



# Housing

Addresses physical damage to residential structures and cost of housing assistance

## 1. Summary

The preliminary need for housing assistance and recovery is estimated at \$5.6 billion. The total estimate includes \$5.0 billion in damages to residential structures, personal automobiles, and other personal property. This preliminary estimate will change as additional data from FEMA, NFIP, and insurers becomes available. Of the overall estimated need, OSBM expects \$4.2 billion to be covered by private and federal sources of funding and \$79.0 million has already been allocated by the State, resulting in an unmet housing impact of at least \$1.3 billion.

Preliminary Damage & Need Estimate (Millions)							
Category	Direct	Indirect/ Induced <sup>1</sup>	Total Impact	Expected Funding		Appropriated	Unmet Impact
				Federal <sup>2</sup>	Private	State	
Residential	\$4,820.0	\$0.0	<b>\$4,820.0</b>	\$1,083.0	\$2,710.0	-	<b>\$1,027.0</b>
Auto & Other Personal Property	\$175.0	\$0.0	<b>\$175.0</b>	\$0.0	\$136.0	-	<b>\$39.0</b>
Transitional Shelter	\$2.2	\$0.0	<b>\$2.2</b>	\$1.6	\$0.0	-	<b>\$0.6</b>
Housing Assistance	\$236.2	\$0.0	<b>\$236.2</b>	\$236.2	\$0.0	-	<b>\$0.0</b>
Public Assistance	\$54.0	\$0.0	<b>\$54.0</b>	\$40.5	\$0.0	-	<b>\$13.5</b>
Other Needs Assistance	\$51.9	\$0.0	<b>\$51.9</b>	\$38.9	\$0.0	-	<b>\$13.0</b>
<b>Subtotal</b>	<b>\$5,339.3</b>	<b>\$0.0</b>	<b>\$5,339.3</b>	<b>\$1,400.2</b>	<b>\$2,846.0</b>	-	<b>\$1,093.1</b>
Resilience efforts	\$0.0	\$0.0	<b>\$291.0</b>	\$0.0	\$0.0	-	<b>\$291.0</b>
State appropriations	-	-	-	-	-	\$79.0	-
<b>Total</b>	<b>\$5,339.3</b>	<b>\$0.0</b>	<b>\$5,630.3</b>	<b>\$1,400.2</b>	<b>\$2,846.0</b>	<b>\$79.0</b>	<b>\$1,305.1</b>

1. Zero does not indicate that indirect and induced losses do not exist for these categories, only that estimates are not available.

2. FEMA Federal Share Projection (\$317 million) + CDBG-DR (\$1.1 billion) = \$1.4 billion + TBD Future Federal Funding

## 2. Scope

The scope for preliminary housing estimates includes:

- Residential housing: single-family, multi-family, rental residences, and supportive housing (includes subsidized affordable housing)

- Temporary housing, public assistance (STEP program for emergency repairs), and individual assistance payments

These estimates do not include losses from private, non-residential buildings or government buildings. These items are covered in other sections.

The table below provides additional detail on estimates by level and type of damage. This data also includes nursing homes and temporary lodging, which are reflected in the health and business sections, respectively.

<b>SUMMARY OF NCEM ESTIMATED FLOOD DAMAGES TO RESIDENTIAL PROPERTIES</b>							
<b>DAMAGE</b>		<b>All Flood Hazards</b>		<b>Surge Flooding</b>		<b>Riverine Flooding</b>	
		<b>Estimated Damages (M)</b>	<b>Building Count</b>	<b>Estimated Damages (M)</b>	<b>Building Count</b>	<b>Estimated Damages (M)</b>	<b>Building Count</b>
<b>FLOOD DEPTH</b>	<b>LEVEL</b>						
Substructure	Minor	\$142	37,391	\$52	8,900	\$91	28,491
0 - 2 ft	Minor	\$563	15,474	\$341	8,552	\$222	6,922
2 - 4 ft	Moderate	\$766	10,712	\$550	7,617	\$215	3,095
4 - 6 ft	Major	\$624	6,711	\$467	4,880	\$157	1,831
6+ ft	Destroyed	\$435	4,275	\$321	2,938	\$114	1,337
<b>Total</b>		<b>\$2,530</b>	<b>74,563</b>	<b>\$1,730</b>	<b>32,887</b>	<b>\$799</b>	<b>41,676</b>

*Source: NC Division of Emergency Management; estimates include temporary lodging, nursing homes, and institutional dormitories, which are otherwise excluded from housing damage estimates.*

### **3. Methodology**

OSBM relied primarily on flood modeling performed by the Division of Emergency Management of the NC Department of Public Safety (NCEM) and reports of insurance claims from the NC Department of Insurance (DOI) to produce estimates of total storm-related structural damages and associated insurance coverage.

NCEM flood models indicate that approximately 74,400 residential structures incurred damage from water, with nearly 21,000 structures having National Flood Insurance Program (NFIP) policies sufficient to cover all damages and another nearly 1,800 structures with partial NFIP coverage. Based on insurer reports to the NC Department of Insurance (DOI) as of October 19, 2018, however, OSBM anticipates only approximately 12,000 residential NFIP claims resulting from Florence. Based on the same DOI insurance claims reports, OSBM estimates that wind and other non-flood insurable hazards damaged approximately 360,000 residential properties sustain and 34,000 personal automobiles.

These preliminary estimates represent \$5.0 billion in total damages, which includes a 10% inflation factor for flood damages to account for anticipated higher construction costs.

The estimates include damages from the coastal storm surge, flooding from rivers, and wind.

- *Storm surge:* To produce the storm surge damage estimates, NCEM used national models to create a GIS layer of the storm surge. In conjunction with the GIS layer, NCEM used data on the elevation of the structures' first floor to determine the depth of the flooding incurred by structures. Then, NCEM translated the flood depth into damage estimates by relying on Army Corps of Engineers' formulas and estimated replacement values for buildings and

contents in NCEM's statewide database of buildings. Replacement values include the value of equipment contained in the buildings. The estimate for the number of buildings affected by the storm surge only includes primary structure.

- *Flooding from rivers:* To produce the riverine estimates, NCEM employed NOAA National Severe Storms Laboratory data to determine the amount of flooding sustained from rivers and create a GIS layer of riverine flooding. To increase precision, the GIS layer combines model calculations of precipitation accumulation with actual river gage and high-water observations. The riverine flooding GIS layer allowed NCEM to estimate the flood depth sustained by structures, and in turn the flood depth informed the loss estimate for structures and their contents (including equipment). The estimate for the number of buildings affected by flooding from rivers only includes primary structures.
- *Total flood damages:* OSBM relied primarily on NCEM model-generated estimates for total structural damages caused by flooding. OSBM then adjusted the amount of damage to properties with flood insurance to account for the lower number and amount of NFIP and private flood insurance claims reported by DOI, assuming that 80% of expected NFIP and private flood insurance claims were filed by October 19, 2018
- *Wind damages:* Wind damages are based on the estimated residential share of insured losses reported to DOI by private insurers as of October 19, 2018, including the Coastal Property Insurance Pool (CPIP) and the Fair Access to Insurance Requirements plan (FAIR plan). Based on the National Oceanic and Atmospheric Administration's (NOAA's) methodology for converting insured wind-damage losses to total wind-damage losses, OSBM assumed that insured losses represent only 80% of total wind-damage losses. One shortcoming of the preliminary insured losses reported to DOI is the possibility of double-counting between CPIP/FAIR losses and other insured losses. If subsequent DOI reports of insured losses indicate significant double-counting in their preliminary reports, total estimated wind damages will be lower than the current estimate.
- *Personal Automobiles & Other Property:* Based on DOI reports, OSBM anticipates approximately 28,000 claims for insured personal automobile damage, resulting in an estimated \$100 million in insured losses. DOI also reports approximately \$36 million in insured losses to unspecified property types, which OSBM assumes is distributed between personal and commercial property in the same ratio as damages to residential and commercial real property. Consistent with NOAA's wind-damages methodology, OSBM assumes that insured losses represent 80% of total losses.
- *Adjustments to Insured Losses:* OSBM adjusted DOI data for insured losses by estimating deductibles not included in insurers' claims reports and by assuming additional claims equal to 25% of insured losses as of October 19,

2018, will be filed at a later date.

- *Other considerations:*
  - Based on 5-year ACS estimates of housing tenure by structure type (e.g., single-family dwellings, duplexes, etc.) for each of the 31 FEMA individual-assistance-eligible counties, OSBM estimates that owner-occupied and rental structures accounted for approximately 70% and 30%, respectively, of damaged residential structures.
  - Outside of the 31 FEMA individual-assistance-eligible counties, OSBM calculations based on NCEM flood modeling indicate that approximately \$56 million in flood damages to residential buildings occurred.
  - The supply of affordable housing in the Florence-affected region of the state was far below the needs of the local population even before the storm hit: the NC Housing Finance Agency estimated an affordable-housing shortfall of more than 200,000 homes. Florence exacerbated this shortfall.
  - Under- and uninsured single-family homes and manufactured homes account for nearly 70% of all residential structures with NCEM-modeled flood damage. Repairing and replacing these homes – most of which would qualify as affordable housing based on estimated replacement values – will cost an estimated \$1.3 billion (excluding estimated insurance coverage for under-insured homes).

#### **4. Assumptions**

- *Construction cost:* The preliminary estimate for property damages conservatively assumes construction costs will be 10% higher than the replacement values in the NCEM database. Experience from hurricanes Matthew, Katrina, Harvey, and Superstorm Sandy suggests construction costs were 8-20% higher in the aftermath of the event due to a shortage of available construction services or an increase in the cost of raw material or labor. In addition, Hurricane Florence construction costs are likely to be driven up by the impact of tariffs on the price of lumber, steel, aluminum, and other materials, which would increase further the preliminary estimate.
- *Building estimation:* The estimate for the number of buildings affected by storm surge and riverine flooding only includes primary structures. The estimate for wind damage also includes detached garages, sheds, and the like.

#### **5. Primary Data Sources**

- NC Division of Emergency Management for flood-impact modeling
- NC Department of Insurance for reported insured losses
- Census Bureau: American Community Survey 5-Year County Estimates
- FEMA

- HUD

## **6. Potential Sources of Funding for Unmet Impact**

### Federal:

- North Carolina expects to receive approximately \$276 million from FEMA for individual assistance, temporary shelter, and other assistance programs, resulting in a state match need of \$13.5 million.
- North Carolina expects to receive approximately \$124 million from FEMA for hazard mitigation, resulting in a state match need of \$41 million.
- Based on FEMA estimates as of October 5, 2018, the state is expected to receive \$554 million in Public Assistance funds from FEMA with a state match of \$185 million for a total of \$739 million. Based on allocations from Hurricane Matthew, we anticipate that approximately \$54 million of those funds will be for housing related items, resulting in a state match need of \$14 million.
- The US Congress has earmarked approximately \$1.2 billion to North Carolina in the form of HUD CDBG funding. We anticipate that a large portion of this (\$1.1 billion) will be utilized for housing program needs.
- The Small Business Administration has approved 4,715 low-interest loans to homeowners and renters, totaling nearly \$188 million as of October 20, 2018.
- Additional funds may also be available from USDA.

### Private:

- *FEMA National Flood Insurance Program (NFIP)* – Based on the most recent claims data reported to DOI and the commercial share of NFIP coverage among flood-affected structures modeled by NCEM, OSBM anticipates that NFIP will pay an estimated \$440 million for non-residential flood damages. DOI data as of October 19<sup>th</sup> shows that total NFIP claims are approximately \$385 million (adjusted to account for likely deductibles), of which OSBM estimates the non-residential share to be nearly \$350 million. OSBM anticipates that the final amount will be at least 25% higher (\$440 million) based on historical trends. However, actual reimbursement may end up being lower if policyholders are not reimbursed up to the amount of their coverage, as has been the case in past disasters.
- *Private Flood Insurance* – OSBM anticipates that private flood insurance will cover approximately \$15 million in flood damage. As of October 19<sup>th</sup>, DOI reported total private flood insurance losses equal to nearly \$31 million (adjusted to account for likely deductibles), and OSBM anticipates that this figure will increase by at least 25% to \$38 million. Based on other insurance filings with DOI, OSBM estimates that the residential market accounts for

roughly 40% of the private flood insurance market in the state. OSBM used the estimated residential vs. non-residential market shares for private flood insurance to disaggregate the projected total private flood insurance claims into non-residential and residential estimates.

- *Private Insurance for Damages Caused by Winds and Other Hazards* – OSBM anticipates that private residential property insurance will cover approximately \$2.25 billion in damages to real property, \$100 million for personal automobiles, and \$36 million for other personal property. DOI’s October 19<sup>th</sup> reports show insured property losses of more than \$2.2 billion (adjusted to account for likely deductibles) from wind and other hazards. OSBM anticipates that the final amount will be at least 25% higher based on historical trends. DOI reports separate amounts for residential versus commercial claims for real property and automobiles, and OSBM assumed that coverage for other, unspecified property is distributed the same as for real property. The total estimate for insured property likely includes some insured business disruption losses due to current reporting limitations.
- *Deductibles* – Note that all estimates of total insured losses include OSBM estimates of deductibles paid by policyholders to satisfy claims. Deductibles are not included in unmet need.

## **7. State Funding Recommendation for Unmet impact**

*Rebuilding - \$243 million*

### **FEMA State Match for Individual and Public Assistance – \$27.5 million**

Funds state match for FEMA individual assistance programs to provide short to medium term housing and temporary emergency repairs to damaged homes. Assistance is also provided for other needs, such as: medical and dental assistance, child care, repair or replacement of clothing and household items, moving and storage, and other critical needs.

### **Rapid Rehousing Program (Back@Home NC) – \$12.0 million**

Assists individuals and families still living in shelters or staying in unsafe or unstable arrangements due to Hurricane Florence quickly transition to safe and sustainable longer-term housing. Services include help finding housing, rent and utility assistance, move-in supplies, and, if needed, help accessing other stability supports like job training and placement and child care.

### **Transitions to Community Living Initiative (TCLI) Displacement Recovery – \$1.3 million**

Provides funding to help to secure new placements and provide additional tenancy support services to TCLI participants who were displaced during Hurricane Florence.

### **Volunteer Organizations Active During Disasters (VOADs) – \$2.0 million**

Provide support to volunteer organizations that provide multiple services to storm survivors.

### **Homeowner Repair and Rehabilitation Fund – \$176.0 million**

Provide funding for programs that help homeowners and renters remain in their communities, for activities that are not eligible for federal reimbursement. Strategies to implement this include the following:

- *Homeowner reimbursements, repairs and rehabilitation funding.* For example, owners can be reimbursed for flood damaged appliances, emergency repairs, urgent and pressing needs or other documented costs that may not be covered by federal funding sources, because the volume of applicant demands exceed federal award amounts for North Carolina.
- *Forgivable loans or grants to SBA housing loan recipients.* For example, if an individual has received an SBA loan but has difficulty affording the payments, this program would provide funds to assist with the payments or loan interest buydown.
- *Extension of Rental/Mortgage Assistance* for displaced individuals who must pay current rental leases or mortgages while their damaged properties are repaired. For example, many funding sources that provide rental and mortgage assistance do so on a time-limited basis. If a qualified individual has received assistance but continues to have unmet needs after exhausting the time limit of the benefit, this program would provide funds to continue providing the much-needed rental or mortgage assistance.
- *Gap assistance payments.* For example, if an individual has qualified for a FEMA hazard mitigation grant to re-locate their house, and the FEMA award is less than an equivalent market priced home that is not in a floodplain, gap assistance payments can supplement these awards to make up the difference

### **Cash Flow Assistance to Distressed Local Government Agencies - \$24.0 million**

Provides cash flow management assistance for small, rural, and distressed agencies. Hazard Mitigation Grant Program (HMGP) awards can greatly exceed small local government operating budgets and cash reserves. For example, the Town of Fair Bluff received an \$8.3 million FEMA grant to rebuild over 100 houses destroyed from Hurricane Matthew. However, the town's annual general fund operating budget is \$900,000. The town does not have the cash capacity to pay construction contractors first and wait for lengthy reimbursements on its FEMA grant without risking town payroll and other budget needs.

To address this fiscal challenge, it is recommended that the Office of State Budget and Management be provided with adequate funding and authority to enter into fiscal agent agreements with these agencies to ensure they have the cash flow and financial capacity to reimburse federal agencies for disaster response and recovery grant awards. The final federal reimbursements from this cash flow assistance program would be re-directed to future FEMA grants or support housing reconstruction, repairs and state mitigation efforts.

*Resiliency - \$291 million*

**FEMA State Match for Hazard Mitigation – \$41.0 million**

After a presidential declared disaster, FEMA hazard mitigation grants requests are reviewed and approved often in advance of federal CDBG-DR funding requests. These HMGP approvals support housing acquisitions, elevations and reconstruction activities to minimize and mitigate these homes from future risk of loss of life and property. HMGP federal grants are awarded to impacted Counties and municipalities who must hire contractors, execute repairs, and then seek reimbursements from FEMA for the federal share and the State for the state share.

It is estimated that NC would qualify for a minimum of \$164 million FEMA HMGP approvals, with 75% (or \$123 million) supported by FEMA federal grant funds that require a 25% (or \$41 million) state or local agency match.

**State Acquisition and Relocation Fund (SARF) – \$180.0 million**

Provides funding to SARF, which is currently authorized by statute and has a primary focus to buyout, acquire, and totally reconstruct homes outside from the 100-year floodplain. The types of things SARF can assist with include the following:

- Home acquisition and buyouts that minimize future flood damage
- Financial assistance in the form of interest buy down grants
- Gap assistance grants for associated loans
- Flood insurance assistance

**Residential Construction Infrastructure Grants - \$20.0 million**

Recommends funds for the Department of Commerce’s Rural Economic Development Division to provide grants to local and regional agencies for infrastructure required to support new residential structures in areas outside the 100-year floodplain or to repair or replace existing infrastructure. Funds may be used to cover water, sewer, sidewalks, storm drainage, and other similar projects.

**Affordable Housing – \$50.0 million**

Provides funds to the Housing Finance Agency (HFA) to create housing development incentives for high-quality, resilient, affordable housing options in the affected communities. Funds may also be used to repair damaged HFA properties, emergency, homeless, and domestic violence shelters.

**8. Funding Provided in S.L. 2018-134 and S.L. 2018-136**

**Disaster Housing Recovery Support – \$23.0 million**

Allocates funds to the Department of Public Safety, Office of Recovery and Resiliency, for two programs. The Homeowner Repair and Rehabilitation Fund provides for homeowner reimbursements, repairs, and rehabilitation, forgivable loans or grants to help repay federal Small Business Administration loans, rental or mortgage

assistance, and relocation gap funding. The State Acquisition and Relocation Fund facilitates home acquisition and buyouts to move families out of floodplains, interest buy down grants, gap funding assistance, and flood insurance assistance.

**Share of State Match - \$44.0 million**

North Carolina has allocated \$115 million to the Hurricane Florence Disaster Relief Reserve and Fund for the required State match for various Federal funding programs. Based on the remaining match needs across categories, an estimated \$44.0 million is expected to be dedicated to Housing.

**Housing Assistance - \$10.0 million**

Allocates funds to the Housing Finance Agency (HFA) to assist with the development of affordable housing and to repair damaged single-family homes and existing properties within the HFA portfolio in impacted counties.

**Volunteer Organizations Assisting with Disasters - \$2.0 million**

Allocates funds to the Department of Public Safety, Division of Emergency Management, to provide financial assistance to volunteer non-profit organizations that provide shelters, housing repairs, and other emergency and disaster recovery services.