

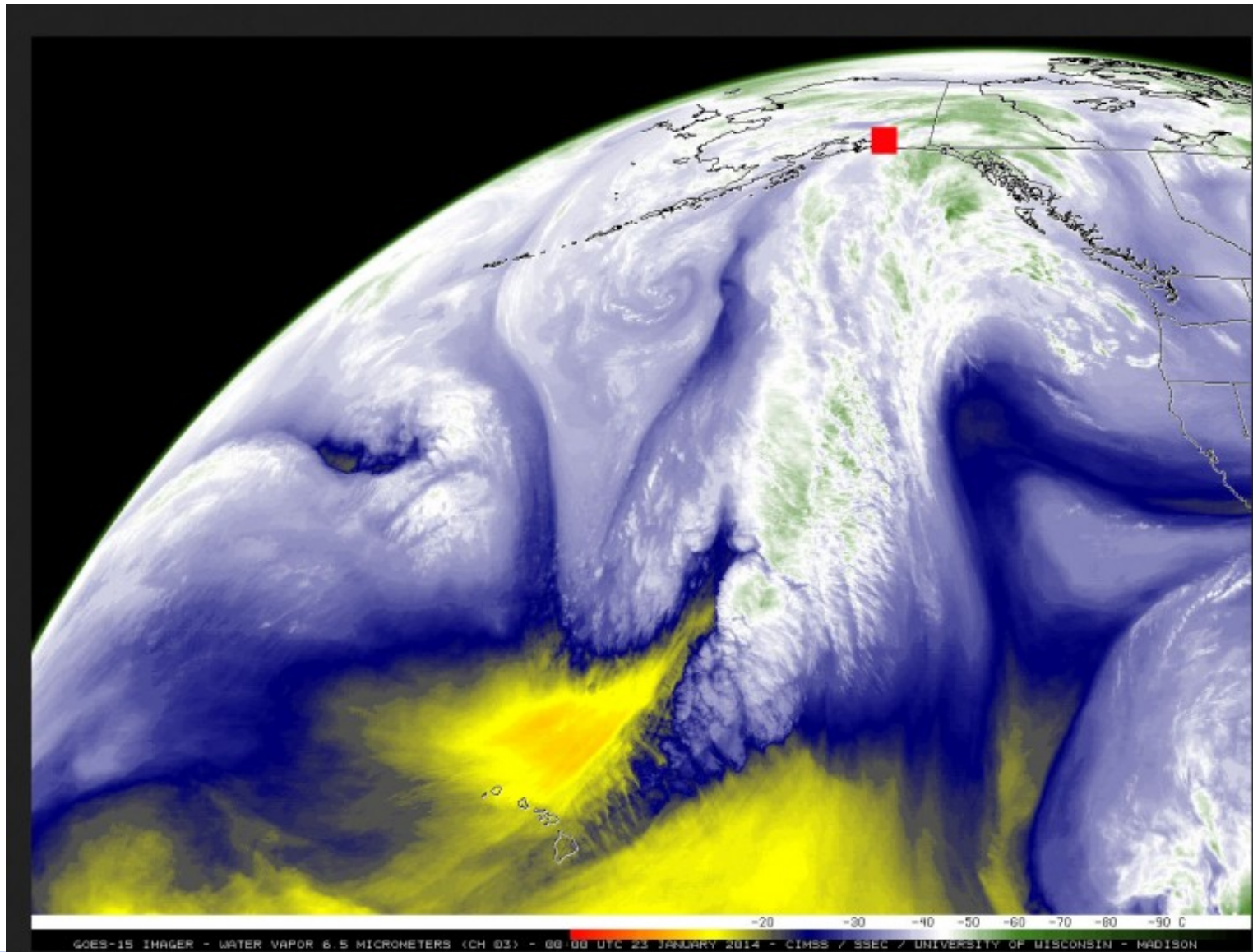


Alaska Department of Transportation & Public Facilities

Road Weather Information System (RWIS) & Maintenance Decision Support System (MDSS)

August 24, 2015

Changing Weather Patterns



"Godzilla" El Niño?

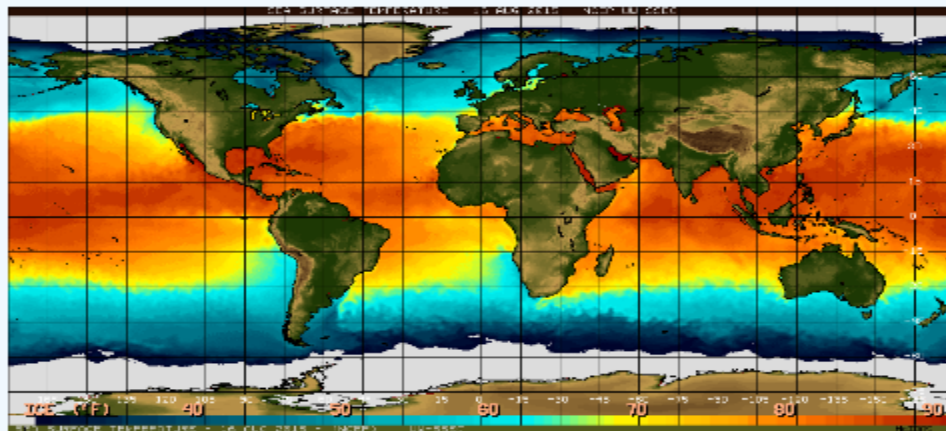


Weather.gov Forecast
City, ST [» GO](#)

- [» What's Happening Today?](#)
- [» Forecasts](#)
- [» Observations](#)
- [» Research](#)
- [» Impacts](#)
- [» Links, FAQs, Graphics...](#)
- [» Education](#)
- [» El Niño Home](#)
- [» La Niña Home](#)

NOAA's El Niño Portal

For more information on the ongoing El Niño event, check the [ENSO Diagnostic Discussion](#), which is updated on the second Thursday of each month. Be sure to follow our [ENSO blog](#) and connect with us on [social media](#).



Sea surface temperature in the equatorial Pacific Ocean (above). **El Niño** is characterized by unusually warm temperatures and **La Niña** by unusually cool temperatures in the equatorial Pacific. Anomalies (below) represent deviations from normal temperature values, with unusually warm temperatures shown in red and unusually cold anomalies shown in blue.

- [» El Niño is a disruption of the ocean-atmosphere system in the Tropical Pacific having important consequences for weather and climate around the globe.](#)
- [» NOAA has primary responsibilities for providing forecasts to the Nation, and a leadership role in sponsoring El Niño observations and research.](#)
- [» El Niño status & discussion](#)
- [» What is El Niño?](#)
- [» What is La Niña?](#)
- [» YouTube video: Understanding El Niño](#)
- [» YouTube video: Developing an El Niño Observing System](#)
- [» New Look at 1918/1919 Niño Suggests Link to Flu Pandemic](#)
- [» El Niño FAQs & definitions](#)



Our Mission

Keep Alaska moving through service and infrastructure

- Provide for the safe and efficient movement of people and goods
- Provide access to state services
- Provide access to resources

To accomplish our mission, we build, maintain, and operate Transportation Infrastructure (Assets)



Recurring Ice Storms





Standard Method: Weather Guessing



HOME FORECAST PAST WEATHER WEATHER SAFETY INFORMATION CENTER NEWS SEARCH ABOUT

Local forecast by "City, St" or ZIP code

Go

[Location Help](#)

Government Shutdown Notice

Due to the Federal Government shutdown, NOAA.gov and most associated web sites are unavailable. However, because the information this site provides is necessary to protect life and property, it will be updated and maintained during the Federal Government shutdown.

[Read More...](#)

[En Español](#)

Current Conditions

[Share](#) | [f](#) [t](#) [e](#) [m](#)



Mostly Cloudy
37°F
3°C

Humidity 79%
Wind Speed NE 10 mph
Barometer 29.79 in (1009.6 mb)
Dewpoint 31°F (-1°C)
Visibility 10.00 mi
Wind Chill 30°F (-1°C)

Last Update on 5 Oct 10:53 am AKDT

Current conditions at

Fairbanks International Airport (PAFA)
Lat: 64.82 Lon: -147.87 Elev: 436ft.

[More Local Wx](#) | [3 Day History](#) | [Mobile Weather](#)

Fairbanks AK

7 Day Forecast

Fairbanks, AK

NWS Weather Forecast Office

THIS AFTERNOON	TONIGHT	SUNDAY	SUNDAY NIGHT	MONDAY	MONDAY NIGHT	TUESDAY	TUESDAY NIGHT	WEDNESDAY
Mostly Sunny High: 46 °F	Partly Cloudy Low: 27 °F	Mostly Cloudy High: 42 °F	Chance Rain/Snow Low: 27 °F	Mostly Cloudy High: 45 °F	Mostly Cloudy Low: 31 °F	Mostly Cloudy High: 54 °F	Chance Rain Low: 28 °F	Chance Rain/Snow High: 43 °F

RWIS Technology



Info available








RWIS Site Summary

Airport Way @ MP . 11


For definitions, click on the name field.

Date / Time	
08/12/2015 1:33 PM	
Atmospheric Data	
Air Temperature	55 °F
Dew Point	47 °F
Relative Humidity	75 %
Wind Speed	1 mph
Wind Direction	E
Wind Speed Maximum	6 mph
Wind Direction of Maximum Speed	E

Pavement Surface and Subsurface Data			
Pavement Sensor Location	Date/Time	Surface Temperature (°F)	Subsurface Temperature (°F)
EB Lane @ RPU - Infrared	08/12/2015 1:33 PM	59	-

Camera Data			
 Airport Way West View 08/12/2015 1:53 PM	 Airport Way West View 08/12/2015 1:53 PM	 Gaffney Road North View 08/12/2015 1:54 PM	 Airport Way East View 08/12/2015 1:54 PM
 Airport Way - Richardson EB Ramp 08/12/2015 1:54 PM	 Airport Way - Steese/Richardson Intersection 08/12/2015 1:54 PM	 Pavement Closeup View 08/12/2015 1:54 PM	


Road Weather

- » RWIS Home
- » RWIS - Camera - TDP
- » myRWIS
- » About RWIS
- » About TDP
- » RWIS Glossary
- » RWIS Website FAQs 
- » Alaska Weather Links
- » Contact RWIS Manager

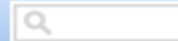
- » RWIS Site Data
 - » Site Summary
 - » Extremes Summary
 - » Atmospherics Summary
 - » Pavement Summary
 - » RWIS Site MetaData

- » 511 - Traveler Information 



Please note: You must have Acrobat Reader to open any  documents on this page. If you do not have Acrobat Reader, [click to download the FREE software.](#)

Pavement Friction



DOT&PF > Iways > RWIS > State Map > Area Map

RWIS Site Summary

Airport Way @ MP . 11

For definitions, click on the name field.

Date / Time	
08/12/2015 1:33 PM	
Atmospheric Data	
Air Temperature	55 °F
Dew Point	47 °F
Relative Humidity	75 %
Wind Speed	1 mph
Wind Direction	E
Wind Speed Maximum	6 mph
Wind Direction of Maximum Speed	E

Pavement Surface and Subsurface Data						
Pavement Sensor Location	Date/Time	Surface Temperature (°F)	Subsurface Temperature (°F)	Pavement Surface Grip	Pavement Surface State	Pavement Contaminant Depth (mm)
EB Lane @ RPU - Infrared	08/12/2015 1:33 PM	59	-	0.76 - GOOD	Wet	-

RWIS Hardware

Non-Invasive Pavement Sensors

- There are two separate sensors...
- **DSC111** (The 'C' stands for condition)
- **Measures Road State** – 4 eye safe lasers at differing frequencies are transmitted by top lens & received by bottom lens
- **DST111** (The 'T' stands for temperature)
- **Measures Road Surface Temperature** - based on long-wave infrared radiation.





How to Use

Maintenance Manager Use of Friction Measurement Readings

Grip (Co-efficient of Friction) Reading Rule of Thumb:

Level of Grip

0.6 and above

0.4 to 0.59

0.39 and below

Description*

Grip good

Grip poor

Pavement slippery – Very poor grip

**These descriptions are intended only as indicators, as the real friction values depend on many variables, such as vehicle type and speed, tire type, road surface structure, etc.*



Why Improve On This? (Why MDSS?)

- Customer demand for higher **level of service** and **reliable, current information**
- **Budget/staff constraints** in the face of high cost of labor, equipment and materials used for maintenance
- Difficulty in **forecasting** certain types of **weather and complex pavement response** to conditions and maintenance efforts
- **Environmental concerns** with anti-icing and de-icing



Alaska Enhanced MDSS

- **Decision support tool** → recommends course of action based on conditions/forecast
- Integrates fixed **RWIS** sites and **mobile operations**
- Algorithms customized for **Alaska**





Partners in MDSS



MDSS Hardware



Mobile Observations

Find Public Works Fleet MGT





MDSS Home Page

Pikalert EMDSS

http://www.ral.ucar.edu/projects/rdwx_mdss/emdss/?state=alaska

Google

Apple Yahoo! Google Maps YouTube Wikipedia News (35) Popular

Obs Next 6 Hrs 6 - 24 Hrs 24 to 72 Hrs

Pikalert Map

Map Satellite

Chukchi Sea

Bering Sea

Sea of Okhotsk

Gulf of Alaska

Yukon

Northwest Territories

Canada

British Columbia

Alberta

Saskatchewan

Manitoba

Ontario

Washington

Montana

North Dakota

Minnesota

Wisconsin

Vancouver

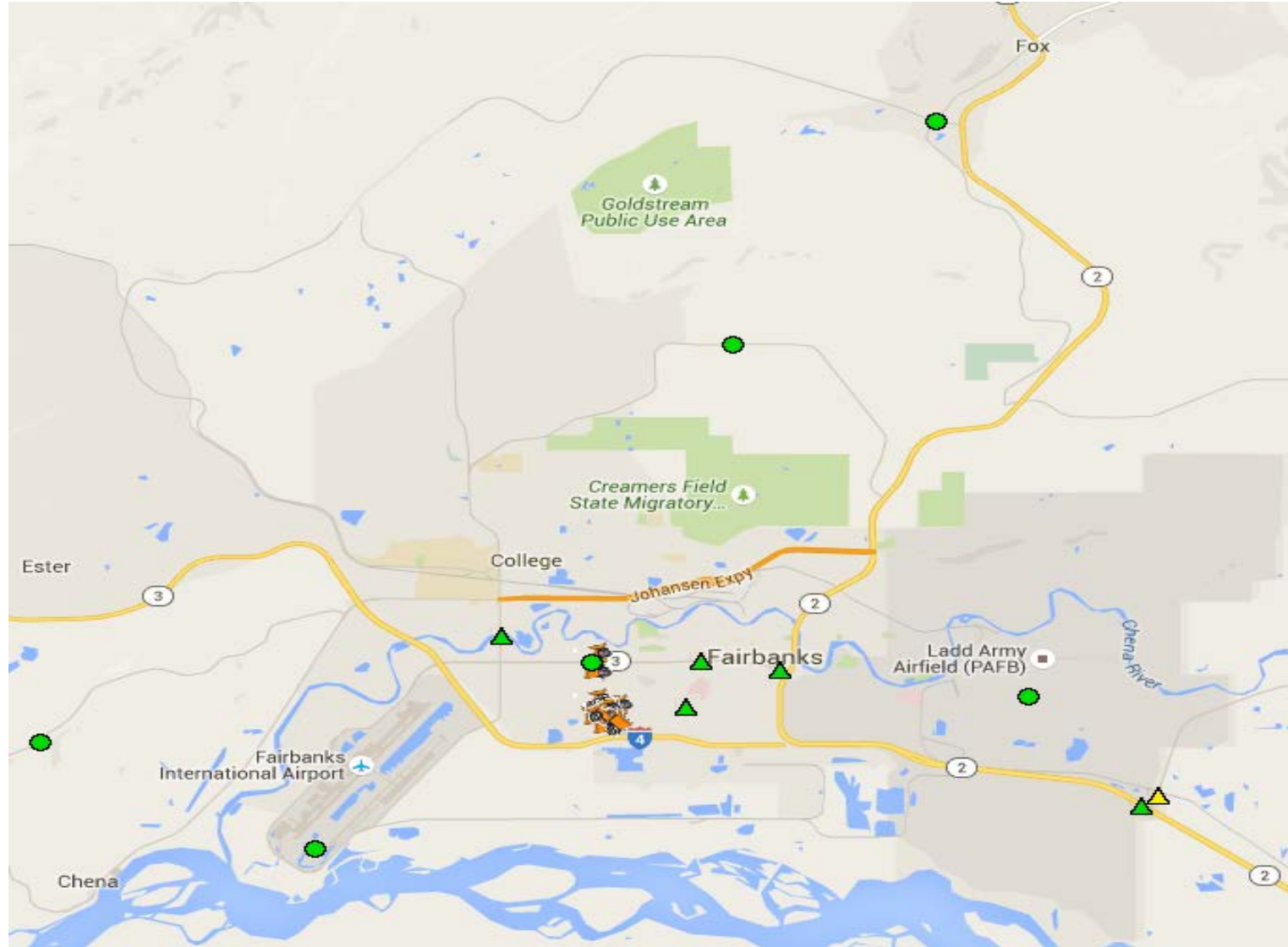
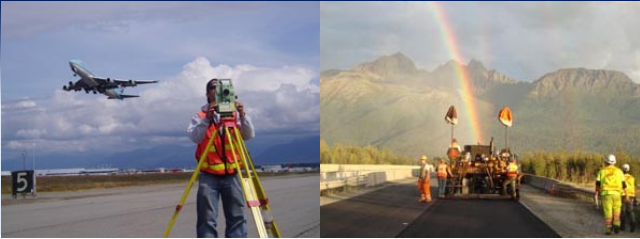
Calgary

Winnipeg

Edmonton

Map data ©2013 Basarsoft, Google, INEGI, ORION-ME Terms of Use Report a map error

Site List Map Vehicle List





Weather Reporting Site Pick List

Pikalert EMDSS

http://www.ral.ucar.edu/projects/rdwx_mdss/emdss/?state=alaska

Google

Apple Yahoo! Google Maps YouTube Wikipedia News (35) Popular

Pikalert Site List

Fairbanks [zoom...]

Obs: ● Next 6 Hrs: ● 6 - 24 Hrs: ● 24 - 72 Hrs: ●

(All alerts generated at: 17:00 on 10/5)

FAIRBANKS, FAIRBANKS INTERNATIONAL AIRPORT

Obs: ● Next 6 Hrs: ● 6 - 24 Hrs: ● 24 - 72 Hrs: ●

WAINWRIGHT U. S. ARMY AIRFIELD

Obs: ● Next 6 Hrs: ● 6 - 24 Hrs: ● 24 - 72 Hrs: ●

District North-Side Hills. Farmers Loop @ Summit Dr

Obs: ○ Next 6 Hrs: ● 6 - 24 Hrs: ● 24 - 72 Hrs: ●

FAIRBANKS / EIELSON AIR FORCE BASE

Obs: ● Next 6 Hrs: ● 6 - 24 Hrs: ● 24 - 72 Hrs: ●

District Town. Airport Way @ Peger Rd

Obs: ○ Next 6 Hrs: ● 6 - 24 Hrs: ● 24 - 72 Hrs: ●

District North-Side Hills. China Ridge Rd @ Ridgepoint Dr

Obs: ○ Next 6 Hrs: ● 6 - 24 Hrs: ● 24 - 72 Hrs: ●

District North-Side Valleys. Gold Stream Rd @ Old Steese Hwy

Obs: ○ Next 6 Hrs: ● 6 - 24 Hrs: ● 24 - 72 Hrs: ●

Steese Highway @ Cleary Summit MP 20.9

Obs: ● Next 6 Hrs: ● 6 - 24 Hrs: ● 24 - 72 Hrs: ●

Richardson Highway @ Badger Interchang

Obs: ○ Next 6 Hrs: ● 6 - 24 Hrs: ● 24 - 72 Hrs: ●

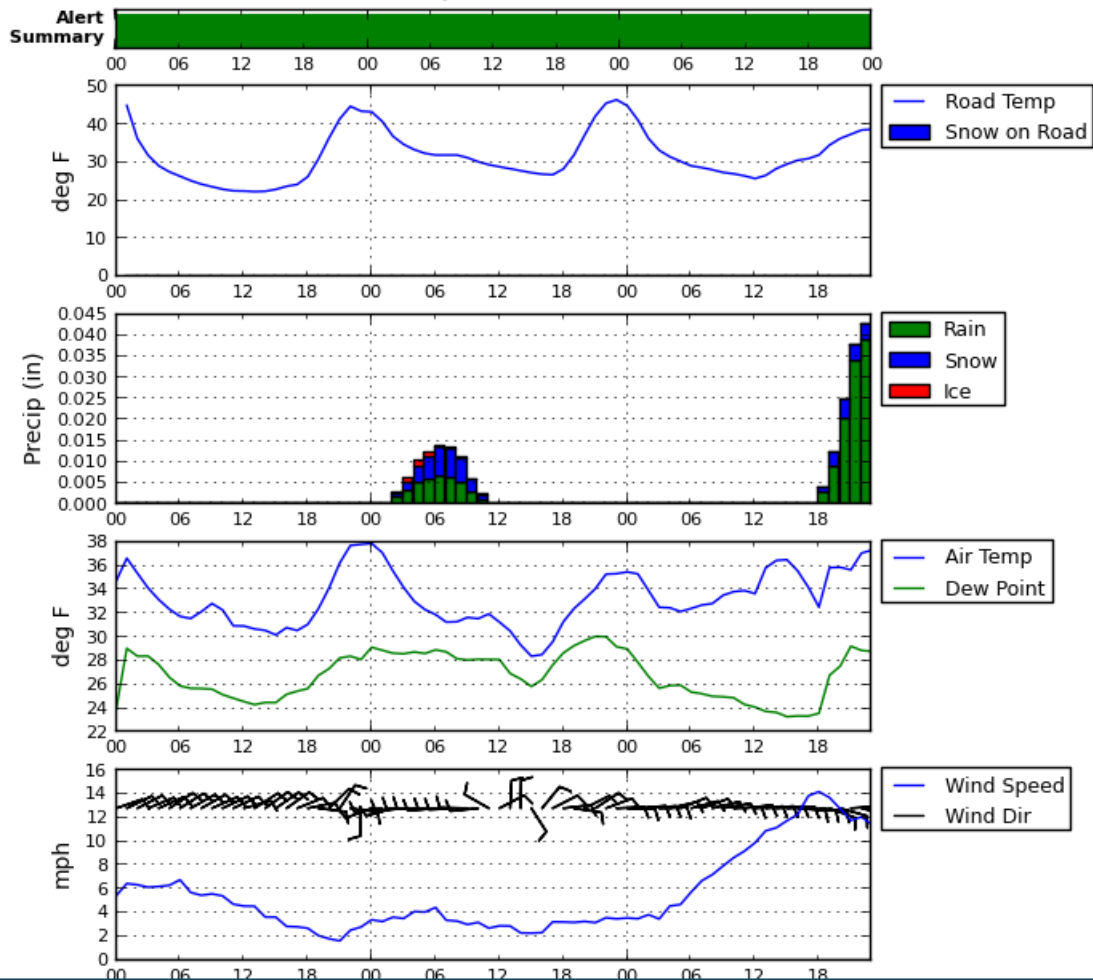
University Avenue Fairbanks @ Chena Ri

Obs: ○ Next 6 Hrs: ● 6 - 24 Hrs: ● 24 - 72 Hrs: ●

Back

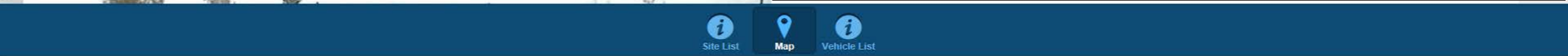
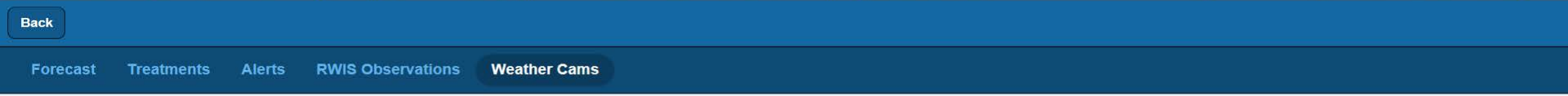
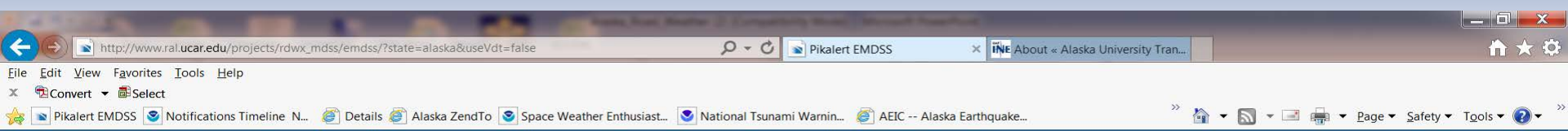
Pikalert Fcst. Summary Treatments Rec. Treatments RWIS

Steese Highway @ Cleary Summit MP 20.9





MDSS RWIS Weather Cameras





EMDSS Benefits

- **Proactive** approach
- **Efficient** allocation of resources
- Mobile operations yield **real-time data** and offer flexibility



Future Build Out



- Connected vehicle display on MDSS Site - **1 hour historical**
- Treatment recommendations for **all weather sites Statewide**
- Expand **mobile observations**
- **Tablet and iPhone** access (w/App)



National Weather Service Resources

Web:

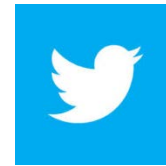
- <http://pafg.arh.noaa.gov>
- www.weather.gov
- www.arh.noaa.gov

Get Mobile Alerts:

- <http://inws.wrh.noaa.gov>

Radio: 162.55 MHz

Social Media:



Twitter:

@NWSFairbanks

<http://twitter.com/NWSFairbanks>



Facebook:

www.facebook.com/

NationalWeatherService.Alaska.gov



Questions?

