

Riebeeck Wes Distribution System - Input Variables for Water Requirement Model								
Parameter / Variable	Year	Income Categorization				Com. & Ind. ^(D)	Other ^(E)	Total
		HI	MI	LI	Sub- Total			
Units are presented in brackets with the "Parameter Description" - First Column								
Population ^(A)	2016	2214	3262	687	6163			
	2021	2385	3781	2081	8247			
	2026	2569	4384	4084	11036			
	2031	2767	5082	6920	14769			
	2036	2981	5891	10891	19764			
	2041	3212	6830	16407	26449			
Growth (%/year)		Growth in Population				Growth in Demand		
	2016-2021	1.50%	3.00%	24.81%	6.00%	4%	2%	
	2021-2026	1.50%	3.00%	14.44%	6.00%	4%	2%	
	2026-2031	1.50%	3.00%	11.12%	6.00%	4%	2%	
	2031-2036	1.50%	3.00%	9.50%	6.00%	4%	2%	
2036-2041	1.50%	3.00%	8.54%	6.00%	4%	2%		
Unit Demand (l/c/d) ^(B)	2016	65.0	50.0	40.0	-	-	-	-
Average Annual Daily Water Requirement (Kl/d - NRW Excluded)	2016	144	163	27		61	27	422
	2021	155	189	83		75	29	531
	2026	167	219	163		91	32	673
	2031	180	254	277		110	36	857
	2036	194	295	436		134	40	1098
	2041	209	341	656		163	44	1414
NRW (%) ^(C)	2016	6.7	6.7	6.7		6.7	6.7	
	2021	10.0	10.0	10.0		10.0	10.0	
	2026	10.0	10.0	10.0		10.0	10.0	
	2031	10.0	10.0	10.0		10.0	10.0	
	2036	10.0	10.0	10.0		10.0	10.0	
	2041	10.0	10.0	10.0		10.0	10.0	
Average Annual Daily Water Requirement (Kl/d)	2016	154	175	29		66	29	453
	2021	172	210	92		83	33	590
	2026	186	244	181		101	36	747
	2031	200	282	308		123	40	952
	2036	215	327	484		149	44	1220
	2041	232	379	729		182	48	1571
Average Peak Month Daily Water Requirement (Kl/d)	2016	233	264	44		99	43	684
	2021	260	317	140		125	49	891
	2026	280	368	274		152	54	1129
	2031	302	426	464		185	60	1438
	2036	325	494	731		225	66	1842
	2041	350	573	1101		274	73	2372
Peak Day Water Requirement (Kl/d)	2016	291	330	56		124	54	854
	2021	325	397	175		156	62	1114
	2026	350	460	343		190	68	1411
	2031	377	533	580		232	75	1797
	2036	406	618	914		282	83	2302
	2041	438	716	1376		343	92	2965
Total Annual Water Requirement (Kl/year)	2016	56289	63803	10752		23981	10406	165232
	2021	62862	76677	33756		30247	11911	215453
	2026	67720	88890	66245		36800	13150	272805
	2031	72954	103048	112250		44772	14519	347544
	2036	78592	119461	176684		54473	16030	445240
	2041	84666	138488	266165		66274	17698	573292
Peak Month Factor ^(F)	1.51							
Peak Day Factor ^(G)	1.25							

Notes :

→ TO USE THIS SHEET, FILL IN THE VARIABLES IN THE SHADED BLOCKS ABOVE

References:

(A) - Total population based on Census 2011 data. Future estimated growth agreed with Municipality in January 2014.

(B) - Residential unit demands estimated.

(C) - Non Revenue Water (NRW): Calculated NRW from July 2016 to June 2017. No estimated further reduction in NRW over the next five years.

(D) - Commercial and Industrial: Calculated from Billed Metered Consumption data for the period July 2016 to June 2017. Average 61.3 k/d.

(E) - Others: Calculated from Billed Metered Consumption data for the period July 2016 to June 2017. Average 26.6 k/d.

(F) - Peak Month Factor: Maximum value calculated from July 2012 to June 2017 data.

(G) - Peak Day Factor : Estimated

Riebeeck Wes Distribution System Projected Water Requirement (Kl/a)								
Year *	Measured Potable Water Requirement (System Input Volume)	Projected Water Requirement from model	Other Projections					Annual WWTW Flows (Estimated from Billed Metered Consumption Data)
			2% Annual growth on 2016/2017 Water Requirement	4% Annual growth on 2016/2017 Water Requirement	DWS's Reconciliation Strategy (February 2016)			
					Low	Medium	High	
2001	103,715							
2002	131,151							
2003	148,353							94,875
2004	132,657							82,862
2005	155,286							85,751
2006	167,235							88,514
2007	157,435							101,463
2008	166,745							101,611
2009	186,984							101,556
2010	214,216							111,304
2011	188,371							116,687
2012	186,744							113,085
2013	184,210							132,756
2014	209,227							126,772
2015	189,440							108,615
2016	165,162	165,232	165,162	165,162	209,000	209,000	209,000	105,971
2021		215,453	182,352	200,945	289,800	299,000	308,200	
2026		272,805	201,332	244,480	379,000	400,200	422,000	
2031		347,544	222,286	297,447	500,100	540,700	585,200	
2036		445,240	245,422	361,890	665,600	739,200	821,200	
2041		573,292	270,966	440,295				

Notes: (*) The years in the above table refer to the Municipal Financial Years and is for the period July till June the following year. The measured demand for 2016 is therefore from July 2016 up to June 2017.

RIEBEEK WES - TOTAL ANNUAL WATER REQUIREMENT (Kl/a)
Includes Measured Water Requirement, WSDP Projected Requirement, DWS's Reconciliation Strategy projections and the annual WWTW flows

