

Appendix 4

Wastewater Calculations

Project:	Beachlands	Date	8/06/2026
Project No:	A2515591.00	Completed by	
Office / Region:	Auckland	Approved By	

Factors

Watercare WW CoP Section 5.3.5.1

ADWF l/p/d	180
Self Cleansing Peak Factor SCPF	3
Peak Design Flow PDF	6.7
People/dwelling	3
Pipe Coeff. k, mm	1.5

Input Output Not Applicable

CATCHMENT	SUB-CATCHMENT	TYPE	NAME	STOREY	NUMBER OF LOTS/UNIT	DESIGN OCCUPANCY	FUTURE INTENSIFICATION FACTOR	DESIGN POPULATION	SELF CLEANSING PEAK FACTOR (SCPF)	PEAK DESIGN FLOW (PDF)	DESIGN ADWF (L/s)	PDWF (Q) =ADWFx SCPF	PWWF (QPWF) =ADWFx PDF
A	A-1	STAND-ALONE		1	24	3	1.5	108	3	6.7	0.2	0.7	1.5
	A-2	STAND-ALONE		1	2	3	1.5	9	3	6.7	0.0	0.1	0.1
		TERRACE		1	16	3	1	48	3	6.7	0.1	0.3	0.7
	A-3	STAND-ALONE		1	11	3	1.5	50	3	6.7	0.1	0.3	0.7
		TERRACE		1	12	3	1	36	3	6.7	0.1	0.2	0.5
	A-4	STAND-ALONE		1	28	3	1.5	126	3	6.7	0.3	0.8	1.8
	A-5	APARTMENT	MP3-A,3-B	6	48	3	1	144	3	5	0.3	0.9	1.5
	A-5A	STAND-ALONE		1	1	3	1.5	5	3	6.7	0.0	0.0	0.1
		TERRACE		5	1	3	1	3	3	5	0.0	0.0	0.0
	A-6	APARTMENT	MP8-A,B,C	3	54	3	1	162	3	6.7	0.3	1.0	2.3
	A-6A	STAND-ALONE		1	3	3	1.5	14	3	6.7	0.0	0.1	0.2
		TERRACE		1	7	3	1	21	3	6.7	0.0	0.1	0.3
	A-7	STAND-ALONE		1	9	3	1.5	41	3	6.7	0.1	0.3	0.6
		TERRACE		1	19	3	1	57	3	6.7	0.1	0.4	0.8
	A-8	APARTMENT	MP16-A,B	6	48	3	1	144	3	5	0.3	0.9	1.5
	A-8A	STAND-ALONE	7	1	7	3	1.5	32	3	6.7	0.1	0.2	0.4
		TERRACE	14	1	14	3	1	42	3	6.7	0.1	0.3	0.6
B	A-9	STAND-ALONE		1	14	3	1.5	63	3	6.7	0.1	0.4	0.9
		TERRACE		1	23	3	1	69	3	6.7	0.1	0.4	1.0
	A-10	STAND-ALONE		1	17	3	1.5	77	3	6.7	0.2	0.5	1.1
		TERRACE		1	22	3	1	66	3	6.7	0.1	0.4	0.9
	A-11	APARTMENT	MP26-A	6	19	3	1	57	3	5	0.1	0.4	0.6
	B-1	STAND-ALONE		1	9	3	1.5	41	3	6.7	0.1	0.3	0.6
		TERRACE		1	9	3	1	27	3	6.7	0.1	0.2	0.4
	B-1A	APARTMENT	MP15-A	6	36	3	1	108	3	5	0.2	0.7	1.1
C	B-1B	APARTMENT	MP24-A	6	36	3	1	108	3	5	0.2	0.7	1.1
	B-2	STAND-ALONE		1	27	3	1.5	122	3	6.7	0.3	0.8	1.7
		TERRACE		1	10	3	1	30	3	6.7	0.1	0.2	0.4
	B-2A	APARTMENT	MP25-A,B	6	48	3	1	144	3	5	0.3	0.9	1.5
	C-1	APARTMENTS	C9-A,B	6	72	3	1	216	3	5	0.5	1.4	2.3
	C-2	STAND-ALONE		1	28	3	1.5	126	3	6.7	0.3	0.8	1.8
	C-3	STAND-ALONE		1	24	3	1.5	108	3	6.7	0.2	0.7	1.5
	C-4	STAND-ALONE		1	34	3	1.5	153	3	6.7	0.3	1.0	2.1
	C-5	STAND-ALONE		1	40	3	1.5	180	3	6.7	0.4	1.1	2.5
	C-6	STAND-ALONE		1	12	3	1.5	54	3	6.7	0.1	0.3	0.8
		TERRACE		1	10	3	1	30	3	6.7	0.1	0.2	0.4
	C-6A	APARTMENTS	C5-A,B,C	6	72	3	1	216	3	5	0.5	1.4	2.3
	C-7	STAND-ALONE		1	1	3	1.5	5	3	6.7	0.0	0.0	0.1
		TERRACE		1	5	3	1	15	3	6.7	0.0	0.1	0.2
	C-7A	APARTMENT	C7-A	6	36	3	1	108	3	5	0.2	0.7	1.1
	C-8	STAND-ALONE		1	13	3	1.5	59	3	6.7	0.1	0.4	0.8
	C-9	STAND-ALONE		1	21	3	1.5	95	3	6.7	0.2	0.6	1.3
	C-10	STAND-ALONE		1	22	3	1.5	99	3	6.7	0.2	0.6	1.4
	C-11	STAND-ALONE		1	11	3	1.5	50	3	6.7	0.1	0.3	0.7
	C-12	STAND-ALONE		1	24	3	1.5	108	3	6.7	0.2	0.7	1.5
	C-13	STAND-ALONE		1	14	3	1.5	63	3	6.7	0.1	0.4	0.9
	C-14	STAND-ALONE		1	13	3	1.5	59	3	6.7	0.1	0.4	0.8
	C-15	STAND-ALONE		1	13	3	1.5	59	3	6.7	0.1	0.4	0.8
	C-16	STAND-ALONE		1	12	3	1.5	54	3	6.7	0.1	0.3	0.8
	C-17	STAND-ALONE		1	12	3	1.5	54	3	6.7	0.1	0.3	0.8
	C-18	STAND-ALONE		1	23	3	1.5	104	3	6.7	0.2	0.6	1.4
	C-19	STAND-ALONE		1	11	3	1.5	50	3	6.7	0.1	0.3	0.7
	C-20	STAND-ALONE		1	23	3	1.5	104	3	6.7	0.2	0.6	1.4
	C-21	STAND-ALONE		1	36	3	1.5	162	3	6.7	0.3	1.0	2.3

D	D-1	STAND-ALONE		1	10	3	1.5	45	3	6.7	0.1	0.3	0.6
	D-2	TERRACE		1	22	3	1	66	3	6.7	0.1	0.4	0.9
	D-3	STAND-ALONE		1	33	3	1.5	149	3	6.7	0.3	0.9	2.1
	D-2A	PRIMARY SCHOOL	CM8		500	15	1		2	6.7	0.1	0.2	0.6
	D-2B	SECONDARY SCHOOL			1500	20	1		2	6.7	0.3	0.7	2.3
	D2-A, D2-B	STAFF (combined)			142	45	1		2	6.7	0.1	0.1	0.5
E	E-1	STAND-ALONE		1	34	3	1.5	153	3	6.7	0.3	1.0	2.1
	E-2	STAND-ALONE		1	11	3	1.5	50	3	6.7	0.1	0.3	0.7
	E-3	STAND-ALONE		1	38	3	1.5	171	3	6.7	0.4	1.1	2.4
	E-4	STAND-ALONE		1	3	3	1.5	14	3	6.7	0.0	0.1	0.2
	E-5	STAND-ALONE		1	9	3	1.5	41	3	6.7	0.1	0.3	0.6
	E-6	STAND-ALONE		1	21	3	1.5	95	3	6.7	0.2	0.6	1.3
	E-7	TERRACE		1	16	3	1	48	3	6.7	0.1	0.3	0.7
F	F-1	STAND-ALONE		1	54	3	1.5	243	3	6.7	0.5	1.5	3.4
G	G-1	STAND-ALONE		1	21	3	1.5	95	3	6.7	0.2	0.6	1.3
		TERRACE		1	5	3	1	15	3	6.7	0.0	0.1	0.2
	G-1A	APARTMENT	C1-A	12	21	3	1	63	3	5	0.1	0.4	0.7
H	H-1	STAND-ALONE		1	12	3	1.5	54	3	6.7	0.1	0.3	0.8
		TERRACE		1	8	3	1	24	3	6.7	0.1	0.2	0.3
	H-2	APARTMENT	MP-1A, MP13-A,B	6	72	3	1	216	3	5	0.5	1.4	2.3
I	I-1	VC3 APARTMENTS	VC3-A	3	12	3	1	36	3	6.7	0.1	0.2	0.5
			VC3-B	3	17	3	1	51	3	6.7	0.1	0.3	0.7
			VC3-C	5	44	3	1	132	3	5	0.3	0.8	1.4
	I-2	VC4 APARTMENTS	VC4-A	4	27	3	1	81	3	5	0.2	0.5	0.8
			VC4-B	6	11	3	1	33	3	5	0.1	0.2	0.3
			VC4-C	7	52	3	1	156	3	5	0.3	1.0	1.6
			VC4-D	6	20	3	1	60	3	5	0.1	0.4	0.6
			VC4-E	4	29	3	1	87	3	5	0.2	0.5	0.9
	I-3	VC1 APARTMENTS	VC1-A	7	42	3	1	126	3	5	0.3	0.8	1.3
			VC1-B	3	12	3	1	36	3	6.7	0.1	0.2	0.5
	I-5	CM3 APARTMENTS	CM3-A	4	71	3	1	213	3	5	0.4	1.3	2.2
			CM3-B	3	12	3	1	36	3	6.7	0.1	0.2	0.5
			CM3-C	3	24	3	1	72	3	6.7	0.2	0.5	1.0
	I-6	STAND-ALONE	CM4	1	27	3	1.5	122	3	6.7	0.3	0.8	1.7
		TERRACE		1	38	3	1	114	3	6.7	0.2	0.7	1.6
	I-7	HOTEL GUEST	CM6		150	180	1		3	6.7	0.3	0.9	2.1
		HOTEL STAFF	CM6		50	45	1		3	6.7	0.0	0.1	0.2

Commercial

Type	Catchment	Name	Net floor area (m2)	No. of people/net floor area	Design Wastewater Flow Allowance (L/m2/d)	Design ADWF	Self Cleansing Design Flow	Peak Design Flow (L/s)
Wet Retail	I-3	VC1-A	1268	-	15	0.22	0.44	1.5
	I-4	VC2-A	624	-	15	0.11	0.22	0.7
	I-4	VC2-B	646	-	15	0.11	0.22	0.8
	I-3	VC1-A	6747	135	65	0.10	0.20	25.4
Dry Retail	I-4	VC2-B	495	10	65	0.01	0.01	1.9
	I-3	VC1-A	2818	188	65	0.14	0.28	0.0
ce Buildings and Dry R	I-4	VC2-B	654	44	65	0.03	0.07	0.0

	Catchment	Area (m2)	Routine Peak Daily Discharge (L/m2/d)	Design Routine Peak Flow (L/s)	Self-Cleansing Design Flow	Peak Design Flow	Self Cleansing Design Flow (L/s)	Peak Design Flow (L/s)
Dry Industry - light wa	E-E-8	49583.96	4.5	2.6	5	6.7	12.9	17.3
INDUSTRIAL AREA								

Catchment	Total Peak Flow (L/s)
A	17.9
B	6.8
C	30.6
D	7.0
E	25.3
F	3.4
G	2.2
H	3.3
I	48.2

Table 5.1.3 Commercial - dry retail, office and wet retail design wastewater flow allowance and peaking factors

Commercial activity type	Design wastewater flow allowance	Design wastewater peaking factors	
		Peaking factor: Self-Cleansing Design Flow (Normal PDWF)	Peaking factor: Peak Design Flow (PDWF or Exceptional PDWF)
Dry retail (Note 1) (where kitchen/toilets are not normally made available to customers)	1 person per 50m ² net floor area at 65 litres per person per day.	2.0	5.0
Office buildings and dry retail where toilet facilities, etc. are provided to customers.	1 person per 15m ² net floor area at 65 litres per person per day.	2.0	5.0
Wet retail (Note 2): Food and or beverage retail/preparation e.g. coffee shop, restaurant, bar, butcher, fresh fruit and vegetable retail.	15 litres per day per net m ² of floor area (including kitchen and dining areas).	2.0	6.7