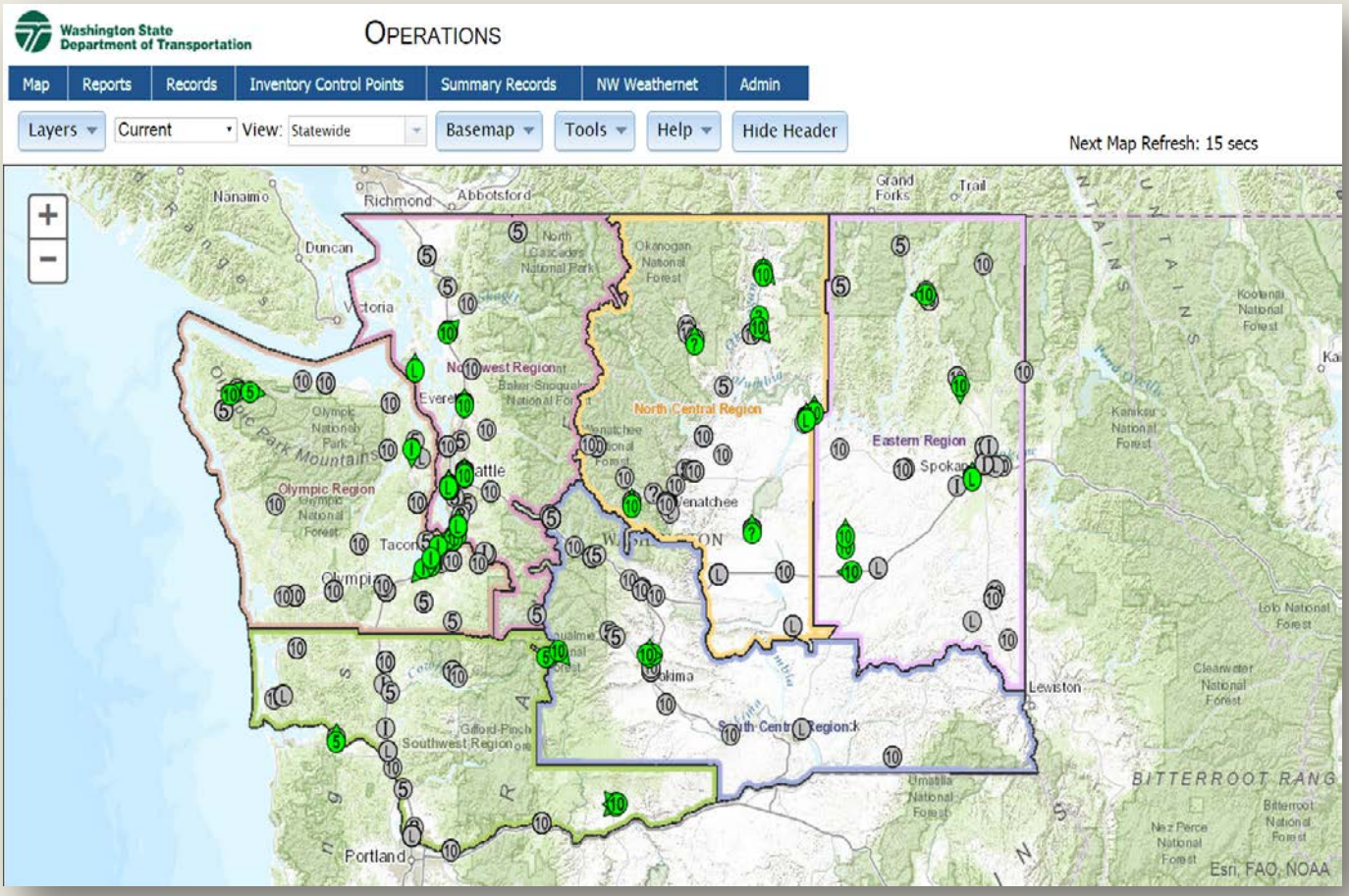
Chapter 2

Snow and Ice
Level of Service
Data Collection Processes
Statewide Weather Forecasting Services



MAP Snow and Ice Level of Service (LOS)

What: WSDOT snow and ice operation performance is measured in terms of the results of these operations. The most important overall result is the condition of the travel lanes provided by maintenance actions (i.e. anti-icing, deicing, or plowing) during winter conditions (i.e. snow, ice, frost). Performance measurement information is used to determine the Level of Service (LOS) provided by the maintenance program throughout any given winter season. LOS ratings can be determined on different scales that range from statewide to route specific.

When: Road surface conditions are assessed after snow and ice response activities occur during the winter season. There are no specified days or times during which road surface conditions should be documented. Assessment and documentation should be made after the activity is completed and the outcome (i.e. bare pavement, wheel tracks bare, etc) is known. Maintenance personnel should assess and document road surface conditions in the course of their daily work as opposed to making a special trip to a specific location solely to document road surface conditions.

Where: Road surface condition outcomes as a result of winter maintenance operations can be documented at any location where such operations were performed.

How: Maintenance personnel conduct the condition assessments by observing the surface condition of a roadway (all lanes, both directions). Observations are documented in the Highway Activities Tracking System (HATS), or automatically collected in AVL/GPS equipped trucks.

Ratings: Road surface conditions are assigned different point values based on the assessed condition of that roadway. The point values are used to calculate the LOS ratings. There are two classes of road surface conditions on the form that represent the two primary methods by which WSDOT provides snow and ice control. One is to enhance traction on top of snow/ice by spreading abrasives (i.e. sand) on the travel lane. The other is to attempt to provide a bare pavement surface by applying chemicals to the travel lane. Point values for different conditions are as follows with commensurate LOS ratings:

Road Condition Rating for Sand Treatment	**Points**	**LOS Rating**
100% of roadway has sand present	3	C+
50% or more of roadway has sand present	3.5	C
All emphasis areas have sand present	4	D+
50% or more of emphasis areas have sand present	5	F+
50% or less of emphasis areas have sand present	5.9	F
Unable to evaluate	-	-

Road Condition Rating for Chemical Treatment	**Points**	**LOS Rating**
Bare Pavement	1	A+
Patches of frost, black ice, slush, or compact.	1.5	A
Wheel tracks bare, frost, snow, or ice encountered.	2	B+
50% of roadway with compact snow and ice.	3	C+
Entire roadway covered with compact snow and ice.	4	D+
Unable to evaluate	-	-

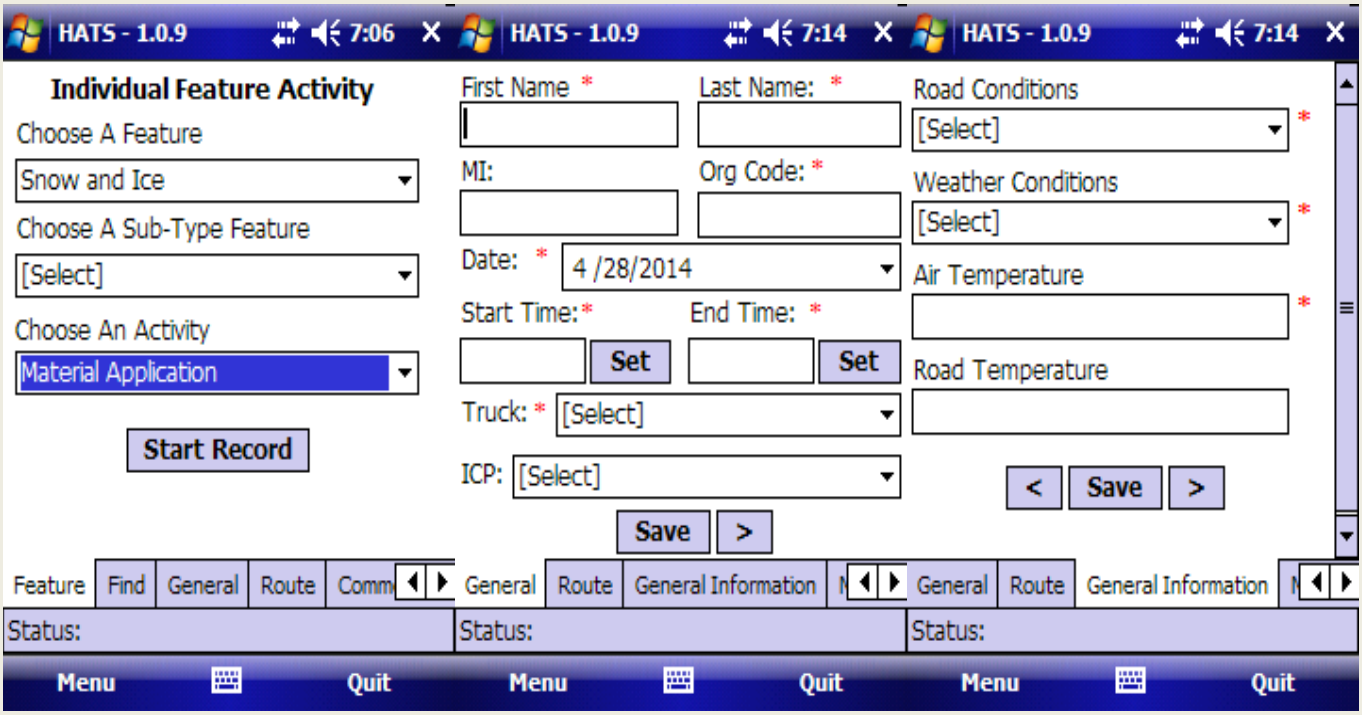
Note: Emphasis Areas include hills, bridges, curves, intersections and known problem areas.

Expected Season LOS	Expected Road Condition after Treatment Completed
A to B	**Snow or ice buildup encountered rarely. Bare pavement attained as soon as possible. Travel delays rarely experienced.** 
B to C	**Snow or ice buildup encountered at times but infrequent. Travel at times may experience some isolated delays with roads having patches of black ice, slush, or packed snow.** 
C to D	**Snow or ice buildup encountered regularly. Travel likely to experience some delays with roads having black ice or packed snow with only the wheel track bare**. 
D to F	**Compact snow buildup encountered regularly. Traveler will experience delays and slow travel.** 
N/A	**Closed periodically or for the duration of the winter season.**

HATS Snow and Ice Material Application Records

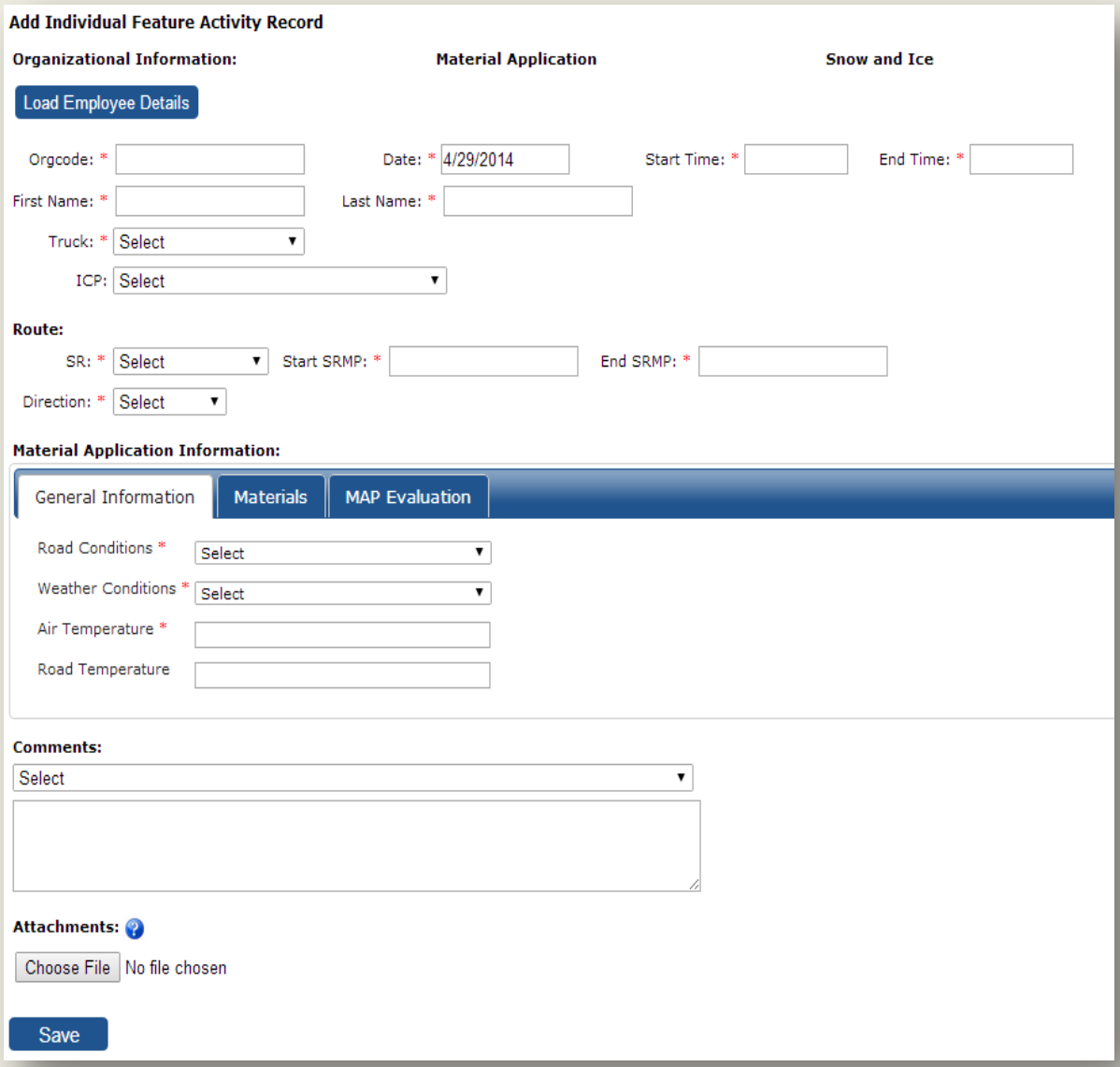
To add a new “Snow and Ice” record to HATS PDA:

1. Launch the HATS application by tapping on the HATS icon
2. Choose feature “Snow and Ice”
3. No sub-feature type
4. Select activity “Material Application”
5. Tap “Start Record”
6. Fill out form questions accordingly and tap “Save”
7. Sync PDA via “Send Features” when complete



To add a new “Snow and Ice” records to HATS web do the following:

1. Navigate to: http://hatsprod/Maintenance/Management/Activities/
2. Select the “Individual Feature Activities” tab
3. Click “Add New Record”
4. Select “Snow and Ice” from the drop down menu with the activity “Material Application”
5. Fill out the form questions accordingly and click “Save”



Statewide Weather Forecasting

Good winter maintenance response decisions are heavily reliant on accurate weather forecasting. Crew scheduling, equipment deployment, material stockpiling, and material application rates are examples of elements which are dependent upon accurate weather forecasting. All of these decisions correlate directly to our ability to provide winter time mobility, keep passes open, and work within budget constraints.

Northwest Weathernet, Inc. (Weathernet) is the contract forecast provider for WSDOT. Weathernet provides area specific weather forecast services and 24 hour a day support consultation via toll free phone lines to WSDOT Maintenance personnel. Text forecasts (of an agreed upon format), are generated twice daily during the winter months - October 1st through April 30th. Forecasts include narratives for all maintenance areas and site-specific forecasts for each maintenance section within the maintenance area. Written forecasts are made available to authorized persons on the Weathernet Website, and sent via email or fax to requested locations. Weathernet meteorologists monitor weather conditions throughout the state and will provide alerts to WSDOT personnel for any abrupt changes to the forecast. Weathernet meteorologists archive daily forecasts and communications, and document storm events for future evaluation.