Rotoiti / Rotoma Sewerage Scheme Investigations /

Options Register and Current Status and Indicative Costs

	Table: RI	OC Technical Officers Wor	king Draft		_										
	Key:	Well meets with the cri	iteria												
		Marginal / may meet the Fails to meet the criteri	ne criteria ia												
Jean Los of the statistic transmission statistic registerior statistic registerio statistic registerio statistic registerior statistic r		Tuis to meet the criteri		Must have's											
Lype Opposite properties Control Cont					RRSSC Goals										
Num Num <th></th> <th>Ontion</th> <th>Ontion Components</th> <th>Goal #1</th> <th>Goal #2</th> <th>Goal #3</th> <th>Goal #4</th> <th>Goal #5</th> <th>Goal #6</th> <th>Goal #7</th> <th>Goal #8</th> <th>Goal #9</th> <th>Goal #10</th> <th>Goal #11</th>		Ontion	Ontion Components	Goal #1	Goal #2	Goal #3	Goal #4	Goal #5	Goal #6	Goal #7	Goal #8	Goal #9	Goal #10	Goal #11	
Image: Control large in the		Option	Option components	Comply with local Action	Culturally acceptable	Met communities	Acceptable public health	All key planning and	Qualifies for Central	Reasonable capital and	Socially acceptable	Can mitigate technical,	Superior option	Outside of former	
No. No. No. No. No. No. No. No. 01 Include				Plan Nutrient target		environmental outcome	s risks	statutory requirements	Government Subsidy	long term operational		resilience, risk matters	(if other similar option is	Manawahe Site (WWTP	
CA1 Northing Northing </th <th></th> <th></th> <th></th> <th>levels</th> <th></th> <th></th> <th></th> <th>met</th> <th></th> <th>COST</th> <th></th> <th></th> <th>presented)</th> <th>& LIS)</th>				levels				met		COST			presented)	& LIS)	
A.A. Instrume Ins								DO NOTHING							
Initial and the service grade	CB-1	Do nothing	None												
01.1 To Morrison Use produce grader page tetriculation in page tetriculatin															
REC2 Te Address Mode pressure gradeer particulation before and pressure of before with the address with P and LS Image pressure gradeer particulation before with the address with P and LS Image pressure gradeer particulation before with the address with P and LS Image pressure gradeer particulation before with the address with P and LS Image pressure gradeer particulation before with the address with P and LS Image pressure gradeer particulation before with the address with P address with P addr							CENTRALISED RET	ICULATION TO EXISTING V	WWTP						
Inclose Instrumentation Instrumentation Instrumentation Instrumentation Instrumentation Instrumentation Instrumentation Instrumentation Instrumentation Instr	RDC-1	To Rotorua	-Low pressure grinder					Resource consent							
Indiana iso before a provide to before a provide transmission with the set IDS Indiana iso before a provide transmission with the set IDS R0-2 To Savesul Indiana iso before a provide transmission to before a provide transmission transmissin transmission transmission transmissin transmi			pump reticulation												
R0-2 Is fame and the information of the			-Trunk mains to Rotorua					\sim							
NUC2 14 LOS Information of View Information of View Information of View Information of View NUC2 14 Rosenue Information of View Information of View Information of View Information of View NUC2 14 Rosenue Information of View Information of View Information of View Information of View NUC2 14 Rosenue Information of View Information of View Information of View Information of View NUC2 14 Rosenue Information of View Information of View Information of View Information of View NUC2 14 Rosenue Information of View Information of View Information of View Information of View NUC2 14 Rosenue Information of View Information of View Information of View Information of View NUC2 14 Rosenue Information of View NUC2 14 Rosenue Information of View NUC2 14 Rosenue Information of View NUC2 16 Rosen Info			-Expand Rotorua W/W/TP												
In Example Intervention New York			and LDS												
RL-2 In Exercise Low pressure priority multiplication fruits fraints to Exercise WVP and L2-and memory models Contrained fraints to Exercise WVP and L2-and memory models Contrained fraints to Exercise WVP and L2-and memory models Contrained fraints WVP and L2-and memory models Contrained fraint WVP and L2-and Memory MVP and L2-and Memory models Contrained fraint WVP and L2-and Memory MVP and L2-and															
RD-3 To WVTP and LDS n Rect at the there is there is the there is there is the there is the th	RDC-2	To Kawerau	-Low pressure grinder					Resource consent							
Implementation Imple			pump reticulation												
Image: State Statement With Part 1DS Centralised restment for which Part 1DS Centralised restment for which Part 1DS Image: State Part Part Part 1DS Centralised restment for which Part 1DS Centralised restment for Part 1DS Image: State Part Part Part Part Part Part Part Part			-Trunk mains to Kawerau												
Applied consistence Applied consistence Hybrid RDC1 and BC2 with restructual convegate of trackal convegate of trackal convegate conv			WWTP Expand Kawarau W/W/TD												
Inclusion Centralization Centralization <td></td> <td></td> <td>-Expand LDS</td> <td></td>			-Expand LDS												
Hybrid RDC1 aud Cathwert and Conception of Trateat Activities of Trateat Conceptions of Trateat Conceptions of Trateat Conceptions of Trateat Activities Associate Consent RDC3 To WVTP and LDS in Tautaria / General Masswark arXes to activities (conceptions) Associate Consent Conceptions) Associate Consent RDC3 To WVTP and LDS in Tautaria / General MasswarkarXes to activities (conceptions) Associate Consent Associate Consent RDC3 To WVTP and LDS Within Bio conducts of two communities Associate Consent Associate Consent															
BCD-2 with treatment in plate or Two individual conveyance of treated wastewater to within Botorus WWTP or Gischarge / disposal ficilities Low pressure grinder efficilities Conveyance of treated discharge/disposal discharge/disposal ficilities Low pressure grinder efficilities TDC-3 To WWTP and LDS in Postbilly Catchined Postbilly Catchined Low pressure grinder efficilities Conveyance of treated discharge/disposal ficilities Low pressure grinder efficilities TDC-3 To WWTP and LDS in Postbilly Catchined Low pressure grinder efficilities Low pressure grinder efficilities Conveyance of treated discharge/disposal ficilities TDC-3 To WWTP and LDS in Postbilly Catchined Low pressure grinder efficilities Low pressure grinder efficilities Conveyance grinder efficilities To WWTP and LDS in Postbilly Catchined Low pressure grinder efficilities Low pressure grinder efficilities Conveyance ficilities To WWTP and LDS in the catchined Low pressure grinder efficilities Low pressure grinder efficilities Conveyance ficilities To WWTP and LDS in the catchined Low pressure grinder efficilities Low pressure grinder efficilities Conveyance ficilities Viruit Swere System Within the catchined in the catchined in the catchined in the catchined in the catchined in the catchined Low pressure grinder efficilities Low pressure grinder efficilities To WWTP and		Hybrid of RDC-1 and	-Centralised treatment				\bigvee	Resource consent							
catchinent and convegance of trated wastewater to with horozonus WVTP or fischarge/dappeal facilities tratament plants convegance of trated wastewater to existing discharge/dappeal facilities convegance of trated wastewater to existing discharge/dappeal facilities RDC-3 To WVTP and LDS in possibility located in Rocentum existewater to within be common WVTP and LDS in facilities Low pressure grinder reflocitation Low pressure grinder reflocitation RDC-3 To WVTP and LDS in facilities Low pressure grinder reflocitation Low pressure grinder reflocitation Low pressure grinder reflocitation To WVTP and LDS within be catchinent Manwahe Ste Low pressure grinder reflocitation communities joined within boordaries of two communities of two communities Low pressure grinder reflocitation communities of two communities Low pressure grinder reflocitation communities of two communities of two communities Low pressure grinder reflocitation communities Low pressure grinder reflocitation communities		RDC-2 with treatment i	in plant or Two individual												
Image: convegace of tracked Convegace of tracked watewater to white watewater to instruction Rotorus WWTP discharge / disposit facilities facilities Rotorus WWTP discharge / disposit facilities		catchment and	treatment plants												
wastewater to wither Rotories WWTP of Kixwersy WWTP dicharge/disposil facilities		conveyance of treated	-Conveyance of treated												
R000ua WUP or Kaweraya MWTP discharge / disposal facilities discharge / disposal facilities discharge / disposal facilities R0C-3 To WWTP and LDS inst investigation possibility koted in Rotebu Catchment -Low pressure grinder reticulation or communities joined by truit sever system -Commo WWTP and LDS -Within boundaries of two communities -Low pressure grinder reticulation -Two communities joined by truit sever system -Commo WWTP and LDS -Within boundaries of two communities -Low pressure grinder reticulation - Two communities joined by truit sever system - reticulation - Two communities of two communities -Low pressure grinder reticulation - Two communities joined by truit sever system - reticulation - Two communities of two communities -Low pressure grinder reticulation - Two communities of two communities		wastewater to wither	wastewater to existing												
Carwau write dickings / disposit facilities iadilities iadilities iadilities RDC-3 To WWTP and LDS in possibility located in society located in society located in three statement -Low pressure grinder reticulation CENTRALISED RETICULATION WITH A NEW COMMON WWTP & LAND DISPOSAL SYSTEM (LDS) RDC-3 To WWTP and LDS in possibility located in society located in communities -Low pressure grinder reticulation -Low pressure grinder reticulation To WWTP and LDS within boundaries of two communities Stee within the catchment - Worthin boundaries of two communities -Low pressure grinder reticulation -Low pressure grinder reticulation		Rotorua WWTP or	discharge/disposal												
RDC-31 To WVTP and LDS in To WVTP and LDS in Rotehu Catchment Manwahe Site Within boundaries of two communities joined by trunk sever system -Two communities joined -Within boundaries of two communities draw		discharge / disposal	Identities												
RDC-3 To WWTP and LDS in Tautar / General Matawhar Area site as Rote hu Catchment Within boundaries of two communities joined by trunk sever system -Common WWTP and LDS Within boundaries of two communities of two communiti		facilities													
RDC-3 To WUTP and LDS in Tautar / General Matawhara Area site as first investigation Possibility located in Rotoehu Catchment Within the catchment Manawahe Site Manawahe Site Ma															
NUC-S To Wurf and LDS III -Composition of the service system of the ser	RDC 2	To W/W/TD and LDS in	Low proceuro grindor			CENTRALISED	RETICULATION WITH A N	EW COMMON WWTP & LA	AND DISPOSAL SYSTEM (L	DS)		1			
Matawhara Area Site as first investigation possibility located in Rotow VMTP and LDS within the catchment Manawahe Site 1-Wo communities joined by trunk sewer system -Common WWTP and LDS within the catchment Manawahe Site -Within boundaries of two communities in the catchment Manawahe Site -Within boundaries of two communities in the catchment Manawahe Site -Common WWTP and LDS -Within boundaries of two communities in the catchment -Common WWTP and LDS -Within boundaries of two communities in the catchment -Common WWTP and LDS -Within boundaries of two communities in the catchment -Common WWTP and LDS -Within boundaries of two communities in the catchment -Common WWTP and LDS -Within boundaries of two communities in the catchment -Common WWTP and LDS -Within boundaries of two communities in the catchment -Common WWTP and LDS -Within boundaries of two communities in the catchment -Common WWTP and LDS -Within boundaries of two communities in the catchment -Common WWTP and LDS -Within boundaries of two communities in the catchment -Common WWTP and LDS -Within boundaries of two communities in the catchment -Common WWTP and LDS -Within boundaries of two -Common WWTP and LDS -Within boundaries of two -Within boundaries of two	RDC-5	Tautara / General	-Low pressure grinder												
first investigation by trunk sewer system common WWTP and LDS -Common WWTP and LDS within the catchment -Low pressure grinder reticulation -Low pressure grinder -common WWTP and LDS -Low pressure grinder within the catchment -Low pressure grinder -common WWTP and LDS -Low pressure grinder within the catchment -Low pressure grinder -within boundaries of two communities joined -WTM sewer system -common WWTP and LDS -Low pressure grinder within the catchment -Low pressure grinder -WIMTP and LDS -Low pressure grinder -WIMTP and LDS -Low pressure grinder -Within boundaries of two communities joined -WIMTP and LDS -WIMTP and LDS -WIMTP and LDS -W		Matawhara Area site as	-Two communities joined												
possibility located in Rotoehu Catchment -Common WWTP and LDS -Within boundaries of two communities -Common WWTP and LDS -Within boundaries of two communities -Common WWTP and LDS -Common WWTP and LDS -Common WWTP and LDS To WWTP and LDS within the catchment Manawahe Site -Low pressure grinder reticulation -Two communities joined by trunk sever system -Common WWTP and LDS -Within boundaries of two communities -Common WWTP and LDS -Common WWTP and LDS -Common WWTP and LDS		first investigation	by trunk sewer system												
Rotoehu Catchment -Within boundaries of two communities To WWTP and LDS within the catchment -Low pressure grinder reticulation Within the catchment -Low communities joined by trunk sewer system -Common WWTP and LDS -Commo		possibility located in	-Common WWTP and LDS												
Image: Communities communities Image: Communiti		Rotoehu Catchment	-Within boundaries of two												
Image: Constraint of the catchment Manawahe Site -Low pressure grinder reticulation -Two communities joined by trunk sewer system -Common WWTP and LDS -Within boundaries of two communities Image: Constraint of two communities of two constraint of two communities Image: Constraint of two constraint of two communities Image: Constraint of two constraint of			communities												
Image: Note of the series of two communities of two communities Low pressure grinder reticulation Low pressure grinderere Low pressure grindererere					\sim										
within the catchment Manawahe Site reticulation -Two communities joined by trunk sewer system -Common WWTP and LDS -Within boundaries of two communities		To W/W/TP and LDS	-low pressure grinder												
Manawahe Site -Two communities joined by trunk sewer system -Common WWTP and LDS -Within boundaries of two communities		within the catchment	reticulation												
by trunk sewer system -Common WWTP and LDS -Within boundaries of two communities	1	Manawahe Site	-Two communities joined												
-Common WWTP and LDS -Within boundaries of two communities			by trunk sewer system												
-Within boundaries of two communities			-Common WWTP and LDS												
communities			-Within boundaries of two												
			communities												

Rotoiti / Rotoma Sewerage Scheme Investigations / Options Register and Current Status and Indicative Costs

		Option Components	Must have's											
			RRSSC Goals											
	Option		Goal #1	Goal #2	Goal #3	Goal #4	Goal #5	Goal #6	Goal #7	Goal #8	Goal #9	Goal #10	Goal #11 Outside of former	
			Plan Nutrient target levels		environmental outcomes	risks	statutory requirements met	Government Subsidy	long term operational cost		resilience, risk matters	(if other similar option is presented)	Manawahe Site (WWTP & LTS)	
						FOR POTOMA & POTOITI								
RDC-4	Separate communities	-Low pressure grinder		TWO CENTRALISEL	RETICULATION STSTEWS			A LAND DISPOSAL STSTE	NI (LDS) FOR EACH COIVIN					
	plants for both Rotoiti and Rotoma	reticulation -Two separate trunk sewer systems -Two separate WWTP and LDS - Within boundaries of two communities												
								$ \land \land \land$						
		I		CC	MBINATION OPTION WIT	H TWO RETICULATION SYS	STEMS FOR ROTOMA AND	ROTOITI WITH SEPARATE	WWTP AND LDS					
	Rotoiti pumped to Rotorua WWTP and community plant for Rotoma	-Low pressure grinder reticulation -Two separate trunk sewer systems -Rotoiti pumped to Rotorua WWTP -New WWTP and LDS within Rotoma community												
						CUNCTED								
RDC-5	Clusters with package WWTP to achieve high nutrient removal / LDS. Cluster location and size based on location	-Property clusters (approximately 29) -Gravity reticulation -Common WWTP and LDS for each cluster -WWTP to achieve high				GW separation of LTS								
		nutrient removal												
CB-6a	Urine Separation, cluster Biolytix (or similar system)	-Individual on-site urine separation -Cluster Biolytix (or similar) for 10 HUE on average -Cluster reticulation to Biolytix (or similar) -Cluster LDS				Urine and compost handling			Cost to be determined					
CB-6b	Urine separation, individual Biolytix (or similar) and cluster subsurface irrigation	-Individual on-site urine separation -Individual on-site Biolytix (or similar) -Reticulation to cluster LDS				Urine and compost handling			Cost to be determined					

WORKING DRAFT Issue Number: 1 Date: 28/04/2015

Rotoiti / Rotoma Sewerage Scheme Investigations / Options Register and Current Status and Indicative Costs

			Must have's											
			RRSSC Goals											
	Option	Option Components	Goal #1	Goal #2	Goal #3	Goal #4	Goal #5	Goal #6	Goal #7	Goal #8	Goal #9	Goal #10	Goal #11	
			Plan Nutrient target		environmental outcomes	risks	statutory requirements	Government Subsidy	long term operational	Socially acceptable	resilience, risk matters	(if other similar option is	Manawahe Site (WWTP	
			levels				met		cost			presented)	& LTS)	
RDC-6	Individual OSET	-Individual on-site	Nutrient removal less			GW separation of LTS in	SET RULES COMPLIANT NU	TRIENT REMOVING SYSTE	M					
OSET-1	compliant nutrient removal systems	AWTS+NR (aerated wastewater treatment system with nutrient removal package plant)	than Action Plan requirements			high water table areas								
		soakage system												
OSET-2	OSET compliant System	-Existing OSET compliant septic tank -septic tank land application area -Resource Consent OSET financial contribution \$5,000	Nutrient removal less than Action Plan requirements											
OSET-3	OSET Compliant System 2	-New OSET compliant septic tank -Complying land application area - Resource Consent -OSET financial contribution \$2,800?	Nutrient removal less than Action Plan requirements					$\left(\right)$						
CB-3	On-site urine separating	-Urine separating toilets	Nutrient removal less						Cost to be determined					
	toilets	-Existing or new septic tanks -Existing or new ground soakage area	than Action Plan requirements				\mathbb{Z}_{\sim}							
CB-5	On-site Composting toilets	-Urine separating toilets -Composting toilet -Existing or new ground soakage area for grey water and any liquid from composting toilet	Nutrient removal less than Action Plan requirements						Cost to be determined					
					1	ONSIT	TE AND/OR CLUSTER							
CB-4	Targeted Upgrades + Improved Management	-Targeting through an onsite approach areas needing upgrading -Putting in place on-site and/or cluster system management							Cost to be determined					
CB-2	Buy and Decommission	-Purchase existing farm in				OFF-SET			Cost to be determined					
	a Farm	area -Decommission farm to offset nutrient loading												
CB-7	Stop using Phosphate in Household Detergents	-Depends on the sewerage scheme selected							Cost to be determined					
	Combining elements of	Craig Brown Ontions 1.7 for				N	IIX AND MATCH							
	Cluster or Indivi	dual on-site systems	I O RE DISCOSSED -	NO BASIS OF EVALUA	ATION YET DETERMI	NED								

WORKING DRAFT Issue Number: 1 Date: 28/04/2015

Rotoiti / Rotoma Sewerage Scheme Investigations / Options Register and Current Status and Indicative Costs

		Must have's											
		RRSSC Goals											
Ontion		Goal #1	Goal #2	Goal #3	Goal #4	Goal #5	Goal #6	Goal #7	Goal #8	Goal #9	Goal #10	Goal #11	
Option	Option Components	Comply with local Action	Culturally acceptable	Met communities	Acceptable public health	All key planning and	Qualifies for Central	Reasonable capital and	Socially acceptable	Can mitigate technical,	Superior option	Outside of former	
		Plan Nutrient target		environmental outcomes	risks	statutory requirements	Government Subsidy	long term operational		resilience, risk matters	(if other similar option is	Manawahe Site (WWTP	
		levels				met		cost			presented)	& LTS)	

Notes

1 Key sources of options are

-Environment Court Evidence -Post Environment Court Review: Overview of Options

-RDC Summary Table to RRSSC 10/02/2014

-RDC summary sheets and presentation 14/04/2014 to RRSSC workshop

-RDC options 1-6

-Craig Brown presentation to RRSSC workshop 14/04/2014

-Terry long EBoPRC OSET options

-RRSSC workshop output 14/04/2014

2 RDC = Rotorua District Council, CB = Craig Brown

WORKING DRAFT Issue Number: 1 Date: 28/04/2015