

**BEFORE BAY OF PLENTY REGIONAL COUNCIL**

**IN THE MATTER** of the Resource Management Act 1991

**AND**

**IN THE MATTER** of Lake Rotorua Nutrient Management - Proposed Plan Change 10 to the Bay of Plenty Regional Water and Land Plan under clause 8B of Schedule 1 to the Act

**BETWEEN** **ROTORUA LAKES COUNCIL**

**Submitter**

**AND** **BAY OF PLENTY REGIONAL COUNCIL**

**Plan Change 10 Proponent**

TOMPKINS | WAKE

**ROTORUA**  
**LAKES COUNCIL**

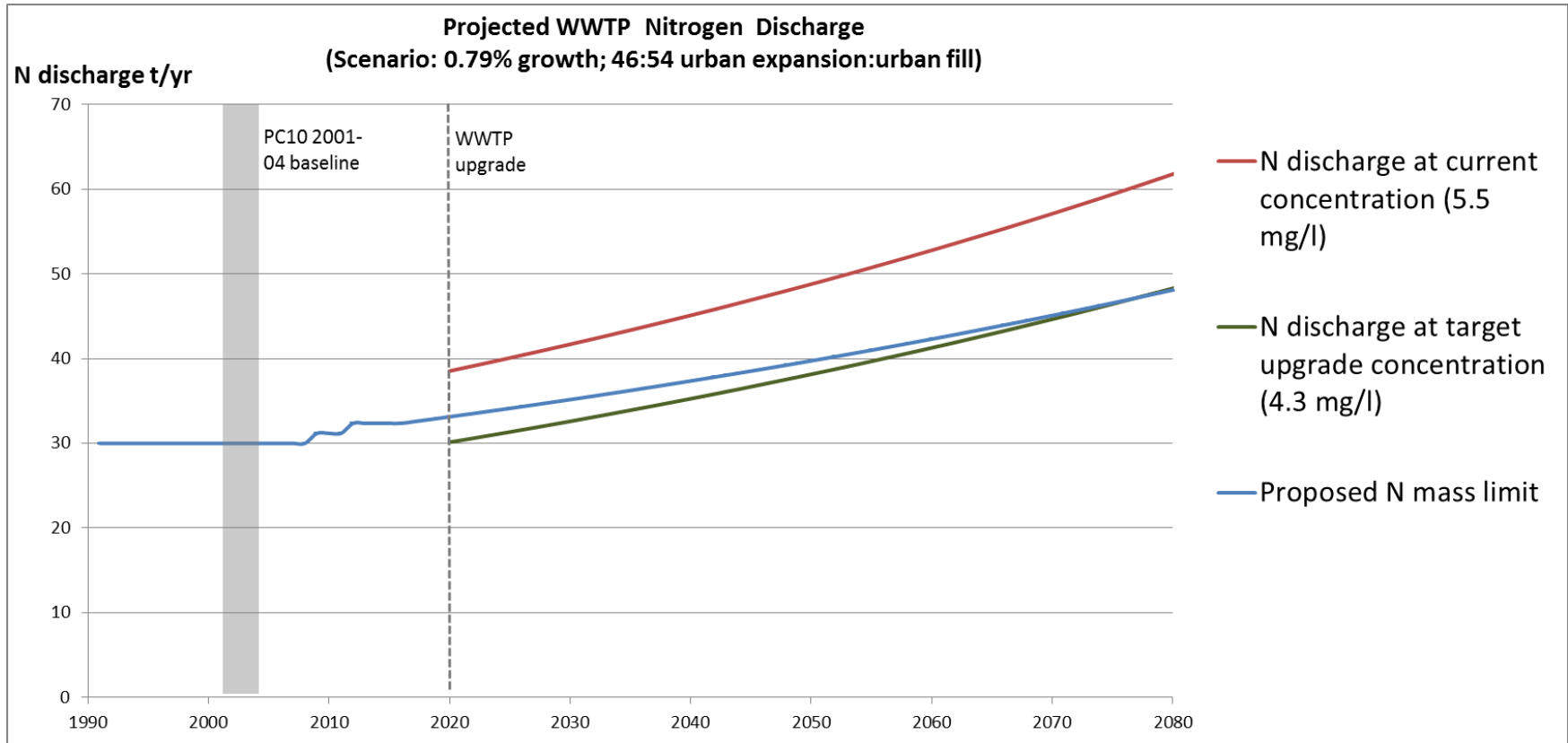
Phil Osborne

Economics

# Simon Banks

Wastewater Infrastructure

# Projected WWTP discharge with best-estimate assumptions



Assumes 1.4 kg/potential HUE is added to 30 t urban baseline

	Rutherford <sup>1</sup> 1984-5	Rutherford <sup>1</sup> Target	ROTAN 755 <sup>2</sup> Baseline	PC10 <sup>3</sup> Target	Change achieved 1980's to Baseline	Change required Baseline to Target	Progress
<b>Population</b>	54,000						
<b>Raw sewage</b>	260	not specified	300	385 (estimate)			
<b>Other</b>							
Rain			30.0	30		0	no change
Geothermal (Tikitere, Whaka)			30.3	0.3		-30	
Engineering reductions				-6.4		-6.4	
<b>Rural Area</b>							
Dairy, drystock, lifestyle			525.7	256		-269.7	
Gorse	415	405	721	405	306	-316	
Incentivised reductions							
Forest			75.4	75.4		0	no change
<b>Urban Area</b>							
Urban land losses			33.5	33.5		0	no change
<b>+ sewage</b>							
Septic tanks (not reticulated)			26.2	16.2		-10.0	achieved
WWTP (reticulated)	150	30	33.7	30	-116.3	-3.7	achieved
<b>TOTAL</b>	<b>565</b>	<b>435</b>	<b>755</b>	<b>435</b>	<b>190</b>	<b>-320</b>	

1. Rutherford, J.C., Pridmore, R.D. and E. White. 1989. Management of phosphorus and nitrogen inputs to Lake Rotorua. NZJ Water Res Planning and Mgt, Vol 115 No. 4

2. Rutherford K, Palliser C and S Wadhwa. Prediction of nitrogen loads to Lake Rotorua using the ROTAN model. NIWA Client Rpt 2010.

3. PC10 Hearing memo of clarification from BOPRC. Appendix 7 Clarification of current and target nitrogen loads for Lake Rotorua.

#### Notes

1980s sustainable load to lake established at 435 t, and PC10 sector targets reflect the 1980's target.

1980s sewage load was 150 t. Planned reduction 120 t. Actual reduction 116.3 t (over this period raw sewage to WWTP increased by 125 t, 48%)

1980s other loads were 415 t. Planned reduction 10 t. Actual increase 306 t

PC10 requires a further 3.7 t reduction from WWTP and 10 t reduction from septic tanks. These have been achieved.

Note the PC10 sector target loads are based on 2010 land use area, but land use will change.

The actual future loads from each sector will reflect land use change. This is consistent with the proposed sewage accounting approach.

# James Fuller

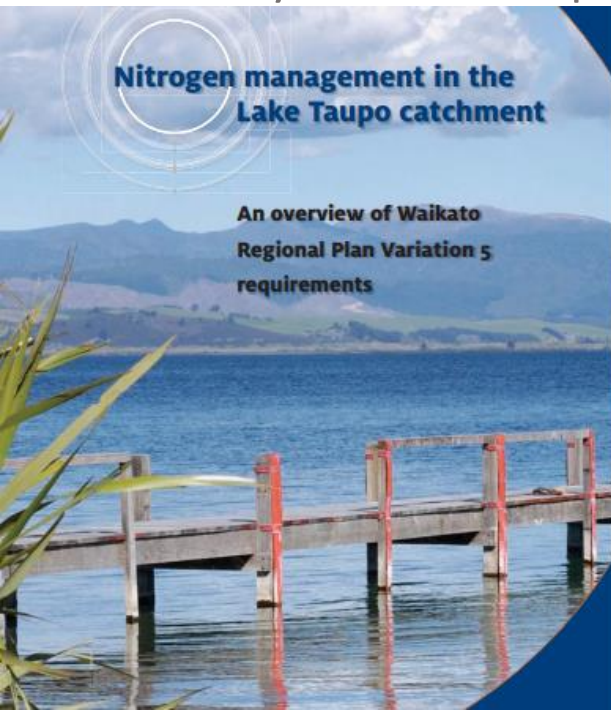
Planning

# Variation 5, the One Plan and Plan Change 1



All of these policy changes include the constituent parts (rural, urban and natural).

They are specific to their environment, what they were seeking to achieve and the time they were developed and approved.



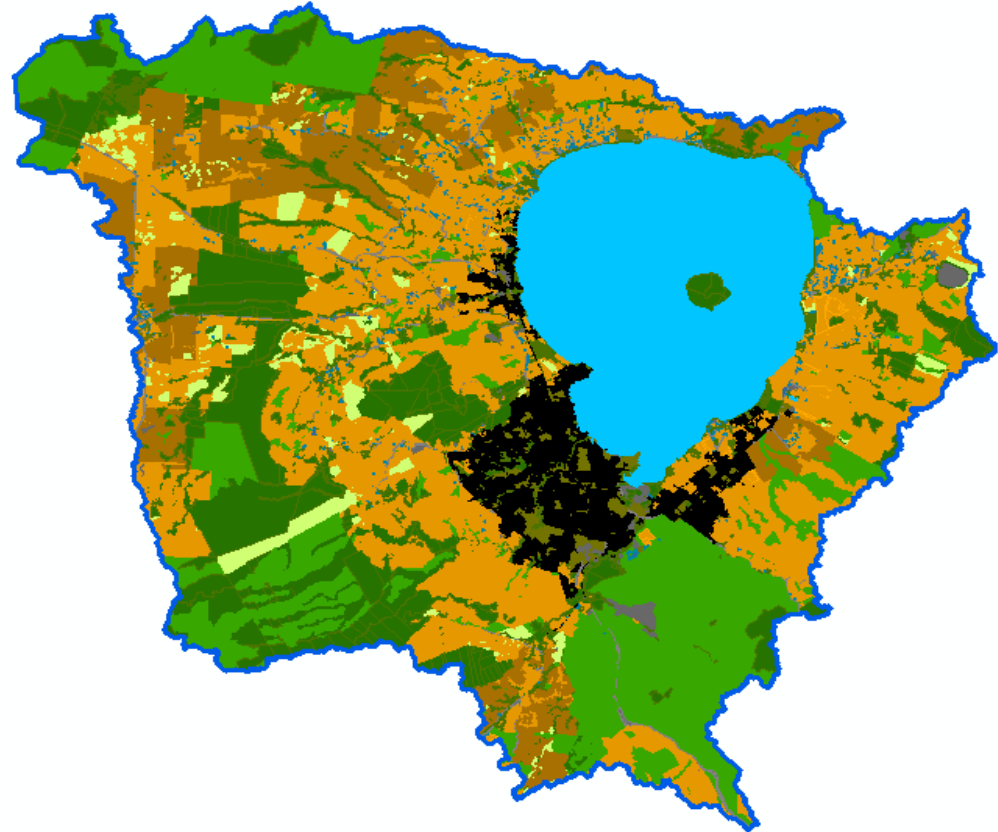
# Grant Eccles

Planning



# Background – PC10 allocation system

- The urban area is mapped at 2001-04 land use
- Since then, and into the future, rural land will change to urban
- Rural land has been allocated a N discharge
- As land use changes from rural to urban this N allocation is available to offset the increasing sewage-N at the WWTP.



# Example of N at time of subdivision

1 ha rural land



Land losses	28.0 kg	
Sewage losses from septic tanks		0 kg
Total N loss	<hr/>	
	28.0 kg	

NDA

28.0 kg N

Subdivided into 1 ha urban RD1



Land losses	5.5 kg	
Sewage losses from WWTP		20.2 kg
Total N loss	<hr/>	
	25.7 kg	

25.7 kg N

Recognising 20.2kg at WWTP is within the NDA