



# 2021

## Shareholders

## Report

Welcome to the annual Shareholders Report. The purpose of this report is to highlight specific activities your local National Weather Service office was engaged in during 2021 as a part of our core mission and desire to provide high quality weather information and education. The National Weather Service values its relationships with its core partners and the communities it serves, and we want to continue to enhance our products and services to meet your needs.

## National Weather Service

### Goodland, Kansas



# Introduction From The MIC

## Ed Holicky, Meteorologist-in-Charge

Welcome to our first edition of the National Weather Service (NWS) Goodland's Shareholders Report. This report details the activities in 2021 of NWS Goodland's area of responsibility in the Tri-State Region. Our area incorporates part of Southwest Nebraska, far Eastern Colorado and Northwest Kansas.

Due to COVID-19 mitigation procedures, we have limited staffing in the building with an increase in teleworking among staff. However, we were able to bring in additional staffing during the significant weather events in 2021. In 2021, we had several weather events that impacted our region from the large tornado outbreaks that occurred in May to the recent high winds, dust storms and fires that occurred on December 15, 2021. Your local NWS office is always here working for you.

In 2021, your local office participated in several experimental testbeds. These testbeds were to examine ways to improve our products and services and enhance our communication. We are always looking to improve our services and communication to you, and participating in these testbeds is a way to test new methods and ideas.

This year we also made some significant upgrades to our facility that will assist forecasters with situational awareness and improve communication. Our operations floor was redesigned to provide a better flow of information and collaboration among operational staff.

In 2022 we don't know what COVID-19 will bring us. However, rest assured that your NWS Goodland Team will be ready for what weather comes our way.

If you have any suggestions on how we can improve our services or communication, do not hesitate to contact us.

Ed Holicky  
Meteorologist In Charge



# The February 2021 Record Cold Event

## Kyle Knight, Meteorologist

During the early to mid parts of February, a cold arctic air mass moved into the Central United States and remained roughly in place for about a week. From February 8th to February 16th, that arctic air mass impacted portions of the Goodland forecast area. During that time period, 13 daily record low temperatures were broken at various sites throughout the area along with 3 record monthly low temperatures and 6 daily low maximum temperatures. Most of the area saw wind chills consistently go below 0°F with the 14-16th of February seeing wind chills below -30°F. A few instances of measurable snow occurred during this time period as well though most accumulations were below 2".

Before the event, forecasters began to message the potential for wind chills as low as -15°F as soon as February 1st in forecast discussions. By February 4th, the forecast discussion, hazardous weather outlook, and daily social media posts were all consistently messaging that the cold air and wind chills would be coming.

During the event, the mention of cold wind chills continued daily in all forecast products. Stronger messaging for the colder wind chills near the end of the event began to be included around February 8th, nearly a week before they would occur. As part of the messaging, nearly 75 social media graphics were sent out during the event that highlighted the cold wind chills, provided safety information, or informed the public and partners about the conditions that were observed. Support staff including Electronic Technicians also kept systems going including going to repair the automated observing station at McCook when wind chills were below -10°F.

In the end, there were no reported fatalities or injuries to humans from this event; however, there were a few hundred calves that did not survive the cold. The combination of hard work by the office staff, hard work and support from partners, and awareness of the public helped limit the impacts that could have occurred with this historically cold event.

# The Tornadoic Days of May 24th and May 26th

**Amanda Wekesser, Meteorologist**

The latter half of May 2021 was a busy time for the staff of the Goodland National Weather Service office. Over the course of three days, the Tri-State region was affected by two high-impact, tornado outbreaks which spawned a total of 17 tornadoes. For reference, the thirty year average from 1990 to 2019 for tornadoes occurring in the Goodland County Warning Area (CWA) is 22 tornadoes per year. On May 24th, seven tornadoes were reported across northwest Kansas by trained storm spotters, the public, law enforcement and off-duty National Weather Service employees. NWS staff members issued warnings, provided weather information and updates to emergency officials and posted information to our social media pages. The seventh and final tornado to develop occurred in Sheridan County, impacting Selden, Kansas. The large, multi-vortex tornado damaged trees, power poles, buildings and overturned irrigation pivots.

The tornado also knocked out the emergency sirens in Selden. As a result, firefighters drove through town to warn of the oncoming tornado. A National Weather Service Storm Survey Team rated the tornado as an EF-1 the following day. Through the rest of the week, NWS meteorologists continued to provide weather information to our emergency management and law enforcement partners in Sheridan County as clean-up efforts commenced.

Two days after the Selden Tornado, another high-impact outbreak occurred over southwestern Nebraska and northwestern Kansas. In total, the May 26th thunderstorms produced ten tornadoes across four counties. This ties with the June 1, 2003 and May 9, 2015 outbreaks for the fifth highest number of tornadoes to occur on a single day in the Goodland CWA. A meteorologist provided a weather briefing via Facebook Live in the afternoon before storms began firing up in the area. Staff members from all shifts contributed to issuing warnings, taking spotter reports, making phone calls seeking storm reports, calling local dispatch centers and emergency managers and maintaining updated forecasts.

# The Tornadoic Days of May 24th and May 26th (Continued)

**Amanda Wekesser, Meteorologist**

Of the ten tornadoes, five occurred in Dundy County with three in Rawlins, and one in Hitchcock and Decatur counties. Trained storm spotters, the media, law enforcement, and the public played a large part in documenting the tornadoes with photos, videos and storm reports. These reports provided crucial, real-time information to radar operators working to issue warnings. The reports also gave two NWS Storm Survey Teams information for where to go to conduct storm surveys. Through the course of the surveys, two tornadoes were rated as EF-0. Another tornado located northwest of Max, Nebraska was rated as an EF-2, causing damage to trees, power poles and one residence.

The events of May 24th and May 26th are a reminder of the importance of our partnerships with law enforcement, emergency managers, the media, trained storm spotters and the public. The reports sent to the Goodland NWS provided eyewitness accounts of events as they unfolded.

# Providing Decision Support Services During Summer 2021 Fair Season

## Kalitta Kauffman, Meteorologist

This summer was full of activities across the Tri-State area and the meteorologists at National Weather Service Goodland were prepared to help anytime weather support was needed. In July and August, NWS Goodland provided Decision Support Services (DSS) or maintained situational awareness for sixteen county fairs across the Tri-State area.

During the fairs, meteorologists provided daily, pinpointed weather briefings as needed to assist those responsible for the safety of the event and the attendees. Of the sixteen fairs, seven were impacted by rain and/or thunderstorms. As the storms approached the fairgrounds, a meteorologist contacted the point of contact for the fair to update them on the changing weather conditions including the timing and potential hazards. Overall, the summer 2021 fair season was successful across the Tri-State area due to the watchful eyes of our meteorologists and communication with our partners.

# Significant Winds, Blowing Dust and Wildfires: A Look At December 15th

**Kyle Knight, Meteorologist**

On December 15th, an intense low pressure system moved across the Plains. This system brought the Tri-State area wind gusts that exceeded 80mph, 6 wildfires, blowing dust and some rain. The winds were strong across the entire area with most counties seeing gusts in excess of 70 mph and winds sustaining between 40-50 mph. Sustained winds peaked in areas around 55-60 mph while some areas saw wind gusts peak around 90 mph. With the strong winds and favorable weather conditions, a wall of dust developed and swept across the area and lowered visibility to near zero at times. Even after the initial wall of dust, blowing dust continued for a few hours and continued to reduce visibility and air quality. The wind and dust also helped contribute to the ignition and spread of wildfires which burned around 17,800 acres in the area with a larger fire just outside of the area.

Before this event, NWS Goodland began messaging aspects of this event as early as 7 days prior when the potential for fire weather was mentioned in the hazardous weather outlook on Dec 8th. The next day, messaging began to include the threat for winds, fire and blowing dust. By Dec 12th, messaging was consistent on widespread damaging winds with significant fire and dust impacts. On the 13th, both a fire and a wind watch were issued and then upgraded to warnings the next day on the 14th. Accompanying the watches and warnings were social media graphics and briefing packets that were sent out a couple of days leading to the event so the area had at least 48 hours notice as to the threats that were coming. The office also hosted two webinars the day prior and the day of the event to further emphasize that there was high confidence in the event and to go over the various hazards with the event. Finally, plans for office staffing and roles were done the day prior to make sure the office was ready.

# Significant Winds, Blowing Dust and Wildfires: A Look At December 15th

**Kyle Knight, Meteorologist**

When the day of the event came, the office staff were briefed and prepared for the event. A plan was also put in place to deal with the dust since it would come through as a wall first and then have lingering areas of poorer air quality and lowered visibilities behind the initial wave. Staff kept an open webinar for partners to come in and ask questions and consistently gave out information over 800 MHz radio and social media. The office also relayed partner messages including posts from the DOT showing roads closed across the area. Staff also collected and relayed over 150 Local Storm Reports which helped the office and partners know what conditions.

The event was a significant one that impacted travel across the area and sparked dangerous wildfires. In spite of the intensity of the event, it was handled well by the office. Staff were preparing and messaging the event days in advance, in part due to local dust storm research that has allowed the office to be more confident in the potential impacts and likelihood of dust storms. Communication between the partners, public, and the office went smoothly as information was communicated before and during the event across multiple channels which allowed more people to receive more information. It also allowed for conversations back in forth so that there was understanding by all involved and allowed for information to be shared more rapidly. Finally, by planning the day before the event, the operational staff were able to focus on the event itself instead of trying to figure out roles and communication while hazards were ongoing.

This event could have been much more impactful had it not had been for the coordination and efforts of the office staff, community partners and the public. The warnings were taken seriously and actions were taken to lessen the overall impact from this significant event.



# **Building Internal Connections (Culture/Leadership/Office Unity/Diversity)**

**Jessica Husted, Meteorologist**

The Culture, Leadership, Office Unity, and Diversity (CLOUD) Team at NWS Goodland strives to build a unified office that not only works well together, but is able to grow and learn about each other on a deeper level. It is the belief of the team that having a good culture and personal connections will result in better success during times of high-stress and chaotic weather. In order to fulfill their goals, the CLOUD team not only passes along articles and videos related to culture, diversity, and leadership topics, but also organizes bimonthly meetings or activities for the entire staff. During COVID-19, a time of restrictions and people staying at a distance, it has been more difficult to facilitate the team's mission. However, they have worked to find ways to continue moving forward.

In 2021, the CLOUD team adapted by hosting activities and virtual meetings that could be accessed by staff whether working from home or at the office. One example of an activity occurred in March for Women's History Month. A Google Slides presentation was set up for staff to share a quote from an inspirational woman who has made an impact on their lives. By the start of summer, virtual meetings were held with a new subject each month. Some of the topics discussed were servant leadership, diversity and the Olympics, as well as mental health matters such as coping with living far from home and rotating shift work. Lastly, towards the end of the year, another activity enabled staff to share what they were thankful for in a Google form.

These events allowed participants to open up, learn new things about each other, and share valuable ideas or comments. Through the activities and meetings, everyone in the office was able to grow as a team while interacting from a distance. The CLOUD Team looks forward to continuing with their efforts, and coming up with new ideas to build camaraderie and relationships in the future.

# Hydrology (Hydro)

## Jason Neilson, Lead Forecaster

As the office HPM(Hydro Program Manager) here at NWS Goodland, numerous duties are performed here at the office to ensure the staff has the tools to adequately provide the general Public the best coverage to protect life and property, should a Flooding event occur either on an area river, or by thunderstorms raining heavily in rural and urban areas.

Some of the duties are performed on an ongoing basis like training, some are done annually, semiannually, etc. One of these items that occurred over the course of 2021, were visits to all but one of our CWA(County Warning Area) river gauges. These visits were spaced out over the course of the year.

These visits are usually done on a 5-year rotating basis, but with many in close proximity to each other, multiple gauges were visited. The purpose of these visits:

- 1) To obtain new/updated photos around each gauge and river as previous visits may not show overgrowth or lack thereof since the last visit, which would definitely impact the river channel and surrounding land during a flooding situation
- 2) These photos will be compared to ones from the last visit to show any channel changes that could slow/increase flooding especially if an event occurred that carved out a new section or diverted the flow entirely.
- 3) If any overgrowth that is found at a gauge site that could impede river flow, these new photos would aid local officials as to where potential fixes could occur to keep normal river flow.
- 4) Another reason to visit is to inspect a gauge if possible to see if any damage has occurred to it, it's missing or even to see if overgrowth has grown too much and would block reading of a river gauge reading. This did occur at a staff gauge site and the locally Emergency Manager was notified to help remedy the issue.

# Hydrology (Hydro) (continued)

## Jason Neilson, Lead Forecaster

5) I was accompanied by two members of the Hydro team, to allow them to see these sites for familiarization purposes. Time for all staff to visit these sites is not possible, so these visits in obtaining fresh images will aid those that could not visit when there is a flooding issue and can direct emergency officials if a gauge needs to be read, as well as being able to accurately message key points of the area during a warning. Those individuals can refer to these photos to aid in the decision process.

6) Also done on these visits for the first time, multiple videos were made as an additional aid to forecasters. The videos gave folks another perspective to each site by almost putting them there. Audio provide to point out landmarks and other items that photos can't express.

All the data obtained allowed for updates to all river gauges manuals, uploaded to a regional site for coordination purposes.

Also, to aid the forecasters in the warning process, continued work this year occurred on our new Hydro intranet page. The new format allowed me to highlight each individual gauge with new and previous pictures in time step, all the videos and other pertinent information for each site. Training material has been update to include work on the new Hazard Services system. All items on this site are now a one-stop place where the forecasters can use should an event occur. This is always morphing/updating.

These are just some of the few and newer items done on the Hydro side of the office during 2021, all to aid the forecaster when a situation arises.

# Fire Weather Program Update

## Dave Thede, Lead Meteorologist

For the year 2021 the theme of the fire weather program team was to look at ways we can improve the service we provide regarding Fire Weather Watches and Red Flag Warnings. Specifically, the team analyzed every Red Flag Warning issued from 2014 to present, looking at successful and unsuccessful warnings. A warning is considered successful if it meets the criteria of three hours of relative humidity at or below 15 percent and sustained winds or wind gusts of 25 mph or higher. The team analyzed each warning by hour, beginning time, ending time, county, time of day, etc. The results from this research have been presented to the staff.

The team also recently began analyzing statistics regarding which of the numerous computer model guidance parameters we have access to such as temperature, dew point, sustained wind and wind gusts performed the best on days when a Red Flag Warning is in effect. This research effort will continue through 2022. We are also looking into ways of incorporating the Grassland Fire Danger Index (GFDI) into our warning decision process to improve the accuracy of our Red Flag Warnings.

A total of 224 Red Flag Warnings have been issued in 2021 for the Goodland County Warning Area (CWA). This ranks 4th for the highest number of warnings issued since 2014.

We continue to look for ways to increase the number of weather stations across a few counties we serve, specifically Dundy and Hitchcock counties in Nebraska, Rawlins, Decatur, and Sheridan counties in Kansas, and Cheyenne county Colorado. In these counties it's very difficult to get real time weather information (temperature, relative humidity, wind speed, precipitation, etc) and makes it very difficult to verify the Red Flag Warnings we issue.

# Outreach Events and Spotter Training

## Jesse Lundquist, Lead Meteorologist

There were a number of changes that occurred for the outreach programs of the Goodland NWS office during 2020 and 2021. Seemingly overnight, outreach activities came to a halt due to the pandemic. We were forced to rethink how to meet our mission while still meeting the social distancing guidelines. However, this challenge did not stop our staff from interacting with our customers. It merely caused us to be more creative in how we interacted with them.

With the restrictions for visiting partners in place as preparations for spotter training season started, the decision was made to do the first entirely remote spotter training season the office had ever done. (In 2020 the last half of the training season was done through video recordings of staff presenting the spotter training.) In an effort to have some degree of interaction, the decision was made to use a webinar interface to host the spotter training. The webinar software allowed us all the interactions of hosting the class in person, except for being physically there. The one drawback to this interface was not being able to present videos during the training due to internet bandwidth for some users not showing every frame of the video.

Even though this was the first spotter training season we did entirely virtual, we received praise from partners: “I have gotten a lot of positive feedback from my staff regarding the online Weather Spotter training. They enjoyed it very much.”, “Very informative and very few glitches for the first one ever!! I think the training is better on the webinar than the in person training classes I have attended. It was kept interesting and moved right along so it was anything but boring.” We averaged 30 attendees for each of the six webinars we hosted for spotter training.

# Outreach Events and Spotter Training (Continued)

## Jesse Lundquist, Lead Meteorologist

Last year the Integrated Warning Team (IWT) meeting was canceled due to not being able to meet in person. This year there was still a need to have an IWT meeting. Due to still not being able to meet in person, the office put together a virtual IWT meeting. The purpose of this meeting was to present topics that were relevant to agencies that work closely with the National Weather Service in an effort to improve how the agencies collaborate during various scenarios. Partners that attended included emergency managers, an on-air meteorologist, radio announcers, FEMA, and staff from the office.

The topics discussed during this meeting were: descriptions used to characterize fire weather conditions (elevated, near critical, critical), an After Action Review of the Dundy County Flooding, operations and impacts during recent dust storms, how to use NWEMs, Benkelman Fire Lessons Learned, and even a tabletop exercise of how to address a wildfire impacting part of a town. Even though we couldn't meet together, these discussions helped strengthen our relationships with the partners we serve each day.

School tours of the office have yet to resume. As a way to connect with students and give them a project to work on, four of the staff put together a series of videos showing how to perform short experiments related to different aspects of the weather. These experiments included how to make fog and frost, and demonstrating how convection and density differences operate. Each of these videos are six minutes or less and use items commonly found around the house. You can find these videos on our Youtube page by searching for NWS Goodland and then going to our Weather 101 videos under playlists.

# Outreach Events and Spotter Training (Continued)

## Jesse Lundquist, Lead Meteorologist

We are also dipping our outreach toes into the Facebook Live arena with a series of presentations. So far these presentations have discussed career advice for students interested in meteorology, travel and winter weather safety, and measuring and reporting winter weather. These presentations will continue in January with the following topics: Weather and the Agriculture Industry, Photographing Weather, and Weather and Aviation. We will be advertising the January topics on our social media pages.

Something new for our office was conducting a virtual office tour. During the pandemic, we cannot allow visitors into the office. However, that did not stop our team from providing a tour of the office through our office iPad. One of our forecasters led the tour, which included a look around our operations area, and demonstrated how we create a forecast and issue warnings for severe thunderstorms or tornadoes. Feel free to contact our office if you would like to schedule a virtual tour.

To maintain our connection with partners, we started hosting monthly familiarity webinars that began in September 2020. These webinars kept our partners updated on the latest changes at our office, such as new staff or new products/services coming out. We also used these webinars to discuss the latest climate outlook and drought information. These monthly webinars have continued through this year, and continue to provide an avenue for the local NWS office to maintain a connection with our partners.

To maintain our connection with our Weather Ready Nation Ambassadors, our office created a Weather Ready Nation Ambassador newsletter that is published quarterly with the office newsletter. While we look forward to being able to return to our in-person visits, we continue to explore new ways of engaging those we serve to maintain our connection with them.

# Improving Our Understanding Of Dust Storms

**Dave Thede, Lead Meteorologist**

During 2021 the staff of WFO Goodland focused on improving our understanding of how large scale dust storms develop. While for much of 2021 conditions were not generally favorable for the development of dust storms, that certainly changed during the intense storm system that brought widespread damaging winds to the region on December 15th. With the aid of our local research we were able to identify the dust storm threat ahead of time and provide WEA (wireless emergency alerts) warnings as the dust storm developed. Our current research findings will be presented at the American Meteorological Society's 102nd annual meeting in January 2022.

While we have a better understanding of how dust storms develop, there are several other factors that need to be understood to further improve our knowledge of these events. Evaporation and the response of the upper layers of soil are two factors that need to be understood better to allow us to discriminate between windy days where dust storms occur versus windy days where they don't. In order to better understand these factors, the office has purchased a Davis weather station. This station will measure standard atmospheric variables as well as incoming solar radiation, soil temperature and soil moisture at 2 depths. Coinciding with the weather station, Goodland will begin to take evaporation pan measurements in 2022.

Collecting this data will aid the office in forecasting potential evaporation and highlight which areas will be susceptible to dust storm formation. Additionally, the evaporation measurements and estimates may be useful to agricultural and water resource interests. Data will also be used to study and possibly calibrate low cost sensors to measure these variables at other locations.



# Improving Our Understanding Of Dust Storms (Continued)

**Dave Thede, Lead Meteorologist**

Finally, the Goodland dust sensor will be coming back online in the beginning of 2022. Some wiring issues have been identified and corrected and we are hoping for a successful deployment and test this spring. This data can be used for air quality purposes and when combined with the ASOS (Automated Surface Observing System) visibility sensor located a few miles away at Goodland's Renner Field give us a comparison of dust concentration vs visibility which can be used in the future when additional dust sensors are deployed across the Goodland forecast area.

# ET Program

## Grady Bonsall, Electronic Systems Analyst

The Goodland Weather Forecast Office (WFO) Electronics / Information Technology (IT) staff continues to stay active and maintain all WFO systems and equipment including: WSR 88D Doppler radar, NOAA Weather radio transmitter sites, Automated Surface Observing Systems (ASOS), Advanced Interactive Processing System (AWIPS), WFO network and computer systems, and WFO facilities equipment. In addition, the team has taken on a new temporary role of maintaining the COOP Program's equipment until a new Observation Program Leader (OPL) is hired. This includes servicing the Fischer Porter Weighing Rain gauges, and repairing MMTS and associated equipment. Despite the pandemic we continue to work through the obstacles and challenges to keep our staff safe and to meet the mission of the NWS and serve our forecasters and customers with excellent service.

The toughest challenge during Fiscal Year 2021 was to perform our job from home as we have been restricted to telework and minimize our staff within the office due to safety concerns. This challenge has allowed us to think outside the box and work in a different environment. We've been able to access equipment remotely for monitoring and, in some cases, troubleshooting. When required and necessary, we travel to the sites to make the repairs needed, perform equipment upgrades, and / or perform preventative maintenance.

Some of the highlights we have been involved in during FY2021 included:

- Taking on the role of maintaining the COOP Observers equipment
- Replacing the WFO Uninterruptible Power Source monitoring system
- Upgrading the LAN equipment within the WFO, including: routers, switches, and a new Windows Server
- Fabricating and testing a Beta Dust sensor to help with dust forecasting in the future

# ET Program (Continued)

## Grady Bonsall, Electronic Systems Analyst

- Converting phone lines from Plain Old Telephone Service Lines (POTS) to Voice over IP, this will provide the same service of communication but with a greater savings to the government
- Upgraded our backup communications systems, Very Small Aperture Terminal (VSAT) Satellite dish, to a faster and improved bandwidth system
- Hiring and training of our new Electronics Technician, Drew Mantei
- Upgrade the WSR 88D radar software to incorporate more Volume Coverage Patterns (VCPs) and remove outdated VCPs to improve radar coverage speed and accuracy
- Replaced WSR 88D radar Master System Control Function (MSCF) to a faster and updated processor
- Reorganization of the Weather Forecast Office Operations Layout
- FY2022 – currently we are replacing the WSR 88D Pedestal , this is part of the Service Life Extension Program (SLEP)
- FY2022 – Setup of new Evaporation pan and weather equipment to assist with the WFO dust research project

Even though it's been a different kind of year, we continue to move forward and meet the mission. With that said we were able to hire our new Electronics Technician, Drew Mantei, which puts us at full staff. Drew comes from Utah and was working for the Department Of Defense. He is originally from Kansas and has several years of electronics experience to include working on the electronics of aircraft in the USAF. Drew has been busy training and has been an asset to our Electronics Team.

As we continue to move forward and prepare for what FY2022 brings, we know there are some major upgrades coming to the WSR 88D radar system, we hope to finalize our Dust Sensor project, and implement upgrades to the ASOS processor. We are proud of our Electronics / ITO team and the support they provide to our staff, partners, and customers, they continue to keep moving us forward to better serve the public.

# Local CoCoRaHS Update

## Dave Thede, Lead Meteorologist

CoCoRaHS (Community Collaborative Rain, Hail & Snow Network) is used by a wide variety of organizations and individuals. The National Weather Service, other meteorologists, hydrologists, emergency managers, city utilities (water supply, water conservation, storm water), insurance adjusters, USDA, engineers, mosquito control, ranchers and farmers, outdoor & recreation interests, teachers, students, and neighbors in the community are just some examples of those who visit the CoCoRaHS web site and use their data. In 2021, the program had approximately 164 active stations across northwest Kansas, extreme southwest Nebraska and far eastern Colorado. In 2020 there were approximately 163 active stations. Active stations are defined as those who reported at least one observation over the past 365 days. The number of active sites in Nebraska is through NE Rain (Nebraska Rainfall Assessment and Information Network). The following is a list of active stations for each county in the Goodland CWA (county warning area):

### Colorado:

Cheyenne – 9

Kit Carson – 10

Yuma – 12

### Nebraska:

Dundy – 11

Hitchcock – 21

Red Willow – 27

### Kansas:

Cheyenne – 4

Decatur – 6

Gove – 8

Graham – 3

Greeley – 2

Logan – 8

Norton – 2

Rawlins – 4

Sheridan – 6

Sherman – 9

Thomas – 9

Wallace – 6

Wichita – 6



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