

## Executive Summary

In September 2018, Hurricane Florence brought high winds, dangerous storm surge and record rainfall that caused historic flooding throughout North Carolina. At its peak, Hurricane Florence was a Category 4 storm as wide as the entire state with winds reaching 140 mph. The storm hovered over North Carolina for six days, inflicting even higher levels of rainfall, storm surge, and flooding than Hurricane Matthew only two years prior.

This deadly storm has left a lasting impact on families and neighborhoods across our state, resulting in 40 confirmed fatalities. Property damage and power outages were widespread, cutting power to over a million people and forcing tens of thousands of families to take refuge in emergency shelters. While the impacts of Hurricane Florence were felt across the state, those who live in the southeast bore the brunt of the storm. Twenty-eight counties have been designated by FEMA for federal disaster assistance.<sup>1</sup> An estimated 2.6 million people, or one in four North Carolinians, live in one of the designated counties.<sup>2</sup>

Preliminary impact estimates approach \$13 billion in damages across the state. This is over two times the \$4.8 billion physical and economic cost of Hurricane Matthew in 2016. While the storm affected nearly every aspect of life in Eastern North Carolina, three categories drive approximately 80% of the direct and indirect damage estimates: (1) Business, (2) Housing and (3) Agriculture:

- **Business:** The impact on businesses and non-profits in North Carolina has also been significant, currently estimated at \$3.9 billion. Over 3,800 private-sector business and nonprofit properties incurred water damage; more than 49,000 incurred wind damages. The ripple effect of this impact is immense. Hurricane related interruption results in lost revenue for the businesses and lost wages and ancillary benefits for employees, both of which can lead to substantial knock-on effects to local economies and businesses, exacerbating the impact.
- **Housing:** Current estimates show that approximately one million households or 26% of North Carolina households have been affected by the storm resulting in a preliminary impact estimate of \$3.4 billion. While single and multi-family dwellings drive a significant portion of those costs, Affordable, Temporary, and Supporting Housing damages are also substantial and could continue to grow as the recovery continues.
- **Agriculture:** Florence has also had devastating effects on North Carolina's agriculture industry, causing large scale loss of crops and livestock with impact estimated at upwards of \$2.4 billion. Among other elements, this figure includes \$1.1 billion in crop, livestock and commodity losses and \$117.7 in farm buildings, equipment, and infrastructure losses.

In terms of sources of funding, initial estimates indicate at least \$2.3 billion of potential federal aid (majority in the CDBG-DR and FEMA funds). While private insurance coverage is difficult to estimate at this early stage, high-level estimates suggest \$3.3 billion in private coverage. That leaves a significant gap of \$7.1 billion which will need to be met by a combination of additional federal, private, and state aid.

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<sup>1</sup> The 28 counties FEMA designated by 10/8/2018 for individual assistance are: Beaufort, Bladen, Brunswick, Carteret, Columbus, Craven, Cumberland, Duplin, Greene, Harnett, Hoke, Hyde, Johnston, Jones, Lee, Lenoir, Moore, New Hanover, Onslow, Pamlico, Pender, Pitt, Richmond, Robeson, Sampson, Scotland, Wayne, and Wilson.  
Another 13 counties are currently under review by FEMA as of 10/8/18

<sup>2</sup> NC OSBM, Certified Population Estimates, Vintage 2017.

## Summary of Preliminary Damage and Needs Estimates

Preliminary Total Damage and Needs Assessment Costs (Millions)					
Category	Direct <sup>1</sup>	Indirect/ Induced <sup>2</sup>	Subtotal	Resiliency efforts	Total impact
Business	\$2,610	\$1,274	<b>\$3,884</b>	\$20	<b>\$3,904</b>
Housing	\$3,181	\$0	<b>\$3,181</b>	\$291	<b>\$3,472</b>
Agriculture	\$1,332	\$1,023	<b>\$2,355</b>	\$75	<b>\$2,430</b>
Utilities, Water and Sewer	\$791	\$0	<b>\$791</b>	\$25	<b>\$816</b>
Natural resources	\$409	\$0	<b>\$409</b>	\$145	<b>\$554</b>
Government Property and Revenue	\$332	\$69	<b>\$401</b>	\$5	<b>\$406</b>
Transportation	\$378	\$7	<b>\$385</b>	\$50	<b>\$435</b>
Education	\$269	\$28	<b>\$297</b>	\$0	<b>\$297</b>
Health and Human services	\$192	\$40	<b>\$233</b>	\$0	<b>\$233</b>
Recovery operations	\$194	\$0	<b>\$194</b>	\$0	<b>\$194</b>
<b>Total recovery costs</b>	<b>\$9,690</b>	<b>\$2,441</b>	<b>\$12,130</b>	<b>\$611</b>	<b>\$12,741</b>

1. *Direct effects* are the results of changes in spending and investment by businesses and organizations in a given region, including money spent to pay for salaries, supplies, raw materials, and operating expenses.
2. *Indirect effects* are the results of business-to-business transactions within a given region indirectly caused by the direct effects, such as changes in spending on business supplies or product components. *Induced effects* are the results of changes in personal income caused by direct and indirect effects. Businesses experiencing changes in revenue from the direct and indirect effects will subsequently alter payroll expenditures (e.g., by hiring more employees, increasing payroll hours, raising salaries, etc.). Households will, in turn, change amounts spent at local businesses. The induced effect is a measure of the resulting change in purchases by households from businesses within a given region.

**Summary of Preliminary Damage Estimates (cont.)**

<b>Preliminary Funding Assessment (Billions)</b>					
	<b>Current expected funding level</b>				
<b>Total impact</b>	<b>Private</b>	<b>Federal</b>	<b>Unmet impact</b>	<b>Additional Federal Request</b>	<b>Remaining unmet impact</b>
\$12.7	\$3.3	\$2.3	\$7.1	\$3.4	\$3.7

<b>Governor Cooper’s Hurricane Florence State Recovery and Resiliency Plan</b>	
<b>Total recommendation</b>	<b>Initial down payment</b>
\$1.5 billion	\$750 million

## Historical Comparison of Florence to other Storms

Measure	Florence	Matthew	Floyd
<b>Total Damage</b>	\$12.8 billion	\$4.8 billion	\$7.0-\$9.4 billion (inflation adjusted)
<b>FEMA Individual Assistance applications</b>	158,800 (anticipated)	82,000	87,000
<b>Inches of Rain</b>	25-35	18-20	17-20
<b>Storm Surge (ft.)</b>	10	6	9
<b>Fatalities</b>	40	28	51
<b>Strongest wind (mph)</b>	90	80	100
<b>Duration (days)</b>	6	2	4