

YORK COUNTY 2006 HAZARD MITIGATION PLAN

FLOODPLAIN SECTION

5.5 York County Profile

The following sections present a detailed assessment of critical hazards that affect York County. Understanding these hazards will assist the Peninsula region in its process of identifying specific risks and developing a mitigation strategy to address those risks.

5.5.1 Flooding – York County

The geographic location of York County makes it extremely susceptible to coastal flooding. Storms associated with coastal flooding include tropical cyclones and nor'easters. These types of events typically drop large amounts of rain and generate high winds that result in storm surge. Storm surge is essentially the water that is pushed toward the shore by the persistent force of the winds of an approaching storm. It should be noted that astronomical tides occur independent of climatic conditions. Depending on the tide level at the time of land-falling storms, surge may be elevated. Flash flooding and urban flooding are also a concern within the County limits.

As part of the NFIP, FEMA created a Flood Insurance Study (FIS) and Flood Insurance Rate Maps (FIRMs) for York County. In addition, the NCDC tracks the occurrence of flooding events for communities across the nation. York County has developed surge elevations for its parcel data set. All of these data sources were utilized in developing the hazard identification and vulnerability assessment.

FEMA published a FIS for York County, dated December 16, 1988. The FIRMs, which accompany this FIS delineate the 100- and 500-year flood hazard boundaries for flooding sources identified in areas of growing development or areas predicted to have future development, at the time of the report. A detailed wave height analysis was developed in order to delineate the 100- and 500-year flood hazard boundaries for the County. This analysis resulted in a 100-year stillwater elevation of 8.5 feet for the County and a maximum 100-year wave crest of 11 to 13 feet.

York County's FEMA FIRM maps were updated in 2008 and adopted in **June 16, 2009**. The new maps added several more properties into the Flood Zone while also taking others out. Property owners were notified by mail of these map changes.

The significant flood events outlined in the FIS are given below in Table 5.5.1a.

Table 5.5.1a- Significant Flood Events – York County

Date	Storm	Tide Elevations
August 1933	Hurricane	Max tide heights averaged 8 feet
April 1956	Nor'easter	Not given

October 1957	Hurricane – Not Named	Not given
September 1960	Hurricane Donna	Not given
March 1962	Nor'easter	Max tide heights averaged 6.8 feet

Source: FEMA 1988

The NCDC operated by NOAA keeps a record of significant weather related events and damage estimates for the entire country. Listed below (Table 5.5.1b) are the significant events that have affected York County, according to that database.

Table 5.5.1b- NCDC Listed Significant Flood Events –York County

Date	Event	Precipitation	Comments
1989 (not in NCDC database)	Thunderstorm with urban flooding	Not given	<ul style="list-style-type: none"> Urban flooding costs estimated at \$500,000 in York County.
September 22, 1994	Coastal Flooding	Not given	<ul style="list-style-type: none"> Caused minor local flooding along Water Street in Yorktown
April 23, 1997	Coastal Flooding	Not given	<ul style="list-style-type: none"> Minor coastal flooding was reported in portions of Newport News and York County
January 27, 1998	Coastal Flooding	Not given	<ul style="list-style-type: none"> Residential homes sustained severe damages Gale force winds caused damage to power lines which caused power outages locally
February 4, 1998	Coastal Flooding Nor'easter	Not given	<ul style="list-style-type: none"> Caused severe flooding Buildings were evacuated Widely spread power outage \$314,000 in costs incurred by York County government
September 15 to 17, 1999	Hurricane Floyd	12 to 18 inches	<ul style="list-style-type: none"> Numerous roads washed out due to flooding Flooding considered 500-year flood Enormous crop damage

As with the entire Peninsula planning area, there are obvious data gaps when combining the FIS and NCDC databases. Recent, noteworthy urban-type flood events in the County have included:

- Hurricane Floyd (1999) affected the neighborhoods of Tabb Lakes, Coventry, Running Man and Foxwood. Insufficiently sized culverts, culvert blockages, and intense rainfall contributed to the drainage problems.
- July 24, 2000, intense rainfall affected the Tabb Lakes and Coventry subdivisions.
- Hurricane Isabel (2003) resulted in flooding of some streets and intersections in many of the same subdivisions listed above, but no significant flooding of structures was noted.
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The County has been working with residents recently to identify and abate these drainage problems. As a result of Hurricane Floyd, Newport News Waterworks made changes to

their reservoir management practices to be more proactive in adjusting reservoir elevations ahead of storm systems that are predicted to produce excessive rainfall amounts. Residents indicate that Little Brick Kiln Creek, which is on the Newport News/York County boundary, is a major outfall for several York County tributaries with very low slopes. Maintenance of the creek by all stakeholders (including the U.S. Army which also has land holdings in the area) is critical to maintaining sufficient drainage using existing infrastructure.

5.5.2 Hurricanes – York County

The FIS for York County identified four historic hurricanes that affected the County (see Table 5.5.1a above); however, specific damage estimates were not given. The NCDC dataset listed five hurricanes for York County for the period between 1950 to June 2004. These storms are listed in Table 5.4.2. County records and other National Weather Service data provide dates of earlier storms and identify a number of hurricanes to include the damaging event in August 1933. These storms are included in Table 5.5.2.

Hurricane Fran (1996) created power losses to 140,000 people across the Peninsula. Additionally, four people died within York County as a result of Fran.

Hurricane Floyd (1999) moved through the area dropping 18 inches of rain within 24 hours. Trees and power lines were knocked down and roads were flooded; over 5,500 homes were left without power.

Hurricane Isabel made landfall on September 18, 2003, as a Category 2 hurricane near Drum Inlet, North Carolina. Hurricane Isabel is considered to be one of the most significant tropical cyclones to hit this area since hurricane Hazel (1954) and the Chesapeake-Potomac Hurricane of 1933. Isabel produced storm surges six to eight feet above normal high tide levels and is directly responsible for 10 deaths in Virginia and indirectly responsible for 22 deaths. Isabel caused widespread wind and storm surge damage in eastern North Carolina and southeastern Virginia, currently estimated at \$925 million in Virginia. All of the above data was taken from the NOAA Tropical Cyclone Report for Hurricane Isabel (Beven and Cobb, 2004).

In York County, Hurricane Isabel reportedly destroyed 55 homes. Debris removal alone cost the county over \$10.6 million. There were 900 flood insurance claims through the NFIP, which represent only a small portion of the total number of homes that were damaged by floodwaters. The Small Business Administration provided loans for home repair totaling \$9 million, and loans for businesses totaling \$909,000. FEMA housing assistance other needs assistance in the County totaled \$2.6 million

Table 5.5.2- Historic Hurricanes – York County

Date	Storm Name	Category	Descriptions
August 23, 1933	Chesapeake-Potomac Hurricane	Category 1/Tropical Storm	<ul style="list-style-type: none"> • Extensive damage to areas along the York River and Chesapeake Bay. Tide levels of 6-9 feet above MLLW over a large portion of the Bay. Peak wind gusts at Cape Henry were 88 mph.
August 19, 1985	Danny	Extratropical System	<ul style="list-style-type: none"> • Tracked over York County
September 6, 1996	Fran	Tropical Storm	<ul style="list-style-type: none"> • 4 deaths in York County associated with the storm • Water Street and other areas flooded • High winds, and 140,000 on the Peninsula without power.
July 12, 1996	Bertha	Tropical Storm	<ul style="list-style-type: none"> • 170,000 people on the Peninsula without power. Tracked over York County.
August 29, 1998	Bonnie	Tropical Storm	<ul style="list-style-type: none"> • 51,000 people on Peninsula without power.
September 1, 1999	Dennis	Hurricane/Tropical Storm	<ul style="list-style-type: none"> • Prolonged period of tropical cyclone • Highest sustained winds at Langley 52 mph • Tide 3 feet above normal • Coastal flooding • 2 to 5 inches of rain • \$27,000 damage
September 15, 1999	Floyd	Category 1/Tropical Storm	<ul style="list-style-type: none"> • Spawned 2 tornados • Hundreds of downed tress • Tide 3.9 feet above normal • Numerous roads washed out • \$99.4 million in property damage over the entire affected area • 18" of rainfall in York County
September 18, 2003	Isabel	Category 1/Tropical Storm	<ul style="list-style-type: none"> • Hundreds of downed tress • Loss of power • Damaged residents and businesses • Greatest storm surge since Hazel
August 18, 2004	Charley	Hurricane	<ul style="list-style-type: none"> • Uprooted of trees and downed numerous power lines • Over 2 million Virginians without power • Heavy rain and wind gusts

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August 30, 2004	Gaston	Tropical Depression	<ul style="list-style-type: none"> • Hard rains that produced flooding • Roads under water • Power outage (99,600 statewide) • 2 F0 Tornadoes confirmed in York County.
September 8, 2004	Frances	Hurricane	<ul style="list-style-type: none"> • Generated 9 tornadoes in Central Virginia • High winds • Large amounts of rainfall/flooding
September 17, 2004	Ivan	Hurricane	<ul style="list-style-type: none"> • Spawned unconfirmed tornadoes • Power outage (66,000) • Heavy rain/flooding
September 28, 2004	Jeanne	Hurricane	<ul style="list-style-type: none"> • Flash flooding/heavy rainfall • Power outage