



# Water Efficiency, Technologies and Processes

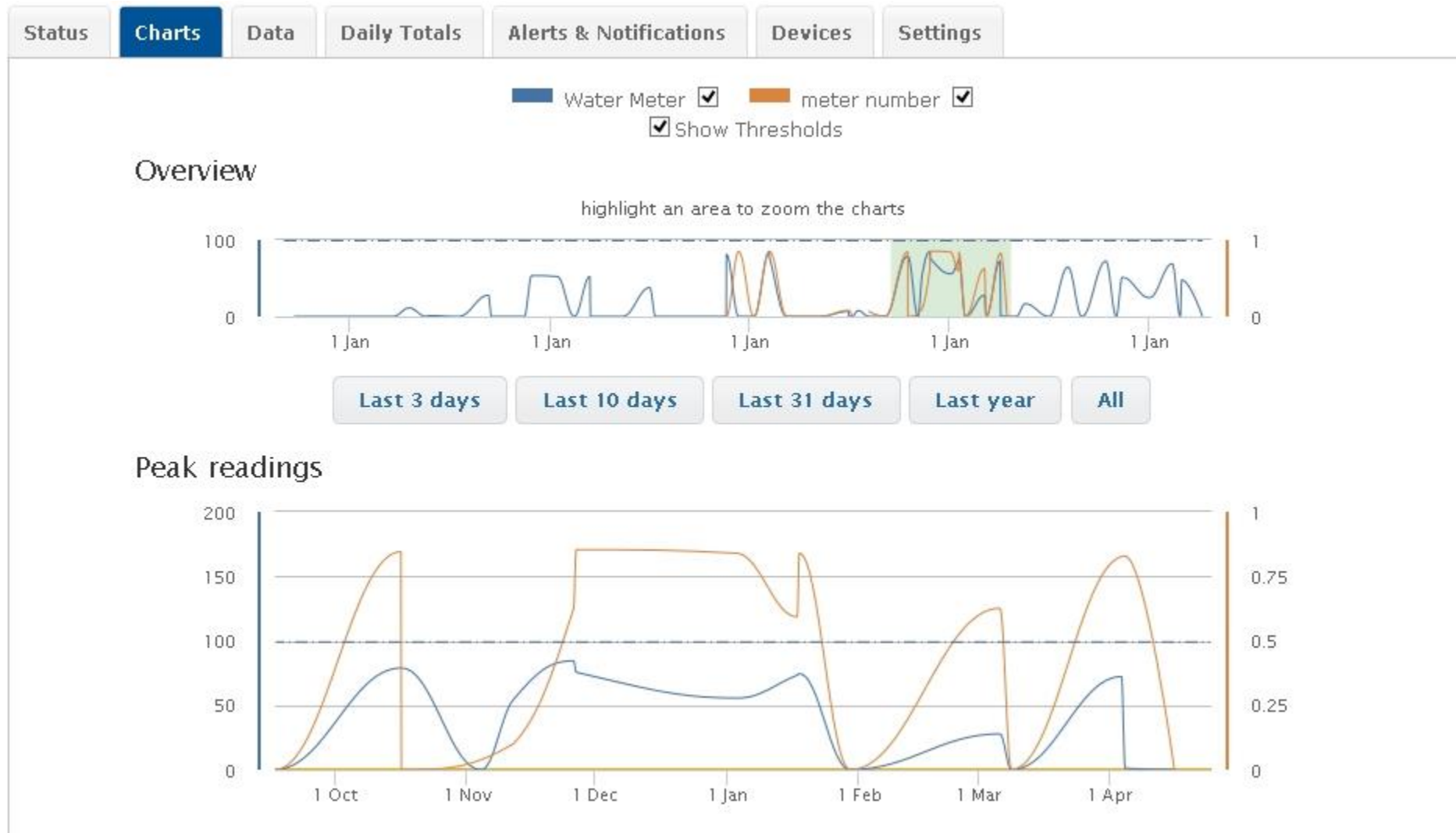


## Local Councils - NZ

- Water Balance
- Overlay of Electricity and Pump efficiency
- Pump Scheduling – optimum use of energy
- Alternative power sources and supply
- Load Shaving



# Energy Efficiency



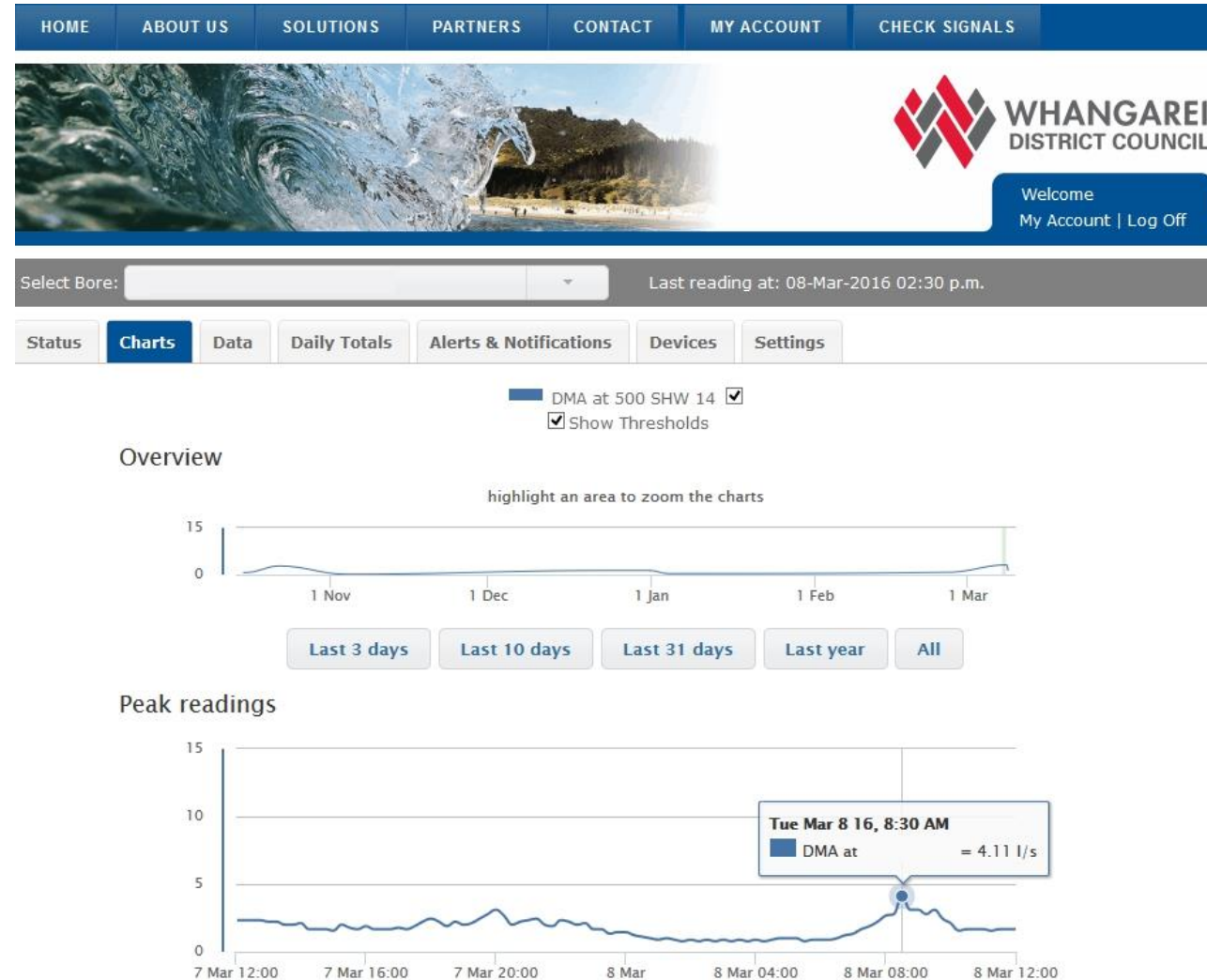


## Water Balance - Whangarei

- Pulling data from DMA at 15 min intervals
- Overlaid with actual collected universal meter data
- Water losses displayed



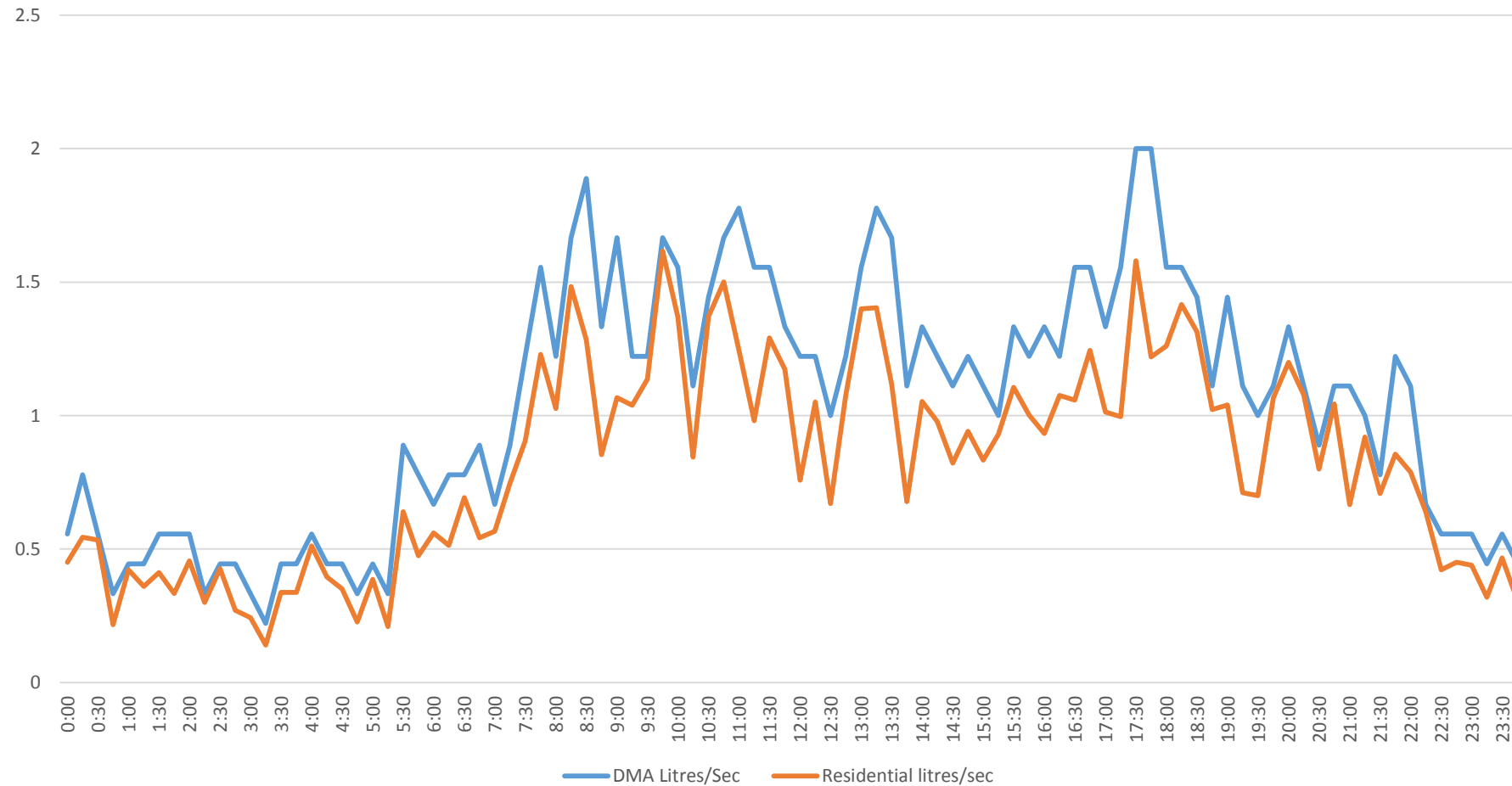
# DMA - Whangarei





# DMA - Whangarei

DMA Flow Overlaid with Actual Usage





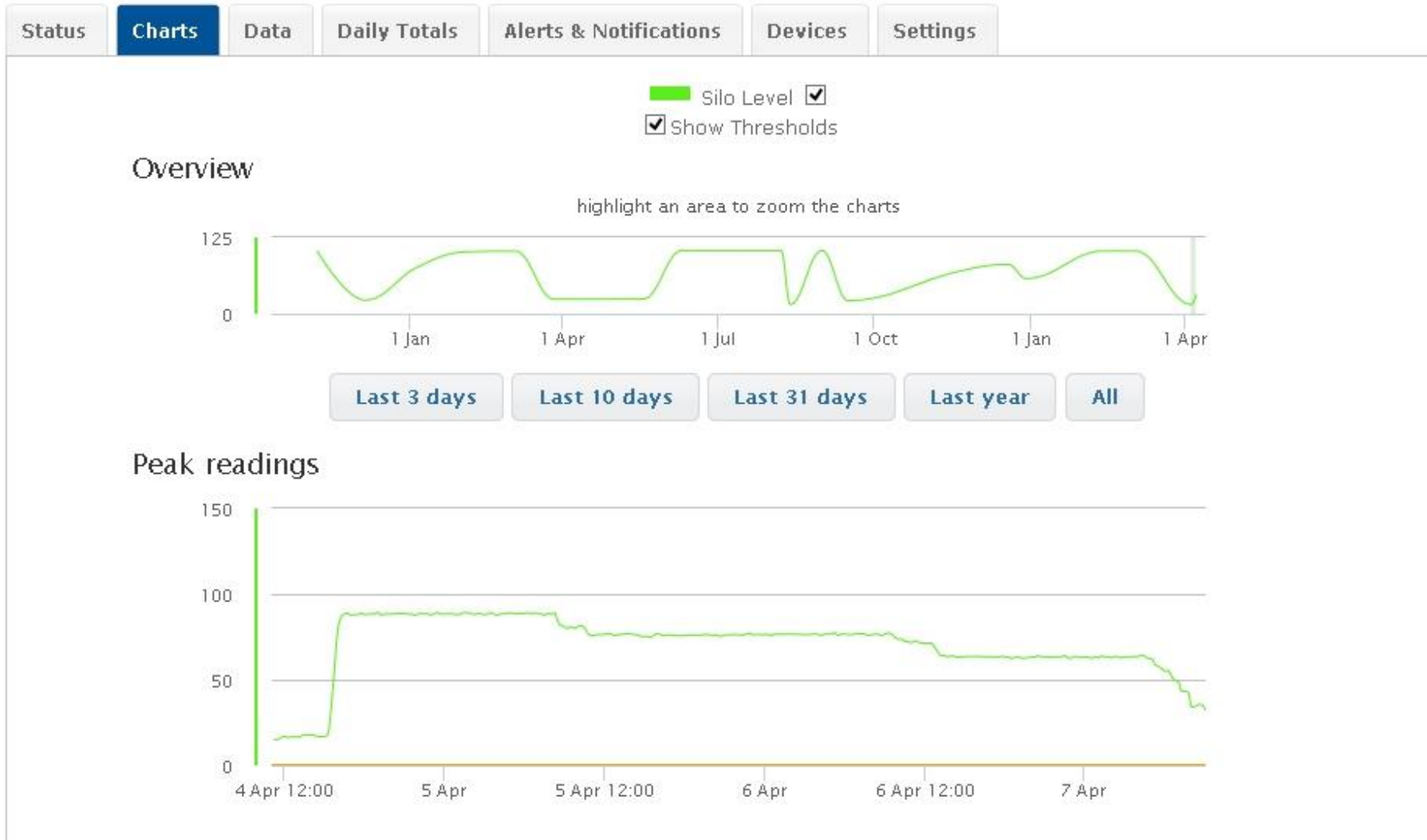
## Irrigation Space

- Various Sensors
  - Soil Moisture
  - Evapotranspiration
  - Weather analysis for Irrigation Scheduling
  - Reduction in nitrate leaching
  - Usage analysis for Parks and Sports grounds
- City, Urban and Commercial & Industrial
- Not just limited to water measurement
  - Consequential impact savings - \$400k (cement company)





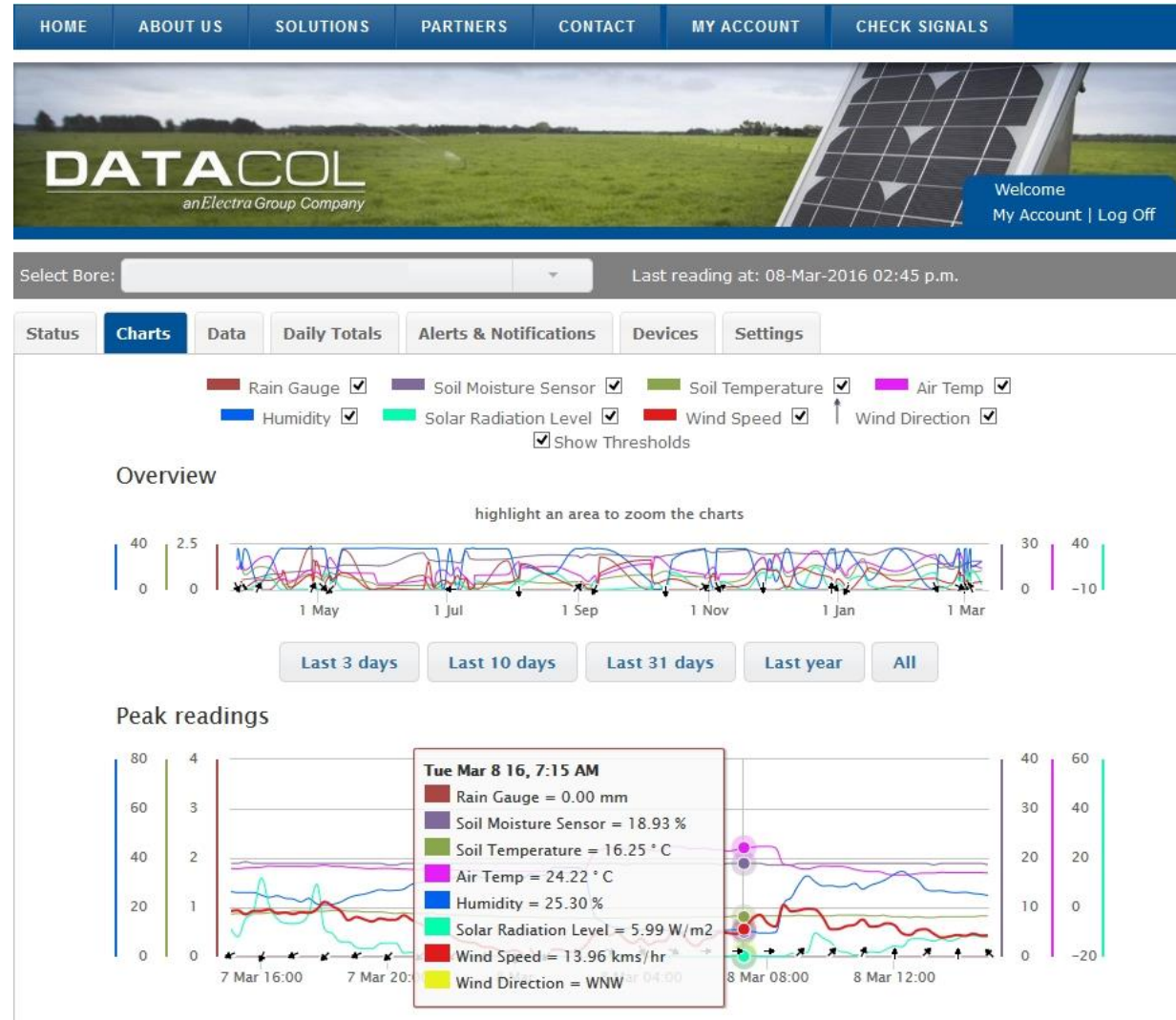
# Cement Company







# Multiple Sensors



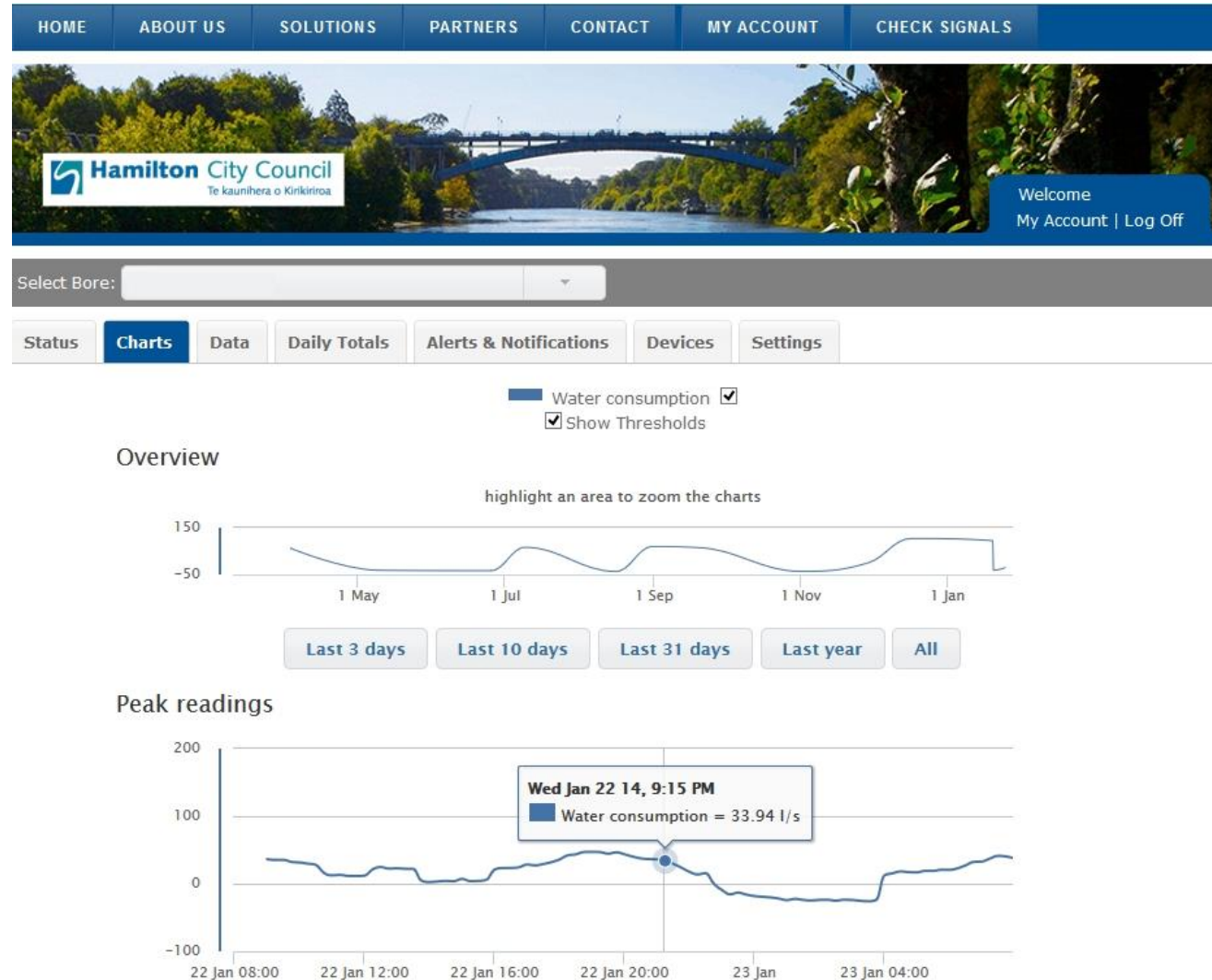


## Structured Data

- KCDC – alignment of DMA's with meters
- Sydney Water
  - Manual readings / AMR
  - Multi meter vendors
- Hamilton City Council
  - Historical data
  - Trends
- Victoria Park Market - Auckland



# Hamilton City Council





# AMR and Water Balance



## VICTORY FOR VICTORIA PARK MARKET

How installing AMR meters permitted fair  
user pay for tenants





## Scheme Monitoring

- Water Transfer Platform
- Water Ordering Platform
- Reduced Electricity Costs / Efficiency
- Irrigation Scheduling
- Soil Moisture / Soil Temperature (Parks and Recreation Grounds)
- Water Consent Monitoring
- Pump Curve



# Water Transfer

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## Water Transfer Platform

Select Bore:

[Water Allocation](#)
[Low flows](#)
[Configuration](#)
[Trades](#)
[Results](#)
[Approvals](#)
[Invoices](#)
[Payments](#)
[Settings](#)

### TRADES

Show  entries
Search:

Auction	Trade Auction Period	Water Use Period	Buying/	Your Offer/Bid	Success	Trade's	Your
Id			Selling	Volume	Rate	Offer/Bid Volume	Closing Rate
<a href="#">96</a>	01-Mar-2016 to 04-Mar-2016	06-Mar-2016 to 09-Mar-2016	Buying	691.20	11.00		
<a href="#">97</a>	04-Mar-2016 to 07-Mar-2016	09-Mar-2016 to 12-Mar-2016					
<a href="#">98</a>	08-Mar-2016 to 11-Mar-2016	13-Mar-2016 to 16-Mar-2016					<a href="#">Offer/Bid Now</a>
	09-Mar-2016 to 12-Mar-2016	14-Mar-2016 to 17-Mar-2016					<a href="#">Start Trade &amp; Make Offer/Bid</a>
	10-Mar-2016 to 13-Mar-2016	15-Mar-2016 to 18-Mar-2016					<a href="#">Start Trade &amp; Make Offer/Bid</a>
	11-Mar-2016 to 14-Mar-2016	16-Mar-2016 to 19-Mar-2016					<a href="#">Start Trade &amp; Make Offer/Bid</a>
	12-Mar-2016 to 15-Mar-2016	17-Mar-2016 to 20-Mar-2016					<a href="#">Start Trade &amp; Make Offer/Bid</a>
	13-Mar-2016 to 16-Mar-2016	18-Mar-2016 to 21-Mar-2016					<a href="#">Start Trade &amp; Make Offer/Bid</a>
	14-Mar-2016 to 17-Mar-2016	19-Mar-2016 to 22-Mar-2016					<a href="#">Start Trade &amp; Make Offer/Bid</a>

Showing 1 to 9 of 9 entries

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# Water Ordering

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## Water Ordering

www.managemywater.co.nz

Welcome

[My Account](#) | [Log Off](#)

Select Bore:

[Order Water](#)
[Stored Water Usage](#)
[Settings](#)
[Manage Orders](#)

### ORDER WATER FROM RRIA

#### WATER BALANCE AND CONSENTED TAKE

	Opening Balance	Used	Remaining Balance
Current Stored Water	44,158.0 m3	00.0 m3	44,158.0 m3
	Average Instantaneous Flow	Average Daily Volume	
Water Consent Conditions (ECAN)	184.96 l/sec	15,980.0 m3	

#### PLACE AN ORDER

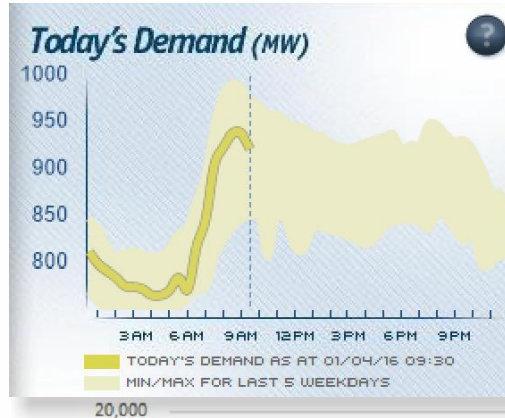
Requested Date	Required l/sec	Ordered Volume	Within Water Balance	Within Avg Daily Consent	Order Sent	Order Release Ack
<a href="#">Add</a>						



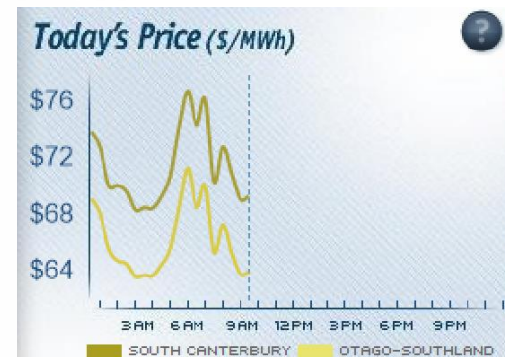


# Reduced Electricity

## Example Farmer / Irrigator Electricity Profile (Total 197,483 KWh)



Alpine Energy Off-peak Network Charge 2.86 cents / kwh  
vs 6.68 cents / kwh day charge



Peak v Off-peak Spot Electricity Price can be  
4 - 6 cent/kwh vs 7 - 9 cents/kwh

Combined can provide a 20% to 40% delivered energy cost saving

Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun

# Irrigation Scheduling

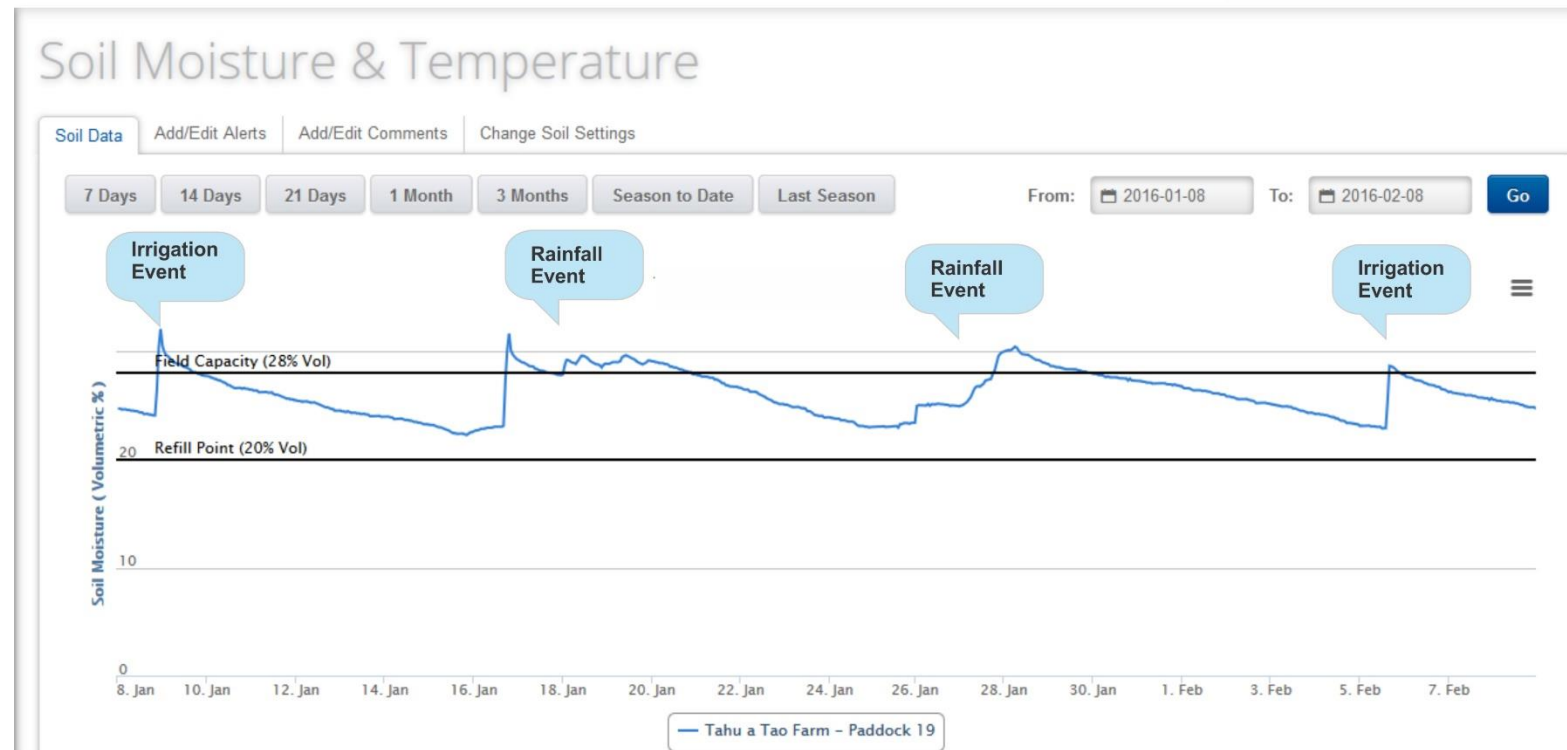


## Features:

- Specific for each irrigation block on your farm.
- Quickly show current soil moisture and temperature compared to optimal zone for pasture growth.
- Irrigation recommendation for coming 5 days. Updated daily based on actual irrigation, rainfall, ET, and weather forecast.
- Summary of past forecast conditions relative to optimal zone for pasture growth.



# Soil Moisture / Temperature





# Water Consent

- Status
- Charts**
- Data
- Daily Totals
- Alerts & Notifications
- Devices
- Settings

- Water Meter ☒
- Show Thresholds ☒

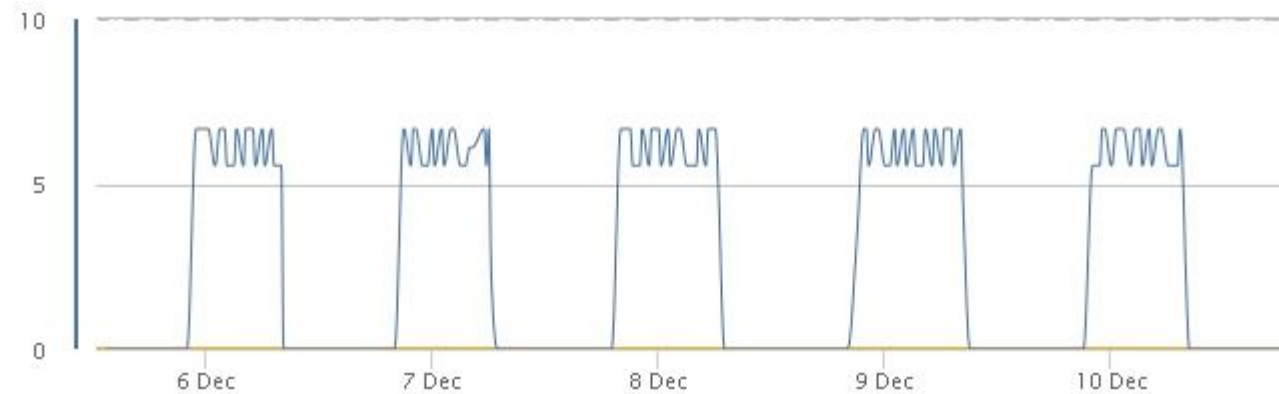
## Overview

highlight an area to zoom the charts



- Last 3 days
- Last 10 days
- Last 31 days
- Last year
- All

## Peak readings





# Question and Answer Period