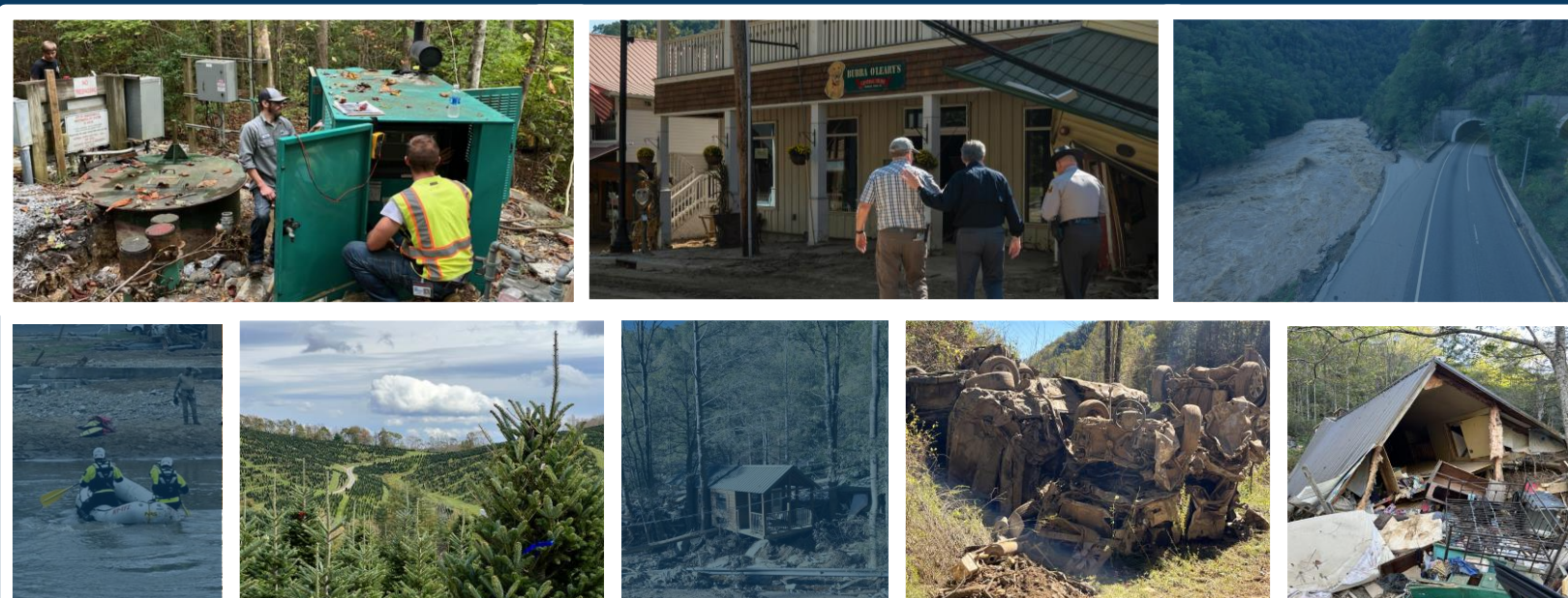


Hurricane Helene Recovery Recommendations

Governor Roy Cooper

Preliminary Damage and Needs Assessment

October 23, 2024





STATE OF NORTH CAROLINA
OFFICE OF THE GOVERNOR

ROY COOPER
GOVERNOR

October 23, 2024

The North Carolina Senate

The Honorable Phil Berger, President Pro Tempore The Honorable Dan Blue, Democratic Leader

The North Carolina House of Representatives

The Honorable Tim Moore, Speaker The Honorable Robert Reives, Democratic Leader

The People of North Carolina

Dear Mr. President, Mr. Speaker, Leaders, Members of the North Carolina General Assembly, and Fellow North Carolinians:

Hurricane Helene brought damage and devastation to North Carolina on an unprecedented scale. This is the deadliest storm in our state's history, and sadly, at least 96 North Carolinians lost their lives. We pray for their families and communities. The impact on our infrastructure and economy has been staggering. An initial assessment conducted by the Office of State Budget & Management suggests that the overall impact of damage from Helene is likely to exceed \$53 billion.

I am grateful for the steadfast work of our emergency responders. They have saved lives and helped rebuild critical infrastructure. However, despite an unprecedented commitment of federal resources, the region faces numerous challenges and unmet needs, and we must resolve to rebuild even stronger, safer and smarter.

The people of western North Carolina are determined and tough, and we will recover from this storm. But the quality of that recovery requires cooperation, speed, and robust investment in impacted communities. Success for the region will depend upon significant investments in public infrastructure, housing, agriculture, schools and businesses. I ask the North Carolina General Assembly to consider this damage and needs assessment as a blueprint and starting point for our state's commitment to western North Carolina. Thank you for your consideration and for working together to secure a strong recovery for North Carolina.

With kind regards I am,

Very truly yours,

Roy Cooper

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Executive Summary

Hurricane Helene reached North Carolina on Friday, September 27, bringing historic rainfall and resulting floods and landslides, strong winds, and tornadoes generated by the storm. To date, Helene is the third-deadliest US storm in the 21st century, with nearly 100 confirmed deaths in North Carolina alone and dozens more still missing. Thirty-nine counties have been designated by FEMA for federal disaster assistance. An estimated 4.6 million people – more than 40% of the state’s population – live in one of the designated counties. The region accounts for 45% of the state’s GDP.

Hurricane Helene has left significant, long-term impacts on western North Carolina. In addition to the devastating loss of life, the storm destroyed thousands of homes and damaged tens of thousands more. Millions of North Carolinians lost access to critical services like water and sewer, electricity, telecommunications, and healthcare facilities – services that for some communities remain unavailable. Thousands of miles of roads and bridges were damaged, cutting communities off and limiting egress for residents and entrance by essential response and recovery teams. The region’s economy has suffered a severe blow, threatening livelihoods and the long-term viability of communities.

Preliminary estimates of damage and needs approach **\$53.6 billion** across the state, including \$41.1 billion of direct damages, \$7.6 billion of indirect or induced damages, and \$4.8 billion of potential investments for strengthening and mitigation. Five categories drive more than 90% of estimated direct and indirect damage: Economy, Housing, Utilities and Natural Resources, Transportation, and Agriculture. The damage attributable to Helene is roughly three times the \$16.7 billion impact of Hurricane Florence in 2018.

While these numbers will continue to be refined, early action – in addition to the \$273M already appropriated – will be critical to the long-term well-being of affected communities. Recent research investigating nearly 3,000 county-level recoveries from large disasters found that two of the keys to successful recoveries are (1) quickly mobilizing significant, flexible capital and (2) proactively investing in local capacity and expertise to support post-disaster efforts.

Helene is a reminder of the importance of strengthening our communities against flooding and other severe weather. Investments made in mitigation save \$6 per \$1 spent, and adopting national building code standards saves \$11 per \$1 spent. Taking smart steps now to make communities safer and to prevent loss of life and damage is critically important, especially when using taxpayer dollars.

Preliminary Estimates (Millions)										
Category	Damage & Needs					Investments				
	Direct	Indirect/ Induced	Subtotal	Strengthening & Mitigation	Total	Expected Federal	Expected Private & Other	State Funded	Unfunded	Governor Recommended
Economy	\$10,025	\$5,890	\$15,915	-	\$15,915	\$351	\$1,480	-	\$14,084	\$650
Housing	\$12,904	-	\$12,904	\$1,845	\$14,749	\$6,100	\$2,639	-	\$6,010	\$650
Utilities & Natural Resources	\$5,389	-	\$5,389	\$1,320	\$6,709	\$3,470	\$1,442	-	\$1,797	\$578
Transportation	\$8,461	\$100	\$8,561	\$1,280	\$9,841	\$1,555	\$157	-	\$8,129	\$55
Agriculture	\$1,978	\$1,189	\$3,167	\$209	\$3,376	\$1,373	-	-	\$2,003	\$422
Government & Recovery Ops	\$989	\$371	\$1,360	\$62	\$1,422	\$133	\$223	\$257	\$809	\$594
Education	\$732	\$42	\$774	\$70	\$844	\$249	\$289	\$16	\$290	\$282
Health and Human Services	\$659	\$47	\$705	\$19	\$724	\$361	\$102	-	\$261	\$252
Tribal and Federal Lands	TBD	TBD	TBD	TBD	-	TBD	TBD	TBD	TBD	-
Helene subtotal	\$41,136	\$7,639	\$48,775	\$4,805	\$53,580	\$13,591	\$6,333	\$273	\$33,382	\$3,481
Other Disasters	-	-	-	-	-	-	-	-	\$420	\$420
All disasters total	\$41,136	\$7,639	\$48,775	\$4,805	\$53,580	\$13,591	\$6,333	\$273	\$33,803	\$3,902

Introduction

Hurricane Helene made landfall along Florida’s Gulf Coast on Thursday, September 26 as an extremely strong category 4 storm with maximum sustained winds of 140 miles per hour.

Helene reached North Carolina on Friday, at which point the state’s western region had already received substantial rain. Helene brought significantly more precipitation, driving three-day rainfall totals that exceeded 8 inches across North Carolina’s mountain region and 12 inches in many areas. Highest local rainfall maximums across the state exceeded 30 inches for only the second time in recorded state history.

The rain swelled streams and rivers – many of which were already in flood stage – to record highs, producing 1,000-year flood events in several counties.¹ Flooding, landslides, strong winds, and tornadoes generated by the storm combined with unique aspects of western North Carolina to produce a major disaster. To date, Helene is the third-deadliest US storm in the 21st century, with nearly 100 confirmed deaths in North Carolina alone and dozens more still missing.

While North Carolina has been impacted by several major disasters in recent years, Helene was characterized by:

A large number of severe or catastrophic impacts on homes and essential services

- **Large-scale damage to homes:** Helene is expected to have damaged more than 100,000 homes, with many thousands having experienced severe or catastrophic impacts.
- **Disruption of life-sustaining services:** Helene damaged or destroyed sewage and water treatment systems in multiple communities and 44 emergency response facilities. The storm resulted in the evacuation of 145 healthcare facilities (including hospitals; nursing homes; and adult, family, mental health, and community health facilities) across western North Carolina.
- **Impacts to transportation and utilities:** Entire communities lost access to core services and communication. Over 1,000 roads and bridges were damaged and closed for traffic, including I-40. Landslides and flooding cut residents off from outside help and communication.

Impacts that may be particularly long-lasting

- **Delay in return-to-business:** With the loss of essential services, utilities, and transportation corridors, came long-term cessations in operations for businesses across western North Carolina. The complexity of restoring infrastructure has directly slowed the reopening of businesses and has impaired access to key customer bases. In turn, businesses face challenges to their survival, which may have significant impact on the region's communities.
- **Multi-year damages:** Key centers of production and revenue generation in industries such as agriculture and tourism experienced impacts that are likely to last for years (e.g., damage to nursery plants, which will need multiple seasons to regrow; damage to backcountry infrastructure and natural landscapes at state and national parks, which may not return to ‘normal’ for years). The longevity of these

¹ A flood with a 1-in-1,000 statistical likelihood of occurring in a given year.

damages is likely to slow re-building, and may make it more challenging for communities to recover, retain residents, and attract visitors.

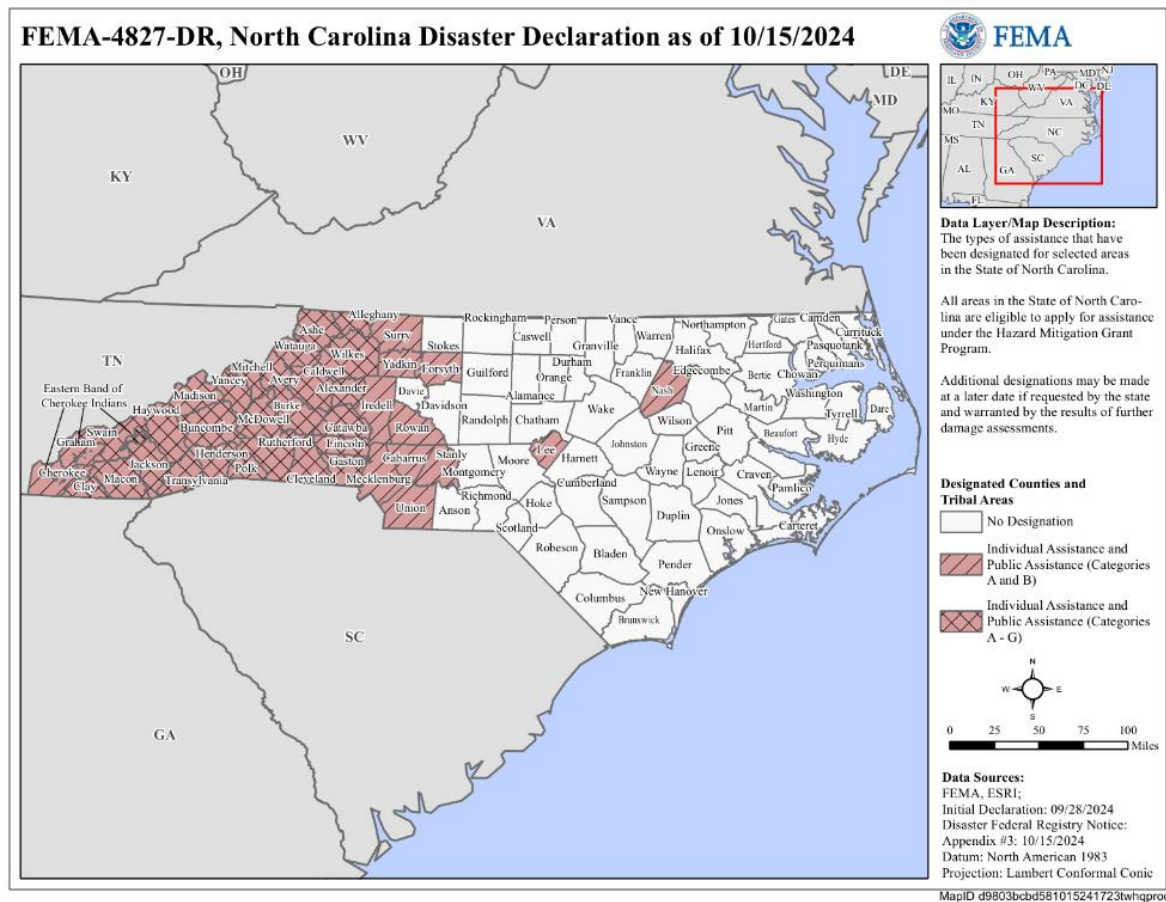
- **Substantial uninsured home and property losses:** Helene damaged thousands of structures, including many residences. Unlike in coastal areas, most homeowners do not carry flood insurance. This coverage gap will dramatically reduce private financial resources for recovery.

Increased costs to complete recovery and mitigate future harm

- **Increased construction costs:** Construction costs have risen significantly since COVID-19. In addition, multiple recovery efforts from concurrent natural disasters across the Southeast may lead to higher-than-normal costs than for disaster recovery.
- **Opportunity for strengthening and mitigation:** Unprecedented damage and impact to the state have led to calls for strengthening and mitigation to prevent future disasters of this magnitude from happening again.

On September 27, 2024, Governor Roy Cooper requested a Major Disaster Declaration from the federal government for 39 North Carolina counties and the Eastern Band of Cherokee Indians for federal Public Assistance and Individual Assistance. On September 28, 25 counties in North Carolina were declared a major disaster by the President of the United States under the Stafford Act (P.L. 93-288), approving individual and public assistance for these counties as well as the Eastern Band of Cherokee Indians. On October 5, two additional North Carolina counties were declared eligible for federal individual assistance, followed by twelve more on October 16. At 4.6 million people, a little less than half (42%) of the state's population live in one of the 39 officially declared federal disaster assistance counties. Of these 39 counties, there are 26 counties currently eligible for all categories of FEMA public assistance (FEMA Public Assistance Categories A-G). 1.8 million people, or about 16% of all North Carolinians live in these 26 most impacted counties.

Exhibit 1: North Carolina counties included in FEMA’s Helene disaster declaration



To aid response and relieve burden on affected North Carolinians, the Cooper Administration quickly signed executive orders deploying State Emergency Response and temporarily waiving certain requirements on vehicles supporting emergency relief;² temporarily suspending limitations on certain types of vehicle fuels;³ temporarily increasing flexibility for affected state employees and expediting hiring to support emergency response;⁴ temporarily waiving certain requirements for medical practice and enabling delivery of emergency medications;⁵ and temporarily increasing flexibility for essential social programs (e.g., childcare, foster care, public health, aging, Medicaid, TANF, vocational rehabilitation);⁶ addressing the impact on water systems and other infrastructure and waiving regulatory requirements;⁷ and providing unemployment insurance relief to those affected.⁸

While North Carolina has experienced storms of similar size and strength to Helene – like 2018’s Hurricane Florence – the damage and regional characteristics have created complexities the state has never before experienced. These complexities complicated the comprehensive damage and needs assessment due to:

² E.O. 315, September 25, 2024
³ E.O. 316, October 3, 2024
⁴ E.O. 317, October 4, 2024
⁵ E.O. 318, October 5, 2024
⁶ E.O. 319, October 9, 2024
⁷ E.O. 320, October 15, 2024
⁸ E.O. 322, October 16, 2024

- **Impaired access:** Large-scale flooding and landslides caused extensive damage to transportation infrastructure in the region. The extensive road damage has at times slowed aid and hindered damage assessments of many of western North Carolina's more isolated communities. Road construction crews have worked tirelessly to make it safe for first responders and inspectors to move in and out on a limited set of transportation corridors.
- **Difficulty of communication:** Helene caused significant damage to communications infrastructure in western North Carolina. These impacts were amplified by damaged transportation infrastructure, which has slowed network restoration by service providers, and the region's mountainous topography, which limited the range and quality of connections provided by temporary solutions. The resulting severe, prolonged communications disruption has limited the ability of first responders and inspectors to communicate across and outside the region.
- **Disparate nature of communities:** Many affected communities and residences are spread far apart and isolated by western North Carolina's mountainous terrain. This is evidenced by the region's relatively low population density. Counties in the major disaster declaration that experienced greatest rainfall have an average population density of 156 residents per square mile, compared to 169 per square mile in Florence-affected counties and 223 per square mile for North Carolina as a whole.

Despite the complexity of comprehensive damage and needs assessment, initial state and external estimates can provide a sense of Helene's total impact. With the assistance of state agencies, non-governmental organization partners (e.g., League of Municipalities, Association of County Commissioners), and private stakeholders (e.g., utilities), the Office of State Budget and Management (OSBM) has completed a preliminary, limited damage and needs assessment, to be followed by a comprehensive assessment in the coming weeks. This preliminary assessment estimated Helene's total potential impact in counties receiving federal individual assistance at **\$48.8 billion** (excluding the identified needs to strengthen and mitigate our communities). This estimate implies impact in North Carolina more than twice that of Florence, and is supported by external assessments:

- On October 4, CoreLogic estimated **\$30.5-47.5 billion** in property damage across affected states from wind and flood.⁹
- Moody's Analytics estimated **\$38-\$58 billion** in total economic loss, with property damages accounting for most of the total.¹⁰

While the comprehensive damage and needs assessment has not yet been completed, early action – in addition to the \$273M already appropriated – may be critical to the long-term well-being of affected communities. Recent research investigating 2,797 county-level recoveries from \$1 billion disasters found that those that experienced “leading recoveries”¹¹ were more likely to quickly mobilize significant, flexible capital and proactively invest in local capacity and expertise to support post-disaster efforts.¹²

⁹ <https://www.corelogic.com/intelligence/blogs/hazard-hq/ptc9-hurricane-helene-florida/>

¹⁰ Moody's Talks: Inside Economics. “Consumer Prices & Catastrophic Hurricanes.” October 11, 2024. <https://www.moody.com/web/en/us/about/insights/podcasts/moodys-talks-inside-economics/consumer-prices-catastrophic-hurricanes.html>

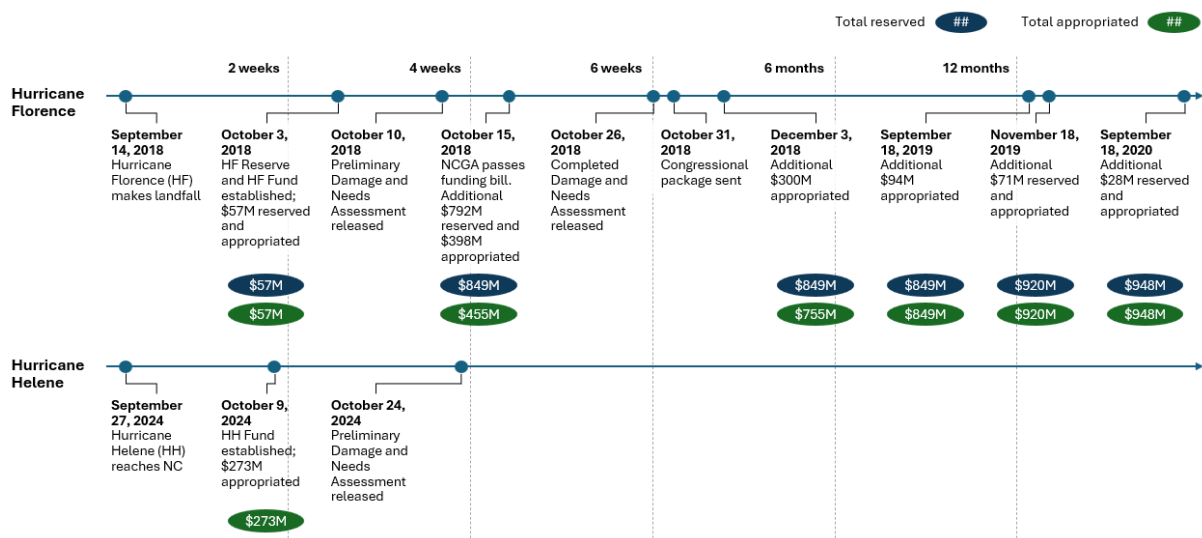
¹¹ Recoveries in which economic growth in the first two years after the disaster exceeded pre-disaster levels and was sustained at least five years after the disaster

¹² Mysore, Mihir , Tim Ward, Tom Dohrmann and David Bibo. “Bounce Back Better: Four Keys to Disaster Resilience in U.S. Communities.” Edited by Kayyem, Juliette and Nate Bruggeman. October 1, 2024

Following Hurricane Florence, the General Assembly reserved and appropriated \$57 million on October 3, 2018. This was followed by reservation of an additional \$792 million and appropriation of an additional \$398 million based on a preliminary damage and needs assessment, 4 weeks after the storm. To date, state appropriations to support Florence recovery total \$948 million.

Despite the unique challenges posed by Hurricane Helene, we are on track to deliver a comprehensive damage and needs assessment on a similar timeline. To date, the General Assembly has appropriated \$273 million to support response and recovery.

Exhibit 2: Timeline for DNA development and appropriations for Hurricanes Florence and Helene (to date)



The pages that follow provide initial estimates of damage and needs across local economies, housing, utilities and natural resources, transportation infrastructure, agriculture, government property and revenue, education, health and human services, and tribal and federal lands, based on best available data, with the expectation to complete a comprehensive damage and needs assessment by November 19.



Economy

Addresses physical damage and economic losses for non-agricultural businesses and non-profit organizations

Preliminary Estimates (\$M)								
Category	Damage & needs			Investments				
	Direct	Indirect/ Induced	Total	Expected Federal	Expected Private	Expected Other	State Funded	Unfunded
Business Disruption	\$7,250	\$5,890	\$13,140	\$54	\$143	\$75	-	\$12,868
Structures/ Equipment	\$2,700	-	\$2,700	\$297	\$1,196	\$10	-	\$1,197
Vehicles	\$75	-	\$75	-	\$56	-	-	\$19
Sub-Total	\$10,025	\$5,890	\$15,915	\$351	\$1,395	\$85	-	\$14,084
Strengthening & mitigation	-	-	-	-	-	-	-	-
Total	\$10,025	\$5,890	\$15,915	\$351	\$1,395	\$85	-	\$14,084

1. Summary

Western North Carolina is forever changed in the wake of the devastating impacts of Hurricane Helene, significantly impacting the area’s economy. Thousands of businesses in the region suffered damage from rushing flood waters, landslides, wind, and falling trees. Even businesses spared from direct damage were often cut off from workers and customers due to washed-out roads or being unable to open due to extended outages of electricity, water, sewer, and communications.

The preliminary findings of this analysis confirm that the economic devastation from Hurricane Helene is unparalleled in modern North Carolina history: nearly \$16 billion in total impact. The total includes an estimated \$2.8 billion damages to business and nonprofit property, including structures and vehicles, and more than \$13 billion in economic loss from reduced business revenue, resulting in billions of dollars less in income for workers and business owners. OSBM estimates payments from private insurance, federal grants and subsidized loans, and unemployment insurance will cover about \$1.8 billion of the \$16 billion total negative impact.

Economic Overview

Most of the damage from Hurricane Helene was concentrated in the western half of the state. Western North Carolina is home to scenic parks and cultural attractions that drive tourism and support local hospitality, retail, and restaurant businesses. Seasonal tourism surrounding “peak leaf season” in fall is particularly important in many of the counties most affected by Helene, with local businesses regularly citing the relative importance of October to annual revenue. The mountains receive nearly 30% of annual visitor spending in fall and early

winter, totaling more than \$2 billion in western North Carolina during the prior fall season.¹³ Several counties within the affected region rely on arts, entertainment, recreation, accommodation, and food services for 5% or more of total employment, much higher than the 1-3% share for those industries in most other areas of the state.¹⁴

Of 100 counties in the state, 39 are eligible for FEMA Individual Assistance (IA). Those counties:

- Make up 45% of North Carolina’s total GDP;
- Host 115,237 separate employer business establishments, 46% of which have five or fewer employees;¹⁵
- Are home to an additional 384,000 “mom and pop” businesses with no employees and \$18.7 billion in receipts;
- Had an average unemployment rate of 3.3% in 2023, lower than the state average of 3.5%. For the most recent month of unemployment data, August 2024, unemployment in this region was 4.0%, lower than the North Carolina rate of 4.3%; and
- Are home to unique businesses that play major roles in supplying products for specific industries, including Baxter International in McDowell County, an IV fluid manufacturer whose North Carolina plant supplies 60% of IV fluids nationwide,¹⁶ and quartz mining operations in Spruce Pine, which supply most of the world’s high-purity quartz for semiconductors and other technologies worldwide.¹⁷

Following Hurricane Helene, some businesses have begun to clean up and reopen following initial disruptions, but face obstacles to complete recovery, particularly in the hardest-hit counties.

- Although regional unemployment data lags the effects of major disaster events, initial unemployment claims in North Carolina in the week after Hurricane Helene spiked to more than three times the average in 2024 thus far.¹⁸
- As of October 20, FEMA provided almost 90,000 households with housing and other assistance related to the effects of Hurricane Helene, totaling approximately \$120 million in support. FEMA assistance to families helps sustain local consumer spending, which helps businesses that remain open but are experiencing lower sales from out-of-town visitors.¹⁹
- FEMA estimates that as October 13, over 90% of gas stations, grocery stores, and pharmacies in the area affected by Helene have resumed conducting transactions. These locations represent key consumer staples, and spending levels in these stores

¹³ VisitNC special data request.

¹⁴ North Carolina Regional Economic Analysis Project, 2022 data.

¹⁵ US Census Bureau. 2022 County Business Patterns.

¹⁶ NPR. “Baxter bringing back hurricane-hit IV supply facility in stages.” October 9, 2024.

<https://www.reuters.com/business/environment/hurricane-impact-baxter-further-constrain-iv-fluid-supply-hhs-says-2024-10-09/>

¹⁷ NPR. “A tiny town just got slammed by Helene. It could massively disrupt the tech industry.” October 1, 2024.

<https://www.npr.org/2024/09/30/nx-s1-5133462/hurricane-helene-quartz-microchips-solar-panels-spruce-pine>

¹⁸ FRED Initial Claims in North Carolina (NCICLAIMS).

¹⁹ FEMA Daily IA Status Report for 10/16/2024.

are nearing pre-Helene levels. Other businesses, however, are operating far below pre-Helene levels.

2. Scope

Losses in scope for the economic-impact estimates include:

- Physical damage to real and personal property, including vehicles, owned or leased by private businesses and non-profit organizations
- Economic loss from business-disruption effects, including lost revenue to businesses and lost income for workers

The economic losses from business disruption covers the whole of the state's economy, except for the farming and fishing industries (those losses are covered in the Agriculture section) and government (losses to government entities are covered in the Government and Recovery Operations section).

3. Methodology

Damages to Buildings and Other Business Property: OSBM combined two approaches to estimating structural damages: a “top-down” approach to estimate total damages given limitations in modeling floods, landslide, and wind damages, and a “bottom-up” approach using a combination of on the ground observations and modeling to estimate the distribution of total damages.

- **Top-down approach:** The top-down approach leveraged detailed data from FEMA IA applications and inspections to identify structural damages. OSBM used the most recent publicly available applicant-level Helene IA data as of October 12 to project the final number of Helene IA registrations, inspections showing flood damage, and the total amount of verified flood damage for IA applicants. OSBM estimated the projected amount of verified flood damage for Helene IA applicants to be 150% higher than the final amount of FEMA-verified flood damage from Hurricane Florence IA applications.

Because FEMA-verified flood damages only account for a small fraction of total flood damages, OSBM estimated the total amount of damage to business and nonprofit structures and to equipment to be 150% higher than the final estimate of total flood damage from Hurricane Florence based on OSBM's October 2018 Damage and Needs Assessment for Hurricane Florence, adjusted for more recent data from the NC Department of Insurance on final insurance payments and losses resulting from Hurricane Florence. This method provides information only on the total amount of damages to business and nonprofit structures and equipment, not the distribution of damages across counties, structure types, or level of damage.

- **Bottom-up approach:** This approach relies primarily on Search and Rescue (SAR) data collected by FEMA and the NC Division of Emergency Management (DEM). These teams categorize properties they observe as destroyed, having major or minor damage, affected, or unaffected based on criteria established by FEMA. OSBM supplemented SAR observation data with modeled geospatial data on flood inundation produced by DEM and modeled geospatial data on landslides developed

by the NC Department of Environmental Quality (DEQ) and the US Geological Survey. OSBM and DEM combined these datasets with parcel data from counties, which provides property values for most of the structures with confirmed damage from SAR data or likely damage based on flooding and landslide modeling. Although the data are very detailed, SAR teams have only categorized a subset of damaged buildings, and the mountainous topography and unprecedented level of flooding in the area resulted in underestimates for the number and severity of damages to structures based on flood and landslide modeling.

- **Combined approach:** Given the limitations of both methods, OSBM employed a hybrid approach. The top-down approach likely provides a more accurate representation of total structural damages and is more consistent with estimates of structural damages from Hurricane Helene by organizations like property analytics firm CoreLogic and Moody's Analytics. CoreLogic estimates between \$20 billion and \$30 billion in uninsured flood property losses from Helene and between \$11.5 billion and \$17.5 billion in insured property losses.²⁰ Moody's Analytics estimates \$38 billion to \$58 billion in total economic loss, with property damages accounting for most of the total.²¹ The bottom-up approach allows for better estimating the distribution of damages across counties, structure types, and level of damage.

Business Disruption: OSBM estimates total nonfarm non-governmental business disruption loss to North Carolina from Hurricane Helene to be \$13.1 billion – inclusive of direct and secondary (indirect and induced) effects.

- All 100 counties were grouped into five categories of impact – critical, high, moderate, low, and minimal (see figure in Assumptions below). Criteria for designation include FEMA designation for and current uptake of IA, duration and severity of electric power outages, search-and-rescue damage estimates as a proportion of county assessed real property value, and duration of county school closures.
- OSBM estimated and projected the level of decreased economic output over multiple time periods for each severity category extending 12 months after the initial impact of the storm (see Assumptions section below).
- The disruption assumptions were applied to the average daily nonfarm, non-government employee compensation figures in each group of counties to determine the total direct impact on compensation.
- Compensation losses were scaled to employment, GDP, and total industry output (i.e., business receipts) in an economic modeling platform (IMPLAN) to calculate the direct and secondary impacts on economic output and other economic indicators. Three separate models were run based on the classification of county by severity of impact (critically and highly impacted counties, moderately impacted counties, and low and minimally impacted counties). Model estimates also include the impact of disruptions in county groups on one another.

²⁰ CoreLogic. "Helene Insured Loss Estimate Updated, Gap Becomes Clear." October 4, 2024. <https://www.corelogic.com/intelligence/blogs/hazard-hq/ptc9-hurricane-helene-florida/>

²¹ Moody's Talks: Inside Economics. "Consumer Prices & Catastrophic Hurricanes." October 11, 2024. <https://www.moody's.com/web/en/us/about/insights/podcasts/moodys-talks-inside-economics/consumer-prices-catastrophic-hurricanes.html>

- Direct effects include lost production and sales to firms resulting from storm-related disruptions (e.g., business closures, reduced access by employees and customers, etc.). Secondary effects include changes to business-to-business purchases and household purchases affected by disruptions and wage losses. The total business disruption loss reported is the total effect on business output, which is consistent with how business disruption was reported for Hurricane Florence in the past.

OSBM anticipates that additional data, including data from early insurance claims, FEMA inspections, refined flood and landslide mapping, and business operations and utility outages, will become available in the weeks after the publication of this document. OSBM will incorporate new data as it becomes available to refine estimates of structural and personal property damages and business disruption in subsequent versions of this report.

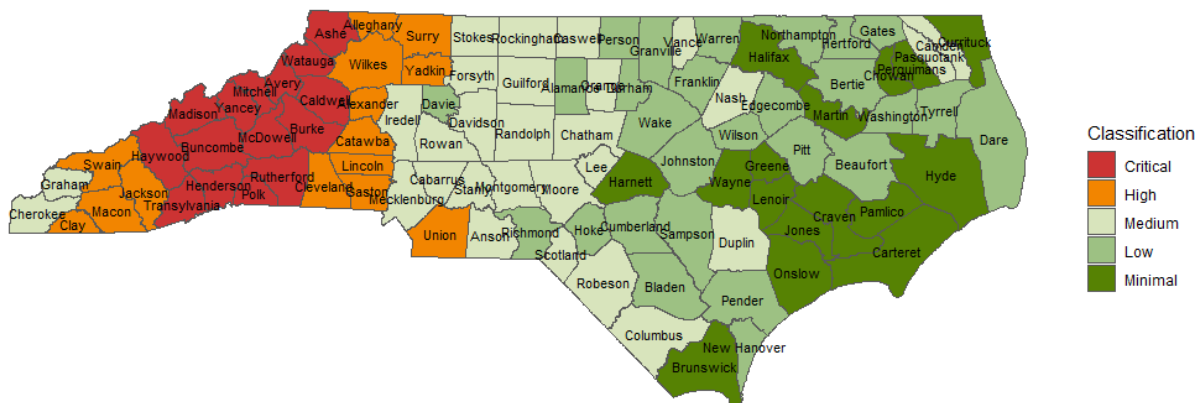
4. Assumptions

- ***Buildings and Structure Losses:*** For the top-down approach, this assessment assumes flood related and non-flood related structural damage data from Hurricane Florence can serve as a reasonable benchmark for scaling Hurricane Helene’s damage estimates despite differences in terrain. OSBM also assumed that IA applications and inspections to date, with a modest reduction in assumed average flood damage per inspection, represent an adequate sample for projecting total damages. The model assumes that the ratio between FEMA IA payouts and total structural damages for Florence recipients will hold for Helene. Experience from hurricanes Matthew, Katrina, Harvey, Superstorm Sandy, and Florence suggests construction costs are 8-20% higher in the aftermath of an event due to a shortage of available construction services or an increase in the cost of raw material or labor. The top-down approach indirectly incorporates additional construction costs, conservatively estimated to be 15% for this report.

For the bottom-up approach, damaged buildings were identified based on SAR locations as well as modeled flood or landslide status of a location. The value of the damaged buildings was computed using affected parcels’ improved value with a multiplicative factor of 100%, 55%, 20% and 10% assigned to destroyed, major, minor, and affected buildings, respectively. These assumptions were modeled after a method developed by Wisconsin Emergency Management.²²

- ***Business Disruption:*** County impact category and assumptions for disruptions in each category are below. Disruption time-duration assumptions are based on power outages, road closures, and state park facility and school closures, along with re-opening timelines where available. The business-disruption levels reflect estimates of business revenues permanently lost due to the storm. Many businesses will compensate for reduced production and revenues during and immediately after the storm with higher production and sales (e.g., through overtime) and some may be able to mitigate lost sales over longer time periods by shifting operations (e.g., through increasing online sales).

²² <https://www.wistatedocuments.org/digital/api/collection/p267601coll4/id/1662/download>



Business Disruption Assumptions											Disruption Factor (Days)	
Period Start (Incl.)	9/26	9/28	10/1	10/6	10/11	10/16	10/21	10/31	12/1	12/31		
Period End (Excl.)	9/28	10/1	10/6	10/11	10/16	10/21	10/31	12/1	12/31	9/27		
Days	2	3	5	5	5	5	10	31	30	270		
Weekdays	2	1	4	4	3	3	8	22	21	194		
County Impact Categories	Share of Business Activity Permanently Disrupted											
Critical	95%	85%	75%	55%	35%	15%	10%	8%	5%	1%	20.88	
High	50%	40%	30%	15%	8%	3%	3%	2%	1%	0%	6.03	
Moderate	30%	10%	5%	2%	0%	0%	0%	0%	0%	0%	1.35	
Low	20%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0.58	
Minimal	5%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0.15	

5. Primary Data Sources

- NC Division of Emergency Management for search and rescue structure damage, preliminary inundation geography, and power outages, along with poweroutage.us
- Department of Transportation for road closures
- NC OneMap for parcel data from NC counties
- U.S. Bureau of Economic Analysis for county-level employee compensation
- IMPLAN for estimates of county-level economic indicators, multipliers, and inter-industry linkages
- FEMA for individual assistance statistics for current and previous disasters and building-footprint occupancy types
- NC Department of Insurance for historical insurance claims related to Hurricane Florence
- CoreLogic and Moody’s Analytics for comparative damage estimates
- VisitNC for quarterly data on tourism spending in Western NC for 2023

6. Potential Sources of Non-State Funding

Federal

- *Small Business Administration (SBA) Loans (\$175 million)* – The agency provides low-interest disaster loans to eligible small businesses for damages to property and equipment or financial losses. SBA is currently accepting and reviewing disaster loan applications but is unable to make new loan offers due to a lapse in Congressional funding. Before exhausting funding, SBA received 37,000 total applications across the affected states related to Hurricane Helene and made more than 700 loan offers for a total of \$48 million. Applying the ratio of damage to commercial structures between Hurricane Helene and Hurricane Florence suggests that SBA loans may cover \$175 million in hurricane-related commercial damages.
- *FEMA Public Assistance (\$122 million)* – Structural damage to private nonprofit entities is eligible for coverage under FEMA PA. Based on national statistics, OSBM estimates that 5% of establishments with structural damages are private nonprofits and that \$122 million, or 90%, in losses will be covered by FEMA. The state would need to provide matching funds of \$13.6 million.
- *Disaster Unemployment Assistance (DUA) (\$44 million)* – FEMA and the U.S. Department of Labor provide payments to cover income losses resulting from disaster-related unemployment or inability to work. The Division of Employment Security (DES) estimates that up to 50,000 workers could claim up to 14 weeks of DUA benefits, which would result in an estimated \$175 million in payments.²³ Given the rise in unemployment insurance claims in North Carolina immediately following Hurricane Helene and the projected duration of business disruptions, OSBM estimates 25% utilization of the DES maximum, or \$44 million paid from the DUA program.
- *Disaster Dislocated Worker Grant (\$10 million)* – Workers in counties eligible for PA are potentially eligible for funds to provide jobs and training through the Department of Labor. These two-year grants create jobs in recovery and humanitarian assistance, and initial funding totals \$10 million.
- *HUD Community Development Block Grants-Disaster Recovery (TBD)* – North Carolina applied Community Development Block Grants-Disaster Recovery and Mitigation (CDBG-DR and CDBG-MIT, respectively) to Hurricane Matthew and Florence recovery efforts. Congress would need to appropriate CDBG-DR and CDBG-MIT funds for Hurricane Helene response before NC can access them for disaster recovery efforts. A portion of CDBG-DR funding could be used to support economic development. More details of North Carolina’s anticipated allocation for CDBG-DR are available in the Housing section of this report.

Private

- *Private Business Disruption Insurance (\$143 million)* – Business-disruption insurance is expected to cover 2% of the direct economic losses, similar to coverage levels during Hurricane Florence.

²³ NC Governor’s Office Press Release. “Governor Cooper Issues Executive Order Increasing Unemployment Payments for North Carolinians in the Wake of Hurricane Helene.” <https://governor.nc.gov/news/press-releases/2024/10/16/governor-cooper-issues-executive-order-increasing-unemployment-payments-north-carolinians-wake>

- *National (NFIP) and Private Flood Insurance (\$270 million)* – OSBM expects NFIP and private flood insurance to cover \$270 million in flood damages. Final insurance claims data for Hurricane Florence suggest that flooding accounted for less than half of damages to business and nonprofit structures and equipment. Due to lower windspeeds in North Carolina from Helene, OSBM assumes that flooding losses will account for a greater share of total damages (two-thirds). Based on FEMA IA data as of October 12, only 7.5% of homes with FEMA-verified flood damage had any flood insurance coverage. This analysis assumes commercial coverage rates would be double the rate for homeowners due to higher insurance compliance rates, resulting in an estimated 15% insurance coverage for flood damages to commercial structures.
- *Private Insurance for Other Hazard Damage (\$766 million)* – Commercial property and automotive insurance would cover damages not incurred by flooding. Assuming business coverage remains consistent with levels seen during Hurricane Florence, OSBM anticipates \$710 million in damage to real property, inventory, and equipment and \$56 million in automotive damage will be covered by private insurance.
- *Private Commercial Loans (\$216 million)*: In addition to federal loans to businesses through the SBA, some businesses—particularly larger businesses—will obtain loans from private commercial banks to finance needed repairs to damaged buildings or replace destroyed buildings and equipment. A recent paper estimated that households cover 8% of disaster repairs using formal loans from private lenders.²⁴ Assuming businesses cover the same share would result in an estimated \$216 million in private loans to cover disaster repairs not covered by insurance or other sources.

Other

- *Nonprofit Organizations (\$10 million)* – Various nonprofit entities and community-development institutions have stepped up to provide subsidized loans and technical assistance to hurricane-affected businesses and replace lost income for eligible workers in specific industries. OSBM has not had time to catalog all of these efforts but know that there are many and they are ongoing.
- *Enhanced Unemployment Insurance Benefits (\$75 million)* – Enhanced benefits following Hurricane Helene include a \$250 increase in weekly payments for workers through the duration of the disaster declaration. The Division of Employment Security (DES) estimates that full expanded state benefits to 50,000 workers for 12 weeks will cost \$150 million at most.²⁵ Given the rise in unemployment insurance claims in North Carolina immediately following Hurricane Helene and the projected duration of business disruptions, OSBM estimates 50% utilization of the DES maximum, or \$75 million paid from the Unemployment Insurance Trust Fund.

²⁴ Collier, Benjamin L. and Ellis, Cameron M. (2024). A Demand Curve for Disaster Recovery Loans. *Econometrica*. 92 (3) pp. 713-748. DOI: 10.3982/ECTA20417.

²⁵ NC Governor’s Office Press Release. “Governor Cooper Issues Executive Order Increasing Unemployment Payments for North Carolinians in the Wake of Hurricane Helene.” <https://governor.nc.gov/news/press-releases/2024/10/16/governor-cooper-issues-executive-order-increasing-unemployment-payments-north-carolinians-wake>

7. State Funding Recommendations – \$649.6 million

The recommendations below combine grants and low-cost loans to support businesses impacted by Hurricane Helene, along with grants to local governments and other entities to rebuild commercial infrastructure and provide technical assistance. Research has shown that both grants and loans play critical roles in helping businesses recover from disaster.

Combining both grants and loans often proves more effective than relying only on one strategy. Grants are especially important early on, when businesses are vulnerable to cash-flow problems related to factors such as destroyed infrastructure and supply chains, disaster-induced-demand changes, and workforce challenges (e.g. employees who are themselves disaster victims). As one recent study noted, "[e]ven small amounts of faster funding can help businesses re-open more quickly and reduce their interruption losses."²⁶ Government recovery loans, covering longer time periods, can further help businesses retain employees, increase revenue, and avoid delinquency or bankruptcy, while also inducing more private investments in those businesses.²⁷

Other recent research indicates that states and local governments that have moved quickly to support disaster recovery efforts, including investing in promoting business recovery, experienced more rapid economic recoveries than areas that acted more slowly.²⁸

Sustaining Businesses by Replacing Lost Revenue

Helene Business Recovery Grants – \$475 million

Provides funds to the Department of Revenue (NCDOR) to award grants to businesses in the counties hardest hit by Hurricane Helene.

Phase 1: Immediate Recovery Needs – \$150 million

In Phase 1 of the Helene Business Recovery Grant program, businesses are eligible for a grant equal to the lesser of \$50,000 or 25% of taxable sales based on sales tax returns filed with NCDOR covering sales from October and November of 2023. For businesses that do not list taxable sales on their sales tax return, the grant amount will be equal to the lesser of \$50,000 or 4% of gross receipts as reported on 2022 federal tax schedules.

Businesses eligible for Phase 1 are those with at least \$8,000 in taxable sales in October and November of 2023 or \$37,500 in 2022 gross receipts and that are registered in counties with valid FEMA IA applications equal to 10% or more of certified 2023 county populations as of October 24, 2024. The minimum qualifying grant amount is \$1,500.

An estimated 23,000 employers and more than 24,000 non-employer businesses would potentially be eligible for Phase 1 grants in the thirteen counties projected to have IA applications numbering more than 10% of the county population. However, based on participation rates in the COVID-19 Business Recovery Grant program and other state and

²⁶ Chang SE, Brown C, Handmer J, Helgeson J, Kajitani Y, Keating A, Noy I, Watson M, Derakhshan S, Kim J, Roa-Henriquez A. Business recovery from disasters: Lessons from natural hazards and the COVID-19 pandemic. *Int J Disaster Risk Reduct.* 2022 Oct 1;80:103191. doi: 10.1016/j.ijdr.2022.103191. Epub 2022 Jul 21. PMID: 35880115; PMCID: PMC9300585.

²⁷ Collier, Benjamin and Howell, Sabrina T and Rendell, Lea, After the Storm: How Emergency Liquidity Helps Small Businesses Following Natural Disasters (April 4, 2024). Available at SSRN: <https://ssrn.com/abstract=4784537> or <http://dx.doi.org/10.2139/ssrn.4784537>

²⁸ Mysore, Mihir, Tim Ward, Tom Dohrmann and David Bibo. "Bounce Back Better: Four Keys to Disaster Resilience in U.S. Communities." Edited by Kayyem, Juliette and Nate Bruggeman. October 1, 2024

federal programs assisting businesses, OSBM expects fewer than 25,000 businesses to receive Phase 1 BRG grants. Businesses must apply for grants, and they will be awarded on a first-come, first-served basis until funds are exhausted.

Eligibility for Phase 1 grants is broader for farmers and includes farming operations in the 37 western declared disaster counties that experienced the most significant rainfall, flooding, and landslides during Hurricane Helene. Information and costs associated with grants for farmers outside of the thirteen counties that have valid FEMA IA applications equal to 10% or more of the population can be found in the Agriculture section of the report.

Phase 2: Sustaining Business Recovery – \$325 million

In Phase 2 of the Helene Business Recovery Grant program, businesses that can demonstrate a loss of gross revenues of 20% or more based on gross receipts in October-December 2023 versus the same period in 2024 are eligible for a grant equal to the lesser of \$75,000 or 25% of the reduction in gross receipts in the final three months of 2024 compared to the final three months of 2023. Businesses must have a reduction in gross revenues in the qualifying period of at least \$6,000 to qualify (equal to a minimum grant of \$1,500) to be eligible for a Phase 2 grant.

Rather than being eligible for Phase 2 of the Business Recovery Grant program, farmers in the 39 declared disaster counties will be eligible for a grant program operated by the Department of Agricultural and Consumer Services (DACS) covering a portion of verified uninsured losses to crops, livestock, aquaculture, and infrastructure, less any amounts received as part of Phase 1 of the Helene Business Recovery Grants. Please see the Agriculture section for more information.

Businesses registered in all counties eligible for FEMA IA are eligible. There are more than 100,000 employers and more than 115,000 non-employer businesses potentially eligible for Phase 2 grants, but only a fraction will experience a large enough decline in sales to be eligible, particularly outside of the areas hardest hit by Hurricane Helene. Businesses must apply for grants, and they will be awarded on a first-come, first-served basis until funds are exhausted.

Helping Businesses Rebuild and Recover

Local Infrastructure Grants – \$70 million

Resilient Main Street Communities Fund – \$50 million

Provides funds to the Department of Commerce's Rural Economic Development Division (REDD) to award grants in federally declared disaster counties to support rebuilding damaged local government and business infrastructure in downtowns and other business districts affected by Hurricane Helene. Eligible projects must include measures to ensure rebuilt infrastructure is more resilient to future flooding events and other natural disasters. Individual grant awards may not exceed \$2.5 million.

Rural Recovery Resource Fund – \$20 million

Provides REDD with funds to award grants similar to the Resilient Main Street Communities Fund but targets rural areas and small towns affected by Hurricane Helene. Projects including

measures to ensure rebuilt infrastructure is more resilient to future flooding events and other natural disasters will receive priority. Individual grant awards may not exceed \$1 million.

ReToolWNC – \$15 million

Provides funds to the Department of Administration’s Office of Historically Underutilized Businesses (DOA-HUB) to award grants of up to \$25,000 to certified Historically Underutilized Businesses and Disadvantaged Businesses Entities. Eligible businesses must have 50 employees or fewer and gross revenues less than \$2.5 million. DOA-HUB will administer this program in partnership with the Carolina Small Business Development Fund and The Institute.

Golden LEAF MountainBizWorks – \$50 million

Provides funds to Golden LEAF to make bridge loans to small businesses affected by Hurricane Helene. These loans will sustain businesses that suffered damages and/or revenue losses while they await longer-term loans from the Small Business Administration or other lenders. Golden LEAF will partner with MountainBizWorks, a nonprofit lender based in Asheville. Repaid capital will support additional lending to small businesses in need.

Carolina Small Business Development Fund – \$6 million

Provides funds to the Carolina Small Business Development Fund (CSBDF) to provide disaster relief and recovery services to small businesses affected by Hurricane Helene. The funding would support grants, disaster recovery business coaching, and development and distribution of a disaster relief toolkit tailored to small businesses.

State Match for FEMA PA – \$13.6 million

OSBM estimates that eligible nonprofits will receive a total allocation of \$135.6 million from FEMA PA toward the costs of addressing damages to nonprofit structures and equipment. This allocation will result in a 10% state share of \$13.6 million to match the estimated \$122 million in federal funds.

NC Community Colleges Small Business Center & Apprenticeship NC

See Education section.

Bringing Tourists Back to western North Carolina – \$20 million

Revitalizing western North Carolina’s Tourism Economy

Provides \$20 million in funds to the Economic Development Partnership of North Carolina's (EDPNC) VisitNC division to support and revitalize western North Carolina's tourism economy. This allocation includes funding for a 12-month targeted media campaign aimed at encouraging both in-state and out-of-state tourists to return to the region. EDPNC will also distribute funds to local tourism offices to support their efforts and to develop a coordinated market strategy to attract visitors back to western North Carolina. Remaining funds will be dedicated to developing programs and campaigns designed to attract new businesses to the region.



Housing

Addresses physical damage to residential structures and cost of housing assistance

Preliminary Estimates (\$M)							
Category	Damage & needs			Investments			
	Direct	Indirect/ Induced	Total	Expected Federal	Expected Private	State Funded	Unfunded
Residential	\$12,200	-	\$12,200	\$5,443	\$2,639	-	\$4,118
Auto/Personal Property	-	-	-	-	-	-	-
Transitional Sheltering	\$3	-	\$3	\$3	-	-	-
Housing Assistance	-	-	-	-	-	-	-
Public Assistance	\$101	-	\$101	\$91	-	-	\$10
Other Needs Assistance	\$600	-	\$600	\$450	-	-	\$150
Sub-Total	\$12,904	-	\$12,904	\$5,987	\$2,639	-	\$4,278
Strengthening & mitigation	\$1,845	-	\$1,845	\$113	-	-	\$1,732
Total	\$14,749	-	\$14,749	\$6,100	\$2,639	-	\$6,010

1. Summary

The preliminary need for housing assistance and recovery is estimated to be \$14.8 billion. The total estimate includes \$12.2 billion due to residential structure damage but will change as FEMA conducts further on-the-ground assessments.

- An estimated 220,000 households will apply for individual assistance.
- Approximately 126,000 homes are expected to be damaged. Single-family homes, manufactured homes, and duplexes account for the majority of affected residential structures.
- Displaced residents will need transitional and short-term housing, personal property replacement, and other assistance.
- Public buildings, such as public housing authorities and other government programs related to housing, may have also suffered damages greater than local capacity can quickly cover.

The direct damage and needs include:

- \$12.2 billion in residential damages;
- \$3 million in transitional sheltering;
- \$101 million in public assistance;
- \$600 million in other assistance for households; and,

- \$1.8 billion in resilience efforts during recovery.

Of the overall estimated need, \$8.7 billion is expected to be covered by private and federal sources of funding, resulting in an unmet housing impact of about \$6 billion. This preliminary estimate will change as additional data from FEMA, NFIP, and insurers become available.

2. Scope

The scope for preliminary housing estimates includes:

- Residential housing: single-family, multi-family, rental residences, public housing, and supportive housing (includes subsidized affordable housing);
- Transitional sheltering;
- Housing for individuals with disabilities, individuals experiencing homelessness, and individuals with severe mental illness; and,
- Individual and public assistance (IA and PA, respectively) payments, with additional non-housing related assistance, such Other Needs Assistance (ONA) and other FEMA programs, separated out.

These estimates do not include losses from private, non-residential buildings, or government buildings, or funding from FEMA's Hazard Mitigation Grant Program (HMGP). These items are covered in other sections of the Damage and Needs Assessment.

Pending Information

As of October 20, 2024, certain data needed to complete this assessment is still unavailable or incomplete. OSBM will incorporate this information into the Damage and Needs Assessment as it becomes available. At a minimum, updates will include:

- FEMA IA claims. The data used to forecast ONA is based on IA claims through October 12th; OSBM used this data to forecast total expected ONA. Individuals can submit IA claims until November 27.
- FEMA PA data. PA claims are not yet available. OSBM scaled PA assistance from Hurricane Florence to estimate FEMA PA for Hurricane Helene recovery.
- Insurance Claims. Insurance claim data from the Department of Insurance (DOI) is not yet available. The estimation for private and flood insurance covered is based on insurance coverage numbers, estimated flood insurance coverage rates in impacted areas, and amounts from previous disasters.

3. Methodology

OSBM relied primarily on Individual Assistance claims data and housing data from the US Census Bureau's American Community Survey (ACS).

The estimates include damage to housing structures, registered motor vehicles, personal property and buildable land.

- *Residential Damages*: OSBM forecasted the total damages to residential structures using FEMA IA data and scaling based on comparisons to Florence. OSBM estimates \$12.2 billion in residential damages, including both single- and multi-family housing. As federal sources of funds to address this need, OSBM included \$5 billion from CDBG-DR, \$320 million from SBA loans, \$120 million from FEMA housing assistance through IA, and \$3 million for the Rapid Unsheltered Survivor Housing program (RUSH), for a total of \$5.4 billion in federal assistance toward residential damages.
- *FEMA Assistance*: OSBM analyzed FEMA IA data published on October 12. The deadline to apply for FEMA IA is November 27, so OSBM projected the number based on the currently known number of applications.
 - *FEMA IA*: To estimate impacted households, OSBM reviewed individual assistance claims presently submitted and projected the number of total applications received based on this data. OSBM estimates 9,546 households receiving housing assistance through IA.
 - *FEMA ONA*: FEMA publishes data on approved ONA funds, which cover immediate housing and life needs, vehicles, essential household items, and disaster-related funeral or child-care costs, with the other IA data. OSBM estimates 133,522 households will receive ONA.
 - *FEMA PA*: FEMA will reimburse housing-related expenditures through PA related to emergency protective measures and public housing facilities. This projection includes public housing authorities' units and government programs that house certain populations, like Transitions to Community Living. FEMA's IA data on October 12 does not include any PA data.
- *US Small Business Administration (SBA) Loans*: The federal residential funding also includes disaster loans for homeowners and renters through the SBA. As of October 16th, 4,310 North Carolinians had registered for SBA loans. OSBM projected the final number of registrations by the November 27 deadline and used the average loan per household for Hurricane Florence to project total SBA loans that residents will receive.
- *Private insurance*: In the absence of DOI data, OSBM used insurance coverage levels from IA data and previous disasters to project the residential damages that private insurance would cover. This analysis divided potential claims into those with flood damage and all other claims. The initial IA data shows that 7.6% of those with verified flood damage had flood insurance, and OSBM applied the percentage of damage that insurance covered following Hurricane Florence for all other claims. Based on the assumption that flooding losses will account for roughly two-thirds of total damage, OSBM estimates that private insurance will approve \$2.6 billion in residential claims.
- *Transitional sheltering*: FEMA PA will reimburse 100% of transitional sheltering costs in designated counties for the first six months following Hurricane Helene. At its peak on October 4th, counties in western NC opened 22 shelters serving 1,162 occupants. The need for transitional sheltering continues to drop. On October 16th, 13 shelters served 570 occupants. OSBM estimated total costs of sheltering by

forecasting the number of occupants through the end of six months following the storm. Using an American Red Cross estimate of cost per occupant, OSBM estimates a transitional sheltering cost of \$3 million over the first six months of recovery, which FEMA will fully cover, to serve 60,627 displaced residents in shelters.

- This estimate does not include participation in FEMA’s Transitional Sheltering Assistance, an IA program that helps victims displaced from and unable to live in their pre-disaster residence. OSBM will incorporate these costs when available.

This methodology does not specifically include several key considerations that many stakeholders have brought to OSBM’s attention. OSBM will continue to refine how to address these key considerations in subsequent versions of this document:

- *Vulnerable Individuals and Families:*
 - *People experiencing homelessness:* Approximately 4,600 individuals in disaster-declared areas were unhoused as of 2022. Individuals experiencing homelessness are often more at-risk and vulnerable during hurricanes due to limited resources and community connections.
 - *People with disabilities:* 12.8% of individuals in western North Carolina identify as having a disability. Individuals with disabilities may not have the flexibility to relocate and may be more impacted by disaster related challenges.
 - *Aging population:* In North Carolina, 17.5% of the population is 65 or older. While across all declared counties, this same statistic holds, 32 of the 39 declared counties have a percentage aged 65+ above this statewide average, ranging up to 33%. Excluding Mecklenburg, Union, Cabarrus, Watauga, and Iredell – the only counties with less than 17% of the population aged 65+, the average increases to 20.6%. Older individuals are more likely to be on a fixed income and experience additional disaster related challenges.
- *Unique Housing Characteristics:* Certain characteristics of the housing supply in western North Carolina create challenges for hurricane recovery and rehousing displaced individuals, such as:
 - *Seasonal Housing:* In the 39 declared counties, seasonal housing represents approximately 10% of the total housing stock, with a range of less than 1% in many of the piedmont counties to nearly 45% in Avery County. Statewide, seasonal housing is only 3.9% of the housing stock.
 - *Vacant Units:* In the 39 declared counties, 7.3% of total housing units are designated as vacant-other in American Community Survey data. Often, housing units designated as ‘vacant-other’ are indicated as such due to condition, foreclosure or other legal reason, or for personal/ family reasons and cannot easily or quickly be reincorporated into the occupied housing stock. Statewide, vacant-other units are only 4.6% of total housing units.
 - *Uninsured/ Underinsured:* Based on American Community Survey 1-year estimates for homeowner insurance costs, over 13% of homeowners in North Carolina are uninsured or underinsured. County data is only available for counties with a population greater than 65,000, providing data for 44

counties, 20 of which are in the disaster areas. These counties have a slightly higher rate of un/under insurance compared to the 24 non-disaster area counties (13.1% and 12.5%). Individuals who are uninsured or underinsured will be more reliant on FEMA and state programming.

- *Flood insurance:* Of the Individual Assistance applications submitted, only 7.6% of households have flood insurance. This will create an increased gap in flood-related damage.
- *Building Codes:* North Carolina's building codes lag behind updated versions, still relying on 2015 standards. This deficiency costs North Carolina federal grants, such as FEMA's Building Resilient Infrastructure and Communities program, that reward states for updating their building codes. Since 2023, North Carolina has lost roughly \$70 million in federal funding due to this outdated policy, hindering projects across the state that would protect residents against storms like Hurricane Helene. These obsolete codes also result in communities facing avoidable damage. FEMA studied the ICC codes' impacts and found that the US has saved \$1.6 billion in average annualized losses by adopting and enforcing the most recent building codes.
- *Affordable housing:* In disaster-declared counties 40.8% of households earn less than 80% of the area median income, so affordable housing is a key issue for this population. Already 55.4% of low-income households experience cost-burdened housing. Public housing authorities, whose eligible damages FEMA would reimburse, serve 2% of residents in this region.
- *Land Use Challenges to Rebuilding:* Western North Carolina faces unique geographic challenges as recovery efforts move forward. Because of the land features described below, these communities have fewer available parcels of land on which to rebuild or construct new housing.
 - *Protected Lands:* Relative to the rest of the state, counties in western North Carolina have a larger percentage of protected land. Considering only state and federal natural areas, parks, and forests, 19.6% of land area in declared counties is protected; this is a conservative estimate since it excludes locally protected lands and privately held easements. In five counties, Clay, Macon, Transylvania, Swain, and Graham, over 50% of land area is federal or state protected. The abundance of protected land, along with topography, limits the supply of buildable land.
 - *Steep Slopes:* The mountainous terrain of western NC limits land to safely construct housing, and both state and local governments have established parameters for certain elevations and slopes to ensure resilient development. For example, G.S. 113-209 prevents counties or cities from constructing buildings on ridges with an elevation of at least 3,000 feet and that are at least 500 feet above the elevation of the adjacent valley floor.
 - *Landslides:* According to the US Geological Survey, Hurricane Helene caused a total of 1,171 landslides in the Appalachian Mountains. Land along their path not only loses structures already in place but also risks losing the ability to develop on it later. As western NC counties that suffered landslides recover, they face a smaller area to redevelop because of those damages.

- *Local Zoning for Mobile Homes:* Per the US Census Bureau, disaster-impacted areas had over 200,000 mobile homes before Hurricane Helene. The US Census Bureau American Community Survey defines mobile homes as mobile dwelling structures and towable recreational vehicles. Mobile homes have weaker structural integrity and are more susceptible to damage from storms. In addition, stakeholders raised concerns that due to local zoning ordinances that restrict where mobile homes may be located, some units may need to be replaced with single-family residences. These single-family residences will have a higher cost than what FEMA would reimburse through IA, as FEMA typically only replaces like with like.
- *Buyouts:* Stakeholders raised that these challenges in land development will lead many residential structures to not meet industry standards for septic, setbacks, and slope. As a result, survivors facing these obstacles to build may pursue buyouts more than following previous storms.

4. **Assumptions**

- *Residential damages and needs* – OSBM used FEMA IA data available as of October 18th. Since the deadline to apply for IA is November 27, OSBM projected total IA based on program enrollment following Hurricane Florence and adjusted the estimate for inflation. These projections do not include flood inundation or landslide layers that map specific damages to certain structures; OSBM will include structural damage data as it becomes available.
- *Construction cost* – The preliminary assessment for property damages conservatively assumes construction costs will increase by 15% due to the storm. Experience from hurricanes Matthew, Katrina, Harvey, Superstorm Sandy, and Florence suggests construction costs are 8-20% higher in the aftermath of an event due to a shortage of available construction services or an increase in the cost of raw material or labor. In addition, Hurricane Helene construction costs will likely to be driven up by the continued impact of the pandemic recovery, more difficult terrain, and Hurricane Milton.
- *Resiliency* – Recovery efforts should account for additional costs and needs to rebuild more resilient communities to mitigate future damages. OSBM included 15% of capital costs for resiliency needs to account for this approach.

5. **Primary Data Sources**

- American Community Survey 1-year and 5-Year County Estimates
- FEMA Individual Assistance Claims through October 12, 2024
- Conversations with state agencies and stakeholders involved in housing

6. Potential Sources of Non-State Funding

Federal

- North Carolina expects to receive \$570 million from FEMA for individual assistance, temporary shelter, and other household assistance programs, resulting in a state match need of \$150 million due to the varying program match requirements. FEMA ONA requires a 25% state share, while the state share for other programs that support individuals and households during recovery varies. IA housing assistance (\$120 million) does not require a state match. FEMA has not published data on the following programs that NCEM included in its estimate of FEMA IA state match:
 - Transitional Sheltering Assistance;
 - Non-Congregate Sheltering Program;
 - Mass Care/Emergency Assistance;
 - Disaster Case Management;
 - Crisis Counseling Assistance and Training Program;
 - Disaster Legal Services;
 - Disaster Unemployment Assistance; and,
 - Voluntary Agency Coordination.
- North Carolina also expects to receive an estimated \$91 million from FEMA for PA toward the costs of addressing damages to public housing authority units and other housing-related government programs. This allocation will result in a 10% state share of \$10 million. OSBM projected this estimate by scaling North Carolina's amount for this purpose from Hurricane Florence for damage and inflation.
- The US Department of Housing and Urban Development (HUD) runs the Emergency Solutions Grant (ESG) program to provide grants to local governments and non-profit organizations to shelter and re-house residents at risk of or facing homelessness. HUD has already announced \$3 million from ESG to the Rapid Unsheltered Survivor Housing program (RUSH) to North Carolina. Though FEMA PA will reimburse 100% of local sheltering for the first six months, RUSH will allow NC to support sheltering residents beyond that timeframe.
- As of October 16th, the US Small Business Administration (SBA) has registered 4,310 homeowners and renters for low-interest disaster loans. With another month before the homeowner/renter deadline to apply, OSBM currently estimates NC residents will receive \$320 million in SBA disaster loans.
- FEMA has not yet announced funding from the Hazard Mitigation Grant Program (HMGP) for North Carolina following Hurricane Helene. This aid will result in a state match need of 25%. As a state with an enhanced mitigation plan, North Carolina qualifies to receive a higher percentage through HMGP. NCEM receives the state's FEMA HMGP funds and has historically applied them to elevations, acquisitions, and generators. Because FEMA determines HMGP funding based on total damages, the state's outdated building codes do not affect HMGP allocations (unlike BRIC grants).

Federal – Contingent on Special Appropriation:

- *Community Development Block Grants-Disaster Recovery and Mitigation:* North Carolina applied Community Development Block Grants-Disaster Recovery and Mitigation (CDBG-DR and CDBG-MIT, respectively) to Hurricane Matthew and Florence recovery efforts. Unlike FEMA IA and PA programs, the US Department of Housing and Urban Development does not have a threshold that automatically triggers aid to affected areas. Congress would need to appropriate CDBG-DR and CDBG-MIT funds for Hurricane Helene response before NC can access them for disaster recovery efforts. OSBM estimates a total CDBG-DR and CDBG-MIT need of \$5.1 billion. This estimate includes both housing- and non-housing-related parts of the recovery effort, such as economic, health, government, transportation, and utilities initiatives.
- *Low Income Housing Tax Credit (LIHTC):* The Low-Income Housing Tax Credit incentivizes the construction or rehabilitation of affordable rentals for low-income individuals. Additional LIHTC credit has previously been granted to disaster impacted areas to expand the area housing supply. For example, in the Consolidated Appropriations Act of 2021, Congress provided approximately \$986 million in disaster Housing Credit authority for housing development in wildfire disaster areas, and California received an amount equal to 50 percent of the state’s 2017 and 2018 Housing Credit authority.

Private

- *Private Insurance:* OSBM estimates that private insurance will approve \$2.6 billion in residential claims.

7. State Funding Recommendations – \$650 million

Recovery

DPS NCEM State Match for FEMA IA – \$150 million

Provides state matching funds for the FEMA IA program, which supports Hurricane Helene victims with short- to medium-term housing and temporary emergency repairs to damaged homes. FEMA also provides assistance for other needs, such as: medical and dental assistance, childcare, repair or replacement of clothing and household items, moving and storage, and other critical needs. This funding includes support for two specialists and \$35 million for the projected state match for ONA, which is 25% of approved assistance.

DPS NCEM State Match for FEMA PA – \$10 million

Provides state matching funds for the FEMA PA program, which distributes grants to state and local governments to support permanent and emergency work to respond to and recover from major disasters. Housing-related PA eligible expenses include work to address damages to public housing authorities and other government programs that house residents. This funding is a requirement to access the full federal allocation of \$91 million for a total of \$101 million.

Rental, Mortgage, and Utility Assistance – \$25 million

Individuals impacted by the disaster, whether displaced from their homes or their livelihoods affected, often must still pay current rental leases or mortgages while their damaged properties or places of employment are repaired. This program would provide direct assistance to individuals in disaster-declared counties whose have been displaced or livelihoods affected who are unable to afford rental, mortgage, or utility costs due to Hurricane Helene.

Rebuilding Existing Housing Stock

Homeowner Recovery Programs – \$325 million

Expedites the state’s response to Hurricane Helene by starting a CBDG-DR compliant program and providing funds for activities that are not eligible for federal reimbursement as soon as possible. Based on IA claims to date, OSBM estimates that between 121,000 and 132,000 homes have been damaged due to Helene. After both Hurricane Matthew and Florence, it took nearly two years before the state began receiving CBDG-DR funding; yet, recovery needs to start immediately.

Based on current ReBuild spending and understanding that it will take time to stand up a program in the western part of the state, OSBM estimates that \$325 million will provide sufficient bridge funding to support the homeowner and renter program and begin a CBDG-DR compliant homeowner recovery program.

- *\$300 million for CBDG Compliant Homeowner Recovery Program:* Establishes a CBDG-DR compliant program that can begin the rebuilding process prior to the appropriation of federal CBDG-DR funds. This program will help the state to avoid the delay between demand for rebuilding and the availability of federal funds. Projects would include reconstruction and rehabilitations of homes as well as buyouts, particularly for those who cannot wait for the federal recovery programs because they are living in temporary housing or housing that presents urgent safety or health risk.

Based on the state’s experience with the Florence ReBuild program, OSBM estimates that up to over 5,100 homes may ultimately be rebuilt through this program, requiring more than \$1.1 billion for this program. Assuming the program takes six months to begin rebuilding homes and ramps up to completing 100 homes per month by the end of two years, when CBDG-DR funds should be available, OSBM estimates that this funding can help more than 1,200 homes be completed quickly.

- *\$25 million for Unmet Needs for Homeowners and Renters:* Provides funding to help homeowners and renters remain in their communities by supporting minor repairs that can be complete immediately, cover needs that are not FEMA eligible, and fill gaps in FEMA funding. While the need for this funding is known based on past disaster experience, OSBM does not have an estimate of the number of households impacted by Helene in need of such funding at this time, and this request is based on agency recommendations.
 - *Homeowner Repairs and Rehabilitation.* Gets individuals and families back into safe homes as quickly as possible by helping owners who are not

financially able to hire contractors to make permanent repairs to their homes that sustained minor to moderate damage. The objectives of this program are to make homes safe for occupancy and prevent further damage while state and federal long-term disaster recovery programs are set up and/or delays in the applications process. A similar program was successfully used in the Earthquake and Tropical Storm Fred recoveries. Eligible homeowners include those who own homes damaged by Helene but reside outside of the federally declared counties.

- *Rental Property Repair and Rehabilitation*: Focuses on repairing or rehabilitating multi-unit rental properties in the most impacted counties with the goal of getting housing units back in service as quickly as possible. Doing so will reduce the number of individuals and families living in temporary housing and help reduce area depopulation. In addition, because impacted counties have a limited supply of multi-unit rental properties, funding may be used to repair single-family rental units. Rental units damaged by Helene that are outside of the federally declared counties are also eligible for these funds.

Local Government Capacity – \$5 million

Provides funds to OSBM for grants for regional councils of government to support planning and permitting assistance and building/trade inspectors. This will ensure repaired and rebuilt housing meets local requirements. Local governments, especially those in the most critically impacted areas, will need additional capacity to manage the housing recovery from Hurricane Helene. This funding supports staff who can serve multiple counties and prevent backlogs in inspections and ordinance changes and exceptions that slow the rebuilding process.

Historic Tax Credit Bonus – \$1 million

Increases the income tax credit to promote rehabilitation of historic buildings and structures in impacted areas and expands eligibility to include smaller projects.

Assistance for Vulnerable Individuals and Families

Disaster Legal Services – \$1.5 million

Provides funds to OSBM for a grant to NC Legal Aid to provide legal services to disaster victims. Legal support for disaster-impacted individuals will prevent and mitigate fraud/scams early in the recovery process and help victims resolve probate, title, and easement issues, helping avoid delays in the long-term recovery process.

Transitions to Community Living – \$2 million

Provides DHHS with funds to support the Transitions to Community Living program for moving expenses, replacing essential furnishing, and accessibility equipment. This will be partially covered by PA; this portion reflects the state share.

Back @ Home – Helene – \$20 million

Expands current programming in impacted areas in western North Carolina. Back @ Home provides housing stabilization services and financial assistance for individuals in rural communities experiencing homelessness to help transition them to permanent supportive housing. This funding would also support these services in urban counties not in the program's current service area.

Resilience

Affordable Housing – \$50 million

Provides funds to 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 properties as well as emergency, homeless, and domestic violence shelters impacted by Hurricane Helene.

State Acquisition and Relocation Fund (SARF) – \$50 million

Provides funding for SARF, an existing program with a primary focus to buy out flood-damaged homes and encourage individuals with homes in the 100-year floodplain to move outside of floodplains. Due to the housing characteristics and land use challenges in the disaster impacted counties (see 3. Methodology above section), the state expects an unprecedented need for buyouts.

Currently, the SARF can assist with 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 federal programs; and,
- Flood insurance assistance.

Temporary Weatherization Program Expansion – \$10 million

Provides funds (up to \$10,000) to DEQ to provide weatherization services to homeowners impacted by Hurricane Helene. Weatherization helps to reduce utility bills and energy costs and increases home safety. Funds may also address weatherization needs that increase home safety but may not be covered by federal programs.

8. Special Provision Recommendations

- **Update Building Codes.** Amends GS 143-138 to direct the North Carolina Building Code and Residential Code Councils to adopt the most recent building codes from the International Code Council (ICC).
- **Historic Tax Credit Bonus.** Amends GS 105-129.35 to increase the historic tax credit and suspends or reduces the substantial rehab test to allow smaller projects in disasters counties to qualify for historic tax credits.



Utilities and Natural Resources

Addresses the physical damage and cleanup of energy, water, waste clean-up, telecommunications, dams, levees, dikes, and mines infrastructure

Preliminary Estimates (\$M)							
Category	Damage & needs			Investments			
	Direct	Indirect/ Induced	Total	Expected Federal	Expected Private	State Funded	Unfunded
Electricity Providers	\$1,394	-	\$1,394	\$84	\$1,300	-	\$9
Natural Resources	\$100	-	\$100	-	-	-	\$100
Gas	\$41	-	\$41	-	\$41	-	-
Dams, dikes, levees	TBD	-	-	-	-	-	-
Mines	TBD	-	-	-	-	-	-
Water, sewage, stormwater	\$3,657	-	\$3,657	\$3,291	-	-	\$366
Hazardous waste, water treatment	\$96	-	\$96	\$86	-	-	\$10
Telecom and internet	\$101	-	\$101	-	\$101	-	-
Sub-total	\$5,389	-	\$5,389	\$3,462	\$1,442	-	\$485
Strengthening & mitigation	\$1,320	-	\$1,320	\$8	-	-	\$1,312
Total	\$6,709	-	\$6,709	\$3,470*	\$1,442	-	\$1,797

*Only reflects FEMA Public Assistance amounts, exclusive of other potential Federal funding sources.

1. Summary

The electrical, gas, water, sewer, waste, and telecom infrastructure of western North Carolina services about three million residents and 500,000 businesses. The unique geography of this area often requires that pipes, wires, transmission and pumping stations, and related equipment span terrains that are uniquely susceptible to natural disaster and especially difficult to repair or rebuild (e.g., equipment traversing destroyed bridges or alongside high slopes, infrastructure that spans long distances to service low population density areas).

The damage and needs total impact is currently estimated at \$6.7 billion. This is based on preliminary reports of damage from the NC Department of Environmental Quality (DEQ), municipal owned electrical membership organizations, electrical co-operatives, private electricity and gas providers, and the Federal Communications Commission (FCC), but note that in many areas – due to destroyed roads, debris, and related logistical challenges – it has not yet been possible to fully survey the damage.

The direct damage and needs estimate is comprised of:

- \$1.4 billion in damages to the electrical wiring and electrical infrastructure facilities of 23 municipal owned systems, seven co-operative owned electrical systems, and two major private electrical providers in a region serving nearly two million households

- \$41 million in damages to gas lines impacting 400 customers and 10 retail propane locations in NC severely damaged or destroyed resulting in the loss of 5,000 propane tanks
- \$3.7 billion in damages to 163 water and sewer systems and hundreds of miles of impacted distribution pipes across more than 20 impacted towns in affected counties
- \$96 million in damages to up to 400 facilities maintaining hazardous waste, and to manage 5.75 million cubic yards of curbside waste needing to be recycled or disposed of in landfills
- \$101 million in damages to telecommunications and internet infrastructure including submerged substations, thousands of downed utility poles, and downed transmission towers, covering a region with over 70 independent telecommunications and internet providers
- \$100 million in damages to local parks, and erosion to riparian buffers and trail networks across the state
- \$1.3 billion in funding to make infrastructure and technology upgrades to secure a more resilient western NC

As of October 20th, approximately 94% of communications capabilities have been restored across western NC, but the remaining areas require significant infrastructure reconstruction. There are still 25 potable water systems either on a partial system or system wide boil water advisory or notice, and two systems are completely closed. Additionally, 27 wastewater treatment plants are only partially operational or operating on back-up power, five remain with no power, 10 are closed with significant damage, and one continues to have no access. There are 77 active solid waste/debris sites. New requests arrive daily for additional debris sites, and there are currently 520 potential hazardous material incident locations that have been reported.

Of the \$6.7 billion in damage and needs, OSBM estimates that the federal and private sector would cover \$4.9 billion, leaving \$1.8 billion unfunded.

2. Scope

Scope for utilities estimates include:

- Electricity – private providers, cooperatives, municipalities
- Gas – private providers
- Dams, dikes, levees
- Water, sewage, stormwater
- Hazardous waste, waste management
- Telecom and internet
- Natural resources
- Resiliency efforts

3. Methodology

- Electricity Providers: NC electrical cooperatives, community-owned electric systems membership organizations, and the largest private electric providers in western NC provided OSBM with preliminary damage assessments, which amount to about \$1.4 billion. This estimate does not include the costs of the total transmission and distribution infrastructure rebuild required to restore power to the remaining 1,000 homes and business that are in the process of being restored, or to replace temporary repairs done to quickly restore power to customers with permanent infrastructure. As one example, a substation on Swannanoa River Road powering customers in Biltmore Village was decimated by debris and will have to be rebuilt over the next three to four months. Duke Energy is installing a critical, but temporary, substation to power nearly 7,000 customers in the area. These types of necessary temporary patches are expensive, and ubiquitous, across a storm-impacted region where 900,000 homes and businesses suffered power outages. Estimates will be refined as providers continue to conduct assessments, reach cutoff areas, and restore power.
- Gas: Information was provided to OSBM by major gas providers in western NC as well as a propane industry trade association with a presence in North Carolina, South Carolina, and Georgia. These contributors provided preliminary estimates amounting to \$41 million, due to damage to gas transport systems and significant losses of propane tank inventory as a result of flooding.
- Water & Sewage: DEQ's Division of Water Resources and DEM have compiled operational status data directly from water system owners, together with benchmark costs for repair or replacement of these systems. A total of 163 water and sewer systems were damaged as well as hundreds of miles of distribution pipes. In total, 88 wastewater systems and 75 drinking water systems were impacted. In Mitchell County towns have systems that were so devastated by Helene that some systems will require total replacement. In the disaster region, 70% of the population uses septic which is higher than the statewide average of 50%. DEQ estimates 30,000 septic systems will need to be repaired or replaced, at a cost of \$500 million. Many households currently on septic systems may not be able to replace the system and will need to be connected to sewer systems or alternative waste systems.
- Stormwater: No stormwater damage estimates are currently available. DEQ and the UNC Environmental Finance Center estimate local government units across the state have \$250 million dollars in unfunded stormwater needs. DEQ anticipates this unmet need for existing stormwater systems will be exacerbated by Hurricane Helene.
- Hazardous Waste: Average costs of soil and groundwater remediation vary by incident size, scope, and location. Using existing GIS resources, DEQ identified up to 400 facilities in a 500-year floodplain that likely experienced moderate to significant flood damage including underground storage tanks, oil pollution, hazardous waste and abandoned containers. DEQ has arrived at a preliminary damage estimate of \$22 million for Underground Storage Tanks.
- Waste Management: There are 162 landfills in the impacted region and DEQ has found that 16 recycling centers are damaged. The Buncombe Transfer Station is closed due to storm damage to its monitoring wells, perimeter access road, and property damage at their closed landfill. To estimate the need for storage of waste,

DEQ calculated the per-acreage cost of storage as \$800,000/.65 acres. DEQ estimates that 5.75 million cubic yards of curbside material will need to be recycled or disposed in landfills. Each five-acre landfill footprint could hold 288,000 cubic yards of compacted waste. To dispose of all this material, they estimate a total of thirteen five-acre landfill cells will be needed to handle the increased volume of waste from Helene. DEQ's Division of Waste Management has not had an opportunity to verify and categorize reported underground storage tank incidents.

- *Telecom and Internet:* In partnership with DIT, OSBM requested damage assessment information from over 70 major telecommunication and internet providers servicing the 39 disaster declared counties. Access roads incurred significant damage due to the storm, rendering many impassable and making assessments of losses premature for the majority of providers. Thus, only 14 businesses responded with damage estimates, and only nine of them were able to provide data at this early stage. Those that could provide data reported \$71 million in damage. OSBM summed these direct damage reports with cell site transport repair estimates calculated by leveraging benchmarks provided by DIT. This estimate assigned a repair cost associated with an average length of a damaged cable segment for a particular outage duration window. This cost was then multiplied by the number of NC-based, post-storm transport outages repaired by Day 1, Day 5, and Day 11, as reported by the Federal Communications Commission. As providers complete their assessments, more accurate data will become available on damages to telecommunication and internet infrastructure. Estimates provided in this section will be refined based on that data.
- *Natural Resources:* From leaf-peeping to trout fishing to hiking, tourism and outdoor recreation are vital components of the western NC economy. According to Visit NC's 2023 Visitor Spending Report for the western and northwestern prosperity zones, which include the most critically impacted counties, visitors spend more than \$7.5 billion and tourism accounts for over 50,000 jobs in these regions. Western tourism and outdoor recreation are dependent on the abundance of conserved land and unspoiled natural resources. Approximately 19.6% of land area in declared counties is state and federal natural areas, parks, and forests, a conservative estimate that excludes locally protected lands and privately held easements. In addition to their importance to the local economy, protected lands are also important to resiliency as they help to mitigate flooding, reduce erosion, and enhance resilience.

OSBM has received requests from both state agencies and local governments for funds to repair and rebuild local park facilities and greenway systems and to restore and protect wetlands, streams, riparian buffers and natural habitat areas damaged by the storm. A complete assessment of the scale and complexity of repairing these assets is still unknown across disaster-impacted counties.

- *Resiliency Efforts:* The recovery investments afford an opportune time to efficiently introduce building, infrastructure, and technology upgrades that will ensure that future storms do not cause the same level of destruction, better safeguarding both public safety and economic stability. Three categories of resiliency efforts have been identified: Water Infrastructure Resiliency & Interconnections Fund (\$500 million), Stormwater Systems Resiliency (\$60 million), and Dams Repairs & Overtopping Study (\$760 million). Providing resiliency funding for water systems to interconnect to neighboring water systems provides communities with a backup option should a

water system go offline for an extended period of time. Bolstering stormwater and dam resilience will curb against future catastrophic flooding. Before Hurricane Helene there was already a high need for repair and upgrades to dams and stormwater systems across the region.

- Dams, Dikes, Levees: Ensuring the structural integrity of dams, dikes, and levees is critical to reducing the risk of life, property loss, and surface and groundwater contamination that could result from dam breaches and failures. DEQ has 119 permitted sites across 67 companies that are within the 27 counties in the major disaster declaration. At present, damage estimates as a result of Hurricane Helene are unavailable; however, anecdotal reports have come in, including reports of 10 dams overtopping. For example, a private engineering company assessed that the 100-year-old Lake Lure Dam performed as intended, was not compromised, and remains serviceable; however, the dam was damaged and its access road was washed out in several sections. Preliminary field investigations and designs to replace the dam are underway, but the impact of the catastrophic flooding to surrounding access roads requires a significant acceleration of the replacement timeline. This example is indicative of the types of damage expected across the region. Preliminary estimates from DEQ are 75 dams will need to be removed, 13 can be repaired, and assessments are still being made on how many will require replacement. Needs will continue to be evaluated in the coming months when and if further data becomes available.

4. Assumptions

All estimates provided on damage are preliminary as of October 18, 2024. Additional data demonstrating additional damage is expected to be available in the coming months. For-profit organizations represented will not be eligible for direct state or federal assistance through existing programs.

5. Primary Data Sources

- City of Asheville
- Department of Environmental Quality (DEQ)
- ElectriCities of North Carolina
- Federal Communications Commission
- North Carolina Electrical Cooperatives Association
- Private electricity and gas providers
- Southeast Propane Alliance

6. Potential Sources of Non-State Funding

Water Infrastructure – \$150 million

Requests funds from relevant Environmental Protection Agency (EPA) programs for DEQ for water infrastructure projects, technical assistance grants, emergency loans, and to study how water systems can be more resilient through use of onsite water and reuse of grey water. Grant funds up to \$7 million could be used to assist local government units for the assessment and design of water and wastewater infrastructure in areas impacted by Hurricane Helene. Requests \$100 million in additional funding for the State Wastewater and Drinking Water Reserves to facilitate the Department's support of three to six months of cash flow for utilities responding to immediate and temporary needs to bring drinking water and wastewater services back online as they anticipate FEMA reimbursement or otherwise.

Water Infrastructure Resiliency & Interconnections Funds – \$2 billion

Requests funds for DEQ for existing programs, technical assistance, loans, and grants to repair or replace water or sewer. Of these funds \$25 million is for the existing State Wastewater and State Drinking Water funds to be used for failing public water systems, resolve documented low pressure in an existing system, the treatment of contaminated water, and support connections between systems or cover a public need. One million dollars will go to the existing western North Carolina Recreational Water Quality Program, a successful pilot, to rapidly assess and communicate water safety information in the French Broad River Basin. These funds may also be used for costs associated with elevating water or sewer infrastructure located in the Hurricane. EPA's water infrastructure programming, USDA's Water and Waste Disposal Loan and Grant Program will fund this need. Any remaining need would be funded through an additional congressional request.

Stormwater – \$50 million

Requests funding for DEQ for the Local Assistance for Stormwater Infrastructure Investments (LASII) program for cities, counties, regional councils of government and nonprofit partners for construction and planning projects that will improve or create infrastructure for controlling stormwater quantity and quality. These funds may also be used for costs to address WNC's portion of unmet stormwater needs over the next 10-15 years as outlined by the UNC Environmental Finance Center assessment. CBDG-MIT will provide some resources for these efforts based on programing requirements; the rest would be funded through an additional congressional request.

Dams – \$750 million

Requests funds for DEQ from the National Dam Safety Program and the High Hazard Potential Dams Grants Program to establish a high hazard dam reserve for the repair of dams that pose a substantial threat to the health, safety and welfare of downstream residents and businesses. Funds may be used by the Department to provide technical assistance, funding dam owners and operators for repairs and improvement, and to conduct a dam overtopping study for high and intermediate hazard dams to fill data gaps and ensure dam safety equity across the state. The remaining funds for this effort would be funded through an additional congressional request.

Microgrids – \$1 billion

Requests \$1 billion for DEQ's State Energy Office through the Department of Energy Clean Energy Financing Program to establish a State Energy Financing Institution (SEFI) program

to fund microgrids for communications infrastructure. SEFIs enable states to leverage significant federal investment from the Department of Energy’s Loan Program Office, providing financing support or credit enhancements for eligible energy projects. This program would help communications providers install solar and storage microgrids that would allow communications infrastructure, such as cell phone towers, to remain operational when the electric grid goes down.

Grid Resilience & Hardening – \$26 million

Requests funding for DEQ’s State Energy Office from the Infrastructure Investment and Jobs Act’s (IIJA) Grid Resilience State and Tribal Formula Grants program, designed to strengthen America’s power grid against wildfires, extreme weather, and other natural disasters. This represents three years of federal funding to expand the state’s work on grid resiliency to better support rebuilding western North Carolina. Projects could potentially include transmission and distribution systems, investing in smart efficient technologies to make the electric grid more resilient, and analysis of substations including how to size substations to accommodate additional EV fast-charging infrastructure.

Waste Management & Hazardous Waste Fund – \$500 million

Requests funds for DEQ from the USDA and EPA for necessary long-term cleanup and storage of debris, polluted sites, and hazardous waste due to Hurricane Helene. Funds may be used for projects related to waste removal, remediation, emergency infrastructure repair, orphaned tanks, underground storage tanks, and use of resilient materials to for solid waste facilities and infrastructure. The Division of Waste Management (DWM) has identified up to 400 facilities located in a 500-year floodplain that would likely have experienced flooding with moderate to significant damage. EPA federal allocations can only be used for assessment and cleanup, leaving owners and operators or state funds responsible for repair costs. Hurricane Helene impacts also caused petroleum releases from Home Heating Oil Tanks, above ground storage tanks, and petroleum release of auto body maintenance and repair shops, which are hazardous and need complete assessment and remediation. To date, DWM received notification of releases from 115 large quantity generators, 405 small quantity generators, and 1838 very small quantity generators in the counties under disaster declaration. EPA federal allocations can only be used for assessment and cleanup, leaving owners and operators or state funds responsible for repairs.

7. State Funding Recommendations – \$577.8 million

FEMA Matching Funds – \$288.6 million

Provides state matching funds for FEMA public assistance funds for utility related damage and debris disposal based on a 90/10 state match. Based on estimates, the state expected to receive a total of \$2.8 billion in public assistance funds. These funds could potentially include repairing electrical power grids and water and sewer systems operated by governmental and non-profit utilities.

Bernard Allen Emergency Drinking Water Fund – \$5 million

Provides funds to DEQ for the Bernard Allen Memorial Emergency Drinking Water Fund in the Department of Environmental Quality to increase the state’s response to water supply contamination and provide low-income households with a safe drinking water supply. The fund has three authorized uses: 1) pay for notice to persons whose wells were at risk from

groundwater contamination; 2) pay for the costs of testing private wells; and 3) provide an alternate drinking water supply to well owners affected by the contamination.

Restoring Local Parks – \$50 million

Provides additional funding to the Department of Natural and Cultural Resources (DNCR) for the Parks and Recreation Trust Fund (PARTF) for grants supporting local governments to restore local parks. Projects may include repairing or rebuilding local park facilities, greenway systems, or natural habitat areas damaged by Hurricane Helene. Grants will not require a match from the local government.

Funding for state park repairs can be found in the Government and Recovery Operations section.

WNC Sustainable Energy Disaster Grant Program – \$2 million

Provides the Office of Science & Technology in the Department of Commerce with funds to invest in micro-grants to western North Carolina based sustainable energy businesses impacted by Hurricane Helene. Funds may be used for projects to purchase new supplies, equipment, or relocation costs not covered by insurance or federal disaster funds. There are 270 sustainable energy businesses in the region with 137 located in Buncombe Co.

Utility Bill Assistance

Funding for household assistance with utility bills can be found in the Housing section.

Resiliency

FEMA Hazard Mitigation Matching Funds – TBD

Provides the state match for FEMA hazard mitigation funds to be used for natural resource-related projects.

Water Infrastructure Resiliency & Interconnections Fund – \$100 million

Supplements federal funds for DEQ to provide support for existing programs, technical assistance, loans, and grants to repair or replace water or sewer systems. Of these funds, \$25 million is for the existing State Wastewater and Drinking Water fund, to be used for failing public water systems, resolve documented low pressure in an existing system, the treatment of contaminated water, and support connections between systems or cover a public need. One million dollars will go to the existing western North Carolina Recreational Water Quality Program, a successful pilot, to rapidly assess and communicate water safety information in the French Broad River Basin. These funds may also be used for costs associated with elevating water or sewer infrastructure located in the Hurricane.

Stormwater – \$10 million

Supplements federal funding for DEQ's Local Assistance for Stormwater Infrastructure Investments (LASII) program for cities, counties, regional councils of government and nonprofit partners for construction and planning projects that will improve or create infrastructure for controlling stormwater quantity and quality. These funds may also be used for costs to address WNC's portion of unmet stormwater needs over the next 10-15 years as outlined by the UNC Environmental Finance Center assessment.

Grid Resilience & Hardening – \$4.2 million

Provides the required state match for DEQ’s State Energy Office to draw down \$26 million from the Infrastructure Investment and Jobs Act’s (IIJA) Grid Resilience State and Tribal Formula Grants program, designed to strengthen America’s power grid against wildfires, extreme weather, and other natural disasters. This represents three years of federal funding to expand the state’s work on grid resiliency to better support rebuilding western North Carolina. Projects could potentially include transmission and distribution systems, investing in smart efficient technologies to make the electric grid more resilient, and analysis of substations including how to size substations to accommodate additional EV fast-charging infrastructure.

Mapping and Modeling – \$45 million

Provides funds to DEQ to continue monitoring landslide hazards areas and to update the western North Carolina landslide mapping project and the Blueprint project to include current geodata from Helene disaster counties to better inform local government planning, and state permitting. Funds may also be used for projects to identify potential geo-engineering solutions for use to protect critical infrastructure, study the creation of a landslide warning and notification system in North Carolina, and expand DEQ’s landslide work with NCSU meteorology and geology departments. Of these funds, \$5 million is provided for to the Department of Public Safety’s Division of Emergency Management for floodplain mapping revisions in western North Carolina. Revisions include new imagery and processing to capture changes in the region, incorporate new high-water marks, and to begin adjusting flood maps for the region.

Flood Abatement and Water Quality Protection Measures – \$50 million

Provides funding to DNCR’s for the NC Land and Water Fund (NCLWF) for conservation and restoration of the state’s streams, parks, and trails damaged by Hurricane Helene. Funding may be used to provide grants to nonprofits and government agencies for projects for restoring wetlands, streams, and riparian buffers to increase natural flood protection and reduce erosion in the disaster area. These projects will help the region restore water quality in important wetlands, streams, wildlife habitats, and fisheries. Funding may also be used for projects resulting in the restoration of outdoor recreational opportunities including but not limited to restoring trail networks in western NC.

Dams – \$10 million

Provides DEQ a 35% required state match for FEMA’s High Hazard Potential Dams (HHPD) Grants Program to access up to \$28.5 million over several years of federal funds for the rehabilitation of dams that fail to meet minimum dam safety standards and pose risk to life and property. Funds may be used for project scoping, engineering and design as well as construction projects. This further supports other federal funds DEQ will seek to establish a high hazard dam reserve for the repair of dams that pose a substantial threat to the health, safety and welfare of downstream residents and businesses.

Microgrids – \$10 million

Provides \$10 million in state matching funds to DEQ’s State Energy Office to leverage up to \$1 billion in guaranteed low interest loans from the US Department of Energy’s Loan Program Office (LPO). DEQ, in consultation with the Department of Commerce, will establish a State Energy Financing Institution (SEFI) program to fund microgrids for

communications infrastructure. SEFIs enable states to leverage significant federal investment from the LPO, providing financing support or credit enhancements for eligible energy projects. This program would help communications providers install solar and storage microgrids that would allow communications infrastructure, such as cell phone towers, to remain operational when the electric grid goes down.

Brownfields – \$3 million

Provides additional funding to DEQ’s Division of Waste Management to bolster the assessment and cleanup of contaminated brownfield properties in areas damaged by Hurricane Helene. The storm created a large set of abandoned and damaged brownfields properties. The Brownfields Community Network has 12 local government members in the storm-damaged areas. Funding would also be used to conduct outreach to include other local governments in need with sites eligible to enter the Brownfields Program for redevelopment.

8. Special Provision Recommendations

Department of Information Technology

Broadband Infrastructure Repair and Replacement: Allows DIT’s Broadband Infrastructure Office (BIO) to leverage \$90 million in appropriated “Stop-Gap” funds to repair or replace broadband infrastructure damaged or destroyed by Helene. Recommended changes in the law also enables the BIO to shift additional funds between ARPA-funded broadband infrastructure programs, freeing up appropriated funds to be invested in infrastructure based on greatest needs (e.g., destroyed towers, downed poles, severed cable, etc.) in disaster-impacted counties.

Department of Environmental Quality

Disaster Recovery Act Wastewater Reserve Amendment: DEQ requests a technical correction to change the infrastructure funding provision definition in Section 10.1.(a) of S.L. 2024-51 to refer to the Wastewater Reserve instead of the Clean Water Reserve.

Federal Source Fund Transfer Amendment: Updates Section 10.1.(b)(1) of S.L. 2024-51 to authorize DEQ to transfer funds between accounts that do not originate from federal sources in the Water Infrastructure Fund.

Waive DWI Fees for Emergency Loans: Amends G.S. 159G-24 to authorize the DEQ Secretary to waive fees for emergency loans from the Wastewater Reserve and Drinking Water Reserve during a State of Emergency.

Allow Mines to be Used as Temporary Disaster Debris Sites: Amends G.S. 74-52 to allow the DEQ to authorize Mine Permittees to deviate from their permitting regulations in direct response to a State of Emergency, and for up to one year following the State of Emergency.

Expand Uses of the Dam Safety Emergency Fund in States of Emergency: Amends G.S. 143-215.32A(c) to allow DEQ’s Dam Safety Emergency Fund to be used for dam repairs, removals, and breaches during a State of Emergency or a pending disaster. This will allow the Fund to be more effective in responding to dam safety needs during an emergency.

Provide Direct Reimbursement for Leaking Underground Storage Tank Cleanups: Amends G.S. 215.94E(e5) to authorize DEQ to directly reimburse contractors or third parties who are cleaning up or remediating a leaking underground storage tank. DEQ anticipates that

some owner/operators of underground storage tanks may be negatively impacted by Helene, and requests general authority to pay contracted authorities (rather than strictly owner/operators under current statute) in order to expedite payments to companies that engage in cleanup/remediation activities.

Department of Natural & Cultural Resources

America 250 NC Grants Extension: Allows DNCR's previously allocated funds for Americas 250 to not revert in the 39 counties impacted by Helene until June 30, 2027, to recognize that those counties will have difficulty using the funds by the original deadline.



Transportation

Addresses the physical damage and state revenue implications of the transportation infrastructure damage inflicted by Hurricane Helene

Preliminary Estimates (\$M)							
Category	Damage & needs			Investments			
	Direct	Indirect/ Induced	Total	Expected Federal	Expected Private	State Funded	Unfunded
Public Roads and Bridges	\$6,000	-	\$6,000	TBD	-	-	\$6,000
Public Transportation	\$5	-	\$5	\$5	-	-	-
Rail & Rolling Stock	\$270	-	\$270	-	\$135	-	\$135
Airports	\$1	-	\$1	-	-	-	\$1
Non-system (Municipal) roads and Bridges	\$1,725	-	\$1,725	\$1,550	-	-	\$175
Private Roads and Bridges	\$460	-	\$460	TBD	-	-	\$460
State Revenue Impact	-	\$100	\$100	-	-	-	\$100
Sub-total	\$8,461	\$100	\$8,561	\$1,555	\$135	-	\$6,871
Strengthening & mitigation	\$1,280	-	\$1,280	TBD	\$22	-	\$1,258
Total	\$9,741	\$100	\$9,841	\$1,555	\$157	-	\$8,129

1. Summary

Hurricane Helene has severely impacted approximately 5,000 miles of state-maintained roads across the affected area in western North Carolina, including several major national interstates and arterial routes that serve as critical transportation corridors. The North Carolina Department of Transportation (NCDOT) has found damage to 674 bridges and 712 culverts - western North Carolina has 25% more public bridges than the state average, with the percentage of private bridges likely even higher due to the terrain and population density.

The terrain in this region is especially challenging, as it is mountainous with an elevation on average two to three times that of the Piedmont, which complicates road and bridge repairs. Western North Carolina also includes a significant number of privately maintained roads and bridges, with municipal and private roads making up 48% of all roads in the region compared to 41% for North Carolina as a whole. This higher proportion of non-state-maintained infrastructure adds further complexity to recovery efforts.

The following outlines the methodology used to estimate transportation needs resulting from Hurricane Helene. Preliminary estimates are based on data provided by government agencies, damage models, and historical data and trends. The total transportation impact is estimated at \$9.8 billion, the vast majority of which is anticipated to be covered by federal funding

sources. Of this total need, the NCDOT highway and bridge system is projected to require \$6 billion in repairs and replacements.

Once major repair and replacement projects are underway, NCDOT will require substantial cash flow support while awaiting federal reimbursements. The Department's existing cash reserves are already committed to routine operations and ongoing programs, making additional financial resources essential to ensure long-term sustainability and the continued functionality of vital infrastructure.

2. Scope

Structures in scope for transportation estimates include:

- Public roads, bridges, tunnels, and sidewalks maintained by the State
- Municipal roads, bridges, tunnels, and sidewalks
- Private roads, bridges, and culverts
- Public transit, including bus systems
- Rail and rolling stock
- Ports and airports

3. Methodology

- *State Highways and Bridges* – NCDOT and contract staff began conducting a field assessment of damages when conditions became safe. Field staff have completed the initial assessment but are still discovering damage sites and are completing initial assessments on those when discovered. Staff document damage sites with pictures and damage information including location, size, and type of damage. Based on engineering and field experience, staff generate a cost estimate of damage. At this time, team members are refining estimates and will ultimately develop formal engineers' estimates which will replace the initial field assessments.
- *Non-System (Municipal) Roads and Bridges* – Local Road and bridge damages were estimated by utilizing the NCDOT Route Characteristics dataset to determine the mileage of non-system roads in the effected counties. OSBM estimated total repair and replacement costs for roads using experts' estimated cost benchmarks, together with county damage severity classifications. The non-system road damage is estimated to be \$1.38 billion, and bridge damage at \$345 million.
- *Private Roads and Bridges* – The Office of State Budget and Management's (OSBM) Disaster Recovery section has extrapolated data from previous storms, such as Tropical Storm Fred, to estimate the impact on private infrastructure in counties affected by Hurricane Helene. OSBM used this to estimate the potential number of affected private roads and bridges across counties hit by Hurricane Helene and scaled up the impact based on Emergency Management advice on the severity of the damage relative to previous events. Private roads make up almost half of all roads in the region – it is estimated that 3,000-5,000 private roads, bridges and culverts, making up close to 1,000 miles of roadway, have been damaged. The unique nature

of the mountainous terrain in western North Carolina presents additional challenges requiring specialized approaches to road and bridge repair.

- *Airports* – NCDOT’s Aviation Division has spoken to all affected airports. The Hickory Airport reported destruction of one building under construction (80% complete), for which they had received state funds. Other airports reported minimal damage. Estimated damage for Hickory Airport is \$0.8 million, while the cost of minor flood damage across other affected airports is estimated at \$0.3 million. To improve resiliency, the Aviation Division has asked for \$3 million to fund generators and / or microgrid planning at the region’s 22 general aviation airports to ensure power availability for fueling aircraft, which have been key to relief and damage assessment efforts; and \$0.8 million for two LiDAR drones to help better and more quickly assess the extent of damage in the aftermath of major storms and hurricanes.
- *Public Transportation:* Early estimates from NCDOT's Integrated Mobility Division suggest limited damage from Hurricane Helene, affecting only a small number of counties. Public transportation in western North Carolina is primarily comprised of rural, on-demand systems and infrequent bus routes connecting small towns. Asheville Rides Transit (ART) is the region's only major public transportation system, operating several bus routes but serving a smaller area compared to other urban systems in the state.
- *Railroad Damage* – Based on damage reports from Norfolk Southern and CSX press releases, OSBM calculated full railroad replacement / repair costs using monetary per-mile railroad benchmarks, and estimated bridge replacement / repair costs based on experts’ estimated cost benchmarks and our own research. There is significant uncertainty around the estimates for bridges, so these estimates could be higher or lower than final costs.
- *State Revenue Impact* –For this estimate, FY 2024-25 consensus revenue estimates for the state were used as a baseline.
 - Motor Fuels Tax – Using miles driven from NC DOT traffic volume maps and assumed reduction in driving based on county severity, reduction in gasoline consumption was calculated for each county. The final reduction in motor fuels tax collection was estimated by combining expected gasoline costs and motor fuels tax rate to the state.
 - Registration, DMV, and Other Fees – Reduction in fees was calculated based on county shares of vehicles and damage severity.
- *NCDOT Buildings* – Please refer to the Government and Recovery Operations section for information on damage to NCDOT buildings.

4. Assumptions

- *County Severity Classification:* Please refer to the Economy section
- *Road and Bridge costs:* Estimated cost benchmarks provided by industry experts
- *Construction costs:* The preliminary assessment for infrastructure damage conservatively assumes construction costs will be 15% higher than estimated due to a shortage of available construction services and/or an increase in the cost of raw material and labor driven by multiple concurrent disasters across the Southeast.

Experience from hurricanes Matthew, Katrina, Harvey, and Florence, and Superstorm Sandy suggests similar shortages drove construction costs 8-20% higher in the aftermath of the event. In addition, Hurricane Helene construction costs are likely to be driven up by the continued impact of the pandemic recovery and more difficult terrain.

- *Damage Magnitude*: Proportional damage numbers, e.g., percent of roads damaged or destroyed, from county severity classification and inspection of locations with higher flooding, landslides, and road incidents.
- *Hazard Mitigation Costs*: OSBM estimated the cost using the below industry standards for cost as a percentage of repair and replacement costs.

Hazard Mitigation Option	Description	Cost as % of Repair/Replacement Estimates
Road and Embankment Stabilization	Stabilizing roads with geotextile fabric, revetments, and drainage improvements to prevent erosion and flooding	10% to 30%
Bridge Protection	Installing scour countermeasures, uplift tie-downs, and elevating bridges to prevent flood and erosion damage	15% to 30%
Slope Stabilization	Stabilizing slopes using bioengineering methods like planting vegetation or using riprap for erosion control	10% to 30%
Floodproofing and Levees	Installing flood barriers and levees and elevating roads to protect against flood risks	20% to 30%

5. Primary Data Sources

- NC DOT
- NC Emergency Management
- CSX and Norfolk Southern press releases on railroad damage
- Federal Emergency Management Agency (FEMA)
- Industry experts' estimated cost benchmarks for transportation infrastructure

6. Potential Sources of Non-State Funding

Given the intense nature of this storm and the severe damage inflicted on the state's critical infrastructure, including key arteries for transporting goods across the country and to ports,

North Carolina will need the federal government to provide most of the funding to repair and replace damaged and destroyed roads, bridges, and other transport infrastructure.

- FEMA-Public Assistance (FEMA-PA): This provides grants to state, local, tribal, and territorial governments to assist with disaster response and recovery, including debris removal, emergency protective measures, and permanent restoration of facilities.
- Hazard Mitigation Grants Program (HMGP): This provides funding to state, local, tribal, and territorial governments after a disaster declaration to protect eligible public or private property through mitigation measures to undamaged facilities (Public Assistance has provisions that allow for mitigation of damaged facilities).
- Community Development Block Grants-Mitigation (CDBG-MIT): North Carolina applied CDBG-MIT grants to Hurricane Matthew and Florence recovery efforts. The US Department of Housing and Urban Development does not have a threshold that automatically triggers aid to affected areas. Congress would need to appropriate CDBG-MIT funds for Hurricane Helene response before North Carolina can access them for disaster recovery efforts.

Significant additional federal funding is available through IIJA, IRA, and other programs, on a competitive grant basis. With a finite set of funds to be competed for by states, local governments, and non-profit organizations, it is crucial to provide agencies and local governments with sufficient matching funds to ensure their applications are viable and can compete effectively for federal funds. Federal match funding is included in the Government and Recovery Operations section of this report.

The rail system is required by state law to receive 50% of their damage estimate as reimbursement from the Short Line Railroad. Private insurance may also meet some costs for damages to railroads and airports.

7. State Funding Recommendations – \$54.8 million

State Match for Federal Funding for NCDOT Road and Bridge Repairs and Replacement – TBD

In the event that the federal government does not cover the full costs of repairing or replacing transportation infrastructure damaged or destroyed by Hurricane Helene, NCDOT will need state funding to fill the gap between costs and federal funding.

Public Transportation Affected by Hurricane Helene – \$5 million

Provides funding to NCDOT's Integrated Mobility Division for grants to local authorities to meet the costs of repairs or replacement of public transportation infrastructure and vehicles damaged or destroyed by Hurricane Helene.

Improving NCDOT Capacity to Assess Weather-Related Damage – \$0.8 million

Provides funding to NCDOT's Aviation Division to purchase LiDAR drones to improve NCDOT's capacity to rapidly assess damage to transportation infrastructure following severe weather events.

Local Match for Federal Funding for Municipal Road and Bridge Repairs and Replacement – TBD

Provides funds to NCDOT for grants to local authorities to meet local match requirements for federal funding to repair or replace municipal roads and bridges damaged or destroyed by Hurricane Helene. This assumes federal funding for 90% of the costs of repairs and replacement.

Private Road and Bridge Repairs and Replacement – \$46 million

Provides funds to enable federal and state government to partner to repair or replace private roads and bridges to a more resilient level that will better withstand future storm events. This is crucial for ensuring emergency vehicle access to protect life and safety, without endangering the lives of first responders, as well as facilitating access to rebuilt homes. Restoring these bridges is critical for many residents to gain access to their homes to either return or to begin the rebuilding process.

Building Smarter and Stronger Resilient Roads – TBD

Match funds will be required in future to help leverage federal grants for designing roads, bridges, pipes, and other transportation structures to better mitigate the effects of extreme weather events. This funding would leverage Hazard Mitigation Grants Program (HMGP), Infrastructure Investment and Jobs Act (IIJA), and other federal funds to reduce the risk of transportation system and local property damages in future storm events.

Improving Airport Resiliency – \$3 million

Provides \$3 million to NCDOT's Aviation Division for grants to the 22 general aviation airports across western North Carolina to fund the purchase of generators and/or planning for microgrid infrastructure. This will ensure the availability of power to pump fuel and meet other essential needs to provide aviation support during disaster recovery and emergency management operations.

8. Special Provision Recommendations

Allowable uses for funding for private roads and bridges to include the ability to shore up nearby riverbanks or address other potential floods or other threats to the rebuilt or repaired structures.

The funds provided for repairs and replacements of private roads, bridges and culverts damaged or destroyed by Hurricane Helene may be used to pay for resilience and hazard mitigation scopes of work within a reasonable distance of the recovery project and essential for life safety or emergency services access. To the extent a private road or bridge was impacted by Tropical Storm Fred and Hurricane Helene, the road or bridge may be repaired or replaced using resources provided for either event.

Dual Impacted Recovery Projects

Notwithstanding any other provision of law, reallocates \$10 million of unused Tropical Storm Fred recovery funds to address an estimated 143 unfunded private road and bridge projects that were also impacted by Hurricane Helene. For this purpose, OSBM may reallocate funds originally appropriated for Tropical Storm Fred recovery from any of the following:

- (1) S.L. 2021-180
- (2) S.L. 2021-189
- (3) S.L. 2022-6
- (4) S.L. 2022-74
- (5) S.L. 2023-11.



Agriculture

Addresses physical damage and business disruption for agricultural enterprises

Preliminary Estimates (\$M)							
Category	Damage & needs			Investments			
	Direct	Indirect/ Induced	Total	Expected Federal	Expected Private	State Funded	Unfunded
Crop losses	\$1,394	\$1,189	\$2,583	\$976	-	-	\$1,607
Trout farms	\$9	-	\$9	\$5	-	-	\$5
Stream debris removal and stabilization	\$431	-	\$431	\$341	-	-	\$90
Agricultural infrastructure and land restoration	\$126	-	\$126	\$52	-	-	\$74
Wildfire risk and response	\$19	-	\$19	-	-	-	\$19
Sub-Total	\$1,978	\$1,189	\$3,167	\$1,373	-	-	\$1,795
Strengthening & mitigation	\$209	-	\$209	-	-	-	\$209
Total	\$2,187	\$1,189	\$3,376	\$1,373	-	-	\$2,004

1. Summary

The partial estimate of economic impact to the agricultural community is \$3.4 billion. This is an incomplete estimate based on preliminary reports due to inaccessibility and limited communications in the region. Many impacts are still unknown pending on-the-ground assessments. These figures will be refined as additional data becomes available.

The *direct* damage and needs estimate is \$2.2 billion and comprises crop losses, stream debris removal and stabilization, agricultural infrastructure and land restoration, trout farm losses, wildfire risk response, and mitigation efforts. There is an estimated additional \$1.2 billion in indirect and induced impacts. Federal funding is expected to cover \$1.4 billion of the damage, leaving \$2 billion unfunded.

The agricultural community also experienced significant disruption and damage in the following areas. Assessments are underway and impact estimates will be included when data becomes available.

- Revenue losses to agritourism businesses
- Agricultural building and equipment damage
- Timber damage
- Livestock losses

Agriculture Sector in western North Carolina

Agricultural production in the mountains tends to be predominantly small, diverse operations. As of 2022, USDA-NASS survey data indicates there were approximately 18,600 farms in the 37 western counties impacted by Hurricane Helene. Of the 39 FEMA designated counties, Lee and Nash are excluded from this analysis. These two counties suffered localized tornado damage, but initial reports suggest these counties did not experience significant crop losses from hurricane damage.

Specialty crops make up the majority of farm operations in the mountains and foothills. The Greenhouse, Nursery and Floriculture sector is the largest sector of the farming community with annual revenues of over \$400 million. This diverse sector includes Christmas trees, sod, and ornamental plants used in landscaping and flowers such as Chrysanthemum and Poinsettias. Christmas trees alone account for about \$120 million in yearly sales. Vegetable farming is another large sector, important to many small local food producers, with over \$92 million in annual sales. This western region is also home to very large fresh produce farms. The region's proximity to large population centers in the southeast and its cooler mountain climate allow it to grow cool season crops near large markets.

Because of the amount of specialty crop production in the region, it is estimated that as little as 5% to 10% of crop losses are protected by insurance to assist with financial recovery. In the future, data from USDA-Risk Management Agency will help to verify the percentage of losses that are uninsured.

Nursery and vegetable produce operations were particularly devastated by Hurricane Helene. Many of these businesses are located in low-lying areas that suffered the worst flooding and swift water destruction. The majority of vegetable, nursery, and sod crops in these locations were lost. Initial estimates indicate that over 80% of plant nurseries were destroyed. Nursery inventory can take one to eight years to re-establish.

The region is also home to a large apple producing area. Most of the remaining apple harvest was lost. Trees that must be replaced take over five years to reach fruit bearing age.

Hay land, often in valleys, was destroyed along with stored hay in these areas. Cattle farmers now face chronic shortages of hay just as they are beginning the winter-feeding season.

On higher ground, landslides destroyed Christmas trees, a crop that takes at least five years to grow. Pastures were also lost.

2. Scope

The scope for preliminary agriculture estimates includes:

- Crop and trout farm losses
- Stream debris removal and stabilization
- Agricultural infrastructure and land restoration
- Wildfire risk and response

The following agricultural sectors have also experienced loss and disruption from Hurricane Helene, but the magnitude of the impact is unable to be estimated at this time. On-the-ground

and aerial assessments are needed to estimate damages in agricultural buildings, equipment, forestry, and livestock.

- Agritourism
- Agricultural buildings and equipment damage
- Forestry and timber damage
- Livestock loss

3. Methodology

Crop losses

The Department of Agriculture and Consumer Services (DACS) partnered with NC State University Extension economists and OSBM to derive a preliminary estimate of crop losses caused by Hurricane Helene across 37 western disaster-declared counties that experienced the most extreme rainfall and flooding. Two counties, Lee and Nash, were excluded from the analysis. These counties suffered localized tornado damage, but initial reports suggest these counties did not experience significant crop losses from hurricane damage.

The analysis first employed geospatial analysis to identify agricultural land affected by three types of storm impacts – extreme rainfall, heavy rainfall, and proximity to landslides. Regional agronomists provided provisional estimates of crop losses by county based on initial observations. These loss percentages were applied to crop acreage within the designated rainfall zones, with farmland near landslides assumed to have 100% loss. Additionally, the analysis accounted for multi-year losses, particularly for nurseries and tree crops, which require longer recovery times. The economic impact of these production losses was then calculated using the IMPLAN model based on the preliminary lost production estimates.

The initial estimate of direct production losses to the farm sector is close to \$1.4 billion. This figure accounts for multiple years of production lost in sectors like nurseries, sod, Christmas trees, and apples. In some areas, even annual crops like vegetables will likely lose unharvested production from 2024 and may also lose production in 2025 due to damaged fields. These preliminary estimates will continue to be refined as conditions allow on-ground assessments to be completed.

When farm revenues are lost there is a ripple effect through the regional economy, through lost jobs, lost activity in agriculture support industries, and those that rely on farm products. The total estimated economic impact from these crop losses is \$2.6 billion.

The direct production losses and economic impact estimates below do not include the costs and disruption from damaged infrastructure and equipment. It also does not include remediation and recovery costs that may be needed to restore farmland and pasture from the effects of landslides, extreme erosion, sediment deposits, and stream redirection.

Note that while this analysis includes Cherokee, Graham, Jackson, Haywood, and Swain counties, these loss estimates largely exclude agricultural production on tribal lands in the Qualla Boundary, as the Cherokee Nation is not required to report to the USDA.

Preliminary Estimates - Commodity Loss by Crop and Livestock Type (Millions)			
Commodity	Direct Production Losses	Indirect/ Induced Economic Impact	Total Economic Impact
Nurseries and Sod	\$803	\$673	\$1,476
Christmas Trees	\$208	\$174	\$383
Vegetables and Melons	\$132	\$124	\$257
Hay and Pasture	\$84	\$61	\$144
Corn and Other Grains	\$81	\$84	\$165
Apples and Other Fruit	\$49	\$41	\$89
Soybeans	\$18	\$14	\$32
Tobacco	\$9	\$8	\$18
Hemp and Cover Crops	\$8	\$8	\$16
Cotton	\$2	\$2	\$4
Subtotal all crops	\$1,393	\$1,189	\$2,583

Aquaculture: Trout Farm Operations

Preliminary estimates provided by aquaculture producers in the region currently estimate mortality losses and structural damage combined to be \$9 million. This estimate is derived solely from initial producer reports and no site visits have been conducted at this time.

Stream Debris Removal and Stabilization

The scale of impact from Helene around the needs of stream debris removal, streambank stabilization, erosion control measures, and stream restoration is unprecedented. Preliminary estimates for these needs amount to a total need of \$431 million. These estimates are based on experience from past storms, the greater intensity and severity of damage to waterways, farmland, conservation structures due to the region’s topography, and initial indications from federal agencies.

Agricultural Infrastructure and Land Restoration

Hurricane Helene also caused significant damage to agricultural infrastructure, croplands, and pastures totaling \$126 million in total need:

- *Cropland and pasture restoration, agricultural pond repair:* \$56 million is the preliminary estimate of funds needed to restore cropland and pastures and to repair damaged agricultural ponds for irrigation and water management. These estimates are based on land and pond repair costs during Hurricane Florence and the extent of the damage in western North Carolina. The USDA-Emergency Conservation Program caps funding for pond repairs at \$200 thousand, but repairs averaged more than double that cost during Florence.
- *Conservation structure repair and renovation* – \$15 million is the preliminary estimate of funds needed for best management practice repair and renovation. Examples of affected conservation structures include grass waterways and dairy waste storage pond repair.
- *Farm access road repair* – \$20 million is the preliminary need estimate to repair existing access roads used for agricultural operations, including roads to existing crop fields, pastures, and barns. Many more road miles need significant repair compared to past storms, due to the topography of western North Carolina and the severe erosion and structural damage caused by this storm.

- *Engineering and technical assistance support* – The scale and severity of the storm damage will result in significant repair work. Additional engineers and contracts are needed to provide design and project implementation oversight. The estimated need is \$35 million.

Wildfire Risk and Response

It is likely that western North Carolina will experience more intense fire seasons – both in scale and severity – due to the downed timber and debris accumulation caused by Hurricane Helene. Timber and debris are ignitable fuels on the forest floor that increase wildfire risk. The need estimate of \$19 million is composed of additional NC Forest Service overtime, contract work, and equipment repairs. The expected resources and staff time required for larger scale fires are based on previous actual expenditures during past severe fire seasons.

Strengthening and Mitigation

Significant investments are needed to promote sustainable agricultural practices, land use changes, and farmer supports that are responsive to the unique threats farmers face from increased rainfall, droughts, and more frequent extreme weather events. This analysis conservatively assumes 15% of direct production losses (\$209 million) represents a meaningful first step toward resilient farm systems that protect natural resources and build stronger communities.

Unquantified impacts pending data availability

Agritourism – TBD

Agritourism plays a crucial role in the economic and cultural landscape of western North Carolina, where many farms and agricultural businesses rely on seasonal tourism to sustain their operations. Voluntary programs like the NC Agritourism Network Association, Got to Be NC, and Visit NC Farms App list 1,063 such operations, though this does not capture all agritourism businesses in the affected area. The estimated impact of reduced tourism on the agritourism economy will be included as additional data becomes available.

Key agritourism activities in the impacted region include but are not limited to: Christmas tree farms, pumpkin patches, U-pick operations (apples, strawberries, blueberries, grapes), wineries, wedding venues, cideries, breweries, distilleries, farm stores, bed and breakfasts, and horseback riding.

The fall season is an especially a vital period for agritourism, drawing visitors for activities such as pumpkin patches, apple picking, choose-and-cut Christmas trees, and many other fall activities. Limited visitors to the area will impact these operations.

The impacts of reduced tourism in the region are not limited to the fall. Agritourism businesses, like farms that rely on direct-to-consumer sales, are expected to experience longer-term challenges. With the region's recovery from damage and disruptions still uncertain, it is likely that tourism return will be gradual. If tourism remains low, farmers who primarily sell their products directly to consumers may have to sell to wholesale markets (if possible) at lower prices.

Agricultural Buildings and Equipment – TBD

Damage to agricultural builds and equipment cannot be assessed at this time due to data limitations. Estimates will be updated as on-the-ground assessments and insurance data becomes available.

Timber Damage – TBD

Preliminary surveillance flights to survey timber damage are anticipated to be completed in late October, contingent on weather conditions and airspace availability.

Livestock and Honey – TBD

In addition to crop production and aquaculture, there are also a large number of small beef cattle operations, dairies, equine farms, and small ruminant operations in western North Carolina, as well as honey producers. Livestock and apiculture losses are not available at this time, pending on-the-ground assessments.

4. Assumptions

Crop loss percentages:

- Regional agronomists provided provisional estimates of crop loss percentages by crop and county; these initial estimates will be revised as on-the-ground assessments are completed.
- All farmland within 0.5 miles of a landslide is assumed to have a 100% loss, either directly or due to inaccessible land; these initial loss estimates will be revised as on-the-ground assessments are completed.

Crop loss duration:

- The hurricane's impact is assumed to extend over multiple years for all crop types. While most field crops are expected to face an additional year of loss due to field damage, nurseries and tree crops that require replanting will have longer recovery periods. These provisional estimates will be revised as on-the-ground assessments are completed.

Crop insurance coverage:

- This analysis assumes 10% of the direct crop production losses are covered by federal crop insurance, due to the crop mix in the region that is predominantly vegetables, fruits, nursery, and other specialty crops. This estimate will be revised as claims data become available.

Stream and agricultural land restoration:

- This analysis assumes physical impacts and associated needs are scaled based on the more severe effects of flooding, erosion, and landslides due to the region's topography. Also considers past experience with USDA disaster program funding availability and eligibility.

Strengthening and mitigation:

- Conservatively assumes 15% of direct production losses represents the investment needs for adopting more sustainable agricultural practices.

5. Primary Data Sources

- DACS analysis of:
 - USDA-Farm Services Agency crop land field boundaries 2024 and cropland
 - Geospatial rainfall, inundation, landslide, and search and rescue reports provided by NCEM
- USDA NASS 2022 Census of Agriculture
- IMPLAN model industry output values
- Regional agronomists provided provisional estimates of crop loss percentages

6. Potential Sources of Non-State Funding

Uninsured Crop Losses – Contingent on Special Congressional Appropriation

This analysis projects that \$1.3 billion of the total estimated crop losses in the 37 western counties hardest hit by Hurricane Helene is uninsured. Agricultural production in the NC mountains tends to be predominantly small, diverse operations. Because of the amount of fruit, vegetable, and other specialty crop production in the region, it is estimated that as little as 5% to 10% of crop losses are protected by insurance. DACS initial estimates indicate that over 80 percent of plant nurseries were destroyed, along with most vegetable and sod crops in the hardest-hit counties. Replacement nursery inventory and damaged tree crops take multiple years to reach full production value.

OSBM estimates that \$836 million will be appropriated by Congress for additional assistance for western North Carolina farmers. This amount, covering two-thirds of the unmet need, is consistent past congressional appropriations for uninsured crop and livestock losses following extreme disaster events.

From 2017 to 2022, \$19 million in ad hoc congressional appropriations have been made through USDA programs:

- In 2017 and 2019, Congress made special appropriations for agricultural producers to offset losses from eligible hurricanes and wildfires through the Wildfires and Hurricane Indemnity Program (WHIP) and WHIP+ Programs.
- The Disaster Relief Supplemental Appropriations Act of 2023 also provided \$3.7 billion through the Emergency Relief Program and Emergency Livestock Relief Program for uncovered crop and livestock losses.
- USDA's Block Grants for Agricultural Disasters program can direct funding to states for a specific aspect of agricultural recovery following a natural disaster. For example, after Hurricane Harvey, Florida received a block grant of \$340 million for its citrus industry.

Stream debris removal and stabilization

Due to the mountain region's topography, the depth and velocity of the floodwaters, and number of landslides, the scope and scale of the need for stream debris removal, streambank stabilization, and stream restoration is unprecedented. In addition, oil tanks and other hazardous pollutants present in the debris pose a threat to water quality. The total estimated need is \$431 million.

Both FEMA and the USDA-Natural Resources Conservation Service's Emergency Watershed Protection program (EWP) provide some stream debris removal and streambank stabilization assistance, particularly when there is an imminent risk to life or a threatened road or structure. North Carolina anticipates receiving \$250 million from USDA-NRCS for this purpose.

Even after accounting for NRCS funding, there is an extraordinary remaining need of \$181 million. OSBM estimates that \$91 million of this unmet need would be addressed by expanded support from FEMA.

Agricultural infrastructure and land restoration

USDA's Emergency Conservation Program (ECP) and Environmental Quality Incentives Program (EQIP) provide disaster assistance for agricultural infrastructure and land restoration needs such as cropland and pasture restoration and repairs to farm ponds, farm access roads, best management practices, and other conservation structures. North Carolina anticipates receiving \$52 million from these programs to support the total estimated need of \$126 million.

Other crop, livestock, and forestry loss assistance

Beyond federal crop insurance, USDA also offers a variety of additional disaster assistance programs to address crop, livestock and forestry losses including but not limited to the following:

- Noninsured Crop Disaster Assistance Program (NAP)
- Emergency Forest Restoration Program (EFRP)
- Livestock Forage Disaster Program (LFP)
- Livestock Indemnity Program (LIP)
- Tree Assistance Program (TAP)
- Emergency Assistance for Livestock Honeybees, and Farm-Raised Fish Program (ELAP)

Based on preliminary estimates of damages and losses to trout farm operations, this analysis projects aquaculture operations may receive \$5 million in assistance from ELAP.

Additional federal assistance may be provided to crop, livestock, and forestry operations through these programs, but it is not possible to estimate potential federal funding support until losses are known. Assessments are in progress and will be updated as data become available.

7. State Funding Recommendations – \$422 million

Helene Business Recovery Grants: Expanded Farmer Eligibility – \$25 million

Provides an additional \$25 million to the Department of Revenue to award grants to businesses in the counties hardest hit by Hurricane Helene. Extends eligibility for Phase 1 of the Helene Business Recovery Grants – *Immediate Recovery Needs* beyond the thirteen counties projected to have valid FEMA IA applications numbering more than 10% of county population to include farmers in all the 37 western declared disaster counties that experienced the most significant rainfall, flooding, and landslides during Hurricane Helene. USDA-NASS data indicates there were approximately 18,600 farms in the affected area in 2022.

See the Economy section of this report for details about program eligibility and grant awards.

Helene Agricultural Disaster Farmer Recovery Program – \$225 million

Provides funds to the Department of Agriculture and Consumer Services for grants to farmers in the 39 declared disaster counties for verified uninsured losses to crops, livestock, aquaculture, and infrastructure, less any amounts received as part of Phase 1 of the Helene Business Recovery Grants. Payments to eligible farmers will be calculated and scaled based on available funding and verified losses. Agricultural production in the mountains tends to be predominantly small, diverse operations. Because of the amount of specialty crop production in the region, it is estimated that as little as 5 to 10% of crop losses are protected by insurance to assist with financial recovery.

Stream Debris Removal and Stabilization – \$90 million

Provides funds to the Soil & Water Division of the Department of Agriculture and Consumer Services for stream debris removal, streambank stabilization, and sediment removal. Due to the mountain region's topography, the depth and velocity of the floodwaters, and number of landslides, the scope and scale of the need for stream debris removal, streambank stabilization, sediment removal, and stream restoration is unprecedented.

Agricultural Infrastructure and Land Restoration – \$25 million

Provides funds to the Soil & Water Division of the Department of Agriculture and Consumer Services for repair and restoration of croplands, pastures, best management practices, farm access roads, and agricultural ponds. Includes funds for engineering and technical assistance support to provide design and project implementation oversight. Croplands, farm roads, ponds, and conservation structures all suffered significant damage in western North Carolina due to severe erosion and land destabilization caused by Hurricane Helene.

Other Federal Disaster Program Match Funds – \$20 million

Sets aside additional funds to the Department of Agriculture and Consumer Services to provide matching funds for FEMA or other USDA disaster assistance programs. These funds may be used for required FEMA matches or optionally for the nonfederal share of USDA assistance programs. Funds are reserved in the State Emergency Response and Disaster Relief Fund and appropriated to the Department of Agriculture on an as-needed basis based on FEMA or USDA awards.

Wildfire Risk and Response – \$12 million

Provides funds to the Department of Agriculture and Consumer Services for departmental on-call and overtime, for contracted wildfire personnel and equipment, and for firefighting equipment and aircraft repairs. It is likely that western North Carolina will experience more intense fire seasons – both in scale and severity – due to the downed timber and debris accumulation caused by Hurricane Helene.

Agricultural Development and Farmland Preservation Trust Fund (ADFP) – \$25 million

Provides funds to the Department of Agriculture and Consumer Services to protect working farms and forests and to support farmland preservation efforts in affected counties through agricultural conservation easements, farmland preservation plans, and agricultural development projects. 36,000 acres of working lands have been preserved through the ADFP since 2006.

8. Special Provision Recommendations

Funding Flexibility

Funds provided to the Soil & Water Division of the Department of Agriculture and Consumer Services may have flexibility to adjust funding allocations among the purposes of stream debris removal, streambank restoration, sediment removal, agricultural infrastructure, and land restoration to best serve local needs and maximize federal funding with prior approval by the Department of Agriculture and Consumer Services and the Office of State Budget and Management.



Government and Recovery Operations

Addresses the damage to government properties and lost tax/fee revenue

Preliminary Estimates (\$M)							
Category	Damage & needs			Investments			
	Direct	Indirect/ Induced	Total	Expected Federal	Expected Private	State Funded	Unfunded
Match Funds/Cash Flow	\$507	-	\$507	-	-	\$257	\$250
Local Gov. Buildings*	\$250	-	\$250	\$86	\$135	-	\$29
State Gov. Buildings	\$159	-	\$159	\$31	\$60	-	\$68
State attractions	\$73	-	\$73	\$15	\$29	-	\$29
State Tax Revenue Loss	-	\$125	\$125	-	-	-	\$125
State Fee Revenue Loss	-	\$8	\$8	-	-	-	\$8
State Lottery Revenue Loss	-	\$2	\$2	-	-	-	\$2
Local Tax Revenue Loss	-	\$115	\$115	-	-	-	\$115
Local Fee Revenue Loss	-	\$121	\$121	-	-	-	\$121
Sub-total	\$989	\$371	\$1,360	\$133	\$223	\$257	\$747
Strengthening & mitigation	\$62	-	\$62	-	-	-	\$62
Total	\$1,051	\$371	\$1,422	\$133	\$223	\$257	\$809

1. Summary

Preliminary estimates for total direct and indirect impact are estimated to be \$1.4 billion, \$356 million of which we expect to be covered by federal, private and state sources, leaving an unfunded government property and revenue need of \$800 million. OSBM currently estimates a state tax and fee revenue loss of \$135 million and a local tax and fee revenue loss of \$236 million.

The 39 counties eligible for individual assistance under FEMA contain over 2,500 state owned buildings, belonging to 20 state agencies and universities, with a total insured building value of \$8.7 billion. In addition, these counties contain over 300,000 acres of state-owned land. After an initial assessment of the damage wrought by Hurricane Helene agencies and universities, including state attractions, reported damage totaling \$224 million. The amount and kind of damage that state agencies reported varied widely from property to property but included significant flooding damage to buildings, trees falling on buildings, roads and trails being washed away in the floods, and many other types of damage. Five counties (Ashe, Buncombe, Rutherford, Transylvania, and Watauga) suffered over \$10 million in damages to state owned property. In total, damage to state property was reported in 29 counties as a result of Hurricane Helene.

Western North Carolina contains more than a dozen state parks that attract visitors from around the state and country, with 13 parks closed through at least October 31 due to Hurricane Helene. The impacted counties are also home to eight of North Carolina's 12 state forests.

The 39 counties eligible for individual assistance under FEMA contain 198 individual municipalities that provide local government services alongside county governments, including public safety and emergency response and recreation and cultural services including parks and libraries. Local governments rely primarily on own-source revenue and transfers from the state and federal governments. Local governments collect most tax revenue through property taxes, sales taxes, and utility fees. County and municipal governments will be major players in the recovery effort as they work to return operations to normal.

This region also represents a sizeable subset of North Carolina's state tax base, comprising 45% of 2021 state taxable income per the most recent available data.

2. Scope

Structures in scope for the preliminary state and local government property estimates include:

- Local government facilities: excluding public utilities, Community Colleges, and public K-12 educational facilities
- State government buildings for state agencies and the University of North Carolina
- State attractions for the Department of Natural and Cultural Resources and state forests for the Department of Agriculture and Consumer Services

Incomplete Responses: All Agencies, Universities, and local governments are continuing to evaluate properties for damage and for the extent of the damage.

3. Methodology

- *Local Buildings*: The North Carolina Association of County Commissioners and North Carolina League of Municipalities provided insured building value in their two insurance pools to the State for impacted Helene areas. In addition, Buncombe and Henderson Counties provided actual damage estimates of \$42 million and \$35 million respectively. To calculate the expected federal and private funding we used the ratio of coverage that was provided by the Department of Insurance for Hurricane Florence.
- *State Buildings*: State agencies and universities sent in their responses to the state facility survey directly to OSBM. Two exceptions to this are the Department of Adult Correction and the Wildlife Resource Commission. For DAC the data used in this category was pulled from their budget (worksheet II) requests submitted for Helene damage. A value of \$5 million was used for WRC based on initial feedback on damage sustained to their facilities. To calculate the expected federal and private funding we used the ratio of coverage that was provided by the Department of Insurance for Hurricane Florence.
- *Construction Cost*: The preliminary estimate for property damage conservatively assumes construction costs will be 15% higher than estimated. Experience from

hurricanes Matthew, Katrina, Harvey, Superstorm Sandy, and Florence suggests construction costs were 8-20% higher in the aftermath of these events due to a shortage of available construction services or an increase in the cost of raw material or labor. In addition, Hurricane Helene construction costs are likely to be driven up by the continued impact of the pandemic recovery, more difficult terrain, and Hurricane Milton.

- *Resiliency*: 15% of the facility damage estimate will be needed to make capital sites more resilient.
- *State and Local Tax Revenue Losses*: State tax revenue losses are based on estimated personal and business income decreases resulting from economic disruption following Helene (*See Economy section for detailed methodology on economic disruption*). Local tax revenue losses are based on estimated taxable property losses from storm-related damage and the average effective combined property tax rate for counties and municipalities. Local occupancy tax losses are expected to be high due to loss of peak fall season visitation (estimated at 35% of visits) with additional reductions to continue through winter and spring. In addition, some state and federal funds are allocated to local governments at least partially on a per capita basis (such as Powell Bill funds and community art program grants). Economic losses could exacerbate population from the direct impact of the storm and lead to additional losses in revenue from federal and state formula driven programs
- *State Fee Revenue*: State fee revenue loss estimates are based on state agency survey responses.
- *Local Fee Revenue*: Local Governments provide a variety of services that are supported from fees. These fees range from water and sewer, transportation and parking, ambulatory services, and parks and recreation. In order to understand the scope of the loss, this analysis used the Department of State Treasurer's Financial Reports and Analysis Tool. Each county and municipality impacted by Helene was summarized to show the current state from FY 2023 (latest year of report).
- *State Lottery Revenue Loss*: The NC Education Lottery analyzed retail activity in western North Carolina following Helene and forecast on-going sales losses to estimate net lottery revenue loss.

4. Assumptions

- *State Government Buildings*: State agencies and the University of North Carolina were sent a survey to provide a preliminary damage estimate.
- *Local Buildings*: The assumption is that the loss in the impacted counties was similar to the loss the state experienced (3.99% of insured building value). OSBM had requests from Henderson and Buncombe so that information was used for those counties rather than this assumption. Information obtained for this analysis was very broad and some counties in the declared disaster area were not represented by the various insurance pools. The estimate contained here should be considered a low estimate while more information on damaged local government facilities is gathered.
- *Local Occupancy Tax Revenue*: Local occupancy tax revenue is expected to face a 35% reduction in revenue due to loss of the peak fall season. Additional reductions

in winter are expected due to closures. Data from VisitNC for statewide overnight stays per season was also used in this analysis.

- *Local Fee Revenue:* For high-impact areas, there was an assumption of 1 month of lost revenue followed by 2 months of collections at 50%. It was assumed that there was no loss of revenue for fees and utilities in the low-impact areas.

5. Primary Data Sources

- *State Property Database:* The Department of Administration maintains a database for all property (land and buildings), assigned to a state agency or UNC campus that includes size, use, and insured building value.
- *State Facility Survey:* OSBM surveyed all state entities with a facility or land in the hurricane impacted area.
- *Department of State Treasurer: State and Local Financial Division: Financial Reports Analysis Tool.* The Division maintains financial and operational information for local governments.
- *Local Buildings:* North Carolina League of Municipalities and North Carolina Association of County Commissioners aggregate insured building value by Helene-impacted pool participants.
- *Department of Revenue: State Individual Income Tax Calculation by County (Table C1) and Municipal Valuations, Levies, and Tax Rates (LG54).*

6. Potential Sources of Non-State Funding

The primary source of funding for event specific losses is expected to be private insurance held by governments. \$194 million may be available for state and local property damages from private insurance, based on preliminary estimates. It is assumed that the federal government will also provide a significant amount of funding in the form of Federal Emergency Management Agency – Public Assistance. This funding is assumed to be the next largest portion of funds for local government property damage. The final source of funds is a direct state appropriation for unmet needs.

7. State Funding Recommendations – \$594 Million

Match Funds and Cashflow Needs \$250 million

Provides an additional \$250 million to the Department of Public Safety, Division of Emergency Management to provide the state match for federal disaster assistance programs and to provide cash flow assistance while awaiting reimbursement of federal funding. This funding is in addition to the \$250 million appropriated in S.L. 2024-51. As of October 18, 2024, DEM has already obligated \$300 million in storm-related expenses, excluding personnel expenses and procurement card purchases.

Repair and Renovations of State Facilities \$102 million

Provides \$102 million to OSBM for renovation of state facilities and UNC system facilities.

Continuing Operations and Staffing: \$73 Million

Provides funds to provide continuing operations support and temporary program increases at various state agencies, including the Administrative Office of the Courts, Departments of Adult Correction, Agriculture and Consumer Services, Military and Veteran's Affairs, Environmental Quality, Public Safety, and Office of the State Fire Marshal. Also provides funding to replace damaged equipment. Federal funding will be pursued to the full extent practicable (\$60 million).

Provides funds to replace lost revenue at attractions and facilities at the Departments of Natural and Cultural Resources and Agriculture and Consumer Services (\$8.4 million).

Creates the Hurricane Helene Data Resource Hub hosted at a public university in western North Carolina to monitor the recovery effort. Activities of the Hub will be to map movements in population, understand the trajectory of economic activity, estimate available housing, and track where financial resources have been allocated in order to provide a regional picture of recovery and highlight areas of unmet need. The Hub will help provide businesses, nonprofits, and local governments the information they need to make decisions about the design and allocation of current and future recovery efforts. (\$1.0 million per year for five years).

The General Assembly has appropriated \$7 million in continuing operations currently, accounted for in the preliminary damage and need estimate table within "Match Flow and Cash Flow," for the State Board of Elections and to the Office of State Budget and Management for elections work and grants to support local governments.

Grant Programs: \$169 Million

Provides funds to the Department of Natural and Cultural Resources for grants to local organizations for arts, historic preservation, libraries, and science museums (\$44 million).

Provides \$50 million to local governments for needs that are outside of the parameters of FEMA Public Assistance funds. The funds will be used for activities related to debris clean-up and public infrastructure repairs.

Provides funds from the Federal Infrastructure Match Reserve to the Office of State Budget and Management's State Technical Assistance and Match Program (STAMP) to assist in drawing down funds from federal grants available under the Infrastructure Investment and Jobs Act, the Chips and Science Act of 2022, and the Inflation Reduction Act of 2022 that may be directed toward impacted areas. Given the unique nature of this storm and the need to rebuild resiliently and with new technologies, North Carolina should increase our efforts and capacity to draw down as much federal funding as possible (\$75 million).

Recovery Organizational Structure

This disaster is like nothing we have seen in North Carolina and the response will need to take a new approach. Building on lessons learned from the pandemic, prior hurricanes, and Tropical Storm Fred, we know that a central state office that coordinates the efforts of others while also ensuring accountability is a more nimble and tactical approach than trying to roll all functions into one organization or in contrast, allowing each organization to go it alone. Many organizations, state agencies, and local governments will be involved in this recovery, and they each should focus on their areas of strength while collaborating and making recovery as seamless as possible for the people in the mountains.

A western-based state recovery office, guided by input from an advisory board, should be established to improve coordination, increase transparency, and ensure accountability to North Carolinians. As part of state government, this office will have convening power and established relationships that can assist with reducing bureaucracy and red tape.

Similar to the Pandemic Recovery Office, this state office will convene local governments and other stakeholders, oversee fund distribution, and ensure accurate reporting to state and federal agencies, including transparent and public data dashboards on recovery metrics, as determined by the advisory board.

8. Special Provision Recommendations

- **Remove Revolving Loan Fund language:** S.L. 2024-51, section 6.1.(a) authorized the creation of a revolving loan fund program for local governments. If a grant program is created, this language is no longer needed. Additionally, the federal community disaster loan program covers many of these needs, particularly if Congress expands the program as they did during Hurricane Katrina.
- **Reversion Language:** Strike sentence “Funds received by a State agency from the Helene Fund that are not expended, made subject to an encumbrance, or disbursed to another entity at the end of each fiscal year shall revert to the Helene Fund” from S.L. 2024-51, section 4.1.(c) and replace with “Funds received by a State agency from the Helene Fund will remain available until the project is complete. The Recovery Office shall review projects on a regular cycle and require reversion of funds as projects are complete. The Office shall reallocate funds among existing projects as needed to complete projects.”
- **Applicable Area:** Strike requirement in Sec. 4.1(b)(1) of S.L. 2024-51 that limits the Hurricane Helene Disaster Recovery Fund to federally-declared disaster counties and replace with “counties impacted by Hurricane Helene.”

In prior hurricane recovery efforts limiting state funds has led to inequities for families and businesses that are just outside the federally-declared counties but their county overall did not experience enough damage to be eligible for federal assistance.

- **Landslide Training:** Modify G.S. 166a, Article 6 to include the technical rescue skills necessary for response to hazards, such as landslides, into existing training and certification programs for state search and rescue teams. This would assist first responders with necessary training to respond to areas at greater risk of landslides.

9. Funding Provided in S.L. 2024-51

- The Office of State Budget and Management received \$2 million to provide grants to the North Carolina League of Municipalities, the North Carolina Association of County Commissioners, and the North Carolina Association of Regional Councils of Governments to provide technical assistance with local recovery funds.
- The State Board of Elections received \$5 million for items such as technology and internet connectivity; printing and communications; temporary staff; and mobile voting units and related supplies and equipment.



Education

Addresses the repair cost and revenue implications of damage to educational facilities.

Preliminary Estimates (\$M)							
Category	Damage & needs			Investments			
	Direct	Indirect/ Induced	Total	Expected Federal	Expected Private	State Funded	Unfunded
Public K-12 Schools – Operational	\$15	\$16	\$31	\$14	-	\$16	\$2
Public K-12 Schools – Capital	\$573	-	\$573	\$196	\$256	-	\$122
Community College – Operational	-	\$7	\$7	-	-	-	\$7
Community College – Capital	\$62	-	\$62	\$26	\$34	-	\$3
UNC System	\$14	\$19	\$33	\$14	-	-	\$20
Recovery Support	\$67	-	\$67	-	-	-	\$67
NCICU	-	-	-	-	-	-	-
Sub-Total	\$732	\$42	\$774	\$249	\$289	\$16	\$220
Strengthening & mitigation	\$70	-	\$70	-	-	-	\$70
Total	\$802	\$42	\$844	\$249	\$289	\$16	\$290

1. Summary

Over 1,000 public K-12 schools, 23 community colleges, and seven UNC institutions are located within the 39 North Carolina counties and the Qualla Boundary most affected by Hurricane Helene. Preliminary reporting shows that several schools were destroyed and many suffered damage, but road and water systems destruction in surrounding areas had a larger impact on school closures.

Still, the breadth of the storm caused enough damage that ten K-12 school districts closed for 10 or more days, and 82 public schools across six local education agencies (LEAs), two community colleges, and one UNC institution remain closed as of October 23.^{29,30} The preliminary economic impact across the education sector is estimated at \$844 million, not including university capital. This estimate will change as insurance claims data becomes available. Of the overall estimated impact, we expect \$554 million to be covered by Federal, Private, and State funding sources, resulting in an unmet education impact of \$290 million.

²⁹ OSBM does not yet have reliable data on charter school reopening schedules.

³⁰ UNC Asheville will resume online on October 28 and will remain online for the remainder of the fall semester.

2. Scope

Sectors in scope for education estimates include:

- Public universities (damage to university facilities is not included here; it is included with state buildings data in the Government Property and Revenue section)
- Public K-12 schools and Charter schools
- Community colleges, including lost revenue and facilities (locally-owned)
- Independent colleges and universities

For reference, the table below shows the number of educational institutions by sector located in the 39 counties and Qualla Boundary that qualify for FEMA public assistance. For postsecondary schools, the table shows the number of students from FEMA-designated counties who are enrolled at institutions across the state.

Type of School	Number of Institutions in FEMA Counties	Number of Students from FEMA Counties
K-12 Schools (46 LEAs + Cherokee Central School)	1,023	571,255
Charter Schools	83	59,335
Community Colleges	23	224,342
UNC Institutions	7	73,854
Independent Colleges & Universities	7	4,200

3. Methodology

K12 Public Schools

- *Damage to Facilities and Equipment* – As of October 19, 2024, no public schools had submitted damage claims to the Public School Insurance Fund (PSIF). Damage to public school facilities was estimated by applying a damage factor to all PSIF-insured K-12 facilities in impacted counties. This factor tried to isolate K-12 building damage from other area impacts such as road and water system damage by weighting based on (1) storm severity in the county and (2) the number of days that schools in the county were closed. Using this PSIF data, average per-school damages were calculated for critical, high, and medium damage counties and then applied to non-PSIF counties to estimate the total K-12 capital damage across all Local Education Agencies (LEAs) in FEMA-designated counties. An additional \$500,000 was added to include a damage estimate provided by the North Carolina School for the Deaf, a K-12 boarding school which enrolls 69 students from across the state. An additional factor was added to account for flooding and water intrusion-caused damage to paved surfaces, walkways, sidewalks, playgrounds, and athletic fields not captured in methodology described above. Based on this modeling, our preliminary estimate of damages to public school facilities and grounds is \$573.3 million. Of this amount, \$100 million may be ineligible and is excluded from calculations of expected private insurance and FEMA Public Assistance reimbursement. These estimates are subject to revision as damage

assessments and insurance filings proceed. Insurance and FEMA’s Public Assistance Program will cover many of the costs, but the state and local share will be significant.

- *The NC Public School Insurance Fund* insures 73 LEAs, including 23 of the 46 LEAs located in FEMA-Public Assistance-eligible-designated counties. Zero LEAs have submitted claims to the Public School Insurance Fund to date.
- *School Nutrition Programs* – Impacted schools suffered losses of food and equipment used to provide meals under the School Nutrition programs. The Department of Public Instruction (DPI) reported initial assessments of losses of \$5 million as of October 24, 2024. This figure may rise as program officials assess the damage.
- *School Technology Needs* – DPI estimates that impacted schools suffered \$10 million in losses to information technology equipment that will not be covered by insurance.
- *Estimated Lost Revenue* – DPI lost revenue from school meals not served and reimbursed by the federal government under the school nutrition programs. The Department estimated this loss to be \$16 million as of October 2, 2024, based on inflation-adjusted October 2023 salaries and benefits for school nutrition staff in the impacted counties. The NC General Assembly appropriated \$16 million for this purpose from the Hurricane Helene Disaster Recovery Fund in SL2024-51, which the Governor signed into law on October 10, 2024.
- *The North Carolina Education Lottery (NCEL)* – NCEL compared lost sales from daily games during a 14-day window surrounding Hurricane Helene with the average activity from comparable 14-day windows from the previous two months to assess the initial impact of the storm. NCEL estimates a net loss in revenue to education of \$2 million resulting from the storm; however, there are sufficient funds in the Lottery Reserve to offset this revenue loss for FY 2024-25. Total estimated loss of lottery revenue of \$2 million is included in the Government Property and Revenue section, so it is not included in the education section.

Community Colleges

- *Estimated Receipt Shortfall and Operating Losses* – The NC Community College System Office (NCCCS) developed estimates of potential lost tuition revenue (\$4.2 million) and operating losses (\$2.8 million) based on the severity of hurricane damage in FEMA-designated counties. The System used the length of college closures as a proxy for impact. Colleges with the longest closures were assigned a larger damage factor to estimate the amount of lost tuition revenue and refunds per full-time equivalent student.
- *Damage to Facilities and Equipment* – Damages to facilities and equipment at community colleges were estimated by applying a damage factor to all facilities at colleges covered by the Public School Insurance Fund (PSIF) in impacted counties. This factor was weighted based on (1) storm severity in the county and (2) the length of college closure to isolate building damage from other area impacts such as road and water system damage. Using this PSIF data, average damage estimates per

college were calculated for critical, high, and medium damage counties and then applied to non-PSIF counties to estimate the total capital damage across all community colleges in FEMA-designated counties. Based on this modeling, preliminary estimates of damages to NCCCS facilities and equipment are \$62.1 million. These estimates are subject to revision as damage assessments and insurance filings proceed. NCCCS is conducting a statewide survey of all colleges regarding damage to facilities and equipment and storm clean-up costs. This survey, combined with claims data submitted to the PSIF, will be used to produce more complete estimates of facility damage in coming weeks. Insurance and FEMA's Public Assistance Program will cover many of the costs, but the state and local share will be significant.

UNC System

The UNC System Office surveyed constituent institutions regarding operating impacts and lost fee revenue due to storm-related disruption.

- *Estimated Operating Impact*—The System Office received 18 survey responses,³¹ including six of the seven institutions located in disaster-declared counties, that reported an estimated loss of \$14.3 million related to debris removal, emergency protective measures, damaged supplies, and business interruptions. Of that, \$6.6 million was at Appalachian State University and \$5.7 million was at UNC-Asheville.
- *Estimated Revenue Losses*—Six institutions,³² including 3 of the 7 institutions located in disaster-declared counties, reported an estimated revenue loss of \$19.0 million. The estimated lost revenues primarily consisted of fee, housing, dining, and event receipts. Of that, \$5.3 million was at Appalachian State University and \$11.9 million was at UNC-Asheville.
- *Damage to Facilities* – Damage to UNC facilities are reported separately in the Government Property and Revenue section.

NC Independent Colleges and Universities

- *Estimated Lost Revenue* – No estimate of potential lost revenue has been obtained from private colleges.
- *Damage to Facilities and Storm Clean-Up* – No data has been collected regarding damage to private college facilities.
- The NC Independent Colleges and Universities association has requested \$20 million for (1) a grant program to assist the 4,200 students from FEMA designated counties and (2) direct aid to the seven affected institutions for campus restoration projects, other hurricane-related costs, and operating losses.

³¹ Arboretum, ASU, ECSU, ECU, FSU, NCAT, NCCU, NCSSM-Morganton, NCSU, PBS NC, UNCA, UNCC, UNC-CH (MAHEC), UNCG, UNCSA, UNCW, and WCU.

³² ASU, ECU, NCSU, UNCA, WCU and the Arboretum.

4. Assumptions

Facilities:

- *FEMA Funding:* Public Assistance will cover 90% of the costs to replace and repair school buildings and contents above what insurance pays in the Helene disaster-designated counties.
- Non-PSIF counties and institutions experienced roughly the same amount of damage as PSIF counties and institutions when controlling for county severity designation and school closure.
- *Construction cost:* The preliminary assessment for property damages conservatively assumes construction costs will increase by 15% due to the storm. Experience from hurricanes Matthew, Katrina, Harvey, Superstorm Sandy, and Florence 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 Helene construction costs are likely to be driven up by the continued impact of the pandemic recovery, more difficult terrain, and Hurricane Milton.
- *Resiliency:* 15% of the facility damage estimate will be needed to make capital sites more resilient.

Operations:

- *K-12:* FEMA Public Assistance will cover 90% of Category E building contents, including nutrition and technology equipment, in Helene disaster-designated counties.
- *UNC:* We estimate that federal reimbursement will be 100% for all UNC operating costs related to debris removal and emergency protective measures (categories A and B). We estimate that federal reimbursement will be 90% for FEMA categories C through E. We do not expect federal reimbursement for lost revenues.

Federal:

- *Federal Funding:* When expected federal funding estimates were based on Hurricane Florence numbers, a 1.26 inflation factor was applied.

5. Primary Data Sources

- Division of Emergency Management
- Department of Insurance
- Department of Public Instruction
- Individual K-12 institutions
- North Carolina Education Lottery
- NC Community College System Office
 - Additional information reported by individual colleges to the System Office through virtual conference meetings.
- UNC System Office

- Meetings were held to coordinate information and data procurement.
- Individual UNC and Community College system institutions
 - NC Independent Colleges and Universities association
 - Western Region Education Service Alliance

6. Potential Sources of Non-State Funding

Federal

- *Federal Emergency Management Agency* – Based on OSBM’s damage estimates above and FEMA’s funding and match levels for Public Assistance, the state expects to receive \$249 million in Public Assistance with a state match of \$27 million for a total of \$276 million for Hurricane Helene K-12 and postsecondary recovery.
- *Federal Emergency Management Agency* – The state expects to receive funding through the Hazard Mitigation Grant Program, which is awarded as a formula grant based on the estimated total federal assistance for a major disaster declaration.
- *Department of Education* – Based on the funds North Carolina received from the US Department of Education for the Immediate Aid to Restart School Operations (RESTART) following Hurricane Florence, the state expects to receive \$4.5 million. This estimate adjusts for inflation and the number of K-12 students from FEMA-designated counties.
- *Department of Education* – Based on the funds North Carolina received from the US Department of Education for the Project School Emergency Response to Violence (SERV) following Hurricane Florence, the state expects to receive \$2.9 million. This estimate adjusts for inflation and the number of K-12 and postsecondary students from FEMA-designated counties.
- *Department of Education* – Based on the funds North Carolina received from the US Department of Education for the Federal Supplemental Education Opportunity Grants (FSEOG) following Hurricane Florence, the state expects to receive \$3.5 million. This estimate adjusts for inflation and the number of postsecondary students from FEMA-designated counties.

Private

- *FEMA National Flood Insurance Program* – Water damages would be covered based on the structures that have coverage through NFIP; estimates are still pending.
- *Private insurance* – A potential \$289.1 million may be available for property damages to K-12 schools and community colleges from private insurance, based on preliminary modeling. However, estimates are still pending that will show the total amount across educational sectors that could potentially be covered.

Other

- *Local Governments* – Additional funds may be provided by counties and municipalities; however, estimates are still pending. Capital facilities for K-12 public schools and community colleges are largely owned and maintained by local governments.

7. State Funding Recommendations – \$282 million

Recommended funding addresses immediate cash-flow constraints and covers unmet needs.

State Match for FEMA Public Assistance Funds – \$27 million

Provides funding for the state share of FEMA funding for public assistance based on FEMA category match rates. Public assistance projects for educational operations and facilities could potentially include emergency protective measures and debris removal, infrastructure and equipment repair and replacement, cost-effective hazard mitigation to protect the facilities from future damage, and temporary facilities.

Flexible Emergency Funding for Operations – \$38 million

Provides \$38 million in flexible funding for public K-12 schools, community colleges, and UNC institutions.

- *UNC Institutions* – \$16 million
Offsets the unmet need for operating costs and revenue losses described above.
- *NC Community College System* – \$7 million
Offsets an anticipated \$4.2 million FY 2024-25 receipts shortfall from affected community colleges due to enrollment declines caused by Hurricane Helene. These funds will also provide \$2.8 million for refunds to students who do not return to school due to Hurricane Helene.
- *K-12* – \$12 million
Provides cash-flow for the replacement of lost or damaged food service equipment, food, and supplies and to replace lost and damaged technology not covered by insurance.
- *NC Independent Colleges and Universities* – \$3 million
Provides direct aid to affected institutions for campus restoration projects, other hurricane-related costs, and operating losses.

Capital Needs for K-12 and NCCCS – \$100 million

Allocates \$75 million to DPI and \$25 million to NCCCS to provide emergency funding to help schools repair facilities and grounds damaged by Hurricane Helene. Funds provide cash flow for schools awaiting reimbursements and cover uninsured, underinsured, or FEMA ineligible capital damages. Any expenditure for which reimbursement is eventually received shall be returned to the state.

Public School Insurance Fund Solvency – \$50 million

Provides \$50 million to the Public School Insurance Fund (PSIF) to address immediate pay-outs and cash-flow needs. Significant increases in reinsurance costs stem from inflation and higher reinsurance premiums in response to more frequent severe storms. It is anticipated that all these funds will be needed, but any portion not expended for Helene recovery shall not revert, but instead remain with the PSIF to maintain future solvency and to cash-flow future emergencies.

Student Support

- **Mental Health Services – \$10 million**

Provides funds for mental health support for students and staff in districts and higher education institutions impacted by Hurricane Helene. This may include leveraging existing staff to allow for short-term, temporary leave from unaffected districts, as well as contracting with mental health agencies to meet immediate needs. The personnel will provide crisis intervention, psychological first aid, and therapeutic support as students cope with trauma, anxiety, and academic challenges.

- *UNC System* – \$2.5 million
- *NC Community College System* – \$2.5 million
- *K-12* – \$5 million

- **K-12 Summer Learning Programs – \$25 million**

Provides funding for districts that miss 15+ instructional days to bolster proficiency rates on End of Grade and End of Course assessments. DPI estimates that 60% of students would participate in this program, similar to what was provided to respond to the COVID-19 pandemic.

- **Stay-in-School Student Assistance – \$26 million**

Assists students from disaster-declared counties who may have trouble maintaining enrollment due to disruptions to family income, ability to pay, and other negative storm-related impacts. Funds will assist affected students with paying for tuition, fees, and emergency expenses that impact a student's ability to remain enrolled. Each system will have flexibility to develop program guidelines and assess the need for applicants. The maximum award for each eligible recipient is \$2,500. Eligible recipients must be NC residents and either have a FEMA-designated county as their primary residence or be attending an eligible post-secondary education institution in a FEMA-designated county. Funds will be allocated as follows, with funding administered by community colleges and by the State Education Assistance Authority for UNC and independent colleges:

- *NC Community College System* – \$18.5 million
- *UNC System* – \$6.5 million
- *NC Independent Colleges and Universities* – \$1 million

Resiliency Efforts – \$6 million

Community colleges support statewide business development through economic development programs.

- **Small Business Center & Technical Support – \$4 million**

Supports seven additional Small Business Counselors to offer small businesses essential services, such as navigating insurance claims, disaster relief programs, and rebuilding strategies. These funds will also support legal, accounting, financial advisory services, and direct financial assistance to companies applying for state and/or federal small business programs.

- **ApprenticeshipNC Support – \$2 million**

Provides three Apprenticeship Consultants to bolster apprenticeship programs and meet disaster-induced workforce challenges, such as worker displacement and increased demand for skilled labor in rebuilding efforts. Apprenticeships create job opportunities for displaced workers and support the long-term economic resilience of the affected communities.

8. Special Provision Recommendations

DPI

- **Additional School Calendar Flexibility:** Amends S.L. 2024-51, Sec. 8.1(a)(1)(ii) to allow the State Superintendent to approve up to an additional 10 days for counties that received excessive damage causing a delay in returning to school.
- **Charter School Enrollment:** Makes an exception to the lottery requirement in GS 115C-218.45 for charter schools in the impacted counties. Students would essentially be guaranteed re-enrollment once they move back.

NCCCS

- **Disaster Recovery Funds:** Includes non-revert language for appropriated recovery funds so NCCCS can address implementation issues beyond FY 2024-25. NCCCS experienced lingering issues following Hurricane Florence.

UNC System

- **UNC System Emergency Grants:** Establishes the UNC System Emergency Grant Program to provide emergency scholarship grants in an amount up to \$2,500 per student to eligible UNC system students who have suffered financial hardship due to the damage and destruction from Hurricane Helene. Eligible students either attended a UNC institution located in a FEMA-designated county or are residents of a FEMA designated county.

9. Funding Provided in S.L. 2024-51

School Nutrition Employee Compensation – \$16 million

Allocates funds to the Department of Public Instruction for the compensation of school nutrition employees in counties impacted by Hurricane Helene whose compensation would otherwise have been provided by school meal receipts as part of the National School Lunch Program or School Breakfast Program.



Health and Human Services

Encompasses the financial impact of damage to health and child care facilities, as well as costs to address other health and human services needs caused by Hurricane Helene.

Preliminary Estimates (\$M)							
Category	Damage & needs			Investments			
	Direct	Indirect/ Induced	Total	Expected Federal	Expected Private	State Funded	Unfunded
Health Care Facilities	\$81	\$47	\$128	\$38	\$68	-	\$21
Public Health	\$7	-	\$7	\$6	-	-	\$1
Social Services	\$31	-	\$31	\$1	-	-	\$30
Health Needs	\$348	-	\$348	\$261	-	-	\$87
Mental Health	\$33	-	\$33	-	-	-	\$33
Child Care	\$82	-	\$82	-	\$34	-	\$48
Medicaid	\$78	-	\$78	\$52	-	-	\$26
Subtotal	\$659	\$47	\$705	\$358	\$102	-	\$245
Strengthening & Mitigation	\$19	-	\$19	\$4	-	-	\$15
Total	\$678	\$47	\$724	\$361	\$102	-	\$261

1. Summary

Preliminary estimates are based on information provided to OSBM by the North Carolina Department of Health and Human Services (DHHS), and external health and human service stakeholders. Total impact is estimated at \$724

million, at least \$463 million of which OSBM expects to be covered by federal and private sources of funding, resulting in an unmet health and human services impact of \$261 million.

Much of the damage from Hurricane Helene was to a part of North Carolina that includes a higher percentage of older residents than the rest of the state and that is home to many rural communities that might have issues easily accessing health care and social services.

Over 12% of residents in the region live in poverty, and a little more than 20% live below 150% of the poverty line. Over 40% of the state's Medicaid population live in the area. Under normal circumstances, these residents often rely on a combination of government-subsidized health and human services for food, medical care, and housing assistance. In the wake of Hurricane Helene, they have turned to emergency assistance programs such as the Disaster Supplemental Nutrition Assistance Program (D-SNAP), and temporary housing

Demographics Snapshot of Disaster-Impacted Counties	
Medicaid	<ul style="list-style-type: none"> Almost 1.4 million people enrolled in Medicaid
Uninsured	<ul style="list-style-type: none"> 11.7% uninsured (over 400,000 people) Almost 33% of uninsured fall below 138% of poverty line
Disabled	<ul style="list-style-type: none"> 15% of population over the age of 18 (over 500,000 people)
Public Assistance	<ul style="list-style-type: none"> 11.6% of households receive FNS benefits (over 200,000)
Elderly	<ul style="list-style-type: none"> 18% over age of 65 (over 800,000) 30% of households have at least one person over the age of 65 (over 525,000)

shelters until they can return to their homes.

Over 40% of the state's population lives in the 39 counties the Federal Emergency Management Agency (FEMA) declared eligible for individual assistance. Nearly two in 10 individuals were food insecure prior to Helene, and many of those people lack the capacity to easily recover from such a devastating event. A robust response is needed to ensure the affected population has access to food and crucial physical and mental health care and social services.

2. Scope

Structures in scope for health and human services estimates include:

- Hospitals, nursing homes, and health care safety net facilities
- Public health (including vector surveillance and mold mitigation)
- Social services (including foster care & adult care)
- Health needs (including emergency prescription and nutrition assistance, assistive technology, and I/DD services)
- Mental health services
- Child care
- Medicaid

3. Methodology

Healthcare Facilities

Hospitals

OSBM estimated hospital costs by comparing the total number of beds for private hospitals in the 51 Hurricane Florence FEMA disaster declared counties, to the total number of beds in the private hospitals in the 39 Hurricane Helene FEMA disaster declared counties.

OSBM then scaled down the total estimated facility damage costs and economic losses resulting from Hurricane Florence for each private hospitals to account for the 19% fewer private hospitals in the 39 Helene affected counties. OSBM then adjusted the total damage cost and economic losses for inflation that occurred between 2018 and 2024. Using this methodology, private hospitals will face an estimated \$49 million in facility costs and \$31 million in economic losses. In addition, the UNC Hospital system estimates that they will face \$6 million in facility damage and \$16 million in lost revenue.

Nursing Homes, Community Health Centers, and Free and Charitable Clinics

OSBM surveyed the North Carolina Health Care Facilities Association, the North Carolina Community Health Center Association, and the North Carolina Association of Free and Charitable Clinics to estimate facility damage by these three facility types (nursing homes, community health centers, and free and charitable clinics). OSBM assigned an estimated per facility cost to address damage and economic loss for Level 2 and 3 damage.

OSBM then multiplied the total number of facilities in each facility type within each damage level by the per facility cost. Using this methodology, OSBM estimates that nursing homes will face a total of \$5 million in facility damage.

Community health centers will face a total of \$20 million in estimated facility costs while free clinics will face an estimated \$0.9 million in facility damages.

Public Health

Mold Remediation

OSBM estimated the cost for mold remediation by scaling the amount committed during Hurricane Florence recovery to the same percentage (4%) of households potentially impacted in the 39 Hurricane Helene FEMA disaster declared counties and accounting for inflation. This scaling resulted in an estimated almost 69,000 households in need of mold remediation. Adjusting the \$13.69 per household estimate for Hurricane Florence recovery to 2024 dollars (1.25% inflation) increases the cost per household to \$17.05. Applying this per household cost to the number of Helene impacted households results in an estimate of \$1 million mold remediation need. FEMA will reimburse 100% of mold remediation costs for the first six months of recovery.

Mosquito Abatement

OSBM's methodology for mosquito abatement costs is based on the population and acreage of the Hurricane Helene impacted counties and the estimates from the state's commitment during Hurricane Florence. OSBM scaled the Florence mosquito abatement estimate of \$8 million using the acreage of the 39 Helene-impacted counties (16,511.001 acres) and adjusted for inflation. OSBM estimates a total need of \$6 million for mosquito abatement in 39 counties. FEMA will reimburse eligible "increased" cost of mosquito abatement. Fall and winter temperatures could potentially reduce the need for mosquito abatement in the impacted counties, but it is unclear to what extent at this time.

Public Health Well Water sample collection and testing supplies and equipment to meet EPA requirements is located in the Utilities and Natural Resources section of this report.

Social Services

Foster Care

According to DHHS, there are more than 4,000 children in the custody of DSS and their resource parents in the impacted counties. DHHS estimated that the cost to provide basic needs like food and clothing to youth and their resource parents, as well as continued access to other critical services is \$4.0 million. This estimate also includes funding for two temporary staff to disperse the funds.

To further ensure that kinship providers can continue to cover the costs of children in their care, and reduce the burden on county budgets while the affected counties address the aftermath of Helene, DHHS estimates an additional \$2.6 million is needed to cover the county share of kinship provider payments, of which the state and county governments share equally and ensure that child welfare involved families can safely remain in their communities.

Adult Care

Administrative Cost to Guardianship Corporations – There are six guardianship corporations in the Helene-impacted counties that are responsible for meeting the essential needs of individuals in their care. Guardianship corporations have utilized their resources during the emergency to provide critical supplies such as food, water, and hygiene items. DHHS estimates that guardianship corporations need \$3 million to continue providing these critical supplies, ensuring the safety of the more than 1,400 individuals in the care of these corporations.

Other Vulnerable Older Adults – According to the American Association of Retired Persons (AARP), older adults are significantly more vulnerable to natural disasters due to mobility difficulties, fixed incomes, and lack of access to consistent internet services. HHS estimates the cost to assist older adults with essential services, reducing unnecessary institutionalization, at \$1.4 million.

DSS Staffing

DHHS estimates a need of \$20 million to increase capacity of local social services agencies. There has been an increase in applications for emergency services that are handled by local departments of social services. DHHS estimates that an additional 30 temporary positions are needed across the agency to make required contacts with children in foster care placed in congregate settings, as well as to assist child protective services staff in assessments of facilities and other duties as needed by county agencies.

County Emergency Assistance for utilities can be found in the Housing section of this report.

Health Needs

Emergency Prescription Assistance Program (EPAP)

OSBM estimates a total need of \$6.2 million to ensure eligible, uninsured people in the region can access their medications. OSBM estimated EPAP cost by comparing the ratio of uninsured individuals in the 51 Florence affected counties to the 39 Helene impacted counties. OSBM adjusted the \$1 million estimated need for Florence to account for the +35% difference in the uninsured populations of each disaster, as well as for changes due to inflation between 2018 and 2024.

Assistive Technology

DHHS estimates a total need of \$0.3 million to ensure individuals who currently utilize assistive technology through the North Carolina Assistive Technology Program can access replacement technology. This estimate includes the cost of relocating nine emergency kits, such as assistive technology devices such as wheelchairs and communication boards, and magnifiers. This investment also covers the purchase of additional equipment, and 1.5 temporary FTE to assist individuals in accessing equipment that best meets their needs.

Intellectual and/or Developmentally Disabled Displacement Recovery

FEMA does not typically cover specific therapeutic needs of community members with I/DD. DHHS estimates \$2 million in need to purchase transitional supplies for individuals with I/DD who must transition to a new group due to damage to the facility in which they currently reside. This estimate includes furniture, bedding, heating, clothing, assistive technology, and personal care supplies. An additional \$8 million is required to ensure that

publicly funded group homes can upfit facilities to support new members who have been displaced.

DHHS also projects that \$5 million is required to provide counseling and therapeutic equipment for individuals in 100 group homes that were impacted, but from which residents do not have to transition, and that \$3 million is needed to provide additional respite support to caregivers, while ensuring that individuals with IDD can access sensory equipment, providing additional therapeutic support.

Food Insecurity

D-SNAP – NC DHHS estimated the amount needed to cover the Disaster Supplemental Nutrition Assistance Program (D-SNAP) 50% county and state match by determining the infrastructure required to process and approve more than 300,000 D-SNAP applications in the 39 impacted counties. A total of \$35 million is needed to bolster state infrastructure. This investment will leverage approximately \$238 million in federal D-SNAP benefits.

Food Banks and Emergency Food Assistance – OSBM estimated the cost to ensure food banks in the impacted counties will be able to recover from damage to their facilities and continue to offer services. OSBM based this estimate on the total amount allocated in the Coronavirus Relief Funds and State Fiscal Recovery Funds to Food Banks during the pandemic. OSBM then adjusted the total allocation for the 39 Helene impacted counties, which represent approximately 40% of the state. Through this methodology, OSBM estimates that \$45 million is needed to reinforce food bank infrastructure to ensure they can continue providing food to the community.

To bolster emergency feeding programs, and meet the nutritional needs of affected individuals, Reinvestment Partners, a non-profit organization that serves the state, estimates that an additional \$5 million is needed to expand their Eat Well emergency feeding program to an additional 12,500 individuals impacted by Helene.

Mental Health Services

Substantial research has shown that natural disasters negatively impact mental health. This is driven by both newly induced post-traumatic stress disorder (PTSD) amongst disaster survivors as well as, for existing mental health patients, a higher likelihood that their access to needed care is disrupted and that underlying conditions (e.g. anxiety) are worsened.

The DHHS Division of Mental Health, Substance Use, and Developmental Disabilities (DMH) will invest \$33 million to address the expected rise in behavioral health needs for Helene impacted individuals. Without these funds, DMH estimates that the current system will be unable to sustain requests for supports.

Of the \$33 million, \$20 million is needed to ensure that impacted and uninsured individuals can receive crisis services, including detox centers. DMH established that an additional \$5 million is required to guarantee that the more than 400,000 uninsured individuals can access coordinated care, ensuring their behavioral health needs are met with the appropriate level of care.

To provide continued care to the 13,906 individuals on the Innovations Waiver in the affected areas, DMH will provide a one-time retention payment for more than 1,500 Direct Support Professionals, totaling \$5 million.

The remaining \$3 million will be used to bolster telehealth resources in community centers, enabling individuals without internet to receive telehealth services.

School Behavioral Health can be found in the Education section of this report while supports for the I/DD population is mentioned above.

Child Care

While access to facility damage data is limited, DCDEE confirmed at least 55 child care centers sustained damage that prevented reopening. Additionally, the General Assembly granted NC DHHS the flexibility to waive certain mandatory standards for licensing child care facilities in an area impacted by Hurricane Helene to address the child care needs of families in the 39 impacted counties. To estimate child care facility damage, OSBM established county damage categories using DEM data.

OSBM estimated the total square footage of all child care centers in the 39 impacted counties based on the statutorily required 25 square feet per child. Using an estimated new construction cost of \$115 per square foot, OSBM assigned a percentage of this cost based on the county's damage categorization. The total costs of damages are estimated at \$46 million. Assuming private insurance, SBA Disaster Loans, and FEMA Individual Assistance coverage of 65% of damage costs, the total unmet need for child care facility damages is \$12 million.

DHHS has also cited the need for one-time disaster relief grants to child care providers in hardest hit Helene-impacted counties. DHHS estimates that \$36 million is needed to ensure support for child care workers and to ensure child care centers remain open or can reopen. HHS' need methodology is based on a child care provider's fixed operational costs and child care worker compensation based on established state rates.

Medicaid

DHHS' Division of Health Benefits (DHB) estimates that Medicaid enrollment will increase by more than 8,000 adults and 44,000 children, a 20% increase in enrolled beneficiaries, and that an additional \$18 million is needed to cover the total share of the adults and children who newly enroll following Helene.

DHB is waiving the \$4 Medicaid pharmacy benefit co-pay that beneficiaries must pay to ensure the more than 1 million Medicaid beneficiaries affected by Hurricane Helene can continue accessing drug therapies and prescription drugs. The total cost to ensure this continued access through December 2024 is \$19 million.

DHB is extending tailored care management rates through March 30 to support needs of affected individuals and is increasing community-based care management to strengthen outreach and address beneficiaries increased health needs. The total estimated cost to extend these rates is \$37 million.

To sustain communication in impacted counties, and ensure beneficiaries and providers are aware of Medicaid flexibilities instituted following Helene, DHB is bolstering Helene disaster response planning, policy development, and communication. The total investment needed is \$4.5 million.

This funding need excludes costs to cover the adults ages 19 through 64 earning up to 138% of the federal poverty line who enroll in Medicaid Expansion. Medicaid Expansion costs require no state appropriations.

4. Assumptions

- OSBM’s analysis defines facility damage categories for nursing homes, community health centers, and free and charitable clinics as the following: Level 1) No physical damage, but surge in patients from evacuated facilities Level 2) Temporary damage i.e., loss of electricity/ water, significant surge in patients, and Level 3) Facility evacuated and closed due to damage.
- For nursing homes, community health centers, and free and charitable clinics, OSBM assumed that facility damage cost for a level three facility is equivalent to \$164,450 while facility costs for a level two facility is \$82,225.
- OSBM assumes all private hospitals and nursing homes have comprehensive private insurance coverage that will compensate them for 80% of their facility costs.
- OSBM assumes that the same percentage of households were impacted by flooding in Florence and Helene assumption, and that the per household amount used during Florence can be adjusted for inflation and applied to the Helene mold remediation estimate.
- OSBM assumes that mosquito abatement needs for Helene will be comparable to needs for Florence, and that some level of mosquito abatement will be necessary in spring 2025 despite fall and winter temperatures.
- OSBM assumes that due to limited data availability there are many more centers with varying levels of damage.
- While total damage and closure of child care centers in the Hurricane Helene impacted counties is unknown, OSBM assumes that several of the area’s over 2,000 child care facilities have sustained some damage.
- OSBM assumes that this new construction cost is applicable to needed child care center repairs.
- OSBM assumes that some child care providers will be eligible for assistance through FEMA IA, SBA Disaster Loans, and private insurance coverage to address damages.
- OSBM assumes a 15% inflation rate in the construction costs for child care facilities and healthcare facilities.
- OSBM applied a 15% strengthening and mitigation rate to healthcare and childcare facility costs.
- OSBM assumes that the funding need for food banks following the Wake of Helene mirrors the COVID-19 need.
- EPAP methodology assumes that North Carolina has a 2% take up rate, or double the impact experienced in New Jersey following superstorm Sandy.

5. Primary Data Sources

- DEM
- DHHS
- LME/MCO Executive Staff

- Hospital, Nursing Home, Community Health Center, and Free and Charitable Clinics Executive Staff
- FEMA
- OSBM
- UNC Management Assistance Data
- U.S. Census Bureau

6. Potential Sources of Non-State Funding

Federal

- US DHHS Center for Medicaid and Medicaid Services (CMS) – CMS will cover 65.09% of Medicaid eligible costs in FFY 2024-25, which began October 1, 2024, and 90% of tailored care management rates, for a total estimate of \$52 million. CMS will also cover 90% of Medicaid Expansion, with the remaining 10% being covered by state hospital assessments.
- 75% of the EPAP costs (\$5 million) covered by the Administration for Strategic Preparedness and Response (US DHHS)
- 25% of the costs associated with child welfare funding for basic needs (\$1 million) covered by Title IV-E
- USDA covers 50% of the administrative costs associated with D-SNAP (\$18 million and 100% of the benefits (approximately \$238 million).
- FEMA PA will reimburse the state up to 90% of the costs associated with facility damage to public health facilities (\$36 million), health care services, (\$9 million), and mosquito abatement (\$5 million).
- FEMA PA will reimburse 100% of mold remediation costs for the first six months of recovery.
- Some child care providers will be eligible for assistance through FEMA IA and/or SBA Disaster Loans.
- OSBM assumes that CDBG-DR will cover some portion of costs.
- See the Housing section of this report for more information about the estimated CDBG-DR amount.

Private

- For hospitals and nursing homes, \$59 million would come from those entities' insurance companies.
- Public hospitals will be eligible for assistance through FEMA PA for some type of assistance.
- Hospitals would cover 10% of Medicaid expansion through state hospital assessments.
- Licensed family child care homes could receive coverage for damages from home day care policy add-on coverage.

7. State Funding Recommendations – \$251.6 million

Unless otherwise noted, all funds will be appropriated to DHHS.

Medicaid – \$26 million

Supports continued access to healthcare for affected individuals, and eligible individuals that enroll in Medicaid. This investment funds the state share of total Medicaid costs to ensure that DHB can provide healthcare to the more than 8,000 adults and 44,000 youth who are expected to enroll in Medicaid in the affected counties, reimbursement for the elimination of the \$4 co-payments for prescription drugs through the end of the calendar year, an extension of the tailored care management rates through March 30, 2025, and contractual support to sustain DHB's current disaster response.

Mental Health Supports- \$33 million

Provides funds to strengthen behavioral health supports to ensure DMH can adequately respond to the expected rise in behavioral health needs of the more than four million individuals in the impacted counties, including crisis care, detoxification and continued access to telehealth. Funds will ensure that the more than 400,000 uninsured individuals in the affected counties can access mental health, improving access to care.

Support for Individuals with I/DD – \$18 million

Invests funds to ensure that the more than 400,000 individuals diagnosed with I/DD in affected counties can remain in the community by providing respite support, transitional supplies for individuals who need to transition to a different group home, and counseling and therapeutic equipment for 100 disaster impacted group homes. Funds will also enable group homes to make necessary upgrades to meet the needs of individuals who transition to their facilities. Without this support, individuals may lack safe housing, increasing pressure on families and emergency services.

Sustainability Payments to Providers- \$2.8 million

Supports providers that offer vocational training and job search assistance for individuals with disabilities who participate in supported employment. This investment provides job counseling services to the 11,185 adults and students with disabilities in disaster impacted counties by providing sustainability funds.

Emergency Prescription Assistance Program- \$1.6 million

Activates the EPAP program, which enables uninsured individuals to access zero cost prescription medications, medical supplies, vaccinations, and some medical equipment due to impacts on healthcare and pharmacy operations. This investment will guarantee access for the more than 400,000 uninsured residents in the affected counties, accounting for almost all of the region's uninsured population.

D-SNAP Match Funding- \$18 million

Leverages federal funds to provide food assistance to 310,000 newly eligible low-income households with food loss or damage caused by Hurricane Helene. This investment will cover the 50% county match for administrative costs incurred by local departments of social

services in operating D-SNAP including IT infrastructure and call centers. This state appropriation leverages federal funding for a total of \$238 million in benefits.

Food Banks- \$45 million

Provides funds to the North Carolina Department of Agriculture and Consumer Services funds for distribution to food banks in affected areas. Funds will ensure that food banks in Helene impacted counties, including Manna and Second Harvest, can continue to provide food to the more than 400,000 food insecure individuals in affected counties throughout the recovery. Funds may be used to purchase refrigeration units, refrigerated trucks, and food.

Emergency Food Assistance – \$5 million

Provides funds to Reinvestment Partners, to bolster their Eat Well program. These funds will ensure that an additional 12,500 impacted individuals can utilize \$80 per month to purchase fruits and vegetables. Enrollment in the program will be managed by Community Care of NC which DHHS selected to provide outreach for other services to disaster victims.

Child Care Center Disaster Relief – \$36 million

Provides one-time disaster relief grants to eligible child care providers (including child care centers, homes, and Pre-K sites) in the impacted counties and tribal communities. These payments are critical to ensure the fragile child care infrastructure in the impacted counties remains functional to support the needs of area families. Funds will be used to support child care providers' operational costs and child care worker compensation. Funds will support over 1500 child care centers in the 39 Hurricane Helene impacted counties.

Local Health Department Support – \$15 million

Invests in aid to local health departments in impacted counties. These funds will support surge staffing and supplies for communicable disease and infection prevention efforts, environmental health efforts, and private well water quality efforts. This investment will support essential health department functions like post disaster food and lodging inspections, disease prevention vector mitigation, and support of temporary shelters.

Communicable Disease Prevention and Response – \$1.5 Million

Provides funding to support public health disease risk mitigation activities, including establishing surveillance systems, vaccinating high-risk populations and developing a communication plan to address increased disease in the Hurricane Helene impacted areas. Funding will support prevention and screening of flu-like and respiratory illness in high-risk environments including emergency shelters and mobile healthcare facilities.

Time-limited Public Health Response & Recovery Staff – \$3 Million

Provides funds to increase public health capacity to support and coordinate state technical assistance and support local health departments. Includes funding to support the Local Disaster Support Unit, immunization efforts, and Evacuation Shelter staffing. Funds will support the continuity operations at local health department in the 39 Hurricane Helene impacted counties.

Vital Records Cost for Replacement – \$1 Million

Provides funds to support waived requirements of NC Office of Vital Records and Registrars of Deeds to collect fees for processing vital records for those seeking replacements and for

newly registered death certificates for anyone whose death is associated with the weather event as designated in Executive Order 318. HHS estimates that 4% of the population (over 130,000) of the impacted counties will need up to 2 replacement certificates. Also provides funds to hire four temporary staff members in NC OVR through December 31, 2024.

NC Office of Emergency Medical Services (OEMS) – \$2.5 Million

Invests funding to support logistical healthcare operations while city and county infrastructure is rebuilding. Provides funding for six months of warehouse operations, services and supplies, support utilization of the State Medical Response System and the NC Mobile Disaster Hospital, provides 30 temporary staff to support oversight of healthcare support sites and equipment, temporary staff operating costs. FEMA funds will be leveraged to the fullest extent possible.

Fatality Management Costs – \$3 Million

Provides funding to the Office of the Chief Medical Examiner for critical response costs related to temporary decedent storage, decedent transportation and surge staffing. FEMA funds will be leveraged to the fullest extent possible. These funds will assist with unmet need related to identification and reunification efforts, expanded statewide fatality management coordination, Hurricane Helene recovery and disaster preparedness.

Child Social Services Support – \$6.6 million

Invests funds to support children and families whose state or local departments of social services are serving in the 39 impacted counties. This investment includes almost \$3 million in flexible funding to meet the needs of more than 4,000 children in DSS custody and their resource parents. A total of 2.5 million will support children and families receiving child protective services at impacted county departments of social services, reducing trauma by helping families remain in their communities. This investment also covers the county share of the cost to support kinship care providers (family members of children in DSS custody who provide an alternative to foster care for those children), helping to relieve strain on county budgets.

Adult Social Services Support – \$4.3 million

Supports individuals receiving adult protective services or guardianship services, helping vulnerable adults to remain in their communities following the impact of Hurricane Helene, reducing institutionalization and ensuring their essential needs are met. This funding also invests in guardianship corporations responsible for meeting the needs of the 1,410 individuals in their care. Funding will cover expenses guardianship corporations are incurring to provide critical supplies like food, water, and hygiene items to ensure the safety and well-being of individuals under guardianship.

Social Services Surge Staffing – \$20 million

Invests in time-limited surge staffing and support for local departments of social services in the 39 impacted counties. This investment will fund 30 time-limited positions to support foster care, child protective services, resource referral services, and technical assistance to county agencies. This investment also ensures continuity of operations across the department, shoring up DHHS' capacity to respond to the increase in applications for Food and Nutrition Services programs, Medicaid, Work First, and other emergency assistance programs.

Assistive Technology – \$0.3 million

Ensures that individuals with disabilities who require assistive technology devices can replace damaged or lost devices by enabling DHHS to relocate 9 emergency kits for distribution and purchased additional assistive technology equipment. Invests additional funds for temporary staffing to ensure that devices can be delivered to individuals, and that individuals can access devices that meet their needs.

Critical Staffing Support – \$9 million

Invests funding to meet continuity of operations needs across DHHS. Funds will be used to address pay rate differentials, pay increases, and overtime that may not be reimbursable by FEMA at state operated facilities.

8. Special Provision Recommendations

DHHS Hurricane Helene Recovery Cashflow Mitigation Funding

Requests \$125 million in funding from the Savings Reserve to assist DHHS with the necessary cashflow to incur eligible Hurricane Helene related costs while awaiting FEMA reimbursement. DHHS will reimburse the Savings Reserve after reimbursements are received.

Allow NCDHHS to Apply for a Temporary Waiver for the Time Limit ABAWDs Can Receive FNS Benefits in Certain Counties with >10% Unemployment

Requests flexibility to apply to USDA for a one-time, temporary waiver for the federal time limit that able-bodied adults without dependents (ABAWDs) in impacted counties can receive FNS benefits without meeting additional work requirements above and beyond the general FNS work requirements. (Amends GS 108A-51.1)

Authorize NCDHHS to Administer County Child Welfare Services and Adult Protective Services in Emergency Circumstances

Requests authority to directly administer specific Child Welfare Services and Adult Protective Services on behalf of counties in certain emergency circumstances. This authority includes, but is not limited to, the authority to make specific case decisions, to direct conflict of interest cases (e.g., in cases where citizen residency is unclear), and to supervise staff and/or make staffing decisions as necessary. (Amends GS 108A-25.1A)

Temporarily Suspend County Responsibility for Errors Made in Determining Medicaid Benefits

Requests to temporarily waive responsibility for county Department of Social Services (DSS) errors as the response to the impact of Hurricane Helene presents challenges for county offices beginning September 1, 2024, through March 31, 2025. (Amends GS 108A-25.1A)

Authorize Temporary Extension of Initial Licenses for Adult Care Homes and Family Care Homes

Extend initial six-month licenses of adult and family care homes in impacted areas to allow more time for the facility to recover from the effects of Hurricane Helene before the Departmental inspection. (Amends G.S. 131D-2.4(a))

Authorize Temporary Extension of License Renewals for Mental Health Providers

Authorize DHSR to temporarily extend annual licenses for providers licensed pursuant to Chap. 122C that are located in the area impacted by Hurricane Helene. (G.S. 122C-23(e))

Temporarily Waive Certain Rules Pertaining to County and/or Municipal Jails

Allow the Division of Health Service Regulation (DHSR) to grant waivers of state regulatory requirements during an emergency. (Amends G.S. 153A-221)

Authorize Temporary Extension of Registration Renewals for Multi-Unit Assisted Housing with Services Facilities

Authorize the Division of Health Service Regulation (DHSR) to extend current registrations for facilities providing Multi-United Assisted Housing with Services (MUAHS), which are assisted living residences in which hands-on personal care and nursing services are arranged by housing management and are provided by a licensed home care or hospice agency. (Amends G.S. 153A-221)

Authorize Temporary Extension of Annual Licenses for Adult Care Homes and Family Care Homes

Authorize DHSR to temporarily extend annual licenses for adult care homes and family care homes in the area impacted by Hurricane Helene. (Amends G.S. 131D-2.4(d))

Authorize Temporary Extension of Certification Renewal Applications for Adult Care Homes Administrators

To allow additional time for certified adult care home administrators to complete and submit their certification renewal applications and fees, and to obtain the required continuing education credits. (Amends G.S. 90-288.15(b))



Tribal and Federal Lands

Addresses physical damage to tribal and federal lands and potential impacts on tourism.

Preliminary Estimates (\$M)							
Category	Damage & needs			Investments			
	Direct	Indirect/ Induced	Total	Expected Federal	Expected Private	State Funded	Unfunded
Tribal land	TBD	TBD	TBD	TBD	TBD	\$0	TBD
Federal land	TBD	TBD	TBD	TBD	TBD	\$0	TBD
Subtotal	TBD	TBD	TBD	TBD	TBD	\$0	TBD
Strengthening & Mitigation	TBD	TBD	TBD	TBD	TBD	\$0	TBD
Total	TBD	TBD	TBD	TBD	TBD	\$0	TBD

1. Summary

Tribal Lands

The Eastern Band of Cherokee Indians (EBCI) is a federally recognized Native American tribe located in western North Carolina. Situated in the Great Smoky Mountains, the tribe is vulnerable to natural disasters like floods and storms and was included in the federal Hurricane Helene Disaster Declaration. With an estimated population of 16,000 enrolled members, the EBCI primarily resides on the Qualla Boundary, which covers approximately 56,000 acres of land. The Qualla Boundary is not a traditional reservation, but it is held in trust by the federal government for the EBCI. This area is located primarily in Swain County and parts of Jackson County. The Qualla Boundary is home to the majority of enrolled members, many tribal facilities, businesses, and cultural sites, making it a focal point for the community. Smaller numbers of members also reside in Haywood, Graham, and Cherokee Counties.

While the ECBI and FEMA are still in the process of assessing damages due to Hurricane Helene, the majority of EBCI members live in critical or high impact-classified counties.

- Swain County: 8,000 EBCI residents. High impact classification.
- Jackson County: 5,000 EBCI residents. High impact classification.
- Haywood County: 1,500 EBCI residents. Critical impact classification.
- Graham County: 1,000 EBCI residents. Medium impact classification.
- Cherokee County: 500 EBCI residents. Medium impact classification.

The EBCI maintains a critical partnership with FEMA to enhance disaster preparedness, response, and recovery, reflected by the 1,216 applications for Individual Assistance (IA) EBCI members have submitted to FEMA through October 16, 2024. Through this collaboration, the EBCI accesses federal resources and expertise to swiftly address damage, protect its members, and restore infrastructure, while preserving its cultural heritage and

autonomy in disaster management. FEMA offers grants available to tribes to help them reduce disaster risks and build resilience. These include:

- The Hazard Mitigation Grant Program (HMGP) for post-disaster hazard mitigation
- The Building Resilient Infrastructure and Communities (BRIC) program for disaster infrastructure projects
- The Pre-Disaster Mitigation (PDM) grant for risk-reduction planning and projects before disasters. These programs support efforts like flood control and building retrofits to enhance tribal resilience against future emergencies
- The Indian Health Service (IHS) also offers emergency grants to tribes to help restore and improve healthcare services for tribal members following a disaster

Healthcare. The EBCI operates a tribally managed healthcare system, integrating medical care with an emphasis on culturally competent services, preventative care, and community health. The primary facility is the Cherokee Indian Hospital Authority (CIHA), providing comprehensive services to approximately 16,000 enrolled members and surrounding communities. The CIH is funded primarily by the Indian Health Service (IHS) but is managed directly by the tribe, giving the EBCI control over the care and services offered.

Education. The EBCI operates the Cherokee Central Schools system, comprising three main schools, serving 1,300 students, prioritizing academic excellence while integrating Cherokee language and culture into the curriculum:

- Cherokee Central Elementary School, 600 students, kindergarten to grade five
- Cherokee Middle School, 300 students, grades six to eight
- Cherokee High School, 400 students, grade nine to twelve

Economy. As a gateway to the Great Smoky Mountains, the EBCI relies heavily on tourism, attracting millions of visitors each year. Gaming operations, primarily through Harrah's Cherokee Casino Resort, are the tribe's largest source of revenue and employment. The tribe is committed to environmental stewardship and cultural resource preservation. With impacted areas remaining closed or inaccessible to visitors, the loss of tourism will significantly affect the local economy. These impacts are detailed in the Economy section of this report.

Damages

While the ECBI and FEMA are still assessing the full breadth of damage caused by Hurricane Helene, the following are some initial damages reported by the tribe.³³

- Hurricane Helene caused substantial damage and losses to the Tribal Trout Hatchery, with overall immediate and anticipated costs totaling approximately \$0.5 million.
 - The loss of 31,000 fish, valued at approximately \$0.1 million.

³³ OSBM conversation and follow up with EBCI Division of Operations, Agricultural Resources, Cherokee Department of Transportation, October 14, 2024.

- Flood mitigation and emergency repair efforts, totaling \$0.2 million.
- Potential revenue losses from fishing permits for the upcoming months of October through December 2025, estimated at \$0.1 million based on average sales from 2023 and 2024.
- Seventeen roads experienced damage, with at least one requiring extensive repairs. The cost to repair this damage will depend on the severity of damage, the number of miles of road impacted, and the type of road. For roads that were significantly damaged and require full reconstruction, estimated cost would be \$3-5 million per mile for a two-lane paved road. Bridge damage occurred at Indian Creek, with water behind the embankment still an issue on the main bridge. Landslides have affected State Highway 19, and Cherokee police have been managing traffic in certain areas.
- The storm caused roof damage to several tribal buildings, including the EOC/EMC building, youth center, and justice center. There are concrete issues and damage to tribal roads, buildings, and driveways. The business district saw damage to buildings that exacerbated pre-existing structural issues. Some property under the tribe's LLC was destroyed, displacing several people. The storm caused damage including gravel and grading work to the Kituwah area, a sacred site central to Cherokee culture and heritage. Kituwah holds deep cultural importance as the "Mother Town" of the Cherokee people and is also used by local school systems for cross-country running. The Fire Mountain trail and disc golf course experienced some damage, though cleanup efforts are already underway. The focus remains on the impacted section of Highway 441 and Oconaluftee Island Park. In the aftermath of the storm, several purchases and costs have been incurred. Eight new trailers were acquired, and there were instances of equipment failure during the recovery efforts. As a result, three to four track hoes were purchased, along with a masticator for mulch. Additionally, three dump trucks were needed due to the insufficiency of the existing CDOT fleet.

Federal Lands

Total federal acreage in North Carolina is 2,434,801, representing 7.8 percent of total acreage in the state. However, federal land accounts for over 15% of total land area in the counties most critically impacted by Hurricane Helene.

Millions of people visit western North Carolina to enjoy the national parks and forests located in and around the Appalachian Mountain chain that runs along the North Carolina border. The Blue Ridge Parkway alone attracts approximately 16 million visitors annually, averaging over a million monthly visitors in April through November and with peak visitation of over 2 million in October. Nearly 95% of visits to the Blue Ridge Parkway and Great Smoky Mountains National Park are from non-local visitors, as estimated by percentage of visitor spending from non-local visitors. A 2023 National Park Service report estimated that national park visitors to North Carolina spent an estimated \$2.6 billion, supporting 38.8 thousand jobs, \$1.5 billion in labor income, \$2.4 billion in value added, and \$4.1 billion in economic output in the North Carolina economy.

Federal land in western North Carolina includes:

- Blue Ridge Parkway (NPS) – 16 million annual visits
- Pisgah National Forest (USFS) – 10 million annual visits

- Nantahala National Forest (USFS) – 7 million annual visits
- Carl Sandburg Home National Historic Site (NPS) – 90,000 annual visits
- Portions of Blue Ridge National Heritage Area (NPS)
- Portions of Great Smoky Mountains National Park (NPS) – 13.5 million annual visits
- Portions of Cherokee National Forest (USFS)
- Portions of Appalachian National Scenic Trail (NPS, USFS, ATC)
- Portions of Overmountain Victory National Historic Trail (NPS)

Damages

Hurricane Helene caused significant damage to roads, bridges, structures, and utilities on National Park Service and United States Forest Service land. Damage primarily resulted from severe flooding and mudslides, ten of which are considered catastrophic. In addition to damaged roads, a number of roads along the Blue Ridge Parkway require major clean up as they have been obstructed by tens of thousands of large, downed trees and other debris. Depending on the severity of damage to the Blue Ridge Parkway, road reconstruction is estimated at \$514 million – \$1.1 billion³⁴.

The entirety of the Blue Ridge Parkway in North Carolina remains closed with significant damage to roadways. The Blue Ridge Parkway headquarters and Visitor Center, both located in Asheville, NC, lost access to water following the storm, and the Linville Falls Visitor’s Center was destroyed. Most significant damages have been observed between Mt. Mitchell and Linville Falls, an area directly northeast of Asheville, NC. Initial estimates indicate that roads leading from Asheville to Mt. Mitchell will remain closed until the summer of 2025, but some road repairs may take several years.

Nantahala National Forest was reopened to the public on October 11, 2024, with the exception of a number of camping and lodging areas, trail systems, and one road. The majority of Pisgah National Forest (the Appalachian and Grandfather Ranger Districts) remains closed to visitors. The Pisgah Ranger District of the National Forest reopened on October 18, 2024, except for four roads (approximately 15 miles) and several facilities.

As large portions of national parks and forests in the impacted areas remain closed or inaccessible to visitors, there will be a significant impact from loss of tourism to the state and local economies. These impacts are included in the Economy section of this report.

³⁴ Cost estimates associated with road reconstruction along the Blue Ridge Parkway utilize a cost estimate of \$18 million per mile of new 2-lane road construction. This amount is higher than the average cost for road reconstruction to account for the challenges of road reconstruction on heavily graded land on the Blue Ridge Parkway and complications arising from mudslides in that area. A range of critically damaged roads is assumed based on county-level Category of Impact. For counties classified as “Critical,” the estimate assumes a range of 12.5-25% of road require reconstruction, while for counties classified as “High,” a range of 5-15% of roads are assumed to require reconstruction.



Other Disasters

Addresses needs related to PTC-8, Tropical Storm Debby, the 2024 Drought, Hurricane Florence, and Hurricane Matthew.

1. **Summary**

Though most recovery efforts are currently focused on Hurricane Helene, North Carolina is still recovering from several other natural disasters. Each of these storms has had different effects, such as wind damage, flooding, or drought, and has impacted different parts of the state. State agencies have requested an additional \$420 million specifically to address these storms. However, several of the recovery requests for Hurricane Helene may also be used to address previous disaster needs.

2. **Scope**

The scope for this section includes needs related to natural disasters other than Hurricane Helene.

3. **Methodology**

This section does not estimate damage; it is instead based on agency requests for PTC-8, Tropical Storm Debby, the 2024 Drought, Hurricane Florence, and Hurricane Matthew.

4. **Disaster Information**

Potential Tropical Cyclone-8 (PTC-8)

PTC-8 impacted North Carolina from September 15-16, 2024, primarily affecting the southeastern coastal region. The storm brought torrential rainfall, leading to severe flash flooding, particularly in the Cape Fear area. In some places, over 12 inches of rain fell within a 12-hour period, with estimates of up to 20 inches in certain locations. The town of Carolina Beach was one of the hardest hit, receiving more than 10 inches of rain in just four hours, causing widespread flooding, power outages, and road closures. A state of emergency was declared as emergency services conducted rescues of stranded residents and pets. Strong winds exacerbated the situation, causing downed trees and power lines along the coast. PTC-8 was declared a federal disaster in four counties on October 19, 2024.

Tropical Storm Debby

Tropical Storm Debby struck North Carolina in early August 2024, bringing severe flooding and heavy rainfall across the state, particularly in Anson, Stanly, and Alamance counties. The storm caused rivers such as the Rocky River and Pee Dee River to swell significantly, leading to widespread flooding of woodlands, farmlands, and public areas. Debby dumped up to 15 inches of rain in some regions, causing flash floods, downed trees, and power outages. Though it primarily impacted inland areas, there were storm surges in some coastal regions.

The flooding threatened agricultural lands, damaging crops like cotton, soybeans, and peanuts.

2024 Drought

The 2024 drought had a significant impact on state agriculture. After the driest June on record, drought conditions rapidly intensified. By mid-July, more than 22 counties were classified as experiencing severe drought, with Columbus County in the southeast experiencing extreme drought. The hardest-hit regions include the southeast, the central Coastal Plains, and the northwest Piedmont. These conditions devastated crops, particularly corn, which was at a critical growth stage during the dry spell. Farmers in counties like Columbus reported harvesting as little as 60 bushels of corn per acre, compared to a typical 170 bushels. Most farmers in the region have some form of insurance, but the coverage rarely fully compensates for the scale of losses seen during a year of extreme drought.

Figure 1: 2024 NC Crop Loss Estimates

Commodity	Main Event/Cause	Production Loss	Dollar Value
Corn	Drought	42% or 55.2M bushels	\$259 million
Soybeans	Drought	6% or 3.75M bushels	\$39 million
Tobacco	Drought, Debby	30% or 75.9M pounds	\$178 million
Hay	Drought	20%	\$40 million
Blueberries	Excess rain, cicadas	15%	\$15 million
Watermelon	Drought, excess water	20%	\$10 million
Sweet Potatoes	Drought	20%	\$61 million
Pumpkins	Drought, excess water	25%	\$5 million
Other vegetables	Mostly drought	15%	\$9 million
Miscellaneous	Other crops, equipment	--	\$10 million
Total			\$626 million

In addition to historic droughts at a crucial part of the growing season, farmers also faced excessive rainfall from Hurricane Helene, Tropical Storm Debby, and Potential Tropical Cyclone #8, as well as a cicada brood hatch that had significant localized impacts. To date, the United State Department of Agriculture has issued 97 primary or secondary disaster declarations for North Carolina due to losses from these events.

Hurricane Florence

Hurricane Florence struck North Carolina on September 14, 2018, making landfall near Wrightsville Beach as a Category 1 storm. Over four days, some areas saw more than 30 inches of rainfall, making Florence one of the wettest tropical systems in U.S. history. The storm primarily affected coastal cities such as Wilmington and New Bern, but its impact extended far inland, with the Cape Fear and Neuse rivers reaching record levels. The flooding displaced thousands of residents, led to the deaths of 42 people, and caused nearly \$17 billion in damage.

Hurricane Matthew

Hurricane Matthew struck North Carolina on October 8, 2016, as a Category 1 storm, and primarily affected the eastern and southeastern parts of the state. Although the storm's winds were moderate, its heavy rainfall—over 18 inches in some areas—caused devastating flooding, particularly in towns along the Tar, Neuse, and Lumber rivers. The flooding

displaced thousands of residents and resulted in the deaths of 31 people in North Carolina. The storm caused significant agricultural losses, damaging crops such as cotton, peanuts, and sweet potatoes, and led to more than \$4.8 billion in damage.

5. State Funding Recommendations – \$420.2 million

The following requests are unlikely to be covered by federal funding for reasons described in each request below.

State Match for Recent Disasters – \$40 million

Provides state matching funds to the Division of Emergency Management within the Department of Public Safety for response and recovery efforts for Tropical Storm Debby, which received a pre-landfall emergency declaration, and PTC-8, which was declared a major disaster. Because both storms received emergency declarations, they are eligible for federal disaster recovery funds that require a state match.

Privately Owned Roads & Bridges – \$5 million

Provides state funding for the repair of critical residential private access roads and bridges impacted by Tropical Storm Debby and PTC-8.

Flood Damage Remediation and Revenue Loss – \$0.2 million

Provides funds to assist the Department of Natural and Cultural Resources (DNCR) in recovering from PTC-8. Needs include funds to remediate flood damage and replace lost revenue. The Archaeology branch office in Kure beach and the Brunswick Town and Fort Fisher historic sites experienced flood damage and need funds to restore access, remove fallen trees, and replace landscaping. The Aquarium at Fort Fisher and the Brunswick Town and Fort Fisher historic sites lost revenue when PTC-8 flooding made those sites inaccessible. The Aquarium was closed for two days, resulting in lost admissions revenue, and the historic sites had to cancel events, resulting in event payment refunds. FEMA does not provide funding for lost revenue.

2024 Uninsured Crop Losses – Pending verified losses, insurance claims

As shown in Figure 1, the preliminary estimate of the resulting crop production losses is \$626 million; it will be several months before the full extent of the losses are verified and claims data becomes available on crop insurance coverage. State funding needs for uninsured losses will be assessed after the harvest and marketing season concludes.

Hurricane Florence Homeowner Recovery Program Needs – \$175 million

Provides funds to sustain the North Carolina Office of Recovery and Resilience's (NCORR) Homeowner Recovery Program. The program has a budget of \$650 million in Community Development Block Grant Disaster Recovery (CDBG-DR) funding for both Hurricanes Matthew and Florence but will need a total of \$825 million to meet program needs.

In 2018, the state requested federal CDBG-DR funding of \$1.1 billion for housing and received only \$542 million in CDBG-DR funds for Hurricane Florence. Since that time, the Homeowner Recovery Program has helped 2,750 families return to rebuilt, resilient housing. Recognizing that the Congressional appropriation was well short of the need, and that the program weathered the COVID-19 pandemic, rising construction costs, labor shortages, and

other challenges, the program requires an additional \$175 million in state appropriations to complete the program.

This funding is needed immediately to avoid stopping work on in-progress homes.

Remaining Florence & Matthew Needs – \$200 million

Provides funds to assist individuals and families with low- to moderate-incomes with the following disaster recovery housing matters: elevations, buyouts, acquisitions, reconstructions, repairs, reimbursements, and related services not covered by FEMA Hazard Mitigation Grant Program (HMGP) and/or HUD CDBG-DR. The requested funds would be used to fund 500 to 1,000+ new projects in counties impacted by Hurricanes Matthew and Florence, as well as projects in counties that had received no state disaster recovery act funds for Hurricane Florence recovery but nonetheless were impacted by the storm.

6. Special Provision Recommendations

- **Eliminate PTC-8 Fund.** Repeals Section 5.1 of SL 2024-51, eliminating the PTC-8 matching fund and directing match funds for smaller storms to the State Match Fund as established in SL 2021-180 and clarified in SL 2021-189.