1.0 Jurisdiction Executive Summary

Jurisdiction executive summaries highlight some of the background data gathered and analysis completed for the 2011 Richmond/Crater 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 the City of Petersburg.

(1) Flooding (Significant Threat)

- Repetitive Loss (RL) Structures = 8; Severe Repetitive Loss (SRL) Structures = 0; Number of Claims = 19; Total Building and Contents Payment on RL and SRL Properties = $277,703 (as of 3/22/2011)
- NFIP Flood Policies = 135; Insurance In-Force = $32,525,500; Number of Claims = 63; Total Building and Contents Payment on Claims = $435,715 (as of 2/28/2011)
- There is 1 critical facility located in the floodplain.
- High Prone Flood Areas =
    - The Appomattox River borders the city to the north, and potential annual flood damages along its banks fall between $0-$30,000.
    - Additional water bodies include Rohoic Creek, Lieutenant Run, and Blackwater Creek, which potentially cause damages throughout the city within the $0-$10,000 category.

Critical Facilities: One critical facility is 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 the City of Petersburg 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 Historical Events: Several severe flooding events have had a widespread impact in the City of Petersburg; these include:

- September 2003: Rain and water flooded Old Towne from the Appomattox River. Bank Street and other low-lying roads in Old Towne were flooded. Estimated damages at $18 million in the city.
- May 2003: Brickhouse Run Creek overflowed and flooded the Carriage House apartments in Old Towne, displacing 300 residents. Much of Old Street and adjacent businesses in addition to a nearby alley were flooded.

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 5 for past 60 years; 1-F4, 1-F3, 1-F2, 1-F1 and 1-F0
- Annualized losses from tornado wind events = $1,148,747[1]
- Annualized losses from hurricane wind events = $197,771
- Annualized losses from thunderstorm and other wind events (excluding tornadoes and hurricanes) = $710

Significant Historical Events: Wind events have had a widespread impact in Petersburg City; these include:

- July 2008: A tornado briefly touched down at the intersection of Farmer Street and Fairgrounds Road in the west section of Petersburg. There was extensive damage to a warehouse, including the roof being blown off the warehouse. Total damage was estimated at $500,000.
- August 1993: A tornado generating winds topping 206 mph produced massive damage to the Old Towne and surrounding areas. Gas, electric, telephone and sewage service was disrupted. In Old Towne, the tornado leveled several buildings, blew out windows on cars and tossed roofs and electrical lines. The South Side Station Flea Market and Mini-Mall, restaurants and businesses were in ruins. Roofs were blown off of several businesses on the Old Town fringe. Many people at the lumberyard were injured. 36 buildings were severely damaged in Old Towne. In Petersburg, 120 businesses and 50 homes were damaged. 140 people were evacuated from an apartment complex. Estimated damages greater than $11.1 million in Petersburg with $10 million in Old Towne.

[1] Particularly damaging tornado events in 1984 and 1993 significantly skewed annualized loss calculation.

- October 1954: Hurricane Hazel: In Petersburg, there were no deaths but several injuries. Damages included torn-off roofs, smashed windows, wrecked signs, twisted antennas, uprooted trees, broken limbs, damaged utility lines, and autos hit by falling trees and limbs. Trees falling on high-tension electric lines disrupted power service. Telephone service was disrupted. Schools and businesses closed. There was considerable damage to parks and Blandford Cemetery in Petersburg.

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 (for Prince George/Hopewell/Petersburg)
- Annualized all winter weather losses = $14,561

Significant Historical Events

- January 2000: Cold temperatures froze and burst pipes. Snow removal costs more than $380,000.
- December 1998: A severe ice storm hit the Tri-Cities area December 23 through December 27. 60,200 customers in Petersburg were without power;
- January 1996: More than 2 feet of snow fell in the city. School systems were closed for 5 days. Roofs fell in due to the weight of snow in Colonial Heights and Hopewell. Snow removal was an issue in Petersburg, with removal costs about $42,000.
- January 1977: Several weeks of ice, snow (11.1 inches) and record low temperatures produced one of the coldest winter seasons. The James River and Chesterfield County rivers were frozen. Residences and businesses dealt with frozen and burst pipes. Ice and freezing temperatures caused nuclear plant shutdowns. Ice in the James River stopped ferry service. In Petersburg City these conditions produced icy roads and sidewalks, closed railroads and closed schools. Additionally this event caused numerous accidents with 21 in the city. Several pedestrian injuries and several drowning deaths.

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 = $910;
- 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 Petersburg City.

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.

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 amounts. 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 = $0
- Total acres burned in Petersburg City (1995-2008) = 26.4
- Total dollar damage in Petersburg City (1995-2008) = $0
- Annualized number of events = 0.31
- 4 woodland communities in high fire rank
- 271 homes in woodland communities in high fire rank

Critical Facilities: Two 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 the City of Petersburg 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 Petersburg City, wildfires have been experienced in 3 years.

- 2008 – 2
- 2002 – 1
- 2001 – 1

Additional information on wildfire can be found in Section 5.13.

(7) Earthquake (Limited Threat)

- Annualized losses from earthquake = $100,732
- 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 wildfire can be found in Section 5.13, starting on page 5-117.

(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/shoreline 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 (Limited 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[2]

- Population (2010): 32,420
- Land Area (2010): 22.93 sq. miles
- Density (2010): 1,413.7 persons per sq. mile
- Median household income (2009): $35,874
- Percent below poverty level (2009): 17.8%
- Race characteristics (2010):
    - White: 16.1%
    - Black: 79.1%
    - American Indian and Alaska Native: 0.3%
    - Asian: 0.8%
    - Native Hawaiian and Other Pacific Islander: 0.1%
    - Persons reporting two or more races: 1.8%

      (of the abovementioned races, 3.8% are of Hispanic or Latin origin)

[2] Source U.S. Census Bureau: State and County QuickFacts.

1.3 Petersburg City Mitigation Actions

Number in 2011 Plan	Strategy	Addresses Goals?	Hazards Addressed	Responsible Department	Resources	Timeframe	Priority
Petersburg-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
Petersburg-2	Partner with Parent Teacher Associations and local schools to implement existing curriculum related to natural hazards (e.g., Masters of Disaster, Risk Watch).	3	All hazards	Emergency Management	Staff time	As funding becomes available	Low
Petersburg-3	Complete application for StormReady Program.	3, 4	Flooding, Wind, Winter Weather, Thunderstorm, Wildfire, Drought	Emergency Management	Staff time	Short-term	Low
Petersburg-4	Consider participating in FEMA's Community Rating System (CRS).	1, 4	Flood	Emergency Management	City budget	Short-term	Medium
Petersburg-5	Inspect and clear debris (or encourage VDOT to) from stormwater drainage system.	2	Flood	Public Works	City budget	Ongoing	High
Petersburg-6	Finish implementation of Reverse 911 system.	3, 4	All hazards	Emergency Management	City budget	Short-term	Medium
Petersburg-7	Establish flood level markers along bridges and other structures to indicate the rise of water levels along creeks and rivers in potential flood-prone areas.	1, 3	Flood	Public Works	City budget	As funding becomes available	Medium

Number in 2011 Plan	Strategy	Addresses Goals?	Hazards Addressed	Responsible Department	Resources	Timeframe	Priority
Petersburg-8	Investigate all public utility lines to evaluate their resistance to flood, wind, and winter storm hazards.	2	Flood, Wind, Winter Weather	Public Works	Staff time	Ongoing	Medium
Petersburg-9	Work with VDOT, and private utilities and/or private homeowners to trim or remove trees that could down power lines.	2	Wind, Winter Weather	Public Works	Staff time	Ongoing	Low
Petersburg-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
Petersburg-11	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
Petersburg-12	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

Number in 2011 Plan	Strategy	Addresses Goals?	Hazards Addressed	Responsible Department	Resources	Timeframe	Priority
Petersburg-13	Support mitigation of priority flood-prone structures through promotion of acquisition/demolition, elevation and flood proofing projects where feasible using FEMA HMA programs where appropriate. Targets include properties on McKeever Street.	1, 2	Flood	Emergency Management	Staff time	Short-term	Medium
Petersburg-14	Conduct stormwater utility fee feasibility study.	4	Flood	Public Works	City budget	As funding becomes available	Low
Petersburg-15	Install quick connects for generators at critical facilities.	2, 4	All hazards	Emergency Management	Grant funds	As funding becomes available	Medium
Petersburg-16	Continue to support development of Tri-City incoming evacuee management plan.	4	All hazards	Emergency Management	Staff time	Short-term	Low

Figure . City of Petersburg: Land Coverage and FEMA Mapped Floodplains

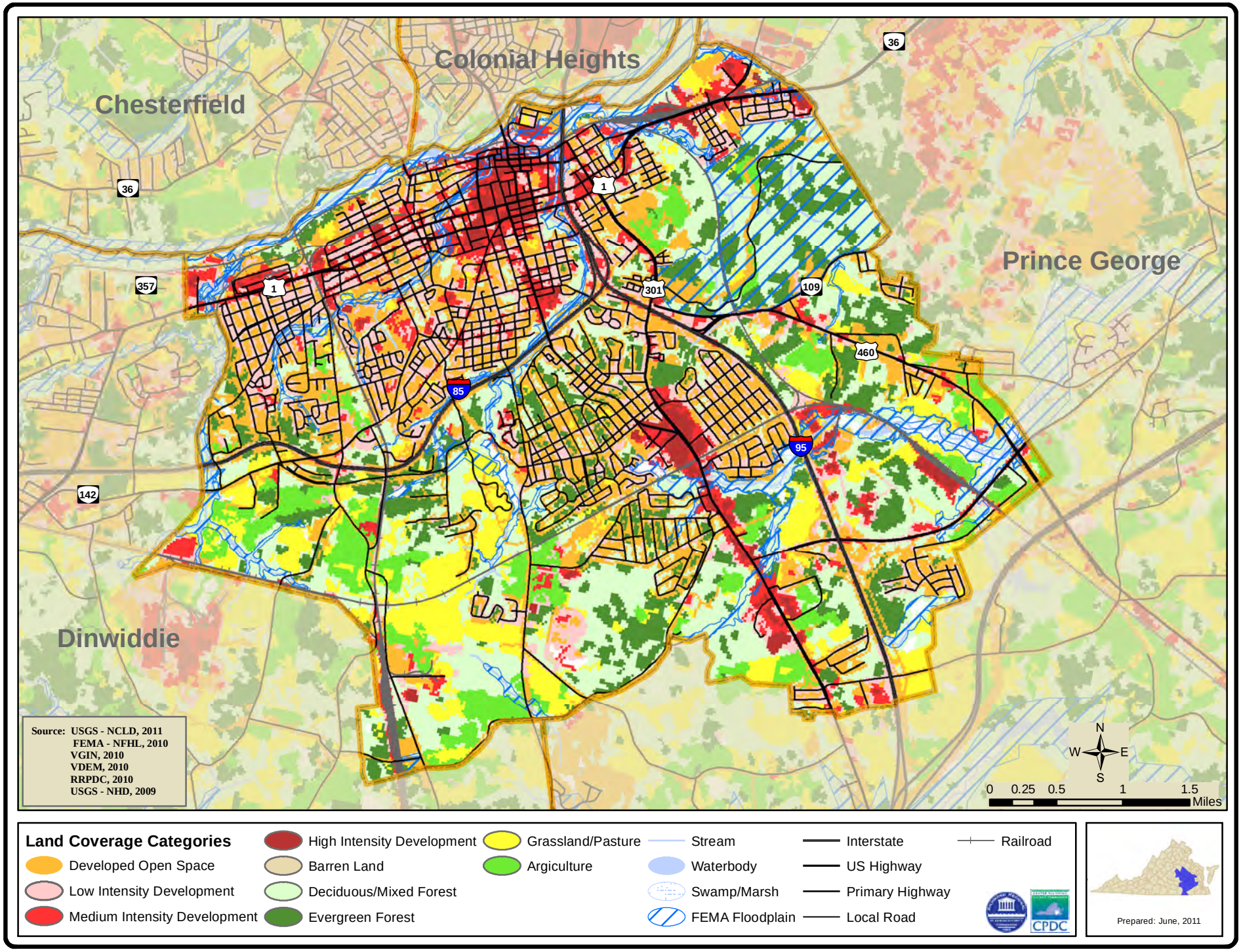

Figure . City of Petersburg: Critical Facilities and FEMA Mapped Floodplains

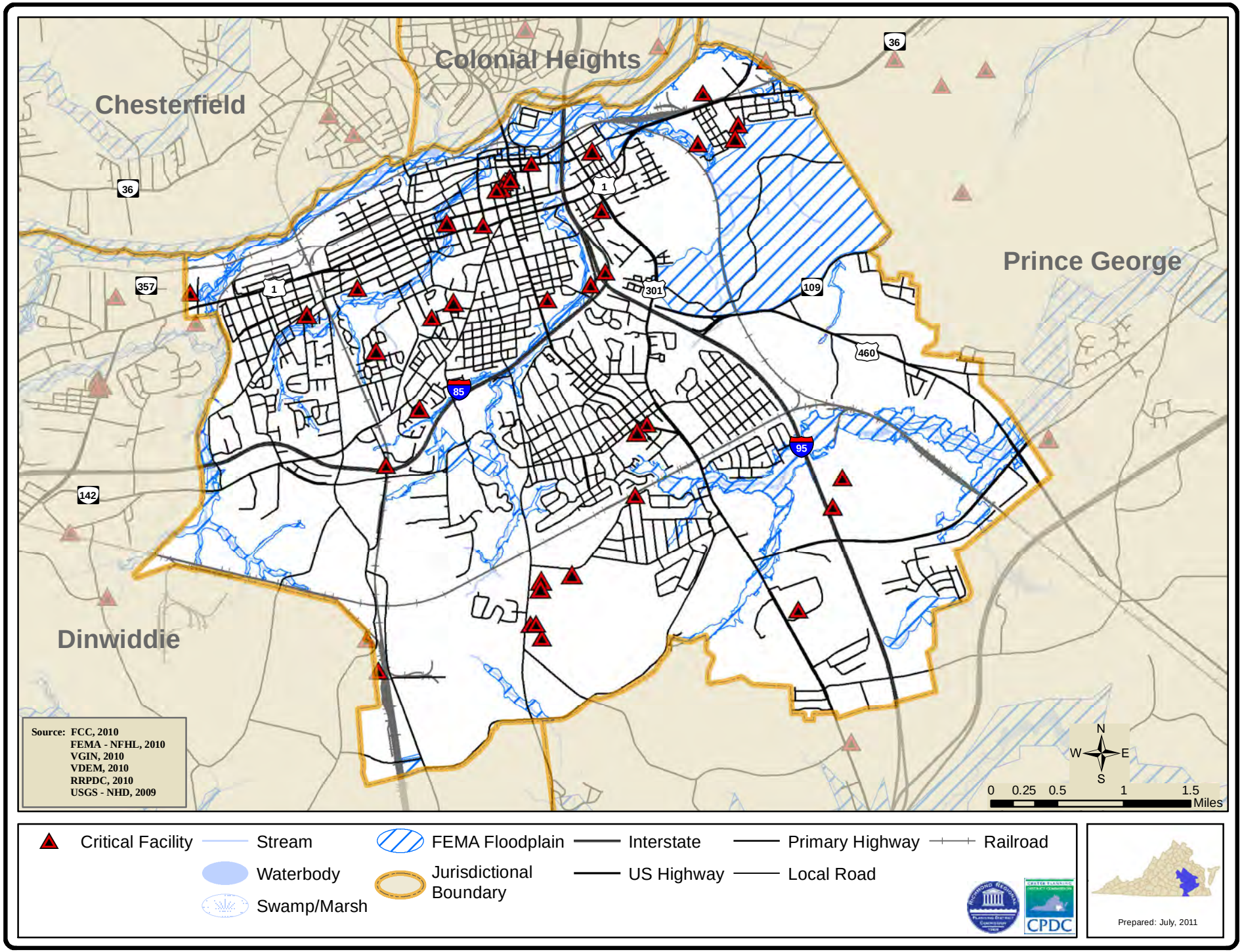

Figure . City of Petersburg: Annualized Flood Loss Damage and FEMA Mapped Floodplains

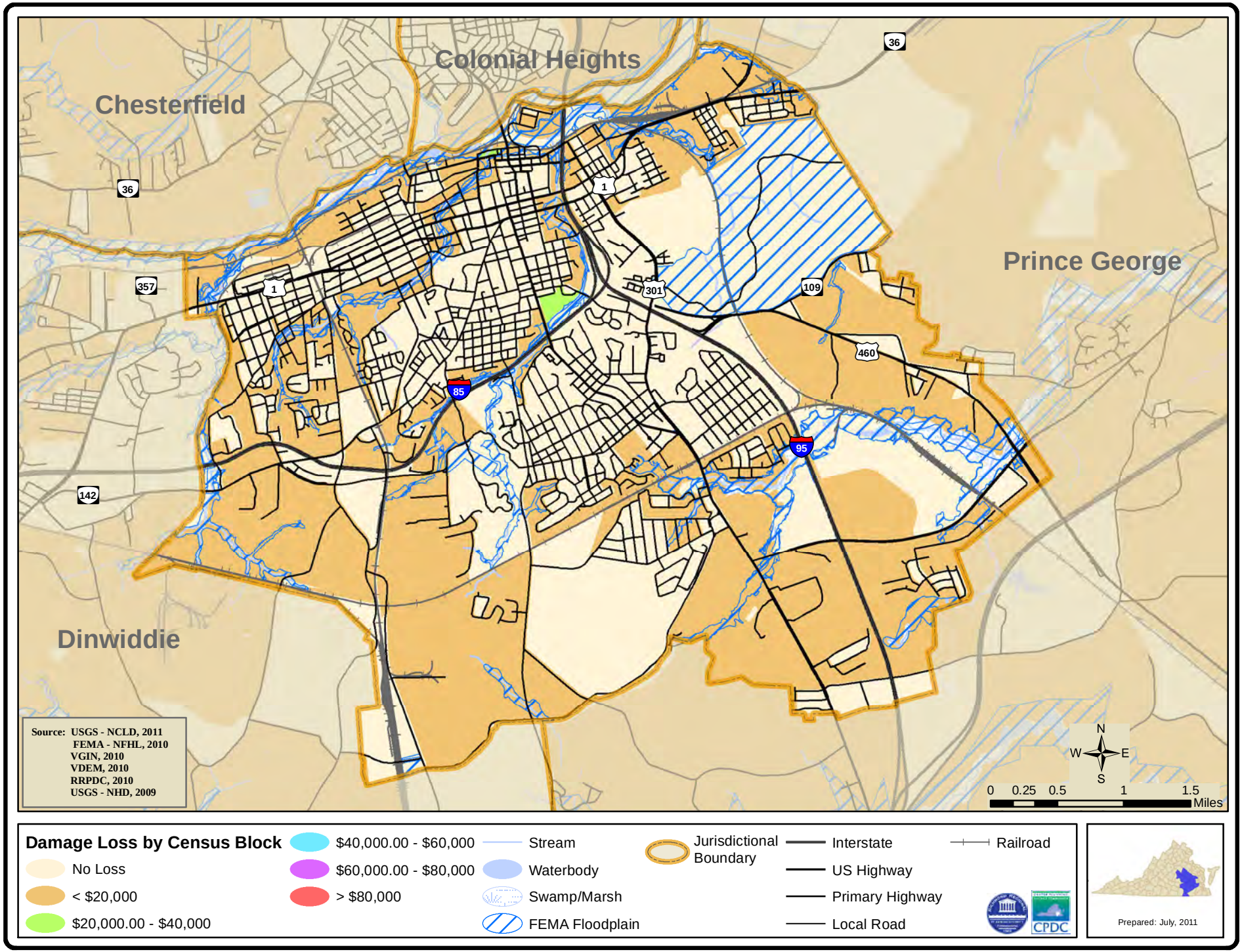

Figure . City of Petersburg: Annualized Loss Due to Wind Damage

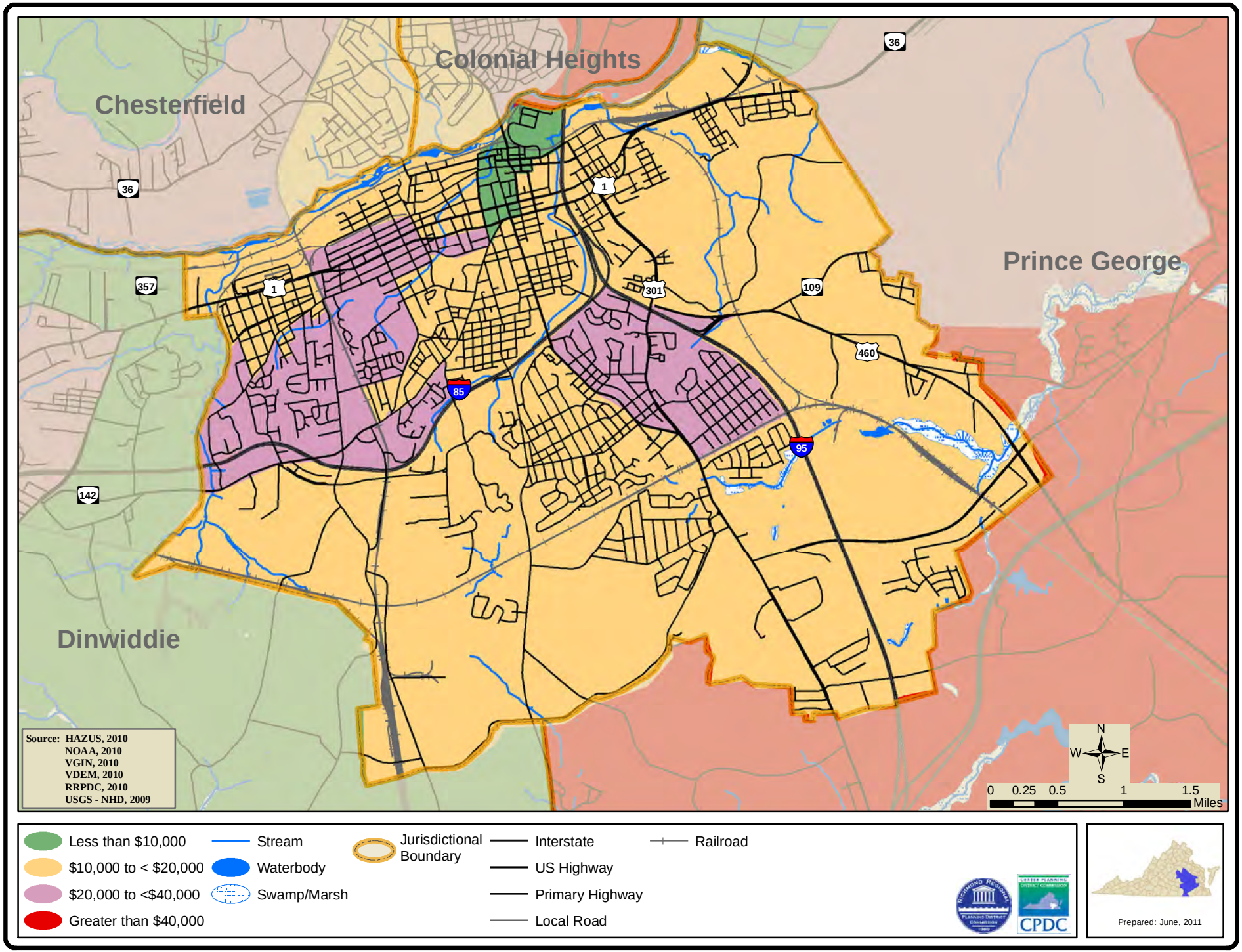

Figure . City of Petersburg: Critical Facilities and Wildfire Risk Areas

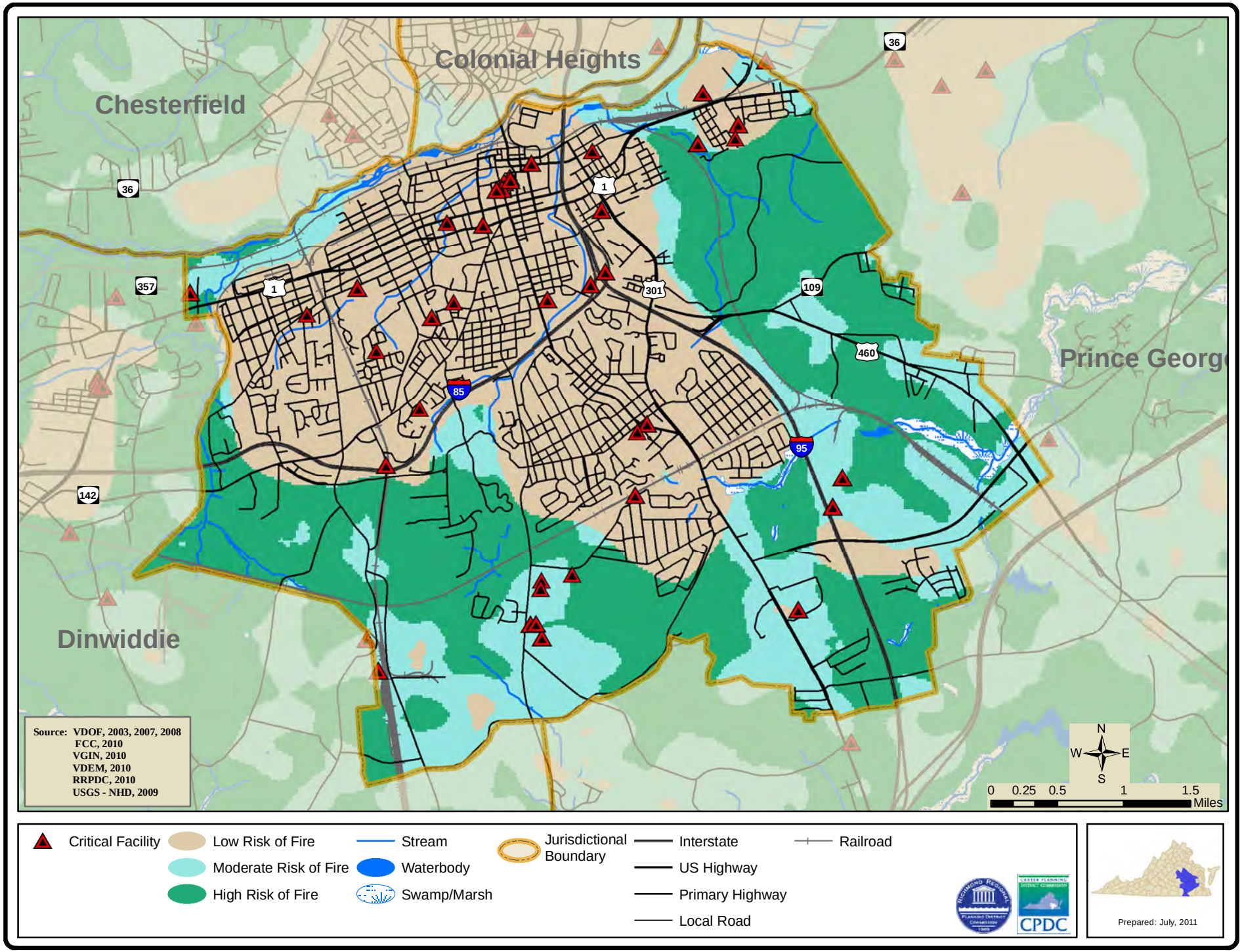

Figure . City of Petersburg: Woodland Home Communities and Wildfire Risk Areas