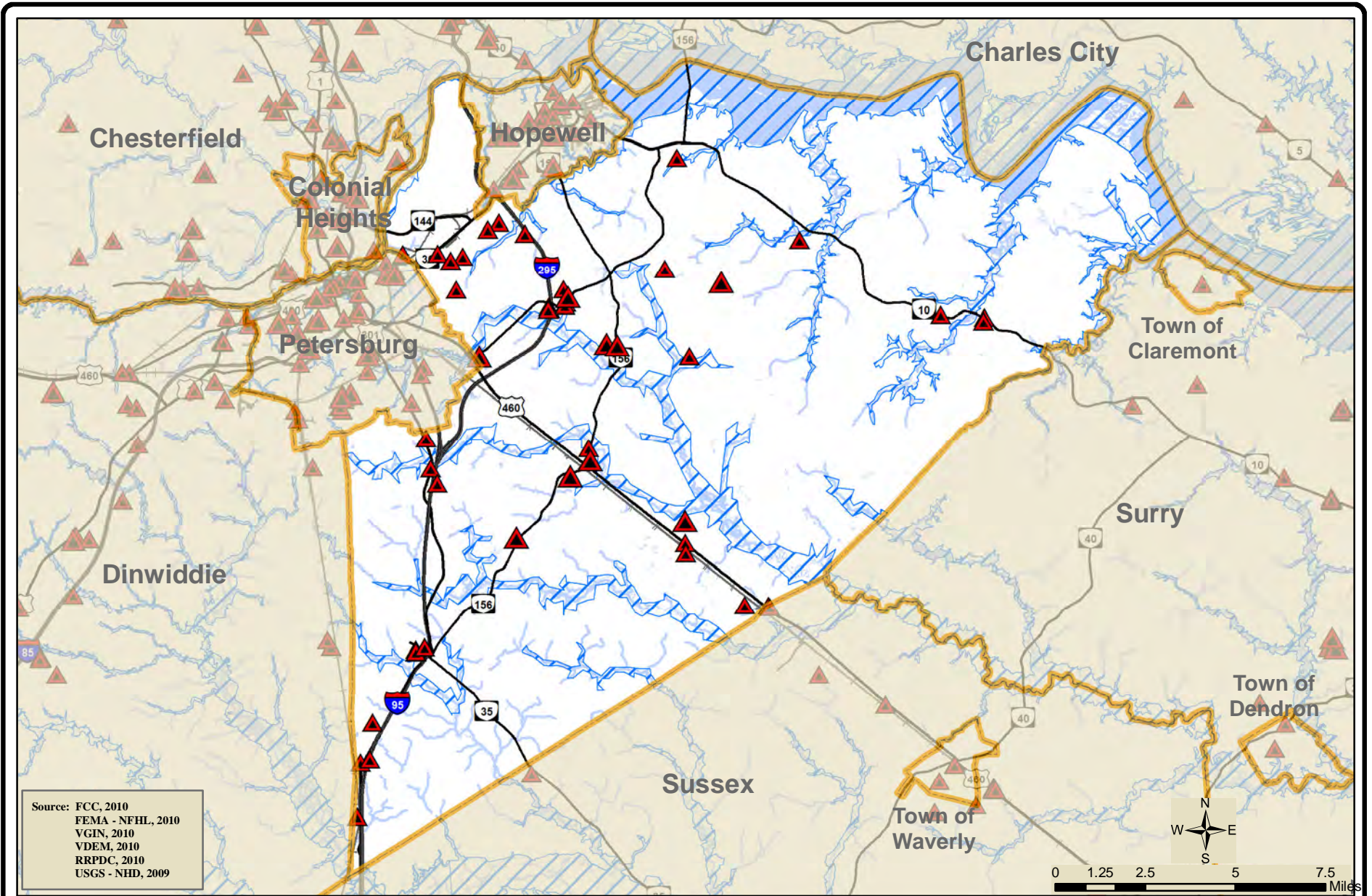
- Interstate
- US Highway
- Primary Highway

- Railroad



Prepared: June, 2011

Figure . Prince George County: Critical Facilities and FEMA Mapped Floodplains



Source: FCC, 2010  
 FEMA - NFHL, 2010  
 VGIN, 2010  
 VDEM, 2010  
 RRPDC, 2010  
 USGS - NHD, 2009

Critical Facility	Stream	FEMA Floodplain	Interstate	Railroad
Waterbody	Jurisdictional Boundary	US Highway		
Swamp/Marsh		Primary Highway		



Prepared: July, 2011

Figure . Prince George County: Annualized Flood Loss Damage and FEMA Mapped Floodplains

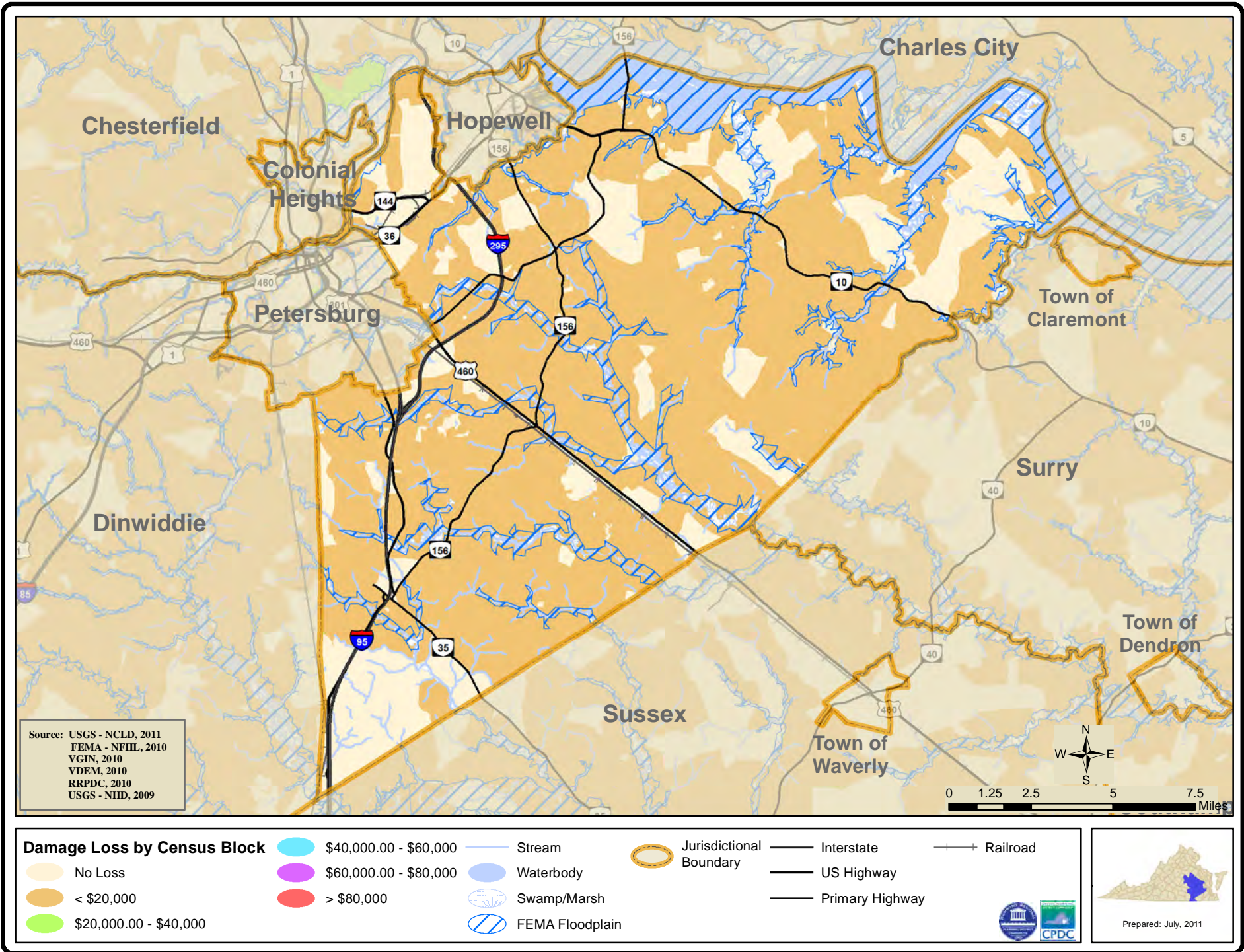
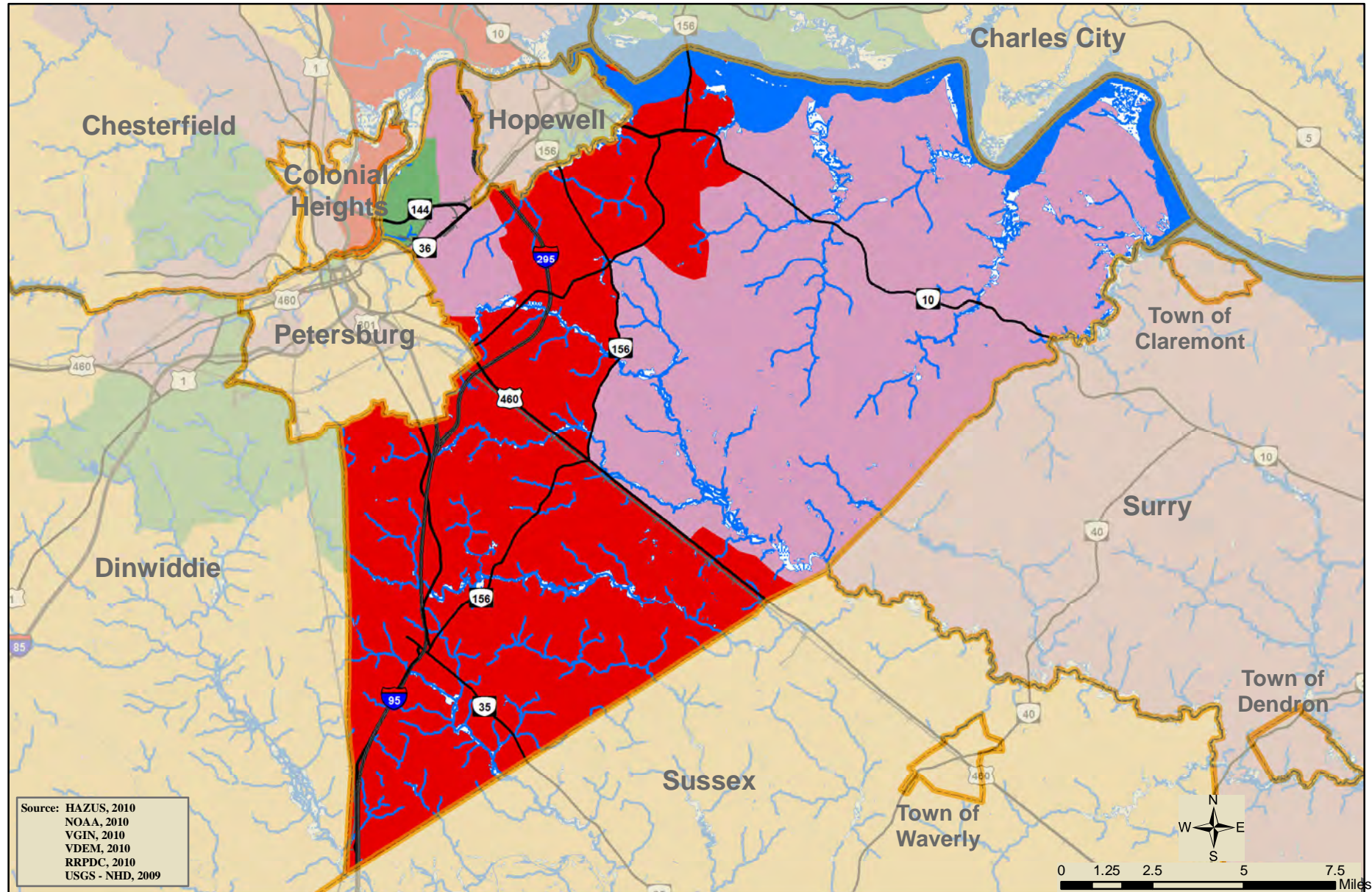


Figure . Prince George County: Annualized Loss Due to Wind Damage

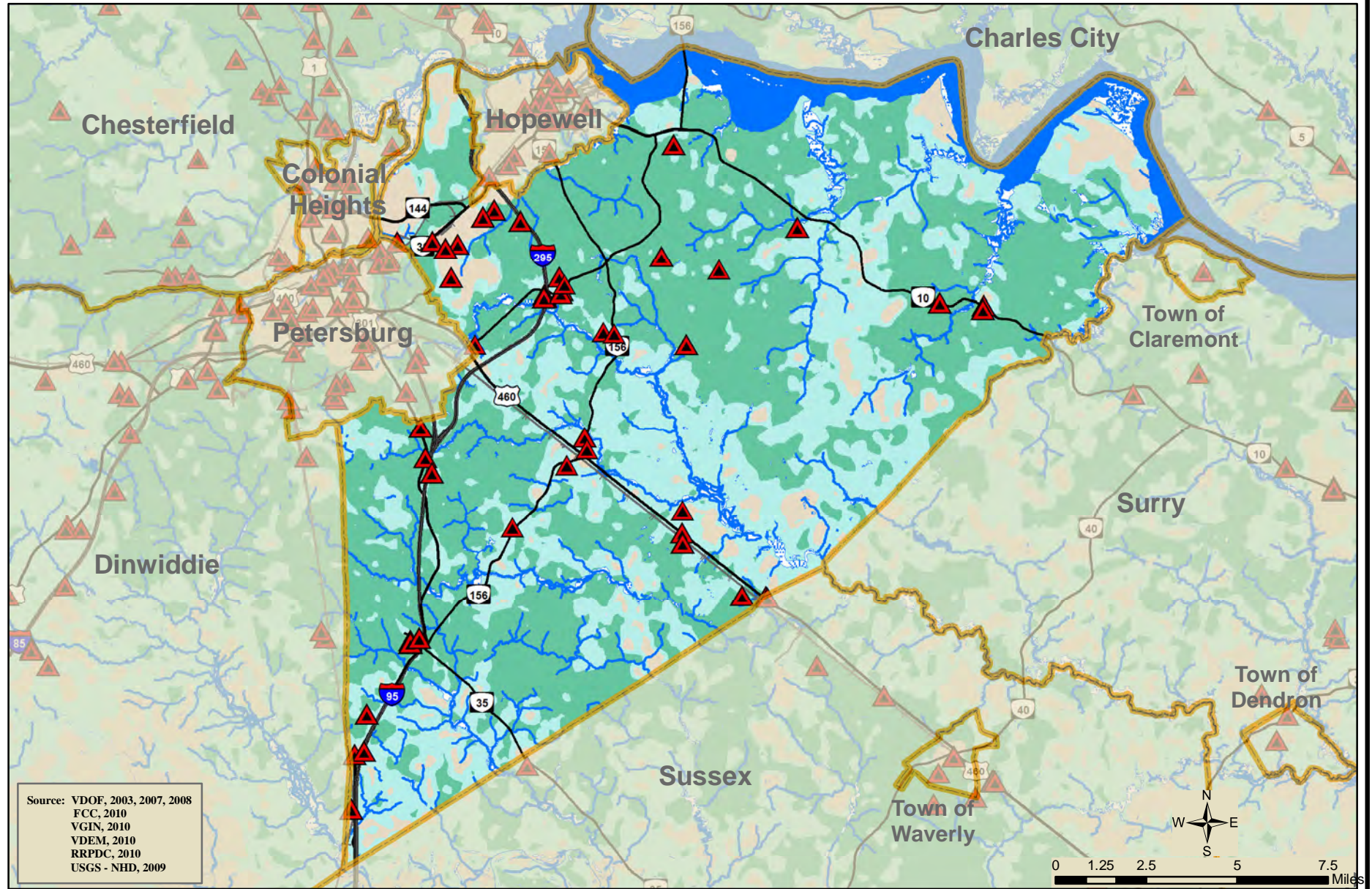


Source: HAZUS, 2010  
 NOAA, 2010  
 VGIN, 2010  
 VDEM, 2010  
 RRPDC, 2010  
 USGS - NHD, 2009

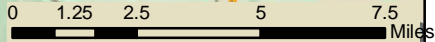
Less than \$10,000	Stream	Jurisdictional Boundary	Interstate	Railroad
\$10,000 to < \$20,000	Waterbody	US Highway		
\$20,000 to < \$40,000	Swamp/Marsh	Primary Highway		
Greater than \$40,000				



Figure . Prince George County: Critical Facilities and Wildfire Risk Areas



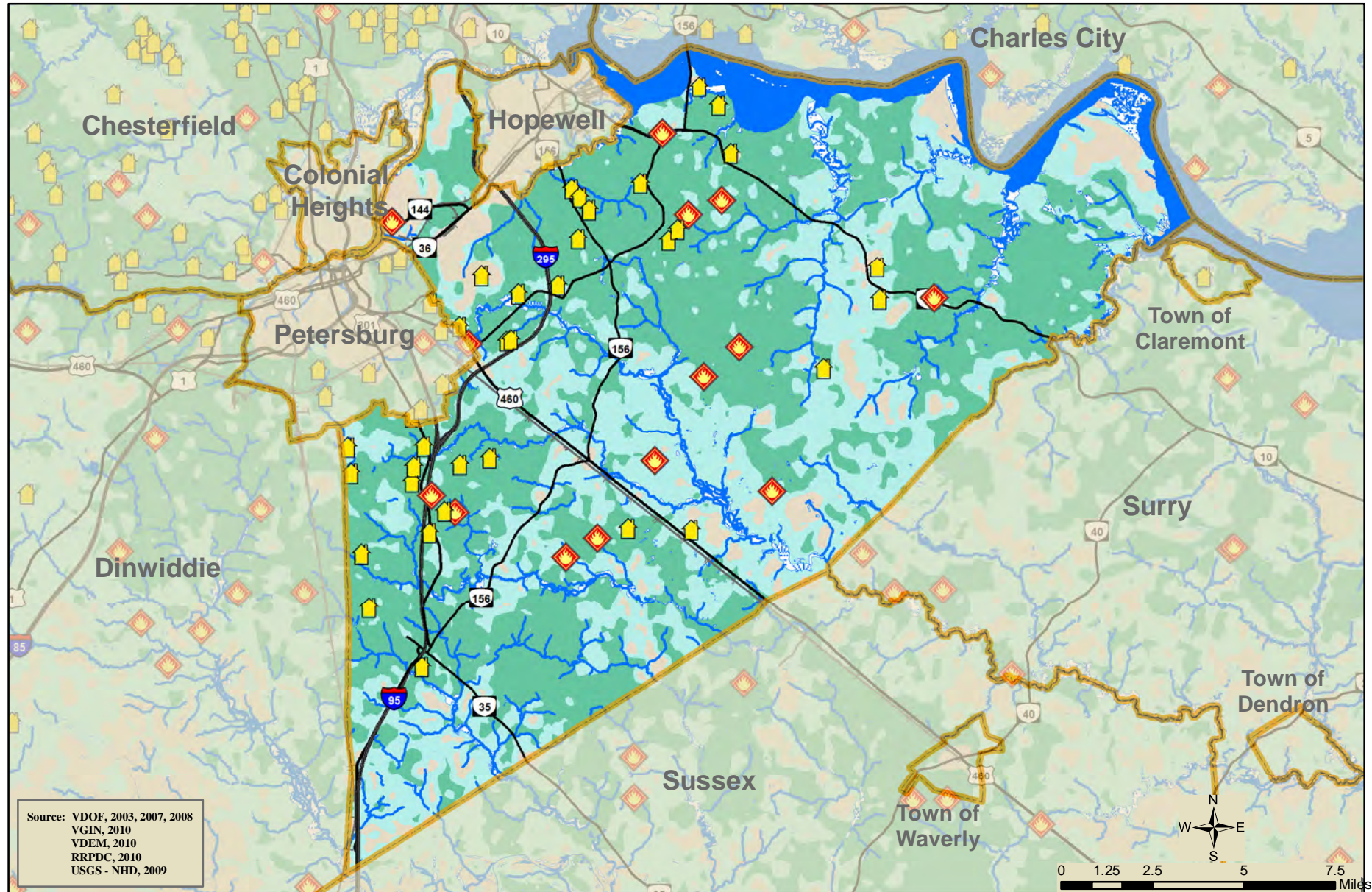
Source: VDOF, 2003, 2007, 2008  
 FCC, 2010  
 VGIN, 2010  
 VDEM, 2010  
 RRPDC, 2010  
 USGS - NHD, 2009



Critical Facility	Low Risk of Fire	Stream	Jurisdictional Boundary	Interstate	Railroad
Moderate Risk of Fire	Waterbody	Swamp/Marsh	US Highway	Primary Highway	
High Risk of Fire					

Prepared: July, 2011

Figure . Prince George County: Woodland Home Communities and Wildfire Risk Areas



Source: VDOF, 2003, 2007, 2008  
 VGIN, 2010  
 VDEM, 2010  
 RRPDC, 2010  
 USGS - NHD, 2009

Woodland Home Communities	Low Risk of Fire	Stream	Jurisdictional Boundary	Interstate	Railroad
Incidents of Wildfires Years 2007 - 2008	Moderate Risk of Fire	Waterbody	US Highway	Primary Highway	
	High Risk of Fire	Swamp/Marsh			

Prepared: June, 2011