Options	Components of options	DRP	Part-P	MEAN Total-P t/yr	MEAN TN t/yr	t N /yr reduced	CAPEX	$/kg N reduced	*Comments*
New - IN-catchment	New LTS (could be other crops etc),any WWTP upgrade requirements not included in cost			**3**	**30**	18	40	2222	
WWTP Minimum upgrade + Cleanwater 1	WWTP upgrade: FB + UV + DRP + C-bed + wetland + re-entry	<3	?	**3**	**35**	13	29	1731	*Incorporates all components proposed at the cleanwater symposium. Potential issues with bacteria and particulates from the wetland*
WWTP minimum upgrade + filtration	WWTP upgrade: FB + UV + DRP + filtration + re-entry	<3	<1	**3**	**40**	8	19.5	1625	*Likely minimum + filtration to reduce particulate fractions*
WWTP minimum upgrade + indigitech	WWTP upgrade: FB + UV + Indigitech + re-entry						?	1625	*Likely minimum + filtration to reduce particulate fractions*
WWTP minimum upgrade + Cleanwater 2	WWTP upgrade: FB + UV + DRP + De-nitrifiction filter + re-entry	<3	<1	**3**	**35**	13	20	1038	*Modification of above to reduce cost and achieve same quality in the discharge*
New - OUT catchment	New LTS out of catchment, eg to farm in Reporoa, any WWTP upgrade requirements not included in cost			**0**	**0**	48	40	833	*BOPRC might contribute $12M*
ex-LTS + Best for Lake	WWTP upgrade: FB + UV + DRP + bypass-lake (pipe to lower end of catchment) + re-entry (eg 10% to lake)	<1	<1	**1**	**4.8**	43	20	313	
ex-LTS	WWTP upgrade: FB, UV, DRP, + re-entry	<3	7	**10**	**48**	0	6.5		*Likely minimum requirements for exiting LTS. Dissolved-P removed but some residual particulate-P in the discharge*
Dual discharge	WWTP upgrade: FB + UV (MBR) + DRP (MBR) + MBR-re-entry and Bardenpho continue to LTS)			**3**	**30**	21	6.5	310	
Treated water back to homes for non-potable use	WWTP upgrade: FB + UV (MBR) + DRP (MBR) + MBR-to non-potable doemstic use and Bardenpho continue to LTS)								
Algae	WWTP upgrade: FB + UV + grow algae to scavenge rest of nutrients + filtration								*trialed growing algae in WWTP discharge water unsuccessfully*
Geothermal aquifer	WWTP upgrade: FB + UV + DRP + discharge to below-ground aquifer								
zeolite	Partital option for inclusion to remove ammonia or modified-zeolite to remove DRP								*Not advantageous for reducing N in the dicsharge as virtually no NH4 in the discharge.*
struvite	Partial option that could be included in WWTP to remove some ammonia and DRP								*these fractions will be targeted by Terax*
MicroV									
Amminox									

FB	Flow-balancing
UV	Pathogen kill by UV treatment
DRP	DRP removal by flocculation
Re-entry	Ecosystem re-entry arrangement (eg pipe to diffusers; gabion; rock passage etc)