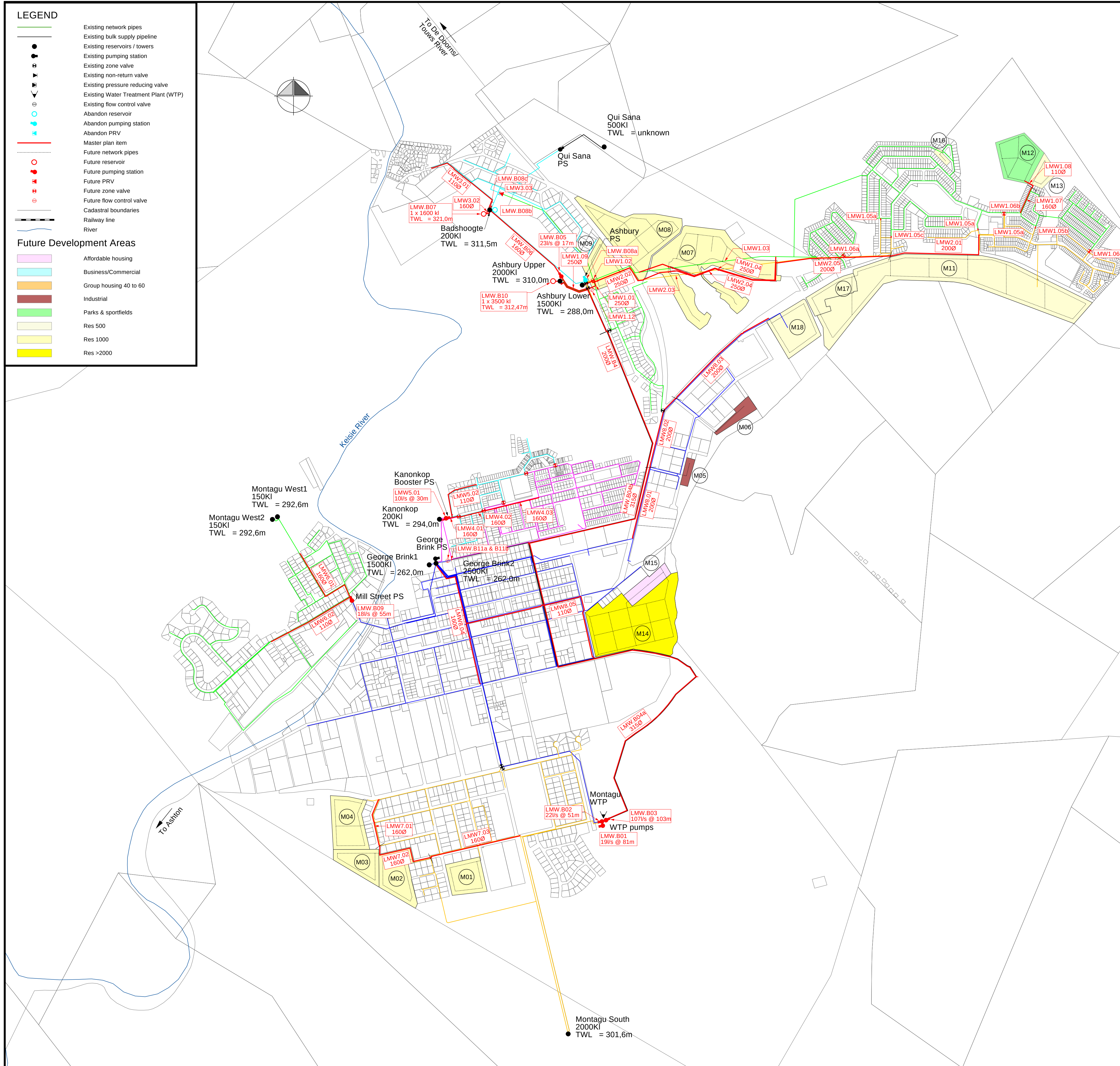




COST ESTIMATES AND PHASING OF THE REQUIRED WORKS						
Item No.	Description	Estimated cost + (R-yr 2011 value)	Item Phasing	Related Phasing	Comments	Project no.
Montagu						
Distribution System Items						
LMW1.01	75 m x 250 mm Ø Pipe to install	95 200	2012		Required to implement Ashbury Upper zone.	PR3-LMW001
LMW1.02	1 x 200 mm Ø Valve to insert and close	71 200	2012		Required to isolate Ashbury Lower and Upper zones.	PR3-LMW003
LMW1.03	1 x 200 mm Ø Pipe to abandon		2012		Abandon existing 200 mm Ø pipe.	PR3-LMW003
LMW1.04	800 m x 250 mm Ø Pipe to install	779 800	2012		Replace 300 mm Ø and replace with 250 mm Ø.	PR3-LMW003
LMW1.05a	2 x 75 mm Ø Valve to close (including Multiple Open/Closed Valves)		2015		Required to isolate Ashbury Lower and Upper zones.	PR3-LMW003
LMW1.05b	1 x 160 mm Ø Valve to close		2015		Required to isolate Ashbury Lower and Upper zones.	PR3-LMW003
LMW1.05c	1 x 200 mm Ø Valve to close		2015		Required to isolate Ashbury Lower and Upper zones.	PR3-LMW003
LMW1.05d	1 x 200 mm Ø Valve to insert and close	71 400	2015		Required to isolate Ashbury Lower and Upper zones.	PR3-LMW003
LMW1.06	1 x 160 mm Ø Valve to insert and close	67 200	2015		Required to isolate Ashbury Lower and Upper zones.	PR3-LMW003
LMW1.06a	1 x 110 mm Ø Valve to insert and close	61 200	2015		Required to isolate Ashbury Lower and Upper zones.	PR3-LMW003
LMW1.07	145 m x 160 mm Ø Pipe to install	95 200	2024		Parallel reinforcement. When FSA M12 & M13 develops.	PR3-LMW005
LMW1.08	60 m x 110 mm Ø Pipe to install	39 200	2024		Supply pipe. When FSA M12 & M13 develops.	PR3-LMW005
LMW1.09	145 m x 250 mm Ø Pipe to install	145 200	2018		Required to improve conveyance.	PR3-LMW003
LMW1.10	32 l/s 200 mm Ø Flow Control Valve to install	172 200	2018		New 32 l/s flow control valve between Ashbury Upper and Lower reservoirs.	PR3-LMW003
LMW2.01	575 m x 250 mm Ø Pipe to install	407 400	2014		New supply required for rezoning.	PR3-LMW004
LMW2.02	360 m x 200 mm Ø Pipe to install	219 800	2010		Parallel reinforcement. When FSA M11 & M12 develops.	PR3-LMW004
LMW2.03	1 x 200 mm Ø Pipe to abandon		2012		Abandon existing 200 mm Ø pipe.	PR3-LMW003
LMW2.04	810 m x 250 mm Ø Pipe to install	726 400	2012		Replace 300 mm Ø and replace with 250 mm Ø.	PR3-LMW003
LMW2.05	600 m x 200 mm Ø Pipe to install	425 000	2010		Parallel reinforcement. When FSA M11 & M12 develops.	PR3-LMW004
LMW2.06	445 m x 110 mm Ø Pipe to install	183 400	2017		Parallel reinforcement for network conveyance.	PR3-LMW006
LMW3.01	45 m x 160 mm Ø Pipe to install	44 800	2017		When new Badshoogte reservoir is constructed.	PR3-LMW006
LMW3.02	1 x 160 mm Ø Check Valve to install		2017		Check that existing non-return valve is operational.	PR3-LMW006
LMW3.03	105 m x 160 mm Ø Pipe to install	75 600	2014		Parallel reinforcement to improve network conveyance.	PR3-LMW008
LMW3.04	145 m x 160 mm Ø Pipe to install	95 200	2014		Parallel reinforcement to improve network conveyance.	PR3-LMW008
LMW3.05	290 m x 160 mm Ø Pipe to install	169 400	2014		Parallel reinforcement to improve network conveyance.	PR3-LMW008
LMW3.06	10 l/s @ 30 m Pump Station to upgrade	7 000	2014		Upgrade to 100 l/s @ 30 m. When existing pump station reaches capacity.	PR3-LMW009
LMW3.07	285 m x 110 mm Ø Pipe to install	131 600	2014		Parallel reinforcement to improve network conveyance.	PR3-LMW009
LMW3.08	465 m x 160 mm Ø Pipe to install	259 000	2028		Parallel reinforcement of main pipe.	PR3-LMW011
LMW3.09	475 m x 110 mm Ø Pipe to install	194 600	2028		Parallel reinforcement of main pipe.	PR3-LMW011
LMW3.10	295 m x 160 mm Ø Pipe to install	159 800	2023		Parallel reinforcement. When FSA M02 - M04 develops.	PR3-LMW013
LMW3.11	375 m x 160 mm Ø Pipe to install	194 600	2023		Supply pipe. When FSA M02 - M04 develops.	PR3-LMW013
LMW3.12	450 m x 160 mm Ø Pipe to install	271 600	2023		Parallel reinforcement. When FSA M02 - M04 develops.	PR3-LMW013
LMW3.13	385 m x 200 mm Ø Pipe to install	265 000	2017		Parallel reinforcement of main pipe.	PR3-LMW007
LMW3.14	405 m x 200 mm Ø Pipe to install	289 800	2017		Parallel reinforcement of main pipe.	PR3-LMW007
LMW3.15	445 m x 200 mm Ø Pipe to install	449 400	2017		Supply pipe. When FSA M12 develops.	PR3-LMW007
LMW3.16	725 m x 160 mm Ø Pipe to install	395 000	2020		Parallel reinforcement of main pipe.	PR3-LMW007
LMW3.17	845 m x 110 mm Ø Pipe to install	368 200	2019		Parallel reinforcement of main pipe.	PR3-LMW007
Sub-total Distribution System Items						
		7 942 200				
Bulk Supply Items						
LMW8.01	19 l/s @ 81 m Pump Only to install	240 800	2014		Add 2nd pumpset for stand-by at WTP - South reservoir pumping station. To increase reliability of pumping station.	PR3-LMW002
LMW8.02	22 l/s @ 51 m Pump Only to install	109 400	2014		Add 2nd pumpset for stand-by at WTP - George Brink reservoir pumping station. To increase reliability of pumping station.	PR3-LMW002
LMW8.03	100 l/s @ 115 m Pump Station to upgrade	2 178 400	2018		Upgrade WTP - Ashbury Upper reservoir pump station to 107 l/s @ 103 m. Required when supply reaches capacity.	PR3-LMW001
LMW8.04	2445 m x 315 mm Ø Pipe to install	3 109 400	2018		Parallel reinforcement of main pipe. When supply reaches capacity.	PR3-LMW001
LMW8.05	2010 m x 315 mm Ø Pipe to install	2 560 000	2018		Parallel reinforcement of main pipe. When supply reaches capacity.	PR3-LMW001
LMW8.06	21 l/s @ 37 m Pump Station to construct	549 200	2015		New 21 l/s @ 37 m Ashbury pump station.	PR3-LMW005
LMW8.07	545 m x 160 mm Ø Pipe to install	299 600	2015		Supply to new Badshoogte reservoir.	PR3-LMW006
LMW8.08	2000 m @ 321 m TWL Tank/Reservoir to install	4 676 000	2015		New 2.0 M Badshoogte reservoir.	PR3-LMW006
LMW8.09	7 l/s @ 14 m Pump Station to abandon		2015		Decommission pump station.	PR3-LMW006
LMW8.10	200 mm Ø 314 l/s TWL Tank/Reservoir to abandon		2015		Decommission balancing tank.	PR3-LMW006
LMW8.11	1 x 110 mm Ø Valve to close		2015		Required to isolate decommissioned balancing tank.	PR3-LMW006
LMW8.12	1 x 75 mm Ø Valve to close		2015		Required to isolate decommissioned balancing tank.	PR3-LMW006
LMW8.13	18 l/s @ 55 m Pump Station to upgrade	152 600	2028		Upgrade to 185 l/s @ 55 m. When existing pump station reaches capacity.	PR3-LMW011
LMW8.14	3000 m @ 312.47 m TWL Tank/Reservoir to install	6 912 400	2018		New 3.0 M reservoir for Montagu emergency storage (Emergency supply to George Brink reservoir zone).	PR3-LMW011
LMW8.15	46 l/s 200 mm Ø Flow Control Valve to install	172 200	2019		New 40 l/s from WTP - Ashbury Upper supplies to George Brink reservoir.	PR3-LMW012
LMW8.16	1 x 200 mm Ø Valve to open		2019		Augment supply to George Brink from Ashbury line.	PR3-LMW012
		21 074 200				
Water Demand Management						
LMW1.01	Quantity at reservoirs, pumping stations and bulk water meters	500 000				
Sub-total Water Demand Management		500 000				
TOTALS		28 906 400				

* Costs include P&G's, Contingencies & Fees, but exclude EIA studies, registration of servitudes and/or land acquisition, protection, monitoring and VAT.

FUTURE DEVELOPMENT AREAS (FDA)										
Future Development Name	Description	Anticipated Landuse	Density (Units/ha)	Gross Area (ha)	No. of Units (Base year: 2011)			UWD (l/s) (inc. UAW)	UWD (l/s) (inc. UAW)	AADD (l/s) (inc. UAW)
					Next 5 yrs	5 - 10 yrs	10 - 20 yrs	Total		
Montagu										
M01	Medium density	Single residential 1000	13	3.2			39	39		
M02	Medium density	Single residential 1000	13	4.2			53	53	400	13
M03	Medium density	Single residential 1000	13	2.9			37	37		
M04	Medium density	Single residential 1000	13	4.7			59	59		
M05	Industrial	Industrial	50	0.6		31		31		
M06	Industrial	Industrial	50	1.2		59		59		
M07	Medium density	Single residential 1000	13	14.4			180	180		
M08	Medium density	Single residential 1000	13	9.4			117	117		
M09	Medium density	Single residential 1000	13	3.4			43	43		
M11	High density	Single residential 500	25	22.3		562		562		
M12	Parks and sportsfields	Recreation	1	4.4			4	4		
M13	High density	Single residential 500	25	1.4			35	35		
M14	Low density	Single residential >2000	1	13.2		12		12	2 500	15
M15	High density	Affordable housing	40	1.8			73	73		
M16	High density	Single residential 500	25	0.3	8			8		
M17	High density	Single residential 500	25	2.5				62	600	5
M18	High density	Single residential 500	25	4.7		62	160	160	600	56
Sub-Total Montagu								1 534	600	1 189

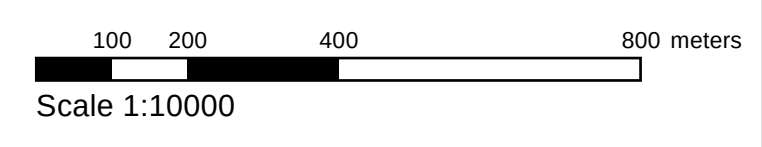


Figure LBW 6.5d
Future required works -
Montagu