
The Need for More Detailed Precipitation Forecasts in Order to Support Decision Making

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May 28, 2008



History of Discussion with User Groups

Fall 2006 thru Spring 2007

- Meetings with Road Maintenance, Forestry, Hydro and Aviation users in:
 - *BC, Yukon, Manitoba and Newfoundland*

Fall 2007

- Meetings with Municipalities in BC
 - *Focus on public works/operations groups, parks and engineering departments*



Objective

- Learn how weather information is used in the decision-making process
- Listen to the “stories” that users tell, relating how weather information is or is not used



Questions for Discussion

- What weather related decisions do you make?
- What types of weather conditions present the greatest challenge in your decision making?
- What weather information do you use in your decision making?
- Tell me about a time when you have to make a decision based on weather but you wished you had had more information.



Stories to tell

- City of Peachland/Lake Country-increase diameter of storm drainage
- Metro Vancouver – precip rate
- Manitoba Aviation Council –
- Snow Removal – Newfoundland/BC



Road Maintenance

- Precipitation Start Time
- Advance notice of 2 to 3 days of precipitation event
- Precipitation rate more important than total amount
- Chance of precipitation falling as a different phase



Municipalities

- BC Interior: Heavy downpours cause the majority of weather related problems in summer
- Metro Vancouver uses precip rate as one of the criteria in deciding when to close public parks



EMO

- Newfoundland EMO has said that the rate of rainfall is what causes majority of problems.
 - *Heavy rainfall rates lead to local flooding, overwhelming drainage infrastructure.*
- BC EMO has said that precip rate is an important factor in assessing the likelihood of flooding in coastal basins.



Aviation Users

- Pilots from Manitoba Aviation Council have said that precipitation rate is a useful means of estimating runway surface conditions



Should this come as a Surprise?

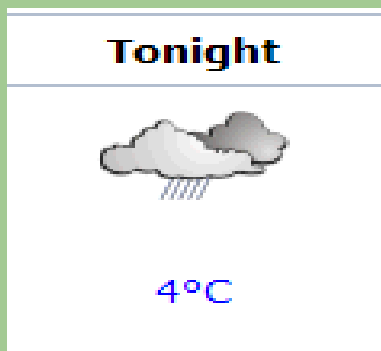
- MSC surveys of the public have shown that precipitation is the element of the forecast that is judged to be among the most important
- Public forecasts address timing of precipitation, amount of precipitation, but rarely is the rate of precipitation mentioned



Current Precipitation Forecasts



Icon Based
OR
Text Based



Today..Cloudy. 40 percent chance of showers this afternoon. Wind northwest 20 km/h becoming southwest 30 gusting to 50 early this afternoon. High 11.

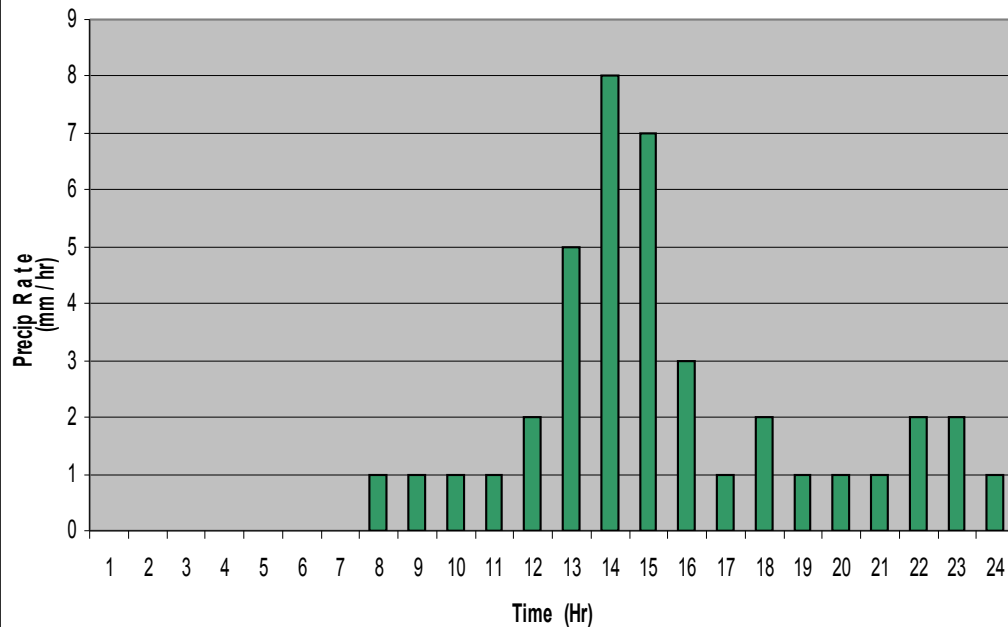
Tonight..Cloudy. 60 percent chance of rain showers this evening. Periods of rain mixed with snow beginning near midnight changing to snow overnight. Wind southwest 30 km/h gusting to 50 becoming north 20 this evening. Low plus 1.

Saturday..Cloudy with sunny periods. 60 percent chance of flurries in the morning. 60 percent chance of rain showers late in the day. Wind northwest 30 km/h. High 7.



Graphical Forecasts

Precipitation Rate at XXX



Today...Rain beginning this morning. Amount 20 to 30 mm. High 12.

Tonight...Showers. Low 7.



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- Tell Story about John Tweedy in mid '90s (prior to meteocode) asking for hourly, 3hourly, 6 hourly precip numbers instead of worrying about words
 - Didn't do it for a number of reasons
 - *Bandwidth issues, models aren't always correct, we were wedded to words etc.*
 - Av tech look at hourly precip rates, decide whether snowpack can handle it, close highway if rates get too high.



Thank You!

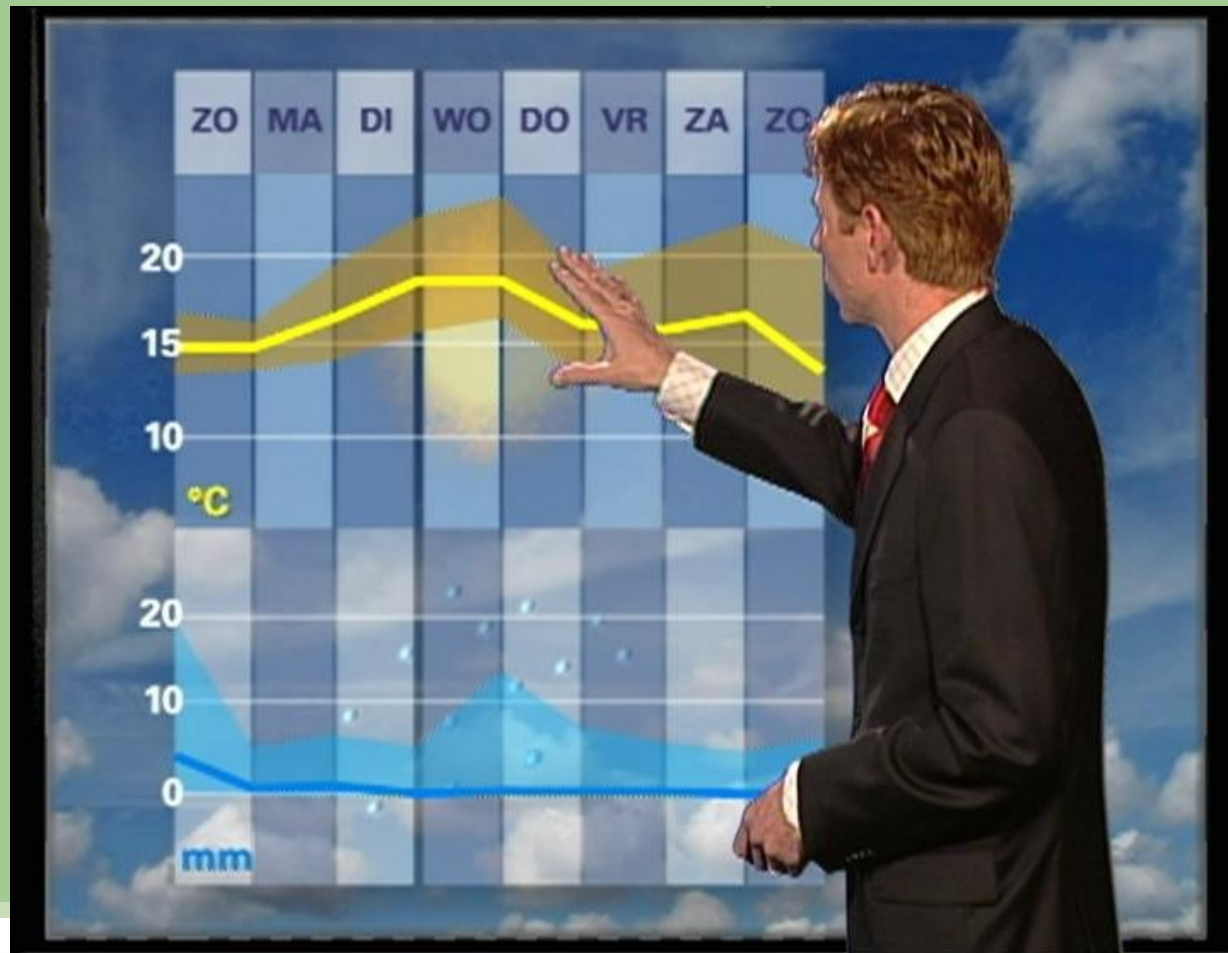
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Canada

Probabilistic Weather Forecast on Dutch Television



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- Wordy forecasts which may have detail can be confusing
 - Evolution of decision making
 - *Probabilistic Forecasting Products*
 - User groups: Aviation, Road Maintenance, Parks Departments,
 - Precipitation is the most important aspect of the forecasts according to MSC surveys of the public



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