



Background

- NZTA
 - Recognition of issue
 - Research what other countries do
 - Discovery
 - Northern Europe has similar weather patterns in places
 - Use thermal mapping to identify cool spots
 - Use weather stations strategically placed to enable forecasting and to identify issues
 - Use forecasting services to highlight potential problems
 - Use ice prediction services to great effect

Background

- MetService and Vaisala
 - Thermal mapping
 - 2000km of NZ roads thermally mapped
 - Thermal domains
 - Regions identified
 - Weather station locations discovered
 - Instrumentation
 - Weather stations built
 - Weather stations installed
 - NWP fine tuned in models
 - Complete weather and ice prediction system designed and built specifically for NZTA

Observations

- Forecast stations
 - ROSA
- Non Forecast stations
 - mSTAR
- Other
 - WXT
 - 45 RWS



Tekapo SI FS09 ROSA



Wallacetown SI NFS04 mSTAR

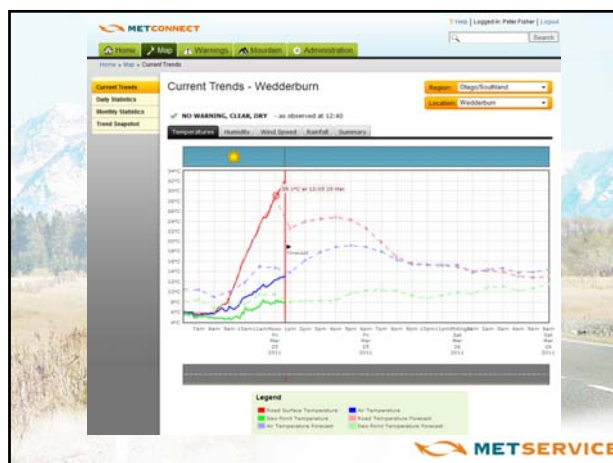
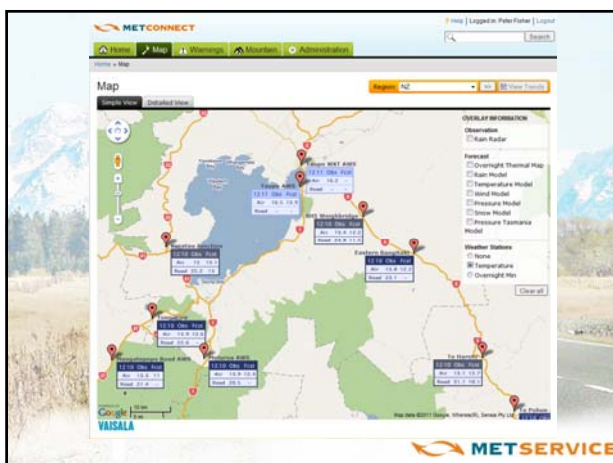


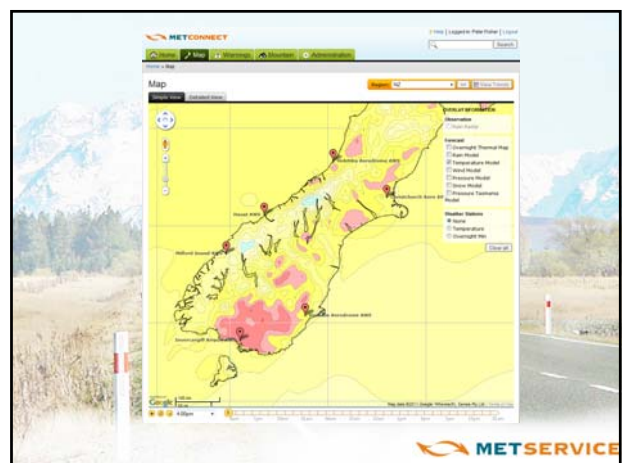
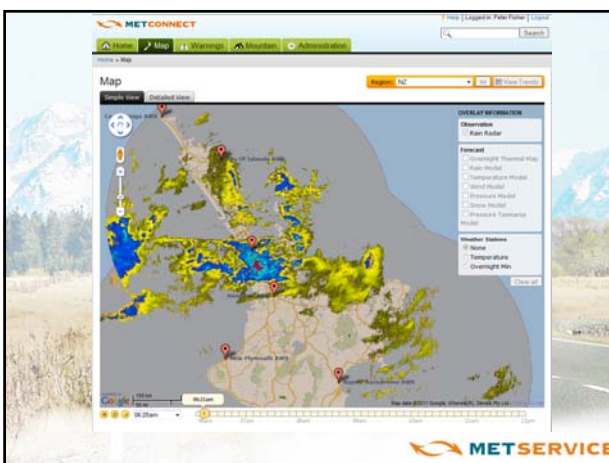
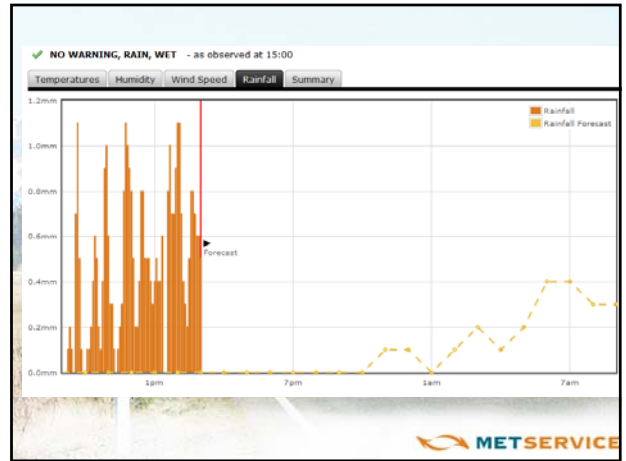
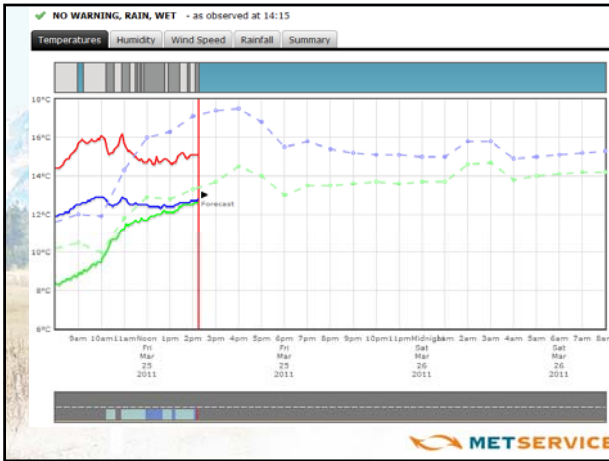
Aotea Quay WXT



Forecasts

- Site Specific NWP (raw, SFT)
- Ice Prediction Service (Vaisala)
- Manually written Local Forecasts
 - covering approx 50km2 of road
- Site Specific Hazards Forecast
 - 24hrs/5days
- Site Specific Nowcasting
 - Up to 2 hours ahead during storm events







What's next

- Auckland harbour bridge AWS
- Camera's on the Rimutaka AWS with a view to National roll out
- Road inundation forecast service North Shore
- Snow depth sensors on high level RWIS
- Road temperature and wind forecasts over entire length of road
- AWS where other weather parameters affect road users
- Linking weather stations either directly or indirectly to signage.
- Smart use of sensors on vehicles
- All in all, making New Zealand roads safer for New Zealand road users

METSERVICE