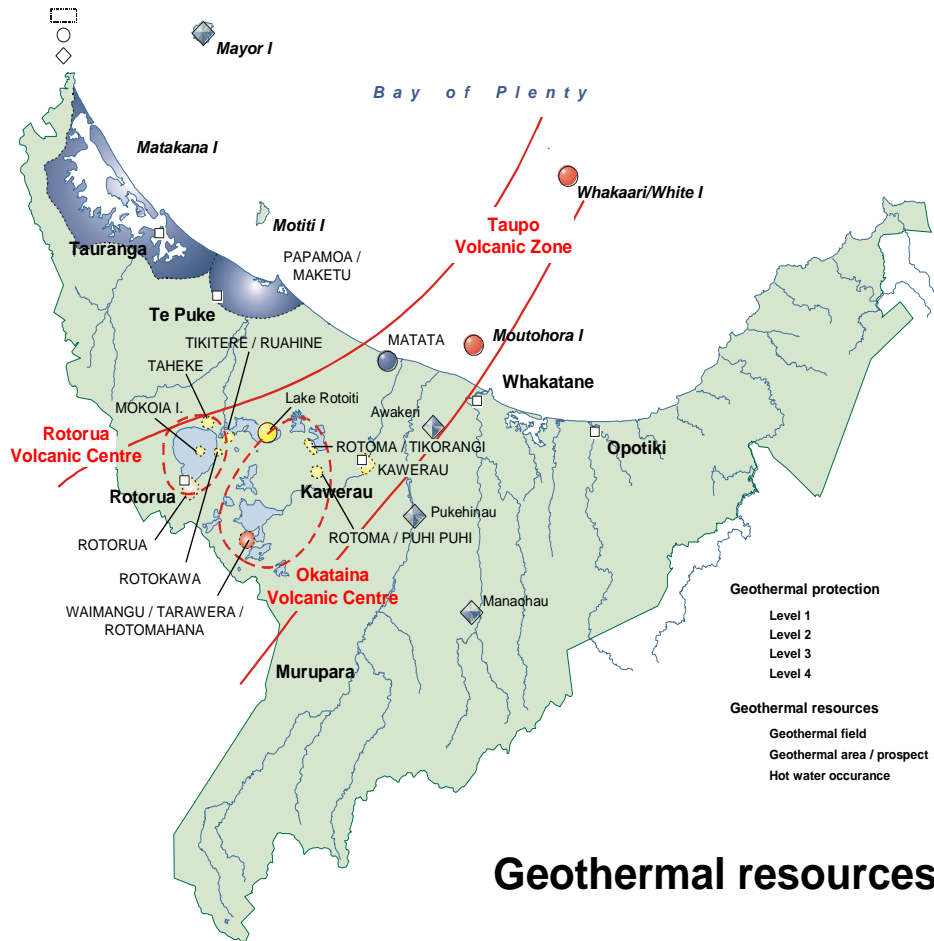


# Bay of Plenty Geothermal Activity

What happened in 2013?

Bridget Robson

# Bay of Plenty Geothermal systems



**Regional Council RMA role:**

**Allocate geothermal heat and fluids s30(1)e**

**Sustainable use principles**

**Optimise long term use**

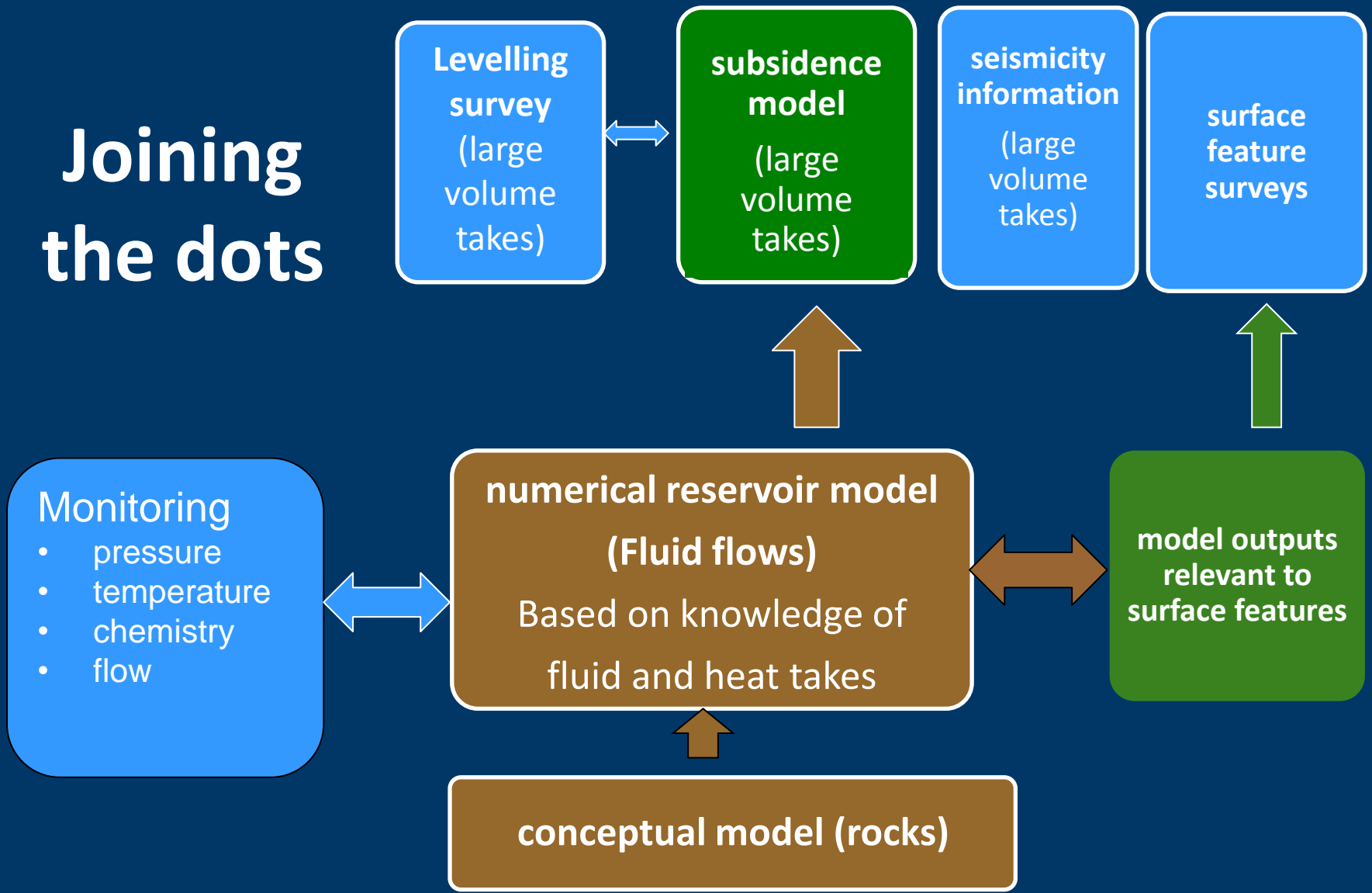
# Top level policy - Regional Policy Statement geothermal provisions **Operative** 1 Oct 2013

**Sets direction for Regional plan rules**  
2014-15 = redevelop plan, aligned to RPS

## Joining the dots on the multiple user systems

Rotorua	= 160 small to medium users
Tauranga	= 130 small to medium users
Kawerau	= a few large industrial users

# Joining the dots



# System Management

## Coherent Management of Geothermal Systems

### 1. Common Information on the system

- Reservoir    monitor and model
- Surface      subsidence, seismicity, surface features
- Take and discharge    who is taking what from where

### 2. Common Protocols and processes

- for gathering and using data/ models
- and reviewing information - peer review panel

### 3. Common Separation distances

- to avoid interference


**Optimising use**  
**with several users in one geothermal system**  
**needs users to be working together**



# System management plans

System	model	Supported by	Need to add
Tauranga	✓	Groundwater monitoring, a few compliance returns (heat and flow)	Comprehensive picture of compliance returns Get info on all users
Rotorua	✓	Groundwater monitoring, compliance returns (heat and flow), surface feature activity and chemistry (Papakura's recent activity encouraging)	Better compliance returns on small takes MT survey
Kawerau	✓	Reservoir monitoring (Pressure, Temp chemistry) , levelling, seismicity, compliance returns (comprehensive), surface feature activity, vegetation	All consents into common view for Peer Review Panel

# System management plans

System	SMP	Style of SMP	Challenge
Tauranga	✓	Build into regional plan	to find and formalise all users 
Rotorua	✓	Build into regional plan	to meet needs of both allocative vs non-allocative uses (geyser health),  Strong political push for more use
Kawerau	✓	Build into resource consents	to retrofit the system management plan onto existing allocation and new allocation (moving target).  Requires a cooperative mind-set and innovation



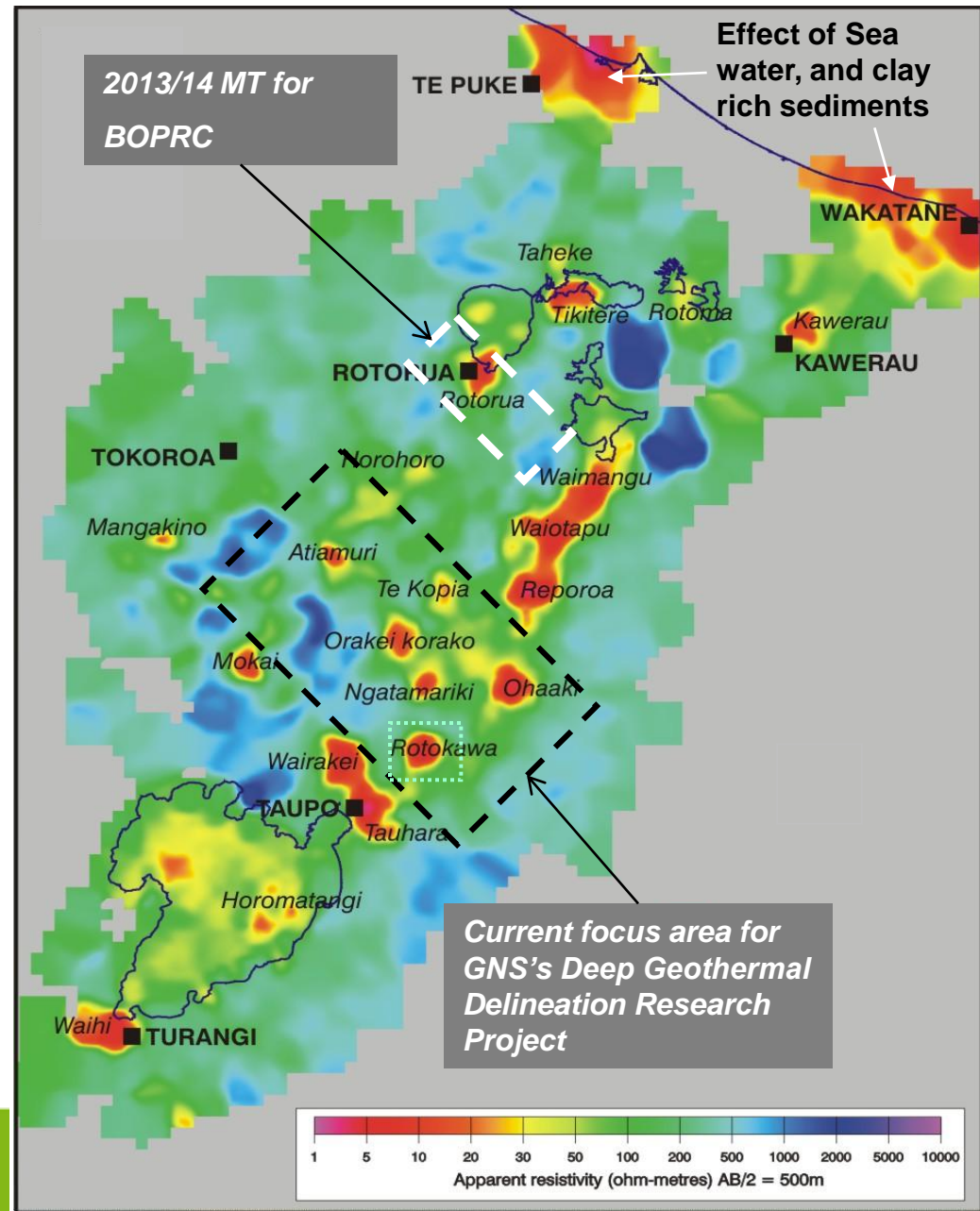
**Plan driven by  
reservoir characteristics =  
allocation of heat and fluid  
surface features = effects on**

# Plans needs a good information base

## Reservoir monitoring and modelling

- large users, consent holders provide information; we peer review, and manage through consent processes
- Systems with >100 users, we collect consent information and supplement it to get a decent\* picture.
- We hold the Rotorua model. Rotorua information supplementation. Monthly monitoring of 40 key surface features. Doing a coarse-grade (2km array spacing) MT survey, due mid 2014.
- Supporting the GNS supermodel project, Rotorua is a case study.
- Using GNS model for Tauranga, doing data verification to improve the model's value.
- \*Still nutting out how to do accurate cost-effective flow measurements on small (<300tpd) uses. Suggestions welcome!

# Adding to the information base



# Plan needs a good information base

## Approx 2000 Surface features - Need to protect the Significant ones

- use new mapping and monitoring guidelines (developed 2012) to resurvey all surface features (2014). Last full survey done in 2000
- rebuilding surface feature database to match new guidelines parameters (2013/14).
- Loading all existing data into new database
- Assessing significance of features using RPS (2013) criteria
- Assessing vegetation using Landcare Research methodology (2013). Assessing vegetation significance using RPS criteria(2013)

# Plan needs a good information base

## Economic Value

- Geothermal value survey. Due Dec 2013.
  - To assist in figuring out the value of the geothermal resource to the regional economy.
  - To assess the relative contribution of various uses – extractive and non-extractive
  - Complements study already done by Waikato. Allows us to get a view on the whole TVZ value

## Joint Regional Strategy

Project with Waikato. See how the two regions can collectively best support sustainable geothermal use in the TVZ. First stage = a bit of navel gazing/comparing notes/ getting ducks in rows.

# On the Consents front

## Greenfields sites

Activity reduced, while power prices are low

## Brown-field = Kawerau

65,000 tpd new allocation, 6,000 re-consented

All were appealed.

2 appeals resolved before reaching court hearing, one still outstanding. Waiting for this last one to be resolved before re-engaging the system management plan discussions.

# Roll on 2014