

## Modelling Guideline -Supporting Document 1. -Design Boundary Conditions for Pipes, streams, creeks and rivers in the Bay of Plenty

All levels are in Moutiki Vertical Datum (MVD) 1953. Off set of 0.13m have to be added to convert to MVD 2020.

For streams, creeks, pipes use Wave Set up values (WS) as maximum design water level.

For rivers use Storm Tide as maximum design water level.

District	Location (as per Coastal Calculator)	Beach Gradient (Storm)	Beach material	AEP(%) ARI(yrs)	Wave Setup (WS) and Storm Tide ( Moturiki 53)																			
					WS	Storm Tide	WS	Storm Tide	WS	Storm Tide	WS	Storm Tide	WS	Storm Tide	WS	Storm Tide	WS	Storm Tide	WS	Storm Tide	WS	Storm Tide	WS	Storm Tide
					63		39		18		10		5		2		1		0.5		0.2			
1		2		5		10		20		50		100		200		500								
WBOPDC	Waihi Beach	0.181	sandy		2.02	1.19	2.15	1.22	2.32	1.28	2.46	1.35	2.61	1.45	2.9	1.68	3.23	1.91	3.54	2.16	3.91	2.3		
WBOPDC	Bowtown	0.16	sandy		2.24	1.19	2.05	1.22	2.24	1.28	2.4	1.35	2.55	1.45	2.84	1.68	3.16	1.94	3.5	2.16	3.92	2.28		
TCC	Mt Maunganui	0.171	sandy		2.02	1.19	2.22	1.22	2.48	1.28	2.69	1.35	2.91	1.45	3.19	1.68	3.41	1.94	3.85	2.14	4.47	2.3		
TCC	Papamoia	0.123	sandy		1.7	1.19	1.87	1.22	2.08	1.28	2.25	1.35	2.43	1.45	2.68	1.68	3.02	1.93	3.39	2.16	3.87	2.28		
TCC	Te Tumu	0.17	sandy		2.02	1.19	2.21	1.22	2.48	1.29	2.69	1.35	2.91	1.46	3.19	1.69	3.46	1.94	3.89	2.21	4.56	2.35		
WBOPDC	Maketu Estuary	0.221	sandy		2.39	1.19	2.64	1.22	2.97	1.29	3.24	1.35	3.51	1.46	3.84	1.69	4.11	1.96	4.49	2.21	5.32	2.35		
WBOPDC	Pukehina	0.145	sandy		1.84	1.19	2.02	1.22	2.25	1.29	2.43	1.35	2.62	1.46	2.89	1.7	3.15	1.96	3.5	2.21	4.19	2.35		
WBOPDC	Otamarakau	0.143	sandy		1.83	1.19	2.01	1.22	2.24	1.28	2.42	1.33	2.62	1.42	2.89	1.64	3.14	1.88	3.52	2.12	4.07	2.37		
WDC	Matata	0.183	sandy		2.13	1.19	2.36	1.23	2.65	1.29	2.89	1.36	3.13	1.47	3.44	1.72	3.69	2	4.14	2.31	4.92	2.5		
WDC	Tarawera River Mouth	0.189	sandy		2.17	1.19	2.41	1.23	2.71	1.29	2.96	1.36	3.2	1.47	3.51	1.72	3.76	1.99	4.21	2.31	5.02	2.5		
WDC	Rangitaiiki river Mouth	0.173	sandy		2.04	1.19	2.24	1.22	2.5	1.29	2.71	1.36	2.67	1.48	3.22	1.73	3.47	2.03	3.97	2.37	4.66	2.55		
WDC	Whakatane River Mout	0.241	sandy		2.49	1.19	2.73	1.23	3.04	1.29	3.3	1.36	3.56	1.48	3.89	1.74	4.13	2.05	4.58	2.41	5.39	2.61		
WDC	Ohope-Mareatotara	0.052	sandy		1.69	1.19	1.8	1.23	1.99	1.29	2.13	1.36	2.29	1.48	2.64	1.74	2.99	2.04	3.37	2.39	3.86	2.61		
ODC-WDC	Ohiva Harbour Entrance	0.106	sandy		1.62	1.19	1.71	1.23	1.88	1.29	2.01	1.37	2.17	1.49	2.52	1.76	2.87	2.06	3.27	2.41	3.7	2.69		
ODC	Waiotahi River Mouth	0.12	sandy		1.69	1.19	1.8	1.23	1.98	1.29	2.11	1.37	2.27	1.49	2.62	1.75	2.99	2.06	3.39	2.41	3.85	2.69		
ODC	Opotiki	0.124	sandy		1.7	1.19	1.82	1.23	1.99	1.29	2.12	1.37	2.3	1.49	2.65	1.76	3.03	2.08	3.42	2.44	3.91	2.73		
ODC	Tirohanga Beach	0.131	sandy		1.74	1.19	1.86	1.23	2.04	1.29	2.18	1.37	2.35	1.49	2.7	1.77	3.09	2.09	3.48	2.45	3.91	2.73		
ODC	Hawai (Torerere)*	0.215	mixed gravel		2.28	1.19	2.47	1.23	2.75	1.29	2.96	1.37	3.18	1.49	3.46	1.77	3.82	2.08	4.27	2.44	4.96	2.7		
ODC	Te Kaha(Omaio)*	0.18	mixed gravel		2.13	1.19	2.36	1.23	2.66	1.29	2.9	1.37	3.17	1.49	3.49	1.76	3.75	2.08	4.24	2.44	5.06	2.63		
ODC	Papatea*	0.11	mixed gravel		1.65	1.19	1.83	1.23	2.05	1.29	2.25	1.37	2.45	1.49	2.73	1.77	3.16	2.08	3.58	2.41	4.16	2.54		
ODC	Whangaparaoa Bay*	0.1	mixed gravel		1.58	1.19	1.75	1.23	1.98	1.29	2.15	1.37	2.34	1.49	2.64	1.76	3.07	2.08	3.48	2.39	4.01	2.53		

\* estimated beach gradient