

January 10, 2023

The Honorable Joseph R. Biden, Jr.
President of the United States
The White House
1600 Pennsylvania Avenue NW
Washington, D.C. 20500

Through: Nancy Dragani, Regional Administrator
Federal Emergency Management Agency
Region VIII
Denver Federal Center
Building 710, Box 25267
Denver, CO 80225-0267

RE: REQUEST FOR A PRESIDENTIAL MAJOR DISASTER DECLARATION

Dear Mr. President,

On behalf of the State of North Dakota, we extend our appreciation for the continuous support your administration has provided our communities. Our counties, cities, tribes and state agencies have been in a continuous response and recovery cycle that began in 2020 and continued with minimal downtime. Our beautiful state has been continually struck by disasters caused by COVID-19, a historic drought, cascading wildfires and severe storm and flood events. Through all of this, our citizens have never failed to prove their resilience and grit against the elements.

Over the past three years, the State of North Dakota has received five federal disaster declarations, three of which were caused by severe storm events. We again find ourselves in need of federal assistance due to a severe storm system that impacted the state from Nov. 9, 2022, to Nov. 11, 2022, which consisted of dangerous weather patterns that caused significant, rapid snowfall and ice accumulations that severely damaged electrical infrastructure and impacted transportation routes due to historic snowfall. Pursuant to Section 401 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. §§5121-5207 (Stafford Act), and implemented by 44 CFR §206.36, the State of North Dakota requests a major disaster declaration for the Nov. 9-11, 2022, severe winter storm for the counties of Dickey, Kidder, Mercer, Nelson, Ransom, Sargent and Wells. Due to this storm system, the central portion of the state received record-breaking and near record-breaking snowfall totals, while the southeast portion of the state was significantly impacted by damages to electrical infrastructure that overwhelmed state and local capabilities to respond and recover from the impacts of this storm event.

Weather Summary

After having a warm and mild fall, the weather pattern changed abruptly bringing colder air and the first snow of the season on Nov. 7, 2022. Before the Nov. 9-11, 2022, storm, daytime

temperatures ranged between 40 and 70 degrees Fahrenheit (maximum) and dropped below freezing most nights. The minimum temperature was 22 degrees Fahrenheit when this storm event entered the state, causing precipitation to fall as rain which turned into glaze ice upon contact with frozen surfaces, causing this event to essentially start as an ice storm. This initial formation created a “Colorado low” system that historically has created treacherous conditions. As the storm continued over the state, precipitation changed to snow starting in southwest North Dakota, traveling to the northeast corner by the morning of Nov. 10. Once snow began to fall, it fell at a rapid and rare rate according to the Bismarck office of the National Weather Service.

Central and western portions of the state continued to experience colder temperatures bringing on record-breaking snow amounts accompanied by wind gusts over 40 mph. Amounts totaled from 24 to 30 inches of snow within the three-day period. Several counties including Burleigh, Morton, Oliver, Mercer, Kidder, Wells and Nelson broke their one-day or two-day historic records. This storm left North Dakotans with snow and ice amounts that varied vastly across the state but ultimately impacted all.

However, snow was not the only precipitation type. From the James River Valley through the southern portion of the Red River Valley, warmer air created significant amounts of freezing rain and ice accumulation. This precipitation left southern and southeast portions of the state coated in a sheet of ice. Interactions between electricity, ice, liquid water, snow and intense winds resulted in significant losses to electrical infrastructure.

According to State Climatologist Adnan Akyüz, who quoted the National Centers for Environmental Information, North Dakota has experienced the highest winter temperature trend in the United States at 4.5 degrees per century. This has created unique challenges and opportunities as North Dakota experiences warmer and more extreme weather events. North Dakota has experienced 42 federally declared disasters since 1993, proving that North Dakotans are not unfamiliar with the extremes. Weather and continued climatic change provided challenging conditions to citizens, critical infrastructure groups and government entities.

Incident Analysis

Attributed to fast and fierce impacts, response and recovery efforts were challenged due to the nature of local and tribal government needs. During the afternoon of Nov. 10, snowfall rates quickly approached 3 inches per hour in some locations. The National Weather Service (NWS) stated, “These two to three-inch per hour snowfall rates, though not unheard of in North Dakota, are not common, and are actually quite rare.” These record snowfalls shut down schools, clogged roadways and knocked out power to thousands of residents. Such great snow depths in such a short period had snow removal teams working tirelessly to get buried and confined residents out of their homes.

With this highly impactful storm forcing not only schools but businesses and government offices to close, it put a halt to surface transportation. Zero visibility, blowing snow and roads coated in ice led to the closure of major highways for a total of 115 hours causing travel disruptions that limited access to critical resources. The North Dakota Highway Patrol in conjunction with the North Dakota Department of Transportation conducted operations in response to multiple vehicle accidents and removals when weather/road conditions and resources allowed. The North Dakota

Department of Emergency Services, Division of State Radio's (NDDDES-SR's) emergency dispatchers saw roughly double their typical call volume for a three-day period. From Nov. 9-11 they answered 3,019 calls, both emergency and non-emergency, compared to 1,693 calls during the following week.

Snow wasn't the only dangerous element as ice hid below the mounds of snow. The impacts on electrical infrastructure caused by ice accumulation became the most detrimental outcome. Under the weight of the ice from freezing rain, it made it easy for the whipping wind to rip apart power lines and poles. There were reports from southeastern North Dakota of a quarter inch of ice accumulation causing tree branches 6 to 8 inches thick to snap. Additionally, a report from the North Dakota Association of Rural Electric Cooperatives (NDAREC) stated, "ice the size of a pop bottle accumulated on the lines, with devastating results." If the lines and poles were resistant to breaking, the grid systems would remain under a great deal of strain because of excessive sagging from ice loads. As power lines started to topple, thousands of people were left without power for an extended duration which created a high vulnerability and risk to human life and safety for those located within such a rural state.

Damage to this critical infrastructure was isolated geographically, but tremendously significant. Area farmers relayed that a large number of irrigation systems were impacted due to the weight of the ice ruining much-needed equipment to support our growing population. Dickey County Emergency Manager Charlie Russell shared, "Everything we get is violent and brutal but thankfully this storm was short-lived," describing the extreme nature of this storm. The rapid yet intense characteristics took public works teams several days to clear. Prolonged, widespread utility disruptions to main distribution feeder lines and high voltage transmission lines/structures, with an additional delayed response, left several households without power for nearly a week and a half. Downed powerlines caused cascading impacts including several fires. Damage was beyond the capabilities and capacities of the hardest hit areas, notably on the Dakota Valley Electric Cooperative infrastructure. Due to these weather impacts, stress on communications and road conditions led to a demanding response and recovery period.

Community and Government Partnerships

North Dakota community members continue to exude resiliency and champion teamwork when faced with rigorous disaster tasks, leading to operational response and recovery efforts. Local, tribal, state and federal partners persistently collaborated to ensure those at risk were supported. Whole Community partners took considerable action to assist, report and monitor impacts to ensure the safety and security of their state.

The North Dakota Department of Transportation (NDDOT), North Dakota Highway Patrol (NDHP), local and tribal law enforcement, and public works departments closed roadways due to life-threatening conditions. Additionally, NDHP and NDDOT organized public messaging for situational awareness of road closures and conditions. NDDOT coordinated with NDHP and wrecking companies to remove stranded vehicles blocking roadways. The North Dakota Parks and Recreation Department (NDPR) in coordination with NDHP readied deployment of Tucker Sno-Cat trail groomers in anticipation of the storm. Although good coordination for the pre-staging of resources, these Tucker Sno-Cats were still susceptible to visibility challenges like other vehicles. NDDDES-SR assisted in coordinating rescue operations and reports from local Public Safety Answering Points (PSAPs) for dispatching available emergency personnel.

NDDOT experienced shortages of snowplow operators in the Williston district that impacted snow and ice operations. To mitigate the impact on citizens, NDDOT developed plans to reallocate resources from other areas within the state to help cover the Williston area. NDHP conducted operations in response to multiple vehicle accidents and removals. Emergency managers assisted with the coordination of medical emergency transportation alongside local fire departments.

Furthermore, Rural Electric Cooperatives (RECs) were overwhelmed with emergency activities, activating mutual aid agreements and pre-qualified contractors to aid in system repairs to hundreds of downed power lines and poles. RECs worked as quickly as possible calling in pre-determined mutual aid partners from within the state. RECs were diligent to coordinate with NDHP through a declaration to move materials, while additionally working alongside NDDOT to gain access to highways, barricades, snow removal and equipment for necessary response efforts. Emergency response services and electrical cooperatives worked diligently to keep citizens safe and critical infrastructure systems afloat.

The North Dakota Department of Emergency Services, Division of Homeland Security, (NDDDES-HLS) led inter-agency contingency planning and situational awareness coordination with NDDDES-SR, NDDOT, NDHP, North Dakota National Guard (NDNG), the North Dakota Department of Health and Human Services (NDHHS), North Dakota Department of Agriculture (NDAg), North Dakota Civil Air Patrol (NDCAP), NDPR and NDAREC, while the Joint Information System coordinated messaging with key agency Public Information Officers to help ensure readiness and identify potential resource gaps. NDDDES-HLS collaborated with the NWS before, during and after the disaster to disseminate information for situational awareness among Whole Community stakeholders as well.

In addition, NDHHS worked tirelessly to coordinate with the American Red Cross (ARC) throughout the storm to ensure sheltering availability for those vulnerable to the elements. ARC prepared to respond to unmet needs once there were safe conditions for responders to do so. ARC partners also assisted the Standing Rock Reservation by coordinating with the emergency manager to ready plows and blades as well as provide emergency supplies in Fort Yates.

Long-Term Implications of Recent Disasters

The electrical infrastructure that experienced destruction during the Nov. 9-11 storm event is the same type of infrastructure that got ripped apart during the April 22 to May 25, 2022, blizzard and subsequent flood. That disaster, declared less than a year ago, is the fifth largest in North Dakota history and caused approximately \$97 million in damages statewide. There is still much work to be done from this previous disaster to restore and harden electrical systems, with an estimated 18-24 months of recovery efforts still expected.

Many have experienced issues with supply chain demands, and the impact on electrical infrastructure is no exception. "Rural Electric Cooperatives (RECs) have been greatly impacted by severe weather for the past two years, resulting in three federal declarations across 13 different RECs. Federal Grant assistance has been crucial in providing power to North Dakota residents," states North Dakota Public Assistance Officer Brent Kahl. Supplies such as transformers, wires and bucket trucks have been exceptionally difficult to obtain with additional wait times on specific supply orders three to six years out. Supply and demand seriously impact the resiliency of the electrical grid. As previously stated, RECs helped coordinate mutual aid

assistance from eight other co-ops who provided 30-40 skilled workforce personnel and materials. Large tractors were utilized to drag equipment through the snow to get resources where needed as the snow prevented personnel from being able to manage repairs on their own. Materials that were used during the event were initially designated for the upcoming construction season and will now push additional resource challenges into the future as those materials will need to be replaced.

Afterward, the forecast showed virtually no chance of warming 10 days after snow and ice were planted. An extended timeframe limited melting that was urgently needed to get rid of the damaging ice, undoubtedly leading to more failing infrastructure creating a higher demand. Continued wear and tear on the system have persistently stretched the maintenance and recovery efforts out for years. Additional stress to infrastructure that is already under repair creates further inconsistencies in restorations. Cascading impacts create a mental and physical toll on those in the field.

The electrical systems that we all depend on for daily living are engineered to withstand forceful weather, but it's not impervious to elements for which you can't typically plan. Electricity is an integral part of our society to ensure access to food, communication, health, safety, and in this instance, warmth. Serious mechanical damage to hardware and electrical support structures poses multiple, serious risks from outside sources. Securing a robust system will help prepare for extreme weather events, avoid power outages and ensure critical services are online and available during times of emergency.

Commitment to Resilience

The North Dakota Department of Emergency Services upholds an *Enhanced Mitigation Mission Area Operations Plan* approved on Feb. 6, 2019. The plan reflects close partnerships with 84 local, tribal and state jurisdictions and private organizations highlighting a whole community approach to mitigation. Holding an enhanced status also allows North Dakota to have a Program Administration by State (PAS) mitigation program. These close relationships provide the ability to drive mitigation initiatives and priorities in close collaboration with the Federal Emergency Management Agency (FEMA).

Through FEMA Hazard Mitigation Assistance (HMA), the State of North Dakota has completed numerous projects to harden electrical grid infrastructure, relocate at-risk substations and equipment, and bury over a hundred miles of rural power lines to help prevent future disaster impacts. The level of disaster damages caused by this storm could have been significantly worse had these mitigation activities not been previously completed, and the State continues to work with electrical cooperatives to identify additional mitigation projects whenever funding allows. Recently, the program has worked to create an electrical infrastructure resiliency plan to provide information to mitigation planning teams to integrate these efforts even further into current and future projects.

This proactive effort highlights a long-term commitment to resilience by learning from past damage reports. North Dakota has enacted 457 total mitigation projects since 1997 with a total of \$286,451,643.77 spent on mitigation. Pew Charitable trusts found in 2020 that using complex budgeting mechanisms such as those used in North Dakota saves \$6.54 per \$1 invested. This savings brings the state to be in the highest category of savings in the country with a total of

\$1,873,393,750.26 saved. Using forward thinking, creative problem-solving and data-informed planning, NDDDES highlights a strong commitment to resilience.

Conclusion

North Dakota continues to protect human life and safety, public and private property and the environment through a unified response in coordination with local, tribal, public and private partners. Weather patterns provide challenging conditions that are tackled in stride with close communication and collaboration throughout. In response to the changing environment, the citizens of North Dakota act as a source of resiliency and strength during extreme change.

Pursuant to 44 CFR§206.36, I have determined severe winter storm conditions were of such severity and magnitude that effective response and recovery are beyond the capabilities of the State and affected local governments. For the reasons described in this letter and its supporting documentation, I respectfully request that you declare a major disaster, with an incident period starting Nov. 9, 2022, and ending Nov. 11, 2022, for the counties of Dickey, Kidder, Mercer, Nelson, Ransom, Sargent and Wells. I also request North Dakota be designated as a Public Assistance Managing State, as it has in previous disasters, and that the Hazard Mitigation Grant Program be implemented on a statewide basis.

I certify for this major disaster that the State and local governments will assume all applicable non-federal shares of costs required by the Stafford Act 93-288. Preliminary Damage Assessments (PDAs) indicate that damages have exceed \$1.7 million as detailed in Enclosure B.

I have designated MG Alan S. Dohrmann and Homeland Security Director Darin Hanson as the State Coordinating Officers (SCOs) for this request. They will work with FEMA to coordinate damage assessments and may provide further information or justifications on my behalf.

Thank you for your consideration of this request for a Major Presidential Disaster Declaration for the State of North Dakota and for your continued support as we recover from an unprecedented number of disasters.

Sincerely,



Doug Burgum
Governor

Enclosures: Enclosure A: Request for Major Presidential Disaster Declaration
Enclosure B: Preliminary Damage Assessment
Enclosure D: Historic and Current Snowfall Totals

Attachments: Attachment A: Jurisdictions Impacted by November 9-11, 2022 Severe Winter Storm
Attachment B: State Climatologist Analysis of November 9-11, 2022 Storm

Attachment C: NWS Summary for North Dakota Winter Storm November 9-11,
2022
Attachment D: ND Presidential Declarations (1993 – 2022)

CC: Senator John Hoeven
Senator Kevin Cramer
Representative Kelly Armstrong
MG Alan S. Dohrmann, Director, North Dakota Department of Emergency Services
Darin Hanson, Director, North Dakota Division of Homeland Security
Justin Messner, Disaster Recovery Chief, North Dakota Division of Homeland Security

Enclosure A:
**Governor's Request for a Major Presidential
Declaration**

DEPARTMENT OF HOMELAND SECURITY
Federal Emergency Management Agency
REQUEST FOR PRESIDENTIAL DISASTER DECLARATION
MAJOR DISASTER OR EMERGENCY

OMB Control Number 1660-0009
Expires 06/30/2023
1-10-2023

1. Request Date

Burden Disclosure Notice	
<p>Public reporting burden for this form is estimated to average 9 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and submitting the form. This collection of information is required to obtain a benefit. You are not required to respond to this collection of information unless it displays a valid OMB control number. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing the burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 500 C Street SW, Washington, DC 20472, Paperwork Reduction Project (1660-0009). NOTE: Do not send your completed form to this address.</p>	
<p>Completion of this form including applicable attachments satisfies legal requirements for emergency and major disaster declaration requests under 42 U.S.C. §§ 5170 and 5191, respectively, as implemented at 44 C.F.R. §§ 206.35 and 206.36. Failure to use this form may result in a failure to meet these requirements and/or a delay in processing the request.</p>	
<p>2a. Name of State (as defined in Stafford Act 102, 42 U.S.C. § 5122) or Indian tribal government requesting declaration.</p> <p>State of North Dakota</p>	<p>2b. Population (as reported by 2010 Census) or estimated population of Indian tribal government's damaged area(s). <u>779,094 (2020)</u></p>
<p>3. Governor's or Tribal Chief Executive's Name</p> <p>Governor Doug Burgum</p>	<p>4. Designation of State or Tribal Coordinating Officer upon declaration (if available) and phone number</p> <p>MG Alan S. Dohrmann, Director, N.D. Dept. of Emergency Services, 701-333-2300</p>
<p>5. Designation of Governor's Authorized Representative or Tribal Chief Executive Representative upon declaration (if available) and phone number</p> <p>Darin Hanson, Director, Division of Homeland Security, 701-328-8165</p>	
<p>6. Declaration Request For: <input checked="" type="checkbox"/> Major Disaster (Stafford Act Sec. 401) <input type="checkbox"/> Emergency (Stafford Act Sec. 501 (a))</p>	
<p>7. Incident Period: Beginning Date End Date or <input type="checkbox"/> Continuing</p> <p style="margin-left: 40px;"><u>Nov 9, 2022</u> <u>Nov 11, 2022</u></p> <p style="text-align: right;"><i>If requesting a "continuing" incident period, enclose an official statement from a qualified Federal Government agency acknowledged as a national authority in a specific incident field (e.g., United States Geological Survey for seismic incidents, the National Weather Service for flooding).</i></p>	
<p>7b. Type of Incident (Check all that apply)</p> <p><input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Explosion <input type="checkbox"/> Fire <input type="checkbox"/> Flood <input type="checkbox"/> Hurricane <input type="checkbox"/> Landslide <input type="checkbox"/> Mudslide</p> <p><input checked="" type="checkbox"/> Severe Storm (rain, high water, wind-driven, rain, hail, lightning) <input checked="" type="checkbox"/> Snowstorm (Must include Enclosure D: Historic and Current Snowfall Data) <input checked="" type="checkbox"/> Straight-Line Winds</p> <p><input type="checkbox"/> Tidal Wave <input type="checkbox"/> Tornado <input type="checkbox"/> Tropical Depression <input type="checkbox"/> Tropical Storm <input type="checkbox"/> Tsunami <input type="checkbox"/> Volcanic Eruption <input type="checkbox"/> Winter Storm</p> <p><input type="checkbox"/> Other (please specify) _____</p>	
<p>8. Description of damages (Short description of impacts of disaster on affected area and population). Include additional details in enclosed Governor's or Tribal Chief Executive's cover letter.</p> <p>The State of North Dakota requests a major disaster declaration for damages caused by a severe winter storm that occurred statewide from November 9, 2022 to November 11, 2022. North Dakota experienced a mixed precipitation event that resulted in freezing rain and heavy snow that broke historic snowfall records. These high snowfall totals led to significant impacts to transportation routes, and the combination of rain and snow caused excessive damage to electrical infrastructure that left some rural homeowners without power for a week and a half during the winter season. FEMA has currently validated \$1.7 million in damages from the storm event as identified in Enclosure B of this request.</p>	
<p>9. Description of the nature and amount of State and local or Indian tribal government resources which have been or will be committed. Include additional details in enclosed Governor's or Tribal Chief Executive's cover letter.</p> <p>North Dakota enacted a whole of government approach with public and private partners. The Governor's Office led the Joint Information Center; ND Department of Emergency Services (NDDDES), Division of Homeland Security, led inter-agency coordination efforts; North Dakota Department of Transportation, North Dakota Highway Patrol, local and tribal law enforcement, and public works departments closed roadways due to life threatening conditions, moved snow, and coordinated with wrecking companies to remove stranded vehicles blocking roadways; NDDDES, Division of State Radio coordinated rescue operations and dispatching of emergency personnel; ND Association of Rural Electric Cooperatives assisted with coordination of electrical infrastructure repairs; ND Health and Human Services coordinated with the American Red Cross on sheltering operations; and the American Red Cross also worked with the Standing Rock Reservation to ready plows, blades, and emergency supplies in Fort Yates.</p>	

10. Joint Preliminary Damage Assessment*

Individual Assistance Dates Performed **Requested** _____ **Start** _____ **End** _____

Individual Assistance Accessibility Problems (Areas that could not be accessed, and why)

Public Assistance Dates Performed **Requested** Dec 13, 2022 **Start** Dec 21, 2022 **End** Jan 6, 2023

Public Assistance Accessibility Problems (Areas that could not be accessed, and why)

11. Programs and Areas Requested

Individual Assistance N/A Individuals and Households Program Crisis Counseling Program Disaster Unemployment Assistance
 All Disaster Case Management Disaster Legal Services Small Business Administration (SBA) Disaster Assistance

For the following jurisdictions, specify programs and areas (counties, parishes, independent cities; for Indian tribal government, list tribe(s) and/or tribal area(s)) If additional space is needed, please enclose additional documentation).

For States, identify Federally-recognized Tribes in the requested counties (if applicable).

Please see **Enclosure A: Supplemental Information for Individual Assistance** for additional information in support of this request*.

**Not Required for Emergency Declaration Request*

11. Programs and Areas Requested (Continued)

Public Assistance N/A Debris Removal (Category A) Emergency Protective Measures (Category B) Permanent Work (Categories C-G)* (not available for Emergency Declaration Requests)

For the following jurisdictions, specify programs and areas (counties, parishes, independent cities; for Indian tribal government, list tribe(s) and/or tribal area(s)). If additional space is needed or your request includes different categories of work for different jurisdictions; please enclose additional documentation.
Dickey, Kidder, Mercer, Nelson, Ransom, Sargent, and Wells

For States, identify Federally-recognized Tribes included in the requested counties (if applicable).

Please see **Enclosure B: Supplemental Information for Public Assistance** for additional information in support of this request*.

Indemnification for Debris Removal Activity

I do not anticipate the need for debris removal.

I anticipate the need for debris removal, which poses an immediate threat to lives, public health and safety. Pursuant to Sections 403 and 407 of the Stafford Act, 42 U.S.C. §§ 5170b & 5173, the State or Indian tribal government agrees to indemnify and hold harmless the United States of America for any claims arising from the removal of debris or wreckage for this disaster. The State or Indian tribal government agrees that debris removal from public and private property will not occur until the landowner signs an unconditional authorization for the removal of debris.

Request for Direct Federal Assistance

I do not request direct Federal assistance at this time.

I request direct Federal assistance for work and services to save lives and protect property, and:

a. I request the following type(s) of assistance:

b. List of reasons why State and local or Indian tribal government cannot perform, or contract for, required work and services.

c. In accordance with 44 C.F.R. § 206.208, the State or Indian tribal government agrees that it will, with respect to direct Federal assistance: (1) Provide without cost to the United States all lands, easements, and rights-of-ways necessary to accomplish the approved work; (2) Hold and save the United States free from damages due to the requested work, and shall indemnify the Federal Government against any claims arising from such work; (3) Provide reimbursement to FEMA for the non-Federal share of the cost of such work in accordance with the provisions of the FEMA-State or FEMA-Tribe Agreement ; and (4) Assist the performing Federal agency in all support and local jurisdictional matters.

Request for Snow Assistance

N/A I request snow assistance.

Snow assistance for the following jurisdictions (Specify counties, independent cities or tribes and/or tribal areas).
Kidder, Mercer, Nelson, and Wells

Please see **Enclosure D: Historic and Current Snowfall Data** for additional information in support of this request*.

*Not Required for Emergency Declaration Request

11. Programs and Areas Requested (Continued)

Hazard Mitigation* Statewide **OR**

For the following specific counties, parishes, independent cities or tribes and/or tribal areas.

12. Mitigation Plan Information*

a. Mitigation Plan Expiration Date 2/5/2024 b. Type of Plan Enhanced Standard

13. Other Federal Agency Programs

I do not anticipate requirements from Other Federal Agencies I do anticipate requirements from Other Federal Agencies

Please see **Enclosure C**: Requirements for Other Federal Agency Programs for additional information in support of this request*.

14. Findings and Certifications

I certify the following:

a. I have determined that this incident is of such severity and magnitude that effective response is beyond the capabilities of the State and the affected local government or Indian tribal government and that supplementary federal assistance is necessary.

b. In response to this incident, I have taken appropriate action under State or tribal law and have directed the execution of the State or Tribal Emergency Plan on Dec 9, 2022 in accordance with the Stafford Act.

c. The State and local governments, or Indian tribal government will assume all applicable non-Federal share of costs required by the Stafford Act.

15. List of Enclosures and Supporting Documentation

Cover Letter Enclosure A (Individual Assistance)* Enclosure B (Public Assistance)*
 Enclosure C (Requirements for Other Federal Agency Programs) Enclosure D (Historic and Current Snowfall Data)
 Additional Supporting Documentation A: State Climatologist Analysis, B: NWS Event Analysis, C: ND Declarations (1993-2022)


Governor's or Tribal Chief Executive's Signature

01-10-23
Date

If anyone except the Governor or Tribal Chief Executive signs this document, please provide the documentation that establishes that this individual has the legal authority to act on behalf of the Governor or Tribal Chief Executive.

*Not Required for Emergency Declaration Request

Enclosure B:
Preliminary Damage Assessment Results

ENCLOSURE B

NORTH DAKOTA PRELIMINARY DAMAGE ASSESSMENT

Conducted December 21, 2022 through January 6, 2023
 Estimates of Eligible Public Assistance Under PL 93-288, as Amended

DO NOT Edit this page.

COUNTY	2020 Population	Category A	Category B	Category C	Category D	Category E	Category F	Category G	Total Estimated Damage	Dollars Per Capita
		Debris Clearance	Protective Measures	Road Systems	Water Control	Buildings & Equipment	Utility Systems	Other		
Dickey County	4,999	0	0	0	0	0	417,582	0	417,582	\$83.53
Kidder County	2,394	0	31,411	0	0	0	0	0	31,411	\$13.12
Mercer County	8,350	0	37,578	0	0	0	0	0	37,578	\$4.50
Nelson County	3,015	0	16,590	0	0	0	0	0	16,590	\$5.50
Ransom County	5,703	0	0	0	0	0	92,191	0	92,191	\$16.17
Sargent County	3,862	0	0	0	0	0	1,112,491	0	1,112,491	\$288.06
Wells County	3,982	0	40,414	0	0	0	0	0	40,414	\$10.15
		0	125,993	0	0	0	1,622,264	0	1,748,257	
STATE TOTALS	779,094									\$2.24
									County Per Capita = \$	4.44
									State Per Capita = \$	1.77
The population of North Dakota is 779,094										

Enclosure B NORTH DAKOTA PRELIMINARY DAMAGE ASSESSMENT

Conducted December 21, 2022 through January 6, 2023
Estimates of Eligible Public Assistance Under PL 93-288, as Amended

COUNTY	2020 Population	Category A Debris Clearance	Category B Protective Measures	Category C Road Systems	Category D Water Control	Category E Buildings & Equipment	Category F Utility Systems	Category G Other	Total Estimated Damage	Threshold Required
Dickey County	4,999						417,582			
Dakota Valley Electric Coop										
Total Dickey County		0	0	0	0	0	417,582	0	\$417,582	\$22,196
Kidder County	2,394									
Kidder County Snow Removal			31,411							
Total Kidder County		0	31,411	0	0	0	0	0	\$31,411	\$10,629
Mercer County	8,350									
Mercer County Snow Removal			37,578							
Total Mercer County		0	37,578	0	0	0	0	0	\$37,578	\$37,074
Nelson County	3,015									
Nelson County Snow Removal			16,590							
Total Nelson County		0	16,590	0	0	0	0	0	\$16,590	\$13,387
Ransom County	5,703									
Dakota Valley Electric Coop							43,704			
Cass County Electric Coop							48,487			
Total Ransom County		0	0	0	0	0	92,191	0	\$92,191	\$25,321
Sargent County	3,862									
Dakota Valley Electric Coop							1,000,436			
Cass County Electric Coop							112,055			
Total Sargent County		0	0	0	0	0	1,112,491	0	\$1,112,491	\$17,147
Wells County	3,982									
Wells County Snow Removal			40,414							
Total Wells County		0	40,414	0	0	0	0	0	\$40,414	\$17,680
	779,094									1,378,996
TOTAL STATE COSTS									\$1,748,257	\$1,378,996
County Per Capita = \$ 4.44 State Per Capita = \$ 1.77 The population of Grantee is 779,094 (2020 Census)										

Enclosure D:
Historic and Current Snowfall Totals

ENCLOSURE D TO MAJOR DISASTER REQUEST

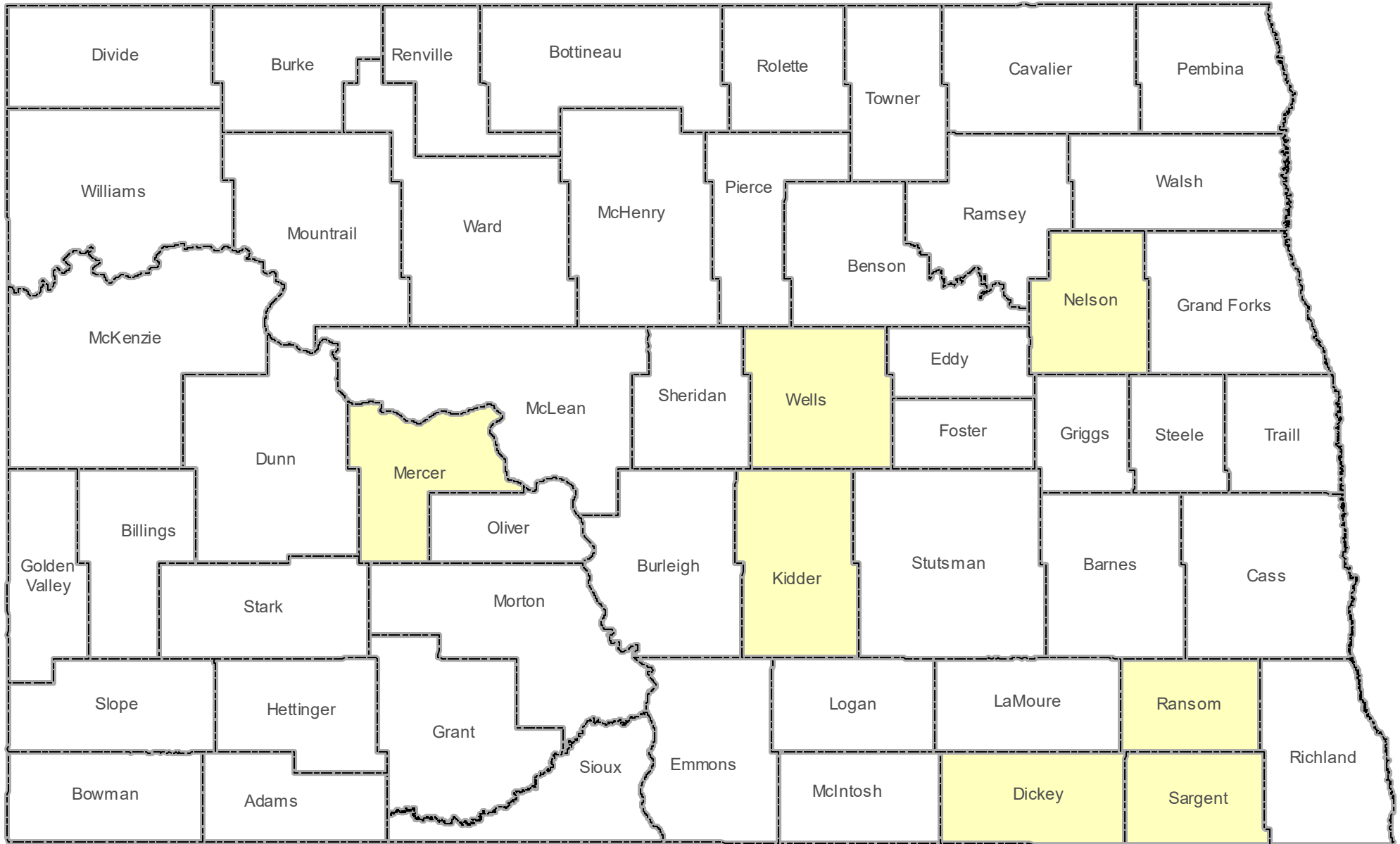
Historic and Current Snowfall Data

County / Tribal Area	NWS Snowfall (inches)	Period (# of days)	NCDC Record Snowfall Data		Evaluation				Comments
			Amount	Period	Record Exceeded	Near Record	Contiguous County	Core County	
Kidder	22.0	1-Day	14.5	1-Day	X			X	
Mercer	16.2	2-Day	18.1	2-Day		X		X	
Nelson	13.5	1-Day	15.0	1-Day		X		X	
Wells	16.5	1-Day	17.0	1-Day		X		X	

Note: The National Weather Service (NWS) has provided a full analysis of the November 9-11, 2022 severe winter storm which identifies the Counties that either exceeded their snowfall of record or were within 10%, per the above table. That analysis is included as Attachment B of the Major Disaster Declaration Request.

Attachment A:
Jurisdictions Impacted by November 9-11, 2022
Storm Event

Attachment A: Jurisdictions Impacted by the November 9 - 11, 2022, Severe Winter Storms



Attachment B:
State Climatologist Analysis of
November 9-11, 2022 Storm

November 2022 Winter Storm in North Dakota

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Synopsis

- A Colorado low tracked across North Dakota from November 9 through 11, bringing a winter storm that included heavy snow, high winds, and freezing rain. North Dakota is not unfamiliar with occasional winter storms bringing heavy snow and high winds, but freezing rain is new to our climate that is starting to become a costly hazard.
- Currently, North Dakota has the highest winter temperature trend in the United States, with 4.5 degrees per century*. Unfortunately, it brings new challenges, with liquid precipitation falling on objects at or below-freezing temperatures. Our usual winter precipitation type in North Dakota is snowfall. However, warm air temperatures with frozen ground yield a new precipitation type, freezing rain.

*NOAA [National Centers for Environmental Information](#)

Synopsis (Continued)

- The November 9-11 winter storm event created snowfall of up to 22" in Central North Dakota and freezing rain with ice accumulation of up to ¼ inches.
- A ¼ in of radial ice coupled with a wind speed of more than 35 mph causes an Ice Damage Index of 4 based on a scale from 0 (minimal risk damage to 5 (Catastrophic damage). The Sperry-Piltz Ice Accumulation (SPIA) Index* 4 is described as:
 - Prolonged and widespread utility interruptions with extensive damage to main distribution feeder lines and some high voltage transmission lines/structures. Outages lasting 5 to 10 days.
- The following slide shows the highest winds reported between November 10 and 11.

SPIA Index: <http://www.usawx.com/icestormindex.htm> (See Appendix 1 for the complete impact data)

Highest Wind Reports in Eastern ND (Nov 10-11, 2022)

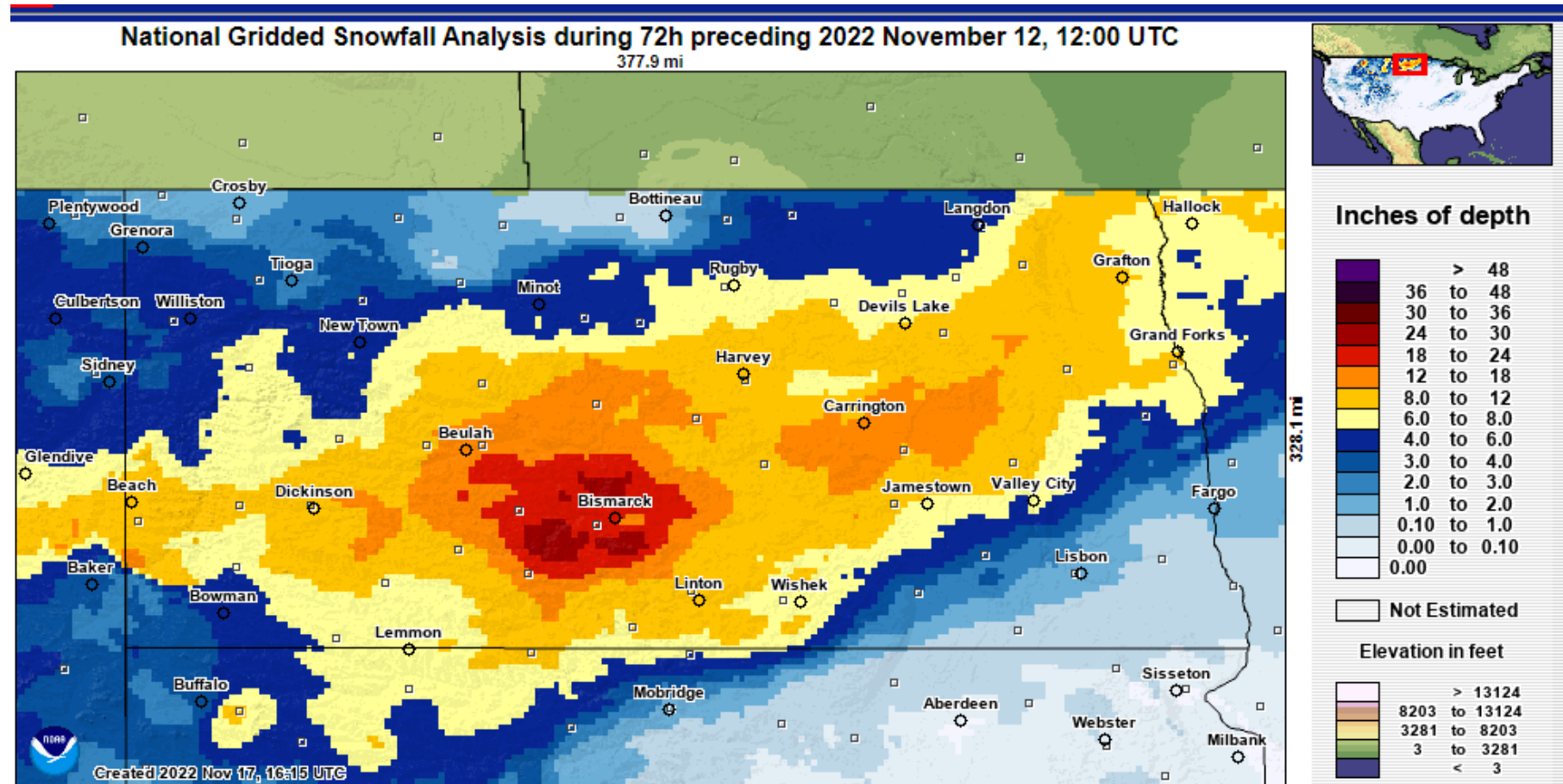
Public Information Statement
National Weather Service Grand Forks ND
934 AM CST Sat Nov 12 2022

...HIGHEST WIND REPORTS NOVEMBER 10TH-11TH...

Location	Speed	Time/Date	Provider
Roseau AP MN	56 MPH	0415 PM 11/10	AWOS
Grand Forks AP ND	51 MPH	1147 PM 11/10	ASOS
Devils Lake AP ND	47 MPH	0339 PM 11/10	AWOS
Hampden ND 3 SE	45 MPH	0258 PM 11/10	RAWS
East Grand Forks MN DOT	45 MPH	1250 AM 11/11	MESOWEST
Walhalla AP ND	44 MPH	0115 PM 11/10	AWOS
Grafton AP ND	44 MPH	0935 PM 11/10	AWOS
Cooperstown AP ND	44 MPH	0555 AM 11/10	AWOS
Herman MN DOT	44 MPH	0145 PM 11/10	MESOWEST
Devils Lake ND 20 MP 97.6	44 MPH	0845 PM 11/10	NDDOT
Cando AP ND	43 MPH	0115 PM 11/10	AWOS
Kent MN DOT	43 MPH	0555 PM 11/10	MESOWEST
Crary ND NDAWN	42 MPH	0320 PM 11/10	NDAWN
Maddock ND NDAWN	42 MPH	0445 PM 11/10	NDAWN
Bowesmont I-29 MP 196	42 MPH	1015 PM 11/10	NDDOT
McHenry ND NDAWN	41 MPH	1030 PM 11/10	NDAWN
Webster ND NDAWN	41 MPH	0520 PM 11/10	NDAWN
Langdon AP ND	41 MPH	1235 PM 11/10	AWOS
Fargo AP ND	41 MPH	0259 AM 11/11	ASOS
Frazee MN DOT	41 MPH	1025 AM 11/10	MESOWEST
Edmore ND NDAWN	40 MPH	0445 PM 11/10	NDAWN
Kempton ND NDAWN	40 MPH	1055 AM 11/10	NDAWN
Logan Center ND NDAWN	40 MPH	1045 PM 11/10	NDAWN
Cavalier AP ND	40 MPH	0135 PM 11/10	AWOS
Grand Forks ND AFB	40 MPH	1101 AM 11/10	ASOS
Warroad AP MN	40 MPH	0855 PM 11/10	AWOS
St Vincent MN DOT	40 MPH	1050 PM 11/10	MESOWEST
Fergus Falls MN DOT	40 MPH	0425 PM 11/10	MESOWEST

- The table on the left lists Eastern ND and Western MN locations with winds 40mph or greater.

72-hr Snowfall Preceding 6 am November 12, 2022*



*<https://www.nohrsc.noaa.gov/interactive>

Analysis

NOWData - NOAA Online Weather Data [Enlarge results](#) [Print](#)

Climatological Data for FARGO HECTOR INTL AP, ND - November 2022
Click column heading to sort ascending, click again to sort descending.

Date	Temperature				HDD	CDD	Precipitation	New Snow	Snow Depth
	Maximum	Minimum	Average	Departure					
2022-11-01	70	31	50.5	13.5	14	0	0.00	0.0	0
2022-11-02	68	47	57.5	21.0	7	0	0.00	0.0	0
2022-11-03	51	32	41.5	5.5	23	0	0.00	0.0	0
2022-11-04	41	22	31.5	-3.9	33	0	0.00	0.0	0
2022-11-05	46	19	32.5	-2.4	32	0	T	0.0	0
2022-11-06	44	23	33.5	-0.9	31	0	0.00	0.0	0
2022-11-07	35	11	23.0	-10.9	42	0	0.00	0.0	0
2022-11-08	43	35	39.0	5.7	26	0	T	0.0	0
2022-11-09	42	30	36.0	3.2	29	0	0.07	0.0	0
2022-11-10	32	22	27.0	-5.3	38	0	0.41	0.8	0
2022-11-11	22	18	20.0	-11.8	45	0	T	T	1
2022-11-12	19	17	18.0	-13.2	47	0	T	T	1
2022-11-13	24	17	20.5	-10.2	44	0	0.03	1.4	1
2022-11-14	26	18	22.0	-8.2	43	0	0.11	1.6	3
2022-11-15	24	17	20.5	-9.2	44	0	0.03	0.4	3
2022-11-16	25	6	15.5	-13.7	49	0	0.01	0.1	3
2022-11-17	26	14	20.0	-8.7	45	0	0.04	0.4	4
2022-11-18	19	1	10.0	-18.1	55	0	T	T	4
2022-11-19	18	7	12.5	-15.1	52	0	0.04	0.6	4
2022-11-20	22	8	15.0	-12.1	50	0	0.00	0.0	5
2022-11-21	24	13	18.5	-8.1	46	0	0.00	0.0	4
2022-11-22	29	20	24.5	-1.6	40	0	0.00	0.0	4
2022-11-23	39	22	30.5	4.9	34	0	0.00	0.0	3
2022-11-24	34	18	26.0	0.9	39	0	0.00	0.0	2

- While the previous slide shows 72-hr snowfall accumulation preceding 6 am on November 12, the remaining places, especially in southeastern parts of the state, received rain.
- See highlighted climate data in Fargo showing 0.07” of precipitation with no snow on November 9 and 0.41” of precipitation with only 0.8” of it being snow on November 10. Meaning that the majority of the precipitation type in Fargo on November 10 was liquid (rain).
- Given the minimum temperature was 22°F, rain falling on the frozen surface created glaze ice upon contact yielding the ice storm.

Historical Perspective

- Based on the National Centers for Environmental Information Storm Data archives*, this event was the first ice storm to strike ND since December 25, 2016.

Images and More Analysis



- The image on the left was taken in Fargo, ND, by a National Weather Service Employee on November 10, 2022.
- Based on my calculations, a $\frac{1}{4}$ in of radial ice on an object that is 1" thick and 1' long creates 177 grams (0.4 lb) of additional weight*. One needs to multiply this number by the actual length of an object (electrical wire, tree branches, etc.) to calculate the exact weight added by the ice accumulation.

*See Appendix 2 for a table showing the added ice weight on objects with different thicknesses

Appendices

Appendix 1: SPIA Ice accumulation damage impact.

The Sperry-Piltz Ice Accumulation Index, or "SPIA Index" – Revised September, 2009

ICE DAMAGE INDEX	RADIAL ICE AMOUNT (inches)	WIND (mph)	DAMAGE AND IMPACT DESCRIPTIONS
0	< 0.25	< 15	Minimal risk of damage to exposed utility systems; no alerts or advisories needed for crews, few outages.
1	0.10 – 0.25	15 - 25	Some isolated or localized utility interruptions are possible, typically lasting only a few hours. Roads and bridges may become slick and hazardous.
	0.25 – 0.50	> 15	
2	0.10 – 0.25	25 - 35	Scattered utility interruptions expected, typically lasting 12 to 24 hours. Roads and travel conditions may be extremely hazardous due to ice accumulation.
	0.25 – 0.50	15 - 25	
	0.50 – 0.75	< 15	
3	0.10 – 0.25	> = 35	Numerous utility interruptions with some damage to main feeder lines and equipment expected. Tree limb damage is excessive. Outages lasting 1 – 5 days.
	0.25 – 0.50	25 - 35	
	0.50 – 0.75	15 - 25	
	0.75 – 1.00	< 15	
4	0.25 – 0.50	> = 35	Prolonged & widespread utility interruptions with extensive damage to main distribution feeder lines & some high voltage transmission lines/structures. Outages lasting 5 – 10 days.
	0.50 – 0.75	25 - 35	
	0.75 – 1.00	15 - 25	
	1.00 – 1.50	< 15	
5	0.50 – 0.75	> = 35	Catastrophic damage to entire exposed utility systems, including both distribution and transmission networks. Outages could last several weeks in some areas. Shelters needed.
	0.75 – 1.00	> = 25	
	1.00 – 1.50	> = 15	
	> 1.50	Any	

(Categories of damage are based upon combinations of precipitation totals, temperatures and wind speeds/directions.)

Appendix 2: Weight of 0.25" of ice accumulating on radial objects having various thickness per 1' length.

Thickness (in): (twice the radius)	Weight (grams)
0.25	70.8
0.5	106.2
0.75	141.6
1	177
1.25	212.4
1.5	247.8
1.75	283.3
2	318.7

Attachment C:
National Weather Service Summary
of November 9-11, 2022 Storm



***NDDDES Summary for
North Dakota Winter Storm
November 9-11, 2022
Issued: December 7, 2022 16:30 CST***

1. Overview / Weather Set-Up

Severe Winter Weather Awareness Week in North Dakota, October 31 through November 4, was warm and dry. The weather pattern abruptly changed the second week of November. Much colder air, and the first snow of the season, a few inches for most of North Dakota, came on November 7. By that date, forecasters at NOAA's National Weather Service in Bismarck and Grand Forks recognized the weather pattern was changing significantly and would support the formation of a "Colorado Low". The offices began messaging the potential for the risk of a significant storm impacting the state just before Veteran's Day.

Snow began falling the evening of November 9th over southwestern North Dakota and spread to the northeast by the morning of the 10th. Bands of very heavy snow, on the order of one to two inches per hour, set up over the south-central part of the state. During the early afternoon of November 10th, snowfall rates approached three inches per hour in some locations. These two to three inch per hour snowfall rates, though not unheard of in North Dakota, are not common, and in actuality are quite rare. Typically, these snowfall rates are only experienced in the state once every several winter seasons.

Snow was not the only precipitation type. From the James River Valley, through the southern Red River Valley, warm enough air worked into the storm to result in significant amounts of freezing rain with impactful ice accumulation. There were freezing rain reports from southeastern North Dakota and ice accumulations exceeding one inch in some locations. Tree branches six to eight inches thick were snapped and electrical infrastructure was impacted. The significant freezing rain and associated ice accumulations resulted in thousands of people without electrical power.

Adding to the intensity of the falling snow and the freezing rain was the wind, gusting as high as 45 mph. Where heavy snow was falling this resulted in a full blown blizzard with blowing snow that reduced visibility to near zero for many hours, and caused drifting of snow. Where there was freezing rain the wind made it even easier, under the weight of the ice, to snap tree limbs, power lines and power poles.

This highly impactful winter storm forced schools, businesses and government offices to close and brought surface transportation to a halt, including the closure of Interstate 29. In the hardest



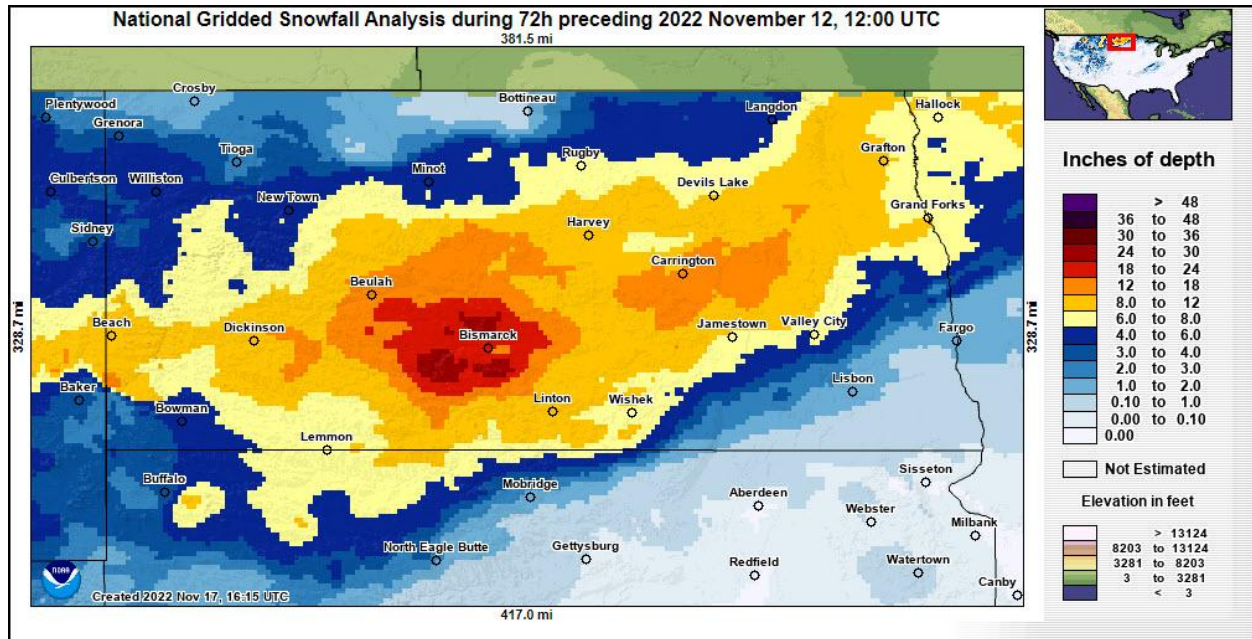
hit areas cleanup and recovery took days. Although precipitation ended during the morning of November 11th, gusty winds continued for the rest of that day.

2. Freezing Rain and Snow Reports

0900 am Nov 10	Fargo, Cass County	Broadcast media reported 0.05 inches of ice accumulation.
1130 am Nov 10	Forman, Sargent County	NWS COOP Observer reported 0.10 inches of ice accumulation snapping 6 to 8 inch thick tree branches.
1000 pm Nov 10	Rutland, Sargent County	Public reported that ice accumulation on trees measured 1.2 inches thick.
1205 pm Nov 11	Lisbon, Ransom County	NWS COOP Observer reported 0.25 inches of ice accumulation.



Left: Ice Accumulation causes damage to a golfing range in Fargo, ND.



Snowfall exceeded one foot across a large swath of the state.



Public Information Statement
 National Weather Service Bismarck ND
 1108 AM CST Fri Nov 11 2022

...SNOWFALL REPORTS...

Location	Amount	Time/Date	Provider
3 SE Mandan	24.0 in	1000 PM 11/10	Public
3 W Bismarck	24.0 in	1004 PM 11/10	Public
4 NNE Bismarck	23.0 in	0840 PM 11/10	Public
Steele	22.0 in	1006 PM 11/10	Public
1 NW Mandan	21.0 in	0815 PM 11/10	Public
Bismarck 1.3 WNW	20.5 in	0700 AM 11/11	COCORAHS
4 WNW Huff	20.0 in	1052 AM 11/11	Trained Spotter
2 NNW Bismarck	20.0 in	0800 PM 11/10	Public
4 SW Lincoln	19.0 in	0800 PM 11/10	Broadcast Media
2 S Lincoln	19.0 in	0840 PM 11/10	Public
Center	18.0 in	0746 PM 11/10	Public
Hebron	18.0 in	0330 PM 11/10	Public
4.9 NW New Salem	17.3 in	0900 AM 11/11	COOP
3 SSE Bismarck	17.1 in	1100 AM 11/11	Official NWS Obs
Sykeston	16.5 in	0710 PM 11/10	Broadcast Media
6 S Hazen	16.0 in	0945 PM 11/10	Broadcast Media
New England	14.8 in	0508 PM 11/10	Public
Underwood	14.5 in	0800 AM 11/11	COOP
Steele	14.0 in	0301 PM 11/10	Public
Braddock	13.5 in	0305 PM 11/10	Public
Cathay 6.5 N	13.0 in	0700 AM 11/11	COCORAHS
Dickinson 1.1 WNW	13.0 in	0800 AM 11/11	COCORAHS
Fort Yates	13.0 in	0630 AM 11/11	COOP
Carrington	12.0 in	0700 AM 11/11	COCORAHS
Halliday	12.0 in	0253 PM 11/10	Public
Pingree 5.4 NW	11.8 in	0600 AM 11/11	COCORAHS
Gladstone	11.5 in	0259 PM 11/10	Public
Lark	11.0 in	1130 AM 11/10	Public
Killdeer	11.0 in	0507 PM 11/10	Broadcast Media
Garrison	10.5 in	0739 PM 11/10	Public
Harvey	10.0 in	0415 PM 11/10	Broadcast Media
Courtenay	10.0 in	0701 PM 11/10	Public
Max	9.0 in	0800 AM 11/11	CO-OP Observer
2 ENE Grassy Butte	8.0 in	0110 PM 11/10	CO-OP Observer
Dunn Center 2 SW	8.0 in	0925 AM 11/11	COOP
2 SSE Jamestown	7.0 in	0931 AM 11/11	CO-OP Observer
Montpelier	7.0 in	0933 AM 11/11	CO-OP Observer
1 ENE Bowman	7.0 in	0800 AM 11/11	CO-OP Observer
Velva 3 NE	6.7 in	0800 AM 11/11	COOP
Ashley	5.4 in	0800 AM 11/11	COOP
Minot	5.0 in	0332 PM 11/10	Broadcast Media
Kenmare	4.0 in	0346 PM 11/10	Public
Crosby	3.0 in	0712 PM 11/10	COOP
Lansford	2.8 in	0500 AM 11/11	COOP

Observations are collected from a variety of sources with varying equipment and exposures. We thank all volunteer weather observers for their dedication. Not all data listed are considered official.



Public Information Statement
National Weather Service Grand Forks ND
308 AM CST Sat Nov 12 2022

...SNOWFALL REPORTS...

Location	Amount	Time/Date	Provider
Michigan ND	13.5 in	0500 AM 11/11	COOP
Sheyenne	13.5 in	0947 AM 11/11	Public
Devils Lake	12.5 in	1205 AM 11/11	Trained Spotter
New Rockford	12.0 in	0700 PM 11/10	Public
Voss	12.0 in	1100 AM 11/11	Public
Roseau	11.0 in	0200 PM 11/11	Public
4 NE Malung	11.0 in	0700 AM 11/11	
Walhalla ND 3.6 SSE	10.1 in	0500 AM 11/11	COCORAHS
Lankin ND 6 E	10.0 in	0600 AM 11/11	COOP
4 W Pisek	10.0 in	0800 AM 11/11	CO-OP Observer
Salol	10.0 in	1007 AM 11/11	Public
4 SSW Nash	10.0 in	0131 PM 11/11	Public
3 SSE Grand Forks	9.3 in	0900 AM 11/11	Cocorahs
Grand Forks ND (NWS)	9.3 in	0609 AM 11/11	COOP
Grand Forks	9.1 in	1205 AM 11/11	Official NWS Obs
Warroad MN 4 W	9.1 in	1000 PM 11/11	COOP
Sharon ND 7.9 ENE	9.0 in	0700 AM 11/11	COCORAHS
Roseau	9.0 in	0900 AM 11/11	Cocorahs
8 SSE Logan Center	9.0 in	0948 AM 11/11	Public
6 N Jessie	9.0 in	1222 PM 11/11	Public
Greenbush	8.5 in	0751 AM 11/11	CO-OP Observer
Cooperstown	8.5 in	0900 AM 11/11	Cocorahs
3 W Backoo	8.5 in	0900 AM 11/11	Cocorahs
Leeds	8.0 in	0945 PM 11/10	Broadcast Media
2 NNW Backoo	8.0 in	0800 AM 11/11	CO-OP Observer
2 NNW Backoo	8.0 in	1209 PM 11/11	CO-OP Observer
Lancaster	7.7 in	0800 AM 11/11	CO-OP Observer
Larimore ND 0.4 SE	7.7 in	0700 AM 11/11	COCORAHS
2 N Devils Lake	7.6 in	0953 AM 11/11	Public
Roseau	7.5 in	0800 PM 11/10	Public
Luverne	7.5 in	0800 AM 11/11	Public
Lake Bronson	7.5 in	0800 AM 11/11	CO-OP Observer
Warroad	7.5 in	0950 AM 11/11	Public
4 N Grand Forks	7.1 in	0900 AM 11/11	Cocorahs
Grand Forks	7.0 in	0206 AM 11/12	Public
2 S Grand Forks	6.5 in	1032 AM 11/11	Public
Warroad MN 4 W	6.1 in	1000 PM 11/10	COOP
5 N East Grand Forks	6.0 in	0900 AM 11/11	Cocorahs
Karlstad	5.6 in	0900 AM 11/11	Cocorahs
Crookston MN 0.6 ENE	5.5 in	0700 AM 11/11	COCORAHS
Valley City ND 2.0 NW	5.5 in	0700 AM 11/11	COCORAHS
Valley City	5.5 in	1100 AM 11/11	Public
5 W Grand Forks	5.2 in	1145 PM 11/11	Other Federal
4 NW Thompson	5.0 in	1047 AM 11/11	Public
Newfolden	4.7 in	0715 AM 11/11	Cocorahs
Pembina	4.7 in	0800 AM 11/11	CO-OP Observer
Hope ND 5.4 WNW	4.5 in	0700 AM 11/11	COCORAHS
Warren	4.0 in	0704 AM 11/11	Public
1 ESE Langdon	4.0 in	0900 AM 11/11	Cocorahs
5 NNE March	3.9 in	0900 AM 11/11	Cocorahs
Goodridge MN 7.4 SW	3.5 in	0700 AM 11/11	COCORAHS
Mayville	3.5 in	0800 AM 11/11	CO-OP Observer
5 SSE Puposky	3.5 in	0600 PM 11/11	Public



Crookston	3.0 in	0800 AM	11/11	CO-OP Observer
Bemidji	3.0 in	0900 AM	11/11	Public
7 W Maida	3.0 in	1100 AM	11/11	Public
Bemidji MN 4.8 NNE	2.5 in	0700 AM	11/11	COCORAHS
Mentor MN 2.5 SSW	2.5 in	0700 AM	11/11	COCORAHS
Bemidji MN 7.8 ENE	2.3 in	0700 AM	11/11	COCORAHS
2 SW Fargo	2.2 in	1232 PM	11/11	Public
4 S Oberon	2.0 in	1258 PM	11/10	Public
Detroit Lakes MN 5.7 N	2.0 in	0430 AM	11/11	COCORAHS
4 NNW Muskoda	2.0 in	0900 AM	11/11	Cocorahs
2 SSE North River	2.0 in	0900 AM	11/11	Cocorahs
7 ENE Grandin	2.0 in	0900 AM	11/11	Cocorahs
Lisbon	2.0 in	1202 PM	11/11	CO-OP Observer
Turtle River MN 3.6 E	1.7 in	0700 AM	11/11	COCORAHS
4 NW Lake Itasca	1.7 in	0900 AM	11/11	Cocorahs
Sabin	1.5 in	0800 AM	11/11	CO-OP Observer
2 WNW Prairie Rose	1.5 in	0900 AM	11/11	Cocorahs
Hawley MN 5.2 WNW	1.4 in	0700 AM	11/11	COCORAHS
3 N Muskoda	1.4 in	0900 AM	11/11	Cocorahs
Barnesville	1.3 in	1020 AM	11/11	Public
Barnesville	1.3 in	1100 AM	11/11	Public
Lake Park MN 6.0 S	1.2 in	0700 AM	11/11	COCORAHS
Casselton	1.2 in	0800 AM	11/11	CO-OP Observer
5 NNW Cormorant	1.2 in	0900 AM	11/11	Cocorahs
3 ENE Richwood	1.1 in	0900 AM	11/11	Cocorahs
Bemidji	1.0 in	1100 PM	11/10	Public
4 SSW Kragnes	1.0 in	0900 AM	11/11	Cocorahs
2 SE Bemidji	1.0 in	0946 AM	11/11	Public
Fargo	0.8 in	0639 AM	11/11	CO-OP Observer
2 N Moorhead	0.8 in	0900 AM	11/11	Cocorahs
4 WNW Two Inlets	0.7 in	0900 AM	11/11	Cocorahs
Ottertail MN	0.5 in	0515 AM	11/11	COOP
3 SE Breckenridge	0.5 in	0803 AM	11/11	CO-OP Observer
2 WNW Cormorant	0.5 in	0900 AM	11/11	Cocorahs
1 ENE Wolverton	0.5 in	0900 AM	11/11	Cocorahs
Abercrombie	0.5 in	0900 AM	11/11	Cocorahs
3 WNW Durbin	0.5 in	0900 AM	11/11	Public
3 E Mcleod	0.4 in	0800 AM	11/11	CO-OP Observer
5 ESE Elizabeth	0.4 in	0900 AM	11/11	Cocorahs
Pelican Rapids MN 6.3 NNW	0.3 in	0607 AM	11/11	COCORAHS
Lidgerwood ND	T in	0700 AM	11/11	COOP
Ottertail MN 1.5 NNW	T in	0700 AM	11/11	COCORAHS
4 S Hoffman	T in	0900 AM	11/11	Cocorahs

Observations are collected from a variety of sources with varying equipment and exposures. We thank all volunteer weather observers for their dedication. Not all data listed are considered official.

3. Snowfall Records

This storm produced record or very near record snowfall in some counties. The historical record for snowfall was taken from NOAA's National Centers for Environmental Information, and was last updated on January 11, 2022, to accommodate



data through June 30, 2021. Reports labeled “Other Report” are from the general public and other sources. Though they are not official in the same way as reports from official National Weather Service observers, there is no reason to doubt their validity. The National Weather Service considers these reports to be believable and reliable for all purposes.

Burleigh County

Official Highest Snowfall on Record

1-day: 18.0 inches on 04-06-1997

2-day: 23.5 inches ending 04-15-2013

3-day: 25.0 inches ending 11-25-1993

November 2022 Snowfall (highest amounts)

Official Site:

1-day	17.0 inches	11-10-22	NWS Bismarck
2-day	20.5 inches	11-10/11-22	1.3 miles west-northwest of Bismarck

Other Reports:

1-day	23.0 inches	11-10-22	4 miles north-northeast of Bismarck
1-day	20.5 inches	11-10-22	1.3 miles west-northwest of Bismarck
1-day	20.0 inches	11-10-22	2 miles north-northwest of bismarck
1-day	19.0 inches	11-10-22	4 miles southwest of lincoln
1-day	19.0 inches	11-10-22	2 miles south of Lincoln
1-day	17.1 inches	11-20-22	3 miles south-southeast of Bismarck



Kidder County

Official Highest Snowfall on Record

1-day: 14.5 inches on 04-14-1986

2-day: 23.5 inches ending 03-04-1966

3-day: 26.0 inches ending 03-05-1966

November 2022 Snowfall (highest amounts)

Other Reports:

1-day	22.0 inches	11-10-22	Steele
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Mercer County

Official Highest Snowfall on Record

1-day: 18.0 inches on 04-07-1997

2-day: 18.1 inches ending 03-23-2011

3-day: 21.0 inches ending 11-30-2016

November 2022 Snowfall (highest amounts)

Official Site:

2-day	16.2 inches	11-10-22	0.4 miles east-southeast of Hazen
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Other Reports:

1-day	15.0 inches	11-10-22	Hazen
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1-day	14.7 inches	11-10-22	Beulah
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Morton County

Official Highest Snowfall on Record

1-day: 22.0 inches on 03-29-2009

2-day: 25.0 inches ending 11-25-1993

3-day: 28.8 inches ending 11-25-1993

November 2022 Snowfall (highest amounts)

Other Reports:

1-day 24.0 inches	11-10-22	3 miles southeast of Mandan
1-day 24.0 inches	11-10-22	Mandan
1-day 21.0 inches	11-10-22	1 mile northwest of Mandan
1-day 20.0 inches	11-10-22	4 miles west-northwest of Huff

Nelson County

Official Highest Snowfall on Record

1-day: 15.0 inches on 11-08-1986

2-day: 20.0 inches ending 11-08-1986

3-day: 23.0 inches ending 03-05-1966

November 2022 Snowfall (highest amounts)

Official Site:

1-day 13.5 inches	11-10-22	Michigan
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Oliver County

Official Highest Snowfall on Record

1-day: 16.0 inches on 10-29-1991

2-day: 16.0 inches ending 10-30-1991

3-day: 16.0 inches ending 10-31-1991

November 2022 Snowfall (highest amounts)

Official Site:

1-day 18.0 inches 11-10-22 6.5 miles south-southeast of Hazen

Other Reports:

1-day 18.0 inches 11-10-22 Center

Wells County

Official Highest Snowfall on Record

1-day: 17.0 inches on 03-04-1966

2-day: 23.0 inches ending 03-04-1966

3-day: 24.0 inches ending 03-05-1966

November 2022 Snowfall (highest amounts)

Other Reports:

1-day 16.5 inches 11-10-22 Sykeston



4. Summary

This highly impactful winter storm, a “Colorado Low”, brought two feet of snow and a blizzard to parts of North Dakota, and significant amounts of freezing rain to other areas of the state. It forced schools, businesses and government offices to close and brought surface transportation to a halt. Where freezing rain fell, over the southeast part of the state, there were reports of ice accumulation exceeding one inch in some locations. Tree branches six to eight inches thick were snapped. The significant freezing rain resulted in thousands of people without electrical power. In the hardest hit areas cleanup and recovery took days.

Prepared For: North Dakota Department of Emergency Services

Prepared On: Wednesday, December 7, 2022

Prepared By: Central Region Headquarters Regional Operations Center Kansas City, MO & National Weather Service, Bismarck and Grand Forks, ND

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Attachment D:
North Dakota Presidential Declarations Map
(1993-2022)

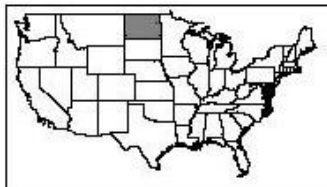
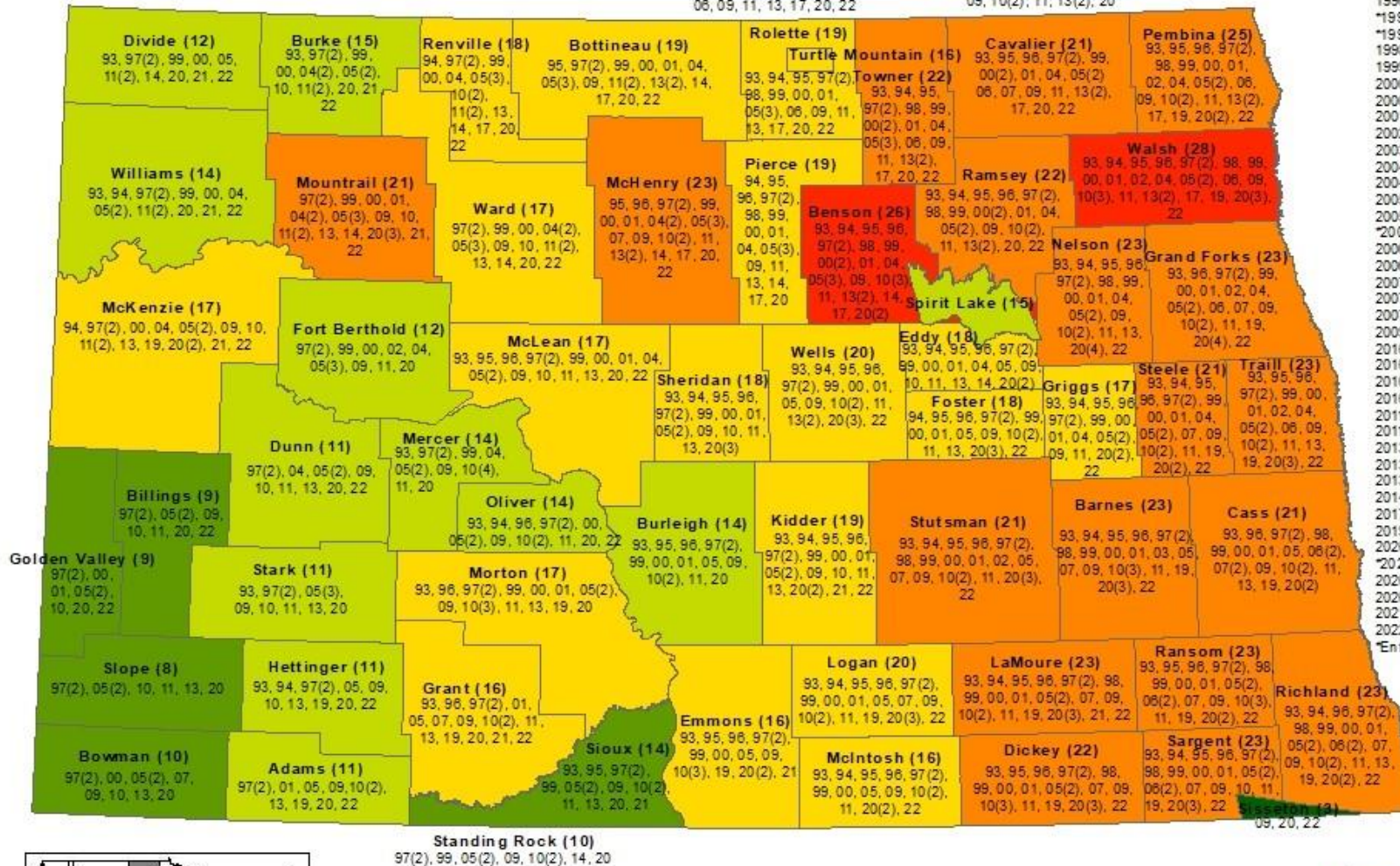
North Dakota Presidential Disaster Declarations 1993 Through 2022

Presidential Declarations

- 1993 - DR-1001 (PA & IA)
- 1994 - DR-1032 (PA Only)
- 1995 - DR-1050 (PA & IA)
- 1996 - DR-1118 (PA & IA)
- *1997 - DR-1157 (PA Only)
- *1997 - DR-1174 (PA & IA)
- 1998 - DR-1220 (PA & IA)
- 1999 - DR-1279 (PA & IA)
- 2000 - DR-1334 (PA & IA)
- 2000 - DR-1353 (PA Only)
- 2001 - DR-1378 (PA Only)
- 2002 - DR-1431 (PA Only)
- 2003 - DR-1483 (PA Only)
- 2004 - DR-3198 (PA Only)
- 2004 - DR-1515 (PA Only)
- 2005 - DR-1597 (PA Only)
- 2005 - DR-1618 (PA Only)
- *2005 - DR-3247 (PA Only)
- 2008 - DR-1645 (PA Only)
- 2008 - DR-1621 (PA Only)
- 2007 - DR-1713 (PA Only)
- 2007 - DR-1725 (PA Only)
- 2007 - DR-1728 (PA & IA)
- 2009 - DR-1829 (PA & IA)
- 2010 - DR-1879 (PA Only)
- 2010 - DR-1901 (PA Only)
- 2010 - DR-1907 (PA Only)
- 2010 - EM-3309 (PA Only)
- 2011 - DR-1581 (PA & IA)
- 2011 - DR-1988 (PA Only)
- 2013 - DR-4118 (PA Only)
- 2013 - DR-4128 (PA Only)
- 2013 - DR-4154 (PA Only)
- 2014 - DR-4190 (PA Only)
- 2017 - DR-4323 (PA Only)
- 2019 - DR-4444 (PA Only)
- 2020 - DR-4475 (PA Only)
- *2020 - DR-4509 (PA Only)
- 2020 - DR-4553 (PA Only)
- 2020 - DR-4565 (PA Only)
- 2021 - DR-4613 (PA Only)
- 2022 - DR-4660 (PA Only)
- *Entire State Declared

Turtle Mountain (16)
97(2), 98, 99, 00, 01, 04, 05(2),
08, 09, 11, 13, 17, 20, 22

Spirit Lake (15)
97(2), 98, 99, 00, 01, 04, 05,
09, 10(2), 11, 13(2), 20



Standing Rock (10)
97(2), 99, 05(2), 09, 10(2), 14, 20

