

Idaho State Report Pacific Northwest Snowfighters

June 7th

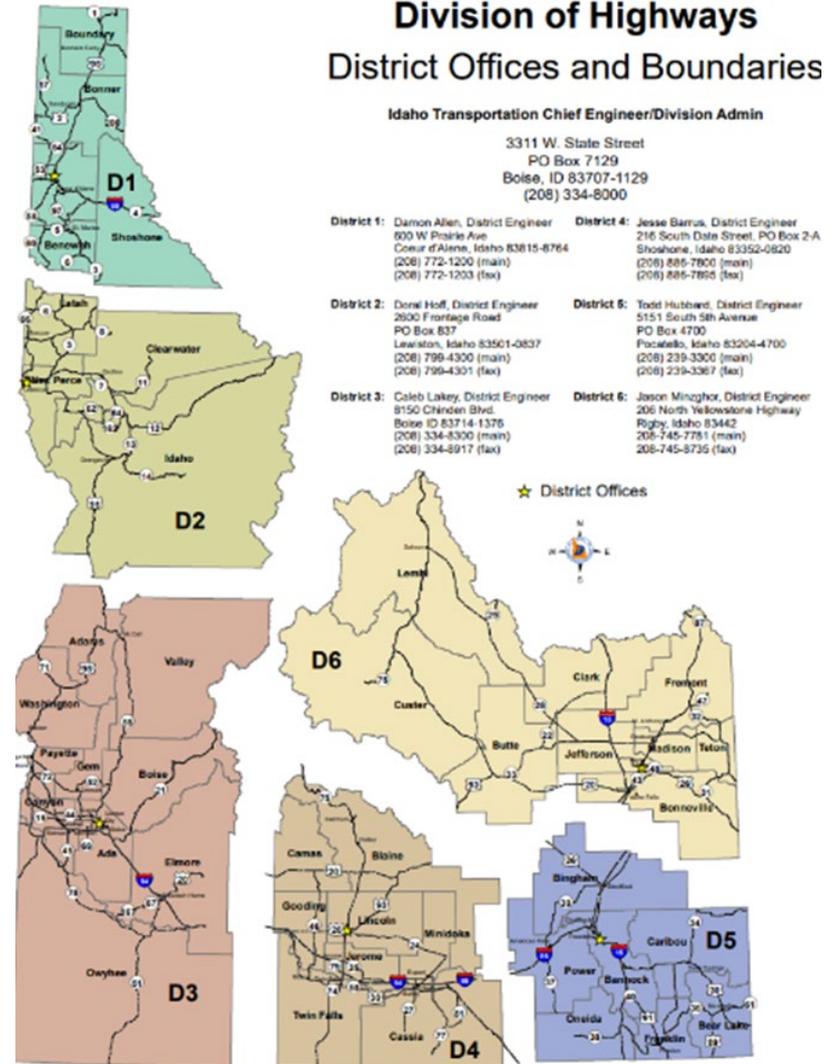
Portland, Oregon



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Idaho Transportation Department

- Dist 1 – Coeur d’Alene
- Dist 2 – Lewiston
- Dist 3 – Boise
- Dist 4 – Shoshone
- Dist 5 – Pocatello
- Dist 6 - Rigby





www.reederflying.com

Shoshone Falls
212 Ft. Tall
900 Ft. Wide

Hells Canyon

7,993 Ft. @ Maximum Depth
Deepest Gorge in America



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#midwest09



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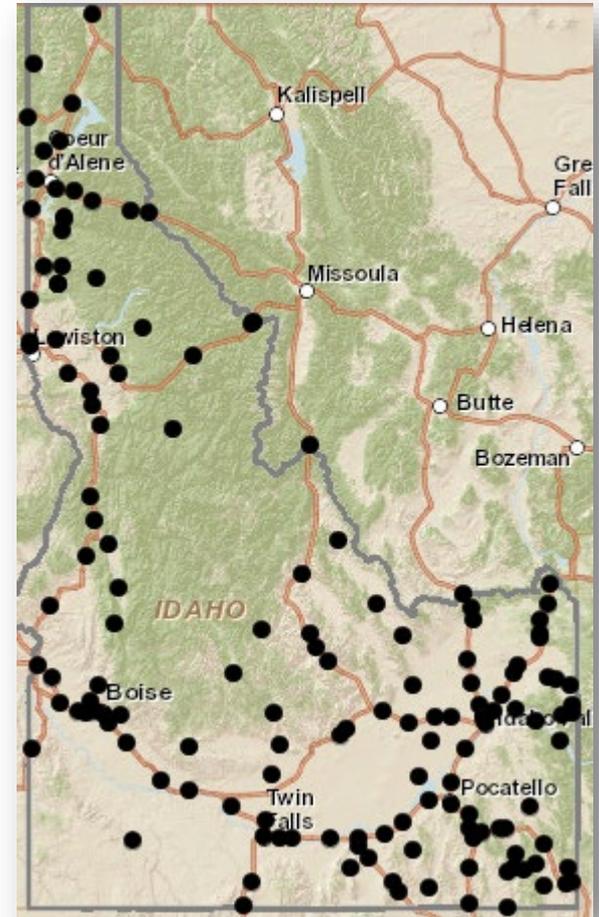
ITD Snowplow Facts

- 13,899 Lane Miles – 5,190 Center Lane Miles
- 48 Road Foreman Areas
- 87 Maintenance Sheds/Garages
- 1,583 Employees
- 418 Snowplow Trucks
- 2 Tow Plows
- 20 Truck Rotaries, 7 Loader Mount Rotaries
- 35 Motograders
- 6 Snowcats



Winter Performance Metrics

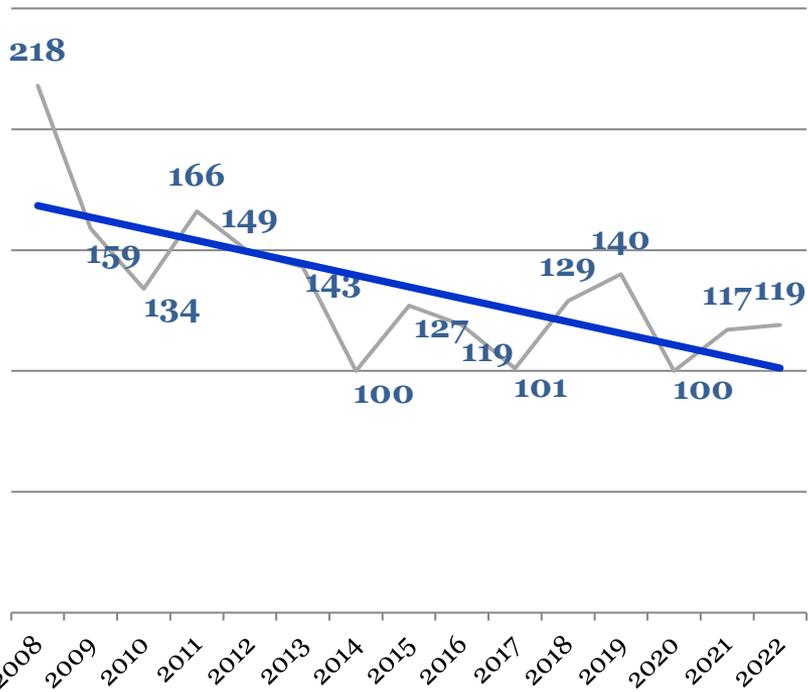
- Mobility Score
 - % of Time w/o Snow/Ice @Freezing Pavement Temperature
- RWIS Data
 - 128 Stationary Sites
- Calculated by District
- ITD Target – 73%
- 2022/2023 Results – 80%



Why Performance Metrics

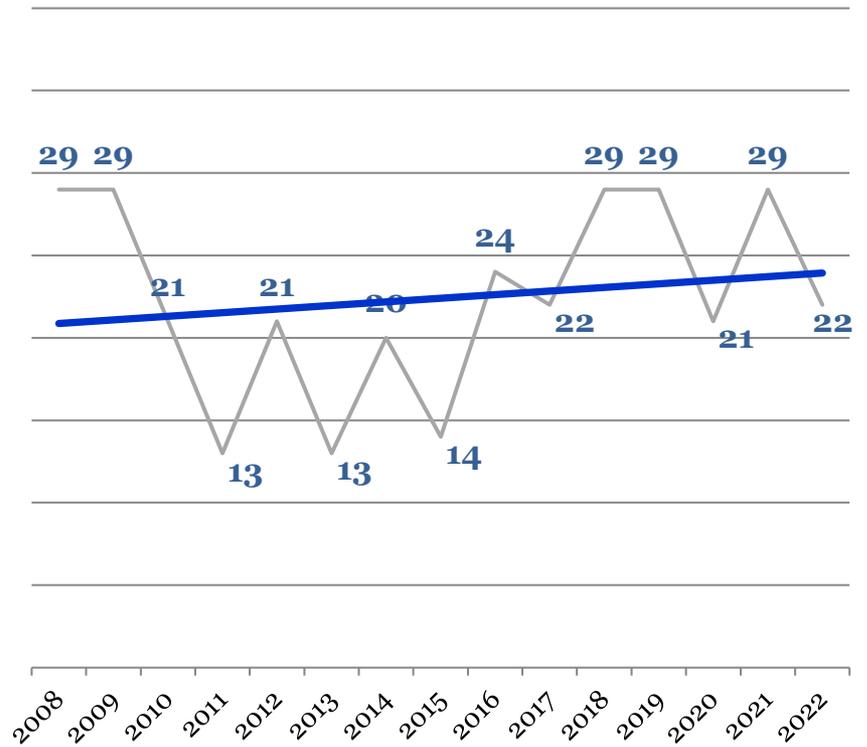
Winter (Dec - Feb) Serious Injuries

— SHS Winter Serious Injuries
 — Linear (SHS Winter Serious Injuries)

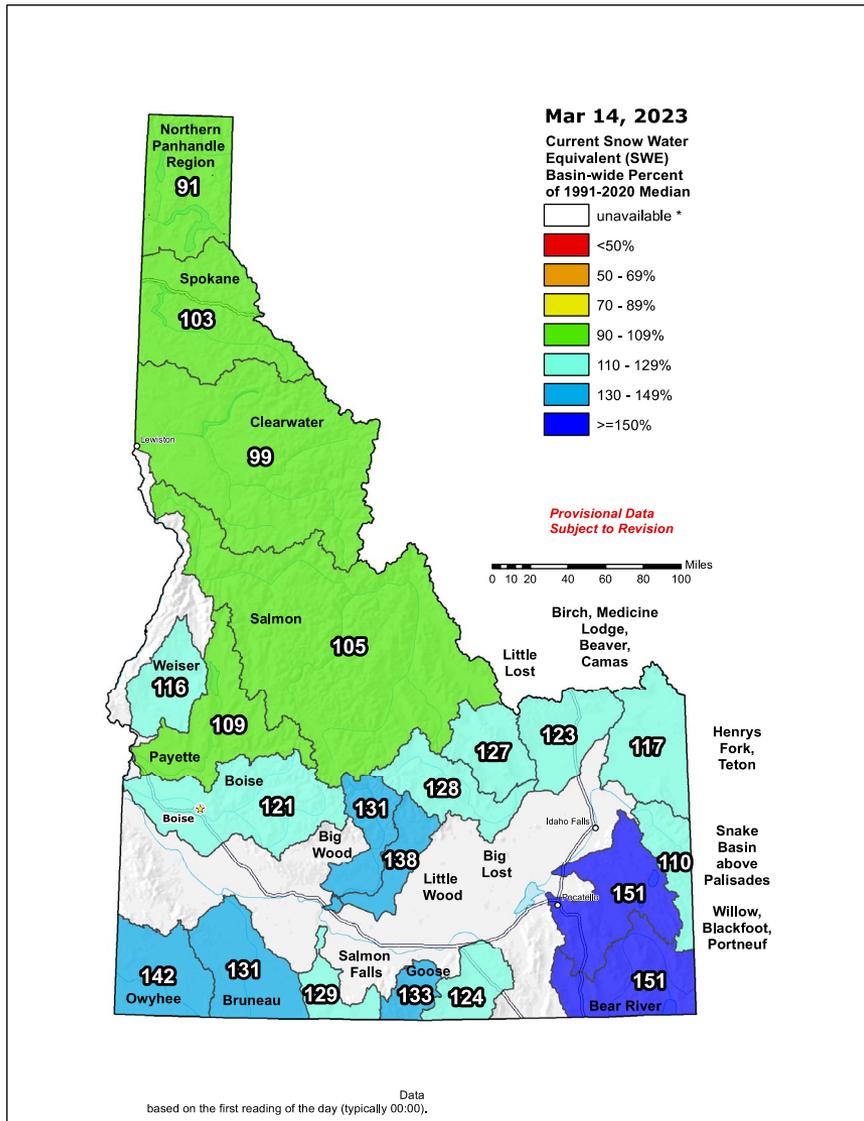


Winter (Dec - Feb) Fatalities

— SHS Winter Fatalities — Linear (SHS Winter Fatalities)



Winter Storm Analysis

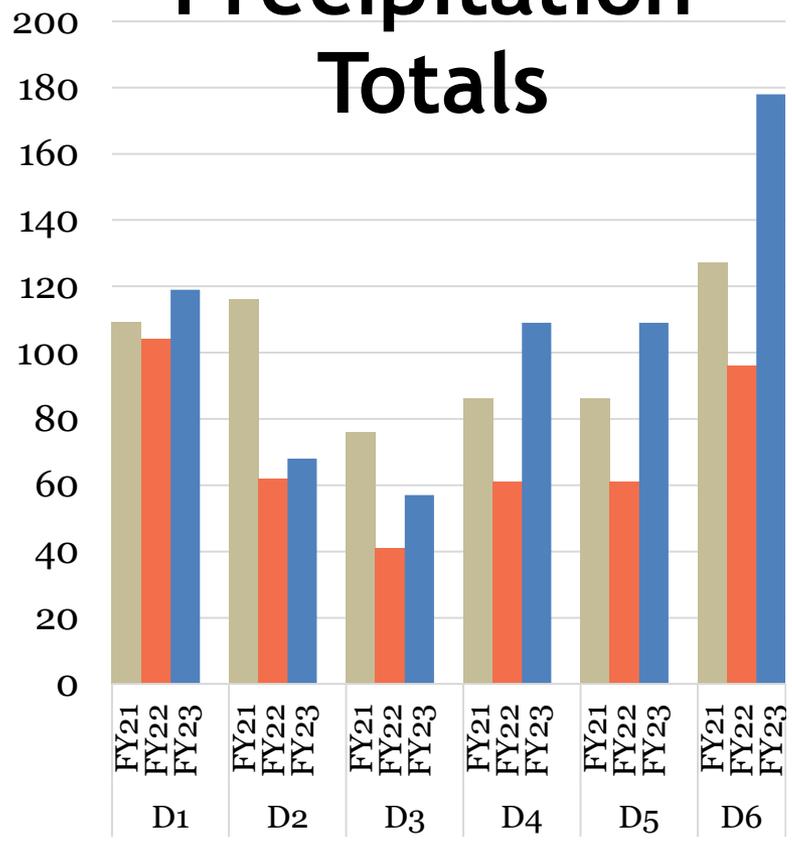


	FY22	FY23
Mobility Score	74%	75%
Total Storm Events	4,572	6,773

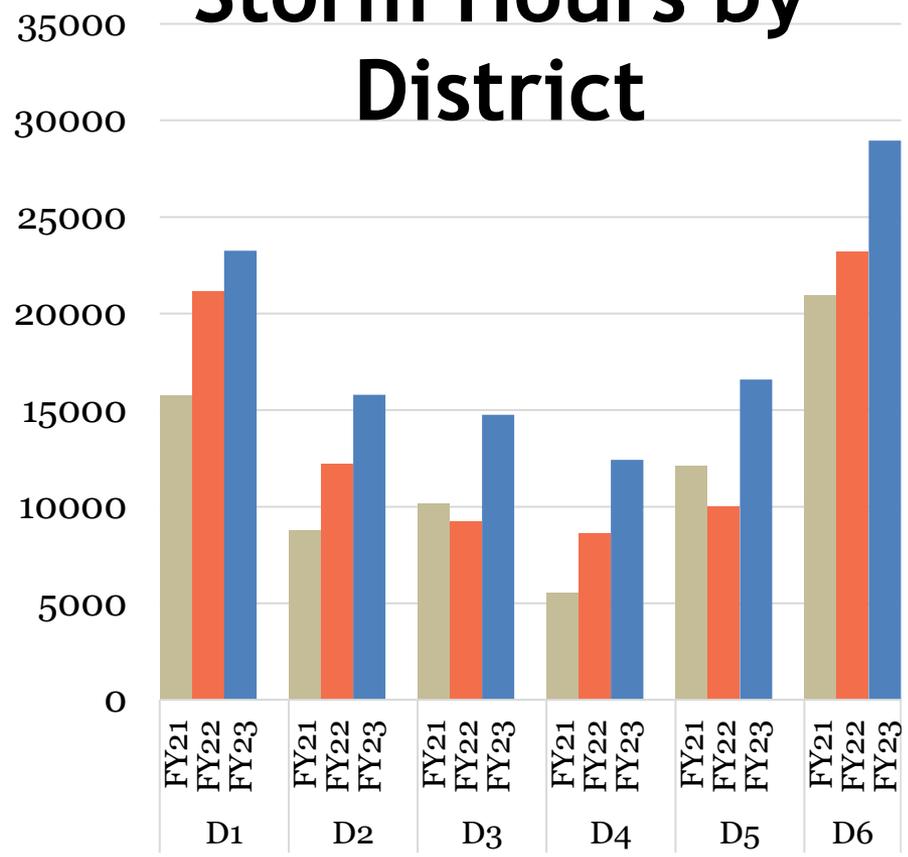
District	# of RWIS
D1	19
D2	14
D3	23
D4	21
D5	23
D6	28
Total:	128



Precipitation Totals

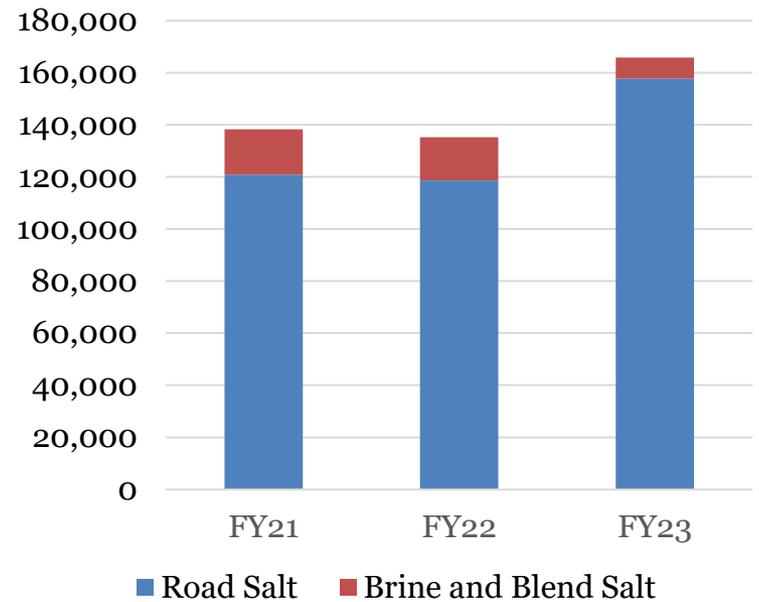


Storm Hours by District





Statewide Salt Usage



6 x 4 Snowplow Trucks

- Freightliner SD114
- 505 HP DD13 Engine
- Certified Cirrus SpreadSmart RX Controllers
- Configurations
 - Chassis Mount Spreaders
 - Slide-In Spreaders
 - Slide-in Deicers
 - Chassis Mount Flusher/Deicers
- Wing Plows
 - 10 Ft. Dual Function
 - 10 Ft. Single Function
 - 8 Ft. Extendable





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6 x 4 Snowplow Trucks New Contract

- Multiple Vendor Award
 - Freightliner SD114
 - International HV513
 - Mack Granite GR64F



Larue T70 Truck Mount Rotary Snowplow



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Work Zone Safety Equipment

Road Equipment Items	D1	D2	D3	D4	D5	D6	Total	Unit Cost	Extended Cost
Trailer Mounted Message Boards w/Radar	7		10		4	13	34	\$15,500	\$527,000
Truck Mounted Message Boards			18	2	8		28	\$6,500	\$182,000
Radar Speed Trailers		2		2		4	8	\$8,500	\$68,000
Trailer Attenuators				2			2	\$20,000	\$40,000
Portable Traffic Signals		1	2			2	5	\$25,000	\$125,000
Light Plants		4	6		4		14	\$15,000	\$210,000
Traffic Control Trailers						3	3	\$9,000	\$27,000
Barricade Trailers				5	2	3	10	\$2,500	\$25,000
Delineation Cone/Barrel Trucks	7	1	2	5	8	4	27	\$95,000	\$2,565,000
Work Zone Barrier Trailer							1	\$350,000	\$350,000
Total	14	8	38	16	26	29	131		\$4,119,000



Maintenance Facilities

- **FY-23 Projects**
 - Powell Mtce Building - \$5.8M
 - Caldwell Mtce Building – \$3.5M
 - Blackfoot Mtce Building - \$2.4M
 - Blackfoot Brine Facility - \$840K
 - New Meadows Mtce Building - \$1.2M
 - Bliss Mtce Building - \$1M
 - Cedars Equip Building - \$750K
 - Sublett Equip Building - \$600K
 - Driggs Employee Housing - \$1.6M
- **FY-24 Project**
 - Powell Fuel Island - \$1.5M
 - Fairfield Employee Housing - \$2M
 - Stanley Employee Housing - \$500K
 - Montpelier Mtce Building - \$4.2M
 - Salmon Mtce Building - \$2.8M



Powell Maintenance Building



Operating Budget Enhancement

- FY-23 Supplemental Operating Budget - \$9,300,000
 - Communication and Computer Services- \$250K
 - Diesel Fuel – \$2.5M
 - Gasoline Fuel - \$1.0M
 - Fuel Surcharge (Salt Delivery) - \$550K
 - Other Fuel and Lubricants - \$200K
 - Highway Contracts & Agreements- \$940K
 - Salt Purchases - \$1.3M
 - Plant Mix Purchases - \$800K
 - Striping Paint - \$380K
 - Liquid Deicer - \$300K
 - Vehicle Repair Parts- \$265K



Equipment Operator Training Program

Accredited Program: Addresses operation and preventive maintenance of equipment which is essential to insuring ITD employees have the necessary skills and knowledge to operate equipment safely. The program requires the use of an accredited training curriculum taught by certified trainers.



Accreditation & Curriculum Partner

Kootenai Technical Education Campus (KTEC) was chosen as the selected vendor to develop curriculum with the assistance of ITD's SME's. The curriculum was created based on needs of ITD, safe operations, preventable Maintenance plans, Daily Equipment inspections, material use and equipment operations. The program creates a standardized, accredited program to invest in the employees and equipment at ITD



Equipment Types - Initial Roll Out

Dump Truck



Loader



Snowplow



Equipment Types - Expanded Program

Street Sweeper



Excavator



Motorgrader



Program Curriculum

- The training is comprised of classroom and actual field experience with a certified trainer.
 - Dump truck & Loader = 40 hours
 - Snowplow = 40 hours
- Training will be provided in District (10 people per class)
- Districts will be responsible for providing equipment to conduct hands on training.
- All Candidates are required to hold a CDL prior to certification.



OJT and Certification

- OJT Process
 - Formalized and documented OJT program.
 - 40 hours of documented OJT will be required after the initial training.
 - TTO step 3 employees will provide OJT as assigned by supervisor.
 - Assigned step 3 employees will receive proper training to deliver OJT.
- Certification Process
 - Written and Skills Exams.
 - All Employees must possess certifications before operating equipment independently.
 - Existing employees grandfathered under existing program.
 - Certifications expire at 5-year intervals.
 - Re-certification will be an 8-hour class and written exam.



Intended Impacts

- Reduce the variety of training methods across the state for Equipment training.
- Create a one right way Equipment Training Program.
- Reduce equipment damage & Improve the overall safe operations of equipment.
- Reiterate the overall importance of Preventative Maintenance (PM)
- Pride in receiving an Accredited training program.
- With in-house training this reduces district travel/costs.



AVL System and Data Uses

- Certified Cirrus Controls
 - SpreadSmart RX™ Spreader Controllers
 - DataSmart™ Reporting System
- WiFi Communication



Integrating RWIS & AVL Data

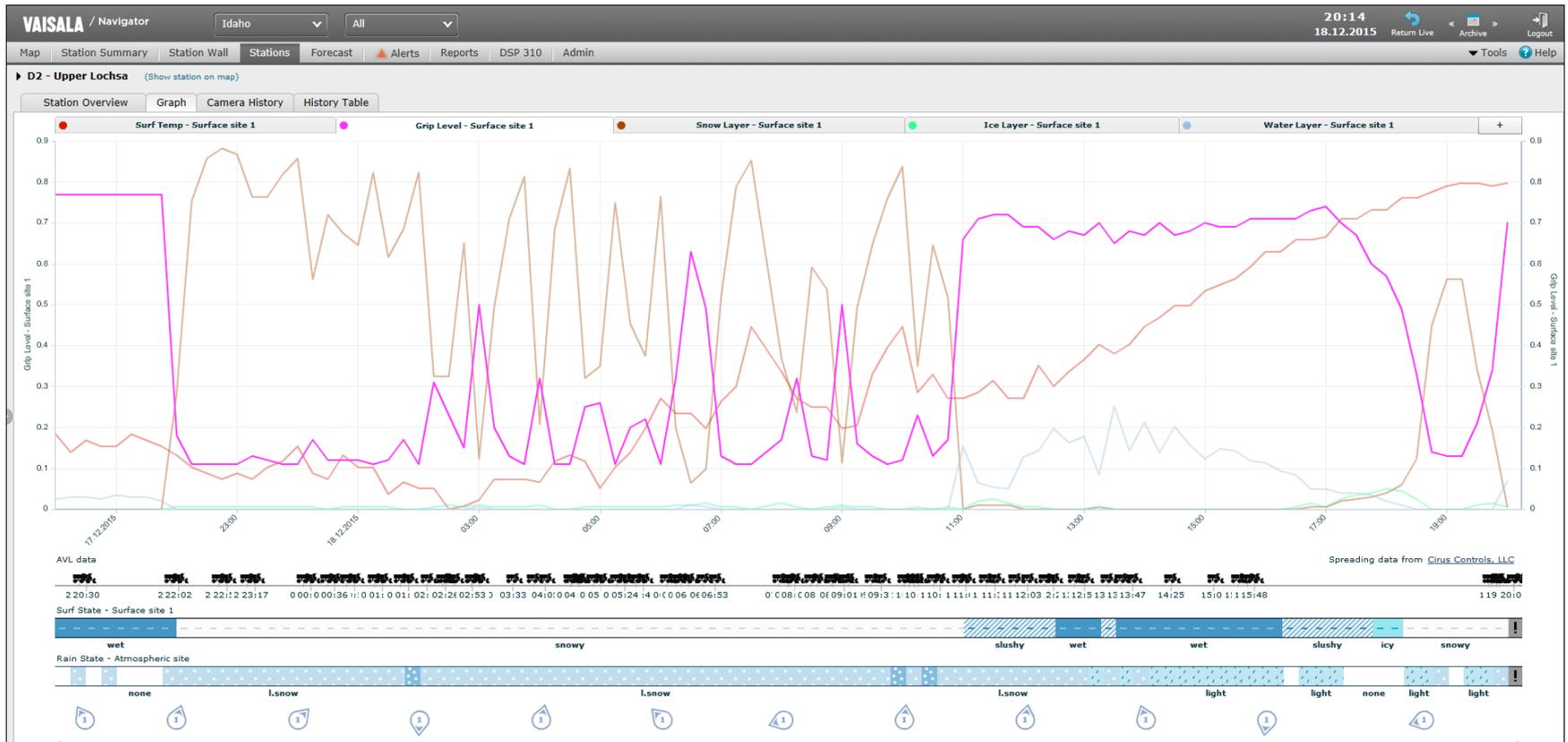


RWIS Data Collection

- 128 RWIS Sites
Statewide
 - Non-Invasive
Pavement Sensors
 - Atmospheric &
Roadway Data
- Data Polled @ 15 Minute
Intervals
- Data and Images
Displayed on the Vaisala
Navigator Website

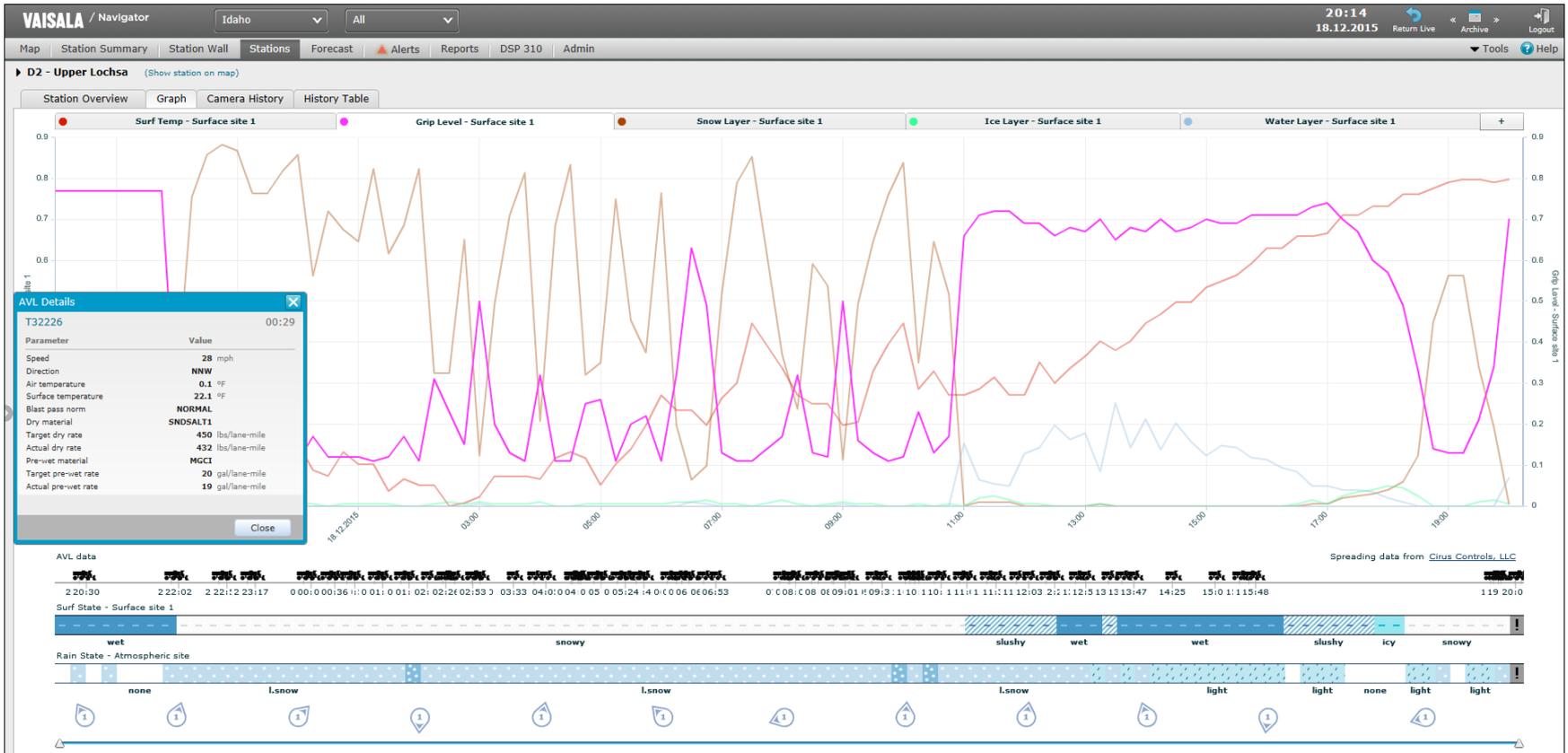


Vaisala Navigator/AVL Data Integration

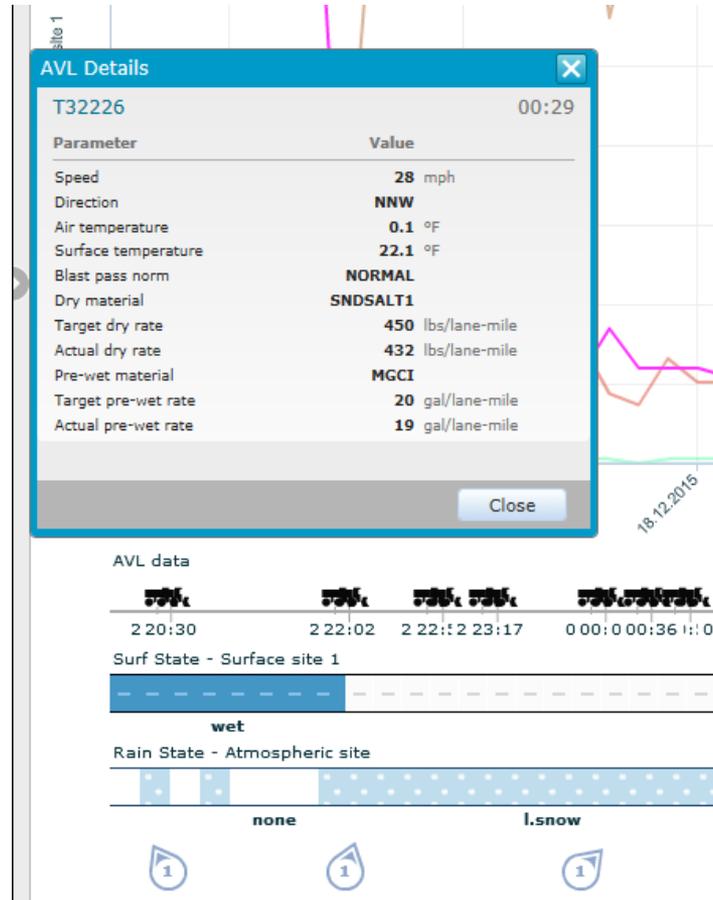


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Vaisala Navigator/AVL Data Integration



Vaisala Navigator/AVL Data Integration



Progress from Data Analysis



Snowplow Operations Assessment



Mobility Cost Efficiency (MCE) Index

- Performance Indicator scaled to a cost expectation based upon Resource Allocation and Mobility accomplishment
- Three (3) Data Sources
 - Response Effort (Resources)
 - Target Response Modeling (Clear Roads Application Matrix)
 - Accomplishment (Mobility Score)
- Index Value of 100.00 or Less - Crew met Mobility at less than the Target Model Costs
- Index Value of 125.00 or Greater – Excessive Resources were Utilized to Achieve Result



RWIS Geofence Area Representation

- Route - Beginning and Ending Milepost
- Total Lane Miles Represented
- Storm Attributes (Vaisala Navigator)
 - Beginning and Ending Storm Dates and Times - Duration
 - Hours of Precipitation
 - Lowest Surface Temperature
 - Mobility Score
- Response Effort - AVL Data (ITD WARS Application)
 - Labor Hours
 - Equipment Miles/Hours
 - Material Type & Quantity
- Target Response - Clear Roads Application Matrix (Assumes 1 hour Lap Time)
 - Application Rates
 - Granular
 - Pre-Wet



MICHAEL GARZ, P.E.

**IDAHO TRANSPORTATION DEPARTMENT –
DISTRICT 3 OPERATIONS/MAINTENANCE**

4C CORROSION INHIBITED SALT RESULTS



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Problem –

CONCERN FROM RESOURCE AGENCIES, LEGISLATURE,
GOVERNORS' OFFICE, PUBLIC ABOUT CHLORIDE
CONTAMINATION AND VEHICLE CORROSION

HOW CAN WE REDUCE THE AMOUNT OF SALT
THAT IS PLACED ON THE ROADWAYS?



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Steps Taken to Reduce Salt Usage

- ▶ **INFORM OPERATORS ON PROPER SALT USAGE**
- ▶ **USE OF CLEAR ROADS MATRIX**
- ▶ **PRODUCTS AVAILABLE**



Winter 2021 – 2022

ITD experienced significant issues with salt deliveries

Emergency Purchase to get deicing product and
ITD-D3 went with 4C Corrosion Inhibited salt (Blue
Salt)

Cascade crew embraced opportunity



4 Sheds were selected for “Expanded Test”

Cascade/Banks - - - - -

New Plymouth/Weiser - - - - -



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Application Rates

(Location)	Salt (pounds per mile)	4C Salt (pounds per mile)
Cascade/Banks	250 - 350	125 - 175
New Plymouth/Weiser	150 - 400	75 - 200



How did the winter of 2022 – 2023 rate

Measure	% of Normal
Precipitation	157%
Events	205%
Precip Hours	181%
Storm Hours	209%

District White Salt Usage

Location	% Used of Normal
District 3 Average	179%
North Half of D3	195%



Product Used Winter 2022-23

Location	Average White Salt	Projected White Salt	4C Salt
Cascade	3001 tons	5371 - 5851	2636 tons
Banks	1397 tons	2700 – 2940	1989 tons
New Plymouth	1162 tons	2079 - 2265	1227 tons
Weiser	1327 tons	2375 – 2587	1205 tons



Savings/Less Product Used

Location	Reduction in Product Placed	Cost Difference
Cascade	2740 - 3200	\$141,662 - \$180,762
Banks	710 - 951	-\$5,466 - \$13,071
New Plymouth	852 - 1038	\$49,316 - \$63,217
Weiser	1169 - 1382	\$70,673 - \$86,548

Total Reduction from Four Sheds

5,472 - 6,592 tons

\$256,000 - \$343,600



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Cascade Shed Two Years Experience

2022	Placed 1300 tons less	\$ 50,000 Savings
2023	Place 2500 tons less	\$150,000 Savings

Cascade Two Year Total

3800 tons less placed	\$200,000 Savings
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Winter Performance

Location	History(2017-2022)	Winter 22/23
Cascade/Banks	0.85	0.80
New Plymouth/Weiser	0.88	0.86



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Unofficial Corrosion Test



SUMMARY

- 1.LESS PRODUCT BEING PLACED(30%-50%)
- 2.OVERALL SAVINGS TO BUDGET(20%-40%)
- 3.NO REDUCTION PERFORMANCE
- 4.LESS CORROSIVE?



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Product used was Icekicker from Saltworx



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Questions?

