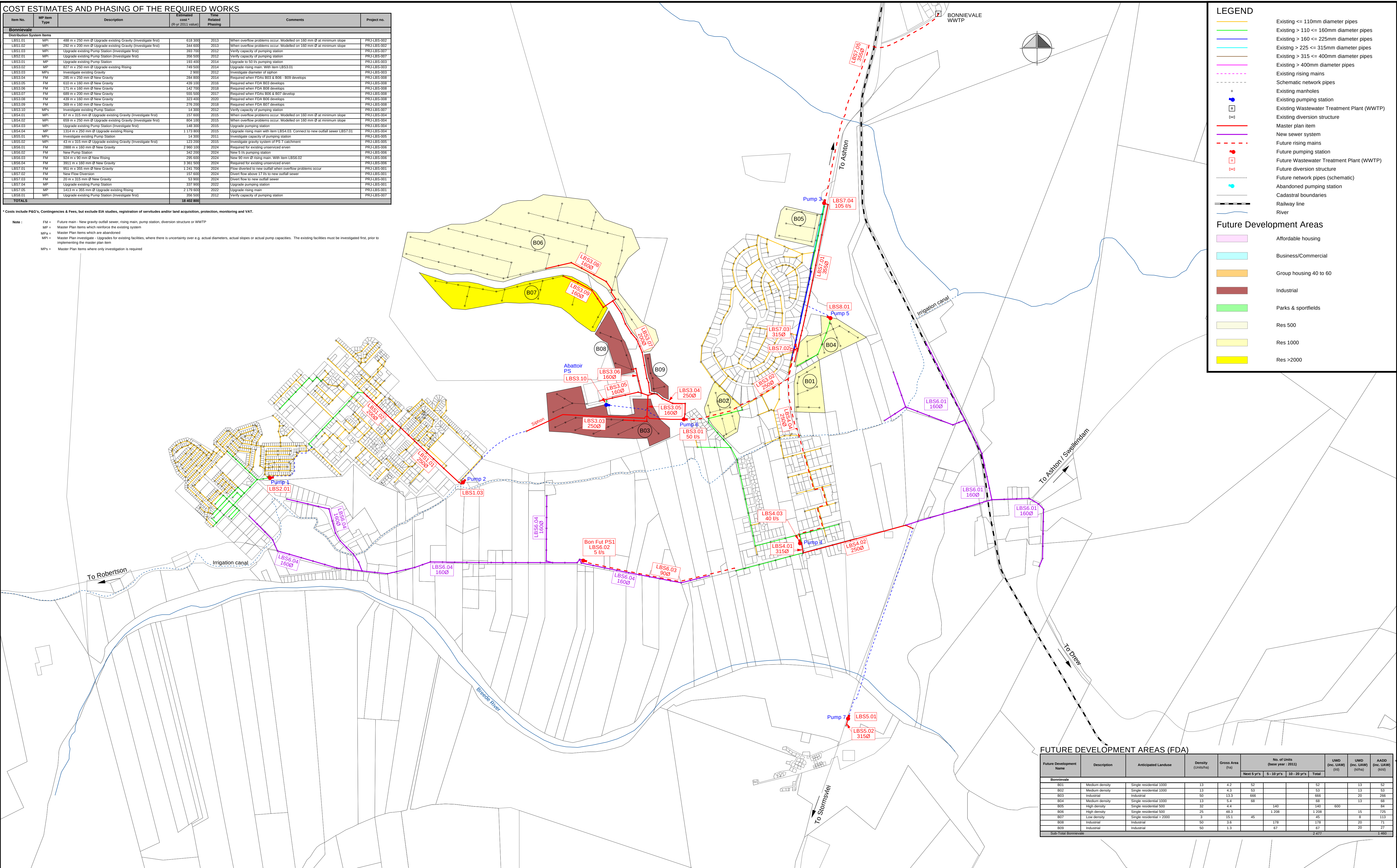


COST ESTIMATES AND PHASING OF THE REQUIRED WORKS						
Item No.	MP Item Type	Description	Estimated cost* (R-yr 2011 values)	Time Related Phasing	Comments	Project no.
Bonnievale						
Distribution System Items						
LBS1.01	MP	488 m x 250 mm Ø Upgrade existing Gravity (Investigate first)	618 300	2013	When overflow problems occur. Modelled on 160 mm Ø at minimum slope	PRJ-LBS-002
LBS1.02	MP	292 m x 200 mm Ø Upgrade existing Gravity (Investigate first)	344 600	2013	When overflow problems occur. Modelled on 160 mm Ø at minimum slope	PRJ-LBS-002
LBS1.03	MP	Upgrade existing Pump Station (Investigate first)	389 700	2012	Verify capacity of pumping station	PRJ-LBS-007
LBS2.01	MP	Upgrade existing Pump Station (Investigate first)	356 800	2012	Verify capacity of pumping station	PRJ-LBS-007
LBS3.01	MP	Upgrade existing Pump Station	193 400	2014	Upgrade to 50 l/s pumping station	PRJ-LBS-003
LBS3.02	MP	837 m x 250 mm Ø Upgrade existing Rising	749 500	2014	Upgrade rising main. With item LBS3.01	PRJ-LBS-003
LBS3.03	MPs	Investigate existing Gravity	2 300	2012	Investigate diameter of siphon	PRJ-LBS-003
LBS3.04	FM	286 m x 250 mm Ø New Gravity	284 800	2014	Required when FDA B03 & B05 - B09 develops	PRJ-LBS-008
LBS3.05	FM	610 m x 160 mm Ø New Gravity	636 700	2015	Required when FDA B01 develops	PRJ-LBS-008
LBS3.06	FM	171 m x 160 mm Ø New Gravity	142 700	2018	Required when FDA B08 develops	PRJ-LBS-008
LBS3.07	FM	689 m x 200 mm Ø New Gravity	555 500	2017	Required when FDA B06 & B07 develop	PRJ-LBS-008
LBS3.08	FM	429 m x 160 mm Ø New Gravity	313 400	2020	Required when FDA B06 develops	PRJ-LBS-008
LBS3.09	FM	369 m x 160 mm Ø New Gravity	276 200	2018	Required when FDA B07 develops	PRJ-LBS-008
LBS3.10	MPs	Investigate existing Pump Station	14 300	2012	Verify capacity of pumping station	PRJ-LBS-007
LBS4.01	MP	67 m x 315 mm Ø Upgrade existing Gravity (Investigate first)	157 900	2013	When overflow problems occur. Modelled on 160 mm Ø at minimum slope	PRJ-LBS-004
LBS4.02	MP	659 m x 250 mm Ø Upgrade existing Gravity (Investigate first)	804 700	2015	When overflow problems occur. Modelled on 160 mm Ø at minimum slope	PRJ-LBS-004
LBS4.03	MP	Upgrade existing Pump Station (Investigate first)	148 300	2015	Upgrade pumping station	PRJ-LBS-004
LBS4.04	MP	1334 m x 250 mm Ø Upgrade existing Rising	1 170 900	2015	Upgrade rising main with item LBS4.03. Connect to new outfall sewer LBS7.01	PRJ-LBS-004
LBS5.01	MPs	Investigate existing Pump Station	14 300	2011	Investigate capacity of pumping station	PRJ-LBS-005
LBS5.02	MP	43 m x 315 mm Ø Upgrade existing Gravity (Investigate first)	123 200	2015	Investigate gravity system of PS Y catchment	PRJ-LBS-005
LBS6.01	FM	2888 m x 160 mm Ø New Gravity	2 960 100	2024	Required for existing unserviced areas	PRJ-LBS-006
LBS6.02	FM	New Pump Station	342 700	2024	New 5 l/s pumping station	PRJ-LBS-006
LBS6.03	FM	824 m x 90 mm Ø New Rising	296 000	2024	New 90 mm Ø rising main. With item LBS6.02	PRJ-LBS-006
LBS6.04	FM	3911 m x 160 mm Ø New Gravity	3 961 300	2024	Required for existing unserviced areas	PRJ-LBS-006
LBS7.01	FM	951 m x 355 mm Ø New Gravity	1 241 700	2024	Flow diverted to new outfall when overflow problems occur	PRJ-LBS-001
LBS7.02	FM	New Flow Diversion	157 600	2024	Divert flow above 17 l/s to new outfall sewer	PRJ-LBS-001
LBS7.03	FM	20 m x 315 mm Ø New Gravity	53 300	2024	Divert flow to new outfall sewer	PRJ-LBS-001
LBS7.04	MP	Upgrade existing Pump Station	337 600	2022	Upgrade pumping station	PRJ-LBS-001
LBS7.05	MP	1413 m x 355 mm Ø Upgrade existing Rising	2 179 600	2022	Upgrade rising main	PRJ-LBS-001
LBS8.01	MP	Upgrade existing Pump Station (Investigate first)	366 600	2012	Verify capacity of pumping station	PRJ-LBS-007
TOTALS			18 462 800			

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

Note :
FM = Future main - New gravity outfall sewer, rising main, pump station, diversion structure or WWTP
MP = Master Plan Items which reinforce the existing system
MPs = Master Plan Items which are abandoned
MPs = Master Plan investigate - Upgrades for existing facilities, where there is uncertainty over e.g. actual diameters, actual slopes or actual pump capacities. The existing facilities must be investigated first, prior to implementing the master plan item
MPs = Master Plan Items where only investigation is required



March 2012

Sewer Master Plan Langeberg Municipality

100 200 400 800 meters
Scale 1:10000



Figure LBS 6.4b
Future required works -
Bonnievale