Serving Residents of Northeast Kansas Since 1878

The Topeka Tiller

National Weather Service
Topeka, KS

Fall 2019 Volume 12, Issue 2

Winter Weather Travel

By Chad Omitt, Warning Coordination Meteorologist

Living in Kansas you may think that tornadoes pose the greatest risk to your safety from Kansas weather. However, the greatest risk to your safety actually comes from driving in snow and ice during the winter season. We're not talking about the traditional blanket of snow that you can see. The true road hazard is subtle and intermittent icing due to light winter precipitation, events that suffer from a lack of obvious visual cues and public awareness (see image above right). It is these conditions that cause the biggest percentage of deaths and injuries and it doesn't take much to make roads icy enough for you to lose control!

Although numbers are largely underreported, here in Kansas at least 15 people lose their lives in automobile accidents where ice and snow plays a role and that number may be much higher. So what can you do to lower your risk when driving on ice and snow?

1. Know what to expect on your trip and plan accordingly. If you know you need to travel through especially bad wintery conditions, be sure to check the weather forecast along your trip by visiting www.weather.gov. Visit Kansas Dept. of Transportation website to access information about your road conditions including webcams.

2. Pay Attention, Slow down and relax. This is the most important rule to driving in bad conditions of any kind. And we're not just talking about speed — you want to do everything more slowly and more lightly than you normally would. Hitting your gas pedal, slamming your breaks or cranking your wheel too quickly is a surefire way to lose traction on an icy or wet road. At the same time, you cannot be distracted by a smartphone for any reason when driving, let alone when trying to drive in ice or snow… pay attention to the road!

3. **If you start sliding, turn slightly into the skid and pump your breaks.** Once you're already sliding, your tires have lost traction with the road. It seems counterintuitive, but in order to avoid a spinout you need to turn slightly into the skid, slowly let off the gas and start pumping the breaks-or let your anti-lock breaks do the work for you. Yanking the wheel in the other direction and locking the brakes will stop your tires from turning, but you'll lose all hope of regaining traction with the road surface.

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Inside this issue:

Large, Violent Tornado Traversed Douglas County on May 28th

By Bryan Baerg, Forecaster

A dangerous evening unfolded across portions of east-central Kansas on May 28th. Scattered thunderstorms developed along the Kansas Turnpike during the late afternoon hours. The thunderstorm of concern developed south of Emporia shortly before 4 PM. Over the next 2 hours, the supercell thunderstorm moved nearly parallel to I-335 producing multiple tornadoes across portions of Lyon and Osage counties. Upon entering southwestern Douglas County, another tornado was spawned just southeast of Overbrook and moved towards Lone Star Lake. This tornado was rated EF-2 with damage confined to primarily trees and outbuildings.

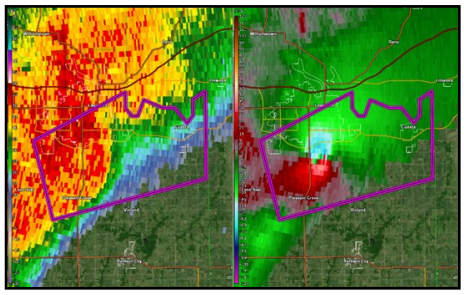


Figure 1. Radar reflectivity and velocity image of tornado in southeast Lawrence.

Shortly after 6 PM, a second and much stronger tornado developed on the north-east side of Lone Star Lake. The combination of tornado's strength and proximity to Lawrence promoted the issuance of a Tornado Emergency for southeast Lawrence. Unfortunately, the tornado heavily damaged or destroyed dozens of homes across Douglas and Leavenworth counties.

Figure 2 (Top). Damage 3 miles south of the Clinton Lake Dam. Figure 3 (Bottom). Damage 3 miles south-southeast of Lawrence.

The joint damage survey between NWS Topeka and NWS Kansas City determined the tornado had maximum wind speeds of 170 MPH (EF-4) with a maximum width of 1 mile and a path length of nearly 29 miles. Fortunately, no deaths were attributed to the tornado.

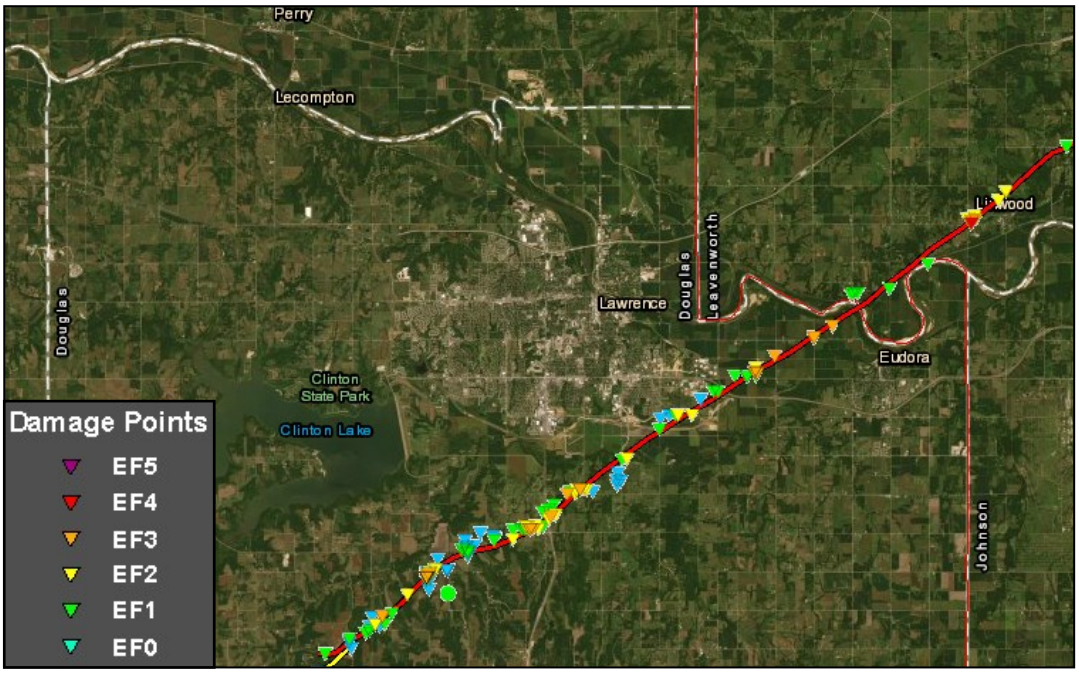


Figure 4. Path and EF ratings of the May 28, 2019 Tornado

Women in Science 2019

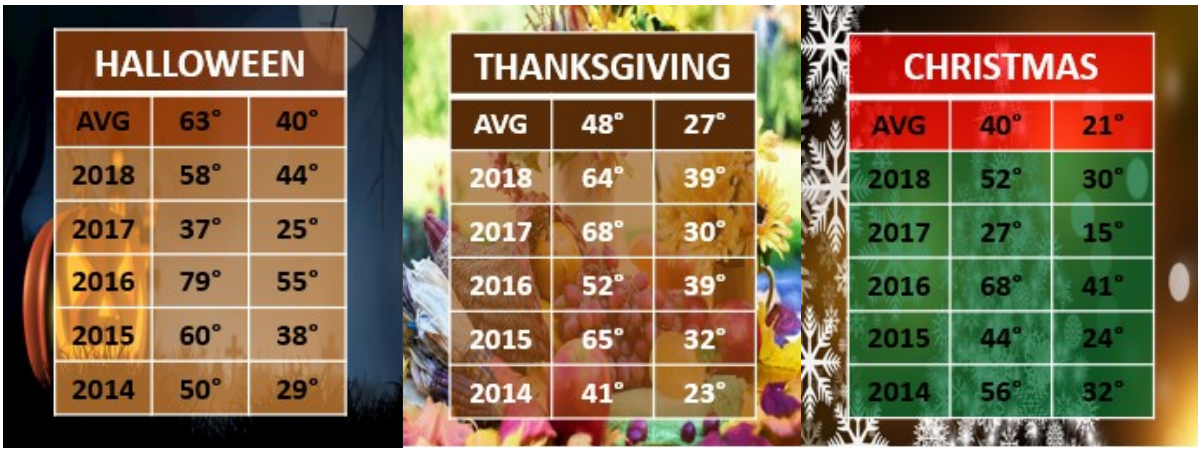
By Sarah Teefey, Forecaster

The ladies of the NWS Topeka office had the honor of participating in another Women in Science event this month. The event is held annually at Washburn University and hosts hundreds of seventh grade girls who attend various labs pertaining to careers routed in science and mathematics. The purpose of the event is to increase awareness of science and math based professions that are often male-dominated. Prior to the event, the girls are able to select specific labs that interest them. In addition to atmospheric science, other professions represented this year included veterinary practices, various areas of the medical field, finance, computer sciences, forensics, and geosciences.

The laboratory experiments conducted by the NWS team included making snow, making fog, and creating a tornado in a bottle. Those experiments allowed us to discuss important atmospheric conditions that we often experience in this region and explain how such weather develops. In addition to attending interactive labs, the girls heard from two keynote speakers: Heather Pfannenstiel, Professor of Biology at Washburn University, and Dr. Hendratta Ali, Associate Professor of Geosciences at Fort Hays State University. The day wrapped up with an energetic science bowl quiz and prizes. It was an educationally fun day for all!

Fun Facts: Topeka Holiday Climatology

By Sarah Teefey, Forecaster



HALLOWEEN		
AVG	63°	40°
2018	58°	44°
2017	37°	25°
2016	79°	55°
2015	60°	38°
2014	50°	29°

THANKSGIVING		
AVG	48°	27°
2018	64°	39°
2017	68°	30°
2016	52°	39°
2015	65°	32°
2014	41°	23°

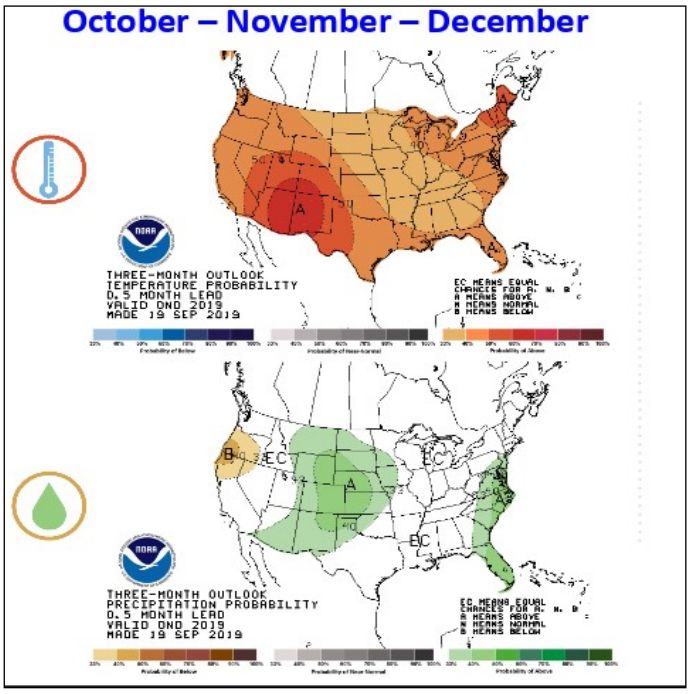
CHRISTMAS		
AVG	40°	21°
2018	52°	30°
2017	27°	15°
2016	68°	41°
2015	44°	24°
2014	56°	32°

Interesting facts: Over the last five years in Topeka, Halloween has had the largest temperature swing. Also, Halloween of 2017 had 0.4” of snow! Because of that, Halloween has had more snow than Christmas!

The Ever-Changing Seasons of Northeast Kansas

By Jenifer Prieto, Lead Forecaster

Northeast Kansas saw its fair share of record heat and heavy rainfall throughout the summer season of 2019. Temperatures started out in June near normal values before sky-rocketing into the upper 90s for several days in July, August, and September. Topeka Billard Airport experienced temperatures in the upper 90s with overnight lows only falling into low 80s from July 18-20. Heat indices in the afternoon ranged from 111 to 114 degrees each day. On record, this was the third-longest three-day period where temperatures were at least 80 degrees or warmer.



September became particularly brutal in terms of heat where the average temperature for the month at Topeka was the 3rd highest on record, with the previous records being 1931 and 1939 respectively. The average high for September was 87 degrees while the average low was 66 degrees and the mean value was 76 degrees. Compared to normal values, the mean temperature was 8 degrees above normal for the month of September.

Heavy rainfall and flooding were also a major weather topic of the summer with the peak rainfall occurring in August. The recorded rainfall for Topeka Billiard Airport for the month of August was 12.03 inches, the second highest total on record. The record is 12.69 inches of rainfall set back in 1983. The highest rainfall total in 24 hours occurred on August 17th in Topeka where they received 2.55 inches at Billiard Airport. While no official 24 hour records were set, rainfall was reported 16 days (of the 31 days) of the month. Minor to moderate flooding was observed throughout the summer across northeast Kansas, not only from the heavy rainfall, but also from back water of upstream rivers and the need to release water from the dams with much of the area lakes being full. National Weather Service Meteorologists worked diligently with the USGS, Emergency Management, and Army Corps of Engineers to ensure appropriate Flood Warnings were in effect while providing daily forecasts and impacts for additional rainfall potential.

As we gradually transition into Fall and Winter in the next few months, latest climate outlooks favor above normal temperatures throughout the Central Plains. Periods of colder temperatures cannot be ruled out, and are likely to occur as seen in early to mid-October. Sea surface temperatures measured back in August and September are indicating a weak or neutral El Nino pattern as the most likely scenario this winter for the United States. For the Central Plains and the northeast Kansas area, this scenario would favor precipitation probabilities to be slightly above normal through December. Additional images and information can be found above.

Employee Spotlight

The National Weather Service in Topeka has had the pleasure of welcoming three new meteorologists to the team this year. Here is an introduction to each of them:

Meet Chelsea Picha!

Hello everyone! I joined the staff as a meteorologist here at the Topeka National Weather Service office in the middle of May, just in time for all the severe weather and flooding we experienced in the second half of the month! I grew up in a small town in south central Minnesota and have been interested in weather from a pretty young age. My mom still remembers me coming home from school one day in first grade and going on and on about the types of clouds – apparently that was the first time I had been so excited about something we learned in school. I particularly remember being fascinated by lightning and watching it during car rides, which eventually led to always watching the severe weather warnings along the bottom of the TV screen and the updates that cut into TV shows. I frequently chose weather-related topics for school projects, and somewhere along the line I decided I wanted to be a meteorologist.

I went to college at St. Cloud State University in St. Cloud, MN and graduated with a Bachelor of Science degree in meteorology in 2016. I then went on to graduate school at the University of Wisconsin-Milwaukee and obtained a master's degree in atmospheric science in 2018. While there, I had the privilege of working at Innovative Weather at UW-Milwaukee, which is a program designed to give students an opportunity to gain real-world forecasting experience while still in school. We provided risk assessments and decision support services to around a dozen clients throughout the Upper Midwest, which gave them the forecast information they needed to make safety and financial decisions. Some of our most notable clients included the Milwaukee Brewers, Milwaukee Summerfest, Lake Express (a ferry service that transports people across Lake Michigan), the Department of Public Works for both the City of Milwaukee and Milwaukee County, and electric companies servicing Wisconsin, Iowa, and the upper peninsula of Michigan. My goal even before Innovative Weather was to work for the National Weather Service, and while that experience confirmed operational meteorology was what I wanted to do, it did so much more than provide a stepping stone into my career. It showed me what my strengths are and how they apply to meteorology, and in doing so, helped me grow in self-confidence and discover my true passion.

I have enjoyed my short time here so far, and I am very excited to be in a place that will fuel my interest in weather, ranging from storms in the summer to snow in the winter. I look forward to the opportunity to serve all of you by turning the complex information we receive every day into meaningful and practical information to help everyone else. I also look forward to becoming more of a part of the community by participating in outreach events as part of the Topeka team for years to come!

Employee Spotlight continues on page 6...

Employee Spotlight (Continued…)

Meet Daniel Reese!

Hi everyone, I'm one of the new additions to the National Weather Service team here in Topeka, joining the staff in mid-September. My interest in the weather was probably first developed by my dad, who would (and still does) always watch the daily weather show, take observations, and keep track of storms online. Growing up in south-central Pennsylvania, I also went through a number of events that further shaped my love of meteorology. These included snowstorms, tropical storms, and a storm that produced an F-3 tornado just ten miles after passing over my house. However it wasn't until my senior year of high school that I wanted to do meteorology as a career. That year – 2011 – in central PA saw a record-breaking flood associated with the remnants of Tropical Storm Lee. This flooding put much of my hometown of Middletown underwater for several days. In addition to this event, I also experienced in 2011 several smaller floods, a larger than usual number of severe thunderstorms, and a record snowstorm just before Halloween. Having such a variety of high impact weather in a short amount of time showed me the importance of an accurate, timely forecast, as well as how fun forecasting and following the weather closely could be.

After high school, I went on to the University of Oklahoma and decided to get my undergraduate degree in meteorology. There in Norman, I got a taste of weather on the Plains. Every different place has its own unique challenges when it comes to forecasting the weather, but I found weather on the Plains to have enjoyable but challenging qualities when it came to forecasting. Severe weather, of course, is one of the biggest of these. I did some storm chasing in my time in Oklahoma and grew quite interested in understanding the environments of severe weather, and how different environments affect the evolution of thunderstorms. Leaving Oklahoma and going to graduate school in New York at the University at Albany, I continued this interest. My Master's Degree, which I completed this past summer, was focused on using mesonet observations to aid in the short term prediction of lines of severe thunderstorms.

Since moving here in September, I am already really enjoying my time here in northeast Kansas. Fall is a great time of year in this area, and gives me plenty of opportunities for enjoying some of my hobbies. Some of these include photography, hiking, and following/playing sports – specifically OU football and Pittsburgh pro teams. Going forward, I am very excited to be part of the team here in Topeka. I am eager to learn more about forecasting, communication, and many other things from some great meteorologists, as well as meet some of the community through various outreach events.

Employee Spotlight continues on page 7...

Employee Spotlight (Continued…)

Meet Matt Flanagan!

Hello everyone! I am one of the two new meteorologists that joined the Topeka National Weather Service office in mid-September. I grew up in the St. Louis area where my experiences with a variety of weather sparked my interest in meteorology at a young age, as seems to be the case for many meteorologists. As a kid, I was terrified of severe storms and tornadoes. Anytime there was severe weather around St. Louis, I would be glued to the television as the broadcast meteorologists described the severe storms, always hoping they would stay away from my house! Over time, this fear turned into a desire to learn about weather, and I knew I wanted to pursue an education in meteorology.

I went on to study meteorology at Saint Louis University where I received my Bachelor and Master of Science degrees. My thesis research looked into utilizing the Cooperative Institute for Precipitation Systems (CIPS) analogs to produce probabilistic snowfall guidance across the contiguous United States. I had a couple of opportunities to talk to elementary school students about what meteorologists do and how to stay safe during inclement weather. It was a great experience as the students were very excited to learn more about meteorology and asked really good questions!

I am excited to be at the Topeka National Weather Service office! I look forward to forecasting the wide variety of weather that impacts northeast Kansas and getting involved with outreach in the community.

Winter Weather Travel Safety and Preparedness (Continued…)

4. Know when to quit. Sometimes road conditions are simply too dangerous to drive in. If you can't see or you keep losing control, pull over. Never push your luck if you're unsure. It's not worth it to drive if you're jeopardizing yourself, your passengers or other drivers on the road.

Even the smartest and safest drivers get into accidents. That's why it's crucial to be prepared for the possibility of any kind of collision or accident that could leave you and your passengers stranded on the side of a cold and possibly dangerous road. The first step is to build an emergency kit and place it in the trunk of your car.

Inside, you will want to include common car safety items like jumper cables, a flashlight and a roadside visibility kit of either reflectors or flares. If you are stranded, a small shovel and bag of sand are must-haves. At left is a list of possible items you may want to have in your vehicle.

COOP Corner

By Shawn Byrne, Observing Program Leader

Summer 2019 has come and gone, and was marked with very wet season, with August being the wettest month. Clinton Lake received 20.51" of rain in the month of August! Here are just a few totals from across the area from COOP observers for June through August:

Abilene:	16.32"
Concordia:	13.92"
Manhattan KSU:	21.63"
Emporia:	19.35"
Lawrence KU:	28.75"
Topeka NWS Office:	28.22"
Seneca 8NW:	9.98"
Garnett:	23.52"

Brad Cox

Thanks to all for your continued reports!

As we hopefully dry out a bit this fall, it is that time of year when we should consider bringing indoors the funnels and inner tubes of the rain gauges. Significant snowfall has already fallen across the Dakotas this season. Funnels and inner tubes should be inside if freezing temperatures are forecast, or by November 1, whichever comes first.

Melba Bruce

Congratulations to our 2019 Holm Award winner, Bernard Vandorn. Hubert Vandorn started the weather station 6 miles NE of Frankfort, KS in 1951. Bernard would help his father with the observations growing up, and then returned to the farm after his military service in Southeast Asia in the late 1960's. Bernard would take over the observation program full time for his father in 1993, and has done and exemplary job in that time. Thank you Bernard, and for all CO-OP observers!!

Here are the 2019 Length of Service awards:

Raymond Oneil (pictured)	Beattie, KS	40 Years
Melba J. Bruce (pictured)	Minneapolis, KS	35 Years
Mike Gfeller	Junction City	35 Years
Richard Phelps	Miltonvale, KS	25 Years
James Dobbins	Goff, KS	20 Years
Kent Bargam	Marysville, KS	20 Years
Brad Cox (pictured)	Pomona Lake, KS	10 Years
Ivan Jones	Fostoria, KS	10 Years
Gary Ecclefield	Garnett, KS	10 Years

Raymond Oneil

If you have any questions at all regarding snow measurements, or any other questions, please contact me via email at shawn.byrne@noaa.gov. Thank you all for your service! It is valued and very much appreciated!

National Weather Service

Topeka, Kansas

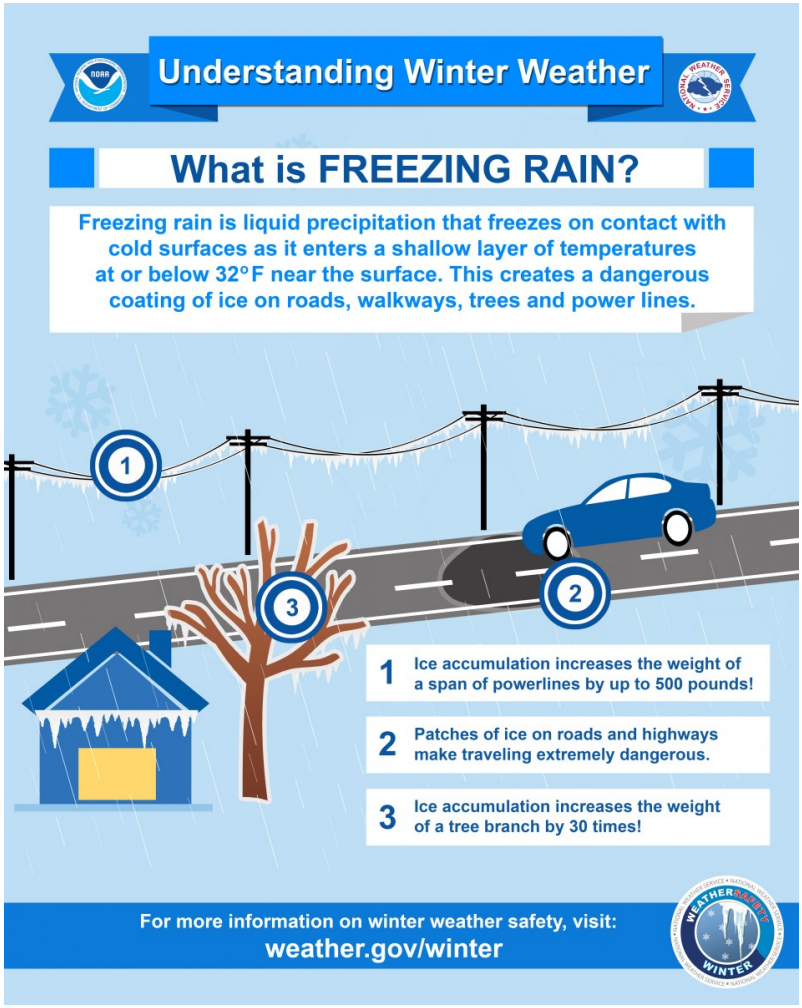
1116 NE Strait Ave

Topeka, KS 66616

Local Forecast Phone: 785-234-2592

E-mail: w-top.webmaster@noaa.gov

Editor: Sarah Teefey, Meteorologist



Winter Weather Driving Safety Tips:

- **Wear your seat belt! Even though wearing your seat belt should already be a no-brainer at all times, during the winter it's even more critical.**
- **Take it slow! *You don't have the skill to drive at normal speeds on icy roads*. High speeds make it easy to lose control on ice and snow.**

Pay Attention! Put your mobile device away and focus on the road with both hands on the steering wheel!