

Riebeeck Wes Distribution System - Input Variables for Water Requirement Model								
Parameter / Variable	Year	Income Categorization				Com. & Ind. (D)	Other(E)	Total
		High Income	Middle Income	Low Income	Sub- Total			
Units are presented in brackets with the "Parameter Description" - First Column								
Population(A)	2020	2795	4118	867	7780	-	-	-
	2025	3011	4774	2627	10411			
	2030	3243	5534	5155	13933			
	2035	3494	6416	8736	18645			
	2040	3764	7438	13750	24952			
	2045	4055	8622	20714	33391			
Growth (%/year)	Growth in Population					Growth in Demand		
	2020-2025	1.50%	3.00%	24.81%	6.00%	4%	2%	
	2025-2030	1.50%	3.00%	14.44%	6.00%	4%	2%	
	2030-2035	1.50%	3.00%	11.12%	6.00%	4%	2%	
	2035-2040	1.50%	3.00%	9.50%	6.00%	4%	2%	
	2040-2045	1.50%	3.00%	8.54%	6.00%	4%	2%	
Unit Demand (l/c/d)(B)	2020	65.0	30.0	25.0	-	-	-	-
Average Annual Daily Water Requirement (Kl/d - NRW Excluded)	2020	182	124	22	-	41	30	397
	2025	196	143	66	-	50	33	487
	2030	211	166	129	-	61	36	602
	2035	227	192	218	-	74	40	752
	2040	245	223	344	-	90	44	945
	2045	264	259	518	-	109	49	1198
NRW (%) (C)	2020	15.5	15.5	15.5	-	15.5	15.5	-
	2025	12.5	12.5	12.5	-	12.5	12.5	-
	2030	11.9	11.9	11.9	-	11.9	11.9	-
	2035	11.3	11.3	11.3	-	11.3	11.3	-
	2040	10.6	10.6	10.6	-	10.6	10.6	-
	2045	10.0	10.0	10.0	-	10.0	10.0	-
Average Annual Daily Water Requirement (Kl/d)	2020	215	146	26	-	49	35	470
	2025	224	164	75	-	57	37	557
	2030	239	188	146	-	69	41	684
	2035	256	217	246	-	83	45	847
	2040	274	250	385	-	101	49	1058
	2045	293	287	575	-	121	54	1331
Average Peak Month Daily Water Requirement (Kl/d)	2020	277	189	33	-	63	45	607
	2025	288	211	97	-	74	48	718
	2030	309	243	189	-	89	53	882
	2035	330	280	317	-	107	58	1093
	2040	353	322	496	-	130	63	1364
	2045	378	371	742	-	157	70	1717
Peak Day Water Requirement (Kl/d)	2020	347	236	41	-	78	56	758
	2025	361	264	121	-	92	60	898
	2030	386	304	236	-	111	66	1102
	2035	413	350	397	-	134	72	1366
	2040	441	403	620	-	162	79	1706
	2045	472	463	928	-	196	87	2146
Total Annual Water Requirement (Kl/year)	2020	78464	53363	9368	-	17710	12786	171690
	2025	81629	59742	27396	-	20808	13633	203208
	2030	87314	68766	53382	-	25137	14945	249544
	2035	93400	79157	89819	-	30367	16384	309127
	2040	99915	91123	140387	-	36688	17963	386076
	2045	106889	104903	210017	-	44327	19695	485831
Peak Month Factor(F)	1.29							
Peak Day Factor(G)	1.25							

Notes :



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References:

- (A) - Projected population for 2020/2021 is based on the Census 2011 data and the estimated future population growth, as agreed with Municipality during January 2014.
- (B) - Residential unit demands estimated.
- (C) - Non Revenue Water (NRW): Calculated NRW from July 2020 to June 2021. Estimated 3.0% reduction in NRW over the next five years.
- (D) - Commercial and Industrial: Calculated from Billed Metered Consumption data for the period July 2020 to June 2021. Average 41 kl/d.
- (E) - Others: Calculated from Billed Metered Consumption data for the period July 2020 to June 2021. Average 29.6 kl/d.
- (F) - Peak Month Factor: Maximum value calculated from July 2016 to June 2021 data.
- (G) - Peak Day Factor : Estimated

Year *	Measured Potable Water Requirement (System Input Volume)	Projected Water Requirement from model	Riebeeck Wes Distribution System Projected Water Requirement (Kl/a)					Wastewater Flow Annual Wastewater Flows (Estimated from Billed Metered Consumption Data)
			Other Projections			DWS's Reconciliation Strategy (March 2016)		
			2% Annual growth on 2020/2021 Water Requirement	4% Annual growth on 2020/2021 Water Requirement	Low	Medium	High	
1995	111 087							
1996	117 579							
1997	126 563							
1998	171 100							
1999	175 863							
2000	145 872							
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	186 384							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	166 162				209 000	209 000	209 000	105 971
2017	127 127							72 661
2018	140 524							80 676
2019	157 908							93 477
2020	171 006	171 690	171 006	171 006				99 427
2025		203 208	188 804	208 055	357 000	375 000	393 000	
2030		249 544	208 455	253 131	467 000	501 000	538 000	
2035		309 127	230 152	307 972	632 500	699 500	774 000	
2040		386 076	254 106	374 695	798 000	898 000	1 010 000	
2045		485 831	280 553	455 874				

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 2020 is therefore from July 2020 up to June 2021.

