

BASELINE CONDITIONS AND IMPACT ASSESSMENT REPORT

Severe Winter Storm, Straight-line Winds, and Flooding (DR-4420)

February 2020

This report presents findings based on best available data at the time of publication. These findings represent a point-in-time snapshot of disaster impacts and are subject to change as new data is collected or identified. The maps and graphics contained in this report are intended to help synthesize available information to convey the scale and location of impacts; however, no single map or image can effectively summarize the impacts of the 2019 disasters. These images are intended to supplement the narrative contained in the report.

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EXECUTIVE SUMMARY

Winter Storm Ulmer and the subsequent flooding of 2019 reshaped Nebraska's perception of disasters and presented the state with unprecedented recovery challenges. The disasters, which began in March 2019 with a bomb cyclone storm roughly equivalent in power to a Category 2 hurricane, led to record-breaking flooding through the spring and summer. This resulted in breached levees, damaged roads, destroyed crops, and entire communities inundated. Tragically, three lives were lost with hundreds more requiring emergency rescue.

Ten months after the disasters began, a clearer picture of the long-term impacts is developing. The eastern side of the state was particularly impacted by flooding, resulting in extensive damage to infrastructure, homes, and the economy. While the western side of the state sustained less housing damage, it is facing long-term impacts associated with damaged infrastructure and heavy agricultural losses.

The State of Nebraska has made great progress in recovering from the disasters. Despite numerous challenges, Nebraskans remain resilient and have been active participants in the rebuilding process. Volunteers have activated statewide, contributing their time, materials, and services to support recovery efforts. Disrupted water systems have been restored, hundreds of miles of roads have been repaired, debris has been removed from agricultural fields, many homes have been repaired, and businesses re-opened. However, much still needs to be done to rectify remaining disaster damage and to build a more resilient Nebraska. As described in this report, many communities and households are struggling to recover from the disasters. In some cases, the struggle is taking place in plain sight, such as the residents of small towns working to rebuild their homes and communities. In other cases, it is hidden, as in the case of small business owners struggling with depression and anxiety as they contemplate whether they will be able to provide for their families after sustained losses.

As recovery continues, the state will be faced with many decisions about how to best recover from the disasters. This will involve decisions about where and how to allocate limited disaster recovery funds and how to balance the desire for a speedy recovery with the need for a forward thinking and resilient recovery. This report aims to provide information and context to support these decisions.

Based on the structure of the Governor's Task Force for Disaster Recovery and that body's associated Recovery Support Functions, this *Baseline Conditions and Impact Assessment Report* produces a point-in-time account of the disasters' impact, the remaining needs, and potential long-term impacts for the state and its people if the issues are not addressed.

By consolidating information available through state- and nationally- maintained databases and personal accounts from numerous standpoints, this document combines individual household and community perspectives into a holistic statewide view. This document incorporates input from the Governor's Task Force for Disaster Recovery, including representatives from federal, state, and local, government agencies, businesses, non-governmental agencies, and local long-term recovery groups.

As of the date of this publication, across all individual functional areas assessed, post-disaster needs fall on a continuum of severity. Cross-cutting needs impacting many functional areas compound the complexity of recovery needs.

Infrastructure Systems

- Damage to infrastructure was widespread, affecting communities across Nebraska.
- Progress has been made to restore roads and other infrastructure, though some infrastructure is still at risk and may require more resilient solutions to avoid damage this spring.
- The non-federal share of federal funding programs is paid by the state and/or local government. This may require an upfront cost, which may indicate a recovery funding gap.
- The extent of damage to infrastructure systems is still being determined. Of particular concern is the extent of damage and funding gaps associated with flood protection facilities, which may leave the state vulnerable this spring.
- Availability of raw materials, equipment, and workers required for repairs (specifically to roads) has been limited, affecting the speed of recovery.

Housing

- Housing damage resulted in roughly \$40 million in insurance payouts and \$173 million in damages, with a resulting potential recovery funding gap of \$80 million.
- Official figures for housing loss may underestimate the true impact of the disaster due to lack of participation in federal disaster programs, families inhabiting damaged dwellings, and discrepancies in federal data collection processes.
- Lack of affordable housing, already a challenge for Nebraskan pre-disaster, was only worsened by additional disaster-related impacts to available housing.
- Sarpy, Dodge, and Douglas counties appear to have suffered the most extensive housing damage, but a number of counties outside of these areas will likely require aid.
- There are likely to be significant unmet housing needs after all federal aid is delivered.
- Substandard living conditions, related to weather and health hazards, warrant temporary solutions for those open to living elsewhere and those that feel safest at home.
- Long-term housing solutions for some households may involve relocating to areas with lower disaster risk and using more resilient building practices.

Health and Social Services

- Vulnerable populations may experience difficulties in accessing and navigating post-disaster aid.
- The disasters may have contributed to temporary or lasting food insecurity in Nebraska. Supplemental assistance was, and may continue to be, necessary.
- Over one-third of public school districts were impacted by the 2019 disasters and the disasters' influence on student enrollment is not yet thoroughly understood.
- Open disaster cases far exceed the number of available disaster case managers, and some individuals may struggle to find case management at all.
- Post-disaster circumstances may create opportunity for increased human trafficking.
- Health issues arising from exposure to mold have persisted.
- Poor mental health status and its evolving nature is an issue of concern among distressed disaster survivors, especially in rural communities.

Economy and Agriculture

- Farmers and ranchers suffered losses that were either not reported or not fully addressed through United States Department of Agriculture indemnity programs, and may sustain multi-year impacts.
- Grain and beef production losses resulted in reduced economic output and decreased state and local tax revenue.
- Issues with low unemployment, workforce housing availability, and outmigration post-disaster contribute to evolving workforce availability and employee retention issues.
- There are real property and business losses (e.g., inventory, machinery, equipment, furniture, fixtures, and leasehold improvements) validated but not covered through SBA.
- Profit losses exist for businesses that were not eligible or did not pursue SBA funding.
- Localized impacts to roads and bridges hindered commodity transportation routes.
- Potential recovery funding gaps are currently nearly \$101M.

Community Planning and Capacity Building

- Long-term recovery groups without 501(c)(3) non-profit status may not benefit from streamlined processes that support accepting grant funding and directly funding individual recovery initiatives.
- Volunteer burnout may have a negative impact on local communities' self-sufficiency, creating a greater need for assistance from external resources and partners.
- Communities may experience a degree of donor burnout, making it difficult to raise additional funds to support continued local recovery efforts.
- Local communities lack expertise, plans, and/or personnel necessary to support long-term recovery and resilience.
- The need to meet building codes when making disaster-related repairs can increase costs and slow the recovery process.
- The lack of available inspectors and cost of building inspections represent barriers to rebuilding.

Natural and Cultural Resources

- Restoration and recovery of the state park system and ancestral tribal lands is challenging, especially due to gaps in funding under the PA Program.
- Disaster impacts continue to impede access to state parks, preventing residents and non-residents from visiting and adding to park revenue.
- Conservation efforts to protect newly endangered and threatened species and/or critical habitats or wildlife refuges.
- Undiscovered or uncollected hazardous materials and waste may have lasting environmental or ecosystem impacts.
- Time associated with environmental reviews and the subsequent impact to pace of rebuilding.

Cross-Cutting Issues

- Infrastructure damage has affected recovery in multiple sectors, including agriculture and the economy.
- The 2019 floods exacted a mental and emotional toll on affected residents. The demand for mental health services is known to spike 12-18 months after a disaster, which may create service gaps as caseworker loads are already too high and federal support is ending shortly.
- The disaster affected a wide geographic area, including communities vastly different from each other, from relatively densely populated areas (Douglas and Sarpy) to rural counties (Boyd, Custer, and Holt).
- The severity and breadth of the disaster creates numerous challenges, including effective coordination and communication, outreach to those affected by the disaster, funding allocation, and design of recovery solutions that meet a variety of disaster needs.
- The state has initiated steps to address recovery challenges, including establishing the Governor's Recovery Task Force and Recovery Support Functions, coordinating with community Long-Term Recovery Groups, and developing a one-stop shop for disaster resources.

1 INTRODUCTION

The State of Nebraska suffered record-breaking damage as a result of a severe winter storm (Winter Storm Ulmer), straight-line winds, and flooding in early 2019. The purpose of the *Baseline Conditions and Impact Assessment Report* (or “report”), is to summarize these impacts so that Nebraska’s leaders and communities can make informed decisions about long-term recovery.

The findings of this report provide context for the reader to understand the needs that may exist across the state as a result of gaps in available assistance. A clear understanding of these gaps will assist community leaders in identifying and leveraging resources, programs, and funding opportunities to address the outstanding needs of disaster survivors.

The categories of analysis in this report align with the working groups activated to support recovery coordination at the state level, known as Recovery Support Functions (RSFs):

- Public Infrastructure and Facilities (**Section 2.3**);
- Housing (**Section 2.4**);
- Economy and Agriculture (**Section 2.5**);
- Health and Social Services (**Section 2.6**);
- Community Planning and Capacity Building (**Section 2.7**); and
- Natural and Cultural Resources (**Section 2.8**).

This report is one of two major documents that the Governor’s Task Force for Disaster Recovery and the associated RSFs are developing following the 2019 events to increase the state’s ability to withstand the impacts of future disasters. The second major document, the *Long-Term Recovery and Resilience Plan*, will build on the findings presented in this report to generate a series of recommendations for long-term recovery informed by stakeholders across the state.

The findings of this report will be used to responsibly prioritize and allocate finite resources in each of the categories assessed to meet the needs of disaster survivors as effectively as possible. *The Long-Term Recovery and Resilience Plan* will represent the formal record of this resource prioritization and allocation effort.

The intended audience for this report includes: State of Nebraska agencies, Federal Government partners, private sector donors, and impacted communities. Certain elements of this report are intended to help the state maintain eligibility and access to sources of federal funding to support recovery efforts. Beyond informing the intended audience of the comprehensive scope of the disasters, this report serves to guide the development of Nebraska’s *Long-Term Recovery and Resilience Plan*, the roadmap for long-term recovery informed by stakeholders across the state.

1.1 IMPACTS OF THE 2019 DISASTERS

Flooding is not new to Nebraska. In the 1990s, 58 counties were declared presidential disaster areas due to seven flooding disasters. In the 2000s, there were 10 declared disasters due to flooding events. Large-scale flooding in 2010 and 2011 created the need for over \$261 million in Federal Emergency Management Agency (FEMA) Public Assistance (PA) dollars.¹ Despite this history of flooding, the impacts of the 2019 disasters were unprecedented and created devastating results.

The six-month period between September 1, 2018, and March 1, 2019, comprised the **fifth wettest fall and winter seasons in 124 years of record**, resulting in high-water tables and several inches of water saturating snowpack.² Nebraska also experienced record low temperatures that created frost depths approximately two feet deep, as well as ice cover on rivers and creeks that caused ice jams in several locations. **February 2019 was also the coldest month in 18 years in Nebraska.** These factors contributed to the unprecedented destruction Nebraska experienced in the months that followed.

Winter Storm Ulmer, a bomb cyclone storm roughly **equivalent in power to a Category 2 hurricane**, hit Nebraska in mid-March 2019. Blizzard conditions and excessive rainfall contributed to rapid melting of ice and snow, resulting in flooded rivers that breached levees, damaged infrastructure, and destroyed thousands of homes and businesses.³

The worst flooding occurred along rivers, including the Niobrara River, North Fork Elkhorn River, Elkhorn River, Loup River, Cedar River, Wood River, Platte River, and the Missouri River. **Rivers reached record-breaking crest levels in 24 locations.** The eastern side of the state was particularly impacted by flooding, resulting in fatalities, evacuations, and search and rescue missions. Between March and July 2019, Nebraska experienced its **worst flooding event in 50 years.**

¹ Nebraska Department of Natural Resources, 2013. "State of Nebraska Flood Hazard Mitigation Plan." Retrieved at: https://dnr.nebraska.gov/sites/dnr.nebraska.gov/files/doc/floodplain/Nebraska_Flood_Mitigation_Plan_2013.pdf

² Throughout this document, **bolded text is used to call attention to salient details** of the report. Use of bolded text is intended to help the reader **quickly synthesize** the information presented.

³ National Weather Service, 2019. "Mid-March 2019: Historical, Catastrophic Flooding Impacts Parts of Central/South Central Nebraska." Retrieved at: <https://www.weather.gov/gid/march2019flood>

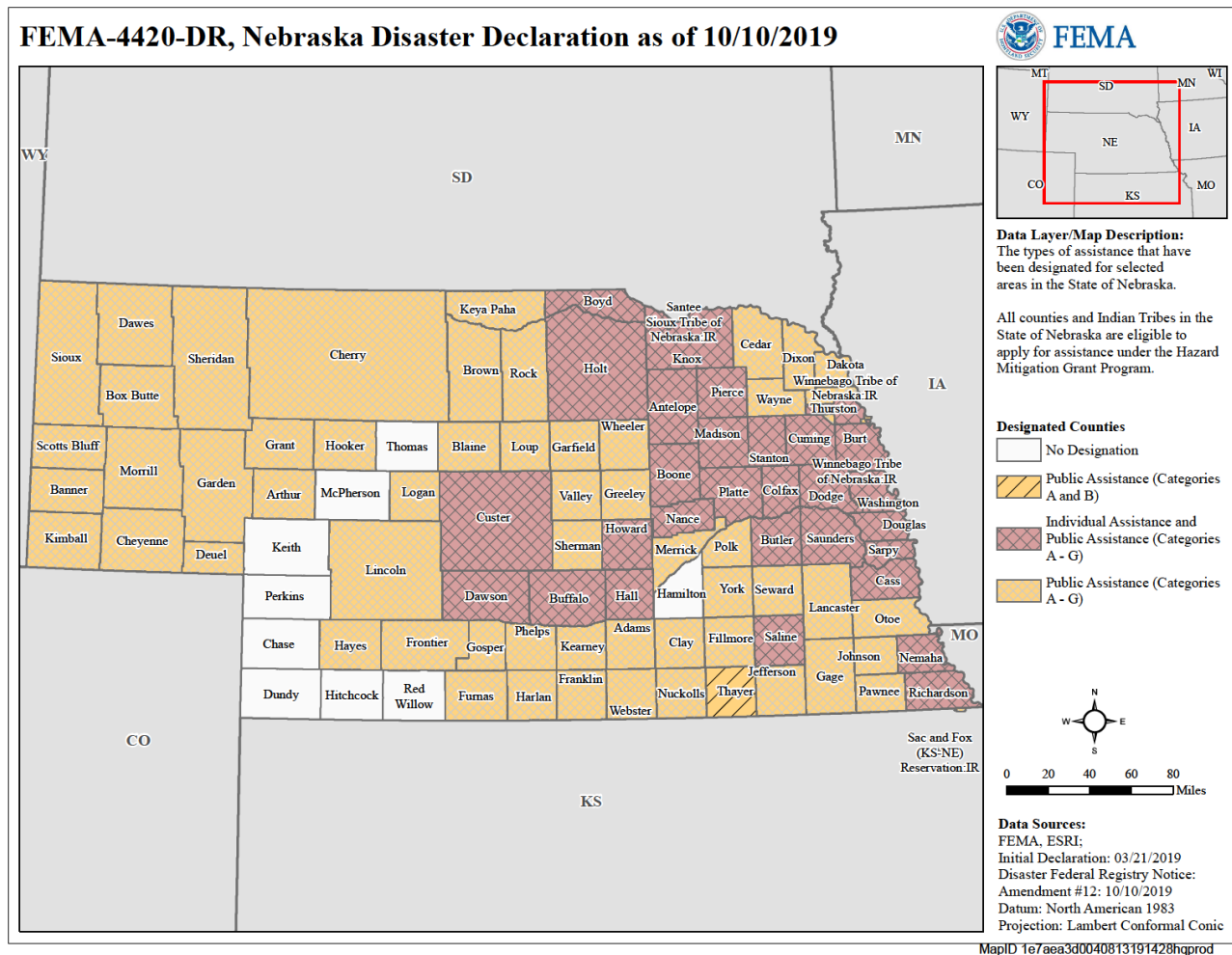
In many areas, the flooding damage was exacerbated by thick river ice breaking off in an atypically severe manner. Bridges were washed away by flooding or rendered impassable due to accumulated ice chunks. The scale of the dislodged ice can be seen in **Figure 1**.

Figure 1 – Photo of Ice Accumulation Post-Disasters



Figure 2 shows which counties were affected by the disasters. Between March and July 2019, **84 of Nebraska's 93 counties received Presidential Disaster Declarations**, showing the breadth of destruction throughout the state. With these declarations, federal assistance was made available to supplement local recovery efforts in the designated counties and tribal areas.

Figure 2 – Map of Federal Disaster Declaration Map for Nebraska⁴



⁴ Federal Emergency Management Agency, 2019. "Nebraska Severe Winter Storm, Straight-line Winds, And Flooding (DR-4420)." Retrieved at: <https://www.fema.gov/disaster/4420>

1.1.1 NOTABLE IMPACTS

The impact of this historic event continues to present infrastructure and economic recovery challenges from damage to roads and bridges leading to business interruption and loss, to disrupted water treatment plants requiring significant repair.⁵

The 2019 disasters especially impacted the agriculture industry, a primary driver of Nebraska's economy, through prevented plantings and failed crops, damage to grain storage bins, and impacts to infrastructure hindering or complicating agricultural activities.

Past flooding in the Midwest has demonstrated the capacity for long-term impacts on the agricultural sector, making this a significant area of concern in Nebraska's recovery efforts.⁶ Ranchers also suffered significant impacts due to livestock harm and losses attributed to severe cold, flooding, and inability to feed.

Disasters often exacerbate pre-existing socioeconomic issues, which can lead to increased rates of outmigration among residents.⁷ Given the long-standing outmigration patterns seen in Nebraskans with high levels of educational attainment, the Governor identified retention of college-educated Nebraskans as a key priority in the wake of the 2019 disasters.^{8,9}

The 2019 disasters also ushered in a multitude of housing and health and social concerns for Nebraskans. Water-logged homes were rendered uninhabitable as a result of mold growth. Families remain in these unsafe homes due to lack of affordable housing options or high costs to repair. Intermediate and long-term housing issues remain a major concern nearly a year after the disasters.

Public water systems were affected, and private wells were contaminated by flood waters, leaving citizens without running clean drinking water for months, creating dependence on bottled water and necessitating school closures. Federal disaster supplemental food programs were activated to address food insecurity among vulnerable families, serving thousands of households in need.

Mental health impacts among disaster survivors are widespread, as Nebraskans continue to grapple with difficult post-disaster conditions and distress. Reminders of the incident remain tangible through damaged homes, buildings, infrastructure, and land, job losses, and other impacts to the economy.

⁵ Federal Emergency Management Agency, 2019. "Progress After Six Months from the March Winter Storm, Straight-line Winds and Flooding." Retrieved at: <https://www.fema.gov/news-release/2019/09/20/progress-after-six-months-march-winter-storm-straight-line-winds-and>

⁶ University of Wellington – Victoria, 2016. "The Long-Term Consequences of Natural Disasters – A Summary of the Literature." Retrieved at: <https://researcharchive.vuw.ac.nz/handle/10063/4981>

⁷ National Bureau of Economic Research, 2019. "The Effect of Natural Disasters on Economic Activity in U.S. Counties: A Century of Data." Retrieved at: <https://www.nber.org/papers/w23410>

⁸ Nebraska's Coordinating Commission for Postsecondary Education, 2019. "2019 Progress Report". Retrieved at https://ccpe.nebraska.gov/sites/ccpe.nebraska.gov/files/PR_Section_3.pdf

⁹ Governor Ricketts' State of the State Address, 2020. Retrieved at: <https://governor.nebraska.gov/press/gov-ricketts-state-state-address-0>

1.1.2 IMPACTS ON THE HORIZON

The full social and economic impacts of the storm may not be fully understood for years to come. Soil moisture and climate projections indicate that the 2020 spring flood season is expected to be difficult, though less severe than 2019.¹⁰ It is in Nebraska's best interest to properly prepare and mitigate risks, where possible. According to State Climatologist Martha Shulski, climate trends indicate that heavy rain events and precipitation during cold times of the year will increase in years to come. Infrastructure and land management will continue to play a key role in mitigating climate impacts and protecting life and property in Nebraska. Therefore, affected counties need continued investment to assist with recovery and to rebuild stronger communities with an emphasis on resilience, both within and outside of identified flood hazard areas.

1.2 METHODOLOGY

The *Baseline Conditions and Impact Assessment Report* represents the culmination of research using the best available data, periodic community assessment responses,¹¹ and stakeholder interviews and feedback to inform and validate the narrative of the report. As much as possible, the findings in this report are based on reputable national, state, or local sources; however, in some places, news reports have been cited to either supplement available data or help contextualize and describe the impacts of the disasters.

This report seeks to identify the costs of recovery after the 2019 disasters, and where possible, identify gaps in recovery needs. The report addresses two types of potential recovery gaps:

- **Potential recovery gaps**, or community needs that may exist across the state as a result of gaps in available assistance. These gaps will typically be described qualitatively.

In many instances, the available data represents just a portion of the actual cost or the actual need, making it difficult to generate a reliable estimate of the total cost of recovery, and associated recovery funding gaps. Additionally, potential recovery funding gaps identified in the report represent a point-in-time estimation that could be superseded as additional data is collected. While this report aims to be as comprehensive as possible, ultimately, estimates of potential recovery funding gaps will not capture the full picture of costs associated with the 2019 disasters.

Potential recovery gaps are summarized within each subsection (e.g., "Public Infrastructure and Facilities") of the report under the "Summary of Potential Recovery Gaps" header. The limitations of the available data are presented alongside the potential recovery funding gaps, where possible.

The *Baseline Conditions and Impact Assessment Report* compiled information from many sources, each with its own unique limitations or caveats. Serving as a consolidated resource to navigate data sources for the figures and tables in the report, **Appendix 3** identifies:

- The figure/table being described;
- Its location in the report;
- The source of the data used to develop the figure/table;

¹⁰ Nebraska Extension, December 3, 2019. "Nebraska's 2019 Flood Season." Webinar Facilitated by Dr. Martha Shulski. Retrieved at: https://www.youtube.com/watch?v=gL_u8Y1Ylvs&feature=youtu.be

¹¹ State-level representatives from the Governor's Task Force for Disaster Recovery distributed the first iteration of a periodic assessment designed to gather information from local staff throughout the state regarding local recovery needs.

- A description of the analysis technique(s) used to create the figure/table; and
- When the relevant data was last updated.

The report incorporates two modes of analysis based on their usefulness in helping contextualize and quantify disaster impacts: economic modeling and mapping.

1.2.1 ECONOMIC MODELING

To estimate the full scale of economic impacts from the disasters—even where data is not yet available to reliably calculate these impacts—**Section 2.5** of this report incorporates the results of an economic model generated by the impact assessment software platform, IMPLAN. The model is intended to help quantify the direct, indirect, and induced losses the State of Nebraska may face as a result of the disasters.

- **Direct effects** are the changes in consumer demand related to the impact to the industry expressed in terms of in terms of industry output, employment, and labor income dollars. For example, decreased labor income, revenue, or job losses within the grain farming industry would be considered *direct* effects.¹²
- **Indirect effects** are those that affect “business-to-business purchases in the supply chain taking place in the region that stem from the initial industry input purchases.”¹³ For example, manure purchased by a grain farmer to help support grain production would fall under *indirect* effects.
- **Induced effects** “stem from employees working in the direct and indirect industries spending their wages” throughout the state.¹⁴ For example, reduced spending of someone who works in grain farm operations on a home mortgage, clothes, or food within the state would be considered *induced* effects.

The primary limitation of using a modeling approach to estimate losses is that the output is only as reliable as the data input. Obtaining reliable, statewide data about the extent of disaster impacts on the economy is challenging as reliable data is still being collected. Data on permanent business closures, tax revenue losses, and outmigration were not available to produce a holistic model of economic impacts for this report. Instead, the model focuses on impacts to the state’s primary economic driver, the agricultural industry. Even within this sector, available data is somewhat limited.

The three most significant drivers of disaster-related economic losses reported in this document are cattle losses, stored grain losses, and prevented and failed crop losses. Of those three potential model inputs, reliable, statewide data was only available for prevented and failed crop losses. For this reason, the impacts modeled are narrow in scope.

The economic model presented in this report is based on the United States Department of Agriculture (USDA) Farm Services Agency (FSA) 2019 prevented and failed crop acreage data and the average monthly price per-unit value for Nebraska commodities from January through November 2019. The five-highest failed and prevented crop losses reported to USDA FSA were selected to express financial impact, which corresponded with some of the state’s top grain crops

¹² Clouse, Candi, 2019. “How IMPLAN Works.” Retrieved at <https://implanhelp.zendesk.com/hc/en-us/articles/360038285254-How-IMPLAN-Works>

¹³ Ibid.

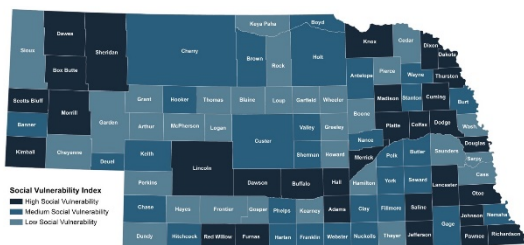
¹⁴ Ibid.

across the state: corn, soybeans, sorghum, wheat, and oats.¹⁵ Other categories of grain crop yield losses related to the 2019 disasters were not significant enough to influence the model results; therefore, they were omitted from this report.

1.2.2 MAPPING

Throughout this document, maps are used to portray the location and intensity of damage. As much as possible, the maps are intended to compare similar types of information, so that meaningful comparisons can be made across sections. There are four styles of maps contained in the report, which are intended to portray different types of analysis.

General categorizations of severity were used instead of numerical groupings to make the maps easier to comprehend. Each category of damage is tied to a specific numerical range based on the data input(s), which are defined in **Appendix 3** (for a complete listing of maps, refer to the **Table of Figures**).



The monochrome blue map conveys the social vulnerability of each county in the state based on the Centers for Disease Control and Prevention’s (CDC) Social Vulnerability Index (SVI). For this map, there are three proportional categories of severity: high, medium, or low based on the range of the SVI index.



Grayscale maps convey the absolute impact of the 2019 disasters, for example:

- Total number of PA projects per county
- Total value of PA projects per county
- Total number of housing assistance applications per county
- Total value of housing damage per county

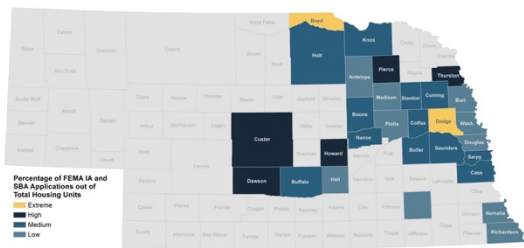
For each grayscale map, there are three categories of severity: high, medium, or low. These categories were established using a geometric interval classification scheme.¹⁶

¹⁵ U.S. Department of Agriculture, 2020. “2018 State Agriculture Overview.” Retrieved from https://www.nass.usda.gov/Quick_Stats/Ag_Overview/stateOverview.php?state=NEBRASKA

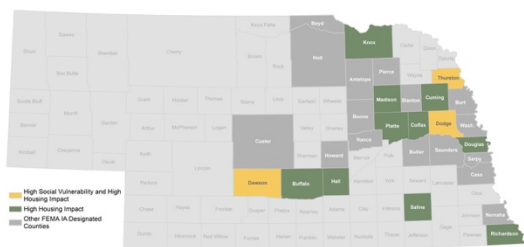
¹⁶ Geometric interval classification is type of classification scheme for classifying a range of values based on a geometric progression. In this classification scheme, class breaks are based on class intervals that have a geometrical series. This classification method is useful for visualizing data that is not distributed normally, or when the distribution is extremely skewed. This classification scheme was applied to enable meaningful comparisons across rural and urban areas.

Blue maps with yellow accents convey the relative impact of the 2019 disasters, for example:

- Relative number of PA projects per county
 - Number of PA projects per county compared with the total number of projects in the state
- Relative value of infrastructure damage per county
 - Total estimated value of damage per county compared to the total value of infrastructure in each county
- Relative number of housing assistance applications per county
 - Number of housing applications per county compared to the number of housing units in each county
- Relative value of housing damage per county
 - Total estimated value of housing damage compared to the assessed property value in each county



These maps use four categories of severity: extreme, high, medium, or low. These categories were established using a geometric interval classification scheme. The purpose of the “extreme” designation is intended to quickly call attention to counties that have been impacted across multiple indicators and are more likely to require special assistance.



The gray map with yellow and green accents conveys overlap of social vulnerability and disaster impacts to highlight counties that may need targeted assistance:

- Counties with high relative housing impacts and high social vulnerability

2 DAMAGE AND POTENTIAL RECOVERY GAPS

This chapter describes the damage sustained by the State of Nebraska as a result of the 2019 disasters. Each subsection in this chapter summarizes pre-disaster conditions, direct damage, resulting community needs, anticipated federal assistance, and potential recovery gaps based on available data. Where possible, losses have been quantified using cost estimates.

The functional areas assessed in this report include:

- Public Infrastructure and Facilities (**Section 2.3**);
- Housing (**Section 2.4**);
- Economy and Agriculture (**Section 2.5**);
- Health and Social Services (**Section 2.6**);
- Community Planning and Capacity Building (**Section 2.7**); and
- Natural and Cultural Resources (**Section 2.8**).

This chapter begins with a summary of the potential recovery funding gaps the state may incur to fully recover from the 2019 disasters (**Section 2.1**). **Section 2.2** contains an assessment of social vulnerability across the state, intended to empower community leaders with the knowledge necessary to protect at-risk individuals from being unfairly burdened with the impacts of the disasters.

Most functional areas suffered significant, quantifiable damage from the 2019 disasters. Others, while not suffering directly as a result of the storms, have been stressed as a result of the disasters. Federal funding has been allocated to the State of Nebraska to support recovery, allowing for calculations of gaps in funding necessary to rebuild in some, but not all sectors.¹⁷

2.1 POTENTIAL RECOVERY FUNDING GAPS

A primary focus of this report is to identify the cost of the 2019 disasters. In the following sections, quantitative and qualitative disaster impacts and costs are described as they pertain to public infrastructure and facilities, housing, agriculture and the economy, health and human services, and natural and cultural resources, based on the best available data. Where possible, we also describe the potential recovery funding gaps, after initial federal funding is provided. Disaster recovery is dynamic, thus data changes quickly and the estimates are based on a point-in-time analysis. Further, some critical information about disaster impacts and funding was not available at the time the report was developed and some facets of disaster impact may never be fully quantified. Where possible, we identify where data is missing to help contextualize our assessment.

Based on the analysis contained in this report, the costs of the 2019 disasters could exceed \$1.1 billion. The most significant drivers of this figure include public infrastructure (including roads, bridges, water control facilities, and utilities), at more than \$640 million, housing at over \$170 million, and economic impacts, including agricultural losses, estimated at over \$300

¹⁷ Note: the findings presented in this chapter of the report are a point-in-time snapshot of disaster impacts based on the best available data at the time of publication. Findings are subject to change as new data is collected or identified.

million. Other quantifiable costs included emergency response and debris removal costs (approximately \$45 million), and costs for case management, crisis counseling, and long-term recovery groups (approximately \$10 million). **It is likely that the actual impact on the state was greater, and potentially significantly greater, as data on flood control works, and private housing and business losses is incomplete.** Data on total livestock losses, initially thought to be as high as \$400 million, cannot be verified and was not included in this calculation.

The State of Nebraska and its residents expect to receive significant financial support to offset disaster costs, including an estimated \$310 million from FEMA's PA Program (based on estimated federal cost share), approximately \$53 million in FEMA Individual Assistance (IA) and United States Small Business Association (SBA) housing loans, and \$160 million from the United States Federal Highway Administration (FHWA). In addition, farmers received \$196 million in insurance payouts for crop and other losses and homeowners received almost \$40 million in National Flood Insurance Program (NFIP) payouts. Although not yet distributed, the United States Department of Housing and Urban Development (HUD) has allocated \$108.9 million in Community Development Block Grant – Disaster Relief (CDBG-DR) funds to Nebraska for disaster recovery. Finally, roughly \$7 million in charitable donations have been provided to support disaster recovery in Nebraska.

These estimates are preliminary and are likely to change over time. Further, the state will not have access to all these funds immediately. FEMA PA, for example, is a reimbursement program and will only be realized by local governments when work is complete and expenses incurred. CDBG-DR funds likely will not be available for programs for months. Further, for many of these programs, the actual estimated funding may never be realized due to future ineligibility determinations, discrepancies between actual costs and estimated costs, and other factors.

The available data reveals an estimated recovery funding gap of more than \$240 million that will need to be borne by the State of Nebraska, local governments, individuals, and businesses. This figure does not reveal the full extent of emerging needs that have not yet been identified—including those related to economic loss and mental health. Further, many Nebraskans chose not to seek assistance or report damage they sustained from the disasters, and this damage remains hidden.

Along with damage and unmet needs, disasters can create opportunities for improvement. The 2019 disasters demonstrated the courage, commitment, and resilience of first responders and disaster survivors, but it also revealed opportunities to strengthen response and recovery systems and to mitigate against future flooding and other disaster events. The full costs—and opportunities—of the 2019 disasters have not yet been realized, and can be shaped by the governments, businesses, and people of Nebraska.

2.2 SOCIAL VULNERABILITY IN NEBRASKA

Increased social vulnerability tends to heighten a community's risk for adverse impacts from hazards.¹⁸ Social vulnerability encompasses demographic and other factors, such as socioeconomic status, household composition, disability status, racial minority status, English

¹⁸ Flannigan, B., et al. "A Social Vulnerability Index for Disaster Management." Retrieved at: <https://svi.cdc.gov/Documents/Data/A%20Social%20Vulnerability%20Index%20for%20Disaster%20Management.pdf>

proficiency, housing conditions, and access to transportation, which have been demonstrated to correlate with resilience.¹⁹

A considerable proportion of Nebraskans may be considered vulnerable and, in turn, require special services, outreach, and sometimes supplemental assistance to have their needs met. Generally, vulnerable populations face the following types of challenges related to disaster recovery:

- Challenges accessing or navigating government services and programs;
- Financial stability necessary to remain within communities while waiting on recovery support; and
- Transportation limitations.

2.2.1 MEASURING SOCIAL VULNERABILITY

The most common measure of social vulnerability is an SVI.²⁰ For the purposes of this report, CDC’s SVI was utilized to analyze Nebraska’s social vulnerability. This SVI compiles 15 individual census variables from the 2012–2016 American Community Survey into the four broad categories outlined below.²¹

Socioeconomic Status:

- Below Poverty
- Unemployment
- Income
- No High School Diploma

Minority Status and Language Proficiency:

- Minority (based on race)
- Speak English “Less than Well”

Household Composition and Disability:

- Aged 65 or Older
- Aged 17 or Younger
- Civilian with a Disability
- Single-Parent Households

Housing and Transportation:

- Multi-Unit Structures
- Mobile Homes
- Crowding
- No Vehicle
- Group Quarters²²

Figure 3 shows the results of the SVI analysis for Nebraska. The map shows relative vulnerability across the state and provides context for areas that are more vulnerable and require further attention during recovery. Additional analyses utilizing this index are used throughout the rest of the report.

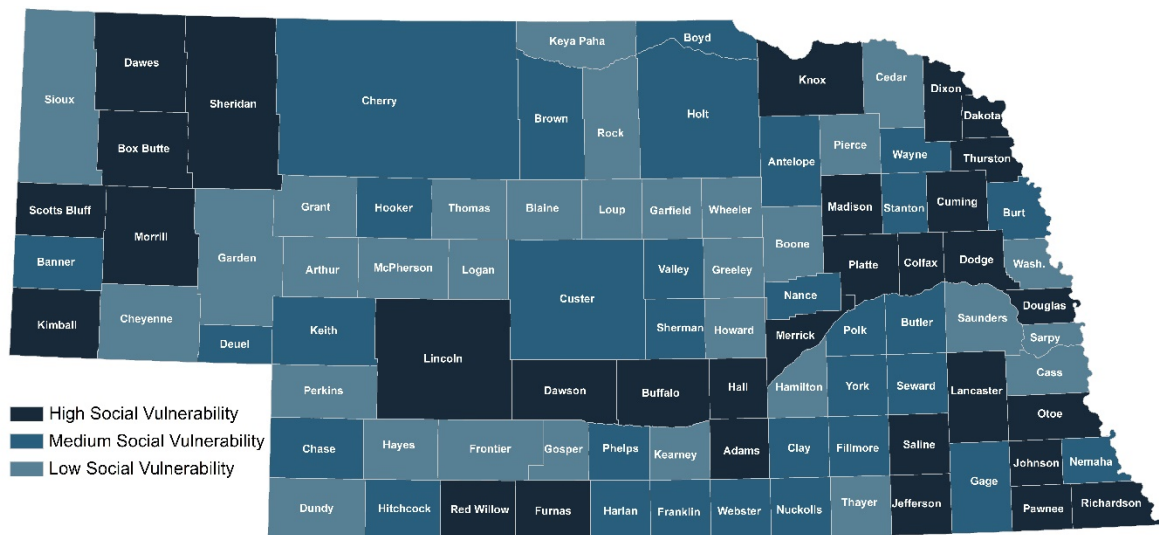
¹⁹ SVI CDC, 2019. “SVI 2016 Documentation.” Retrieved at: https://svi.cdc.gov/Documents/Data/2016_SVI_Data/SVI2016Documentation.pdf

²⁰ There are a variety of SVIs available through researchers and government agencies, such as the University of South Carolina’s College of Arts and Science Hazards and Vulnerability Research Institute’s Social Vulnerability Index (SoVI), or the U.S. Climate Resilience Toolkit’s Social Vulnerability Index.

²¹ SVI CDC, 2019. “SVI 2016 Documentation.” Retrieved at: https://svi.cdc.gov/Documents/Data/2016_SVI_Data/SVI2016Documentation.pdf

²² May be referred to as “precariously housed.”

Figure 3 – Map of Social Vulnerability Categorizations by County²³



2.2.1.1 Socioeconomic Status

Low- to moderate-income households face multiple issues before, during, and after disasters that can make their households more susceptible to risk and subsequent emotional, financial, or physical injury.

Low- to moderate-income households:

- Are often situated in structures and locations that are more vulnerable to the impacts of disasters than their higher income counterparts.²⁴ Greater exposure to risk may translate to increased likelihood of injury or death;
- May experience more acute financial side effects from a disaster (e.g., inability to pay rent due to costs or lost wages associated with the disaster), making it difficult for them to recover without external support or resources, and increasing the likelihood of financial or other exploitation;
- Are more likely to struggle with the costs of recovery, difficulty accessing temporary or permanent housing, increased likelihood of experiencing depression, anxiety, and/or other health problems; and
- May require targeted and specialized assistance during recovery to ensure they are able to access and receive much-needed resources. Failure to provide adequate support to these households can exclude them from recovery and contribute to long-ranging social equity issues.

2.2.1.2 Household Composition and Disability

Children under five years of age, adults 65 years of age and over, and persons with disabilities may have mobility or access challenges, specific medical needs, or other considerable issues.

²³ Centers for Disease Control and Prevention/ Agency for Toxic Substances and Disease Registry/ Geospatial Research, Analysis, and Services Program. Social Vulnerability Index 2016 Database Nebraska. [data-and-tools-download.html](#).

²⁴ Substance Abuse and Mental Health Services Administration, Disaster Technical Assistance Center Supplemental Research Bulletin, July 2017. "Greater Impact: How Disasters Affect People of Low Socioeconomic Status." Retrieved at: https://www.samhsa.gov/sites/default/files/dtac/srb-low-ses_2.pdf

Approximately six percent of the population of Nebraska are young children and 20 percent are adults age 65 or older.

Interruptions to existing support networks due to temporary or permanent displacement from the disasters and disruptions to access to services can be particularly problematic for these individuals, contributing to unhealthy living environments, medical crises, or unnecessary mental or emotional distress.

These individuals may have highly specialized needs, that when unmet, can disrupt independent living and rapidly deteriorate their quality of life and sense of dignity. Providing equitable access to services and goods near an existing support network, when possible, is important to accommodate *all individuals* in the community during disaster recovery.

2.2.1.3 Minority Status and English Language Proficiency

Five percent of Nebraska's population, or 87,469 individuals, age five and older qualify as having "limited English proficiency," meaning they speak a primary language other than English and speak English less than well.²⁵ Limited English proficiency community members may struggle to effectively learn about resources during disaster recovery, as navigating the bureaucratic processes necessary to receive aid can prove difficult even for native English speakers.

Additionally, people from historically marginalized groups may not consider government institutions reliable sources, potentially decreasing their awareness of available resources for recovery. Individuals with citizenship concerns, present in some agricultural communities in the state, are also less likely to seek government support.

For these reasons, impacted areas with higher concentrations of limited English proficiency and migrant workers may require additional assistance for effective disaster recovery. **Initiating culturally competent services (i.e., altering practices to reach different cultural groups) is important for equitable disaster recovery.** Such assistance may include, but is not limited to, translation services and/or ensuring that members of various faiths, races, and/or ethnicities are trained to provide crisis counseling and case management.

2.2.1.4 Housing and Transportation

Access to affordable housing is a key challenge for Nebraska. Prior to the 2019 disasters, **Nebraska only had 41 affordable housing units for every 100 households in extreme poverty.**²⁶ This lack of affordable housing can, in turn, increase the number of individuals experiencing homelessness.

Renter populations are also vulnerable as they tend to have less control over their home's condition (e.g., making repairs and improvements in a timely manner), fewer assets and resources, less stability in their housing situation, and may tend to be more transient. In the post-disaster landscape, landlords may raise the cost of monthly rent to account for structural repairs and renovations, or put off making these repairs, creating additional emotional or financial stress for renters.

²⁵ Nebraska Department of Labor, 2018. "Office of Employment and Training Limited English Proficiency Plan." Retrieved at: <https://dol.nebraska.gov/webdocs/getfile/da345149-f1f3-40a5-906a-c5bf30a68e43>

²⁶ Citylab, 2017. "America's Affordable Housing Shortage, Mapped." Retrieved at: https://blueprint-nebraska.org/wp-content/uploads/2019/08/BlueprintNE_Public.pdf

Reliable transportation is needed to access basic necessities, from workplaces and educational facilities to grocery stores, medical services, and more. In low-income areas, residents frequently have longer commutes, may be less likely to own their own vehicles, and can incur higher costs associated with transport.²⁷ In rural Nebraska, there are unique challenges surrounding transportation, especially if a personal vehicle is not available. Over 320,000 Nebraskans depend on rural public transit, yet one in four live in a county that has no intercity bus stops, limiting opportunities to access the key facilities and services that are often spread across a vast geographic area in a primarily rural state.^{28, 29}

²⁷ U.S. Department of Transportation, 2013. "Relationship to public health." <https://cms8.dot.gov/mission/health/equity>

²⁸ Aliaga-Linares, L. University of Nebraska at Omaha, n.d. "Nebraska Rural Transit Gap Analysis." Retrieved at: <https://documentsndot.s3.amazonaws.com/Nebraska+Rural+Transit+Gap+Analysis.pdf>

²⁹ Intercity Bus Service is a regularly scheduled bus service with limited stops over fixed routes connecting two or more communities.



***PUBLIC
INFRASTRUCTURE
AND FACILITIES***

2.3 PUBLIC INFRASTRUCTURE AND FACILITIES

The 2019 disasters caused acute damage to the state's infrastructure systems and created cascading impacts across other sectors. Infrastructure damage was widespread, with 83 out of 93 counties impacted.³¹ This damage spread across the entire state. Kimball County in the west to Dakota County in the east sustained damage that qualified for FEMA PA infrastructure funding. Damage to infrastructure is estimated at more than \$640 million but this is thought to be a significant underestimate, as full data on flood control works is not currently available. Roads and bridges were most impacted by the disasters with approximately \$429 million in damage, or 68 percent of total quantifiable infrastructure damage. Road and bridge damage also had a cascading impact on recovery to other types of infrastructure (e.g., utilities) and other sectors (e.g., agriculture and the economy). However, other types of infrastructure were significantly affected, particularly water control facilities, including levees and dams, and public utilities, including power, water, and wastewater treatment facilities.

State and local governments moved quickly after the disasters to repair roads and other public infrastructure. However, fully recovering and strengthening infrastructure is an ongoing effort.

A number of federal funding programs are available to support public infrastructure recovery needs, including:

- FEMA PA Program;
- United States Department of Transportation FHWA Emergency Relief (ER) Program;
- HUD CDBG-DR;
- United States Army Corps of Engineers (USACE) Levee Rehabilitation and Inspection Program (RIP);
- Natural Resources Conservation Service (NRCS) Emergency Watershed Protection Program (EWPP); and
- FEMA's Hazard Mitigation Grant Program (HMGP).

The following categories were assessed to determine infrastructure needs:³⁰

- Roads and bridges (**Section 2.3.3**);
- Water control facilities (**Section 2.3.4**);
- Buildings and equipment (**Section 2.3.5**);
- Utilities (**Section 2.3.6**); and
- Parks and recreational facilities (**Section 2.3.7**).

Before data is presented in each of these sections, an overview of potential recovery gaps is presented in **Section 2.3.1**.

³⁰ These categories were chosen based on the FEMA PA permanent work categorization.

2.3.1 SUMMARY OF POTENTIAL RECOVERY GAPS

While the state is expecting extensive financial support from the Federal Government through infrastructure recovery programs, potential recovery gaps may still create a financial burden on the state and local governments.

Potential recovery gaps include:

- Major infrastructure funding programs (e.g., FEMA PA, FHWA ER, NRCS EWPP, USACE RIP) typically require that a non-federal share for repair be paid by the state and/or local government. In some cases, paying this share may place a significant financial burden on the community, or the amount required may exceed their financial capacity.
- Local governments must pay the costs associated with most infrastructure projects upfront, and then request reimbursement through federal programs. This puts financial pressure on local governments, and, in some cases, may prevent local governments from initiating recovery projects due to a lack of cash on hand.
- Infrastructure that is ineligible for federal funding will be the responsibility of the state or local government to restore. The extent of ineligible recovery costs for the 2019 disasters are not yet known and will continue to evolve, but this funding gap could be significant.³¹
- Following a disaster, there is often an increased demand for resources associated with infrastructure repair. In some cases, this demand will exceed the available supply, leading to recovery delays. Specifically, for road repair there have been reports that some communities have an outstanding need for supplies (e.g., gravel, fill dirt).
- Nebraska has an unmapped network of privately built levees, many of which were damaged in the 2019 disasters. The extent of damage is not known, but these levees are not eligible for federal recovery assistance. In most cases, the cost of the levee repairs will have to be borne by the private levee owners.
- The extent of damage to federally supported levees continues to evolve, making it difficult to understand the full scope of recovery needs. Total damage has been reported as high as \$500 million, but under \$33 million has been obligated as of February 2020. Both the USACE and NRCS levee restoration programs require a local cost share for repairs to non-federal facilities based on the total value of damage—making this a significant potential funding gap.
- The Federal Government provides funding for mitigation through a variety of programs—Nebraska expects to receive more than \$50 million in mitigation funding. However, the costs to improve infrastructure throughout the state will far exceed available funding, resulting in difficult choices.

2.3.1.1 Potential Recovery Funding Gaps

Based on the identified damage and the funding that has been allocated to date, **the state may experience a funding gap of up to \$168 million that will need to be closed with state, local, federal, and other resources** (see *Table 1*). This gap includes \$97 million for roads and at least \$45 million for water control facilities, although, as discussed, data on water control facilities is incomplete. This funding gap is based on available data, and likely does not capture the totality

³¹ Infrastructure recovery projects or costs may be determined to be ineligible for a number of reasons, such as: failure to meet program deadlines; inadequate documentation of costs; failure to prove proper pre-disaster maintenance of a facility; or improper procurement. Even projects that have been preliminarily approved may be determined ineligible at a later date, which could increase the gap between actual costs and reimbursed costs.

of potential infrastructure recovery gaps. This gap does not include the potential costs of mitigation and resilience.

Table 1 – Estimated Potential Infrastructure Recovery Funding Gap

| | Estimated Cost to Repair | Anticipated Federal Funding | Potential Recovery Funding Gap |
|-----------------------|--------------------------|-----------------------------|--------------------------------|
| Infrastructure | \$640,698,279 | \$472,438,800 | \$168,259,479 |

2.3.2 STATEWIDE INFRASTRUCTURE DAMAGE

Damage to public infrastructure was concentrated in the eastern portion of the state, as demonstrated by the four figures that follow.

Figure 4 shows that the counties with the highest number of projects are concentrated in the eastern portion of the state. Four counties have over 80 eligible projects, including Douglas (86), Dodge (89), Knox (90), and Custer (111).

Figure 4 – Map of Concentration of PA-Eligible Projects by County

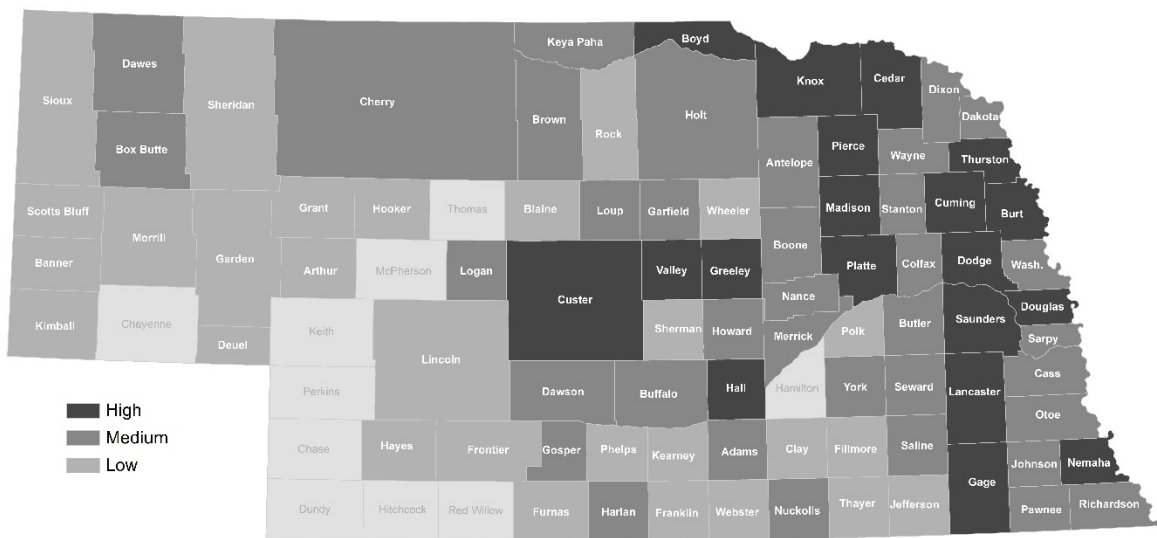
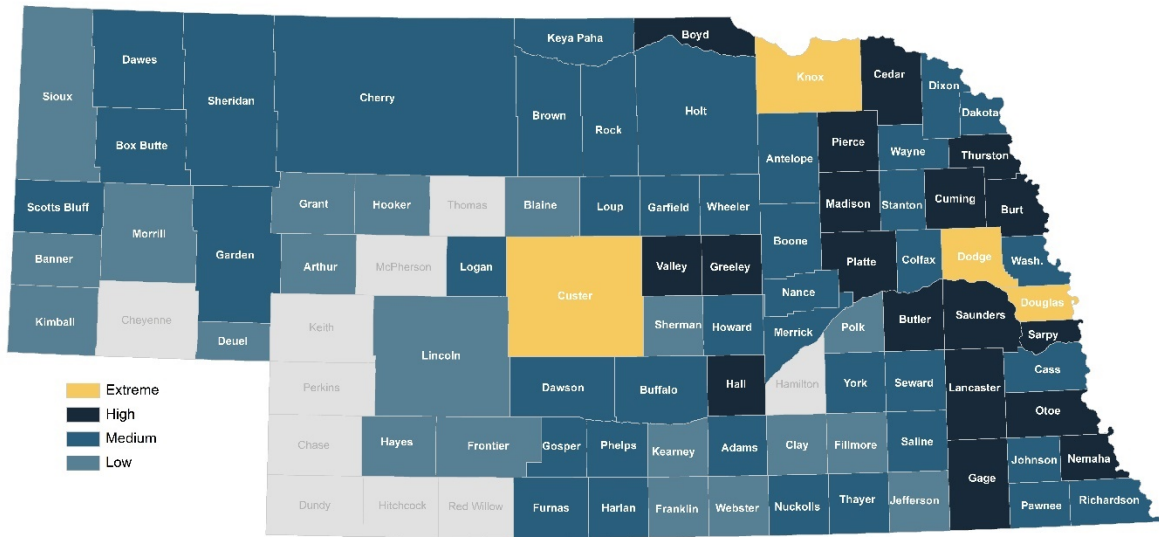


Figure 5 below shows that when comparing the number of PA-eligible projects in each county to the total number of PA projects across the state, most of the counties with a high concentration are on the eastern side of the state (Knox, Dodge, and Douglas), with the exception of Custer County.

Figure 5 – Map of Relative Concentration of PA-Eligible Projects by County



When comparing damage based on value, significant infrastructure damage appears in western counties (Cherry, Scotts Bluff).

Figure 6 shows the total estimated cost of PA-eligible infrastructure projects. Dodge and Douglas Counties have by far the highest eligible recovery project values at \$39,746,267 and \$41,645,729, respectively.

Figure 6 – Map of Concentration of (Estimated) Value of PA-Eligible Projects by County

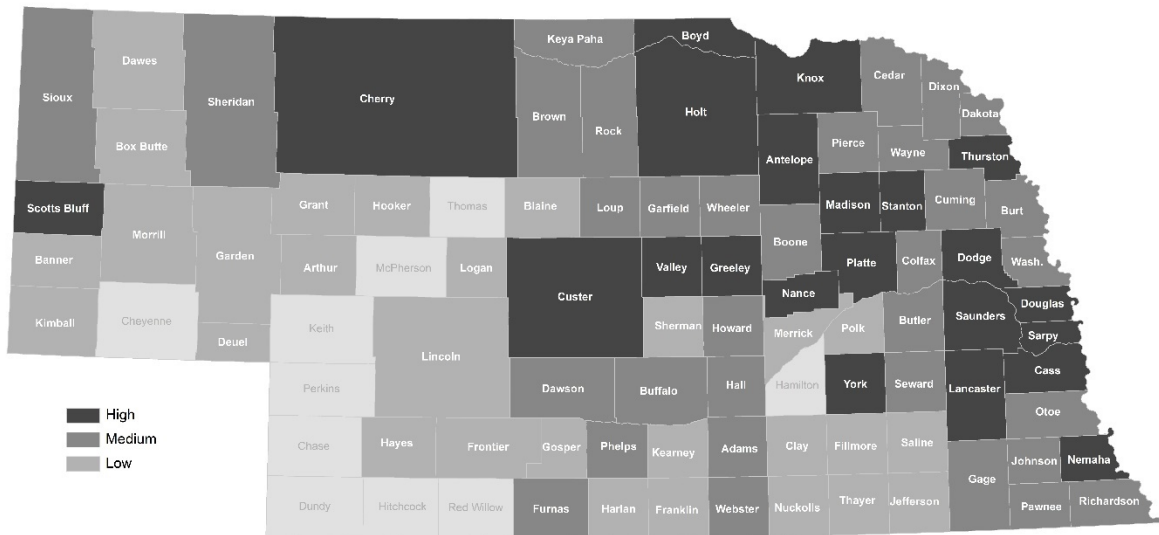
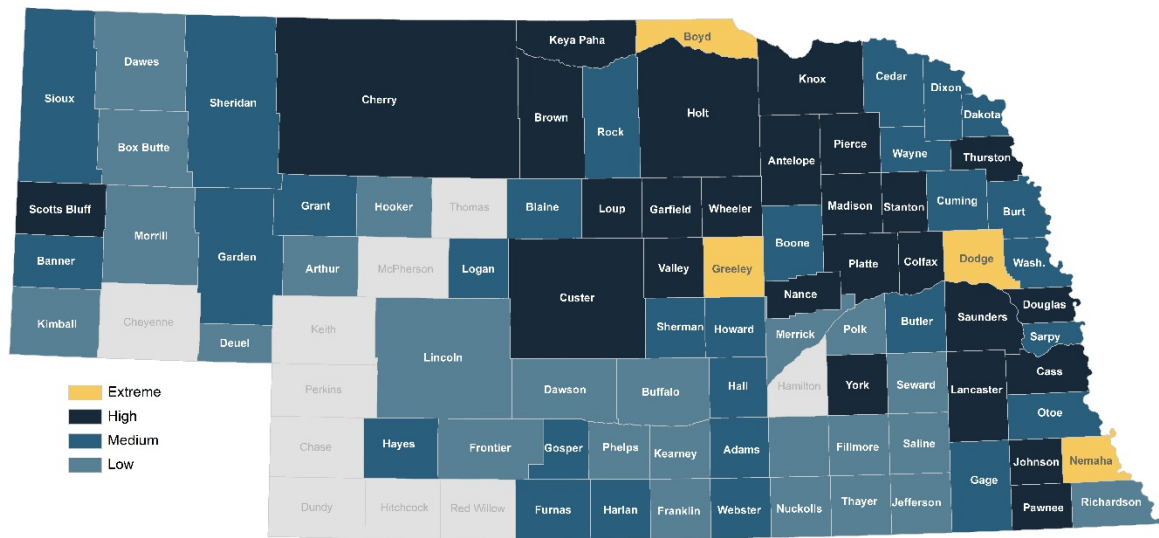


Figure 7 compares the total estimated PA-eligible infrastructure recovery costs to the total value of the public infrastructure in each county. This comparison allows the impact to be estimated by understanding what proportion of the public infrastructure in each county was damaged. The highest impacts were seen in the eastern portion of the state. **This map shows that Boyd, Dodge, and Greeley Counties had the greatest relative impact to infrastructure in the state.**

Figure 7 – Map of Relative Concentration of (Estimated) Value of PA-Eligible Projects by County



This county-by-county analysis uses FEMA PA data as a proxy for infrastructure damage. It does not include federal-aid roads or USACE-supported levees, for example, and does not include damage determined ineligible for FEMA PA assistance, or damage not claimed for reimbursement.

2.3.3 ROADS AND BRIDGES

Roads and bridges are foundational to life in Nebraska, enabling residents to access jobs, schools, food and other daily supplies, medical services, and social networks. Transportation infrastructure is critical to the Nebraska economy by facilitating movement of agricultural equipment, crops, and cattle to and from farms, ranches, and feed lots and between processing, packaging, and distribution facilities.

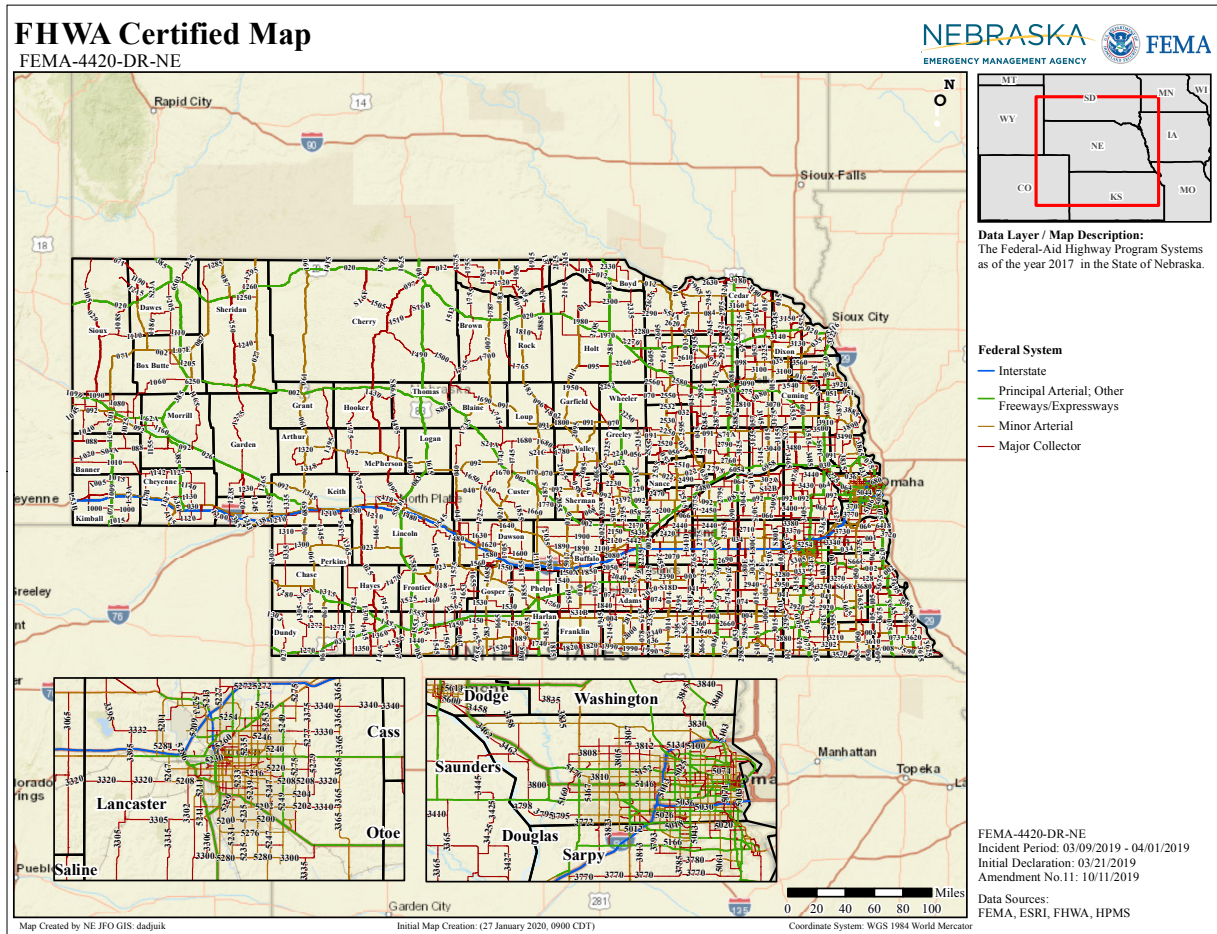
The 2019 flooding devastated roads and bridges throughout the state (see **Figure 8**). Currently, the total approximate **damage to roads and bridges from the 2019 disasters is estimated at \$429 million**. In the aftermath of the disasters, the Nebraska Department of Transportation (NDOT) and local governments moved quickly to provide emergency and temporary repairs to enable roads to reopen. However, work remains to fully restore roads throughout the state.

Figure 8 – Photo of Washed Out Road



Recovery of road and bridge infrastructure is dependent on the type of road or bridge damaged. FHWA-certified roads are potentially eligible for FHWA ER funding, while all other roads are potentially eligible for FEMA PA funding.³² FEMA’s PA Program may pay for repairs to roads not covered by the FHWA ER program. **Figure 9** shows the distribution of FHWA roads in the state.

Figure 9 – Map of Statewide FHWA Roads



2.3.3.1 Federal-Aid Roads

The State Highway System of Nebraska is operated and maintained by the Nebraska Department of Transportation (NDOT). This system includes all state highways as well as interstates and United States highways. Approximately 9,948 miles of state highways are included in this system. This state highway system accounts for approximately 63.5 percent of all vehicle miles traveled for the state and approximately 83.7 percent of all heavy truck travel in the state.³³ Nebraska’s State Highway System is more heavily used in comparison to the national average, but roughly consistent with the regional average.³⁴

³² United States Department of Transportation Federal Highway Administration, 2019. “Special Federal-aid Funding: Emergency Relief Program.” Retrieved at: <https://www.fhwa.dot.gov/programadmin/erelief.cfm>

³³ Nebraska Department of Transportation, 2019. “About Us.” Retrieved at: <https://dot.nebraska.gov/about/>

³⁴ United States Department of Transportation Federal Highway Administration, n.d. “Travel Monitoring.” Retrieved at: https://www.fhwa.dot.gov/policyinformation/travel_monitoring/tvt.cfm

The 2019 disasters caused extensive damage to NDOT infrastructure. A total of 41 counties reported damage to NDOT on federal-aid routes. This event, at its height, forced the closure of 3,300 state highway miles and 27 state highway bridges—approximately one-third of state highway miles in Nebraska.³⁵ Extensive road repair to state-owned road and bridge infrastructure has already been completed. However, not all local federal-aid roads and bridges have been restored. The extent of the remaining needed repairs is not currently known.

The total damage to federal-aid roads in Nebraska is estimated at \$201 million.³⁶ The state has received \$95 million from the FHWA ER Program and intends to request an additional \$67.8 million when the United States Congress opens another funding vehicle.^{37, 38, 39} To accomplish this progress, as of December 2019, NDOT expenditures totaled \$90.2 million across 85 different projects and impacted counties have been reimbursed \$4.3 million. Assuming the state receives the full amount of their additional funding request, Nebraska may face a funding gap of \$40.2 million for federal-aid road recovery.

Figure 10 – Photo of Washed Out Road Under Repair



2.3.3.2 Local Road and Bridge Infrastructure

Local road and bridge infrastructure include major collector roads (federal-aid roads) and minor collector roads (PA-eligible). Locally-owned roads carry approximately 36.5 percent (25.6 percent for municipal roads, 10.9 percent for county roads) of all vehicle miles traveled in the state.⁴⁰

³⁵ Nebraska Department of Transportation, 2019 “March 2019 Flood Recovery Update. Week 39 (December 6).”

³⁶ Ibid.

³⁷ Nebraska Department of Transportation, 2019. “Federal Funding Assistance.” Retrieved at: <https://stories.opengov.com/nebraskadot/published/OmYJLHlHl>

³⁸ This sum of FHWA Emergency Relief Fund was provided for severe weather caused by both the 2018 and 2019 storms.

³⁹ The state received an initial \$25 million in April 2019 from FHWA ER Program to support the cost of recovery. The state received an additional \$68 million in September 2019 from the FHWA Emergency Relief Fund to support recovery, for a total of \$95 million in financial assistance from the FHWA to date.

⁴⁰ Nebraska Department of Transportation, 2019. “About Us.” Retrieved at: <https://dot.nebraska.gov/about/>

Local roads are used for personal travel for Nebraska's individuals and families and transportation of agricultural equipment, livestock, and feed and milk trucks, making these roads critical to the state economy.

FEMA PA Category C covers damage to minor collector roads and bridges (non-federal-aid roads). This includes road surfaces, bases, shoulders, ditches, drainage structures, low water crossings, and other elements of infrastructure (e.g., bridge decking, guardrails, girders, pavement).⁴¹ **Total damage to PA-eligible roads and bridges is estimated at nearly \$228 million.**⁴²

In addition to the direct damage sustained during the 2019 disasters, there were some secondary impacts that have yet to be fully addressed. Specifically, use of local roads (minor collectors) and bridges increased after the disaster, while state and federal roads (major collectors and highways) were impassible. This led to additional wear and tear on the local roads and bridges, which may result in the need for accelerated maintenance and repair. It is unclear whether any of this indirect damage will be covered by FEMA or other federal funding.

Additionally, local roads are less direct and have slower speed limits, which results in increased commute times and slowed deliveries. Bridge damage also contributed to lengthened commute times. A Periodic Needs Assessment respondent noted that work commutes extended as much as two to three hours each way for some residents as a result of the Missouri River Bridge closure. A different respondent noted that it could take up to two hours to reach sites by car that were typically only minutes away.

Rebuilding and repairing roads and other infrastructure at a local level has been hampered by a lack of raw materials, a shortage of labor and contractors, and local governments' inability to access immediate funds to conduct infrastructure recovery work. At the December 2019 Governor's Task Force, it was reported that some communities do not have the financial capital necessary to complete road repairs, since FEMA PA requires local governments to fund repairs upfront and then request reimbursement.

As spring approaches, many roadways remain vulnerable to flooding. NDOT and other state agencies are working to identify critical road segments that are susceptible to flooding, or otherwise face increased vulnerability, and are preparing to respond quickly to address these issues.

⁴¹ Federal Emergency Management Agency, 2018. "Public Assistance Program and Policy Guide." Retrieved at: https://www.fema.gov/media-library-data/1515614675577-be7fd5e0cac814441c313882924c5c0a/PAPPG_V3_508_FINAL.pdf

⁴² Data obtained from NEMA and current as of January 17, 2020.

2.3.4 WATER CONTROL FACILITIES

Water control facilities perform critical flood control, irrigation, navigation, erosion control, and other functions. Water control facilities are critical for safety and the economy because there are rivers throughout the state. This category of facilities can include: dams and reservoirs, levees and floodwalls, engineered drainage channels, canals, aqueducts, sediment basins, stormwater basins, irrigation facilities, pumping facilities, and navigable waterways.⁴³ These facilities may be owned and operated by the federal, state, or local government or privately owned.

Damage to water control facilities in Nebraska was extensive. Dams, levees, and other flood control works were breached, overtopped, or otherwise compromised. However, the full extent of damage to water control facilities in the state is not yet known. This is due to lack of information about private levees, and incomplete data regarding levees that may be eligible for the USACE Rehabilitation and Inspection (RIP) program.

Depending on the type of water control facility, different federal funding programs exist to support infrastructure recovery. In the case of the Nebraska 2019 disaster event, the primary impacts were to dams and levees. Dams are eligible for FEMA PA Category D funding and levees can either be funded by FEMA PA, the USACE Levee RIP, or the NRCS EWPP. FEMA PA Category D covers damage to water control facilities to support state, tribal, territorial, and local governments, and certain types of private non-profits in their recovery from major disasters.⁴⁴ The USACE Levee RIP provides levee rehabilitation funding to support local jurisdictions in maintaining flood protection measures. However, it does require a cost-share of 20 percent for repairs to non-federal systems.

Nebraska has an estimated \$38 million in PA-eligible damage to water control facilities.⁴⁵ The NRCS reports there is approximately \$40 million in damage to levees eligible for the EWPP, although only \$4 million in funding has been awarded. The full extent of damage to levees in the USACE RIP program is not known, but USACE has awarded more than \$32 million to repair eleven levee systems.⁴⁶

It is expected that additional funds may be made available for levee repairs by the USACE and the NRCS. However, based on available data, there may be significant gaps in funding to repair water control facilities in Nebraska.

Progress has been made on restoration of flood control works, but there is concern that the entire system will not be repaired in time for potential spring flooding.

2.3.4.1 Dams

The Nebraska Department of Natural Resources (NDNR) maintains the State Dam Inventory, which includes all dams in the state that are 25 feet or more in height or have a maximum storage capacity of 50 acre-feet or more, along with inspection schedules and maintenance records. In

⁴³ Federal Emergency Management Agency, 2018. "Public Assistance Program and Policy Guide." Retrieved at: https://www.fema.gov/media-library-data/1515614675577-be7fd5e0cac814441c313882924c5c0a/PAPPG_V3_508_FINAL.pdf

⁴⁴ Federal Emergency Management Agency, 2019. "Public Assistance: Local, State, Tribal and Private Non-Profit." Retrieved at: <https://www.fema.gov/public-assistance-local-state-tribal-and-non-profit>

⁴⁵ Data obtained from NEMA and current as of January 17, 2020.

⁴⁶ Email correspondence with Nebraska Department of Natural Resources staff, February 12, 2020.

Nebraska, there are 2,943 dams that are existing or approved for construction.⁴⁷ Most of these dams are low-hazard dams and only 149 dams (five percent) are considered high hazard. All high-hazard dams have an emergency action plan and are the only type of dam that require active management.⁴⁸

The largest impact of the 2019 disaster on dams in Nebraska was the failure of the Spencer Dam. The Spencer Dam, which failed on March 14, 2019, is a hydroelectric dam located on the Niobrara River and owned by the Nebraska Public Power District. Large chunks of ice (measuring 18 to 24 inches thick) carried by floodwaters contributed to the dam failure—the first time such a cause has been cited.⁴⁹ The dam failure immediately destroyed a saloon, destroyed a portion of U.S. Highway 281, and is thought to have caused at least one death.⁵⁰

The dam failure caused damage in three counties downstream (i.e., Boyd, Holt, and Knox). The most impacted town was Niobrara, which required homeowners to evacuate from low-lying areas. The dam failure destroyed a portion of Nebraska Highway 12, as well as local water infrastructure, cutting off the water supply to approximately 2,000 residents.⁵¹ The cause of the Spencer Dam failure and extent of downstream damage is still under investigation. Data from the NDNR indicates that there are at least nine additional dams in Antelope, Custer, Garfield, Greeley, Holt, Knox, and Nance counties that were breached and/or suffered damage due to the 2019 disasters.

2.3.4.2 Levees

Nebraska has an extensive system of levees that support water control and management. Levees can be used for flood control for municipal, agricultural, or personal purposes. While the USACE National Levee Database and the State of Nebraska Flood Hazard Mitigation Plan describe levee location and status, **there is no complete database of federal, municipal, and privately-owned levees in the state, making it difficult to understand the full scope of damage to levees.**⁵²

Nebraska has 137 levee systems that are inventoried by the USACE. These levee systems are primarily located in the eastern third of the state along the Missouri, Platte, and Elkhorn Rivers.⁵³ The Nebraska levee systems include 371 miles of levees and 331 levee structures.⁵⁴ Amongst the inventoried levees in Nebraska, most are locally constructed, operated, and maintained or federally constructed and locally operated and maintained.⁵⁵

⁴⁷ Nebraska Department of Natural Resources, 2019. "Nebraska Dam Inventory." Retrieved at: <https://gis.ne.gov/portal/apps/webappviewer/index.html?id=2aab04a13817421992dc5398ad462e22>

⁴⁸ American Society of Civil Engineers, 2019. "Infrastructure in Nebraska." Retrieved at: <https://www.infrastructurereportcard.org/state-item/nebraska/>

⁴⁹ Hammel, 2019. "Spencer Dam collapse may be first in nation caused by giant ice chunks, inspector says." Omaha World Herald. Retrieved at: https://www.omaha.com/news/state_and_regional/spencer-dam-collapse-may-be-first-in-nation-caused-by/article_e0af7571-9264-5691-bd5c-344f4e940e85.html

⁵⁰ Salter, 2019. "11-foot wall of water: One dam breaks, three counties suffer." Lincoln Journal Star. Retrieved at: https://journalstar.com/news/state-and-regional/nebraska/foot-wall-of-water-one-dam-breaks-three-counties-suffer/article_eaf487d7-acc0-53a8-8786-9eccb43942ed.html

⁵¹ Ibid.

⁵² Nebraska Department of Natural Resources, 2013. "Flood Hazard Mitigation Plan." Retrieved at: <https://nema.nebraska.gov/sites/nema.nebraska.gov/files/doc/flood-hazmit-plan.pdf>

⁵³ Ibid.

⁵⁴ United States Army Corps of Engineers, 2019. "National Levee Database." Retrieved at: <https://levees.sec.usace.army.mil/#/>

⁵⁵ Ibid.

Reported damage to the levee systems from the 2019 disasters varies. Initial reports were superseded after flood waters receded and additional damage was exposed.⁵⁶ Additionally, reported damage to levees varied depending on the source. The NDNR reported that there were 44 levees damaged. The NRCS evaluated between 350 and 400 potential sites for post-disaster damage and estimated approximately \$40 million in total damage.⁵⁷ The USACE Omaha Office reported 24 levees damaged and FEMA reported 27 levees damaged from the disaster. Moreover, there is an expectation that damage to private levees may have gone underreported. The types of damage reported included breaching, overtopping, erosion, and other general damage.

Depending on the purpose of the levee, different federal programs are available to support recovery. If the levee is a flood control work, the levee may be eligible for NCRS EWPP or USACE RIP. If the levee is not eligible for the NCRS EWPP or USACE RIP, or not a flood control work, then the facility may be eligible for FEMA PA. The NCRS EWPP supports recovery of flood control works that relieve imminent hazards to life and property. After evaluating the potentially eligible EWPP sites, the NCRS began working with eight levee sponsors, for 73 project sites, in seven different counties.⁵⁸ The total approved funding for the EWPP as of January 2020 is \$4.1 million.⁵⁹ As of January 2020, there are still a **significant number of potentially eligible NRCS sites not being addressed through the EWPP program**, while the number of funded sites is expected to increase, this may still represent a potential recovery gap.

The USACE RIP provides rehabilitation support to eligible flood control works, where eligibility is determined by sponsorship, purpose, maintenance, and design. Current estimates show 19 levee systems that are eligible for the PL 84-99 Program.⁶⁰ The USACE Omaha District has awarded almost \$33 million for repairing eleven levee systems in Nebraska (as of February 13, 2020).⁶¹ All 19 levee systems that are eligible for the RIP program may eventually be funded for recovery. However, as of December 2019, **there are 26 levees that are inactive or not enrolled under the PL 84-99 Program—a substantial recovery gap**. FEMA is providing support for the repair of 27 additional levees—in Dodge, Douglas, Lancaster, Nemaha, Otoe, Platte, Sarpy, Saunders, and Seward counties.

More work remains to completely restore the levee system. This is a concern as spring arrives with the potential for additional flooding.

⁵⁶ United States Army Corps of Engineers, 2019. "Clarification provided for owners of private levees seeking Corps assistance." Retrieved at: [nwo.usace.army.mil/Media/News-Releases/Article/1800995/clarification-provided-for-owners-of-private-levees-seeking-corps-assistance/](https://www.usace.army.mil/Media/News-Releases/Article/1800995/clarification-provided-for-owners-of-private-levees-seeking-corps-assistance/)

⁵⁷ USDA, n.d. "NRCS Emergency Watershed Protection Program Implementation in Nebraska Following the 2019 Disaster."

⁵⁸ Ibid.

⁵⁹ Ibid.

⁶⁰ United States Army Corps of Engineers, 2019. "Omaha District System Restoration Team." Retrieved at: <https://www.nwo.usace.army.mil/Omaha-District-System-Restoration-Team/>

⁶¹ Email correspondence with Nebraska Department of Natural Resources staff, February 12, 2020.

2.3.5 BUILDINGS AND EQUIPMENT

City, county, and state-owned buildings, their contents, and equipment support the wellbeing of the community, from supporting public safety operations to providing a communal space for positive activities. The diversity of public buildings, building contents, and equipment in the state provides government services, fosters arts and culture, supports the health and safety of the community, and cultivates community education. Recovery of these facilities supports comprehensive community recovery.

FEMA PA will be the primary federal funding source to recoup damage incurred to buildings and equipment from the 2019 disasters. FEMA PA Category E covers damage to public buildings, building contents, and equipment across local jurisdictions and state-owned infrastructure. Currently, the **total damage to PA-eligible buildings, building contents, and equipment is estimated at \$6 million.**⁶² In total, 29 counties applied for FEMA PA for buildings, building contents, and equipment. Varying types of facilities were reported damaged through FEMA PA Category E.

General building contents (e.g., fencing, heaters, and water/wastewater equipment) comprised approximately 60 percent of the reported damage for Category E. This is followed by community facilities (e.g., community centers, arts centers) at 25 percent, public safety facilities (e.g., police and fire) at 10 percent, and educational facilities at five percent. Further discussion of impacts to schools, as well as their students and teachers, can be found in **Section 2.6.2.2**.

In addition to damage caused directly by the disasters, some buildings and equipment were repurposed post-disaster, causing secondary wear-and-tear. For example, in Buffalo, Knows, Saunders, and Washington counties, community facilities such as auditoriums, community centers, and churches were used as FEMA Disaster Recovery Centers.⁶³ Similarly, some community centers were used to store donated items and other goods needed for recovery.⁶⁴

2.3.6 UTILITIES

Utilities include power service, water service, and sewer service. The 2019 disasters resulted in significant disruptions to the power grid and affected a number of public water and wastewater systems. Currently, the **total estimated cost for utility repair projects is \$61 million** based on FEMA PA data.⁶⁵

2.3.6.1 Power Service

Electricity in Nebraska is primarily generated through coal (63 percent); other sources include nuclear (15 percent), wind (14 percent), hydropower (four percent), and natural gas (three percent).⁶⁶ The entire electric grid in the state is publicly owned, with distribution coming from 166

⁶² Data obtained from NEMA and current as of January 17, 2020.

⁶³ NTV, 2019. 6News. "FEMA opening Mobile Disaster Recovery Centers in Neb." Retrieved at: <https://www.wowt.com/content/news/Winslow-faces-uphill-cleanup-fight-after-the-flood-507736971.html>

⁶⁴ Chapman, 2019. "Winslow faces uphill cleanup fight after the flood." Retrieved at: <https://nebraska.tv/news/nebraska-flooding/fema-opening-mobile-disaster-recovery-centers-in-neb>

⁶⁵ Data obtained from NEMA and current as of January 17, 2020.

⁶⁶ United States Energy Information Administration, 2019. "Nebraska State Profile and Energy Estimates." Retrieved at: <https://www.eia.gov/state/?sid=NE>

community-owned utilities.⁶⁷ The largest of the public electricity utilities is the Nebraska Public Power District, which serves 91 of Nebraska's 93 counties, followed by the Omaha Public Power District, which serves Omaha and 13 counties surrounding the city.⁶⁸

The 2019 disasters caused extensive damage to the electric grid as flood water and debris impacted infrastructure, ranging from limited damage to individual electric meters to extensive damage to hydroelectric dams (see **Section 2.3.4.1** for additional information on dam damage).⁶⁹

For months after the disasters, continued flooding in the state made the full extent of the damage challenging to assess. Moreover, other infrastructure damage, especially roads and bridges, made assessment and repair of electric grid infrastructure challenging, particularly in rural areas.⁷⁰ Damaged or inadequate power service can limit access to key medical equipment, spoil personal and agricultural food supplies, and cause safety and security issues.

2.3.6.2 Water and Wastewater Service

Nebraska's drinking water primarily comes from public water systems, with only 20 percent of the population obtaining their water from private wells. There are approximately 1,349 total public water systems treating and distributing potable water throughout the state.⁷¹ The public water systems in Nebraska primarily serve small populations, with over 50 percent of systems providing water to fewer than 101 people, and only one percent of the systems serving large populations greater than 10,000 people.⁷² Approximately two-thirds of the population served by the public water systems in the state receives groundwater through their respective systems. This indicates that water services in Nebraska utilize small facilities that are well distributed throughout the state.

The FEMA Advance Evaluation Team reported significant water treatment system damage. In Nemaha County, the water treatment plant had to shut down and issue a boil water notice.⁷³ Nebraska's public water systems are monitored by the Drinking Water Program at the Nebraska Department of Health and Human Services (NDHHS), as required by the Federal Safe Drinking Water Act. Through this monitoring, NDHHS determined **the disasters impacted 51 public water systems** (3.8 percent) in the state, **and 22 of these water systems were forced offline**. Boyd County had no running drinking water for six months after the Spencer Dam collapsed and destroyed their pipeline.⁷⁴ These impacted water systems required extensive repairs.

In rural areas, many residents use wells to access their drinking water. Private wells are not regulated according to the Safe Drinking Water Act; well owners are responsible for assessing and monitoring their water for quality assurance. This is particularly relevant for Nebraska

⁶⁷ Nebraska Power Association, 2019. "Public Power." Retrieved at: <https://www.nepower.org/public-power/>

⁶⁸ Omaha Public Power District, n.d. "Quick Facts." Retrieved at: <https://www.oppd.com/media/216550/quick-facts.pdf>

⁶⁹ Holly, 2019. "Nebraska Co-ops and PPDs Complete Power Restoration After Floods, but Long Recovery Ahead." America's Electric Cooperatives. Retrieved at: <https://www.electric.coop/nebraska-co-ops-ppds-complete-power-restoration-after-flooding/>

⁷⁰ Ibid.

⁷¹ Nebraska Department of Health and Human Services, 2018. "Nebraska Public Water Supply Program Summary Report." Retrieved at:

<http://deq.ne.gov/Publica.nsf/5b4b133d1e7717ab862583b700632342/4d6daffcb67dfdd28625843900504f84?OpenDocument>

⁷² Ibid.

⁷³ NET News, 2019. "Some Nebraska Communities Still Without Clean Running Water." Retrieved at:

<http://netnebraska.org/article/news/1169266/some-nebraska-communities-still-without-clean-running-water>

⁷⁴ NET News, 2019. "Boyd County Drinking Water Restored After Six Months." Retrieved at:

<http://netnebraska.org/article/news/1191729/boyd-county-drinking-water-restored-after-six-months>

because the percentage of the population with private water sources is higher than the national average.⁷⁵

After the flooding, there was concern that floodwaters may have carried harmful bacteria into wells. Although NDHHS monitors the damage and contamination (e.g., bacteria and parasites) of public water systems, they have a limited role in monitoring private wells. NDHHS and the U.S. Environmental Protection Agency (EPA) supported well water testing and provided public information (e.g., press releases and media) regarding the potential post-disaster damage to private wells.

To address concerns about contaminated well water, the NDHHS and the EPA sponsored well water sampling events in nine communities so that homeowners could test the quality of their drinking water. If found to be contaminated, further instruction was provided on ways to rectify the situation. These April 2019 events resulted in over 700 collected samples, with over 200 testing positive for coliform, and among those that tested positive for coliform bacteria, over 60 tested positive for *Escherichia coli* (*E. coli*).⁷⁶ *E. coli* can cause severe gastrointestinal issues in those exposed, and even kidney failure in young children and older adults.⁷⁷

Water Contamination

In April 2019, 26 percent of collected water samples tested positive for coliform, with 33 percent of those samples also testing positive for *E. coli*.

In Nebraska, publicly owned wastewater treatment facilities treat both domestic and industrial sewage. The National Pollutant Discharge Elimination System requires facilities discharging point source pollution into state waters to apply for a permit. There are 510 publicly owned sites that process domestic sewage. Of these treatment facilities, 287 are permitted for discharging, while the remaining facilities are non-discharging.⁷⁸ Eighty-one wastewater treatment facilities (73 domestic, eight industrial) were affected by the 2019 disasters. As of the date of publication of this document, one remains offline.

Recovery for water and wastewater treatment facilities in the State of Nebraska can be funded through the FEMA PA program and through jurisdictions' general funds. As of January 2020, there were 18 applications for FEMA PA projects related to water and wastewater treatment.

Moreover, the Nebraska Department of Environment and Energy made State Revolving Funds available for drinking water and wastewater infrastructure repair. Communities were eligible after FEMA and the EPA reached an agreement that allowed the State Revolving Loan Fund to provide emergency bridge loans. Loans were provided with zero interest and zero fees until disaster recovery programs become available (assuming this is within five years), and the money can be paid back.

The State Revolving Loan Fund has already been used in the state, issuing four loans totaling \$5.7 million for drinking water and two loans totaling \$4.4 million for wastewater. There is an additional \$35.2 million expected from the State Revolving Loan Fund to be made available for

⁷⁵ United States Geographic Service, n.d. "Domestic (Private) Supply Wells." Retrieved at: https://www.usgs.gov/mission-areas/water-resources/science/domestic-private-supply-wells?qt-science_center_objects=0#qt-science_center_objects

⁷⁶ Nebraska Department of Environment and Energy, 2019. "March 2019 Flood Dashboard – Week of April 22."

⁷⁷ Mayo Clinic, n.d. "E.Coli" Retrieved at: <https://www.mayoclinic.org/diseases-conditions/e-coli/symptoms-causes/syc-20372058>

⁷⁸ Nebraska Department of Environment and Energy, n.d. "National Pollutant Discharge Elimination System – NPDES Program." Retrieved at: <http://deq.ne.gov/NDEQProg.nsf/OnWeb/NPDES>

water and wastewater recovery. Not all water and wastewater facilities that were damaged chose to seek support from the State Revolving Loan Fund.

2.3.7 PARKS, RECREATIONAL, AND OTHER FACILITIES

Recovery of parks and recreational facilities is a core component of restoring the quality of life in communities throughout the state. FEMA PA will be the primary federal funding source to recoup damage incurred by parks, recreational, and other facilities during the 2019 disasters. FEMA PA Category G covers damage to mass transit facilities, beaches, parks, playground equipment, swimming pools, bath houses, tennis courts, boat docks, piers, picnic tables, golf courses, ball fields, fish hatcheries, ports, and harbors.⁷⁹

Damage to PA-eligible parks, recreation, and other facilities is estimated at \$32 million.⁸⁰ In total, 33 counties applied for FEMA PA to fund the restoration of municipal parks, sports facilities, trail facilities, natural resource protection, and marina facilities. This may not account for all of the damage incurred to these facilities as only about one third of the PA-eligible counties reported damage in this category. Moreover, it is possible that the disasters' impacts caused damage to recreational facilities that are ineligible for FEMA assistance. Considerations for potential differences in reported damage can be found in **Section 2.8**.

⁷⁹ Federal Emergency Management Agency, 2018. Public Assistance Program and Policy Guide. Retrieved at: https://www.fema.gov/media-library-data/1525468328389-4a038bbef9081cd7dfe7538e7751aa9c/PAPPG_3.1_508_FINAL_5-4-2018.pdf

⁸⁰ Data obtained from NEMA and current as of January 17, 2020.

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HOUSING



2.4 HOUSING

Nebraska’s housing stock is primarily concentrated in small, urbanized geographic areas, with high population densities to the east. Outside of the Omaha and Lincoln metropolitan areas, the counties are mostly rural. The housing occupancy rates in Nebraska are high, with 90.8 percent of units occupied. Of occupied housing units, 66 percent are owner-occupied and 34 percent are renter-occupied.⁸¹ Before the 2019 disasters, the estimated breakdown of housing stock in Nebraska was as follows:

Table 2 – Estimated Statewide Housing Stock⁸²

| Units in Structure | Estimate | Percent |
|----------------------------|----------------|-------------|
| 1-unit, detached | 598,929 | 72.7% |
| 1-unit, attached | 31,807 | 3.9% |
| 2 units | 15,995 | 1.9% |
| 3 or 4 units | 21,510 | 2.6% |
| 5 to 9 units | 33,181 | 4.0% |
| 10 to 19 units | 39,104 | 4.7% |
| 20 or more units | 54,945 | 6.7% |
| Mobile home | 28,354 | 3.4% |
| Boat, RV, van, etc. | 351 | 0% |
| Total housing units | 824,176 | 100% |

Housing affordability is defined by HUD as “a dwelling (and utilities) that a household can obtain for 30 percent or less of its income.”⁸³ **Identifying workforce and affordable housing is a challenge in Nebraska**, as it is for most states in the country. Housing shortages are felt nationwide due to a national shortage of affordable housing⁸⁴ and a systemic shortage in the construction and trades⁸⁵ workforce available to construct housing at the pace of demand. As

⁸¹ United State Census Bureau, 2017. American Community Survey. Retrieved at: <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF>

⁸² Ibid.

⁸³ HUD, December 17, 2019. “Affordable Housing.” Retrieved at: https://www.hud.gov/program_offices/comm_planning/affordablehousing/

⁸⁴ National Low Income Housing Coalition, March 2019. “The Gap: A Shortage of Affordable Homes.” Retrieved at: https://reports.nlihc.org/sites/default/files/gap/Gap-Report_2019.pdf

⁸⁵ U.S. Bureau of Labor Statistics, Current Employment Statistics survey (1998-2018 nonfarm wage and salary employment, seasonally adjusted) and Employment Projections program (2026 projected employment). Retrieved at: <https://www.bls.gov/careeroutlook/2018/article/careers-in-construction.htm>

mentioned in the vulnerability section of this document (**Section 2.2**), Nebraska only had 41 affordable housing units for every 100 households in extreme poverty.⁸⁶ As of 2017, an estimated:

- 21.3 percent of homeowners *with* a mortgage were spending 30 percent or more of their household income on housing costs;
- 11.9 percent of homeowners *without* a mortgage were spending 30 percent or more of their household income on housing costs; and
- 42.6 percent of renters were spending 30 percent or more of their household income on housing costs.⁸⁷

Housing affordability is often exacerbated during disasters, as is the case in Nebraska, when existing housing stock is damaged and the housing supply is reduced or when post-disaster improvements drive up rent costs across the impacted areas.

When communities lack safe and affordable housing, they become vulnerable to negative health outcomes such as chronic disease, injury, and poor mental health.⁸⁸ Conversely, providing stable, quality, and safe housing has been proven to improve health outcomes.⁸⁹ **Access to safe and affordable housing is critical to establishing a stable workforce and to maintaining the health and well-being of residents.** Since the disasters, some Nebraskans are living in temporary housing solutions, while others are living in substandard conditions.

Specific to the 2019 disasters, quantified housing damage (i.e., damage reported through federal programs) reveals that damage:

- Primarily concentrated in the more densely populated eastern portion of the state.
- Primarily affected homeowners.
- Primarily impacted houses and duplexes.
- Primarily resulted in NFIP housing claims in central and eastern Nebraska.

Sarpy, Dodge, and Douglas counties suffered the most extensive housing damage according to federal sources.

The estimated value of housing damage (based on federal data sources) is roughly \$173 million, which, when adjusted for anticipated federal assistance, yields a potential recovery funding gap of \$80 million. Impacted homeowners participating in the NFIP received over \$39 million in flood insurance payouts as of July 29, 2019.⁹⁰ In contrast, between 1996 and 2016, NFIP payouts in Nebraska totaled approximately \$18 million.⁹¹ However, **official figures for housing losses likely underestimate the true impact of the disasters** due to low household participation in federal disaster programs, families remaining in substandard dwellings, and the way in which

⁸⁶ Blueprint Nebraska, 2019. "Growing the Good Life." Retrieved at: https://blueprint-nebraska.org/wp-content/uploads/2019/08/BlueprintNE_Public.pdf

⁸⁷ United State Census Bureau, 2017. American Community Survey. Retrieved at: <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF>

⁸⁸ U.S. Department of Health and Human Services, Healthy People 2020, January 2020. "Quality of Housing." Retrieved at <https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health/interventions-resources/quality-of-housing>

⁸⁹ Office of the Surgeon General, 2009. "The Surgeon General's Call to Action to Promote Healthy Homes." Retrieved at: <https://www.ncbi.nlm.nih.gov/books/NBK44196/>

⁹⁰ Nebraska Emergency Management Agency, February 7, 2020. "FEMA-4420-DR-NE Weekly Unified Recovery Outcomes Dashboard."

⁹¹ Federal Emergency Management Agency, NFIP Residential Historic Claims, 1996-2016. Retrieved at: <https://www.fema.gov/media-library/assets/documents/130222>

federal disaster losses are calculated. This indicates that there are likely significant unmet housing needs, particularly outside of HUD-designated “most impacted” areas, which may persist even after federal aid is distributed.

Further, many impacted communities are repeatedly vulnerable to risks, such as flooding, requiring strategic employment of mitigation tactics during recovery to help those areas become more resilient for the future.

This section aims to understand direct damage to the state’s housing stock, any resulting recovery gaps, and complicating factors that may make it harder for disaster survivors to find safe, suitable living conditions after a disaster. To perform this analysis, the section relies heavily on housing data from FEMA and SBA because more detailed housing data at the local level was not readily available for the entire state.

Information on housing is grouped into two categories within this report: “Invisible” Housing Needs and Vulnerabilities (**Section 2.4.2**) and Housing Damage and Assistance (**Section 2.4.3**). A summary of potential recovery gaps follows.

2.4.1 SUMMARY OF POTENTIAL RECOVERY GAPS

Housing conditions and needs may change as conditions evolve, new data is gathered, and damage estimates are validated and updated. Based on the analyses summarized in this document, the state may experience recovery gaps associated with the following:

- Housing damage resulted in approximately \$40 million in flood insurance (NFIP) payouts. Based on federal data sources, uninsured housing damage is roughly \$173 million (see **Table 3**). Accounting for IA grants and SBA loans, there is a known potential housing recovery gap of \$80 million for the state.
- Official figures for housing loss may underestimate the true impact (and need) of the disasters due to lack of participation in federal disaster programs, households remaining in damaged dwellings, and the way in which federal agencies assess disaster losses.
- Sarpy, Dodge, and Douglas counties have been classified as counties with the most extensive housing damage according to HUD’s designation of most impacted and distressed communities.
- There are likely to be significant unmet housing needs—particularly in the areas outside of the HUD-designated most impacted and distressed communities. The following counties fall outside of the federal designation but are likely to require additional housing assistance: Boyd, Boone, Buffalo, Dodge, Douglas, Cass, Custer, Dawson, Howard, Nance, Pierce, Sarpy, and Thurston. Of those counties, Dawson and Dodge also have higher rates of social vulnerability.
- Temporary housing solutions are needed for those currently inhabiting substandard living conditions. Temporary solutions should focus on options beyond temporary relocation, to address the needs of families that prefer to stay in their homes.
- Pre-disaster shortages of affordable housing are likely to be compounded by the 2019 disasters because there are fewer housing options available, and available housing options may not be affordable to those in need.
- Long-term housing solutions may involve incentivizing households to relocate to areas with lower disaster risk, in addition to building and repairing using more resilient practices.

2.4.1.1 Potential Recovery Funding Gaps

Table 3 is intended to summarize potential recovery housing gaps related to federal assistance programs.

Table 3 – Estimated Potential Housing Recovery Funding Gap

| | Estimated Cost to Repair | Anticipated Federal Funding | Potential Recovery Funding Gap |
|----------------|--------------------------|-----------------------------|--------------------------------|
| Housing | \$173,397,292 | \$92,869,169 | \$80,528,124 |

The total estimated cost of housing repairs is based on the sum of all FEMA Verified Losses, SBA Verified Losses for home loans, and NFIP Verified Losses. Anticipated federal funding is the sum of FEMA housing assistance awarded, approved SBA home loans, and insurance proceeds (including NFIP housing claims), less any cancelled loans.

These estimates do not account for damage to private property that was not reported to FEMA or SBA. Therefore, the estimates are likely only a partial representation of need.

2.4.2 “INVISIBLE” HOUSING NEEDS AND VULNERABILITIES

Interviews conducted with members of the Governor’s Task Force for Disaster Recovery indicated a general concern that **federal housing data may not capture the full extent of housing needs across the state**. This section examines potential “invisible” housing needs and community vulnerabilities to better understand the post-disaster housing conditions in Nebraska. Specifically, this report examines two categories of “invisible” housing needs: (1) needs that are un- or under-reported, and (2) the needs of vulnerable households that may require recovery assistance over time.

2.4.2.1 Unreported or Partially Reported Housing Needs

Housing needs as a result of the disasters may not be fully captured by post-disaster assessments. However, over time, needs may emerge that recovery programs can address. This section provides more detail on the potential for unreported and partially reported housing needs, including the following considerations:

- Federal data collection methodologies vary, where different pictures of need emerge.
- Some in need who have not sought federal assistance may still require support.
- Families may have failed to report needs while living in a temporary housing arrangement.

2.4.2.1.1 Limitations of Federal Data Collection Processes

After a major disaster, there are typically two federal programs immediately available to impacted households: FEMA’s IA Program and SBA Home Disaster Loans.⁹² Each agency conducts field assessments of damage to determine eligibility for assistance, which can provide useful insight

⁹² Through the IA Program, FEMA may offer eligible homeowners Individuals and Households Program (IHP) Assistance. IHP comprises two provisions: Housing Assistance and Other Needs Assistance. Housing Assistance may be provided in the form of financial assistance (funds provided to an applicant) or direct assistance (housing provided to the applicant by FEMA). Similarly, the SBA may offer eligible homeowners assistance via Home Disaster Loans: loans to homeowners or renters to repair or replace disaster damaged real estate or personal property owned by the victim. Renters are eligible for their personal property losses, including automobiles.

to the overall status of housing. **However, the distinct processes of each agency yield partial estimates of need; preventing community leaders from holistically understanding housing needs.**

When FEMA performs an assessment of structural damage to a home under the Home Repair Program, the assessment is limited to a few rooms of the home, regardless of size. FEMA only counts interior damage to “rooms required for the occupancy of the dwelling,” meaning occupied bedrooms, a bathroom, and a sole kitchen or living room.⁹³ For homes that have unoccupied bedrooms, or multiple rooms that fulfill the same purpose, **FEMA’s estimate of damage may only reflect a portion of the funding required to restore the entire home.** Additionally, **a single household cannot receive more than \$32,900 under the Individual and Households Program**—which includes repairs and replacement funding—regardless of the estimated cost of repairs. Rental assistance and other needs assistance funding is not included in the cap.

Conversely, SBA assessments offer a more holistic representation of housing needs because (1) repair estimates reflect the total anticipated cost to repair the home (regardless of size) and (2) loan amounts for home and property repair/replacement have higher ceilings (home repairs/replacement of real estate is capped at \$200,000; property repair/replacement is capped at \$40,000).⁹⁴

These programmatic discrepancies are reinforced by each agency’s estimation of verified property losses—**looking at Dodge and Douglas counties alone, SBA assessed losses that were 14 times greater than what FEMA assessed.**

While SBA damage assessment findings may be comprehensive, the findings typically represent a smaller sample size, making it difficult to draw conclusions about housing need across the entire impacted area. This is true for Nebraska, as fewer households applied for assistance from SBA than from FEMA.

2.4.2.1.2 Public Attitudes Affecting Participation

When comparing the number of applications received for IA to the number of homes in an eligible county, it appears that “participation” in the programs was extremely low. Even in the state’s most impacted counties, no more than one percent of total renters or owners applied for assistance. Given anecdotal evidence, this number seems low; however, there is not currently an estimate for the total number of renters or owners impacted by the disasters. Stakeholder interviews with selected members of the Governor’s Task Force for Disaster Recovery reinforced this perception, indicating that **political or cultural attitudes across the state may have contributed to low participation in federal programs.** This was possibly attributed to:

- Lack of trust in government (particularly at the state and federal levels);
- Widespread cultural desire for independence or self-sufficiency;
- Concern or fear over citizenship status; and/or
- Lack of understanding about how reporting damage will help repair their homes.

⁹³ FEMA Individual Assistance Program and Policy Guide, Chapter 3, Section IV. <https://www.fema.gov/media-library-data/1551713430046-1abf12182d2d5e622d16accb37c4d163/IAPPG.pdf>

⁹⁴ U.S. Small Business Administration Disaster Loans - Fact Sheet. <https://www.sba.gov/sites/default/files/Concord%20Disaster%20Loan%20Fact%20Sheets.pdf>

Failure to request assistance does not necessarily mean that disaster survivors do not require assistance. **There may be additional, unreported housing needs that are not currently accounted for** due to an unwillingness to seek support from the government.

2.4.2.1.3 Temporary Housing Arrangements

Currently, there is no statewide estimate of the number of individuals and families living in temporary arrangements. Individuals in temporary arrangements may not immediately recognize they need housing assistance but may experience an acute need for housing support if their temporary arrangement is unsustainable.

Through stakeholder interviews and meetings, the Governor's Task Force for Disaster Recovery reported that **individuals in temporary housing arrangements may seek delayed housing support.** In the first iteration of the Periodic Needs Assessment, it was reported that as many as 200 families are living in temporary accommodations.

2.4.2.2 Delayed Housing Needs of Vulnerable Households

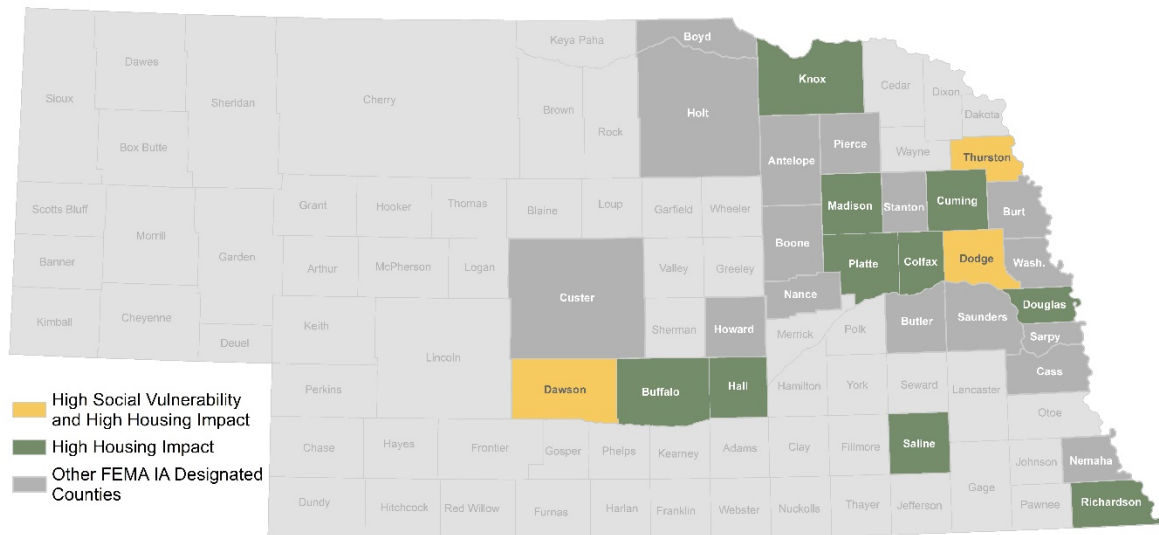
Some households may not have qualified for assistance immediately after the disasters, yet may still experience a delayed need for housing assistance due to compounding factors that impact the stability of their housing arrangements over time. These households may be vulnerable because:

- General social vulnerability compounded by more concentrated impact to housing stock may further decrease individual resilience.
- Families face increased safety risks due to substandard permanent housing arrangements.
- Pre-existing affordable and workforce housing shortages are exacerbated by the disasters.
- Renters are beholden to landlords to make necessary, safe, and timely repairs.
- Impacted families are more likely to experience homelessness or face an imminent risk of homelessness after disasters.

2.4.2.2.1 Location of Vulnerable Households

As discussed in **Section 2.2**, the SVI is a useful tool to quickly understand social vulnerability geospatially. **Figure 11** shows, for IA eligible counties, the alignment between the areas of high housing impact from the 2019 disasters (see **Figure 13** for more details), and the areas of high social vulnerability (**Figure 3**). Layered together, there are three counties that are both highly vulnerable and sustained extensive housing damage, which may manifest as **higher concentrations of delayed housing needs in Dawson, Dodge, and Thurston counties.**

Figure 11 – Map of High Relative Housing Impacts and Social Vulnerability



2.4.2.2.2 Substandard Permanent Housing

During the Governor’s Task Force for Disaster Recovery meetings in November and December 2019, state representatives reported that some **residents are choosing to remain in unsafe and unreported substandard living conditions**. Decisions like these may be attributed to households’:

- Desire to protect property;
- Desire to repair and/or rebuild quickly;
- Fear of extended stays in unfamiliar or uncomfortable temporary arrangements;
- Inability to move temporarily due to costs (e.g., higher rent, longer commute, shorter working hours);
- Uncertainty of alternative housing options;
- Failure to pursue or secure temporary housing due to perceived difficulty of the task;
- Personal conceptions or attitudes about accepting assistance from governmental entities.

Of individuals applying for FEMA IA, 55 percent reported living in their damaged dwelling, with 42 percent of these individuals receiving assistance.

When residents remain in unsafe homes, they are exposed to a variety of hazards. Members of the Governor’s Task Force for Disaster Recovery indicated a concern that housing instability could be exacerbated over time—especially for those living in homes that are not adequately winterized or waterproofed due to ongoing repairs or unrepaired damage.

Members of the Nebraska Voluntary Organizations Active in Disaster (VOAD) noted that temporary home repairs may not insulate a home against winter conditions (e.g., boarded-up windows). Exposure to cold temperatures via homes that are not heated or insulated properly can

lead to acute conditions such as hypothermia. Failure to adequately seal or waterproof homes could contribute to additional damage due to rainfall, mold growth, or foundational problems.⁹⁵

The Governor's Task Force for Disaster Recovery also reported instances of families living in mobile homes or trailer homes that are mold-infested. Freezing temperatures do not kill mold. While mold growth will not necessarily be exacerbated in the winter months, warmer springtime temperatures may promote faster growth, triggering additional needs for housing assistance.⁹⁶ Prolonged exposure to mold can generate health concerns that may motivate residents to seek alternative shelter after health conditions manifest. Additional information about health concerns related to mold are discussed further in **Section 2.6.3.1.2**. Volunteer groups, such as the Great Plains United Methodist Conference, have provided mold remediation services to communities with the most pressing needs for assistance.

2.4.2.2.3 Access to Affordable and Workforce Housing

The destruction of existing housing stock and displacement of disaster survivors further compounds housing affordability issues in the state. Unwanted outcomes can include:

- Outmigration in areas that were already labor resource-stressed;
- Increased housing costs in areas where there were pre-existing housing shortages;
- Difficulty securing affordable, suitable housing near employers; and
- Lengthier commutes due to damaged infrastructure.

In fact, Periodic Needs Assessment survey respondents reported that:

- Some families have been displaced to more expensive housing or are living in substandard conditions—including the workforce of major employers;
- Communities are facing housing affordability challenges;
- Some workers for major employers have been forced to use alternate routes that add hours to their commute.

The cost of housing, both owning and renting, has increased at a faster rate than incomes throughout the state.⁹⁷ Further, employers were unable to expand their businesses because of housing affordability.⁹⁸ Sustained and compounded lack of affordable and workforce housing may impact the ability of other sectors to become more resilient.

2.4.2.2.4 Vulnerability of Renters versus Owners

Some of the highest rates of renters prior to the disasters were in the most impacted areas from the 2019 disasters. Overall, higher rates of households that are renters, compared to owners, indicate a community vulnerability that requires consideration during recovery. Renters, especially those that are low-income, are often displaced from their communities after a disaster due to rising

⁹⁵ U.S. Department of Health and Human Services, January 2020. "Quality of Housing." Retrieved at <https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health/interventions-resources/quality-of-housing>

⁹⁶ U.S. Department of Energy, N.D. "Moisture Control." Retrieved at <https://www.energy.gov/energysaver/weatherize/moisture-control>

⁹⁷ Blueprint Nebraska, July 2019. "Growing the Good Life." Retrieved at: https://blueprint-nebraska.org/wp-content/uploads/2019/08/BlueprintNE_Public.pdf.

⁹⁸ Blueprint Nebraska, July 2019. "Growing the Good Life." Retrieved at: https://blueprint-nebraska.org/wp-content/uploads/2019/08/BlueprintNE_Public.pdf.

rent costs.⁹⁹ Landlords may also defer maintenance or repairs, contributing to emotional, physical, or financial stress of their tenants.

For Sarpy, Douglas, and Dodge counties, nearly one-third of those that applied for housing assistance were renters. FEMA IA data suggests that renters in these areas may not have applied for assistance at a rate consistent with the statewide rate or with the proportion of renters in those specific counties. In these areas, for impacted rental units, **renters may face significant housing challenges. If the landlord decides not to rebuild, or once rebuilt, increases rent to a level not affordable to previous tenants, it may lead to long-term displacement of renters.** These actions can be particularly challenging in smaller communities where there is a limited supply of rental units.

2.4.2.2.5 Homelessness and Imminent Risk of Homelessness

According to HUD, at any given time, approximately 2,421 people are experiencing homelessness in the State of Nebraska based on their Point-in-Time count.¹⁰⁰ Most individuals without homes are sheltered, with only about six percent of individuals being unsheltered at any given time. These statistics indicate that 0.13 percent of the state's population is experiencing homelessness.^{101, 102} However, it should be noted that many in the homelessness advocacy community believe these counts to be inaccurate, as they count only *visible* homeless individuals on just one night out of the year. This discrepancy is thought to be anywhere between two to 10 percent, with some counts being significantly higher depending on the definition of homelessness used.¹⁰³

Post-disaster, increased homelessness is common, particularly for residents already at or below the poverty line. As of 2018, approximately 11 percent of Nebraskans were living in poverty.¹⁰⁴ Disasters can also lead to increased numbers of homeowners experiencing homelessness, where families are unable to occupy their homes due to unsafe living conditions.

Disaster-Related Homelessness in Sarpy County

In Sarpy County, Nebraska, 61 families reported becoming homeless due to the disasters in a summer 2019 survey conducted by Julie McFarland Consulting. Households living paycheck-to-paycheck or below the poverty line are the most at risk of becoming homeless due to the disasters.

Individuals and families experiencing homelessness may require additional resources or support to stay safe and healthy in the wake of a disaster. These individuals are more vulnerable during a disaster event as they may not have stable access to shelter or resources. Post-disaster damage to housing can sometimes strain the community resources ordinarily devoted to supporting homeless and at-risk populations. These populations are critical to consider

⁹⁹ National Low Income Housing Coalition, 2009. "Long-Term Recovery of Rental Housing: A Case Study of Highly Impacted Communities in New Jersey after Superstorm Sandy." Retrieved at: <https://nlihc.org/sites/default/files/Sandy-Rental-Recovery-Report.pdf>

¹⁰⁰ United States Department of Housing and Urban Development, 2018. "PIT and HIC Data Since 2007." Retrieved at: <https://www.hudexchange.info/resource/3031/pit-and-hic-data-since-2007/>

¹⁰¹ Based on American Census Bureau 2018 statewide population estimate of 1,929,268. Retrieved at: <https://www.census.gov/quickfacts/NE>

¹⁰² United States Department of Housing and Urban Development, 2018. "PIT and HIC Data Since 2007." Retrieved at: <https://www.hudexchange.info/resource/3031/pit-and-hic-data-since-2007/>

¹⁰³ Ideastream, 2020. "HUD, Local Homeless Advocacy Groups Differ On Homelessness County." Retrieved at: <https://www.ideastream.org/news/hud-local-homeless-advocacy-groups-differ-on-homelessness-count>

¹⁰⁴ United States Census Bureau, 2018. "2018 Poverty Rates in the United States." Retrieved at: <https://www.census.gov/library/visualizations/interactive/2018-poverty-rate.html>

post-disaster as individuals experiencing homelessness are likely to have fewer physical and financial assets and limited access to resources and are therefore less resilient than individuals and families with stable housing.

2.4.3 HOUSING DAMAGE AND ASSISTANCE

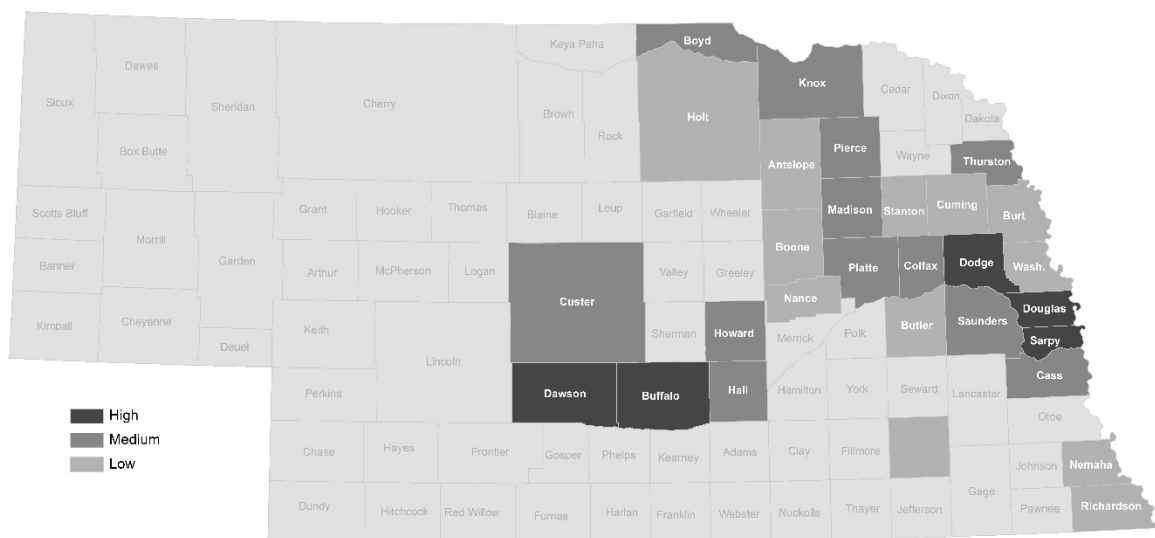
Figures 12 through 15 aim to provide a perspective on housing impacts to the state by county.

- **Figure 12** shows the total number of FEMA IA and SBA housing applications from highest to lowest in numbers in three categories (high, medium, and low).
- **Figure 13** shows the relative number of housing assistance applications based on the number of housing units in each county. Relative data is broken into four categories (extreme, high, medium, and low).
- **Figure 14** shows the total value of verified losses assessed by FEMA and SBA in each county from highest to lowest in three categories (high, medium, and low).
- **Figure 15** shows the relative value of housing damage in each county based on the pre-disaster property value assessments. Relative data is broken into four categories (extreme, high, medium, and low).

For additional information on the categorization approach, refer to **Appendix 3**.

Figure 12 shows that the counties with the **most applications for housing assistance were in Buffalo, Dawson, Dodge, Douglas, and Sarpy counties. Over half of the total housing requests came from Dodge (1,332), Douglas (1,571), and Sarpy (1,349) Counties**

Figure 12 – Map of Concentration of Housing Assistance Requests by County



As described earlier, people may be denied IA and SBA loans for a variety of reasons. However, based on the Invisible Housing needs described in **Section 2.4.2**, the number of applications for housing assistance could be an indicator of severity of impact and potential need for additional housing support.

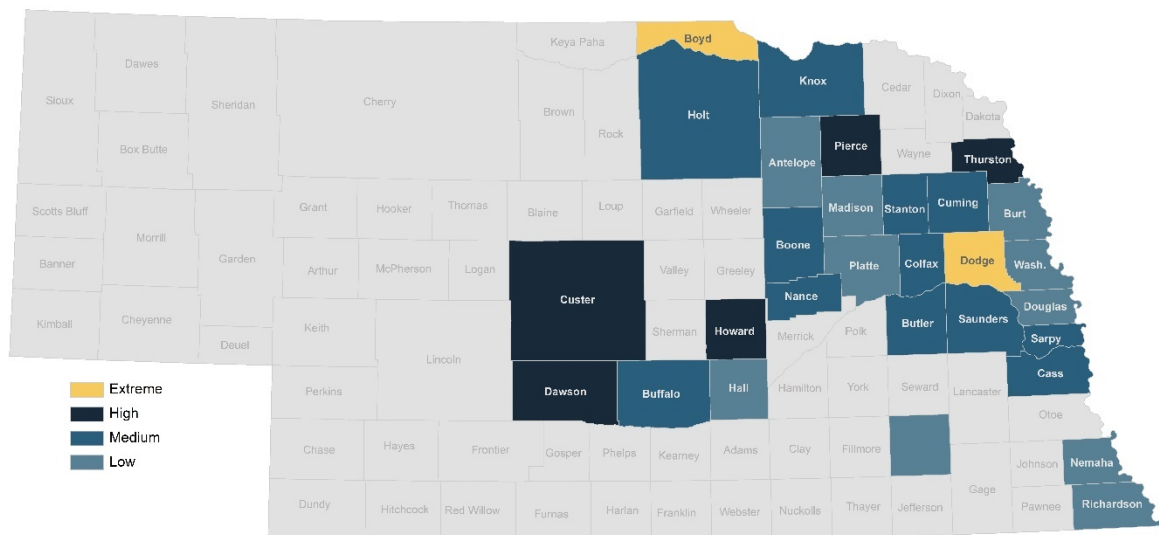
Table 4 provides a snapshot of counties identified in **Figure 12** as high and provides approval rates of IA and SBA.

Table 4 – Counties with Greatest Number of Housing Assistance Requests

| County | Number of Applications | Percentage of Approved Applications |
|---------|------------------------|-------------------------------------|
| Buffalo | 407 | 38% |
| Dawson | 367 | 39% |
| Dodge | 1,337 | 57% |
| Douglas | 1,096 | 44% |
| Sarpy | 1,015 | 62% |

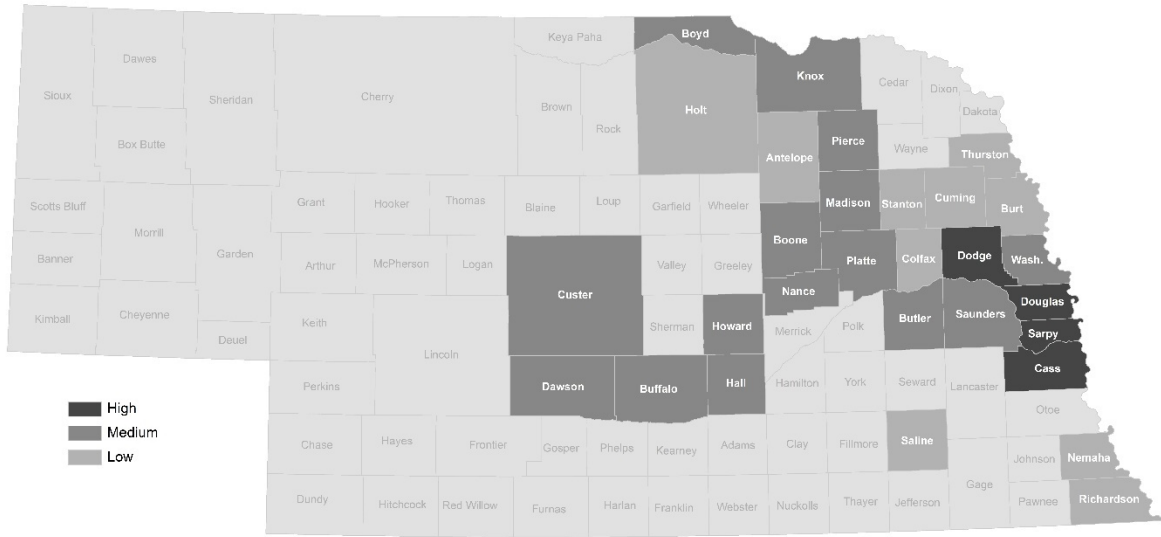
However, when accounting for the relative impact of the request for federal housing assistance with the total number of housing units in each county, **Figure 13** shows that Boyd and Dodge counties had the highest percentage of housing units apply for assistance (Extreme), while Custer, Dawson, Howard, Pierce, and Thurston had the second highest percentage (High).

Figure 13 – Map of Relative Concentration of Housing Assistance Requests by County



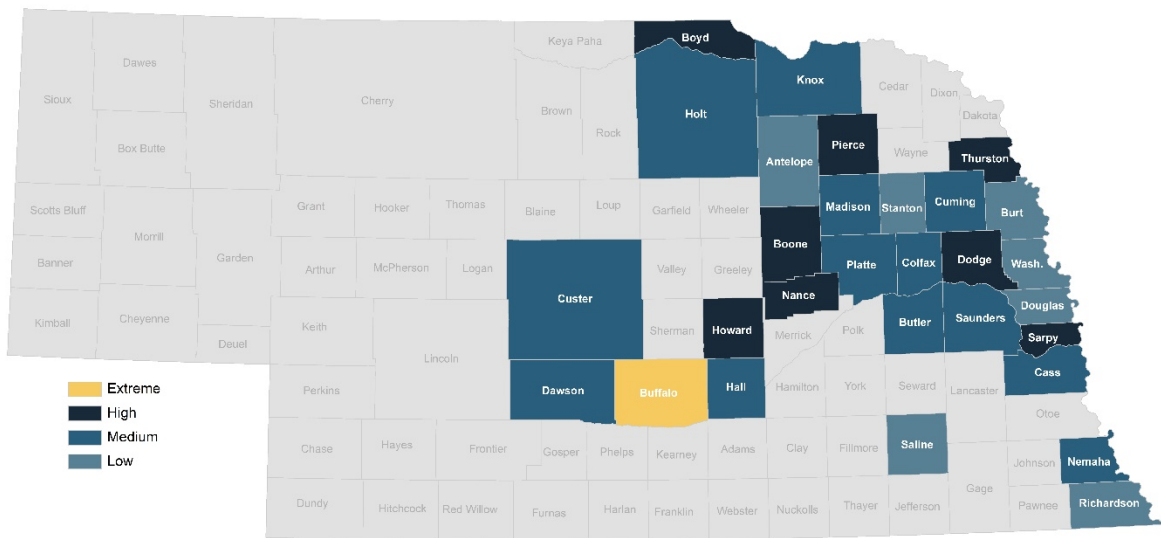
To represent another view of the amount of housing damage (and to capture another potential representation of community need), **Figure 14** shows the estimated value of housing damage by county. **The counties that sustained the costliest housing damage are Dodge, Douglas, Sarpy, and Cass, with approximately one-third of the damage in Sarpy County alone.**

Figure 14 – Map of Concentration of (Estimated) Value of Housing Damage by County



Because urban centers typically have a greater concentration of properties and higher property values, **Figure 15** is intended to represent the relative value of housing damage based on assessed property values for each county.¹⁰⁵ This analysis shows that Buffalo County’s housing stock was, in terms of value of damage, disproportionately impacted (Extreme). Boone, Boyd, Dodge, Howard, Nance, Pierce, Thurston, and Sarpy counties (High) suffered the next highest values of housing damage compared with original housing value.

Figure 15 – Map of Relative Concentration of (Estimated) Housing Damage by County



¹⁰⁵ Fuller, C. January, 2016. “Rockin’ the Suburbs: Home Values and Rents in Urban, Suburban and Rural Areas. Zillow Market Report. Retrieved at <https://www.zillow.com/research/urban-suburban-rural-values-rents-11714/>

The combined analyses of Figures 13 through 16 suggest that **additional housing assistance may be required in the following counties: Boyd, Boone, Buffalo, Dodge, Douglas, Cass, Custer, Dawson, Howard, Nance, Pierce, Sarpy, and Thurston.**

2.4.3.1 Impacts to Housing Stock

Though not representative of all damaged housing, to provide a perspective on the type of housing that was impacted, the following identifies percentage of applications for FEMA IA by housing type and by renter/homeowner status.¹⁰⁶ As **Table 5** demonstrates, **a majority of the impacted households reside in houses/duplexes, followed by mobile homes, then apartments.**

Table 5 – Categories of Damaged Housing for Renters and Owners

| Housing Type | Renters | Owners |
|----------------|---------|--------|
| Apartment | 11% | – |
| House/Duplex | 61% | 78% |
| Mobile Home | 17% | 13% |
| Other | 10% | 7% |
| Travel Trailer | 1% | 1% |

2.4.3.2 Denials of Federal Assistance

In response to the 2019 disasters in Nebraska, FEMA designated 29 counties and one Indian reservation eligible for IA. Additionally, assistance was made available to Nebraskans in the disaster area through SBA disaster loans. Homeowners and renters can apply to both FEMA and SBA for assistance and can receive funding through both sources. **However, households that apply for disaster recovery assistance through FEMA and SBA are not guaranteed to be awarded funding despite being directly impacted by the presidentially declared disaster.**

In Nebraska, for the 2019 disasters, 20 percent of the total applications for FEMA IA assistance were submitted by renters. Of those that that applied, only 43 percent of renters were approved to receive FEMA IA assistance. Owner-occupied applications saw an approval rate of 50 percent.

Typical reasons for FEMA denials for assistance are as follows:

- Insufficient damage – FEMA Inspector has determined that the home is still safe, sanitary, and functional;
- Insurance coverage for the home has been determined as sufficient to cover the damage to the home;
- Temporary rental assistance may be denied if the applicant does not want to move while repairs are being completed;
- FEMA inspector is unable to make contact with homeowner;

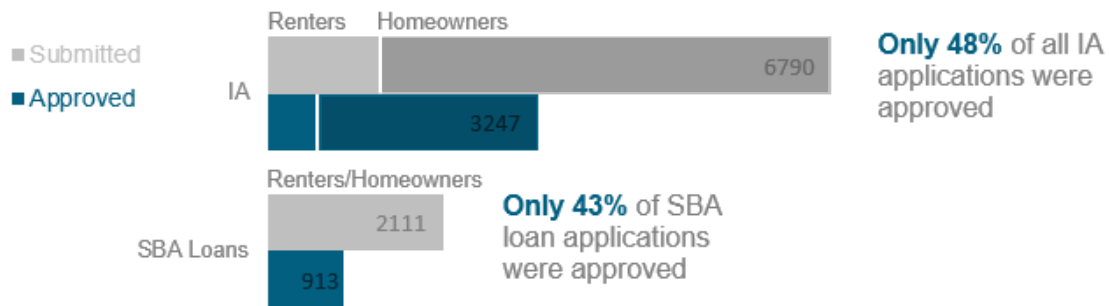
¹⁰⁶ Boat, College Dorm, Condo, Military and Townhouse categories were all removed as they comprised less than one percent of damage type captured by IA and SBA data, combined.

- Identity cannot be identified.¹⁰⁷

Similarly, SBA disaster loan applications may be denied for the following reasons:

- Applicant failed income test;
- Lack of repayment ability;
- Unsatisfactory credit report.

Figure 16 – Comparison of IA and SBA Loan Approval Rates for Renters and Owners



Even if an individual’s home is assessed and a federal entity verifies the damage is sufficient to qualify for assistance, that individual may be denied a loan for a reason completely unrelated to their need for assistance. For instance, if the individual does not want to move while repairs are being completed, FEMA can deny their request for support. Therefore, the number of denied requests for assistance may indicate a remaining recovery need (refer to **Table 4**).

2.4.3.3 Insurance Coverage

A lack of private insurance coverage can put individuals and families at risk during disaster recovery. In addition to not being able to afford to repair or rebuild houses without it, insurance also covers living expenses incurred during an evacuation. Specifically, homeowner’s insurance and renter’s insurance can support general losses, while NFIP covers flooding-specific damage.

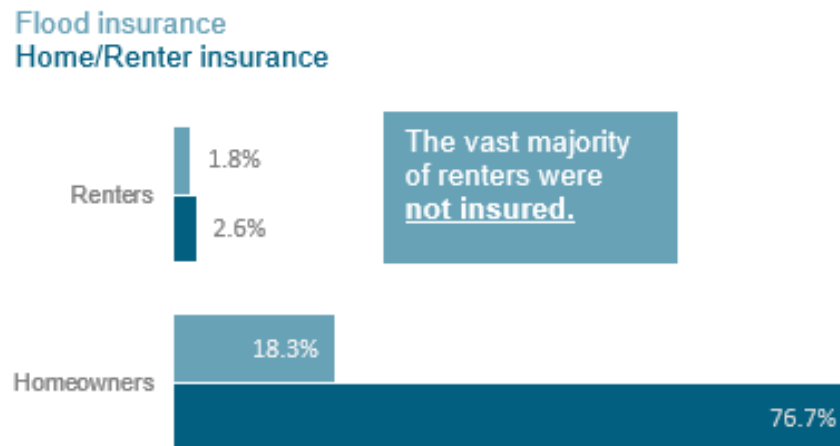
While homeowners and renters can maintain insurance policies to support their personal disaster recovery, underinsurance is caused by a number of factors that prohibit such practices of individual resilience. For homeowners with federally-backed mortgages residing in designated one-percent-annual-chance floodplains, NFIP policies are mandatory, but flood insurance is optional for anyone without these mortgages, including renters. According to FEMA's Midwest Flooding Fact Sheet, the average flood claim submitted between 2006 and 2010 was almost \$34,000, which is "more than many survivors can afford to pay out of pocket for damage due to flooding, and without flood insurance, many must cover the costs to repair or rebuild on their own."¹⁰⁸

¹⁰⁷ Federal Emergency Management Agency, November 2018. “Fact Sheet: Five Reasons FEMA Might Say You Are Ineligible for Housing Assistance and Five Ways You Might Be Able to Change That Decision.” Retrieved at <https://www.fema.gov/news-release/2018/11/06/fact-sheet-five-reasons-fema-might-say-you-are-ineligible-housing-assistance>

¹⁰⁸ Federal Emergency Management Agency, Spring Flooding: Risk and Protection - What Midwest Residents Should Know. 2020. Retrieved at: https://www.ready.gov/sites/default/files/Region_7_Spring_Flood_Fact_Sheet.pdf

Lack of knowledge about flood risk, misunderstanding of insurance availability or functionality, and the high cost of premiums are just a few of the factors that may contribute to underinsurance. According to NDNR, 409 Nebraska communities participate in the NFIP, with 10,582 policies in place protecting both residential and business structures and contents.¹⁰⁹ Notably, between 2011 and 2016, enrollment in the NFIP decreased statewide, mirroring a national trend, as insurance costs increase towards actuarial rates nationwide.¹¹⁰ According to FEMA IA data (**Figure 17**), less than five percent of renters had any kind of insurance, while less than 20 percent of homeowners had flood insurance.

Figure 17 – Comparison of Insured Rates of Renter and Owner IA Applicants



For households with flood insurance, NFIP data indicates that 1,026 claims were paid out after the 2019 disasters, totaling \$5,994,846 in advance payments and \$39,673,497 in total payments as of July 29, 2019, the date of the final Claims Estimate Report associated with these disasters.¹¹¹

¹⁰⁹ Nebraska Department of Natural resources, Floodplain Management. Flood Insurance. 2020. Retrieved at: <https://dnr.nebraska.gov/floodplain/flood-insurance>

¹¹⁰ Federal Emergency Management Agency, 2019. "NFIP Fiscal Year-End Statistics by State - Policy Growth Percentage Change." Retrieved at: <https://www.fema.gov/media-library/assets/documents/21061>

¹¹¹ Nebraska Emergency Management Agency, February 7, 2020. "FEMA-4420-DR-NE Weekly Unified Recovery Outcomes Dashboard."

Figure 18 shows the total number of NFIP home insurance claims made in 2019 per county, showing high concentrations of claims in the eastern and central portion of the state. **The greatest number of NFIP claims in 2019 came from Dodge (297), Douglas (317), and Sarpy (349) Counties.**

Figure 18 – Map of 2019 NFIP Housing Claims by County

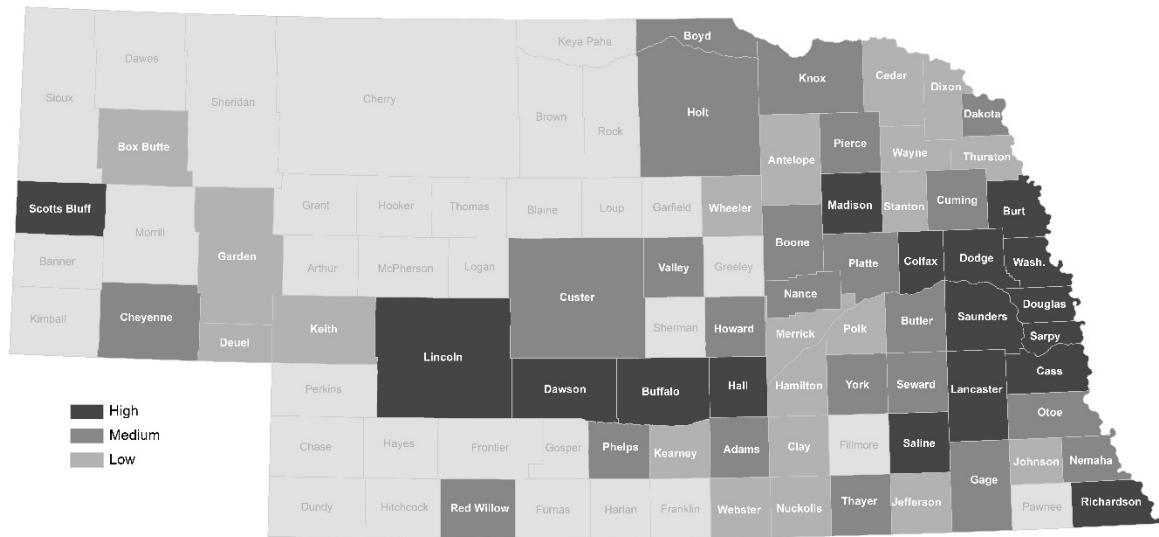


Figure 19 shows the counties with the highest relative number of claims are Dodge, Douglas, Cass, and Sarpy.

Figure 19 – Map of Relative Concentration of 2019 NFIP Housing Claims by County

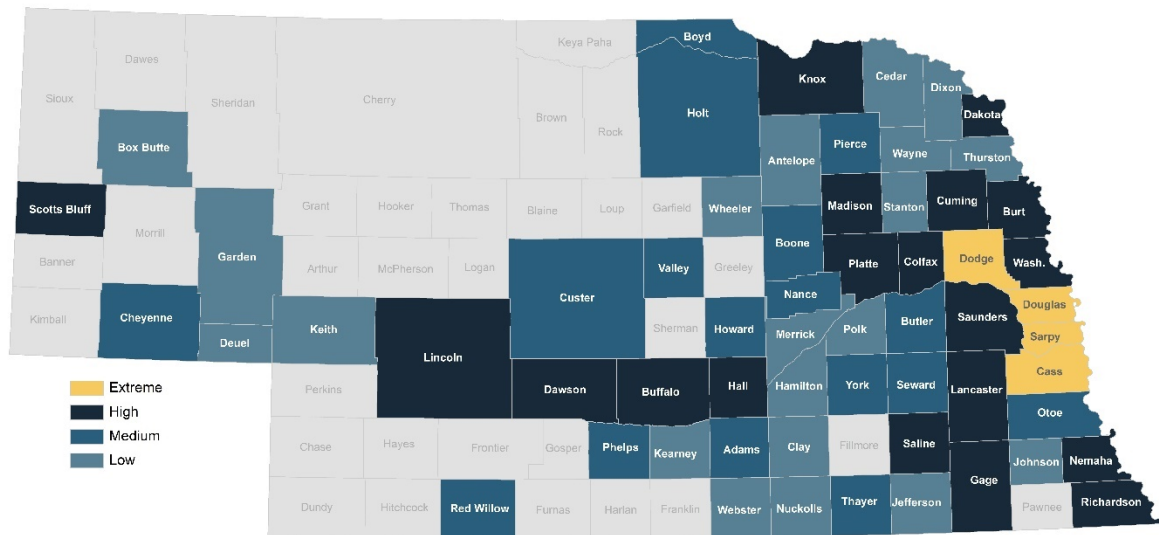


Figure 20 represents the total value of NFIP housing claims per county, reinforcing the impact to homes in the eastern portion of the state demonstrated by **Figure 18** and **Figure 19**.

Sarpy County had the highest total value of NFIP housing claims in 2019 at over \$10.6 million, nearly twice that of the county with the next highest total (Douglas).

Figure 20 – Map of Concentration of Value of 2019 NFIP Housing Claims by County

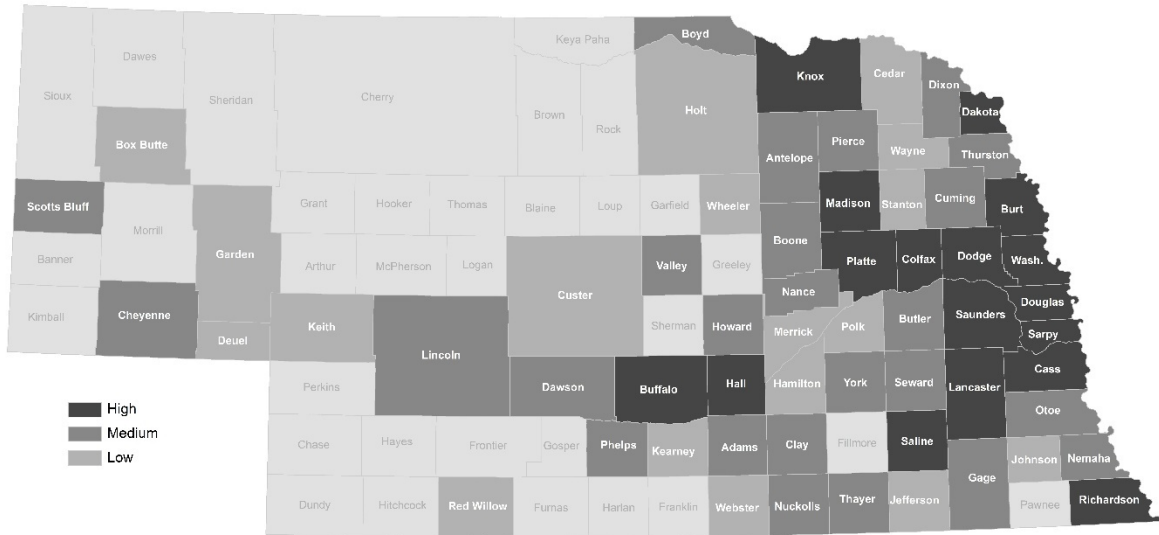
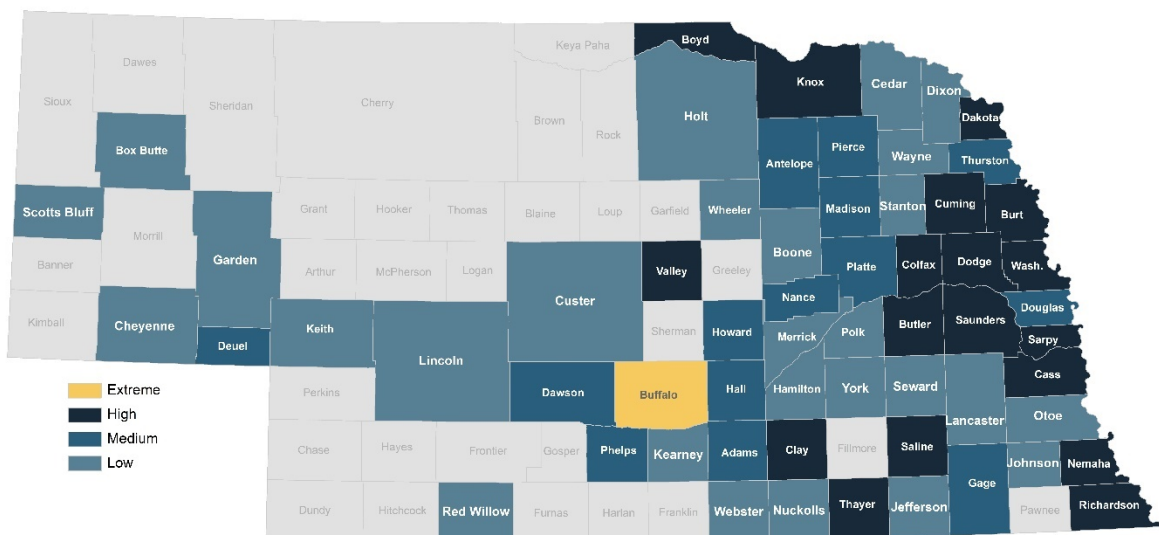
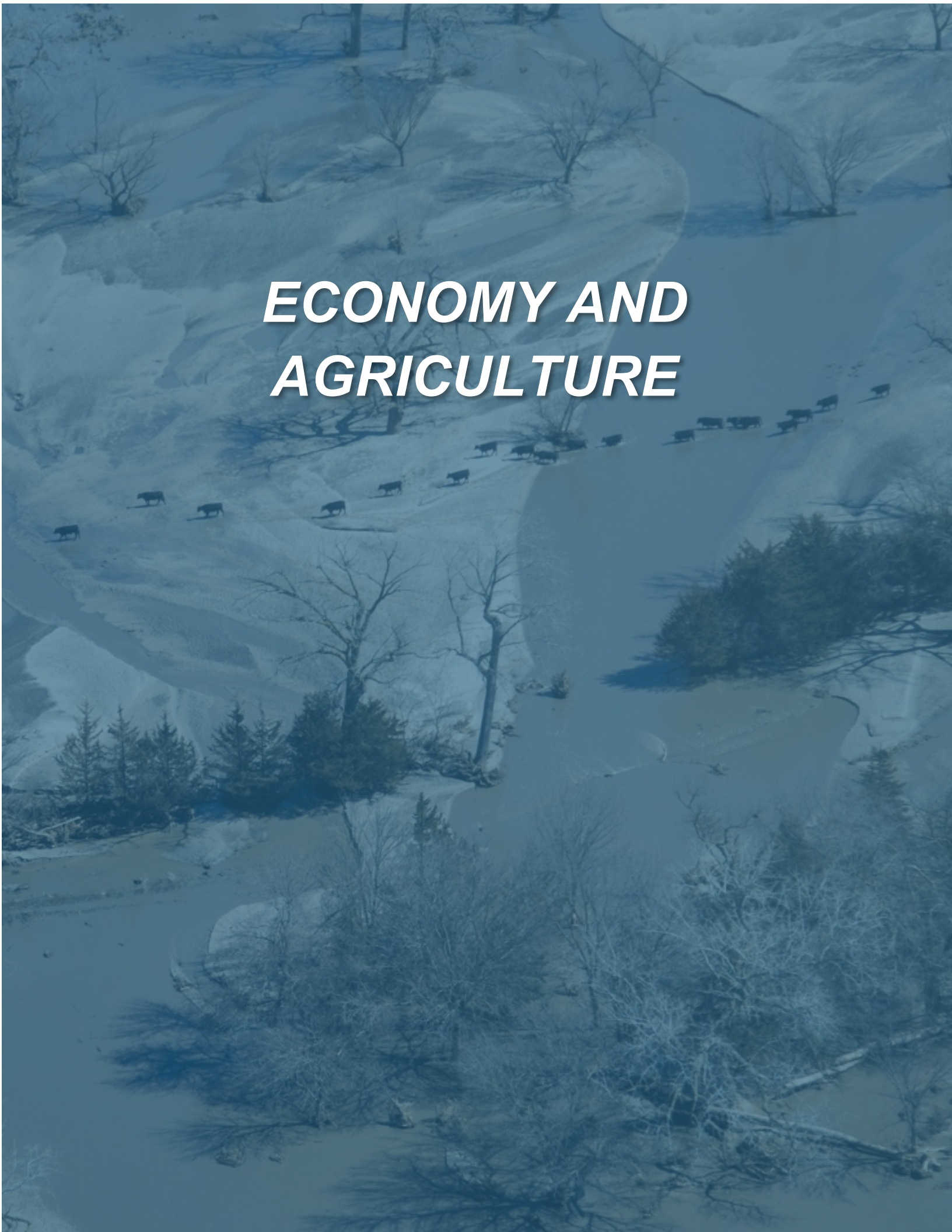


Figure 21 compares the total value of 2019 NFIP housing claims per county to the total value of housing stock in each county. This reveals that Buffalo County was the worst impacted (extreme) within the context of this program, followed by 18 additional counties (high) in the eastern portion of the state.

Figure 21 – Map of Relative Concentration of Value of NFIP Housing Claims by County



Due to low rates of participation in flood insurance across both renters and owners, many disaster survivors do not have access to the financial resources necessary to make a full recovery.

An aerial photograph of a mountainous landscape covered in snow. A herd of dark-colored cattle is grazing on a snow-covered slope in the middle ground. The foreground is filled with snow-covered evergreen and deciduous trees. The background shows more snow-covered peaks and ridges. The entire image has a blue color overlay.

ECONOMY AND AGRICULTURE

2.5 ECONOMY AND AGRICULTURE

The 2019 disasters heavily impacted Nebraska's economy, **causing upwards of \$302 million in direct damage.**¹¹² **The majority of the known and documented economic impacts occurred within the grain farming sector, where projected losses total at least \$280 million in direct damage.**¹¹³ To understand the impacts on the state's economy, pre-disaster economic conditions and issues must be considered; statewide and regional unemployment rates limit the pool of available skilled workers, hindering staffing efforts for rebuilding and recovery projects. Long-standing patterns of college-educated adults moving from smaller communities in Nebraska to larger cities, or out of state entirely, have compounded these workforce issues.¹¹⁴ In part due to these pre-disaster factors, the economic after-effects of the 2019 disasters are likely to have the most consequential long-term impacts on the state.

Crops and livestock were severely harmed by the weather conditions preceding the disasters and by the disasters themselves. Crop insurance payouts are currently projected to cover approximately \$196 million in losses, **leaving a gap of approximately \$84 million between insurance payouts and direct grain crop damage.**¹¹⁵ Comprehensive figures on impacts to livestock production and processing are not currently available, but preliminary estimates projected livestock losses at approximately \$400 million.¹¹⁶ As of February 6, 2020, **more than 2,100 claims submitted through USDA's Livestock Indemnity Program (LIP) had been paid out to livestock producers, providing over \$16 million in compensation for losses** associated with the 2019 disasters. While preliminary loss estimates may have been overestimated, this discrepancy between initial estimates and the total paid through the USDA's LIP program indicates a significant gap between cattle losses and indemnity payouts.¹¹⁷

SBA calculated total verified business losses at just over \$22 million, but this figure does not capture losses for those business owners who did not or could not pursue SBA funding, whether by choice or because they exceeded SBA's threshold for "small businesses." Importantly, it also fails to capture the impacts of lost profits of self-employed farmers, ranchers, feed-lot operators, milk-producers, and others.

To understand how the estimated damage within to the agricultural sector might affect the Nebraska economy, an analysis was conducted to model the expected impact of the 2019 disasters over the next year. Using IMPLAN, an economic modeling software, this section of the report quantifies and predicts economic losses related to the 2019 disasters.¹¹⁸ It should be noted, however, that estimates of stored grain bin and livestock losses are not available, and were therefore excluded from the analysis presented in this section. Instead, the analysis is based on the latest prevented and failed crop acreage data for the Nebraska's major crops from USDA.

¹¹² This estimate is based on the combined estimate of the value of prevented and failed major crops and SBA verified losses.

¹¹³ Ibid.

¹¹⁴ Nebraska Department of Economic Development, January 22, 2020. Economic Recovery Support Function Coordination Meeting.

¹¹⁵ U.S. Department of Agriculture, Risk Management Agency, Federal Crop Insurance Corporation – Commodity Year Statistics for 2019. January 28, 2020. Retrieved at <https://prodwebnlb.rma.usda.gov/apps/SummaryofBusiness/ReportGenerator/Results?CY=2019&CM=0041,0051,0016,0081,0011&ST=31&ORD=CY,CM,ST&CC=S>

¹¹⁶ Associated Press News, 2019. "Nebraska flood damage losses estimated to hit \$1.4 billion." Retrieved at: <https://apnews.com/ebaa8bbfcd06414196ccea457cd2bfd8f>

¹¹⁷ Nebraska Department of Economic Development, Economic Recovery Support Function Kickoff Meeting, December 3, 2019.

¹¹⁸ IMPLAN is a data modeling application that utilizes robust governmental datasets from the Bureau of Economic Analysis, the United States Department of Agriculture, the Bureau of Labor Statistics, and the Census Bureau. It provides one-year economic predictions and insights about regions impacted by disaster events. For more information, refer to Section 1.2.1.

The addition of grain bin and livestock losses would likely significantly increase the losses presented in this section.

Nebraska is unlike most states in the U.S. in that rural areas contribute to more than a quarter of the state's economic activity. Given this dependence on rural areas for economic strength, the agricultural sector is highlighted as a focus area for this section of the report.

Within the agricultural sector, beef production, animal slaughtering, and grain farming account for 41 percent of the state's economy.¹¹⁹ Additionally, one in four jobs are agriculture-related, further indicating the industry's strong presence in the state.¹²⁰ According to the Nebraska Department of Agriculture (NDA), **"every dollar in agricultural exports generates \$1.28 in additional economic activity"** because of the industry labor supporting agriculture, such as transportation, shipping, financing, warehousing, and production.¹²¹ This theme is reinforced by an examination of the state's top industries—animal slaughtering, livestock production, insurance, wholesale trade, grain farming, real estate, and rail and truck transportation—which are all directly tied to the agricultural industry's supply chain. Together, these industries add over \$53 billion to the state economy.¹²² The NDA notes that the abundance of jobs related to agriculture do not just exist in farming and ranching, but in other industries, including insurance, equipment sales and repair, technology, irrigation, and engineering.¹²³

Economic modeling of the impacts of the 2019 disasters revealed the following findings:

- Though the disasters directly caused an estimated loss of 604 jobs in the grain farming sector, the ripple effect of these losses may **cause a total loss of 1,994 jobs.**
- Though direct losses of major crops are estimated to total approximately \$280 million, indirect losses related to crop losses are expected to bring the total losses to nearly \$500 million.

These projections **demonstrate the importance of agricultural recovery to the broader recovery of the state's economy overall.**

The following sections describe the extent of economic and fiscal damage across the state, summarize the extent of assistance provided, and identify any potential recovery gaps that may help inform future economic development activity. The following areas of the economy were assessed in this report:

- Agriculture and Farming (**Section 2.5.2**);
- Employment and Income (**Section 2.5.3**);
- Outmigration (**Section 2.5.4**);
- Small Business Impacts (**Section 2.5.5**).

Additionally, this report presents results from an economic model assessing secondary impacts across sectors (**Section 2.5.2.1.1**). A summary of potential recovery gaps follows in **Section 2.5.1**.

¹¹⁹ IMPLAN, 2017 Data Year.

¹²⁰ Nebraska Department of Labor, 2019. "Nebraska Workforce Trends." Retrieved at <https://dol.nebraska.gov/webdocs/Resources/Trends/August%202019/Trends%20August%202019.pdf>

¹²¹ Nebraska Department of Agriculture, 2019. "Nebraska Agriculture Fact Card." Retrieved at <https://nda.nebraska.gov/facts.pdf>

¹²² IMPLAN, 2017 Data Year. Outputs and Labor Income were rounded to the nearest thousand.

¹²³ Nebraska Department of Agriculture, 2019. "Nebraska Agriculture." Retrieved at https://nda.nebraska.gov/publications/ne_ag_facts_brochure.pdf

2.5.1 SUMMARY OF POTENTIAL RECOVERY GAPS

Impacts to the economy, including agricultural and non-agricultural impacts, will continue to change as conditions evolve, new data is gathered, and damage estimates are validated and updated. Based on the analysis summarized in this document as of February 2020, the state may experience recovery gaps associated with the following:

- Multi-year impacts to self-employed farmers and ranchers who suffered losses that were either not reported or not fully addressed through USDA indemnity programs.
- Reduced economic output and decreased state and local tax revenue resulting from grain production and beef production losses.
- Evolving workforce availability and employee retention issues associated with low unemployment, workforce housing availability, and outmigration.
- Real property and business losses (including leasehold improvements, lost inventory, and damaged machinery, equipment, furniture, and fixtures) validated but not covered through SBA.
- Profit-losses amongst businesses that were not eligible or did not pursue SBA funding.
- Localized impacts to roads and bridges hindering commodity transportation routes.
- Potential recovery funding gaps of nearly \$101 million, with the potential for additional needs to materialize over time.
 - Madison and Lancaster counties had the highest total value of business NFIP claims in 2019, while Colfax, Douglas and Lancaster had the highest total number of business claims, indicating businesses in these counties could use additional support or assistance.

2.5.1.1 Potential Recovery Funding Gaps

Table 6 is intended to summarize potential recovery gaps associated with impacts to the state's economy and agriculture sectors related to federal assistance programs.

Table 6 – Estimated Potential Economic Recovery Funding Gap

| | Estimated Cost to Repair | Anticipated Federal Funding | Potential Recovery Funding Gap |
|-------------------------------------|--------------------------|-----------------------------|--------------------------------|
| <i>Crop Losses</i> | \$279,977,677 | \$195,928,011 | \$84,049,666 |
| <i>SBA Current Verified Losses</i> | \$22,417,026 | \$5,174,335 | \$17,242,691 |
| Total Economic Loss Estimate | \$302,394,703 | \$201,102,346 | \$101,292,357 |

The total estimated crop loss figures included above were generated by converting USDA's 2019 prevented and failed crop acreage data to financial losses, using USDA per-unit commodity prices. See **Section 2.5.2.1** for a detailed explanation of the methodology used to calculate these figures. Anticipated federal funding for crop losses shows the amount paid to Nebraskans through USDA RMA's Federal Crop Insurance Program in 2019.

SBA Current Verified Losses show the sum of all SBA verified losses for business and economic injury disaster loans (EIDL) as of January 28, 2020. Anticipated federal funding is the sum of approved SBA business and EIDL loans and insurance proceeds, less any cancelled loans.

2.5.2 AGRICULTURE AND FARMING

Agricultural land, including farms and ranches, spans 45.2 million acres and represents 91 percent of Nebraska's total land area.¹²⁴ With nearly 23 million acres of rangeland and pastureland, Nebraska boasts 47,400 farms and ranches averaging 954 acres per operation.¹²⁵

In contrast to a national decrease in bankruptcies within the agricultural industry from 2017 to 2018, Nebraska's agricultural industry saw increased bankruptcy claims in 2018 and 2019.¹²⁶ According to the Nebraska Farm Bureau, these bankruptcies are related to a "prolonged downturn in the farm economy."¹²⁷ **The 2019 disasters took an estimated economic toll of \$280 million related specifically to prevented and failed crops (Table 7).**¹²⁸ The flooding began just before spring planting season, which prevented planting, washed out topsoil, and damaged over 350 miles of levees, leaving cropland vulnerable.¹²⁹

Table 7 – Five Crops with Highest Failed and Prevented Losses in 2019

| | Corn | Oats | Sorghum | Soybeans | Wheat | Total |
|------------------|----------------------|------------------|--------------------|---------------------|--------------------|----------------------|
| Failed | \$6,904,673 | \$13,365 | \$83,469 | \$1,194,530 | \$3,620,721 | \$11,816,758 |
| Prevented | \$231,923,512 | \$118,197 | \$1,698,520 | \$34,055,037 | \$365,653 | \$268,160,919 |
| Total | \$238,828,185 | \$131,563 | \$1,781,988 | \$35,249,568 | \$3,986,373 | \$279,977,677 |

2.5.2.1 Crops

Known as "The Cornhusker State," Nebraska is the third largest producer of corn in the country.¹³⁰ As a top trade commodity, **corn is also largely used to feed livestock and poultry within Nebraska, making it even more integral to the state.**¹³¹ Other top crops include soybeans, grain sorghum, wheat, and hay. In 2017, Nebraska's \$6.4 billion in agricultural exports created \$8.19 billion in additional economic activity. The major export categories, all related to agriculture, included: \$3.32 billion in bulk grain products, \$2.23 billion in meat and animal products, and \$933.2 million in other value-added agriculture and food products.¹³²

Commodities related to the farming and agricultural industry, including oilseeds, beef cattle grains, and meat, generate over \$20 billion in domestic exports alone.¹³³ Despite agricultural commodities generating considerable revenue, an economic report noted that farm income has decreased since 2013, which has impacted "industries connected to agriculture as

¹²⁴ Nebraska Department of Labor, 2019. "Nebraska Workforce Trends." Retrieved at <https://dol.nebraska.gov/webdocs/Resources/Trends/August%202019/Trends%20August%202019.pdf>

¹²⁵ Nebraska Department of Agriculture, 2019. "Nebraska Agriculture Fact Card." Retrieved at <https://nda.nebraska.gov/facts.pdf>

¹²⁶ Nebraska Farm Bureau, February 2019. "Farm Bankruptcy is Out There." Retrieved at <https://www.fb.org/market-intel/farm-bankruptcies-in-2018-the-truth-is-out-there>

¹²⁷ Nebraska Farm Bureau, October 2019. "Farm Bankruptcies Rise Again." Retrieved at <https://www.fb.org/market-intel/farm-bankruptcies-rise-again>

¹²⁸ IMPLAN, 2018 Data Year.

¹²⁹ April 4, 2019. FEMA-4420-NE Advance Evaluation Team Report.

¹³⁰ Nebraska Department of Agriculture, 2019. "Nebraska Agriculture." Retrieved at https://nda.nebraska.gov/publications/ne_ag_facts_brochure.pdf

¹³¹ Ibid.

¹³² Nebraska Department of Agriculture, 2018. "2018 Trade Profile: Nebraska Ag Products." Retrieved at <https://nda.nebraska.gov/promotion/profiles/NebraskaAgProducts.jpg>

¹³³ IMPLAN, 2017 Data Year.

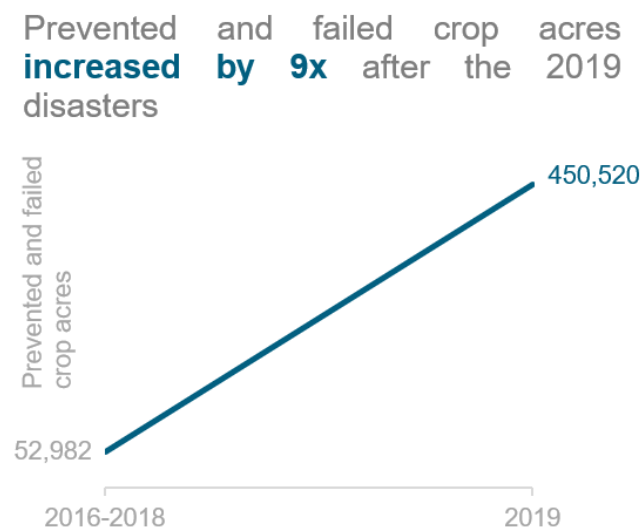
farmers have continued to look for opportunities to cut spending.”¹³⁴ The low price of agricultural commodities may “limit the potential for growth in the farm sector and industries connected to agriculture” in years to come.¹³⁵ Thus, the 2019 disasters must be viewed as exacerbating pre-existing sector-wide issues, directly affecting agriculture and economic prosperity across the state.

According to USDA’s Risk Management Agency (RMA), prevented planting is “a failure to plant an insured crop with the proper equipment by the final planting date designated in the insurance policy’s Special Provisions or during the late planting period, if applicable.”¹³⁶ Notably, prevented planting can be brought on by unforeseen weather events such as floods, hurricanes, and excess precipitation.¹³⁷ In the 2019 growing season, Nebraska crop producers reported “unprecedented levels of prevented plant land.”¹³⁸ **In fact, the 2019 growing year in Nebraska saw 421,409 acres where plantings were prevented—a greater total acres prevented than the past eight years combined.**¹³⁹

Delayed Reporting Results in Underestimates

While these figures demonstrate significant prevented planting for the 2019 growing year, the data excludes farmers who have not reported. Thus, actual prevented crop acreage may be larger than current reports.

Figure 22 – Prevented and Failed Crop Acreage Comparison



The largest number of prevented and failed acres reported were major row crops and small grains, including wheat, soybeans, sorghum, and corn. **Compared to 2016–2018, 2019 losses were significantly higher.** Corn yielded the highest losses in 2019 with nearly 355,000 prevented and failed acres compared to an average of only 32,008 acres over the three years prior. Soybeans also suffered from high losses in 2019 with almost 75,000 acres prevented and failed compared to an average of only 5,500 from 2016–2018. In addition to soybean losses, a 2019 USDA crop progress report showed that soybean emergence was at 85 percent, falling behind the 96 percent

¹³⁴ Kauffman, N. and McCoy, J., 2018. “Low Unemployment but Slow Growth in Nebraska’s Economy.” Retrieved at <https://www.kansascityfed.org/publications/research/ne/articles/2018/1q2018/low-unemployment-but-slow-growth-in-nebraskas-economy>

¹³⁵ Ibid.

¹³⁶ U.S. Department of Agriculture, Risk Management Agency, N.D. “Prevented Planting.” Retrieved at <https://www.rma.usda.gov/en/Topics/Prevented-Planting>

¹³⁷ U.S. Department of Agriculture, 2019. “Prevented or Delayed Planting.” Retrieved at <https://www.farmers.gov/manage/prevented-planting>

¹³⁸ Jansen, J., Stokes, J., October 24, 2019. “Historical Analysis of Prevent Plant Cropland.” Retrieved at <https://krvn.com/agricultural/historical-analysis-of-prevent-plant-cropland/>

¹³⁹ U.S. Department of Agriculture, 2020. Crop Acreage Data for the 2019 Growing Year. Retrieved at <https://www.fsa.usda.gov/news-room/efoia/electronic-reading-room/frequently-requested-information/crop-acreage-data/index>

five-year average.¹⁴⁰ **USDA noted that these unusually high levels of crop loss are due to extensive damage from the 2019 disaster events impacting the state.**¹⁴¹ Areas located near bodies of water typically suffered the highest numbers of prevented plant acres, including along the Niobrara and Missouri rivers.¹⁴²

Further, excess water in fields may have additional negative impacts to crops, pastures, and forage production. University of Nebraska–Lincoln (UNL) noted that forage plant response to a flood can vary depending on the severity and duration of flooding, but that “standing water can be more harmful than plants flooded by moving water.”¹⁴³ According to the University of Nebraska Institute of Agriculture and Natural Resources, fields that are soaked for long periods may lose mycorrhizae fungi and beneficial bacteria, important microbes for soil health and aggregate stability.¹⁴⁴

Additionally, wet conditions may contribute to the development of plant diseases among surviving crops.¹⁴⁵ According to UNL historical research, wet soil conditions specifically caused by flooding or over-irrigation can lead to “damaged crops, reduced yields, and groundwater contamination.”¹⁴⁶ After the flood waters receded, landowners found contaminated sand and sediment deposits that needed to be moved or redistributed, an expensive and labor-intensive process.¹⁴⁷ For grass pastures, these sediment deposits and the corresponding cost of removal may represent the most significant impacts.¹⁴⁸ Nebraskan farmers were also affected by indirect damage to infrastructure statewide. For example, a tunnel collapse that disrupted water delivery to the Gering-Fort Laramie Canal exacerbated the prevented and failed crop growth in Scotts Bluff County.¹⁴⁹

Many farmers also stored their harvested grain, corn, and soybeans, rather than immediately selling, either in the hopes of prices increasing and eventually making a larger profit on their sales, or for use in feeding livestock.¹⁵⁰ **Many of these stockpiles were damaged by flood water, which made them no longer fit for sale by standards set forth by the United States Food and Drug Administration (FDA).**¹⁵¹ FDA guidance states that there is “no practical method of reconditioning the edible portion of crop” and recommends that the affected crops are

¹⁴⁰ U.S. Department of Agriculture, 2019. Crop Progress Report. Retrieved at <https://downloads.usda.library.cornell.edu/usda-esmis/files/8336h188j/9602b05k/3r0755349/prog2619.pdf>

¹⁴¹ U.S. Department of Agriculture, 2019. “Prevented or Delayed Planting.” Retrieved at <https://www.farmers.gov/manage/prevented-planting>

¹⁴² University of Nebraska Lincoln, October 16, 2019. “Historical Analysis of Prevent Plant Cropland in Nebraska.” Retrieved at <https://cropwatch.unl.edu/2019/historic-prevent-plant>

¹⁴³ University of Nebraska Lincoln, March 2019. “Reclaiming Flood-damaged Pastures and Forage Production.” Retrieved at <https://beef.unl.edu/beefwatch/reclaiming-flood-damaged-pastures-and-forage-production>

¹⁴⁴ University of Nebraska Lincoln, July 12, 2019. “Crop Impacts and Options After Mid-Season Flooding.” Retrieved at <https://cropwatch.unl.edu/2019/crop-impacts-mid-season-flooding>

¹⁴⁵ Nebraska Extension, 2011. “Corn Disease Profiles.” Retrieved at <http://extensionpublications.unl.edu/assets/pdf/ec1909.pdf>

¹⁴⁶ University of Nebraska Lincoln, 2008. “Plant Growth and Yield as Affected by Wet Soil Conditions Due to Flooding or Over-Irrigation.” Retrieved from <https://cropwatch.unl.edu/documents/g1904.pdf>

¹⁴⁷ Department of Environmental Quality, May 2019. “NDEQ: Fact Sheet; Potential Options for Removing Sand Deposited by Floods.” Retrieved at <http://deq.ne.gov/Press.nsf/pages/PR051019>

¹⁴⁸ University of Nebraska Lincoln, March 2019. “Reclaiming Flood-damaged Pastures and Forage Production.” Retrieved at <https://beef.unl.edu/beefwatch/reclaiming-flood-damaged-pastures-and-forage-production>

¹⁴⁹ University of Nebraska Lincoln, August 15, 2019. “Potential Economic Impact of Tunnel Collapse is \$89 Million.” Retrieved at <https://cropwatch.unl.edu/2019/potential-economic-impact-tunnel-collapse-89-million>

¹⁵⁰ Huffstutter, P.J., Humeysra, P., Polansek, T., 2019. “U.S. Farmers Face Devastation Following Midwest Floods.” Retrieved at <https://www.reuters.com/article/us-usa-weather-agriculture/u-s-farmers-face-devastation-following-midwest-floods-idUSKCN1R12J0>

¹⁵¹ U.S. Food and Drug Administration, October 2011. “Guidance for Industry: Evaluating the Safety of Flood-affected Food Crops for Human Consumption.” Retrieved at <https://www.fda.gov/regulatory-information/search-fda-guidance-documents/guidance-industry-evaluating-safety-flood-affected-food-crops-human-consumption#asses>

destroyed.¹⁵² The loss of these stored grains both cut into farmers profits and reduced the supply of available feed necessary to sustain and nourish surviving livestock.

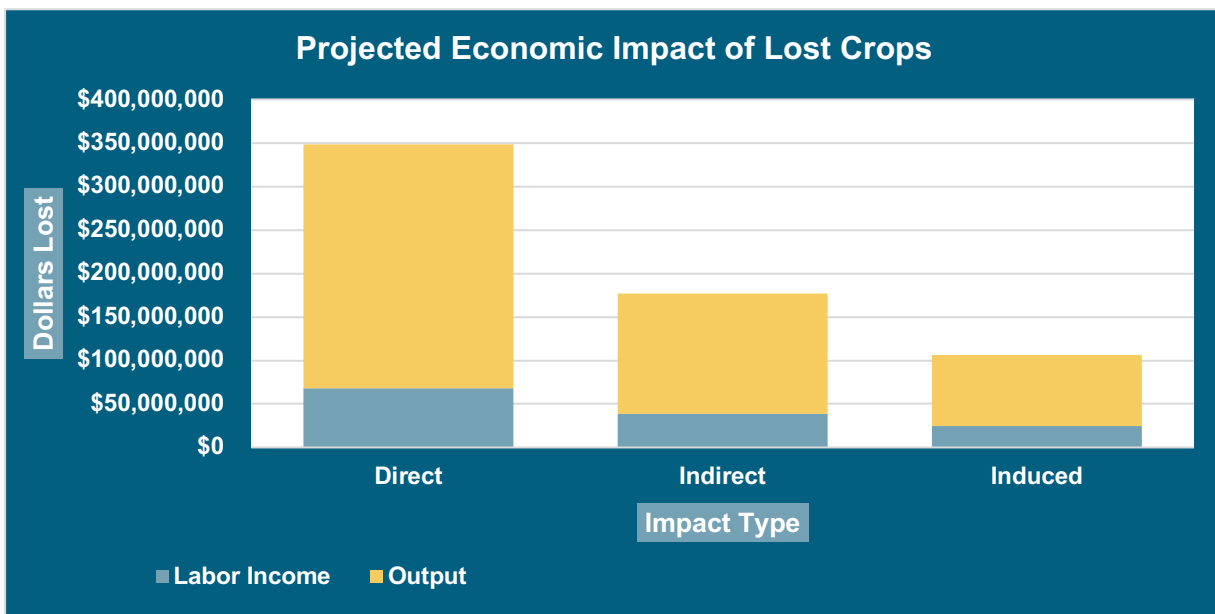
The Nebraska Department of Environment and Energy (NDEE) noted that their office has experienced an estimated 400–500 percent increase in calls related to flood-damaged grains, hay, and corn compared to the previous year.¹⁵³ Though comprehensive figures for stored crop losses are not yet available, this influx in calls further highlights the scope of negative impacts within the agricultural sector.

2.5.2.1.1 Projected 2020 Economic Impact

A Nebraska Extension regional economist noted that farmers’ lack of ability to sell crop commodities will not just impact farmers but will also cause a negative “ripple effect” throughout the economy.¹⁵⁴ This potential decrease in farmers’ income adds to the already low commodity price of crops. Thus, a hit to crop yields related to the 2019 disasters might create even larger financial problems for farmers across the state.

Figure 23 reveals the projected economic impact to the grain farm industry related to current estimated crop losses previously demonstrated in **Table 7**.

Figure 23 – Comparison of Projected Economic Output and Labor Income Losses¹⁵⁵



¹⁵² Ibid.

¹⁵³ Nebraska Department of Environment and Energy, Waste Disposal Division, December 13, 2019. Waste Disposal Phone Call.

¹⁵⁴ Ibid.

¹⁵⁵ Clouse, Candi. "What are Direct, Indirect, and Induced Impacts?" Retrieved from <https://implanhelp.zendesk.com/hc/en-us/articles/360038799153-What-are-Direct-Indirect-and-Induced-Impacts->

Labor Income (LI) Definitions

Direct LI is the sum of employee compensation (EC) and proprietor income (PI) paid to a single employee. This includes wages, salaries, benefits, and payroll taxes.

Indirect LI is the EC and PI associated with business-to-business transactions.

Induced LI is the EC and PI associated with household spending as a result of the economic activity generated by the industry.

Output Definitions

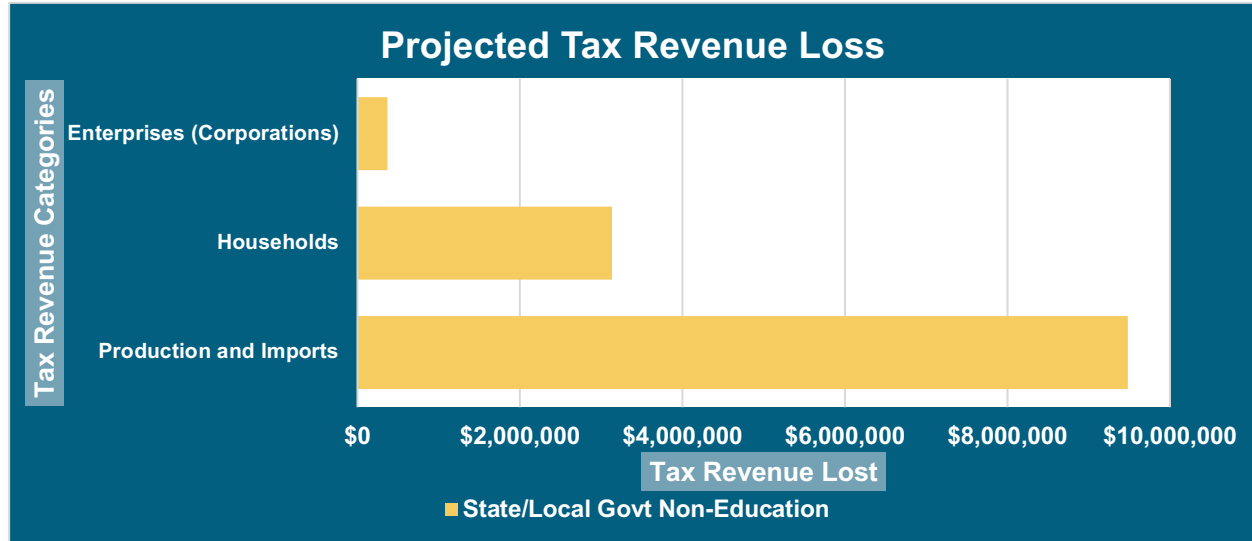
Direct output is the total value of production.

Indirect output is the total output generated related to direct business-to-business spending.

Induced output is the total value that all industries in Nebraska absorb as a result of household spending.

The results show an estimate of nearly \$500 million in output losses related to the grain farming industry. While a direct loss of only four percent may seem insignificant to the \$6.3 billion average total output from the grain farming industry as a whole, the businesses that rely upon regular indirect and induced transactions may see noticeable impacts.¹⁵⁶ Nebraska’s economy can expect to lose about \$81 million related to the regular household spending from direct and indirect employees.

Figure 24 – Comparison of Projected Tax Revenue Losses by Category



These results demonstrate the projected tax revenue category losses related to local and state governments, excluding taxes paid to state and local education. **The total estimated loss in output and value amount to nearly \$13 million in taxes at the state level.** Nearly 75 percent of all projected state and local tax loss is revenue from production and imports, further indicating the importance of grain crops as major commodities for Nebraska. Tax revenue losses at the

¹⁵⁶ The average total output was calculated using the average of the 2015, 2016, 2017, and 2018 data years.

household level imply that household incomes may decrease due to job loss related to the grain farming industry. Corporations are not expected to take a major tax hit related to the 2019 disasters. These projected tax losses demonstrate the influential relationship between the grain farm industry and Nebraska's economy overall. While these losses are unlikely to create a statewide fiscal crisis, they may have bigger impacts on local governments where individual communities were particularly impacted by the agricultural losses.

2.5.2.1.2 Crop Insurance Coverage

According to UNL, crop insurance exists as the “first line of defense against loss of income from low yields or prevented plant acres” followed by disaster assistance provided by the USDA FSA.¹⁵⁷ Per American Farm Bureau Federation statistics, a high percentage of crop acres in Nebraska were covered by crop insurance in 2018 (the most recent year with available data): 92 percent of corn, 84 percent of soybean, and 89 percent of wheat acres were covered by crop insurance (including revenue protection, yield protection, and area revenue protection plans).¹⁵⁸ In 2018, Nebraskan farmers paid \$215.5 million in crop insurance premiums in exchange for \$7.4 billion in liability protection. In the same year, crop insurers paid \$168 million to cover crop losses.¹⁵⁹ **According to USDA RMA data updated as of January 27, 2020, the total indemnity payouts—including prevented plantings and losses—in Nebraska related to corn, soybeans, sorghum, oats and wheat in 2019 total approximately \$196 million.**¹⁶⁰

While typically federal programs and insurance policies have not covered stored grain losses, USDA recently announced that payments are now available to “eligible producers who lost stored commodities due to natural disasters in 2018 or 2019”.¹⁶¹ **Payouts from these programs will likely partially offset losses, but are unlikely to address the full scope of stored grain losses.**

2.5.2.2 Livestock, Calving Season, and Beef Industry

According to the NDA, there are three times as many cows as there are people in the State of Nebraska.¹⁶² Nebraska is the leading state in commercial red meat production, cattle slaughter, and cattle on feed.¹⁶³ Cattle and calves contributed over \$10.6 billion in cash receipts in 2018.¹⁶⁴ Nebraska's cattle industry plays a key role in agricultural manufacturing through slaughterhouses and processing plants.¹⁶⁵ Further, Nebraska is home to the top three beef cattle-producing counties in the nation. Additionally, statewide milk production totaled over \$232 million.¹⁶⁶

¹⁵⁷ University of Nebraska Lincoln, October 16, 2019. “Historical Analysis of Prevent Plant Cropland in Nebraska”. Retrieved at <https://cropwatch.unl.edu/2019/historic-prevent-plant>.

¹⁵⁸ American Farm Bureau Federation, April 29, 2019. “Majority of Crop Acres Covered by Crop Insurance.” Retrieved at <https://www.fb.org/market-intel/majority-of-crop-acres-covered-by-crop-insurance>.

¹⁵⁹ Crop Insurance in America, 2018. Retrieved at <https://cropinsuranceinamerica.org/nebraska/>

¹⁶⁰ U.S. Department of Agriculture, Risk Management Agency, Federal Crop Insurance Corporation – Commodity Year Statistics for 2019. January 28, 2020. Retrieved at <https://prodwebnlb.rma.usda.gov/apps/SummaryofBusiness/ReportGenerator/Results?CY=2019&CM=0041.0051.0016.0081.0011&ST=31&ORD=CY,CM,ST&CC=S>

¹⁶¹ U.S. Department of Agriculture, Farm Services Agency, November 5, 2019. “FSA Announces Disaster Relief Payments for Loss on On-Farm Stored Commodities in Nebraska”. Retrieved at https://www.fsa.usda.gov/state-offices/Nebraska/news-releases/2019/stnr_ne_20191105_rel_34

¹⁶² Nebraska Department of Agriculture, “Nebraska Agriculture.”. Retrieved at https://nda.nebraska.gov/publications/ne_ag_facts_brochure.pdf

¹⁶³ Nebraska Department of Agriculture, 2019. “Nebraska Agriculture Fact Card.” Retrieved at <https://nda.nebraska.gov/facts.pdf>

¹⁶⁴ USDA, Economic Research Service, 2019. Annual Cash Receipts by Commodity – 2018. Retrieved at https://data.ers.usda.gov/reports.aspx?ID=17832#P22654d563b934a26a8e3ea9904f08c1b_2_17iT0R0x27

¹⁶⁵ Ibid.

¹⁶⁶ Ibid.

Farmers and ranchers reportedly lost thousands of pigs and cattle combined due to the flooding.¹⁶⁷ While preliminary estimates of livestock losses were estimated to be \$400 million, the actual number of cattle lost and financial impacts of cattle losses due to the storm remains unknown.¹⁶⁸

Current number of cattle losses due to the storm are currently in question, but representatives from NDEE noted that NDA made several requests for federal assistance with FEMA related to locating and properly disposing of displaced animal carcasses.¹⁶⁹ In response, FEMA issued a mission assignment to USDA to carry out activities to support this request. Between March and April 2019, the USDA Animal and Plant Health Inspection Service (APHIS) conducted over 25,000 miles of aerial surveillance to identify animal carcass locations across those counties that had received a disaster declaration. In coordination with state agencies, APHIS utilized a contractor to remove and dispose of the carcasses.¹⁷⁰ Despite their mission assignment ending in April 2019, NDEE continued to receive carcass removal assistance through at least June 2019.¹⁷¹

USDA's LIP provides assistance to eligible livestock owners or contract growers for "livestock deaths in excess of normal mortality caused by eligible loss conditions, including eligible adverse weather."¹⁷² In addition, LIP provides assistance to eligible livestock owners that are forced to sell livestock at a "reduced price" from an injury related to an eligible loss condition.¹⁷³ To be considered eligible for LIP, livestock owners must:

- Have legally owned the livestock on the day the livestock died and/or were injured by an eligible loss condition.
- Have livestock that either died in excess of normal mortality as a direct result of an eligible loss condition or been injured as a direct result of an eligible loss condition and were subsequently sold within 30 days at a reduced price.

Eligible livestock must:

- Have been maintained for commercial use as part of a farming operation on the day they died; and
- Not have been produced or maintained for reasons other than commercial use as part of a farming operation.¹⁷⁴

Nebraskan cattle producers submitted 2,405 "notice of loss" claims to USDA related to the 2019 disasters.¹⁷⁵ **As of February 4, 2020, 2,133 of these claims have been approved and paid, amounting to \$16,175,632 in total livestock indemnity payouts.**¹⁷⁶ The remaining 272

¹⁶⁷ CNBC, March 2019. "The Farm Belt Faces an Expensive Cleanup After Already-Costly Record Flooding." Retrieved at <https://www.cnbc.com/2019/03/29/farm-belt-faces-an-expensive-cleanup-after-already-costly-record-flooding.html>

¹⁶⁸ Associated Press News, 2019. "Nebraska flood damage losses estimated to hit \$1.4 billion." Retrieved at: <https://apnews.com/ebaa8bbfcd06414196cce457cd2bfd8f>

¹⁶⁹ Information provided by Water Permits Division of the Nebraska Department of Environment and Energy.

¹⁷⁰ Ibid.

¹⁷¹ Ibid.

¹⁷² U.S. Department of Agriculture, July 2019. "Fact Sheet: Livestock Indemnity Program." Retrieved at https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdfiles/FactSheets/2019/livestock_indemnity_program_fact_sheet_july_2019.pdf

¹⁷³ Ibid.

¹⁷⁴ Ibid.

¹⁷⁵ Email correspondence with Nebraska USDA FSA Price Support and Conservation Programs staff, February 6, 2020.

¹⁷⁶ Ibid.

applicants that have not yet been approved have until March 2, 2020, to provide supporting documentation that will allow USDA FSA to pay out these remaining claims.¹⁷⁷

Beyond livestock deaths, representatives from the state estimate that cow and calf production has significantly decreased due to stress and reduced quality of feed related to the 2019 disasters.¹⁷⁸ FEMA's Advance Evaluation Team reported that the 2019 disasters coincided with calving season, impacting the number of calves available to replace and build back herds.¹⁷⁹ The 2019 calving season was already tenuous before the flooding because cold weather conditions led to premature deaths. If the calves survived the cold, their livelihood was further threatened due to rejection from the cows after periods of separation while trying to keep the calves warm enough.¹⁸⁰

Figure 25 – Photo of Emergency Livestock Feeding Operation



2.5.3 EMPLOYMENT AND INCOME

According to the Nebraska Department of Labor, the State of Nebraska averages a low unemployment rate of three percent.¹⁸¹ This average puts Nebraska among the lowest rates of unemployment in the nation for the past six years, with the national average at 3.3 percent in

¹⁷⁷ Ibid.

¹⁷⁸ Nebraska Emergency Management Agency, December 3, 2019. Economic Recovery Support Function Kickoff Meeting

¹⁷⁹ April 4, 2019. FEMA-4420-NE Advance Evaluation Team Report.

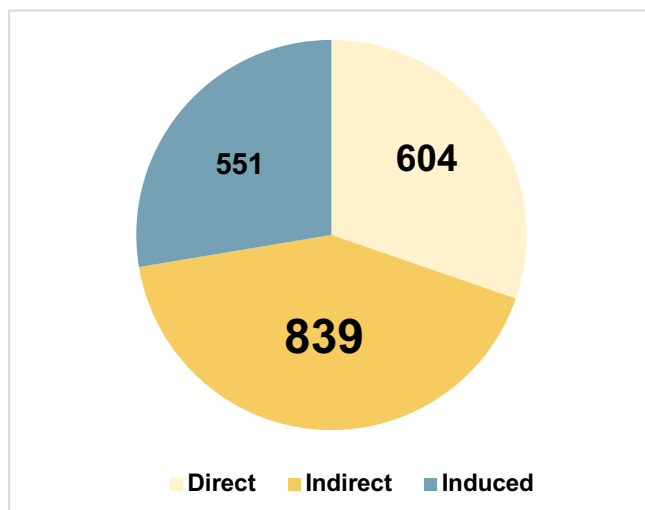
¹⁸⁰ New York Times, March 18, 2019. "It's Probably Over for Us": Record Flooding Pummels Midwest When Farmers Can Least Afford It." Retrieved at <https://www.nytimes.com/2019/03/18/us/nebraska-floods.html>

¹⁸¹ Nebraska Department of Labor, 2019. Labor Force Area Distribution Area. Retrieved at <https://networks.nebraska.gov/>

October 2019.¹⁸² Despite such a low unemployment rate, **the 2019 disasters correlated with a 4.4 percent decrease in hiring in the agricultural sector, which may slow the region’s economic recovery for longer than the average “2–3 month rebound following a natural disaster.”**¹⁸³ In April 2019, LinkedIn noted that Omaha experienced a significant (7.6 percent) decrease in hiring rates attributed to the disasters.

The Governor’s Task Force for Disaster Recovery **noted that there exists a high need for workers in construction, plumbing, electricity, project management, and other infrastructure-related jobs to assist with recovery needs.**¹⁸⁴ With unemployment remaining relatively low throughout the state and impacted areas, some local contractors do not have the capacity to complete recovery jobs. This lack of available workers statewide, particularly prevalent in areas outside of Lincoln and Omaha, may result in delayed economic recovery. Additionally, officials are concerned about worker retention and business continuity efforts as local workers, already employed within impacted areas, transfer to temporary or new positions related to recovery efforts.¹⁸⁵

Figure 26 – Comparison of Projected Number of Job Losses



Based on estimated grain farming losses, economic modeling predicts an overall loss of 1,994 jobs in 2020 (**Figure 26**). While an estimated 604 jobs may be directly lost in the industry, an additional 839 indirect jobs—that is, jobs that are supported by the industry—are predicted to be lost. Examples of these indirect jobs include grain machinery manufacturing and wholesale trade that directly supports grain farming through business-to-business transactions. The approximate 839 indirect job losses are also projected to be larger than the direct impact, indicating that jobs supporting the grain farm industry’s supply chain require more job

years than direct grain farming jobs. The induced losses, which might include industries such as real estate and restaurants, which are supported through direct and indirect employee spending, are predicted to lose an additional 551 jobs. Real estate in particular may be subject to decreased economic activity due to the housing impacts described in previous sections, driving down market-value prices.

As jobs are lost, the impacts of their lost wages will ripple out even further throughout the economy, from changing consumer spending habits to catalyzing increased outmigration. Recovering from the impacts within the agricultural sector will help recover the state’s economy overall. **These job loss projections imply that if the current crop loss estimates are accurate, the loss of primary outputs in the grain farming industry will likely have**

¹⁸² Nebraska Department of Economic Development, December 2019. “Recent Trends in Selected Nebraska Economic Numbers.” Retrieved at <https://opportunity.nebraska.gov/files/research/trends/trends.pdf>

¹⁸³ LinkedIn, April 2019. “LinkedIn Workforce Report | United States | April 2019.” Retrieved at <https://economicgraph.linkedin.com/resources/linkedin-workforce-report-april-2019>

¹⁸⁴ Nebraska Emergency Management Agency, December 3, 2019. Economic Recovery Support Function Kickoff Meeting

¹⁸⁵ Ibid.

downstream impacts on several industries such as real estate, wholesale trade, and insurance, and induced impacts felt throughout the state's economy.

2.5.4 OUTMIGRATION

Total net migration in Nebraska has been positive for the last ten years, meaning overall, more people have moved to the state than have moved away each year. However, estimates from the University of Nebraska Center for Public Affairs Research show drastically different scenarios for potential changes to Nebraska's total population over the coming decades.¹⁸⁶ Projected scenarios range from moderate statewide population declines to rapid growth, in large part depending upon migration trends.¹⁸⁷

In recent years there has been a pattern of adults with high levels of educational attainment leaving Nebraska, harming workforce development statewide.¹⁸⁸ According to a recent analysis by Nebraska's Coordinating Commission for Post-Secondary Education, between 2013 and 2017 the state had "an average net out-migration of 1,687 working-age adults with a bachelor's degree or higher."¹⁸⁹ **Over the last 10 years, it is estimated that Nebraska had a net out-migration of over 16,000 working-age adults with at least a bachelor's degree.**¹⁹⁰ Thus, between low unemployment rates and historic workforce migration patterns, there is a dearth of available skilled workers.

With hundreds of millions of dollars in crops either prevented or failed, the reduction in agricultural workforce needs resulting from the 2019 disasters also likely catalyzed outmigration amongst seasonal and low-skill workers in the sector. Rather than losing out on wages associated with reduced crop yields, workers instead may have chosen to leave their communities, or the state entirely, to find work elsewhere.

Based on migration trends following other natural disasters, LinkedIn predicts the Midwest will lose local workers to major cities in the Southwest and West Coast. Based on current migration trends in the Midwest, LinkedIn predicts "an increase in workers moving to cities such as Denver, Dallas-Fort Worth, Seattle, and Phoenix."¹⁹¹ Localized efforts to address these out-migration issues have also begun to arise, including the Northeast Nebraska Initiative, which is providing incentives to local college students approaching graduation to encourage employment and retention within the community.¹⁹²

In Governor Ricketts' January 2020 State of the State Address, the Governor noted, "Connecting the next generation of Nebraskans to great opportunities in our state is key to helping our kids make Nebraska their home."¹⁹³ He went on to announce his \$16 million dollar proposal to support

¹⁸⁶ University of Nebraska at Omaha, Nebraska Population Projections to 2050 and Implications, 2013. Retrieved at <https://digitalcommons.unomaha.edu/cgi/viewcontent.cgi?article=1039&context=datausers>

¹⁸⁷ Ibid.

¹⁸⁸ Nebraska's Coordinating Commission for Postsecondary Education, 2019. "2019 Progress Report". Retrieved at https://ccpe.nebraska.gov/sites/ccpe.nebraska.gov/files/PR_Section_3.pdf

¹⁸⁹ Ibid.

¹⁹⁰ Ibid.

¹⁹¹ LinkedIn, April 2019. "LinkedIn Workforce Report | United States | April 2019." Retrieved at <https://economicgraph.linkedin.com/resources/linkedin-workforce-report-april-2019>

¹⁹² KETV Omaha, December 2019. "Norfolk to invest in downtown, river redevelopment to stop 'brain drain' crisis. Retrieved at: <https://www.ketv.com/article/norfolk-to-invest-in-downtown-river-redevelopment-to-stop-brain-drain-crisis/30144584#>

¹⁹³ Governor Ricketts' State of the State Address, 2020. Retrieved at: <https://governor.nebraska.gov/press/gov-ricketts-state-state-address->

scholarship funding for students in community and four-year colleges.¹⁹⁴ Though efforts to address outmigration are already underway, **disaster-related outmigration may compound a pre-existing concern of losing educated workers to other major cities.**

2.5.5 SMALL BUSINESS IMPACTS

According to the U.S. Census Bureau, in 2015, Nebraska had over 137,000 business establishments ranging in size from one employee to over 500. Following the 2019 disasters, 195 businesses received payouts for damages through the NFIP, totaling just under \$7.5 million statewide. Figure 27 shows the distribution of business-related claims made through the NFIP in 2019 throughout the State. Figure 27 – Map of Number of 2019 NFIP Business Claims by County

Figure 27 – Map of Number of 2019 NFIP Business Claims by County

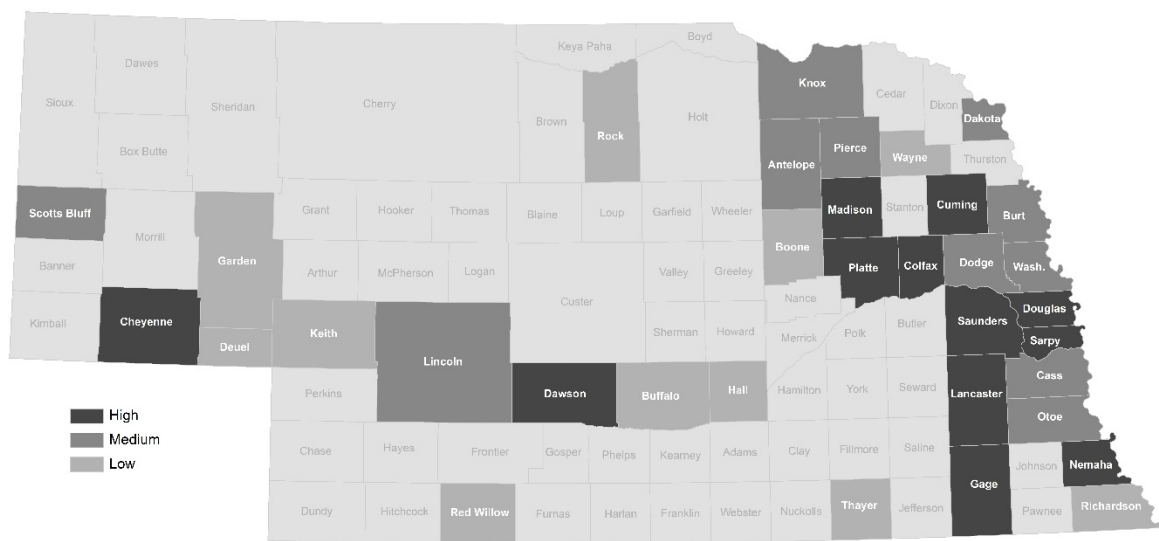


Figure 28 shows the relative concentration of these claims, with Colfax, Douglas, and Lancaster counties all appearing in the “extreme” category with 31, 27, and 23 claims, respectively.

¹⁹⁴ Ibid.

Figure 28 – Map of Relative Concentration of 2019 NFIP Business Claims by County

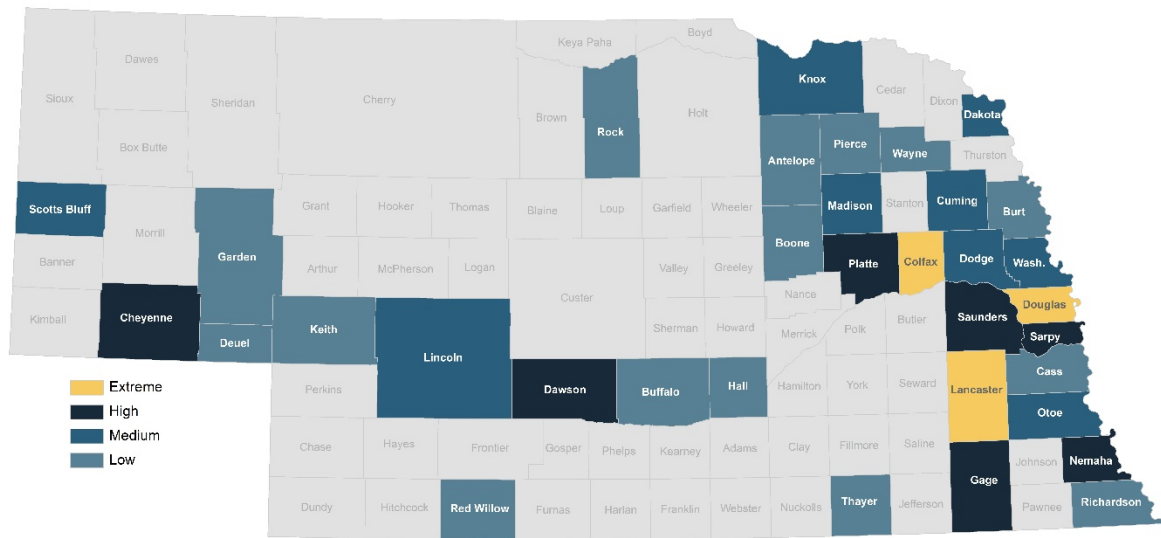
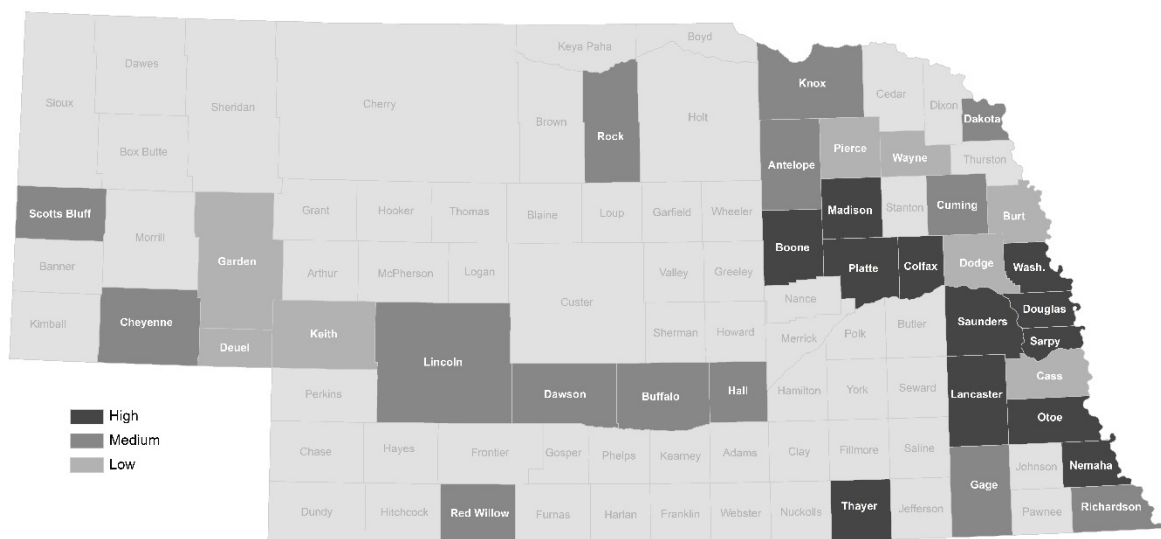


Figure 29 shows the total value for 2019 NFIP business claims per county, again showing that claims were concentrated in eastern portions of the state. **Nearly two-thirds of the total value of NFIP business claims in Nebraska from 2019 were concentrated in Lancaster (\$1,882,855) and Madison (\$2,885,674) Counties.**

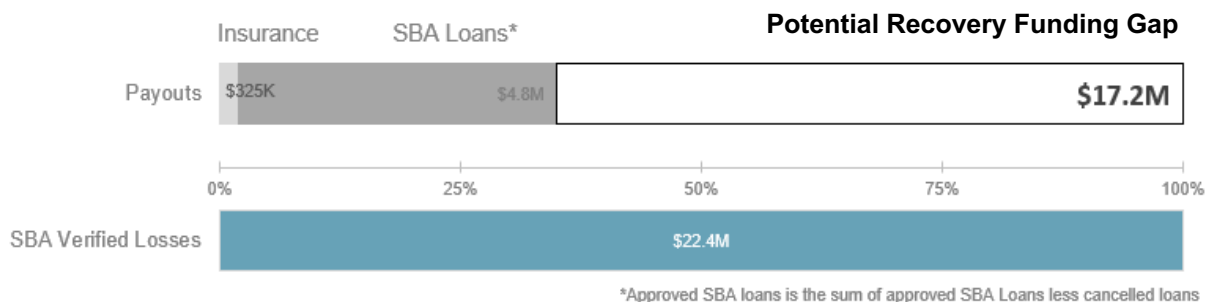
Figure 29 – Map of Value of 2019 NFIP Business Claims by County



SBA defines “small businesses” on an industry-by-industry basis. Crop producing small businesses are identified as those with annual cash receipts below \$750,000.¹⁹⁵ Many of the state’s smaller farmers may have technically qualified for SBA loans, but chose not to pursue them as a result of receiving crop insurance payouts, payouts from other funding programs, or due to other factors.

According to the SBA’s business and economic injury loss data, only 228 Nebraskan businesses applied for SBA business loans after the 2019 disasters—less than one percent of all businesses statewide. Of the businesses that applied for assistance, only 68 were approved for loans, totaling approximately \$8,548,200. Thirty-one of the approved loans, totaling \$3,698,900, were cancelled for reasons such as changed circumstances to notification of insurance payout or identification of alternate sources of funding. SBA calculated total verified business losses of \$22,417,026 for real estate repair and reconstruction, debris removal, land improvements, lost inventory, machinery and equipment, furniture and fixtures, and leasehold improvements. In addition to SBA loans, private insurance paid out \$325,035 in losses to insured businesses. **Figure 30** shows the unmet need for small businesses by comparing insurance payouts and SBA loans to the total SBA Verified Losses.

Figure 30 – Comparison of SBA Verified Business Losses to Insurance Payouts, SBA Loans, and Potential Remaining Unmet Needs



Between July 30, 2019, and September 30, 2019, Nebraska Department of Economic Development (NDED) conducted a post-storm field survey with various community leaders to gain insight on approximate damage to the cities most impacted by the 2019 disasters. NDED chose these interviewees based on their strong ties to their communities. Interviewees consisted of local personnel, ranging from city managers to city clerks within the Northeast, Central, and Southeast economic regions of Nebraska. Representatives from 23 towns in 14 counties with the largest impacts from the disasters responded to a survey about damage to housing, businesses, and infrastructure.

The survey results revealed that only seven towns still had closed businesses at the time of the survey. When asked why businesses remained closed, the top three reasons provided were damaged property, damaged infrastructure, and lack of customer access. NDED staff noted that some of the small number of businesses that did remain closed were likely unable to re-open for reasons unrelated to storm impacts.¹⁹⁶ **These results imply that much of the reported damage to small businesses was minor or did not lead to extended or permanent closures.**

¹⁹⁵ U.S. Small Business Administration, 2016. “Table of Small Business Size Standards”. Retrieved at https://www.sba.gov/sites/default/files/files/Size_Standards_Table.pdf

¹⁹⁶ Department of Economic Development Field Staff, October 28, 2019. Recovery Status Update Meeting.

However, **other impacts likely harmed the profit margins of small businesses throughout the state** (e.g., increased transportation costs or decreased business access resulting from road or bridge closures).¹⁹⁷

In 2016, the Omaha and Lincoln metropolitan areas accounted for about “two-thirds of the state’s economic activity, while non-metro regions accounted for nearly 30 percent of the Gross Domestic Product.”¹⁹⁸ Compared to the rest of the country where non-metro areas only account for “10 percent of nationwide economic output,” this statistic reveals how **Nebraska’s economy, more so than most states in the country, heavily relies on its rural areas.**¹⁹⁹ Economic modeling software was used to attempt to quantify agricultural impacts and understand how agricultural losses may affect Nebraska’s future. Those outcomes are presented in **Section 2.5.2.1.1** and **Section 2.5.3.**

¹⁹⁷ Governor’s Task Force for Disaster Recovery Meeting, January 22, 2020.

¹⁹⁸ Kauffman, N., McCoy, J. “Low Unemployment but Slow Growth in Nebraska’s Economy.” Retrieved at <https://www.kansascityfed.org/publications/research/ne/articles/2018/1q2018/low-unemployment-but-slow-growth-in-nebraskas-economy>

HEALTH AND SOCIAL SERVICES



2.6 HEALTH AND SOCIAL SERVICES

After the disasters, there were three confirmed deaths, but disaster-related injury and death tolls may be underestimated and will become clearer as time progresses. More chronic issues remain of paramount importance, such as exposure to mold and mental distress.

A variety of health and social services needs existed in Nebraska prior to the historic 2019 disasters and continue to exist, and some may have worsened, after the disasters. Health and social services resources are especially scarce in rural areas²⁰⁰ — 87 of the 93 counties in Nebraska — where residents are more likely to encounter barriers to reaching and receiving medical care, allied health services, and social services.²⁰¹ Nebraska 2-1-1 calls increased by a staggering 2,053 percent from 2018 to 2019, highlighting the overwhelming need for support, as this service is provided as a shortcut for people to navigate health and social services.²⁰²

Mental distress in rural communities is a persisting challenge in Nebraska, seemingly exacerbated by the disasters. **Experts believe that other behavioral health challenges will likely emerge after the anniversary of the incident and continue to appear for years.** Poor behavioral health status, possibly including suicidality and substance use disorder, are issues of concern among distressed disaster survivors, especially in rural areas. True impacts may not be quantitatively understood until years post-disaster, but **the health of Nebraskans has been observably harmed.** This concern could be compounded by rural and uninsured populations that lack equitable access to care. Existing medical facilities were forced to temporarily limit care during the disasters and long-term care facilities required evacuation but fared well overall. Additionally, over one-third of public school districts were impacted in some way by the 2019 disasters. Teachers and students experienced displacement and endured widespread class cancellations.

The Health and Social Services section will highlight key issues in Nebraska’s health and social sectors, noting their statuses before the 2019 disasters, where possible, and emphasizing the impacts to these same issues as a result of the disasters. From acute threats to chronic problems, hindrances to a healthy, high-quality life continue in the post-disaster landscape. This section considers the following aspects of health and social services:

- Food Security Post-Disaster (**Section 2.6.2.1**);
- Disruptions to Education (**Section 2.6.2.1**);
- Disaster Casework and Case Management (**Section 2.6.2.2**);
- Acute Health and Safety Impacts from Flooding (**Section 2.6.2.3**);
- Disaster-Associated Effects on Chronic Disease (**Section 2.6.3.2**);
- Access to and Availability of Needed Services (**Section 2.6.3.3**).

A high-level overview of potential recovery gaps is presented below (**Section 2.6.1**).

²⁰⁰ As defined by the U.S. Census Bureau, “rural” encompasses all population, housing, and territory not included within an urban area.

²⁰¹ Nebraska Area Health Education Center Program, 2018. “The Status of the Healthcare Workforce in the State of Nebraska.” Retrieved at: <https://www.unmc.edu/publichealth/hpts/news/The-Status-of-the-Healthcare-Workforce-in-the-State-of-Nebraska-February-2018.pdf>

²⁰² Center for Disaster Philanthropy, October 30, 2019. “Midwest Flooding: The Year’s Biggest U.S. Disaster” webinar.

2.6.1 SUMMARY OF POTENTIAL RECOVERY GAPS

Impacts to health and social services will continue to manifest and evolve over time, gradually revealing the full scope of potential recovery gaps. As of February 2020, these impacts are exceedingly difficult to quantify; however, **the state could see continued or growing recovery gaps associated with any of the following findings:**

- Rural residents, persons with limited-English proficiency, older adults, and other vulnerable populations may experience difficulties in accessing and navigating the post-disaster aid landscape to receive needed health and social services and care.
- The disasters may have contributed to some level of temporary or lasting food insecurity for individuals and families in Nebraska. Supplemental assistance from the Federal Government and local food banks was, and may continue to be, necessary for some individuals and families.
- Over one-third of public school districts were impacted in some way by the 2019 disasters and the disasters' influence on student enrollment is not yet thoroughly understood.
- Open disaster cases far exceed the number of available disaster case managers, and some individuals may struggle to find case management at all.
- Post-disaster circumstances may create opportunity for increased human trafficking.
- Health issues arising from exposure to mold have persisted.
- Poor mental health status is an issue of concern among distressed disaster survivors, especially farmers and ranchers.

2.6.2 SOCIAL SERVICES NEEDS AND STATUS

2.6.2.1 Food Security Post-Disaster

The USDA defines food insecure households as being uncertain of having, or being unable to acquire, enough food to meet the needs of all their household members due to insufficient money or other resources for food. In 2018, 11.1 percent of U.S. households were food insecure at some point during the year and Nebraska's level of food insecurity neared the national average.²⁰³ USDA's Supplemental Nutrition Assistance Program (SNAP) helps recipients buy food and reach adequate nutrition levels among low-income households. In Fiscal Year 2017, SNAP reached 176,000 Nebraska residents, or nine percent of the population. More than 74 percent of those Nebraska SNAP participants are in families with children, and almost 29 percent are in families with members who are elderly or have disabilities. In addition to SNAP, in Fiscal Year 2017, about 1,300 people in Nebraska received benefits through the Food Distribution Program on Indian Reservations, a federal program.²⁰⁴

Disaster SNAP (D-SNAP)—which has different eligibility criteria than normal SNAP—is a food assistance program offered to low-income households that experience adverse effects *due to a disaster*. On March 28, 2019, the USDA Food and Nutrition Service (FNS) approved Nebraska's request to operate a D-SNAP in nine counties due to the disaster. Nebraska expanded D-SNAP

²⁰³ USDA, 2018. "Food Security Status of U.S. Households in 2018." Retrieved at: <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/key-statistics-graphics.aspx>

²⁰⁴ Center on Budget and Policy Priorities, 2018. "Nebraska Supplemental Nutrition Assistance Program." Retrieved at: https://www.cbpp.org/sites/default/files/atoms/files/snap_factsheet_nebraska.pdf

operations to six more counties on April 4, 2019, and to an additional 12 counties on April 12, 2019. **In total, 1,190 households were approved for D-SNAP benefits across the state.**²⁰⁵

Households that were already receiving SNAP benefits could not receive D-SNAP funds but could get supplemental support on top of their regular SNAP benefits. The USDA FNS approved a waiver for households with standard SNAP benefits living in disaster-affected counties.²⁰⁶ This waiver allowed households already receiving normal SNAP benefits, who were living in D-SNAP-qualifying counties, to request a supplement to cover food losses from the disaster. There were 11,719 households that were approved for supplemental benefits or replacement of SNAP benefits.²⁰⁷ **As evidenced by the number of supplemental or replacement benefits provided, the 2019 disasters resulted in food losses for low-income families.**

Non-federal partners also supported the food security response post-disaster. The Food Bank for the Heartland, headquartered in Omaha, distributed hundreds of thousands of disaster meals to survivors.²⁰⁸ One example of their surge response was in Columbus, where the food bank distributed over 5,000 pounds of food, as well as bottled water, to survivors in the town and surrounding Platte County area.²⁰⁹ The Salvation Army also contributed over 24,000 volunteer hours, providing tens of thousands of meals, snacks, and drinks to survivors.

Food Security Efforts: By the Numbers

- 27 counties eligible for D-SNAP benefits
- 1,190 households approved for D-SNAP benefits
- 11,719 SNAP households approved for supplemental or replacement benefits through USDA FNS
- 44,188 meals provided by the Salvation Army
- 600,000 disaster meals provided by the Food Bank for the Heartland

Older adults often fill key needs, such as meals, through support or supplemental services like senior centers. **Senior centers, especially in northeast Nebraska, were directly impacted and sustained long-term disruption of services.** Due to the 2019 disasters, 73 senior centers closed for varying amounts of time, ranging up to 81 days.²¹⁰ **These closures resulted in the disruption of 1,919 meals and other support services for 570 clients.** These figures only acknowledge those older adults that utilize senior centers, so there was likely a more substantial impact on this group, constituting over 15 percent of Nebraska's population, than indicated here.

2.6.2.2 Disruptions to Education

From 2018–2019, there were over 1,200 operating schools, pre-kindergarten through secondary school, in Nebraska — most of which were publicly operated.²¹¹ Among all approved and accredited schools, pre-kindergarten through high school, over 360,000 students were enrolled

²⁰⁵ These households were not part of the typical SNAP program.

²⁰⁶ U.S. Department of Agriculture, 2019. "Nebraska Disaster Nutrition Assistance." Retrieved at: <https://www.fns.usda.gov/disaster/nebraska-disaster-nutrition-assistance>

²⁰⁷ Geocoded D-SNAP approval numbers provided by the Nebraska Department of Health and Human Services, January 29, 2020.

²⁰⁸ Foodbank for the Heartland, 2019. "In the news." Retrieved at: <https://foodbankheartland.org/news-events/>

²⁰⁹ NET News, 2019. "Mobile Food Pantry Will Distribute 5,000 Pounds of Food to Flood Victims in Columbus." Retrieved at: <http://netnebraska.org/article/news/1170787/mobile-food-pantry-will-distribute-5000-pounds-food-flood-victims-columbus>

²¹⁰ Nebraska Department of Health and Human Services, 2019. "Nebraska State Unit on Aging Receives Disaster Recovery Grant." Retrieved at: <http://dhhs.ne.gov/Pages/Nebraska-State-Unit-on-Aging-Receives-Disaster-Recovery-Grant.aspx>

²¹¹ Nebraska Department of Education, 2019. "2018/2019 District Listing." Retrieved at: <https://www.education.ne.gov/wp-content/uploads/2018/12/2018-2019-Numbers-of-Districts-and-Schools-updated-August-28-2018.pdf>

in Fall 2018.²¹² In the same school year, **almost 149,000 children received free or reduced school lunch**, illustrating the dependence on schools for meeting children’s basic needs in the state.²¹³ **In the school year following the 2019 disasters, these counts grew to well over 151,000 children receiving free or reduced lunch statewide.**²¹⁴

Over one-third of Nebraska public school districts were affected by the 2019 disasters.²¹⁵ More than 90 public school districts, and 14 non-public schools, were impacted in some way.²¹⁶ **Almost 200 school closures affected 34,684 students throughout Nebraska.**²¹⁷

Schools across the state had to cancel classes due to inability to physically get to school or other issues such as lack of clean drinking water at the school. For instance, Douglas County West Community Schools canceled school for a week. **Cedar Bluffs Public Schools had over 200 students and nearly half of all teachers and staff unable to safely make it to school and, as a result, “indefinitely” closed** — an unprecedented move despite being able to open again sooner than expected.²¹⁸ Bellevue Public Schools experienced significant disruption, with 300 students displaced or affected by the disasters,²¹⁹ representing about three percent of the district’s enrollment.²²⁰ Similarly, in Fremont Public Schools, 550 students, or about 10 percent of the district’s enrollment, were displaced.²²¹ Students’ daily routines, and meeting of basic needs through public school programs like free and reduced lunch, were interrupted after the disaster.

34,000+
students impacted

2.6.2.3 Disaster Casework and Case Management

Shortages of disaster caseworkers and disaster case managers has been a persistent challenge after the storms. Disaster casework helps survivors by providing early intervention to address immediate and transitional needs after a disaster. Disaster caseworkers can link survivors to available resources and services and help them to navigate bureaucratic processes to meet needs.²²²

²¹² Nebraska Department of Education, 2019. “2018/19 Statistics & Facts About Nebraska Schools.” Retrieved at: https://www.education.ne.gov/wp-content/uploads/2019/12/Statsfacts_20182019.pdf

²¹³ Nebraska Department of Education, 2019. “2018/2019 Free and Reduced Lunch Counts by School.” Retrieved at: https://www.education.ne.gov/wp-content/uploads/2018/11/2018-19_Free_and_Reduced_Lunch_Counts_by_School.xls

²¹⁴ Ibid.

²¹⁵ Nebraska Department of Education, 2019. “2018/2019 District Listing.” Retrieved at: <https://cdn.education.ne.gov/wp-content/uploads/2018/12/2018-2019-Numbers-of-Districts-and-Schools-updated-August-28-2018.pdf>

²¹⁶ Nebraska Department of Education, 2019. “Resolution to Commend Nebraska Schools on Their Response to the Historically Catastrophic Weather Events of March 2019.” Retrieved at: https://cdn.education.ne.gov/wp-content/uploads/2019/04/Resolution_to_commend_schools_on_natural_disasters_April_2019_signed.pdf

²¹⁷ Omaha World-Herald, 2019. “Flooding, Blizzard Disrupted the Lives of Thousands of Nebraska Students.” Retrieved at: https://www.omaha.com/news/education/flooding-blizzard-disrupted-the-lives-of-thousands-of-nebraska-students/article_2298c0a8-0053-56d4-9f71-32352247b346.html

²¹⁸ Omaha World-Herald, 2019. “Some students head back to class after flood, while other school districts remain closed.” Retrieved at: https://www.omaha.com/news/education/primary-secondary/some-students-head-back-to-class-after-flood-while-some/article_e77ec3dd-b107-5051-9aea-73fa62d6bbff.html

²¹⁹ Bellevue Leader, 2019. “Bellevue Schools Feel Impact of Flood Waters.” Retrieved at: https://www.omaha.com/sarpy/bellevue/bellevue-schools-feel-impact-of-flood-waters/article_1312ae46-2486-5cc6-bd3b-68cc1652ad90.html

²²⁰ Nebraska Department of Education, 2019. “2018/19 Statistics & Facts About Nebraska Schools.” Retrieved at: https://www.education.ne.gov/wp-content/uploads/2019/12/Statsfacts_20182019.pdf

²²¹ Lincoln Journal Star, 2019. “Flooding Presents New Challenges to Schools This Year.” Retrieved at: https://journalstar.com/news/state-and-regional/nebraska/flooding-presents-new-challenges-to-schools-this-year/article_2b285bf9-8ed5-5767-8b12-7b19bdb2bd97.html

²²² National Voluntary Organizations Active in Disaster, 2011. “Disaster Management Guidelines.” Retrieved at: http://www.nvoad.org/wp-content/uploads/dlm_uploads/2014/04/dcm_guidelines_-_final_-_2012_-_feb.pdf

Disaster case management is a more comprehensive approach to plan for and achieve realistic goals for recovery post-disaster, with a disaster case manager serving as the primary point of contact to address complex, lasting disaster recovery needs. After basic needs like food and water are met, disaster case managers are the “boots on the ground” support. Disaster case managers have been instrumental in organizing appeals to FEMA, as some disaster damage did not become evident until the winter months.

Typically, caseloads over 35 people exceed what a single case manager can appropriately handle. After Hurricane Harvey, FEMA capped caseloads at 35 in Texas.²²³ **Disaster case managers in Nebraska are experiencing high numbers of cases (exceeding 35) and risk “burning out” or experiencing compassion fatigue due to the caseloads and intensive work.** With limited staff available, volunteers have also been critical to case management and similarly are at risk of burnout and compassion fatigue.

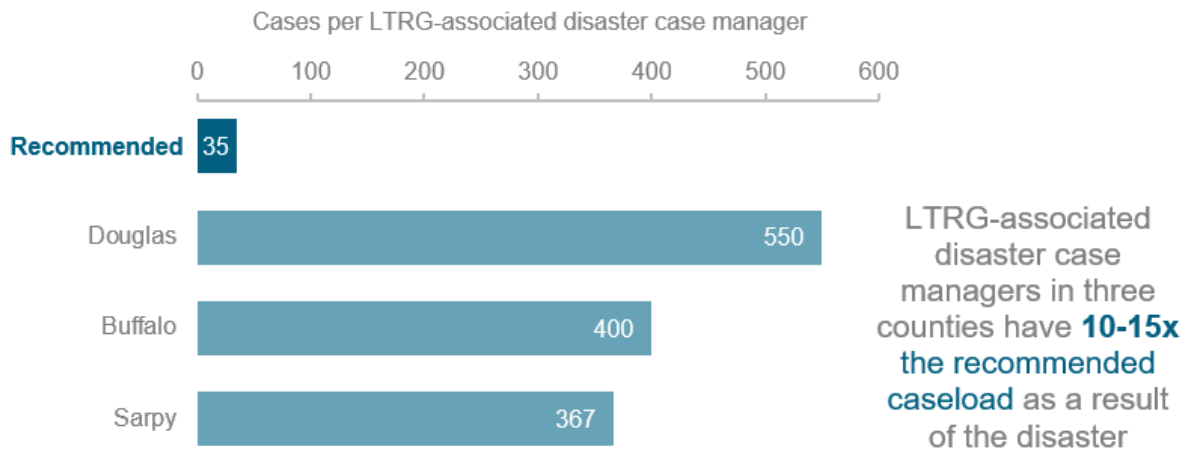
There are disaster case managers, trained at different levels, involved in varying capacities with long-term recovery groups, non-profit organizations, and other groups. There have been reports of an unmet need for quality disaster case management services in areas without long-term recovery groups (LTRGs). A snapshot of the number of active FEMA cases in comparison to the number of disaster case managers in select counties, available through long-term recovery groups, can be found in **Figure 31**. Although the figure represents a point-in-time count, it reflects the significant caseloads placed upon disaster case managers.

Some of the counties impacted by the 2019 disasters also **have substantial numbers of limited-English proficiency individuals, which may correlate to additional recovery gaps.** Communities in Skyler, North Bend, Madison, Columbus, and Fremont had particularly large groups of immigrants and limited-English proficiency populations, among those impacted.²²⁴ Disaster-related materials had to be translated after the fact by Nebraska Extension, including to less regionally prominent languages, such as Arabic and Vietnamese. One Periodic Needs Assessment respondent noted that bilingual disaster case managers were an unmet need.

²²³ The Governor’s Commission to Rebuild Texas, 2018. “Eye of the Storm Report.” Retrieved at: https://gov.texas.gov/uploads/files/press/RebuildTexasHurricaneHarveyEyeOfTheStorm_12132018.pdf

²²⁴ Governor’s Task Force for Disaster Recovery Workshop, Held December 5, 2019.

Figure 31 – Comparison of Local Long-Term Recovery Group Case Managers to Number of Cases ²²⁵



2.6.3 HEALTH SERVICES NEEDS AND STATUS

2.6.3.1 Acute Health and Safety Impacts from Flooding

2.6.3.1.1 Immediate Health and Safety Needs

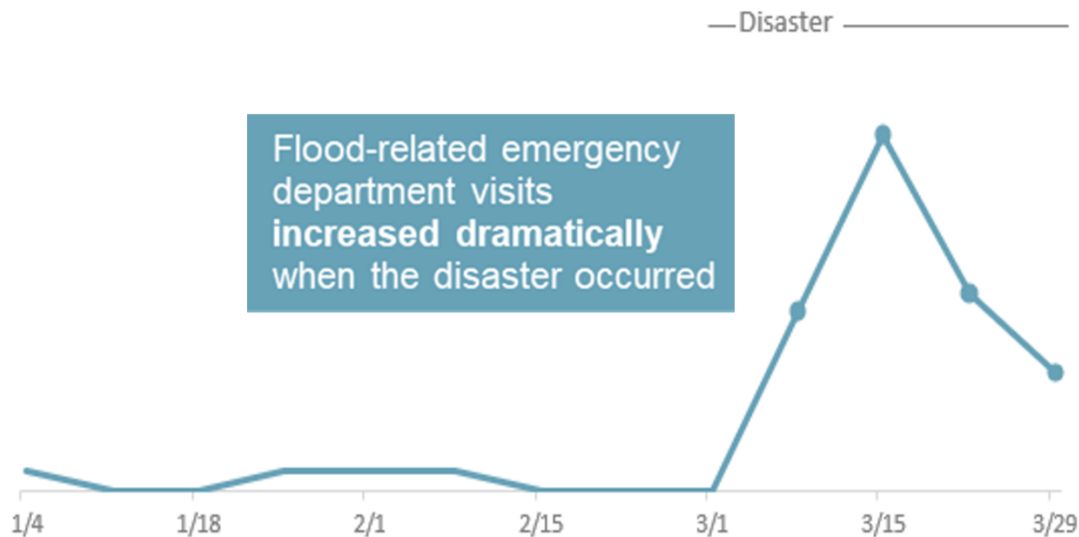
The storm itself caused a multitude of acute health and safety concerns for Nebraskans. Search and rescue teams came to the aid of more than 300 people throughout Nebraska as a result of the disasters. There were **two flood-related deaths** in the Columbus area and an **additional death** in Norfolk. A **missing person** was also reported after the dam collapse near Norfolk.²²⁶ **Unfortunately, natural disasters throughout history have shown that it can take years for a disaster death toll to be fully understood.**²²⁷ Flood-related injuries or deaths can be attributed to drowning, electrocution, disruptions to medical care, infections due to contaminated water, or injuries from the work associated with prepping for or recovering from related events. **Emergency department visits related to those kinds of flood-associated issues spiked at the time of the storm**, as seen in *Figure 32*.

²²⁵ This graphic is informed by a point-in-time count provided by the Nebraska Children and Families Foundation document “Long-Term Recovery Group Update: December 2019.” This does not reflect all active full-time disaster case managers in the State of Nebraska, but rather those associated with long term recovery groups as of December 2019.

²²⁶ FloodList News, 2019. “USA – 3 Dead as Rivers Reach Record Highs in Iowa and Nebraska.” Retrieved at: <http://floodlist.com/america/usa/iowa-nebraska-floods-march-2019>

²²⁷ The National Academies of Sciences, Engineering, Medicine, 2019 “Exploring the Complications of Counting Casualties After Natural Disasters.” Retrieved at: <http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=9122019>

Figure 32 – Comparison of Emergency Department Visits Before and After the Disasters ²²⁸



2.6.3.1.2 Airborne and Waterborne Pathogens

According to the CDC, flooded homes are also at high risk for mold infestation, possibly leading to asthma attacks, eye and skin irritation, and allergic reactions in dwellers. **The level of existing mold infestation in flooded homes is likely high as it begins growth in as little as 24 hours after becoming soaked, without proper drying, exposing many Nebraskans to harmful mold.**²²⁹ According to the Nebraska Children and Families Foundation, mold remains a recurring problem, especially in mobile homes. Families are left to sequester themselves to rooms not ridden with mold in their homes, and children, especially, are suffering health consequences due to the mold.²³⁰

Safe and clean drinking water was also an area of concern for Nebraska post-disaster, as discussed in-depth in *Section 2.3.6.2*.

2.6.3.1.3 Vector-borne Disease

The flooding also created an ideal breeding ground for mosquitos capable of carrying West Nile virus. Eliminating pools of water is the best prevention, but persistent flood and rainwater make that a difficult task. CDC reported that **Nebraska residents had 251 cases of West Nile virus in 2018 — the highest number of any state in the nation.**²³¹ The case counts for 2019 are yet to be finalized by CDC, but the standing water that floods bring may feasibly support the growth of already high case counts for Nebraska.

²²⁸ ESSENCE Syndromic Surveillance data provided by the Nebraska Department of Health and Human Services.

²²⁹ U.S. Centers for Disease Control and Prevention, 2019. "Homeowner's and Renter's Guide to Mold Cleanup After Disasters." Retrieved at: <https://www.cdc.gov/mold/cleanup-guide.html>

²³⁰ Nebraska Children and Families Foundation, 2019. "Long-Term Recovery Group Update: December 2019."

²³¹ U.S. Centers for Disease Control and Prevention, 2019. "West Nile virus disease cases reported to CDC by state of residence, 1999-2018." Retrieved at: <https://www.cdc.gov/westnile/statsmaps/cumMapsData.html>

2.6.3.1.4 Other Safety Concerns

Finally, disasters have been known to usher in ample opportunities for human trafficking. **Both labor and sex trafficking can increase at all stages of a disaster, posing serious health and safety risks to men, boys, women, and girls.** At the beginning of a disaster, people may be easily exploited or taken advantage of through offers of tangible help. During a disaster, survival instincts may come into play that leave survivors at risk. Children may also become separated from their parents, left vulnerable to trafficking. After disasters, individuals may be underpaid or not paid at all for their labor and those with steady employment and income may experience a prolonged disruption, leading to activities such as commercial sex work.²³² Human trafficking is often accompanied by trauma and violence for the victims.²³³ **Opportunities for human trafficking must be closely monitored and protections must be put in place for persons left vulnerable post-disaster.**

2.6.3.2 Disaster-Associated Effects on Chronic Disease

In 2015, 1.1 million people (or 58 percent) in Nebraska had at least one chronic disease, 408,000 had two or more chronic diseases, and 167,000 people had three or more chronic diseases.²³⁴ Chronic diseases are defined as lasting a year or more and require ongoing medical attention, including cancer, depression, substance use disorder, heart disease, and diabetes. Chronic diseases accounted for the three leading causes of death in Nebraska in 2017.²³⁵ Individuals living with chronic disease may require consultation with a variety of specialists, complicating their treatment plans and adherence to those plans. **Historically, disasters contribute to medication non-compliance, interruption of medical treatment, poor nutrition, and other less than ideal circumstances relevant to all impacted, but especially those with chronic diseases.**²³⁶

2.6.3.2.1 Substance Use Disorder

Nebraska residents suffering from Substance Use Disorder (SUD) have many needs related to medical and behavioral health care. Among people aged 12 or older in Nebraska, during 2015–2017, 7.5 percent (or 117,000) had a SUD in the past year, mirroring the national average (also 7.5 percent during the same time period).²³⁷ In a single-day count in 2017, 6,461 people in Nebraska were enrolled in substance use treatment, an increase from 2013. Among those enrolled in substance use treatment in that single-day count, 34.6 percent received treatment for a drug problem only, 22.2 percent received treatment for an alcohol problem only, and 43.2 percent received treatment for both drug and alcohol problems.²³⁸ The majority of those enrolled sought care for co-occurring substance use, further complicating the rehabilitation process. While rural substance use is understudied, it is understood that individuals in rural areas are more likely to use multiple substances concurrently.²³⁹ From these estimates, it is clear that treatment

²³² U.S. Department of Health and Human Services, n.d. "Human Trafficking: What Disaster Responders Need to Know."

²³³ U.S. Department of Health and Human Services, 2016. "The Power of Framing Human Trafficking as a Public Health Issue."

Retrieved at: <https://www.acf.hhs.gov/otip/resource/publichealthlens>

²³⁴ Partnership to Fight Chronic Disease, 2015. "What is the impact of chronic disease in Nebraska?" Retrieved at:

https://www.fightchronicdisease.org/sites/default/files/download/PFCD_NE_FactSheet_FINAL1.pdf

²³⁵ U.S. Centers for Disease Control and Prevention, 2017. "Stats of the State of Nebraska." Retrieved at:

<https://www.cdc.gov/nchs/pressroom/states/nebraska/nebraska.htm>

²³⁶ Clinical Infectious Diseases, 2018. "Health Risks of Flood Disasters." Retrieved at:

<https://academic.oup.com/cid/article/67/9/1450/4945455>

²³⁷ Substance Abuse and Mental Health Services Administration, 2017. "Behavioral Health Barometer: Nebraska, Volume 5."

Retrieved at: <https://www.samhsa.gov/data/sites/default/files/cbhsq-reports/Nebraska-BH-BarometerVolume5.pdf>

²³⁸ Ibid.

²³⁹ Nebraska Educational Telecommunications, 2019. "Nebraska Research Will Collect Rural Drug Use Data in Great Plains Over 5 Years." Retrieved at: <http://netnebraska.org/article/news/1182286/nebraska-research-will-collect-rural-drug-use-data-great-plains-over-5-years>

coverage does not account for all Nebraska residents suffering from SUD. **As of 2019, only 15 percent of people with SUD in Nebraska get treatment.**²⁴⁰

For those who have successfully stopped drinking and/or using other substances, the 2019 disasters could have resulted in strong urges to reinstate the old habit(s). Disasters may **disrupt access to ongoing treatment** through impacted rehabilitation facilities or a forced geographic move due to conditions in the home community.²⁴¹ Disasters can also lead to increased use of substances in those who have not previously experienced SUD in order to forget or reduce feelings of distress.²⁴² **NDHHS stated that the full impact on SUD and other behavioral health issues may not be observable in the immediate aftermath of the disaster; instead, these issues will likely arise over the course of the 12 to 18 months following the disaster, with continued emergence and evolution for years thereafter.**²⁴³

2.6.3.2.2 Mental Illness and Suicide

As a comorbid condition to SUD, mental illness is also prevalent in Nebraska. Results from the Behavioral Health Barometer report show that during 2013–2017 the annual average prevalence of past-year serious mental illness in Nebraska was 3.8 percent (or 54,000), similar to the national average (4.2 percent).

Mental illness is of specific concern to agricultural communities found frequently in Nebraska, with difficult financial situations contributing to mental distress among this sector's workers. University of Iowa research that tracked suicides among farmers and agriculture workers from 1992–2010 found that they had a higher rate of suicides than workers in other occupations.²⁴⁴ Most suicides are related to mental illness, with depression, SUD, and psychosis being key risk factors.²⁴⁵

On average, one person dies by suicide every 36 hours in Nebraska.²⁴⁶ Suicide cost Nebraska a total of \$223,376,000 of combined lifetime medical and work-loss costs in 2010, or an average of \$1,157,386 per suicide death. The Behavioral Health Barometer report notes that between 2013 and 2017, the annual average prevalence of past-year serious thoughts of suicide in Nebraska was 4.1 percent (or 57,000), paralleling the national average (also 4.1 percent). The annual average percentage of adults with serious thoughts of suicide in the past year did not significantly change between 2008–2012 and 2013–2017, according to the same source. Serious thoughts of suicide and the act itself — the tenth leading cause of death in Nebraska — contribute to major health and economic issues for the state.

²⁴⁰ Omaha World-Herald, 2019. "Nebraska 1st State to Put Federal Opioid Funds Toward Training Addiction Specialists, Ricketts Says." Retrieved at: https://www.omaha.com/livewellnebraska/health/nebraska-st-state-to-put-federal-opioid-funds-toward-training/article_b4165ff7-992c-5ffb-98de-6fa4c4e44c3a.html

²⁴¹ The National Child Traumatic Stress Network, 2012. "Alcohol, Medication, and Drug Use After Disaster." Retrieved at: https://www.nctsn.org/sites/default/files/resources//pfa_alcohol_drug_use_after_disasters.pdf

²⁴² Substance Abuse and Mental Health Services Administration, 2013. "Tips for Survivors of a Disaster or Other Traumatic Event: Managing Stress." Retrieved at: <https://store.samhsa.gov/system/files/sma13-4776.pdf>

²⁴³ Health and Social Services Recovery Support Function Kickoff Meeting, December 9, 2019.

²⁴⁴ The Pew Charitable Trusts, 2019. "Farmers Wash Up 'in a Fragile Place' After Historic Midwest Floods." Retrieved at: <https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2019/04/25/farmers-wash-up-in-a-fragile-place-after-historic-midwest-floods>

²⁴⁵ International Journal of Environmental Research and Public Health, 2018. "Suicide Risk and Mental Disorders." Retrieved at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6165520/>

²⁴⁶ American Foundation for Suicide Prevention, 2018. "Suicide Facts & Figures: Nebraska 2018." Retrieved at: <https://www.elvphd.org/Portals/0/Resources%20Document%20Library/Suicide/Nebraska%20Suicide%20Facts%20and%20Figures%202018.pdf>

Understandably, history shows that natural disasters can lead to psychopathologies among those impacted such as post-traumatic stress disorder (PTSD), major depressive disorder, and SUD, in addition to generalized anxiety, suicidality, and somatic symptoms associated with distress.²⁴⁷ Past disasters have shown that PTSD is prevalent among people who have survived disasters, varying in degree due to factors such as demographics, emotional statuses, personality traits, and others.²⁴⁸ Those experiencing mental illness, SUD, and/or serious thoughts of suicide prior to the disaster likely experienced further deterioration of their condition(s) after enduring the event. Although most disaster survivors are resilient and will bounce back without treatment, many will require longer-term intervention through counseling and other behavioral health services. **Rural communities' livelihood and quality of life were severely impacted by the 2019 disasters and these individuals may require more robust behavioral health outreach and services.**

2.6.3.3 Access to and Availability of Needed Services

A variety of acute and chronic health and safety concerns exist for Nebraskans after the 2019 disasters, as discussed in previous sections. Barriers to meeting these needs persist and materialize in a variety of ways. For example, a survivor's place of residence or uninsured status may make reaching and receiving vital medical or behavioral health care difficult. The following sections discuss considerations, as well as approaches to address needs, within the medical system and other support and service frameworks.

2.6.3.3.1 Health Facilities and Providers

Access to and availability of behavioral health and general healthcare is not optimal for all Nebraska residents. In 2017, there were 253 physicians per 100,000 population, compared to 295 physicians per 100,000 population nationwide in 2016.²⁴⁹ **Thirteen out of 93 counties in the state do not have any primary care physician.** Furthermore, a Nebraska Area Health Education Center Program-funded study noted that nearly one in five physicians is older than 65 and thus likely to retire soon.

Nebraska has a variety of licensed facilities and beds throughout the state, with the majority being nursing homes or long-term care facilities. According to NDHHS, the hospital systems fared quite well in the 2019 disasters. Most hospitals could provide or limit care while enduring the disasters. **Multiple long-term care facilities had to temporarily relocate patients to other long-term care facilities in safer locations.**²⁵⁰ These relocations were facilitated by existing plans and memoranda of understanding with partner facilities.

Many Nebraska residents have difficulties beyond finding facilities and providers. The U.S. Census Bureau found that almost one in ten (9.7 percent) persons in Nebraska under 65 do not have health insurance. For many uninsured Nebraskans, critical medical and behavioral health care needs, for chronic conditions like SUD and mental illness, go unmet. According to findings from the University of Nebraska at Omaha's Center for Public Affairs Research, 32 of the 37 Nebraska counties with the highest rates of uninsured are rural. Overall, 13.6 percent of rural

²⁴⁷ Annual Review of Public Health, 2013. "Mental Health Consequences of Disasters." Retrieved at: <https://www.annualreviews.org/doi/pdf/10.1146/annurev-publhealth-032013-182435>

²⁴⁸ Psychological Medicine, 2008. "Post-traumatic stress disorder following disasters: a systematic review." Retrieved at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4877688/>

²⁴⁹ Journal of Medical Regulation, 2017. "A Census of Actively Licensed Physicians in the United States." Retrieved at: <https://www.fsmb.org/siteassets/advocacy/publications/2016census.pdf>

²⁵⁰ Health and Social Services Recovery Support Function Kickoff Meeting, December 9, 2019.

residents lack insurance, compared with 12.3 percent in Nebraska’s metro areas.²⁵¹ **Almost one-third of uninsured people in Nebraska live in Douglas County, one of the counties highly impacted by the 2019 disasters.**²⁵² It is reasonable to assume that Douglas County residents may have a particularly hard time affording care, possibly with medical needs or financial stress exacerbated by the 2019 disasters.

2.6.3.3.2 Non-Medical Support Services

Due to the circumstances that existed both pre- and post-disaster, alternatives to the classic medical setting have been instituted to meet needs. Resources like the National Suicide Prevention Hotline and the Nebraska Rural Response Hotline serve to fill in the gaps for Nebraskans, with staff available to discuss current issues.

Hotline Usage Surges in the Heartland

“This last year, we set four new all-time monthly highs for the most new first-time high-stress phone callers. This is the worst ‘ag’ turn-down since the mid-1980’s so there’s a great need, of course, for services right now and then, of course, the flood just makes all of that more-so.”

– John Hansen, President of the Nebraska Farmers Union and Nebraska Rural Response Hotline Supporter

As of December 17, 2019, **the hotline fielded 324 disaster distress-related calls in 2019.**²⁵³ **These calls were described by staff as “intense,” “challenging,” and “time-consuming,” relative to distress calls made to the hotline in previous years.**²⁵⁴ Of these disaster distress-related calls, 229 callers received a discretionary \$500 stipend, funded by either Farm Aid or Farmers Union Foundation. **Resources like the Rural Response Hotline are experiencing high levels of utilization, impacting staff bandwidth and capacity, as well as possibly contributing to burnout or compassion fatigue. The number and intensity of calls indicate that rural residents are in distress after the 2019 disasters.**

Understanding this overwhelming need, Nebraska Extension has hosted a variety of initiatives, including “Communicating with Farmers Under Stress” programs designed to inform agribusinesses and health professionals of signs of suicide and distress, as well as a “Wellness in Tough Times for Farm and Ranch Families” webinar on April 23, 2019, to provide strategies for dealing with the stress of farming or ranching in today’s difficult economic environment. Over 55 government, education, media, and agricultural professionals participated and at least 66 people engaged with the post-disaster webinar. Nebraska Extension shared that a post-webinar evaluation indicated participants increased their confidence in identifying signs and symptoms of stress and in communicating with someone experiencing stress.²⁵⁵

²⁵¹ Omaha World-Herald, 2016. “As Rural Hospitals Shutter Nationwide, Health Care in the Heartland Appears to Be in Critical Condition.” Retrieved at: https://www.omaha.com/livewellnebraska/health/as-rural-hospitals-shutter-nationwide-health-care-in-the-heartland/article_7294d293-b9ae-5abe-8e45-26a5d1dee884.html

²⁵² Enroll Nebraska, 2016. “The Uninsured in Nebraska.” Retrieved at: <https://enroll-ne.org/uninsured>

²⁵³ Reported by Michelle Soll, Farm & Ranch Project Director for the Nebraska Rural Response Hotline, on December 17, 2019.

²⁵⁴ Ibid.

²⁵⁵ Nebraska Extension’s Disaster Recovery Efforts – 2019 Fact Sheet

The Federal Government also recognized the challenging circumstances and responded with funding for the Crisis Counseling Program (CCP). FEMA granted NEMA over \$400,000 and followed up with over \$2 million more to last through May 2020 for disaster-related crisis counseling services, implemented by the NDHHS and the University of Nebraska Public Policy Center.²⁵⁶ The CCP provides outreach workers to support the emotional and psychological recovery of Nebraska residents impacted by the 2019 disasters, among other services. Trained counselors go door-to-door in affected counties to offer emotional support to survivors. If necessary, the counselors make multiple home visits and can refer clients to longer-term treatment. More than 40 outreach workers were trained and stationed in 28 counties, providing free support.²⁵⁷ **Yet, needs remain for increased psychosocial support, awareness-building, and de-stigmatization.**

Crisis Counseling Program Reach

As of September 10, 2019, crisis counselors have had 12,417 face-to-face meetings with Nebraskans, distributed 23,000 pieces of recovery materials, and are continually sending outreach workers to communities.

²⁵⁶ University of Nebraska – Lincoln, 2019. "Disaster Related Crisis Counseling Available." Retrieved at: <https://newsroom.unl.edu/announce/floodrecovery/9583/56592>

²⁵⁷ University of Nebraska – Lincoln, 2019. "Public Policy Center Continues Nebraska Flood Recovery Work." Retrieved at: <https://news.unl.edu/newsrooms/today/article/public-policy-center-continues-nebraska-flood-recovery-work/>

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A group of people are working together on a boat, filling sandbags. In the foreground, a large pile of filled sandbags is visible. The background shows a body of water and some industrial structures. The image has a blue tint.

***COMMUNITY PLANNING
AND CAPACITY
BUILDING***

2.7 COMMUNITY PLANNING AND CAPACITY BUILDING

Community planning and capacity building refers to the ability of local, state, and tribal governments to engage the community, activate existing plans, and coordinate resources to manage recovery.²⁵⁸ Since the 2019 disasters, impacted communities have demonstrated their strengths in these areas by:

- Forming 11 long-term recovery groups (LTRGs) serving 18 Nebraska counties, to coordinate the connection to important recovery resources;
- Raising funds and coordinating donated resources and services to support recovery; and
- Activating pre-disaster recovery plans and/or hazard mitigation plans to manage recovery.

Some impacted communities may be struggling with strict permitting rules and/or limited inspection capacity statewide slowing the rebuilding process, which may be a beneficial area of focus for long-term recovery.

This section describes and analyzes factors that determine the ease or speed of initial and long-term recovery, such as dedicated recovery groups, funds available, grassroots efforts, existing plans, and jurisdictional codes. The areas of community planning and capacity building examined for this report include:

- LTRGs (**Section 2.7.2**);
- Post-disaster community efforts (**Section 2.7.3**);
- Planning (**Section 2.7.4**); and
- Building codes and inspection capacity (**Section 2.7.5**).

Section 2.7.1 (below) presents a high-level summary of potential recovery gaps based on the findings presented in this section of the report.

2.7.1 SUMMARY OF POTENTIAL RECOVERY GAPS

It is difficult to estimate the costs associated with community planning and capacity building because these efforts can rapidly scale up depending on the scope of activity. Based on the analysis presented in this section, the State of Nebraska may experience recovery gaps associated with the following aspects of community planning and capacity building:

- LTRGs without 501(c)(3) non-profit status may not benefit from streamlined processes that support accepting grant funding and directly funding individual recovery initiatives without a separate fiduciary manager.
- Volunteer burnout may have a negative impact on a local community's self-sufficiency, creating a greater need for assistance from external resources and partners.
- Similarly, communities may experience a degree of donor burnout, making it difficult to raise additional funds to support continued local recovery efforts.

²⁵⁸ Federal Emergency Management Agency, 2019. "Community Planning and Capacity Building." Retrieved at: <https://www.fema.gov/community-planning-and-capacity-building>

- Some local communities lack expertise, detailed plans, and/or personnel necessary to support sustained long-term recovery activities and resilience-building.
- The need to retroactively meet building codes causes already high costs to rise exponentially and therefore slows the recovery process at an individual and community level.
- The lack of availability of inspectors and cost of building inspections represent considerable barriers to rebuilding.

Though there are many potential recovery gaps that can manifest in this area, community leaders have demonstrated their capacity to raise and manage funds to support recovery; four entities raised approximately \$6.7 million to support recovery and resilience activities.

2.7.2 LONG-TERM RECOVERY GROUPS

The impacts from the 2019 disasters will likely last years, necessitating an all-hands approach to recovery. As defined by the National VOAD, “A long term recovery group is a cooperative body that is made up of representatives from faith-based, non-profit, government, business, and other organizations working within a community to assist individuals and families as they recover from disaster.”

The goal of LTRGs is to match recovery resources with **individual and household disaster-caused unmet needs** to guarantee that everyone in the community recovers from a given disaster.²⁵⁹

11

long-term recovery groups

As of February 2020, there were **11 LTRGs active in 18 counties impacted by the 2019 disasters in Nebraska**. LTRG coverage spans Boone, Buffalo, Butler, Cass, Colfax, Dawson, Dodge, Douglas, Hall, Hamilton, Howard, Merrick, Nance, Nemaha, Platte, Sarpy, Saunders, and Washington counties. The establishment of LTRGs is constantly evolving and this list serves as a snapshot of what exists at the time of this assessment’s publication. Mapping shown in **Figure 13** indicates that Boyd County, as an example, may benefit from an activated LTRG given the high proportion of requests for housing assistance made post-disaster.

A FEMA Voluntary Agency Liaison (VAL) is deployed after a federal disaster declaration and may assist with the establishment of LTRGs. The mission of VALs is to “ensure survivors and their communities benefit from a coordinated, comprehensive emergency management effort integrating diverse stakeholders, including voluntary, faith-based, and community-based organizations.”²⁶⁰ **FEMA sent eight VALs to Nebraska to support response and preliminary recovery efforts.**

²⁵⁹ National Voluntary Organizations Active in Disaster, 2012. “Long Term Recovery Guide.”

²⁶⁰ Federal Emergency Management Agency, 2012. “The Role of the Voluntary Agency Liaison in Community Planning and Capacity Building.” Retrieved at:

http://www.airs.org/files/public/Dallas2015/AIRS_Conference2015_Disaster_LongTermRecoveryPartnerships_FEMA_VAL.pdf

Some LTRGs are in the process of establishing 501(c)(3) non-profit status to grant them greater flexibility to serve their communities at a local level. As of December 2019, four are officially established as such, and three are transitioning. Establishing this status can help LTRGs by allowing them to accept grant funding directly, rather than through an established partner organization to manage administration and reporting requirements. In addition, some philanthropic grant programs may be limited exclusively to entities with 501(c)(3) status. Thus, though LTRGs are not required to obtain 501(c)(3) status, given the extensive recovery timeframe, **establishing non-profit status may help bridge potential recovery gaps and provide LTRGs additional operational flexibility.**

Long-Term Recovery

“A long term recovery group (LTRG) is a cooperative body that is made up of representatives from faith-based, non-profit, government, business, and other organizations working within a community to assist individuals and families as they recover from disaster.”

– National Voluntary Organizations Active in Disaster, Long Term Recovery Guide

2.7.3 POST-DISASTER COMMUNITY EFFORTS

2.7.3.1 Philanthropy

Communities internal and external to Nebraska have activated to raise relief funds after the devastating 2019 disasters. **Charitable organizations and foundations can route funds to LTRGs working on the ground**, either directly to those with 501(c)(3) status or through partner organizations serving as financial backers for others, to accomplish their recovery goals on a hyper-local level. FEMA strongly encourages those who want to help to consider donating cash. “A financial contribution to a recognized disaster relief organization is the most effective donation to make.”²⁶¹

Examples of post-disaster largescale fundraising include:

- The #NebraskaStrong Drive for Flood Relief, hosted by the Nebraska Broadcasters Association and the American Red Cross, raised over \$436,000 for recovery efforts.²⁶²
- The Nebraska Farm Bureau established a Disaster Relief Fund at their foundation to provide emergency aid to affected farmers, ranchers, and rural communities. In the first round of fund distribution, \$983,810 was circulated to communities in need; \$1,903,013 in the second round.²⁶³
- The Nebraska Community Foundation joined the Ethel S. Abbott Charitable Foundation in establishing the Nebraska Flood Recovery Fund.²⁶⁴ In January 2020, grants from this fund, totaling \$374,000, were awarded to six communities and non-profit organizations for flood recovery and resilience-building activities.²⁶⁵

²⁶¹ Federal Emergency Management Agency, 2018. “Volunteer & Donate Responsibly.” Retrieved at: <https://www.fema.gov/volunteer-donate-responsibly>

²⁶² Office of Governor Pete Ricketts, 2019. “Gov. Ricketts, First Lady Shore Thank Nebraskans, Broadcasters for #NebraskaStrong Drive for Flood Relief.” <https://governor.nebraska.gov/press/gov-ricketts-first-lady-shore-thank-nebraskans-broadcasters-%E2%80%9Cnebraskastrong-drive-flood-relief>

²⁶³ Nebraska Farm Bureau, 2019. “Disaster Assistance.” Retrieved at: <https://www.nefb.org/get-involved/disaster-assistance>

²⁶⁴ Nebraska Community Fund, 2019. “Nebraska Flood Recovery Fund to Help Rebuild Greater Nebraska.” Retrieved at: <https://www.necommfound.org/news/nebraska-flood-recovery-fund-to-help-rebuild-greater-nebraska/>

²⁶⁵ Nebraska Community Foundation, 2019. “Nebraska Flood Recovery Fund Makes Six Grants to Build More Resilient Communities.” Retrieved at: <https://www.necommfound.org/news/nebraska-flood-recovery-fund-makes-six-grants-to-build-more-resilient-communities/>

- The Salvation Army raised over \$3,000,000 to support disaster response, short-term recovery, and long-term recovery efforts, with 100 percent of funds directly assisting with survivors' needs.²⁶⁶

Private philanthropic efforts will continue to be a necessity for Nebraska's recovery given the high potential for additional recovery gaps.

2.7.3.2 Borrowing

As reported by respondents in the Periodic Needs Assessment, multiple communities have been forced to borrow funds or take out loans to support community recovery. The extent of local damage throughout Nebraska is evidenced by the sizable sum of funds borrowed.

Non-exhaustive instances of post-disaster community borrowing reported via the Periodic Needs Assessment include:²⁶⁷

- City of North Bend has borrowed 1.1 million, as of late 2019, to fix levees and roads and plans to borrow more to fix streets.
- Pierce County took out a 1.3 million bond in 2019 to support repairs to roads and bridges.
- Valley County obtained a bond to pay for the replacement of a bridge.

2.7.3.3 Service

The Nebraska chapter of VOAD, Nebraska Extension, and others activated to provide support in the aftermath of the 2019 disasters. From sandbagging to acting as disaster case managers, contributions by well-organized volunteers have been instrumental to Nebraska's recovery. **Volunteers continue to be vital to the state, but with an extended recovery timeframe, there are concerns surrounding endurance to continue to provide support and services.** Keeping volunteers engaged for months, or even years, after such a devastating situation can be difficult.

The University of Nebraska committed \$250,000 to implement a Flood Recovery Serviceship program, supported by Nebraska Extension, beginning in May 2019.²⁶⁸ The Serviceships offered students the chance to work full-time for 10 weeks, gaining valuable, paid experience in public service and learning about how communities respond to and recover from natural disasters. Nebraska Extension hosted and supervised 27 college students in 13 counties where they learned how to engage local leaders on flood recovery, identify service projects that could be addressed by University of Nebraska, and connect University of Nebraska resources with local recovery gaps. **As another flood season approaches, creative strategies to activate and maintain volunteer support are crucial.**

Community-Based Recovery

"Following this spring's floods, Nebraskans face enormous challenges. As neighbors step up to help neighbors, we will overcome and rebuild an even stronger Nebraska."

– Governor Pete Ricketts, April 10, 2019

²⁶⁶ Reported by Monalisa McGee-Baratta, Divisional Social Services Director, Salvation Army-Western Division.

²⁶⁷ Select responses provided in the first iteration of the Periodic Needs Assessment.

²⁶⁸ University of Nebraska, 2019. "Flood Recovery Serviceships." Retrieved at: <https://nebraska.edu/flood-assistance/flood-recovery-serviceships>

2.7.4 PLANNING

Complete, adopted, and integrated plans are key to Nebraska's recovery and resilience. From planning for proper land use to disaster recovery and hazard mitigation plans, the existence of these plans, and how often they are updated, are crucial to communities. Implementation of these plans in the post-disaster landscape is yet to be fully understood.

2.7.4.1 Pre-Disaster Recovery Plans

Pre-disaster recovery plans provide a framework to guide the initial recovery process in the aftermath of a hectic disaster, allowing the community to begin the road to recovery in a faster manner.²⁶⁹

While there is no overarching framework or policy mandating a set methodology or structure for long-term recovery,²⁷⁰ every county in Nebraska has some iteration of a pre-disaster recovery plan. These are sometimes standalone plans and sometimes in the form of an Emergency Support Function #14—Long-Term Community Recovery annex in their emergency plan. However, the absence of a required structure for recovery planning has created an environment in which **recovery plans may not align with federal best practices, standards, or procedures like the National Disaster Recovery Framework.** Best practices, lessons learned, templates, etc. from other states can be reviewed and referenced as Nebraska seeks to expand and improve recovery planning statewide.

Even in those cases where plans are well-developed and detailed, local communities are often found understaffed for the needs of recovery. Recovery operations are complex, years-long, and can overwhelm general, planning, and community development staff. Despite the complexity of recovery, having a plan in place does make a difference. In Wood River, the local disaster recovery plan supported initial recovery by outlining clean-up and volunteer coordination, for example.²⁷¹

Some resources do exist to bolster recovery planning efforts in local communities. **The Nebraska Department of Economic Development has provided local communities with planning grants to support long-term recovery planning and reduce these needs.**

²⁶⁹ Federal Emergency Management Agency, 2015. "Effective Coordination of Recovery Resources for State, Tribal, Territorial and Local Incidents." Retrieved at: <https://www.fema.gov/media-library-data/1423604728233-1d76a43cabf1209678054c0828bbe8b8/EffectiveCoordinationofRecoveryResourcesGuide020515vFNL.pdf>

²⁷⁰ Interagency Recovery Coordination: DR-4420-NE, August 22, 2019. "Recovery Support Strategy – Executive Summary."

²⁷¹ Reported electronically in Periodic Needs Assessment.

2.7.4.2 Hazard Mitigation Plans

According to FEMA, state, local, and tribal hazard mitigation plans are key to breaking the cycle of disaster damage, reconstruction, and repeated damage. The presence of a robust and updated hazard mitigation plan indicates preemptive thought about risk reduction and how to protect people and property from future hazards. Furthermore, a FEMA-approved hazard mitigation plan is an eligibility requirement for certain types of non-emergency disaster assistance, including mitigation project funding through FEMA's Hazard Mitigation Grant Program and Pre-Disaster Mitigation programs.

The State of Nebraska hazard mitigation plan was last updated in 2014. Like local and tribal plans, this state plan is a living document approved by FEMA for a five-year period. The plan characterizes hazard risks and community vulnerability, then identifies and prioritizes associated mitigation strategies. When implemented, these mitigation strategies should significantly reduce loss of life, injuries, economic costs, and destruction of natural, cultural, and manmade resources as a result of future hazard events.²⁷² **Nebraska also has a FEMA-reviewed flood hazard mitigation plan, last updated in 2013, that was built in conjunction with and integrated into the state's hazard mitigation plan.** This plan integration demonstrates effective coordination on mitigation efforts across state agencies.

As of December 12, 2019, **all but three counties in Nebraska had a FEMA-approved hazard mitigation plan.** Antelope County had a plan that had been approved by FEMA pending adoption, Seward County had an expired plan, and Grant County had no approved plan.²⁷³ However, given the influx in federal mitigation funds available within the state, counties could benefit from mid-cycle updates to their plans to further build out mitigation strategy sections to include more “shovel-ready” projects. Developing, improving, and maintaining hazard mitigation plans statewide that include robust mitigation strategy sections with well-developed, specific, and actionable projects, is critical to long-term recovery. **Counties and tribes with FEMA-approved plans could benefit from conducting mid-cycle updates to revise and expand prioritized mitigation strategies, encouraging greater statewide utilization of mitigation funds.**

2.7.4.3 Comprehensive Plans

State statute charges local planning commissions with developing and maintaining a Comprehensive Plan to guide future land use in communities. Nebraska Revised Statute §19-903 also notes that Comprehensive Plans should include regulations that “secure safety from flood.”²⁷⁴ Comprehensive Plans address both public and private sector development and may include strategies for risk mitigation and resilience, ideally in synchronization with hazard mitigation plans.

Despite the requirement to have a Comprehensive Plan, the State of Nebraska does not have an enforcement mechanism in place, limiting formal tracking or quality oversight of local plans and their maintenance. The Nebraska Department of Natural Resources has created floodplain zoning guidance, but that guidance is intended to help implement floodplain development regulations through code established by a local Comprehensive Plan. There is no dedicated funding source available statewide for Comprehensive Plan development or updates. Thus, some counties may

²⁷² Nebraska Emergency Management Agency, 2019. “State Hazard Mitigation Program.” Retrieved at: <https://nema.nebraska.gov/recovery/nebraska-state-hazard-mitigation-program>

²⁷³ Federal Emergency Management Agency, 2019. “FEMA Mitigation Planning Portal.” Retrieved at: <http://fema.maps.arcgis.com/apps/webappviewer/index.html?id=ec2fb023df744cf480da89539338c386>

²⁷⁴ Nebraska Department of Natural Resources, 2015. “Comprehensive Plans and Flood Risk: A Resource Guide for Nebraska Communities.”

go without a plan completely or go extended periods without updates, reducing the relevance and efficacy of those plans that do exist.

2.7.5 BUILDING CODES AND INSPECTION CAPACITY

The way communities were planned and built largely determines how they fared during the 2019 disasters. Craig Fugate, former FEMA Administrator, spoke to this fact, “Floods and hurricanes happen. The hazard itself is not the disaster — it’s our habits, our building codes. It’s how we build and live in those areas — that’s the disaster.”²⁷⁵ An emphasis on building back resiliently is of utmost importance in Nebraska to prevent repeated devastation.

Nebraska adhered to the 2012 International Building Code, or minimum regulations for building, at the time of the 2019 disasters and recently adopted the 2018 International Building Code. Localities can augment these codes, making them more or less stringent. The status of building codes post-disaster in the most affected areas, and the subsequent impact on recovery, has yet to be determined.

The significant destruction created the need for extensive repairs, rebuilds, and even demolitions. The Nebraska Department of Natural Resources supported local governments by creating and distributing a disaster damage assessment packet outlining the preferred permitting process. All floodplain management ordinances in the State of Nebraska require permits for the repair or reconstruction of damaged structures.²⁷⁶ Before a permit can be issued to a building in a Special Flood Hazard Area, the community must determine if the structure is substantially damaged. Substantial damage constitutes the cost of repairs equaling 50 percent or more of the structure’s pre-damage market value. If the building is found to be substantially damaged, it must be rebuilt floodplain ordinance-compliant to protect against future flooding.

In many instances, the disaster-stricken homes were considered substantially damaged and, additionally, were not previously compliant with required codes. **The need to retroactively meet building codes causes already high costs to rise exponentially and therefore slows the recovery process at an individual and community level.**²⁷⁷ Local-level policy modifications allowing for “recovery” repairs — to livable standards, rather than current code — should be considered.²⁷⁸ Additionally, professionals qualified to conduct inspections, required to understand whether a given structure is worth rehabilitating from a cost perspective, are scarce in communities statewide. **When inspectors are available, the cost of inspection is still a considerable barrier to conducting inspections and eventually rebuilding.** These inspections are essential to detect issues that are not immediately visible, but existing funding streams cannot be used for this purpose.

Some impacted counties in Nebraska have their own planning, zoning, and/or building departments, aiding the pace of recovery efforts through the ability to process applications. In addition, some counties are acting to reduce the burden associated with permitting. For example, the Sarpy County Board waived all permit fees related to repairing or demolishing flood damaged

²⁷⁵ The Atlantic, 2019. “Midwestern Flooding Isn’t a Natural Disaster.” Retrieved at:

<https://www.theatlantic.com/ideas/archive/2019/03/midwestern-flooding-isnt-natural-disaster/585403/>

²⁷⁶ Nebraska Department of Natural Resources, 2019. “State of Nebraska Disaster Damage Assessment Packet.” Retrieved at:

<https://dnr.nebraska.gov/sites/dnr.nebraska.gov/files/doc/floodplain/resources/2019%20Flood%20Damage%20Assessment%20Packet.pdf>

²⁷⁷ Housing Recovery Support Function Kickoff Meeting, Held December 4, 2019.

²⁷⁸ Governor’s Task Force for Disaster Recovery Workshop, Held December 5, 2019.

structures, but fees still apply for complete rebuilds.²⁷⁹ **However, challenges remain around affordability and feasibility of inspecting and getting a structure up to code in a timely manner.**

²⁷⁹ Sarpy County, Nebraska 2019. "Repairing or rebuilding a flooded home?" Retrieved at: <https://www.sarpy.com/about/county-news/repairing-or-rebuilding-flooded-home-2019-04-03t050000>

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***NATURAL AND
CULTURAL
RESOURCES***

2.8 NATURAL AND CULTURAL RESOURCES

Natural and cultural resources are pivotal to a high quality of life and economic stability in Nebraska. Nebraska land is home to valuable assets such as tribal land, parks, historical and cultural monuments, rare animal and plant species, and more. Post-disaster, these varied resources were threatened by widespread destruction. **Specifically, the state park system and ancestral lands in Nebraska sustained significant damage.** This section covers key cultural and natural assets in Nebraska and how they were impacted by the 2019 disasters, including:

- Tourism (**Section 2.8.2**);
- Game and parks (**Section 2.8.3**);
- Plant and animal species (**Section 2.8.4**);
- Environmental hazards (**Section 2.8.5**);
- Environmental reviews (**Section 2.8.6**);
- Tribes of Nebraska (**Section 2.8.7**).

Section 2.8.1 (below) presents a high-level summary of potential recovery gaps based on the findings presented in this section of the report.

2.8.1 SUMMARY OF POTENTIAL RECOVERY GAPS

Most of the quantifiable potential recovery gaps associated with natural and cultural resources have been accounted for in the infrastructure section of this report (**Section 2.3.7**). However, as additional data is gathered, new recovery gaps may be identified in the future. Based on the findings of this report, those gaps may be associated with:

- Restoration and recovery of the state park system and ancestral tribal lands, especially gaps in funding under the PA Program.
- Lasting impacts to access to the state park system that prevents residents and visitors from visiting (and therefore contributing to park revenue).
- Loss of tourism revenue.
- Conservation efforts to protect newly endangered and threatened species and/or critical habitats or wildlife refuges.
- Undiscovered hazardous materials and wastes.
- Time associated with environmental reviews and the subsequent impact to pace of rebuilding.

2.8.2 TOURISM

Tourism contributes \$732 million in tax revenue and almost 50,000 jobs generated by domestic and international travelers in Nebraska.²⁸⁰ All-time lodging tax collection records were broken in February, March, May, August, September, and November 2018. After the historic flooding, state lodging tax collections dropped below 2018 figures in the months of July and August 2019.²⁸¹ The Nebraska Passport program, in place for ten years, encourages visitors to find “hidden gems”

²⁸⁰ Nebraska Tourism Commission, 2019. “2018 Annual Report.” Retrieved at: https://visitnebraska.com/sites/default/files/2019-04/2018_Annual_Report_For_Web-2.pdf

²⁸¹ Nebraska Tourism Commission, 2018-2019. “State and County Lodging Tax Reports.” Retrieved at: <https://visitnebraska.com/state-county-lodging-tax-reports>

throughout the state. In 2017, the Nebraska Passport Program generated \$5.73 million in traveler spending and \$469,500 in state and local tax revenue.²⁸² The number of free Passport booklets requested was only slightly lower in 2019 (48,551 booklets) compared to 2018 (48,895 booklets), indicating that the floods may not have significantly impacted internal and external tourism.

2.8.3 GAME AND PARKS

The Nebraska Game and Parks Commission reported the annual economic impact of hunting, fishing, wildlife viewing, and state park visiting amounts to \$2.64 billion, with hunting having the highest impact.²⁸³

Users support Nebraska's Game and Parks Commission primarily through the purchase of permits and stamps, accounting for 88 percent of revenue in 2017.²⁸⁴ In 2018 alone, almost 200,000 fishing permits were sold.²⁸⁵ Following the 2019 disasters, hunters faced access barriers due to closed or feeble county roads. Fishing also experienced disruptions with typical trout stocking prevented at Trout Lake due to the flooding and additional stockings required in other areas.²⁸⁶

The extensive state park system is another mainstay of Nebraska, encompassing well over 100,000 acres. Despite the breadth of the state park system, the Game and Parks Commission 2018 Annual Report states that over 97 percent of Nebraska's land base is privately owned.

After the 2019 disasters, state parks, state historical parks, state recreation areas, and wildlife management areas found along rivers and streams in Nebraska closed.²⁸⁷ Damage estimates for parks, including these assets, have been quantified in **Section 2.3.7**. In March 2019, 25 state parks and state recreation areas were fully or partly closed due to flooding or other damage from the disasters.²⁸⁸ The prominent Cowboy Trail, located in northern Nebraska, sustained significant flood damage and will cost an estimated \$7.7 million, requiring one to two years to repair.²⁸⁹ The bridge providing access to the Niobrara State Park, a major tourist destination drawing in almost 133,000 visitors in 2018, was damaged before peak season and a temporary bridge will not be established until well into 2020.²⁹⁰ **Effects on the state park system will be long lasting and impact accessibility into the foreseeable future.**

²⁸² Nebraska Tourism Commission, 2019. "Nebraska Passport Program." Retrieved at: <http://nebraskapassport.com/>

²⁸³ Nebraska Game and Parks Commission, 2018. "Information Guide." Retrieved at: <http://digital.outdoornebraska.gov/i/955323-2018-quick-reference-guide>

²⁸⁴ Ibid.

²⁸⁵ Nebraska Game and Parks Commission, 2018. "2018 Annual Report." Retrieved at: <http://digital.outdoornebraska.gov/i/1088687-2018-annual-report>

²⁸⁶ NEBRASKAland, 2019. "Two Rivers SRA Trout Lake closed for foreseeable future." Retrieved at: <http://magazine.outdoornebraska.gov/2019/04/two-rivers-sra-trout-lake-closed-for-foreseeable-future/>

²⁸⁷ NEBRASKAland, 2019. "Game and Parks working proactively to assess conditions at state park areas." Retrieved at: <http://magazine.outdoornebraska.gov/2019/03/game-and-parks-working-proactively-to-assess-conditions-at-state-park-areas/>

²⁸⁸ Associated Press, 2019. "West central state parks, recreation areas among 25 closed due to flood." Retrieved at: <https://apnews.com/2f5a247ed7cf40c6aa761ebe8f95a9b1>

²⁸⁹ U.S. News, 2019. "Flood Fixes for Prominent Nebraska Trail May Take 1-2 Years." Retrieved at: <https://www.usnews.com/news/best-states/nebraska/articles/2019-12-01/flood-fixes-for-prominent-nebraska-trail-may-take-1-2-years>

²⁹⁰ NET News, 2019. "Nebraska Roads and Bridges Still in Recovery After Flooding." Retrieved at: <http://netnebraska.org/article/news/1181479/nebraska-roads-and-bridges-still-recovery-after-flooding>

2.8.4 PLANT AND ANIMAL SPECIES

Nebraska is home to thousands of plant and animal species valuable to the biodiverse environment. The Game and Parks Commission estimates that there are over 30,000 species in Nebraska, the majority being insects. Plants and animals did not go unscathed during the flooding. It will take time for the impact to be fully understood. **The U.S. Fish and Wildlife Service Ecological Services' preliminary report indicated that the disaster impacted 11 threatened or endangered species, four threatened or endangered species' critical habitat, eight national wildlife refuges, and multiple portions of the Rainwater Basin Wetland Management District.**

FEMA's Advance Evaluation Team report expressed concern over the spread of invasive species, including Emerald Ash Borer (EAB), due to improper vegetative debris management post-flood. EAB can infest and kill all types of ash trees, no matter their health status, condition, size, or age – posing a major threat to Nebraska's 44 million ash trees.²⁹¹ According to the Nebraska EAB Response Plan, "The estimated impact of EAB on the approximately one million ash trees in communities in Nebraska is \$961 million (2014 dollars)." By September 2019, **EAB was found in Douglas, Sarpy, Cass, and Saunders counties.**²⁹²

2.8.5 ENVIRONMENTAL HAZARDS

The 2019 disasters posed threats to Nebraska's air, land, and water through exposure to hazardous materials, household hazardous waste, and solid waste. Containers of hazardous materials were displaced by flood waters and household hazardous waste, such as batteries or garden chemicals, accumulated post-disaster. Supported by the Federal Government, NDEE worked steadfastly to identify and remove orphaned containers from waterways, wetlands, and community areas adjacent to major waterways and address household hazardous waste to protect the environment and the public's health.

A system was put in place for local and state authorities to report the locations of known or discovered materials, and orphaned containers were also located by aerial surveillance of flooded waterways. Satellite staging areas were set up in Columbus and Niobrara, as well as a primary staging area in Fremont, to collect the recovered materials. As of July 31, 2019, **approximately 2,250 orphaned containers were recovered, including 1,000 drums, 200 tanks, and 900 smaller chemical containers.**²⁹³ NDEE has since received reports of containers not discovered during the initial mission assignment. It is possible that containers will be discovered in the future as previously inaccessible areas become accessible, but the number of undiscovered containers is likely to be small.

2,000+

orphaned containers recovered

The community also played a key role in supporting environmental clean-up efforts. Guided by NDEE, impacted communities disposed copious amounts of solid and household hazardous

²⁹¹ Nebraska Department of Agriculture, 2015. "Nebraska Emerald Ash Borer Response Plan." Retrieved at: https://nda.nebraska.gov/plant/entomology/eab/eab_response_plan.pdf

²⁹² U. S. News and World Report, 2019. "Emerald Ash Borer Found in Nebraska's Saunders County." Retrieved at: <https://www.usnews.com/news/best-states/nebraska/articles/2019-09-09/emerald-ash-borer-found-in-nebraskas-saunders-county>

²⁹³ Information shared by the Nebraska Department of Environment and Energy.

waste, properly segregating, stockpiling, and then transporting waste to approved disposal facilities.

Swift identification and removal of hazards supported the environment's recovery, but the possibility of discovering new materials or waste is still possible.

2.8.6 ENVIRONMENTAL REVIEWS

After the 2019 disasters, given the level of destruction discussed throughout the report, significant repairs and reconstructions were required for houses and other structures, such as those that are eligible for PA. In order to reconstruct, recipients of certain federal funds must undergo environmental reviews, according to the National Environmental Policy Act.²⁹⁴ Land and structure owners have gone through, or are in the process of completing, environmental reviews to ensure that the rebuilding process poses no threat to sacred grounds, artifacts, endangered species, etc. Considerations and requirements related to environmental reviews are vast and may impact the ability to rebuild quickly, and therefore recover.

The Governor's Task Force for Disaster Recovery meeting in January 2020 provided a status update of the review process to date. History Nebraska, typically charged with completing some of these reviews, has seen a significant uptick in environmental review needs since the 2019 disasters. Related to recovery efforts, History Nebraska is working with NDOT and USDA FSA to streamline reviews and allow for time-sensitive recovery efforts. Archeologists have been hired to support advancement of debris removal and other repair processes.

2.8.7 TRIBES OF NEBRASKA

Nebraska has four headquarter tribes, including the Omaha, Ponca, Santee Sioux, and Winnebago tribes of Nebraska. According to the Nebraska Commission on Indian Affairs, **the Ponca Tribe of Nebraska ancestral land, located in Niobrara, sustained significant damage and was left without power and water** in the aftermath of the floods. In July 2019, the Ponca Tribe of Nebraska and FEMA signed a historic agreement to allow for direct federal assistance, separate from the state government, making the Ponca one of the first tribes to be granted its own disaster declaration. With this, FEMA PA grants go directly to the tribe rather than through the state.²⁹⁵ **Issuance of a disaster declaration indicates the grave impact on tribal lands and quality of life.** The Santee Sioux Nation was also eligible to apply for FEMA disaster assistance as a result of damage from the 2019 disasters. Furthermore, a Disaster Recovery Center was set up in the Santee Sioux Nation.

²⁹⁴ Nebraska Emergency Management Agency, n.d. "Environmental and Historic Preservation and Disaster Recovery." Retrieved at: <https://nema.nebraska.gov/sites/nema.nebraska.gov/files/doc/fema-ehp-guide.pdf>

²⁹⁵ Federal Emergency Management Agency, 2019. "Ponca Tribe of Nebraska and FEMA Sign Historic Pact for Disaster Recovery." Retrieved at: <https://www.fema.gov/news-release/2019/07/17/ponca-tribe-nebraska-and-fema-sign-historic-pact-disaster-recovery>

3 CONCLUSION

Recovery from the 2019 disasters will take years. Individuals, families, communities, and the state, together with federal agencies, non-governmental organizations, and private sector partners have made great strides toward recovery and will need to continue to work together to repair and enhance what remains damaged and vulnerable.

The *Baseline Conditions and Impact Assessment Report* provides a wide-ranging look at the disasters' impacts across several functional areas, including infrastructure, housing, the economy, health and social services, and cultural and natural resources. As described in the report, impacts to one area often have cascading effects that result in impacts to other sectors. For example, infrastructure damage can affect the economy, and damage to housing can affect mental and physical health.

The interconnectivity across the functional areas outlined in this report demonstrates that recovery efforts focused on individual areas will reduce impact and risk more broadly in the years to come. The examples below are based on issues identified in researching this report, along with solutions based on best practices and input from Nebraska recovery stakeholders.

- Damage to infrastructure was widespread, affecting communities across Nebraska and recovery in multiple sectors, including agriculture and the economy. **Thoughtful mitigation measures to roads, bridges, and other essential infrastructure are needed to prevent future infrastructure damage and protect families, homes, farms, and businesses for years to come.**
- Disaster-related housing needs include both immediate assistance for people who have been displaced or are living in substandard conditions, as well as long-term assistance to help provide permanent housing solutions for disaster survivors. Health concerns associated with mold exposure are an urgent concern for the state's housing experts and volunteers alike. **Resilient housing solutions will help Nebraskans reduce risk from future flooding; get Nebraskans into safer and less risk-prone living conditions; reduce health risks associated with living in damaged homes or substandard living situations, including risks to airborne health hazards; and may have positive impacts on the mental well-being of those benefiting from safe, stable homes.** Resilient solutions may include relocation, elevation or flood proofing, and increased utilization of insurance.
- The need for mental health support services—particularly in impacted rural areas—increased as a result of the 2019 disasters, as Nebraskans, already stressed by economic challenges, faced the reality of disaster losses. The demand for mental health services is known to spike 12–18 months after a disaster, indicating that additional needs will likely be identified in the months to come. High demands on disaster case managers may lead to burnout and further limit availability of long-term recovery services for impacted Nebraskans. Increasing the availability of **psychosocial support services and case managers for Nebraskans will work towards minimizing cascading impacts on both recovery services providers and those in need of such essential services.**

3.1 NEXT STEPS

The needs of Nebraska are complex, and resources limited. It is therefore essential for the state to establish a thoughtful roadmap to long-term recovery—a roadmap that addresses the most pressing and complex needs of Nebraskans; outlines key priorities across different impacted sectors; identifies appropriate milestones by which progress can be measured; and identifies necessary resources (including funding) and responsible parties.

To initiate this process, Recovery Support Functions within the Governor’s Task Force for Disaster Recovery have been working to design key goals for long-term recovery from the 2019 disasters. The following provides the draft goals from each Recovery Support Function developed throughout the recovery planning process in 2019:

Table 8 – Governor’s Task Force for Disaster Recovery Long-Term Recovery Goals

| Recovery Support Function | Goal |
|---|--|
| Infrastructure Systems | Support the efficient assessment, restoration, and revitalization of infrastructure systems (e.g., dams, bridges, power plants, wastewater systems, levees). |
| Housing | Design and implement interim, temporary, and permanent housing recovery solutions that effectively support the needs of the whole community. Return housing to a stable state and develop new opportunities for housing and neighborhood growth. |
| Economic & Agricultural | Economic: Return economic and business activities to a healthy state and develop new business and employment opportunities that contribute to a sustainable and economically viable community. Agricultural: Support the efficient restoration and revitalization of agricultural systems after a disaster by researching, planning, and executing projects to rehabilitate and increase the resilience of those systems. |
| Health & Social Services | Restore services that protect health and safety and restore the mental, social, and physical health of the impacted population through the mitigation of disaster-created impacts. |
| Community Planning & Capacity Building | Enable local governments to effectively and efficiently carry out community-based recovery planning and management post-disaster. ²⁹⁶ |
| Natural & Cultural Resources | Protect natural, cultural, and historic resources (e.g., parks, cemeteries, museums) through recovery projects to preserve, conserve, rehabilitate, and restore disaster-damaged resources. |

²⁹⁶ The Governor’s Task Force for Disaster Recovery served in place of an activated Community Planning and Capacity Building Recovery Support Function. This goal was informed by FEMA’s mission for the Community Planning and Capacity Building Recovery Support Function, retrieved at: https://www.fema.gov/media-library-data/1466705670641-82c846c9cfe2db88a70bf2475d5785bf/RSF_CPCB_41416.pdf

Once goals are set and aligned with needs, Nebraska will develop associated objectives, strategies and tactics that aim to meet or come as close as possible to meeting the remaining needs. Further, activities must be prioritized to optimize the timing and sequence of the funding available to augment recovery. The state must consider:

- Are the most pressing needs met?
- Are cross-functional needs met?
- Does the solution have applicability to meet both rural and urban needs?
- Does the solution aim to alleviate the evolution of needs likely to cascade from the remaining impacts today?
- Does the solution aim to minimize the likelihood of risk if a similar hazard strikes the same areas again?
- Are, wherever possible, the right funds being used at the right place at the right time to alleviate the need?

While immediate recovery activities are ongoing, another upcoming step on the long road to recovery is the development of the *Long-Term Recovery and Resilience Plan*. **The *Long-Term Recovery and Resilience Plan* will be the state's blueprint by which the state can measure its progress in becoming more resilient since the 2019 disasters.** Informed and shaped by the Governor's Task Force for Disaster Recovery, the *Long-Term Recovery and Resilience Plan* will help the state ensure that the questions above are addressed by the strategies the state identifies and prioritizes for completion. Coupled with this *Baseline Conditions and Impact Assessment Report's* look at the impacts of the disasters, the actionable long-term plan will move the needle forward toward a recovered and more resilient Nebraska.

APPENDIX 1: ACRONYMS

| Acronyms | Definition |
|----------|---|
| APHIS | Animal and Plant Health Inspection Service |
| CCP | Crisis Counseling Program |
| CDBG-DR | Community Development Block Grant – Disaster Recovery |
| CDC | Centers for Disease Control and Prevention |
| D-SNAP | Disaster Supplemental Nutrition Assistance Program |
| EAB | Emerald Ash Borer |
| EIDL | Economic Injury Disaster Loans |
| EPA | United States Environmental Protection Agency |
| ER | Emergency Relief |
| EWPP | Emergency Watershed Protection Program |
| FEMA | Federal Emergency Management Agency |
| FHWA | Federal Highway Administration |
| FDA | United States Food and Drug Administration |
| FNS | Food and Nutrition Service |
| FSA | Farm Service Agency |
| HMGP | Hazard Mitigation Grant Program |
| HUD | United States Department of Housing and Urban Development |
| IA | Individual Assistance |
| LIP | Livestock Indemnity Program |
| LTRG(s) | Long Term Recovery Group(s) |
| NDA | Nebraska Department of Agriculture |
| NDED | Nebraska Department of Economic Development |
| NDEE | Nebraska Department of Environment and Energy |
| NDHHS | Nebraska Department of Health and Human Services |
| NDNR | Nebraska Department of Natural Resources |
| NDOT | Nebraska Department of Transportation |
| NEMA | Nebraska Emergency Management Agency |
| NFIP | National Flood Insurance Program |

| Acronyms | Definition |
|----------|---|
| NRCS | Natural Resources Conservation Service |
| PA | Public Assistance |
| PTSD | Post-Traumatic Stress Disorder |
| RIP | Levee Rehabilitation and Inspection Program |
| SBA | Small Business Association |
| SNAP | Supplemental Nutrition Assistance Program |
| SUD | Substance Use Disorder |
| SVI | Social Vulnerability Index |
| UNL | University of Nebraska – Lincoln |
| USACE | United States Army Corps of Engineers |
| USDA | United States Department of Agriculture |
| VAL | Voluntary Agency Liaison |
| VOAD | Voluntary Organizations Active in Disaster |

APPENDIX 2: HUD-DEFINED UNMET NEEDS

The estimations of “potential recovery gaps” represented in this report will differ from the estimations of “unmet needs” calculated by HUD under the guidelines associated with the \$108.9 million allocation under the CDBG-DR program. This distinction begins with HUD’s focus on three key areas:

- Infrastructure, based on Public Assistance data;
- Housing, based on FEMA and SBA housing data; and
- Economic revitalization, based on SBA business data.

The potential recovery gaps identified earlier in the report expand beyond these areas by including other programs and resources to show the broader universe of need (e.g., infrastructure repairs eligible for partial reimbursement via FHWA). **This distinction is intended to underscore the extent to which HUD’s estimations *may not be sufficient to address the needs of disaster survivors.***

This section is intended to show and provide context for HUD’s estimation of unmet needs across each of the three programmatic areas introduced above.

3.2 INFRASTRUCTURE NEEDS

To calculate unmet needs for infrastructure projects, HUD obtained FEMA Public Assistance cost estimates (as of November 13, 2019, for 2019 disasters) of the expected local cost share to repair the permanent public infrastructure (FEMA Categories C to G) to their pre-disaster condition. This local cost share—25 percent of eligible project costs—is considered an unmet need and is eligible for funding through CDBG-DR.

HUD reported \$313 million in damage, making the local cost share approximately \$78 million. These figures have both increased over time, as more information was collected. As of January 2020, damage is estimated at \$366 million, making the non-federal share \$91.5 million. It is not anticipated that FEMA will use its waiver authority to assume a larger proportion of the cost than mandated by the Stafford Act. It is also assumed that any use in Nebraska of the alternative PA procedures under Section 428 of the Stafford Act will not alter the unmet need calculation.

HUD requirements stipulate that 80 percent of allocated funding is spent in areas designated as “most impacted and distressed.” For the State of Nebraska, these areas are:

- Sarpy County (entirety);
- Dodge (zip code 68025); and
- Douglas (zip code 68064 and 68069).

However, some counties outside of this area sustained significant infrastructure damage and will need to secure some other source of funding to meet local match requirements. This may prevent some communities from fully resolving their infrastructure needs, which can impede overall community recovery. When comparing the counties with the highest estimated value of damage to infrastructure, the following counties have sustained the greatest losses based on Public Assistance data (current as of January 2020):

- Douglas: \$47 million
- Lancaster: \$43 million
- Dodge: \$28 million
- Platte: \$27 million
- York: \$22 million
- Greeley: \$21 million
- Sarpy: \$17 million
- Cass: \$15 million

3.3 HOUSING NEEDS

HUD allocates funding based on its analysis of FEMA Individual Assistance applications to determine counties that can be deemed as most impacted. The “most impacted and distressed” designation is based on:

- Counties with severe unmet housing needs in excess of \$10 million.
- Zip code with severe unmet housing needs in excess of \$2 million.

HUD calculates “unmet housing needs” as the number of housing units with FEMA inspected real property damage of \$8,000 or above, personal property damage \$3,500 or above, or flooding one foot or above on the first floor times the estimated cost to repair those units less repair funds already provided by FEMA and SBA. Only Sarpy County exceeds the \$10 million threshold for counties, and three zip codes in Dodge and Douglas counties exceeded the \$2 million threshold for zip codes. As a result, the HUD-defined “most impacted and distressed area” is highly concentrated, while damage in Nebraska is far more widespread, with many areas needing access to recovery funding. As a result, Nebraska could seek HUD’s approval to expand the most impacted and distressed areas to broaden access to the 80 percent of funding reserved for such areas.

When comparing the total FEMA inspected real property damage (as of November 2019) on a county by county basis, there is a natural break in the data that separates Dodge and Douglas counties from the remainder of eligible counties.

- Dodge County total inspected real property damage: \$4.6 million
- Douglas County total inspected real property damage: \$4.1 million
- Cass County total inspected real property damage: \$1.3 million

Though Dodge and Douglas counties do not meet HUD's threshold of \$10 million of severe unmet housing needs for a county in order to be recognized as most impacted and distressed, they are, other than Sarpy County, the most impacted counties within the state. The losses sustained in Dodge and Douglas are still three times higher than that of Cass County (the state’s fourth highest verified losses). Designations based on FEMA Individual Assistance data alone may be misleading, because of the homes that were assessed by both FEMA and SBA in Dodge and Douglas counties, SBA verified losses were nearly 14 times higher than FEMA’s calculation. This suggests that FEMA’s assessment process may represent only a partial understanding of housing need. For additional information on discrepancies in data collection, refer to **Section 2.4.2.1.1**.

The total HUD allocation for Nebraska is currently at \$108,938,000 to address both housing and infrastructure needs throughout the damaged areas. HUD requires that 80 percent of CDBG-DR funding be allocated to the most impacted and distressed areas. These four areas will receive

\$87,150,400 (80 percent) of the \$108,938,000 allocated to the State of Nebraska under the CDBG-DR program. Therefore, \$21,787,600 is available to communities outside of the most impacted and distressed designation, which have housing needs currently estimated at \$36,889,763 based on FEMA Real Property Loss figures and payouts and SBA Real Property Losses and Loans. This leaves a potential housing recovery gap of \$15,102,163 that will be the responsibility of individuals and governmental entities to address. This calculation does not take into account the unmet infrastructure needs that will also be funded through the allocation, further reducing the amount of funds available for housing.

3.4 ECONOMIC REVITALIZATION NEEDS

To estimate “serious unmet economic revitalization needs,” HUD analyzes SBA disaster loan data to create five categories of damage based on the combined verified real estate and content losses of the pool of applicants. Of the five categories HUD establishes, “serious” unmet need considers only Category 3 and above:

- Category 1: real estate + content loss = below \$12,000
- Category 2: real estate + content loss = \$12,000 - \$29,999
- Category 3: real estate + content loss = \$30,000 - \$64,999
- Category 4: real estate + content loss = \$65,000 - \$149,000
- Category 5: real estate + content loss = \$150,000 and above

For properties with real estate and content loss of \$30,000 or more (i.e., Category 3 and above), HUD calculates the estimated amount of unmet needs for small businesses by multiplying the median damage estimates by the number of small businesses denied an SBA loan. This amount includes those denied a loan prior to inspection due to inadequate credit or income (or a decision had not been made), under the assumption that damage among those denied at pre-inspection have the same distribution of damage as those denied after inspection. HUD’s estimation of total unmet economic revitalization need equates to \$4,549,631 (based on data from November 2019).

While this approach seems to yield an estimate that seems appropriate for the extent of damage reported by SBA, there is concern for the small businesses that did not apply, that may still need financial assistance. For more information on factors that may have impacted participation in federal funding programs, refer to **Section 2.4.2.1.2**.

APPENDIX 3: DATA REPRESENTED IN FIGURES AND TABLES

The data presented in figures and tables throughout the *Baseline Conditions and Impact Assessment Report* are described further below. Figures that are photographs are not included in the matrix.

| Figure | Explanation | Analysis Technique | Source(s) | Date Data Last Updated |
|-----------------|--|---|--|------------------------|
| Figure 3 | This map displays the social vulnerability index for the State of Nebraska. | This map was developed using an analysis conducted by the CDC. The CDC analysis compiled census data indicators in order to create an index for social vulnerability. A more detailed explanation is provided in Section 2.2.1 . | CDC | 2016 |
| Figure 4 | This map displays the total number of PA-eligible projects per county through three categories: High = 24 - 111 Medium = 5 - 24 Low = 1 - 5 | This map was developed using reported the total PA-eligible projects (Categories C-G) per county. The symbology of the map was graduated colors with the categorization based on geometric intervals. | NEMA PA Database | January 17, 2020 |
| Figure 5 | This map displays the percentage of the total number of PA-eligible projects compared to the total infrastructure value per county through four categories: Extreme = 5.00% - 7.66% High = 1.50% - 5.00% Medium = 0.22% - 1.50% Low = 0.07% - 0.22% For this map, a fourth "extreme category" was chosen in order to illustrate the "outlier" highly impacted categories. | This map was developed using reported PA-eligible infrastructure projects (Categories C-G) and the county infrastructure value information. The symbology of the map was graduated colors with the categorization based on geometric intervals with the extreme category manually selected. | FEMA PA Database Nebraska Department of Revenue | January 17, 2020 |

| Figure | Explanation | Analysis Technique | Source(s) | Date Data Last Updated |
|------------------|---|--|--|--|
| Figure 6 | <p>This map displays the total estimated PA-eligible infrastructure recovery costs by county through three categories:</p> <p>High = \$5,890,651 - \$47,261,351 Medium = \$663,616 - \$5,890,651 Low = \$3200 - \$663,616</p> | <p>This map was developed using reported PA-eligible infrastructure recovery costs (Categories C-G). The symbology of the map was graduated colors with the categorization based on geometric intervals.</p> | FEMA PA Database | January 17, 2020 |
| Figure 7 | <p>This map displays the percentage of the PA-eligible infrastructure recovery costs compared to the total infrastructure value per county through four categories:</p> <p>Extreme = 1.56% - 2.01% High = 0.11% - 1.50% Medium = 0.02 % - 0.11% Low = 0.00% - 0.02%</p> <p>For this map, a fourth "extreme category" was chosen in order to illustrate the "outlier" highly impacted categories.</p> | <p>This map was developed using reported PA-eligible infrastructure recovery costs (Categories C-G) and county infrastructure value information. The symbology of the map was graduated colors with the categorization based on geometric intervals with the extreme category manually selected.</p> | FEMA PA Database Nebraska Department of Revenue | January 17, 2020 2018 |
| Figure 11 | <p>This map displays the alignment of the social vulnerability index and housing impacts. Displayed on this map is the "high" category for the requests for housing assistance and the counties where the "high" category in the social vulnerability index aligns with the high category for the requests for housing assistance.</p> | <p>This map was developed using reported FEMA IA and SBA applications as well as the CDC compiled social vulnerability index. The ArcMap geoprocessing tool intersect was used to create the high social vulnerability and high housing impact data.</p> | FEMA IA Database SBA Database Centers for Disease Control and Prevention | January 17, 2020 January 28, 2020 2016 |

| Figure | Explanation | Analysis Technique | Source(s) | Date Data Last Updated |
|------------------|--|--|---|---|
| Figure 12 | <p>This map displays the total number of requests for housing assistance by county through three categories:</p> <p>High = 433 - 1571 Medium = 110 - 433 Low = 18 - 110</p> <p>For the purposes of this map, requests for housing assistance are defined as total number of FEMA IA and SBA applications (with removal of duplicate program applications).</p> | <p>This map was developed using reported FEMA IA and SBA applications. The symbology of the map was graduated colors with the categorization based on geometric intervals.</p> | <p>FEMA IA Database</p> <p>SBA Database</p> | <p>January 17, 2020</p> <p>January 28, 2020</p> |
| Figure 13 | <p>This map displays the relative number of requests for housing assistance compared to the total housing value per county through four categories:</p> <p>Extreme = 10 - 20% High = 5% - 10% Medium = 1.5% - 5% Low = 0.4% - 1.5%</p> <p>For the purposes of this map, requests for housing assistance are defined as total number of FEMA IA and SBA applications (with removal of duplicate program applications).</p> <p>For this map, a fourth "extreme category" was chosen in order to illustrate the "outlier" highly impacted categories.</p> | <p>This map was developed using reported FEMA IA and SBA applications and total housing stock value. The symbology of the map was graduated colors with the categorization based on geometric intervals with the extreme category manually selected.</p> | <p>FEMA IA Database</p> <p>SBA Database</p> <p>Nebraska Department of Revenue</p> | <p>January 17, 2020</p> <p>January 28, 2020</p> <p>2018</p> |

| Figure | Explanation | Analysis Technique | Source(s) | Date Data Last Updated |
|------------------|--|---|--|------------------------|
| Figure 14 | <p>This map displays the total value of housing damage by county through three categories:</p> <p>High = \$6,584,054 - \$47,905,368 Medium = \$871,910 - \$6,584,054 Low = \$82,279 - \$871,910</p> <p>For the purposes of this map, housing damage refers to reported damage from FEMA IA and SBA applications (with removal of duplicate program applications).</p> | <p>This map was developed using reported FEMA IA and SBA application information. The symbology of the map was graduated colors with the categorization based on geometric intervals.</p> | FEMA IA Database | January 17, 2020 |
| | | | SBA Database | January 28, 2020 |
| Figure 15 | <p>This map displays the proportion total value of housing damage compared to the total housing value per county through four categories:</p> <p>Extreme = 11.00% - 11.75% High = 0.40% - 11.00 Medium = 0.10% - 0.40% Low = 0.00% - 0.10%</p> <p>For the purposes of this map, housing damage refers to reported damage from FEMA IA and SBA applications (with removal of duplicate program applications).</p> <p>For this map, a fourth "extreme category" was chosen in order to illustrate the "outlier" highly impacted categories.</p> | <p>This map was developed using reported FEMA IA and SBA application information and total housing stock value. The symbology of the map was graduated colors with the categorization based on geometric intervals with the extreme category manually selected.</p> | FEMA IA Database | January 17, 2020 |
| | | | SBA Database | January 28, 2020 |
| | | | Nebraska Department of Revenue | 2018 |

| Figure | Explanation | Analysis Technique | Source(s) | Date Data Last Updated |
|------------------|---|---|--|--|
| Figure 16 | This figure represents the total number of applications submitted to FEMA IA and SBA by homeowners and renters, the total number of applications submitted to FEMA IA and SBA that were approved, and each program's approval rate. | This figure was developed by calculating the sum of all applications submitted to FEMA IA and SBA (with the exception of SBA applications for business loans) for renters and homeowners. Information was filtered by number of applications and number of approvals for both FEMA IA and SBA. Based on these filters the percentage of applications approved was calculated. | FEMA IA Database SBA Database | January 17, 2020 January 28, 2020 |
| Figure 17 | This figure demonstrates the rate of insured FEMA IA applicants (both renters and homeowners). | This figure was developed by calculating the sum of all FEMA IA applicants, filtered by homeowner's/renter's insurance and NFIP insurance, and separated by homeowners or renters. | FEMA IA Database | January 15, 2020 |
| Figure 18 | This map displays the total number of NFIP claims for housing properties by county through three categories: High = 30 – 34 Medium = 4 – 29 Low = 1 – 3 | This map was developed using federal NFIP claims information. The symbology of the map was graduated colors with the categorization based on geometric intervals. | FEMA NFIP Redacted Claims Data Set | December 4, 2019 |

| Figure | Explanation | Analysis Technique | Source(s) | Date Data Last Updated |
|------------------|---|--|---|-------------------------|
| Figure 19 | <p>This map displays the percentage of total number of NFIP claims for housing properties by county through four categories:</p> <p>Extreme = 8.01% - 15.82% High = 0.65% - 8.01% Medium = 0.15 - 0.65% Low = 0.05% - 0.14%</p> <p>For this map, a fourth "extreme category" was chosen in order to illustrate the "outlier" highly impacted categories.</p> | <p>This map was developed using federal NFIP claims information. The symbology of the map was graduated colors with the categorization based on geometric intervals.</p> | <p>FEMA NFIP Redacted Claims Data Set</p> | <p>December 5, 2019</p> |
| Figure 20 | <p>This map displays the total value of NFIP claims for housing properties by county through three categories:</p> <p>High = \$415,548 - \$10,605,098 Medium = \$15,691 - \$415,548 Low = \$0 - \$15,691</p> | <p>This map was developed using federal NFIP claims information. The symbology of the map was graduated colors with the categorization based on geometric intervals.</p> | <p>FEMA NFIP Redacted Claims Data Set</p> | <p>December 4, 2019</p> |
| Figure 21 | <p>This map displays the percentage of total value of NFIP claims for housing properties compared to the total value of the housing stock by county through four categories:</p> <p>Extreme = 1.01% - 1.42% High = 0.06% - 1.00% Medium = 0.03% - 0.05% Low = 0.00% - 0.03%</p> <p>For this map, a fourth "extreme category" was chosen in order to illustrate the "outlier" highly impacted categories.</p> | <p>This map was developed using federal NFIP claims information and total housing stock value. The symbology of the map was graduated colors with the categorization based on geometric intervals.</p> | <p>FEMA NFIP Redacted Claims Data Set</p> | <p>December 5, 2019</p> |

| Figure | Explanation | Analysis Technique | Source(s) | Date Data Last Updated |
|------------------|--|--|--|------------------------|
| Figure 22 | This figure demonstrates the significant increase in prevented and failed crops in the 2019 growing year compared to the average of the 2016-2018 growing years. The crops selected to express the approximate financial loss were the top five highest failed and prevented grain crops reported to the FSA for the 2019 growing year. | The average of prevented and failed crops acres from 2016-2018 was calculated in Microsoft Excel. Then, this acreage loss was compared to that of the 2019 growing year. The crops utilized for this figure were wheat, corn, soybeans, sorghum, and oats. | 2019 USDA FSA prevented and failed crop acreage data | January 2020 |
| Figure 23 | This figure demonstrates the projected economic output and labor income loss predicted by the IMPLAN modeling software. This projection only considers the grain crop loss dollar amount calculated in Table 7, thus, results only demonstrate an impact related to the grain crop industry. This estimate does not include impacted dollar amount losses for cattle/livestock, hay, or other losses related to the agriculture sector because there was not sufficient data available to estimate these losses. | IMPLAN is a data modeling application that utilizes robust governmental datasets from the Bureau of Economic Analysis, the United States Department of Agriculture, the Bureau of Labor Statistics, and the Census Bureau. It provides one-year economic predictions and insights about regions impacted by disaster events. | 2019 USDA FSA prevented and failed crop acreage data IMPLAN | January 2020 |
| Figure 24 | This figure demonstrates the projected tax revenue loss for non-education state and local government taxes predicted by the IMPLAN modeling software. This projection only considers the grain crop loss dollar amount calculated in Table 7. | IMPLAN is a data modeling application that utilizes robust governmental datasets from the Bureau of Economic Analysis, the United States Department of Agriculture, the Bureau of Labor Statistics, and the Census Bureau. It provides one-year economic predictions and insights about regions impacted by disaster events. | 2019 USDA FSA prevented and failed crop acreage data IMPLAN | January 2020 |

| Figure | Explanation | Analysis Technique | Source(s) | Date Data Last Updated |
|------------------|--|--|--|------------------------|
| Figure 26 | This figure demonstrates the projected job losses related to the grain farming industry as predicted by the IMPLAN modeling software. This projection only considers the grain crop loss dollar amount calculated in Table 7. Thus, results only demonstrate an impact related to the grain crop industry. | IMPLAN is a data modeling application that utilizes robust governmental datasets from the Bureau of Economic Analysis, the United States Department of Agriculture, the Bureau of Labor Statistics, and the Census Bureau. It provides one-year economic predictions and insights about regions impacted by disaster events. | 2019 USDA FSA prevented and failed crop acreage data IMPLAN | January 2020 |
| Figure 27 | This map displays the total number of NFIP claims for business properties by county through three categories: High = 4 - 31 Medium = 1 - 4 Low = 0 - 1 | This map was developed using federal NFIP claims information. The symbology of the map was graduated colors with the categorization based on geometric intervals. | FEMA NFIP Redacted Claims Data Set | December 4, 2019 |
| Figure 28 | This map displays the total value of NFIP claims for business properties by county through three categories: High = \$38,474 - \$2,885,675 Medium = \$506 - \$38,474 Low = \$0 - \$506 | This map was developed using federal NFIP claims information. The symbology of the map was graduated colors with the categorization based on geometric intervals. | FEMA NFIP Redacted Claims Data Set | December 4, 2019 |
| Figure 29 | This map displays the relative value of NFIP claims for business properties by county through four categories: Extreme = 25.00% - 37.00% High = 0.61% - 25.00% Medium = 0.16% - 0.61% Low = 0.00% - 0.16% For this map, a fourth "extreme category" was chosen in order to illustrate the "outlier" highly impacted categories. | This map was developed using federal NFIP claims information. The symbology of the map was graduated colors with the categorization based on geometric intervals. | FEMA NFIP Redacted Claims Data Set | December 5, 2019 |

| Figure | Explanation | Analysis Technique | Source(s) | Date Data Last Updated |
|------------------|--|--|--|------------------------|
| Figure 30 | This figure demonstrates the projected unmet need for small businesses based on SBA verified losses and SBA loans approved. | This figure was developed by filtering the SBA database to highlight business loan information. From this dataset, the total verified loss, total approved loans, and total insurance payouts were calculated. The unmet need was calculated by subtracting the total approved loans (except the cancelled loans) and the insurance payments from the total verified loss. | SBA Database | January 28, 2020 |
| Figure 31 | This figure demonstrates a comparison of the number of full-time disaster case managers to number of cases in three select counties. This graphic is informed by a point-in-time count and does not reflect all active full-time disaster case managers in the State of Nebraska, but rather those associated with long term recovery groups. This figure is intended to highlight the case burden on case managers. | This figure was developed by dividing the FEMA IA cases by the number of full-time disaster case managers working for long-term recovery groups to show the ratio of case managers to cases. This was compared to the recommended number of cases of 35. | Nebraska Children and Families Foundation document "Long-Term Recovery Group Update: December 2019." | December 2019 |
| Figure 32 | This graph demonstrates flood-related emergency department visits across 56 hospitals in Nebraska from January 4, 2019 through April 4, 2019. | This figure was developed by evaluating the ESSENCE Syndromic Surveillance for emergency department visits, where the definition included any chief complaint or clinical impression of "flood, disaster, drown, or submersion" and Diagnostic Codes related to flood, including X38, T75.1XXA, W1641XA, W1642XA, W73XXXA, and W74XXXA. | Nebraska Department of Health and Human Services | 2019 |

| Table | Explanation | Analysis Technique | Source(s) | Date Data Last Updated |
|----------------|---|---|--|--|
| Table 1 | This table summarizes potential infrastructure recovery funding gaps by demonstrating the value of estimated damage, anticipated funding, and the outstanding recovery funding gap. Notably, the information on water control facilities is incomplete, the total costs listed likely do not capture the totality of potential infrastructure recovery gaps, and the total costs do not include the potential costs of mitigation and resilience. | This table was based on the identified damage and the infrastructure recovery funding that has been allocated to date. | NEMA PA Database | January 17, 2020 |
| Table 2 | This table demonstrates the different housing types in Nebraska by number and represented as a percentage of the state's housing stock. | This table was developed using data from the United States Census Bureau. | U.S. Census Bureau, American Community Survey | 2017 |
| Table 3 | This table is intended to represent the sum of housing damage, anticipated federal assistance, and potential recovery funding gaps. These estimates do not account for damage to private property that was not reported to FEMA or SBA. Therefore, the estimates are likely only a partial representation of need. | This table was developed by calculating the estimated cost to repair as sum of all FEMA verified losses, SBA verified losses for home loans, and NFIP verified losses; the anticipated federal funding as the sum of FEMA housing assistance awarded, approved SBA home loans, and insurance payouts (including NFIP housing claims), except any cancelled loans. | FEMA IA Database SBA Database FEMA NFIP Redacted Claims Data Set | January 17, 2020 January 28, 2020 December 4, 2019 |
| Table 4 | This table demonstrates the percentage of approved applications for the counties with the five highest number of applications for housing assistance. | The table was developed by calculating the total number of housing assistance applications submitted per county and then calculating the percentage approval for the five counties with the highest number of housing assistance applications. | FEMA IA Database SBA Database | January 17, 2020 January 28, 2020 |

| Table | Explanation | Analysis Technique | Source(s) | Date Data Last Updated |
|----------------|---|---|--|--------------------------------------|
| Table 5 | This table demonstrates the percent of FEMA IA housing applications that correspond to households residing in apartments, houses/duplexes, mobile homes, travel trailer, or other dwellings. | This table was developed using reported FEMA IA applications, sorting the dataset in renters and owners, then recording the sum of each housing type per county (expressed as a percentage of total number of applications). | FEMA IA Database 1. | January 17, 2020 |
| Table 6 | This table is intended to summarize potential recovery gaps associated with impacts to the state's economy and agriculture sectors related to federal assistance programs. The table estimates the total cost of economic recovery compared to anticipated funding to determine what the approximate recovery funding gap may be. | <p>This table was generated by listing the sum of all SBA verified losses for business and economic injury disaster loans (EIDL), the anticipated federal funding as the sum of approved SBA business and EIDL loans and insurance proceeds, except any cancelled loans, and then calculating the potential recovery funding gap by subtracting the two previous totals.</p> <p>Then crop losses were listed by understanding the USDA's 2019 prevented and failed crop acreage data, to determine financial losses using USDA per-unit commodity prices. See Section 2.5.2.1 for a detailed explanation of the methodology used to calculate these figures. Anticipated federal funding for crop losses indicates the amount paid to Nebraskans through USDA RMA's Federal Crop Insurance program in 2019.</p> | 2019 USDA FSA prevented and failed crop acreage data SBA Database | January 2020 January 28, 2020 |

| Table | Explanation | Analysis Technique | Source(s) | Date Data Last Updated |
|----------------|--|---|---|------------------------|
| Table 7 | This table is data based on the predicted economic impact of current prevented and failed crop losses, the 2019 USDA prevented and failed crop acreage data was converted to financial losses by using USDA's 2018 price per unit for Nebraska commodities. The crops selected to express the approximate financial loss were the top five highest failed and prevented grain crops reported to the FSA for the 2019 growing year. | This table utilized Microsoft Excel to calculate the financial loss of each crop by multiplying the total prevented and failed acres of crop by the yield per acre of crop by unit price of crop which will equal the prevented and failed dollar loss. The crops utilized for this figure were wheat, corn, soybeans, sorghum, and oats. | 2019 USDA prevented and failed crop acreage data USDA 2018 price per unit for Nebraska commodities | January 2020 |
| Table 8 | This table summarizes the long-term recovery goals validated by the Governor's Task Force for Disaster Recovery in 2019. | N/A | N/A | December 2019 |