

Riebeek 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)	2019	2636	3885	818	7340	-	-	-
	2024	2840	4504	2478	9822			
	2029	3060	5221	4864	13144			
	2034	3296	6053	8241	17590			
	2039	3551	7017	12972	23539			
	2044	3825	8134	19542	31501			
Growth (%/year)		Growth in Population				Growth in Demand		
	2019-2024	1.50%	3.00%	24.81%	6.00%	4%	2%	
	2024-2029	1.50%	3.00%	14.44%	6.00%	4%	2%	
	2029-2034	1.50%	3.00%	11.12%	6.00%	4%	2%	
	2034-2039	1.50%	3.00%	9.50%	6.00%	4%	2%	
	2039-2044	1.50%	3.00%	8.54%	6.00%	4%	2%	
Unit Demand (l/c/d) ^(B)	2019	65.0	30.0	20.0	-	-	-	-
Average Annual Daily Water Requirement (KI/d - NRW Excluded)	2019	171	117	16		61	27	392
	2024	185	135	50		74	30	473
	2029	199	157	97		90	33	576
	2034	214	182	165		110	36	707
	2039	231	210	259		134	40	875
	2044	249	244	391		163	44	1090
NRW (%) ^(C)	2019	14.0	14.0	14.0		14.0	14.0	
	2024	10.0	10.0	10.0		10.0	10.0	
	2029	10.0	10.0	10.0		10.0	10.0	
	2034	10.0	10.0	10.0		10.0	10.0	
	2039	10.0	10.0	10.0		10.0	10.0	
	2044	10.0	10.0	10.0		10.0	10.0	
Average Annual Daily Water Requirement (KI/d)	2019	199	136	19		71	31	456
	2024	205	150	55		82	33	526
	2029	221	174	108		100	37	640
	2034	238	202	183		122	40	785
	2039	256	234	288		149	45	972
	2044	276	271	434		181	49	1212
Average Peak Month Daily Water Requirement (KI/d)	2019	257	175	25		92	41	588
	2024	265	194	71		106	43	678
	2029	285	225	139		129	47	826
	2034	307	260	236		157	52	1013
	2039	331	302	372		192	58	1253
	2044	356	350	560		233	63	1563
Peak Day Water Requirement (KI/d)	2019	321	219	31		114	51	736
	2024	331	242	89		133	53	848
	2029	356	281	174		162	59	1032
	2034	384	325	295		197	65	1266
	2039	414	377	465		239	72	1567
	2044	445	437	700		291	79	1954
Total Annual Water Requirement (KI/year)	2019	72731	49465	6947		25890	11459	166491
	2024	74870	54794	20102		30099	12090	191955
	2029	80656	63522	39449		36620	13348	233595
	2034	86889	73639	66846		44553	14737	286665
	2039	93605	85368	105217		54206	16271	354666
	2044	100839	98965	158504		65950	17965	442222
Peak Month Factor ^(F)	1.29							
Peak Day Factor ^(G)	1.25							

Notes :

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

References:

- (A) - Projected population for 2019/2020 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 2019 to June 2020. Estimated 4.0% 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 kl/d.
- (E) - Others: Calculated from Billed Metered Consumption data for the period July 2016 to June 2017. Average 27 kl/d.
- (F) - Peak Month Factor: Maximum value calculated from July 2015 to June 2020 data.
- (G) - Peak Day Factor : Estimated

Year *	Measured Potable Water Requirement (System Input Volume)	Projected Water Requirement from model	Other Projections					Wastewater Flow Annual Wastewater 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 (March 2016)			
					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	165 162				209 000	209 000	209 000	105 971
2017	127 127							72 661
2018	140 524							80 676
2019	157 908	166 491	165 162	165 162				93 477
2024		191 955	182 352	200 945	340 200	356 000	371 800	
2029		233 595	201 332	244 480	445 000	475 800	509 000	
2034		286 665	222 286	297 447	599 400	659 800	726 800	
2039		354 666	245 422	361 890	764 900	858 300	962 800	
2044		442 222	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 2019 is therefore from July 2019 up to June 2020.

