Option		Option Components	Option Source??	Current Position / Status	Next Action	By Who / By When
DO NOTHING						
CB-1	Do nothing	None	Craig Brown RRSSC Workshop 14/04/2014	Needs answering - Public health needs -Ineffective non-compliant systems eg. some in Tamatea Rd - Catchment Action Plans (nutrient)	Consideration / Decision	TAG RRSSC / RDC MoH EBoPRC
CENTRALISED RETICULATION TO EXISTING WWTP						
RDC-1	To Rotorua	-Low pressure grinder pump reticulation -Trunk mains to Rotorua WWTP -Expand Rotorua WWTP and LDS	RDC October 2013 option 4.1 RRSSC Meetings and workshop 14/04/2014	Both support and opposition at RRSSC workshop 14/04/2014	Consideration / Decision	TAG RRSSC / RDC
RDC-2	To Kawerau	-Low pressure grinder pump reticulation -Trunk mains to Kawerau WWTP -Expand Kawerau WWTP and LDS	RDC October 2013 RRSSC Meetings and workshop 14/04/2014	Not favoured at RRSSC workshop 14/04/2014 - Cultural concerns - Distance -Nutrient removal limitations at WWTP	Consideration / Decision	TAG RRSSC / RDC

Option		Option Components	Option Source??	Current Position / Status	Next Action	By Who / By When
	Hybrid of RDC-1 and RDC-2 with treatment in catchment and conveyance of treated wastewater to wither Rotorua WWTP or Kawerau WWTP discharge / disposal facilities	-Centralised treatment plant or Two individual treatment plants -Conveyance of treated wastewater to existing discharge/disposal facilities	Jim Bradley MWH RRSSC Workshop 14/04/2014	Workshop - some consideration that only possibility if conveying to Rotorua or Kawerau and either septicity / corrosion was an undue problem and/or conveyance of untreated wastewater from one rohe to another was a major cultural objection	Consideration / Decision	TAG RRSSC / RDC
CENTRALISED RETICULATION WITH A NEW COMMON WWTP & LAND DISPOSAL SYSTEM (LDS)						
RDC-3	To WWTP and LDS in Tautara / General Matawhara Area site as first investigation possibility located in Rotoehu Catchment	-Low pressure grinder reticulation -Two communities joined by trunk sewer system -Common WWTP and LDS -Within boundaries of two communities	RDC October 2013 options 2.1-2.4 RRSSC Meetings and workshop 14/04/2014	Support from 2 of 3 discussion groups at the workshop 14/04/2014	Consideration / Decision	TAG RRSSC / RDC

Option		Option Components	Option Source??	Current Position / Status	Next Action	By Who / By When
	To WWTP and LDS within the catchment Manawahe Site	-Low pressure grinder reticulation -Two communities joined by trunk sewer system -Common WWTP and LDS -Within boundaries of two communities	RDC Previous proposed scheme - consent surrendered at Environment Court hearing	RRSSC decided not to further pursue this option at the committee meeting 10th February 2014	???	RRSSC TAG?
TWO CENTALISED RETICULATION SYSTEMS FOR ROTOMA & ROTOITI WITH INDUVIDUAL WWTP & LAND DISPOSAL SYSTEM (LDS) FOR EACH COMMUNITY						
RDC-4	Separate communities plants for both Rotoiti and Rotoma	-Low pressure grinder reticulation -Two separate trunk sewer systems -Two separate WWTP and LDS - Within boundaries of two communities	RDC October 2013 -options 1.1-1.4	Some support at RRSSC workshop but preference for option RDC-3 over this option	Consideration	TAG

Option		Option Components	Option Source??	Current Position / Status	Next Action	By Who / By When
COMBINATION OPTION WITH TWO RETICULATION SYSTEMS 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	RDC October 2013 option 3.1-3.4	Has not been further considered by RDC in latest options package options RDC-1 to RDC-6	???	???
CLUSTERED SEWERAGE SYSTEM						
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 nutrient removal	RDC To the RRSSC workshop 14/04/2014	Not favoured at RRSSC workshop 14/04/2014 - High cost	Consideration / Decision	TAG RRSSC

Option		Option Components	Option Source??	Current Position / Status	Next Action	By Who / By When
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	Raised in Environment Court hearing, included in RDC information to RRSSC - Further raised at RRSSC workshop 14/04/2014	Craig Brown / Dr Kepa Morgan are further developing this or CB-6b	Further development and consideration	Craig Brown Dr Kepa Morgan TAG RRSSC
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	Included in Craig Brown's presentation at RRSSC workshop 14/04/2014	Craig Brown / Dr Kepa Morgan are further developing this or CB-6a	Further development and consideration	Craig Brown Dr Kepa Morgan TAG RRSSC

Option		Option Components	Option Source??	Current Position / Status	Next Action	By Who / By When
INDUVIDUAL ON-SITE (HUE OPTIONS) OSET RULES COMPLIANT NUTRIENT REMOVING SYSTEM						
RDC-6 OSET-1	Individual OSET compliant nutrient removal systems	-Individual on-site AWTS+NR (aerated wastewater treatment system with nutrient removal package plant) -Approved on-site ground soakage system	OSET rules and RDC options, Environment Court October 2013 RRSSC workshop 14/04/2014	???	Further Consideration	Environment Bay of Plenty Regional Council RDC
OSET-2	OSET compliant System 1	-Existing OSET compliant septic tank -septic tank land application area -Resource Consent OSET financial contribution $5,000		???	Further Consideration	Environment Bay of Plenty Regional Council RDC
OSET-3	OSET Compliant System 2	-New OSET compliant septic tank -Complying land application area - Resource Consent -OSET financial contribution $2,800?			Further Consideration	Environment Bay of Plenty Regional Council RDC

Option		Option Components	Option Source??	Current Position / Status	Next Action	By Who / By When
CB-3	On-site urine separating toilets	-Urine separating toilets -Existing or new septic tanks -Existing or new ground soakage area	Craig Brown and Dr Kepa Morgan Environment Court evidence and RRSSC workshop 14/04/2014	Depends what Craig Brown and Dr Kepa Morgan propose be further considered in developing option	???	???
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	Craig Brown and Dr Kepa Morgan Environment Court evidence and RRSSC workshop 14/04/2014	Depends what Craig Brown and Dr Kepa Morgan propose be further considered in developing option	???	???
ONSITE 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	Craig Brown and Dr Kepa Morgan Environment Court evidence and RRSSC workshop 14/04/2014	Depends what Craig Brown and Dr Kepa Morgan propose be further considered in developing option		

Option		Option Components	Option Source??	Current Position / Status	Next Action	By Who / By When
OFF-SET MITIGATION OPTIONS						
CB-2	Buy and Decommission a Farm	-Purchase existing farm in area -Decommission farm to offset nutrient loading	Craig Brown and Dr Kepa Morgan Environment Court evidence and RRSSC workshop 14/04/2014	Depends what Craig Brown and Dr Kepa Morgan propose be further considered in developing option		
CB-7	Stop using Phosphate in Household Detergents	-Depends on the sewerage scheme selected	Craig Brown and Dr Kepa Morgan Environment Court evidence and RRSSC workshop 14/04/2014	Depends what Craig Brown and Dr Kepa Morgan propose be further considered in developing option		
MIX AND MATCH						
	Combining elements of Craig Brown Options 1-7 for Cluster or Individual on-site systems					

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

Option		Option Components	Indicative Costs						
			CAPEX	OPEX	NPV	Per HUE			
						CAPEX BS	CAPEX AS	Annual OPEX Council	Annual OPEX Property Owner
			$M	$M	$M	$	$	$	$
DO NOTHING									
CB-1	Do nothing	None							
CENTRALISED RETICULATION TO EXISTING WWTP									
RDC-1	To Rotorua	-Low pressure grinder pump reticulation -Trunk mains to Rotorua WWTP -Expand Rotorua WWTP and LDS							
RDC-2	To Kawerau	-Low pressure grinder pump reticulation -Trunk mains to Kawerau WWTP -Expand Kawerau WWTP and LDS							

Option		Option Components	Indicative Costs						
						Per HUE			
			CAPEX	OPEX	NPV	CAPEX BS	CAPEX AS	Annual OPEX Council	Annual OPEX Property Owner
			$M	$M	$M	$	$	$	$
0	Hybrid of RDC-1 and RDC-2 with treatment in catchment and conveyance of treated wastewater to wither Rotorua WWTP or Kawerau WWTP discharge / disposal facilities	-Centralised treatment plant or Two individual treatment plants -Conveyance of treated wastewater to existing discharge/disposal facilities							
CENTRALISED RETICULATION WITH A NEW COMMON WWTP & LAND DISPOSAL SYSTEM (LDS)									
RDC-3	To WWTP and LDS in Tautara / General Matawhara Area site as first investigation possibility located in Rotoehu Catchment	-Low pressure grinder reticulation -Two communities joined by trunk sewer system -Common WWTP and LDS -Within boundaries of two communities							

Option		Option Components	Indicative Costs						
						Per HUE			
			CAPEX	OPEX	NPV	CAPEX BS	CAPEX AS	Annual OPEX Council	Annual OPEX Property Owner
			$M	$M	$M	$	$	$	$
0	To WWTP and LDS within the catchment Manawahe Site	-Low pressure grinder reticulation -Two communities joined by trunk sewer system -Common WWTP and LDS -Within boundaries of two communities							
TWO CENTALISED RETICULATION SYSTEMS FOR ROTOMA & ROTOITI WITH INDUVIDUAL WWTP & LAND DISPOSAL SYSTEM (LDS) FOR EACH COMMUNITY									
RDC-4	Separate communities plants for both Rotoiti and Rotoma	-Low pressure grinder reticulation -Two separate trunk sewer systems -Two separate WWTP and LDS - Within boundaries of two communities							

Option		Option Components	Indicative Costs						
			CAPEX	OPEX	NPV	Per HUE			
						CAPEX BS	CAPEX AS	Annual OPEX Council	Annual OPEX Property Owner
			$M	$M	$M	$	$	$	$
TWO CENTALISED RETICULATION SYSTEMS FOR ROTOMA & ROTOITI WITH INDUVIDUAL WWTP & LAND DISPOSAL SYSTEM (LDS) FOR EACH COMMUNITY									
0	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							
CLUSTERED SEWERAGE SYSTEM									
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 nutrient removal							

Option		Option Components	Indicative Costs						
						Per HUE			
			CAPEX	OPEX	NPV	CAPEX BS	CAPEX AS	Annual OPEX Council	Annual OPEX Property Owner
			$M	$M	$M	$	$	$	$
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							
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							

Option		Option Components	Indicative Costs						
						Per HUE			
			CAPEX	OPEX	NPV	CAPEX BS	CAPEX AS	Annual OPEX Council	Annual OPEX Property Owner
			$M	$M	$M	$	$	$	$
INDUVIDUAL ON-SITE (HUE OPTIONS) OSET RULES COMPLIANT NUTRIENT REMOVING SYSTEM									
RDC-6 OSET-1	Individual OSET compliant nutrient removal systems	-Individual on-site AWTS+NR (aerated wastewater treatment system with nutrient removal package plant) -Approved on-site ground soakage system							
OSET-2	OSET compliant System 1	-Existing OSET compliant septic tank -septic tank land application area -Resource Consent OSET financial contribution $5,000							
OSET-3	OSET Compliant System 2	-New OSET compliant septic tank -Complying land application area - Resource Consent -OSET financial contribution $2,800?							

Option		Option Components	Indicative Costs						
						Per HUE			
			CAPEX	OPEX	NPV	CAPEX BS	CAPEX AS	Annual OPEX Council	Annual OPEX Property Owner
			$M	$M	$M	$	$	$	$
CB-3	On-site urine separating toilets	-Urine separating toilets -Existing or new septic tanks -Existing or new ground soakage area							
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							
ONSITE 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							

Option		Option Components	Indicative Costs						
						Per HUE			
			CAPEX	OPEX	NPV	CAPEX BS	CAPEX AS	Annual OPEX Council	Annual OPEX Property Owner
			$M	$M	$M	$	$	$	$
OFF-SET MITIGATION OPTIONS									
CB-2	Buy and Decommission a Farm	-Purchase existing farm in area -Decommission farm to offset nutrient loading							
CB-7	Stop using Phosphate in Household Detergents	-Depends on the sewerage scheme selected							
MIX AND MATCH									
0	Combining elements of Craig Brown Options 1-	0							