Appendix 8.1 Hydraulic Performance of Existing Sewers

Summary of Flow Estimates

	ADWF (m³/d)	ADWF (m³/s)	Contributing Population
Discharge to FMH4038367	27,057.0	0.3132	100,211
DWF	2,700.0	0.0309	-
Total	29,757.0	0.3441	100,211

Hydraulic Performance of Existing Sewers

| Manhole | | UP G.L. (mPD) | DN G.L. (mPD) | Pipe | | | | | | | Accumulative Population | Peaking Factor | Average Dry Weather Flow (m³/s) | Peak Wet Weather Flow (m³/s) | % Utilization by Flow | Capacity Adequacy |
Upstream No.	Downstream No.			Length (m)	Dia. (mm)	Gradient (1 in)	UP I.L. (mPD)	DN I.L. (mPD)	Velocity (m/s)	Capacity (m³/s)						
Without DWF																
FMH4038367	FMH4038368	7.07	7	74.8	1200	299	-2.550	-2.800	1.61	1.8188	100,211	3.7	0.3132	1.1454	63%	**Yes**
With DWF																
FMH4038367	FMH4038368	7.07	7	74.8	1200	299	-2.550	-2.800	1.61	1.8188	100,211	3.7	0.3132	1.1763	65%	**Yes**

Notes:

1) Velocity is calculated by Colebrook-white Equation.

2) Pipe flows are assumed under free fall condition and hydraulic gradient equal to pipe gradient.

3) Pipe roughness of 6 mm (slimed concrete sewer in poor condition) is adopted.

4) Kinematic Viscosity = 0.00000114 m2/s

5) Global peaking factor with stormwater allowance is adopted as per Table T-5 of GESF.

6) Peaking factor is not applied to DWF.

7) Peak Wet Weather Flow (with DWF) = ADWF* Peaking Factor + DWF.

8) Catchment Inflow Factor (Sha Tin) of 1.15 is adopted from Table T-4 of GESF.