Hurricane Florence Recovery Recommendations

Governor Roy Cooper Building Communities Stronger and Smarter Based on Preliminary Damage and Needs Assessment October 10, 2018





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- State funding recommendations

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COVER PAGE PHOTO CREDIT: (left) North Carolina National Guard (right) Andrew Carter, N&O

On September 14th 2018, Florence made landfall and proved to be one of the most devastating hurricanes in North Carolina's history



– Major news outlets



Post Hurricane Florence, North Carolina faces significant challenges



Counties declared zones¹

Total impacted 2.6M population

>900k

>1,000

People without power at peak

Out-of-state first responders

States have provided NC 36 assistance

1 13 counties currently under review by FEMA as of 10/8/18

Photo credit: Andrew Carter, N&O - a photo of Robert Simmons, Jr., and his kitten, Survivor, in a flooded New Bern neighborhood

While much of North Carolina was impacted, the southeast bore the brunt of the storm

LIMIT

700k People enrolled in Medicaid

CAMPING - EXIT 17



19% of the residents are disabled

20%



E

139 Public K-12 schools still closed¹

1 As of Oct 8, 2018

Photo credit: Gerry Broom, AP - the Lumber River overflows onto a stretch of Interstate 95 in Lumberton, N.C., on Sept. 18

of the residents below the

poverty line

Florence destruction exceeds that of Matthew in 2016



Photo credit: NCDOT

The extensive damage will require investment to build a stronger and smarter North Carolina

Needs assessment (\$M)

Categories	Direct ¹	Indirect ² /Induced ³	Subtotal	Resiliency efforts	Total Damage & Needs
Business	\$2,610	\$1,274	\$3,884	\$20	\$3,904
Housing	\$3,181	\$0	\$3,181	\$291	\$3,472
Agriculture	\$1,332	\$1,023	\$2,355	\$75	\$2,430
Utilities, Water and Sewer	\$791	\$0	\$791	\$25	\$816
Natural Resources	\$409	\$0	\$409	\$145	\$554
Govt. Property and Revenue	\$332	\$69	\$401	\$5	\$406
Transportation	\$378	\$7	\$385	\$50	\$435
Education	\$269	\$28	\$297	\$0	\$297
Health and Human Services	\$192	\$40	\$233	\$0	\$233
Recovery Operations	\$194	\$0	\$194	\$0	\$194
Total	\$9,690	\$2,441	\$12,130	\$611	\$12,741

1 Defined as 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 Defined as 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. 3 Defined as 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.

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 Debris, Damages, and Jobs in Limbo: Hidden Costs for Small Businesses After Hurricane Florence
 Image: Starts Starts

Hurricane Florence had significant impact on businesses

Overview

Needs assessment

- Total estimated impact: \$3.9 billion
- Total expected assistance: \$1.1 billion
- Estimated unmet impact: \$2.9B
- Preliminary estimates based on floodplain and business disruption modeling

			Sources of	funding, (\$M)	
	Direct	Indirect/ Induced	Federal	Private	Unmet Impact
Real estate/ equipment	\$754	\$0	\$205	\$104	\$445
Economic Impact	\$1,856	\$1,274	\$0	\$742	\$2,387
Resiliency					\$20
Total	\$2,610	\$1,274	\$205	\$846	\$2,853

Making sure residents have safe, clean housing is a top priority

101,000 individual Assistance claims filed in the first 2 weeks



Flooded out again, residents question
 life by the river — and hope for FEMA
 buy out
 Florence to be the worst hurricane to
 hit the Carolina states in 30 years

- Major News Outlets, Sep 2018

North Carolina's housing needs will require significant aid from federal, state and private sources

Overview

Needs assessment

- Total estimated impact: \$3.2B
- Total expected assistance: \$2.6B
- Estimated unmet impact: \$0.9B
- Preliminary estimates based on comparison of residential property data to the FEMA floodplain map; will clarify as IA inspection reports start to come in

		Indirect/	Sources of fu	nding, (\$M)	Unmet
	Direct	Induced	Federal	Private	Impact
Residential	\$2,837	\$0	\$1,083	\$1,170	\$584
Transitional Shelter	\$2	\$0	\$2	\$0	\$1
Housing Assistance	\$236	\$0	\$236	\$0	\$0
Public Assistance	\$54	\$40	\$41	\$0	\$14
Other Needs Assistance	\$52	\$0	\$39	\$0	\$13
Resiliency					\$291
Total	\$3,181	\$0	\$1,400	\$1,170	\$902



99 Farmers Taking a Big Hit from Hurricane Florence Flooding

The farm animal death toll continues to rise in Hurricane Florence flooding

We've had some bad ones but I think the overall effect that it's had on agriculture its probably one of the worst ones we've had"

- Major News Outlets, Sep 2018

Photo credit: (left): Steve Helber / AP - A pickup truck drives on a flooded road past a farmhouse that is surrounded by flooded fields from Tropical Storm Florence in Hyde County, North Carolina, on September 15, 2018; (right) N C Department of Agriculture & Consumer Services

Farmers face a daunting challenge with \$1.3B in direct damage

Overview

Needs assessment

- Total estimated impact: \$2.4 billion
- Total expected assistance: \$0.2 billion
- Estimated unmet impact: \$2.2B
- Preliminary estimates based on historical production and prices and experience from prior storms

		Indirect/	Sources of		
	Direct	Induced	Federal	Private	Unmet Impact
Crops, Poultry & Livestock	\$1 <i>,</i> 065	\$967	\$0	\$160	\$1,872
Farmer-Owned Co-op	\$10	\$0	\$0	\$0	\$10
Livestock	\$20	\$0	\$20	\$0	\$0
Buildings & Equipment	\$62	\$0	\$0	\$2	\$60
Farm infrastructure	\$56	\$0	\$0	\$0	\$56
Commercial Fishing	\$14	\$20	\$0	\$0	\$33
Forestry*	\$49	\$36	\$0	\$0	\$85
Stream restoration	\$58	\$0	\$0	\$0	\$58
Resiliency					\$75
Total	\$1,332	\$1,023	\$20	\$162	\$2,248

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Crop and livestock losses by type

Crop and livestock loses, Preliminary Estimates(\$M)

	Production Losses	Indirect Impact	Total Impact
Soybeans	\$202	\$202	\$404
Corn	\$84	\$83	\$167
Cotton 📀	\$135	\$124	\$259
Tobacco 🐶	\$314	\$281	\$595
Hay 👫	\$19	\$18	\$37
Peanuts 🤄	\$50	\$46	\$97
Sweet Potatoes	\$180	\$147	\$328
Vegetables	\$26	\$21	\$49
Green Industry	\$30	\$21	\$51
Pork 🐨	\$1	\$1	\$1
Poultry 🧳	\$20	\$20	\$40
Beef	\$0.2	\$0.1	\$0.3
Total	\$1,064	\$967	\$2,031

Photo credit: VOA News - Aerial view of farms flooded after the passing of Hurricane Florence in eastern North Carolina, Sept. 17, 2018



900,000 people without power at peak of storm



Hurricane Florence May Leave 3 Million Homes and Businesses Without Power

99

Almost 99 percent of New Bern is without power after Hurricane Florence

- Major News Outlets, Sept 2018

Photo credit: (left): Chris Seward / AP - A convoy of utility trucks heads east to assist with storm damage near Kinston, North Carolina, on September 15, 2018; (right) Chip Somodevilla/Getty Images – A volunteer rescue truck drives underneath a fallen tree that is suspended by power lines blown down by Hurricane Florence on Friday in New Bern

Local water and sewer systems face significant challenges

Needs assessment

Overview

- Total estimated impact: \$816 million
- Total expected assistance: \$722 million
- Estimated unmet impact: \$94 million
- Preliminary estimates based on data from Duke Progress Energy, NC Electrical Cooperatives Association, and local commissions

		Sources of funding, (\$M)				
	Direct	Indirect/ Induced	Federal	Private	Unmet Impact	
Water, sewer, stormwater	\$100	\$0	\$39	\$3	\$58	
Gas, Electric	\$691	\$0	\$30	\$650	\$11	
Local fee revenue loss	\$0	\$0	\$0	\$0	\$0	
Resiliency					\$25	
Total	\$791	\$0	\$69	\$653	\$94	



Florence caused millions in damage to natural resources and highlights need for future storm resilience efforts



Coastline devastation: Beach cleanup will require \$275M in areas that depend heavily on tourism



19 dams damaged in Hurricane Florence



Death, Destruction and Miles of Work Left Behind: NC Tries to Move Past Florence's Fury

In the Carolinas, some flood maps have not been updated since as far back as 1989 or 1999. Maps for other areas, including Wilmington where Hurricane Florence made landfall, haven't been updated since 2006.

- Major News Outlets, Sep 2018

Waste and water cleanup remain critical priorities

Overview

Needs assessment

- Total estimated impact: \$554 million
- Total expected assistance: \$91 million
- Estimated unmet impact: \$464 million
- Preliminary estimates are based on early reports from affected entities and benchmarking from prior storms

	Direct Indirect/		Sources of f	– Unmet	
	Need	Induced	Federal	Private	Impact
Hazardous waste/waste management	\$3	\$0	\$0	\$0	\$3
Dredging	\$87	\$0	\$0	\$0	\$87
Beach renourishment	\$296	\$0	\$0	\$0	\$296
Dams and dikes	\$24	\$0	\$0	\$24	\$0
FEMA Public Assistance			\$67		1
Resiliency					\$145
Total	\$409	\$0	\$67	\$24	\$464

1 Federal funding of \$67 million drives a negative unmet impact, which is accounted for in the total unmet impact figure



P Florence washes city's signature statue into the middle of road All North Carolina State Parks, state for

All North Carolina State Parks, state forests closed in advance of Hurricane Florence

- Major News Outlets, Sep 2018

Government property and revenue impact tops \$400 million

Overview

- Total estimated impact: \$406 million
- Total expected assistance: \$279 million
- Estimated unmet impact: \$127 million
- Preliminary estimates based survey data from state government agencies and universities

Needs assessment				of funding,	
	Direct	Indirect/ Induced	(\$M) Federal	Private	Unmet Impact ¹
Local Gov. Buildings*	\$144	\$0	\$50	\$78	\$17
State Gov. Buildings	\$180	\$0	\$38	\$97	\$45
State attractions	\$5	\$0	\$0	\$2	\$2
State tax/fees	\$0	\$25	\$0	\$15	\$10
State Lottery loss	\$0	\$18	\$0	\$0	\$18
Local tax/fees	\$0	\$9	\$0	\$0	\$9
Timber	\$4	\$7	\$0	\$0	\$14
Resiliency					\$5
Total	\$332	\$69	\$87	\$192	\$127

As of October 9, NC still has 82 road closures



29,000 miles of road in affected areas



2,500 road closures at peak of storm





Wilmington cut off by extreme flooding as Florence threatens Carolinas with still more rain Florence damaged hundreds of NC ²² roads and bridges. When will they be repaired?

- Major News Outlets, Sept 2018

North Carolina transportation infrastructure heavily impacted

Overview

Needs assessment

- Total estimated impact: \$435 million
- Total expected assistance: \$298 million
- Estimated unmet impact: \$137 million
- Preliminary estimates are based on windshield estimates, detailed site inspections, and historical data from past storms

		Sources o	\$M)		
	Direct	Indirect/ Induced	Federal	Private	Unmet Impact
State bridges & roads	\$260	\$0	\$195	\$0	\$65
Public transportation	\$2	\$0	\$2	\$0	\$0
Rail & rolling stock	\$1	\$0	\$0	\$1	\$1
Ports	\$54	\$0	\$0	\$54	\$0
Aviation	\$4	\$0	\$0	\$4	\$0
State revenue impact	\$0	\$7	\$0	\$0	\$7
Non-system (local) roads	\$57	\$0	\$43	\$0	\$14
Resiliency					\$50
Total	\$378	\$7	\$239	\$59	\$137



99 UNC Wilmington resuming classes Oct. 8, more than 3 weeks after Florence made landfall

More than two weeks after Hurricane Florence tore through North Carolina, thousands of students are still not back in class and many schools need repairs

- Major News Outlets, Sep 2018

Damaged public schools will need at least \$250M to recover

Overview

Needs assessment

- Total estimated impact: \$297 million
- Total expected assistance: \$174 million
- Estimated unmet impact: \$123 million
- Preliminary estimates are based on initial damage and revenue loss assessments

		Indirect/	Sources of funding, (\$M)		Unmet			
	Direct	Induced	Federal	Private	Impact			
Public K-12: Operational	\$2	\$14	\$0	\$2	\$14			
Public K-12: Capital	\$267	\$0	\$26	\$144	\$97			
Community colleges: Operational	\$0	\$9	\$1	\$0	\$8			
Community colleges: Capital		Estimates pending survey submissions from colleges regarding damage to facilities						
UNC system	\$0	\$5	\$1	\$0	\$5			
Resiliency								
Total	\$269	\$28	\$28	\$146	\$123			

Profile of schools and students affected by Florence

		# of institutions in disaster counties	# of students from disaster Counties		
	K-12 schools*	656	385,000		
	Charter schools	32	13,000	1	
	Community colleges	28	137,354		IIII
	UNC Institutions	4	35,768	A	
A REAL	Independent Colleges & Universities	5	9,433	LE	A.
	Total	725	580,555	X	A
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Hurricane Florence intensified public health issues already present for a vulnerable population group



North Carolina has suddenly become a hot spot for some of the largest mosquitoes in the country – known as "mega mosquitoes" – due to the rancid puddles left behind by Hurricane Florence

The species, called Gallinippers, can grow 20 times larger than more common mosquitoes and have a sting that is painful enough to feel like you've been stabbed - Major News Outlets, Sep 2018

Photo credit: (left): ABC News - Bob Richling carries Iris Darden as water from the Little River starts to seep into her home, Sept. 17, 2018 in Spring Lake, N.C; (right) David Goldman / AP – Gloria Sanders, 87, is helped by members of the Nebraska Task Force 1 urban search-and-rescue team as they evacuate an assisted-living facility to a church as a precaution against potential flooding in Fayetteville

Physical and mental health are primary concerns especially at a time of crisis

Overview

Needs assessment

- Total estimated impact: \$232 million
- Total expected assistance: \$150 million
- Estimated Unmet Impact: \$83 million
- Preliminary estimates are based on demographic modeling and benchmarking with prior storms

		Indirect/		Sources of funding, (\$M)		
	Direct	Induced	Federal	Private	Impact	
Hospitals & nursing homes	\$51	\$40	\$0	\$73	\$18	
Public health	\$9	\$0	\$6	\$0	\$3	
Social services	\$29	\$0	\$18	\$0	\$11	
Health needs	\$104	\$0	\$53	\$0	\$52	
Resiliency						
Total	\$192	\$40	\$77	\$73	\$83	

Demographic snapshot of disaster-affected communities	
in North Carolina	

Medicaid	700,000 people enrolled in Medicaid30,000 children enrolled in CHIP
Uninsured	 13.1% of people are uninsured (277,000) Of the uninsured population nearly 45% of people earn below 138% of poverty line
Disabled	• 19% of people over the age of 18 are disabled (363,000)
Public Assistance	• 17% of households receive FNS benefits (174,000)
Elderly	 16% of people are over age of 65 (420,000) 27% of households have at least one person over the age of 65 (270,000)





A disaster of this magnitude requires significant investment to ensure a successful recovery



Broad-reaching impact: 25% of North Carolinians affected



Existing resource constraints: 20% of those affected live in poverty



77 This may be the most catastrophic disaster North Carolina has ever had to deal with"

Florence cut a broad path of death and destruction through our state and we will not soon forget this storm or the lives it claimed

- Major News Outlets, Sep 2018

Photo credit: (left) Andrew Caballero-Reynolds / AFP / Getty – Firefighters pray during an operation to remove a tree that fell on a house and killed two residents as Hurricane Florence made landfall in Wilmington on September 14, 2018; (right) Gerald Herbert / AP – clothes line over flood waters in Marion, S.C., on Sun., Sept. 16, 2018

Local governments critical to recovery success

Overview

Needs assessment

- Total estimated impact: \$194 million
- Total expected assistance: \$137 million
- Estimated unmet impact: \$57 million
- Preliminary estimates are based on NC government staffing costs, Local Government Commission data, and state agency modeling of additional capacity needed

		Indirect/	Sources of funding, (\$ℕ)		Sources of funding, (\$M) Unmet		Unmet
	Direct	Induced	Federal	Private	impact		
Support for recovery & resiliency	\$67	\$0	\$57	\$0	\$10		
Local government assistance	\$20	\$0	\$0	\$0	\$20		
State match – FEMA immediate recovery	\$107	\$0	\$80	\$0	\$27		
Resiliency							
Total	\$194	\$0	\$137	\$0	\$57		

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Governor Cooper recommends \$1.5 billion in total state funding



Total funding recommendation: \$1.5 billion

Total down payment: \$750 million

Governor Cooper recommends \$1.5 billion in state funding across 10 categories

Category	Recommended total funding, \$M	Initial down payment, \$M
Business	\$50	\$50
Housing	\$534	\$170
Agriculture	\$310	\$150
Utilities, Water and Sewer	\$73	\$30
Natural Resources	\$172	\$61
Govt. Property and Revenue	\$87	\$65
Transportation	\$129	\$89
Education	\$74	\$65
Health and Human Services	\$73	\$57
Recovery Operations	\$57	\$15
Total	\$1,558 ¹	\$752

Business funding recommendation overview

Description	Recommended total funding, \$M	Initial down payment, \$M
Small Business Grants and Loans	\$20	\$20
Assistance for Historically Underutilized Businesses	\$5	\$5
Commercial Building Disaster Assistance	\$5	\$5
Historic Preservation Tax Credit ¹	\$1 revenue adj.	\$1m revenue adj.
One NC Fund	\$5	\$5
NC Main Street and Rural Planning Center	\$10	\$10
Tourism and Marketing NC as a Business Destination	\$5	\$5
Total	\$50	\$50

Housing funding recommendation overview

Description	Recommended total funding, \$M	Initial down payment, \$M
FEMA Individual Assistance Match	\$13.5	\$65.0 ¹
FEMA Public Assistance Match	\$14.0	1
FEMA Hazard Mitigation Match	\$41.0	1
Rapid Rehousing (Back@Home)	\$12.0	\$12.0
Transitions to Community Living Displacement Recovery	\$1.3	\$1.3
Volunteer Organizations Active During Disasters	\$2.0	\$2.0
Homeowner Repair and Rehabilitation Fund	\$176.0	\$35.2
Cash Flow Assistance to Distressed Agencies	\$24.0	\$4.8
State Acquisition and Relocation Fund	\$180.0	\$36.0
Residential Construction Infrastructure Grants	\$20.0	\$4.0
Affordable Housing	\$50.0	\$10.0
Total	\$533.8	\$170.3

Agriculture funding recommendation overview

Description	Recommended total funding, \$M	Initial down payment, \$M
USDA Federal Match	\$20.0	\$20.0
NC Farmer Recovery Reinvestment Program	\$200.0	\$100.0
Farmer Resiliency Fund	\$75.0	\$15.0
Commercial Fishing Assistance	\$12.0	\$12.0
Forest Development Fund	\$2.5	\$2.5
Total	\$309.5	\$149.5

Utility funding recommendation overview

Description	Recommended total funding, \$M	Initial down payment, \$M
FEMA Public Assistance Match	\$23.0	1
Local Government Water/Wastewater/Stormwater Grants	\$25.0	\$25.0
Develop and Support More Resilient Systems	\$25.0	\$5.0
Total	\$73.0	\$30.0

Natural Resources funding recommendation overview

Description	Recommended total funding, M	Initial down payment, \$M
FEMA Public Assistance Match	\$22.0	1
FEMA Hazard Mitigation Match	\$10.0	1
Dredging/Beach Nourishment Needs Assessment	\$5.0	\$5.0
Flood Abatement/Water Quality Protection Measures	\$25.0	\$12.5
Oyster and Debris Cleanup	\$3.0	\$3.0
Mapping, Modeling, and Design Mitigation Reservoirs	\$87.7	\$21.9
Lumberton VFW Road Corridor Drainage Improvements	\$14.0	\$14.0
Dam Repair Cost Share	\$5.0	\$5.0
Total	\$171.7	\$61.4

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l (¬overnmen	t nronertv	tunding recc	mmendation	overview.
	c property	i unung i cee	ommendation	

Description	Recommended total funding, \$M	Initial down payment, \$M
FEMA Public Assistance Match	\$22.0	1
Emergency R&R for State Agencies and UNC System	\$25.0	\$25.0
Local Government Infrastructure Fund	\$25.0	\$25.0
Local Parks and Recreational Facilities	\$10.0	\$10.0
State Agency and UNC Risk Insurance Coverage	\$5.0	\$5.0
State Agency and UNC Risk Management Personnel	TBD	TBD
Total	\$87.0	\$65.0

		c 1.		•
•	Transportation	tunding rec	ommendation	OVERVIEW.
	mansportation			

Description	Recommended total funding, \$M	Initial down payment, \$M
Federal Matching Funds	\$65.0	\$65.0
Local Roads - Matching Funds	\$14.0	\$14.0
Build Stronger and Smarter Roads	\$50.0	\$10.0
Total	\$129.0	\$89.0

Education funding recommendation overview

Description	Recommended total funding, \$M	Initial down payment, \$M
FEMA Public Assistance Match	\$9.0	1
Public School Emergency R&R	\$25.0	\$25.0
Flexible Public Schools Operating Funding	\$25.0	\$25.0
Stay-in-School Student Assistance	\$10.0	\$10.0
Community College Tuition Receipts	\$5.0	\$5.0
Total	\$74.0	\$65.0

Health funding recommendation overview

Description	Recommended total funding, \$M	Initial down payment, \$M
Hospitals & Health Care Safety Net	\$5.0	\$5.0
D-SNAP Federal Match	\$5.0	\$5.0
Mosquito Abatement	\$2.0	\$2.0
Individuals with Intel/Devel Disabilities	\$2.0	\$2.0
Child Welfare Services	\$2.0	\$2.0
Durable Medical Equipment & Assistive Technology	\$1.0	\$1.0
Mold Remediation	\$1.0	\$1.0
Emergency Pre-K Repairs	\$1.0	\$1.0
Mental Health - Uninsured	\$27.0	\$18.1
Mental Health - Medicaid	\$20.0	\$13.4
Substance Use Disorder Treatment Programs	\$3.0	\$3.0
Adult Protective Services	\$2.0	\$2.0
EPAP	\$1.0	\$1.0
Child Welfare Social Workers	\$0.6	\$0.6
Area Agencies on Aging	\$0.2	\$0.2
Total	\$72.8	\$57.3

Recovery Operations funding recommendation
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Description	Recommended total funding, \$M	Initial down payment, \$M
FEMA Public Assistance Match	\$27.0	1
State Government Support for Recovery & Resiliency	\$10.0	\$2.0
Local Government Assistance	\$20.0	\$12.5
Total	\$57.0	\$14.5



Questions