INTELLIGENT TRANSPORTATION SOCIETY OF ALASKA

2024 Annual Meeting | Anchorage, AK | Sep 17th

Improving the Value of Transportation Road Weather Information Systems (RWIS) Stations and Networks by Supporting Multiple Data Standards

Michael Lilly, GW Scientific, Ron Paetzold, GW Scientific, Isvan Gomez, Alaska DOT&PF Timothy Glassett, Alaska DOT&PF Gordon Scott, Alaska DOT&PF

Weather Data – Who Needs?

- RWIS – NTCIP Standards
  - Road weather applications
- NOAA/NWS
  - Current Conditions
  - Forecasting
- M&O Applications
  - M&O Staff Daily Winter Maintenance Planning
  - Summer Painting Conditions
  - Flood Warning
  - Others
- Research/Design Groups

Gordon Scott clearing spring avalanche, Atigun Pass, North Side, Path 306, June 1, 2022

Atigun Pass Advanced RWIS Example

- Basic Weather
  - M&O Chandala Staff
- Winter Hazards
  - Wind Chill, Whiteout, Snow Drifts, Avalanches
- Avalanche
- NOAA Forecasting
- Storm Research

Atigun Pass, AAW01
Advanced RWIS
Blowing Snow Sensors,
Gordon Scott,M&O
Avalanche
Snow Forecaster

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Does Everyone Have The Same Data Standard? Atigun Example

	File Code	Table	Data Description	File Code	Table	Data Description
	A	OneMinDiag	1-min Diagnostic Data	Q	QtrHrlyStormAnalysis	Quarter Hourly Wind/Snow Data
	B	TwoMinWind	2-min Wind Data	V	SnowEvent	Snow Event Data
	C	QtrHrly	Quarter Hourly Data	W	ControlVariables	Quarter Hourly Controls
	D	HrlyData	Hourly Data	X	QtrHrlyAVIForecast	QuarterHourly Selected Output
	E	HrlySnowData	Hourly Snow Data	Y	HrlyAVIForecast	Hourly Selected Output
	F	HrlyDiag	Hourly Diagnostic Data	P	DailyAVIForecast	Daily Selected Output
	G	Daily	Daily Data	Z	NTCIP_Values_OneMin	1-Minute table (NTCIP)
	H	DailyDiag	Daily Diagnostic Data	NTCIP		NTCIP ESS Data
	K	TwoMinStormAnalysis	2-min Wind/Snow Data			

			Data Tables															
			One-Minute Data				Two-Minute Data				Quarter-Hourly Data				Hourly Data			
# Sensors	Units	Sample	Avg	Max	Min	Sample	Avg	Max	Min	Sample	Avg	Max	Min	Sample	Avg	Max	Min
1	°C, °F									Q, C	Q, C	C	C	D	D	D	D
1	%									Q, C	C	C	C	D	D	D	D
1	°C, °F									C	C	C	C	D, Y	D, Y	D, Y	D, Y
1	°F									Q, X	X	X	X	Y	Y	Y	Y
	°C, °F									Q, C	C	C	C	D	D	D	D
1	mB									Q, C				D			
1	in Hg													Y			
1	m/s, mph						B, K	B, K		Q, C	Q, C	Q, C		D	D	D	
1	Deg						B, K			Q, C	Q, C			D	D		
1	Unitless					B, K				C				D			
1	m/s					B, K											

AAW01 NTCIP

Ready Accessibility: Investigate Display Settings

Current Applications of Multiple Data Output

- Alaska Avalanche Information Center
  - Gulkana Glacier High-Elevation Site
  - Adding NTCIP Data
  - DOT RWIS/511 Reporting
  - FHA Weather Data Environment (WxDe) Project
- Alaska DOT Avalanche Program High-Elevation Network
  - Expanding to include NTCIP
  - Mesowest/MADIS – NOAA Reporting

Gulkana Glacier High Elevation Station, Hank Statscewich, June 2024

Thank You

Questions?