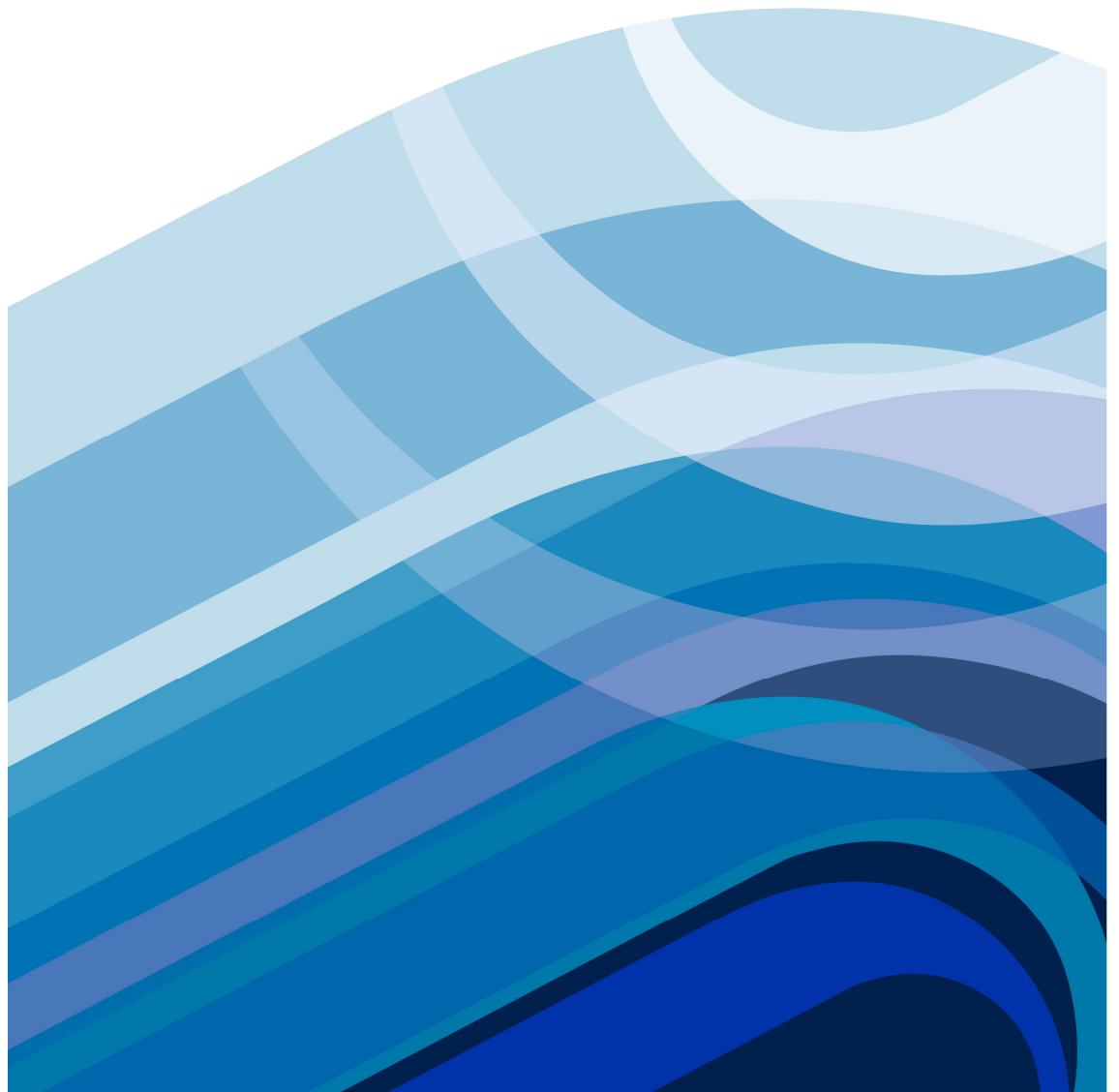




# Infill Sewerage Program Report

## 2006-2009



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## ***Aim***

The Western Australian Government launched the Infill Program in 1994, undertaking to spend \$800 million over a ten-year period to eliminate the health and environmental risks posed by septic systems in Perth and regional centres. At the start of the Program there were 150,000 properties (about 25% of Perth) identified with septic tanks in the Perth Metropolitan region. The initial cost estimates suggested that about 80,000 properties could be connected, which was later revised to 100,000 properties.

## ***Objectives***

The objectives of the Infill Sewerage Program are to provide reticulated sewerage services to high priority public health and environmental areas to:

- protect public water supplies;
- protect underground water resources;
- minimise health risks to the community;
- protect the environment;
- reduce pollutants entering the drains, rivers and wetlands; and
- assist orderly development and redevelopment of land.

## ***Targeted Properties***

Properties targeted by the program to have septic systems replaced with a reticulated sewerage service are:

- Conventionally sized metropolitan residential properties on the coastal plain; and
- Conventionally sized residential and town centre properties in medium and large country towns and cities.

## ***Current Status***

- To 30 June 2009, 88,732 properties have been sewered at a total cost of \$831 million outturn (\$720 million Dec 1994).

## ***Metropolitan Perth***

- 61,933 properties have been provided with a sewerage service at a cost of \$502 million.
- A total of 1,323,961 metres of sewer mains have been laid (the length of sewer laid includes gravity, vacuum and pressure mains).

## ***Country***

- In country towns, 26,799 properties have been provided with a sewerage service at a cost of \$329 million.
- A total of 69 towns have been provided with new or additional sewerage services under the Infill Sewerage Program.
- A total of 684,302 metres of sewer mains have been laid in country towns.

## ***Progress within high priority environmental Infill areas since 1994***

Since the program began in 1994, more than 53,400 properties, representing over 92 per cent of properties targeted by the infill program within the high-priority catchments (Swan-Canning River, Blackwood River, Chapman River, Leschenault Inlet, Peel-Harvey River, Princess Royal Harbour, Vasse and Wilson Inlets) have been seweraged.

Some 4,900 properties remain in the high priority catchments, and include projects in Westfield, Boyup Brook, Bridgetown, Geraldton, Boddington, Mandurah, Ravenswood, Kwinana, Waroona, Albany, Denmark and Mount Barker.

### ***Connection Rates***

The number of properties connecting to the sewerage reticulation system provided measures the effectiveness of the Infill Sewerage Program. Property owners start paying rates as soon as the deep sewer is available, and have 5 years to connect their services to the scheme. Anecdotal evidence available to the Water Corporation has suggested that the connection rates were low and impacting the effectiveness of the Program.

The Development Services Branch undertook an extensive Review of Sewerage Connection Rates in 2007 (*MUST Program Report: Sewer Connection Rates (August 2007)*). The report found that the connection rate for beneficiary lots is 92%, which would indicate that urgent action to accelerate connection rates is not warranted.

As part of the report, a customer survey showed that of the estimated 6,970 properties not connected, 41% intend to connect within 12 months and 46% have not connected due to financial reasons. Based on current trends and these findings, the final long-term connection rate following an Infill project is expected to be of the order of 95%.

### ***New Sewerage Schemes***

Since 1 July, 1994, 12 new sewerage schemes have been constructed in previously unsewered towns, at a total cost of \$48 million. These new schemes have been provided in the towns of Beverley, Boyanup, Dardanup, Denham, Donnybrook, Nannup, Onslow, Pemberton, Quairading, Toodyay, Walpole and York. Generally, these works have included the provision of reticulation sewers, pumping stations, pressure mains and wastewater treatment plants.

**Performance at a glance as at 30 June 2009**

	Previous years 1994/95 to 2005/06	2006/07	2007/08	2008/09	Total 1994/95 to 2008/09
<b><u>EXPENDITURE (\$ MILLIONS)</u></b>					
Metropolitan (incl. BW & PM)	480.046	6.779	3.927	11.626	502.378
Country	258.341	31.649	20.211	18.435	328.636
<b>Total</b>	<b>738.387</b>	<b>38.428</b>	<b>24.138</b>	<b>30.061</b>	<b>831.014</b>
<b><u>NUMBER OF PROPERTIES</u></b>					
Metropolitan	60,452	544	209	728	61,933
Country	22,723	1,701	1,689	686	26,799
<b>Total</b>	<b>83,175</b>	<b>2,245</b>	<b>1,898</b>	<b>1,414</b>	<b>88,732</b>
<b><u>LENGTH OF SEWER MAINS (metres)</u></b>					
Metropolitan	1,301,026	6,430	1,489	15,016	1,323,961
Country	609,102	26,906	29,340	18,955	684,303
<b>Total</b>	<b>1,910,128</b>	<b>33,336</b>	<b>30,829</b>	<b>33,971</b>	<b>2,008,264</b>

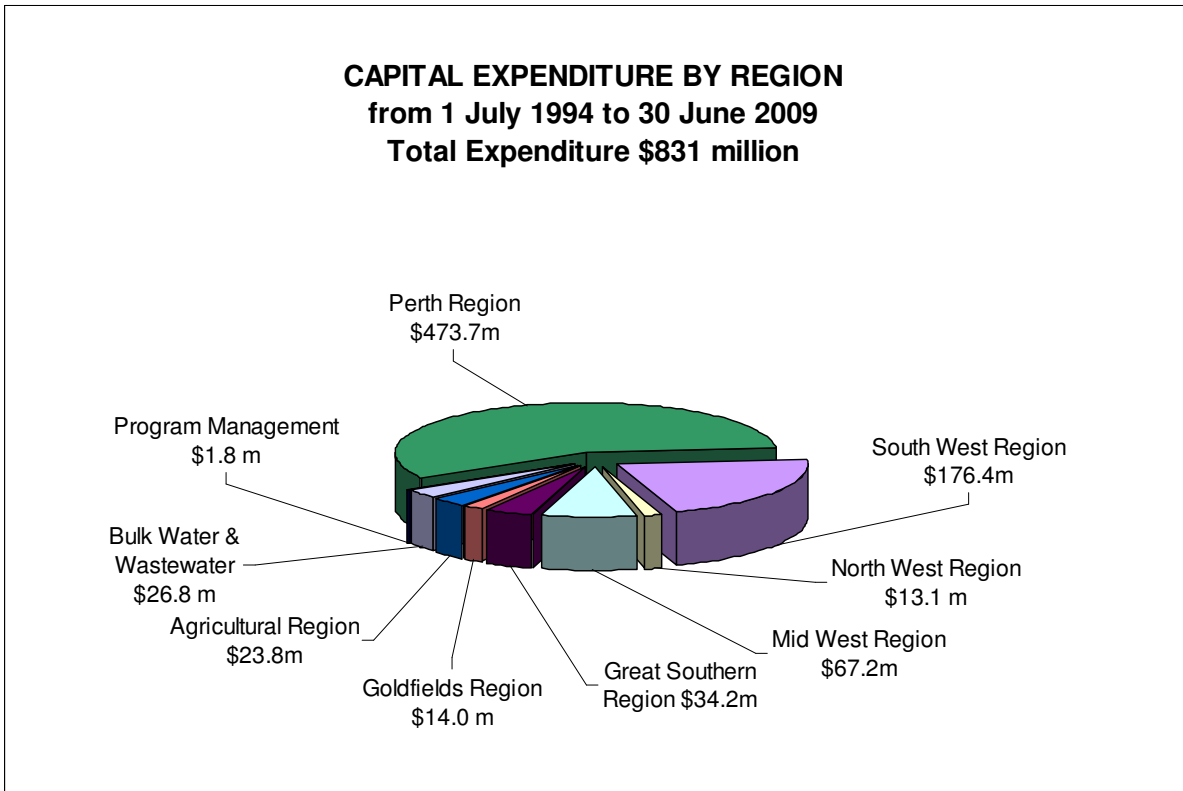
## Capital Expenditure by Region

Region	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	TOTAL
<b>Perth Region</b>																
New Infrastructure	43.077	51.983	44.871	46.639	63.565	51.844	48.481	23.572	20.044	16.023	17.554	12.096	6.779	3.927	11.626	462.081
Upgrade Existing Infrastructure	2.166	0.317	0.000	0.559	0.412	1.410	5.725	1.054	0.000	0.000	0.000	0.000	0.000	0.000	0.000	11.643
<b>Total</b>	<b>45.243</b>	<b>52.300</b>	<b>44.871</b>	<b>47.198</b>	<b>63.977</b>	<b>53.254</b>	<b>54.206</b>	<b>24.626</b>	<b>20.044</b>	<b>16.023</b>	<b>17.554</b>	<b>12.096</b>	<b>6.779</b>	<b>3.927</b>	<b>11.626</b>	<b>473.724</b>
<b>South West Region</b>																
New Infrastructure	5.309	3.713	8.793	10.023	6.521	14.250	13.833	13.266	7.199	5.141	10.476	9.192	20.966	17.391	14.490	160.563
Upgrade Existing Infrastructure	0.475	0.000	4.243	2.903	2.252	2.278	2.965	0.723	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.839
<b>Total</b>	<b>5.784</b>	<b>3.713</b>	<b>13.036</b>	<b>12.926</b>	<b>8.773</b>	<b>16.528</b>	<b>16.798</b>	<b>13.989</b>	<b>7.199</b>	<b>5.141</b>	<b>10.476</b>	<b>9.192</b>	<b>20.966</b>	<b>17.391</b>	<b>14.490</b>	<b>176.402</b>
<b>North West Region</b>																
New Infrastructure	0.117	0.309	0.365	3.089	6.006	0.980	0.613	0.194	0.005	0.016	0.013	0.011	0.002	0.091	0.413	12.224
Upgrade Existing Infrastructure	0.000	0.000	0.094	0.143	0.140	0.468	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.845
<b>Total</b>	<b>0.117</b>	<b>0.309</b>	<b>0.459</b>	<b>3.232</b>	<b>6.146</b>	<b>1.448</b>	<b>0.613</b>	<b>0.194</b>	<b>0.005</b>	<b>0.016</b>	<b>0.013</b>	<b>0.011</b>	<b>0.002</b>	<b>0.091</b>	<b>0.413</b>	<b>13.069</b>
<b>Mid West Region</b>																
New Infrastructure	2.507	6.870	6.533	5.912	7.077	4.702	4.244	7.351	2.121	4.638	4.680	4.987	3.189	0.344	0.456	65.611
Upgrade Existing Infrastructure	0.321	0.000	0.465	0.116	0.130	0.584	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.616
<b>Total</b>	<b>2.828</b>	<b>6.870</b>	<b>6.998</b>	<b>6.028</b>	<b>7.207</b>	<b>5.286</b>	<b>4.244</b>	<b>7.351</b>	<b>2.121</b>	<b>4.638</b>	<b>4.680</b>	<b>4.987</b>	<b>3.189</b>	<b>0.344</b>	<b>0.456</b>	<b>67.227</b>
<b>Great Southern Region</b>																
New Infrastructure	1.407	4.463	5.837	3.622	0.947	1.677	1.470	0.296	0.138	0.365	0.392	3.287	7.416	2.221	0.658	34.196
Upgrade Existing Infrastructure	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>Total</b>	<b>1.407</b>	<b>4.463</b>	<b>5.837</b>	<b>3.622</b>	<b>0.947</b>	<b>1.677</b>	<b>1.470</b>	<b>0.296</b>	<b>0.138</b>	<b>0.365</b>	<b>0.392</b>	<b>3.287</b>	<b>7.416</b>	<b>2.221</b>	<b>0.658</b>	<b>34.196</b>
<b>Goldfields Region</b>																
New Infrastructure	0.171	0.530	3.154	1.932	0.212	2.026	4.782	0.081	0.001	0.001	0.000	0.000	0.004	0.074	0.059	13.027
Upgrade Existing Infrastructure	0.000	0.000	0.351	0.384	0.000	0.218	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.953
<b>Total</b>	<b>0.171</b>	<b>0.530</b>	<b>3.505</b>	<b>2.316</b>	<b>0.212</b>	<b>2.244</b>	<b>4.782</b>	<b>0.081</b>	<b>0.001</b>	<b>0.001</b>	<b>0.000</b>	<b>0.000</b>	<b>0.004</b>	<b>0.074</b>	<b>0.059</b>	<b>13.980</b>
<b>Agricultural Region</b>																
New Infrastructure	0.482	0.448	0.310	3.415	3.179	4.555	1.966	3.673	2.843	0.332	0.034	0.004	0.072	0.090	2.359	23.762
Upgrade Existing Infrastructure	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>Total</b>	<b>0.482</b>	<b>0.448</b>	<b>0.310</b>	<b>3.415</b>	<b>3.179</b>	<b>4.555</b>	<b>1.966</b>	<b>3.673</b>	<b>2.843</b>	<b>0.332</b>	<b>0.034</b>	<b>0.004</b>	<b>0.072</b>	<b>0.090</b>	<b>2.359</b>	<b>23.762</b>
<b>Bulk Water &amp; Wastewater</b>																
New Infrastructure	0.043	0.859	0.667	0.127	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.696
Upgrade Existing Infrastructure	4.293	5.647	1.847	1.182	5.903	2.235	2.829	1.177	0.000	0.000	0.000	0.000	0.000	0.000	0.000	25.113
<b>Total</b>	<b>4.336</b>	<b>6.506</b>	<b>2.514</b>	<b>1.309</b>	<b>5.903</b>	<b>2.235</b>	<b>2.829</b>	<b>1.177</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>26.809</b>
<b>Program Management</b>	0.361	0.623	0.833	0.010	0.000	0.000	0.000	0.000	0.000	-0.067	0.017	0.068	0.000	0.000	0.000	1.845
<b>Total</b>	<b>0.361</b>	<b>0.623</b>	<b>0.833</b>	<b>0.010</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>-0.067</b>	<b>0.017</b>	<b>0.068</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>1.845</b>
<b>Metropolitan/Country Outturn</b>																
Total Metropolitan	49.940	59.429	48.218	48.517	69.880	55.489	57.035	25.803	20.044	15.956	17.571	12.164	6.779	3.927	11.626	502.378
Total Country	10.789	16.333	30.145	31.539	26.464	31.738	29.873	25.584	12.307	10.493	15.595	17.481	31.649	20.211	18.435	328.636

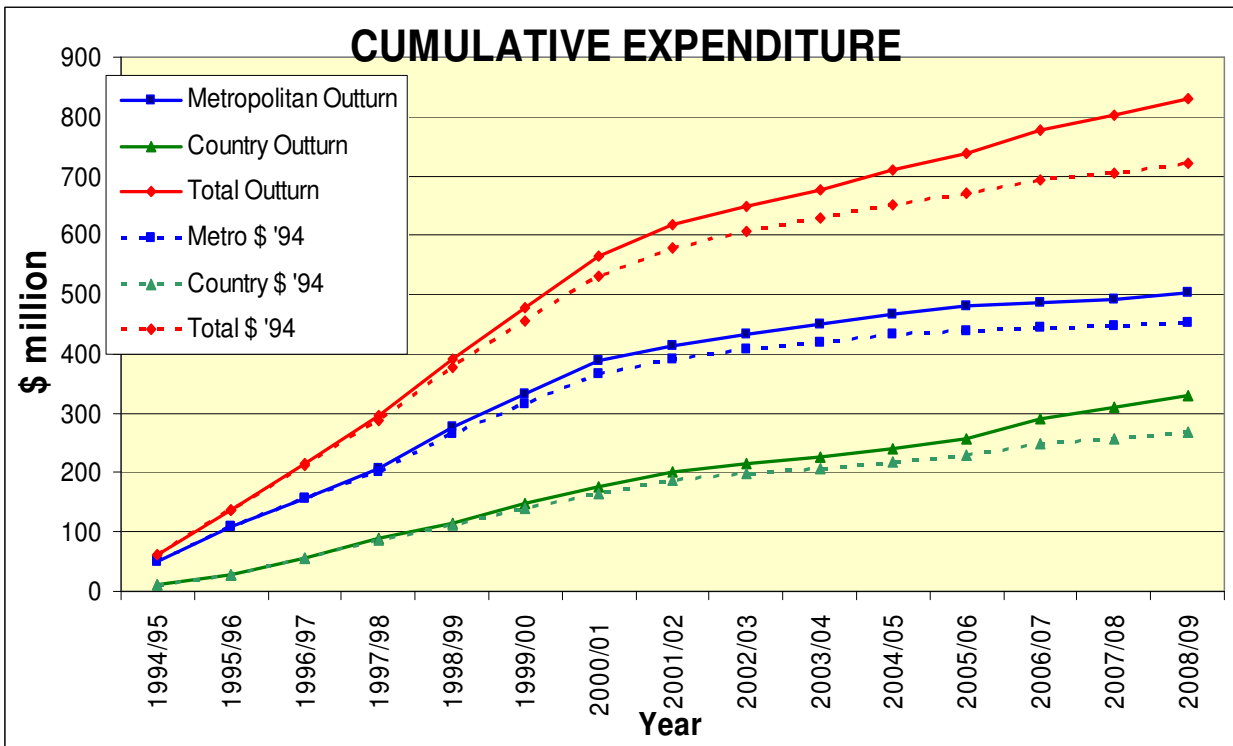
<b>Total Statewide</b>	<b>60.729</b>	<b>75.762</b>	<b>78.363</b>	<b>80.056</b>	<b>96.344</b>	<b>87.227</b>	<b>86.908</b>	<b>51.387</b>	<b>32.351</b>	<b>26.449</b>	<b>33.166</b>	<b>29.645</b>	<b>38.428</b>	<b>24.138</b>	<b>30.061</b>	<b>831.014</b>	
<b>Cumulative Outturn</b>																	
Metro	49.940	109.369	157.587	206.104	275.984	331.473	388.508	414.311	434.355	450.311	467.882	480.046	486.825	490.752	502.378		
Country	10.789	27.122	57.267	88.806	115.270	147.008	176.881	202.465	214.772	225.265	240.860	258.341	289.990	310.201	328.636		
<b>Total</b>	<b>60.729</b>	<b>136.491</b>	<b>214.854</b>	<b>294.910</b>	<b>391.254</b>	<b>478.481</b>	<b>565.389</b>	<b>616.776</b>	<b>649.127</b>	<b>675.576</b>	<b>708.742</b>	<b>738.387</b>	<b>776.815</b>	<b>800.953</b>	<b>831.014</b>		
<b>Metropolitan/Country - without Upgrade Infrastructure</b>																	
Total Metropolitan	43.077	51.983	44.871	46.639	63.565	51.844	48.481	23.572	20.044	16.023	17.554	12.096	6.779	3.927	11.626	462.081	
Total Country	9.993	16.333	24.992	27.993	23.942	28.190	26.908	24.861	12.307	10.493	15.595	17.481	31.649	20.211	18.435	309.383	
<b>Total Statewide</b>	<b>53.070</b>	<b>68.316</b>	<b>69.863</b>	<b>74.632</b>	<b>87.507</b>	<b>80.034</b>	<b>75.389</b>	<b>48.433</b>	<b>32.351</b>	<b>26.516</b>	<b>33.149</b>	<b>29.577</b>	<b>38.428</b>	<b>24.138</b>	<b>30.061</b>	<b>771.464</b>	
<b>Total</b>																	
New Infrastructure	53.474	69.798	71.363	74.769	87.507	80.034	75.389	48.433	32.351	26.449	33.166	29.645	38.428	24.138	30.061	775.005	
Upgrade Existing Infrastructure	7.255	5.964	7.000	5.287	8.837	7.193	11.519	2.954	0.000	0.000	0.000	0.000	0.000	0.000	0.000	56.009	
<b>Total</b>	<b>60.729</b>	<b>75.762</b>	<b>78.363</b>	<b>80.056</b>	<b>96.344</b>	<b>87.227</b>	<b>86.908</b>	<b>51.387</b>	<b>32.351</b>	<b>26.449</b>	<b>33.166</b>	<b>29.645</b>	<b>38.428</b>	<b>24.138</b>	<b>30.061</b>	<b>831.014</b>	
<b>Indices - Feb 2009</b>																	
DoHW/Water Corp Index	106.000	107.000	109.300	111.800	114.300	117.300	120.300	118.000	122.500	133.100	152.600	163.200	184.100	204.400	201.500		
Total Expenditure (\$ Outturn)	60.729	75.762	78.363	80.056	96.344	87.227	86.908	51.387	32.351	26.449	33.166	29.645	38.428	24.138	30.061	831.014	
Total Expenditure (\$ Dec '94)	<b>60.729</b>	<b>75.054</b>	<b>75.997</b>	<b>75.903</b>	<b>89.348</b>	<b>78.824</b>	<b>76.577</b>	<b>46.161</b>	<b>27.994</b>	<b>21.064</b>	<b>23.038</b>	<b>19.255</b>	<b>22.126</b>	<b>12.518</b>	<b>15.814</b>	<b>720.401</b>	
<b>Metropolitan/Country \$ '94</b>																	
Total Metropolitan	49.940	58.874	46.762	46.000	64.806	50.144	50.255	23.179	17.344	12.707	12.205	7.901	3.903	2.037	6.116	452.172	
Total Country	10.789	16.180	29.235	29.903	24.542	28.681	26.322	22.982	10.649	8.357	10.833	11.354	18.223	10.481	9.698	268.229	
<b>Total Statewide</b>	<b>60.729</b>	<b>75.054</b>	<b>75.997</b>	<b>75.903</b>	<b>89.348</b>	<b>78.824</b>	<b>76.577</b>	<b>46.161</b>	<b>27.994</b>	<b>21.064</b>	<b>23.038</b>	<b>19.255</b>	<b>22.126</b>	<b>12.518</b>	<b>15.814</b>	<b>720.401</b>	
<b>Cumulative \$ '94</b>																	
Total Metropolitan	49.940	108.814	155.576	201.576	266.381	316.525	366.780	389.959	407.303	420.011	432.216	440.117	444.020	446.056	452.172		
Total Country	10.789	26.969	56.204	86.107	110.649	139.330	165.652	188.634	199.283	207.640	218.473	229.827	248.049	258.531	268.229		
<b>Total Statewide</b>	<b>60.729</b>	<b>135.783</b>	<b>211.780</b>	<b>287.683</b>	<b>377.031</b>	<b>455.855</b>	<b>532.432</b>	<b>578.593</b>	<b>606.587</b>	<b>627.651</b>	<b>650.689</b>	<b>669.943</b>	<b>692.069</b>	<b>704.587</b>	<b>720.401</b>		

New infrastructure refers to new works and includes wastewater treatment plants, main sewers, connecting sewers, reticulation sewers, pressure mains and pumping stations and is expenditure incurred against the Infill Sewerage Program. Upgrade Existing Infrastructure refers to expenditure incurred on existing assets by Bulk Water and Wastewater Division and Customer Services Division. Until 2001/02, this capital expenditure was sourced separately to the funds for new works but was reported on as a component of the Infill Sewerage Program, being recognition of the expenditure on upgrading the existing conveyance system and treatment plants.

## Capital Expenditure by Region Pie Chart



## Cumulative Expenditure Graph



**Number of Lots serviced by the Program**

YEAR	METRO	CUMULATIVE METRO TOTAL	SOUTH WEST	GREAT SOUTHERN	MID WEST	GOLDFIELDS	AGRICULTURAL	NORTH WEST	COUNTRY	CUMULATIVE COUNTRY	TOTAL MET/COU	PROG TOTAL
1994/95	5,726	5,726	577	30	293	52	2	6	960	960	6,686	6,686
1995/96	7,262	12,988	630	434	317	57	0	4	1,442	2,402	8,704	15,390
1996/97	7,132	20,120	936	519	916	387	6	5	2,769	5,171	9,901	25,291
1997/98	7,009	27,129	1,580	457	561	201	222	234	3,255	8,426	10,264	35,555
1998/99	6,959	34,088	336	58	854	31	47	369	1,695	10,121	8,654	44,209
1999/00	7,584	41,672	1,303	176	418	215	430	55	2,597	12,718	10,181	54,390
2000/01	6,553	48,225	1,139	173	389	522	68	110	2,401	15,119	8,954	63,344
2001/02	3,777	52,002	1,504	26	783	16	246	10	2,585	17,704	6,362	69,706
2002/03	2,973	54,975	564	25	187	13	338	21	1,148	18,852	4,121	73,827
2003/04	2,192	57,167	637	243	553	33	2	8	1,476	20,328	3,668	77,495
2004/05	2,143	59,310	662	22	302	0	1	4	991	21,319	3,134	80,629
2005/06	1,142	60,452	600	4	796	0	2	2	1,404	22,723	2,546	83,175
2006/07	544	60,996	1,198	5	495	0	3	0	1,701	24,424	2,245	85,420
2007/08	209	61,205	1,403	281	0	0	2	3	1,689	26,113	1,898	87,318
2008/09	728	61,933	595	2	0	0	89	0	686	26,799	1,414	88,732
<b>TOTAL</b>	<b>60,452</b>		<b>10,468</b>	<b>2,167</b>	<b>6,369</b>	<b>1,527</b>	<b>1,364</b>	<b>828</b>	<b>22,723</b>		<b>88,732</b>	

Region Expenditure	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
<b>Metropolitan/Country - without Upgrade Infrastructure</b>															
Total Metropolitan	43.077	51.983	44.871	46.639	63.565	51.844	48.481	23.572	20.044	16.023	17.554	12.096	6.779	3.927	11.626
Total Country	9.993	16.333	24.992	27.993	23.942	28.190	26.908	24.861	12.307	10.493	15.595	17.481	31.649	20.211	18.435
<b>Total Statewide</b>	<b>53.070</b>	<b>68.316</b>	<b>69.863</b>	<b>74.632</b>	<b>87.507</b>	<b>80.034</b>	<b>75.389</b>	<b>48.433</b>	<b>32.351</b>	<b>26.516</b>	<b>33.149</b>	<b>29.577</b>	<b>38.428</b>	<b>24.138</b>	<b>30.061</b>

\$/Lot - \$ Out-turn	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
Metro	7,523	7,158	6,292	6,654	9,134	6,836	7,398	6,241	6,742	7,310	8,191	10,592	12,461	18,789	15,970
Country	10,409	11,327	9,026	8,600	14,125	10,855	11,207	9,617	10,720	7,109	15,737	12,451	18,606	11,966	10,915

DoHC/WC Index	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
	106.0	107.0	109.3	111.8	114.3	117.3	120.3	118.0	122.5	133.1	152.6	163.2	184.1	204.4	201.5

\$/Lot - \$ Dec '94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
Metro	7,523	7,091	6,102	6,309	8,471	6,177	6,519	5,606	5,834	5,821	5,690	6,880	7,175	9,744	8,401
Country	10,409	11,221	8,753	8,154	13,099	9,809	9,875	8,639	9,276	5,662	10,931	8,087	10,713	6,206	5,742

## ***Review of the Infill Sewerage Program***

In its May 2009 Budget announcement the State Government confirmed that about \$3 billion in capital savings would be required over the next four years. The Water Corporation contributed to this saving by deferring or reprioritising approximately \$560 million in capital projects. As part of the savings, \$85 million funding allocated to the Infill Sewerage Program was deferred.

Representations for continuance of the Program have been received from most of the affected communities. On 10 November 2009, Minister for Water and Mental Health announced that the remaining Spearwood projects (760 lots) would be completed. See Ministerial Media Statement [here](#).

The representations from affected communities resulted in a public inquiry conducted by the Standing Committee on Environment and Public Affairs. Report 18 (Inquiry into Deep Sewerage in the Cockburn Area – Dec 2009) was produced which contains 17 findings and 9 recommendations.

The Water Corporation continues to receive a significant number of enquiries/comments from members of the public, health surveyors and politicians. A majority of these queries comes from areas not on the current Infill Program, and almost all of these are concerned with a development initiative.

Following the publication of the Committee's report, the Minister for Water (Dr Graham Jacobs) requested that the Department of Water undertake a review of the existing Infill Sewerage Program and its priority areas. The Minister has also requested a separate review of areas not on the current program, such as light industrial areas in Perth.

## ***Remaining Projects on the Infill Sewerage Program***

The existing (deferred) Infill Program recognises approximately 64 projects remaining to be completed that will provide deep sewerage to approximately 12,340 lots. These projects include approximately 3,570 lots in Metropolitan Perth and 8,770 lots in regional centres. Included in these projects are some of the more technically challenging projects in difficult terrain, as well as two small Waste Water Treatment Plants (Bruce Rock and Boyup Brook).

## ***Remaining Projects to be done outside the Infill Sewerage Program***

The Infill program was established in 1994 with a budget of \$800m to address public health and environmental issues in Perth and regional centres throughout Western Australia. Initial cost forecasts suggested some 80,000 lots could be connected, which was later changed to a target of 100,000 lots. In 1994, there were some 150,000 properties on

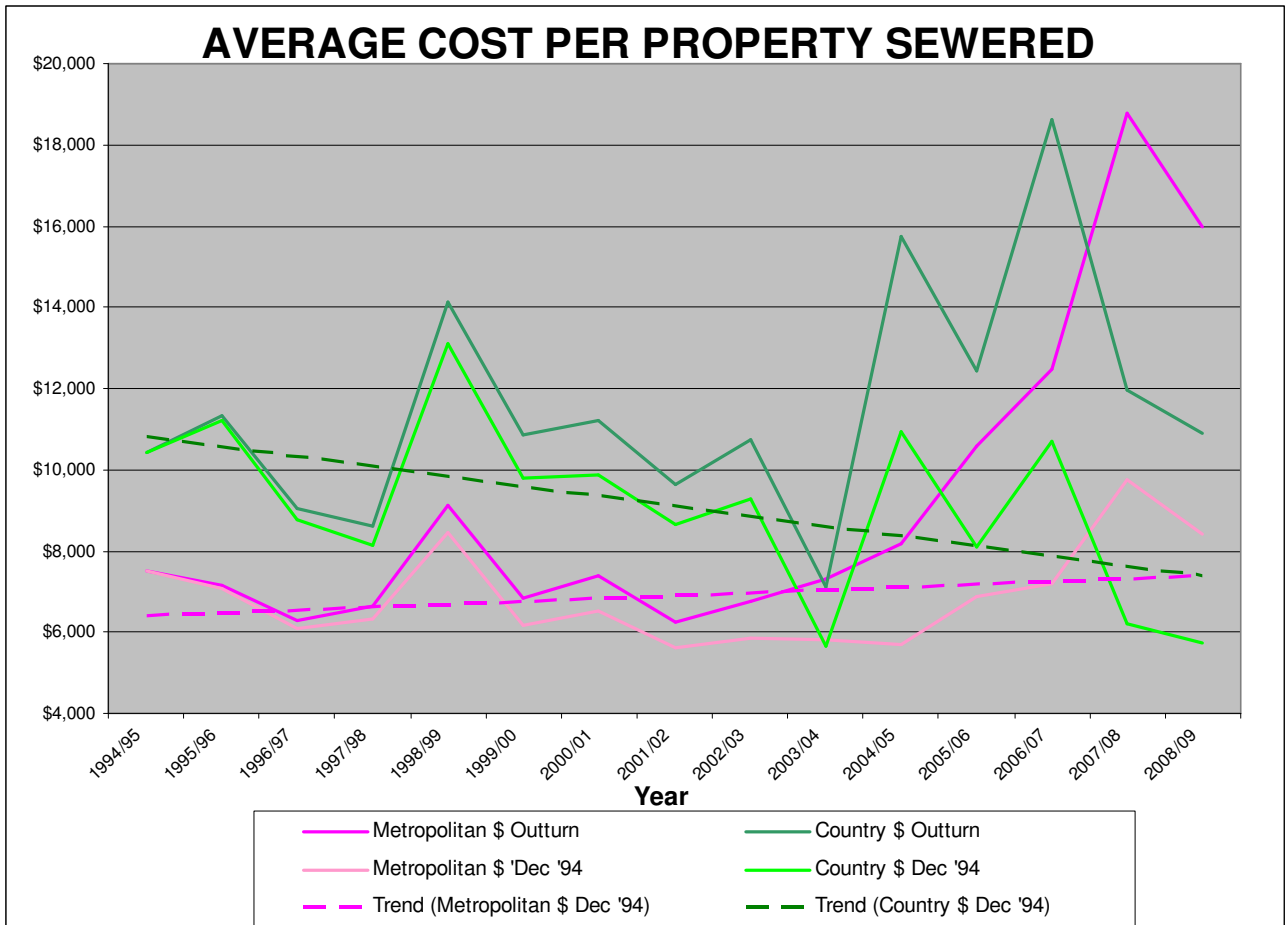
septic tanks in Perth alone (an unknown number in the regional centres) and it was recognised that not all connections could or should be completed.

- The completion of the infill program has been taken to be the completion of 100,000 property connections. The completion of the Infill program may be otherwise defined following a review by Department of Water into the priorities for the Infill Sewerage program.
- A planned schedule of prioritised projects will form part of the Corporation annual reporting once the State budget again supports the Infill program.
- The determination of the order of project priority has always been set in accordance with public health criteria (weighted 3) environmental criteria (weighted 1.5) and development criteria (weighted 1). These weightings have driven appropriate project priorities and ranking since 1994.
- The expected completion dates for the remaining projects relies on funding still to be determined as part of State budget priorities.

There are currently a number of areas not part of the current Infill program that will not be addressed by the Infill program. These areas are generally in the following categories:

- Part of the estimated 50,000 metropolitan lots identified as part of the initial Program which were thought to be either too difficult, expensive or not appropriate target areas for the Infill program;
- Light industrial areas within Perth and some regional centres
- Areas identified by the Department of Health in their 2006 review of the Metropolitan and Regional areas as high priority and which were not on the Infill program as projects; and
- Small country towns.

## Average Cost per Property Sewered



**Note:** Outturn = total cost

### ***Infill Expenditure 2006/07 to 2008/09***

Project No.	PROJECT TITLE	\$ '000		
		2006/07	2007/08	2008/09
	<b><u>PERTH REGION</u></b>			
C-S00260	Bassendean 16A, PS & PM	-32	35	7
C-S00271	Scarborough, 22A, PS & PM	13	-1	0
C-S00773	Cannington 9A & 9C	0	0	3,550
C-S00274	Cannington 9C	18	-61	0
C-S00277	Wembley Downs 6A,PS,PM & Scarborough 1E	884	29	15
C-S00325	Cottesloe 24A, PS & PM	223	16	0
C-S00326	Cottesloe 26B	23	93	106
C-S00327	Hamersley 19A, PS & PM & 12S (Part 2)	18	0	0
C-S00402	Kwinana 10J	13	0	0
C-S00403	Kwinana 14A, PS & PM	24	15	15
C-S00405	Warnbro 4B Part 1 & 2	11	10	2
C-S00406	Warnbro 8U	10	10	2
C-S00409	Maida Vale 2A	51	1	0
C-S00412	Rockingham 25B	6	46	122
C-S00742	Fremantle 1A, 3N, 21G & Spearwood 19J	18	89	639
C-S00757	Hamersley 26E and 26F	7	369	49
C-S00758	Hamersley 30A, PS & PM	144	15	0
C-S00764	Spearwood 2E	1,954	781	34
C-S00766	Spearwood 28A, PS & PM and 3N	41	264	37
C-S00770	Spearwood 27A, PS & PM	42	83	3,200
C-S00773	Cannington 9A and 9C, PS & PM	59	309	0
C-S00776	Quinns 4D	0	0	855
C-S00781	Gooseberry Hill 1D & Maida Vale 1QQ	49	85	831
C-S00784	Hamersley 32A, PS & PM, 25E	2,938	1,289	115
C-S00798	Quinns 4E	0	0	208
C-S00799	Quinns 8A	0	0	174
C-S00800	Quinns 9A	0	0	143
C-S00917	Spearwood 4E	19	73	837
C-S00918	Spearwood 12P&16PP	18	95	73
C-S01089	Infill Lost Junction Claims	46	42	0
C-S01094	Westfield 8C Infill	95	40	0
C-S20902	Claremont 1A Infill Sewerage	62	33	10
C-S20769	White Gum Valley Wood Street Lots 7 & 8	0	119	0
C-S01087	Infill Minor Real Estate Costs	8	26	579
C-S01088	Infill Lost Junction Claims	0	0	23
	Projects with expenditure under \$10k	17	22	0
	<b>TOTAL PERTH REGION</b>	<b>6,779</b>	<b>3,927</b>	<b>11,626</b>

	<b><u>SOUTH WEST REGION</u></b>			
C-S00465	Margaret River 4A, PS & PM	929	389	-29
C-S00480	Donnybrook 1B	26	36	1,519
C-S00506	Eaton 1H,3C,PS,PM&Connect 225 Sewer	749	53	61
C-S00507	Eaton 1J & 2H, PS & PM	124	0	0
C-S00508	Mandurah: Falcon 2B	675	3,459	468
C-S00511	Manjimup 8A, PS & PM	48	109	4,213
C-S00513	Pemberton 1D	1	56	845
C-S00517	Australind 8A,PS&PM	134	50	1,637
C-S00518	Capel 1B & 2C	33	0	0
C-S00532	Boyup Brook 1A & 2A, PS, PM & TP			11
C-S00545	Bridgetown 1F	10	61	94
C-S00549	Busselton 10F & 15B, PS & PM	8,213	2,189	219
C-S00550	Eaton 6A , 7A, PS & PM	4,414	1,294	54
C-S00755	Dawesville 1B & PS, 2B, 4A & PS, 5A & PS	98	197	61
C-S00762	Mandurah 2L,8J,46A,PS&PM	498	59	23
C-S00772	Bunbury 21M & 32H	6	11	54
C-S00775	Eaton 1K, 2J & 4J	39	0	0
C-S00785	Harvey 5D	10	14	6
C-S00790	Mandurah Halls Head 12L, 17J, 19K & 49E	495	4,893	1,294
C-S00802	West Murray 2A PS & PM	34	6	89
C-S00804	Waroona 1H	15	40	11
C-S00828	Mandurah 58A PS & PM	404	354	0
C-S00937	Falcon 3A, PS & PM	3,526	3,342	1,772
C-S01064	Australind 4Q & 5E	44	63	61
C-S01067	Bridgetown 1E Part 2	24	31	12
C-S01115	Bunbury 13B, 18E, 39G & 44B	6	18	90
C-S01119	Australind 1Q	21	130	40
C-S01120	Australind 4P & 9A PS & PM	53	161	71
C-S01123	Bunbury 21N, 24D & 47C	10	12	66
C-S01124	Bunbury 29F, 39A, 46A, 52A, PS & PM	14	164	372
C-S01126	Mandurah: Falcon 2C	38	94	159
C-S01141	Walpole Effluent Disposal	104	14	34
C-S01155	Nannup 2A PS & PM	31	38	1,170
C-S01318	Collie 23D & 25B	0	28	2
C-S20948	Bunbury Tuart St Lot 24 - Infill Contrib	0	19	0
C-S21192	Dunsborough Contrib For Infill Lots	131	0	0
C-S21606	Bunbury - Contribution to Infill Lots	0	0	11
	Projects with expenditure under \$10k	9	7	0
	<b>TOTAL SOUTH WEST REGION</b>	<b>20,966</b>	<b>17,391</b>	<b>14,490</b>
	<b><u>NORTH WEST REGION</u></b>			
C-S00710	Pt Hedland 9B & 10A (Area East Of Acton)	2	91	413
	Projects with expenditure under \$10k	0	0	0
	<b>TOTAL NORTH WEST REGION</b>	<b>2</b>	<b>91</b>	<b>413</b>

	<b><u>MID WEST REGION</u></b>			
C-S00639	Geraldton: Spalding S2	17	19	48
C-S00648	Geraldton South Geraldton SG3 - Stage 1	19	40	66
C-S00655	Greenough GR2B,PS&PM(WAS SG12): Stg 1	10	6	57
C-S00657	Geraldton: G3, PS & PM	2,288	17	2
C-S00659	Geraldton G7	0	0	118
C-S00668	Geraldton: South Geraldton SG1F & SG7	664	103	0
C-S00700	Carnarvon South SC1A, PS & PM	39	1	0
C-S00795	South Geraldton SG9B	0	0	101
C-S01236	Lancelin: Infill Contribution to Shire	148	148	64
	Projects with expenditure under \$10k	4	10	0
	<b>TOTAL MID WEST REGION</b>	<b>3,189</b>	<b>344</b>	<b>456</b>
	<b><u>GREAT SOUTHERN REGION</u></b>			
C-S00566	Mt Barker 5C	3	80	54
C-S00567	Albany Bayonet Head 3D & 6B	283	0	0
C-S00576	Albany Bayonet Head 7A, PS & PM	28	26	25
C-S00589	Boddington 1G	0	0	1
C-S00756	Denmark 1G, 2B, 4G & 5A	0	0	38
C-S00771	Albany Little Grove Infill	7,101	2,065	537
C-S01118	Denmark 6A PS & PM, 7A PS & PM	0	43	3
	Projects with expenditure under \$10k	1	7	0
	<b>TOTAL GREAT SOUTHERN REGION</b>	<b>7,416</b>	<b>2,221</b>	<b>658</b>
	<b><u>GOLDFIELDS REGION</u></b>			
C-S00780	Esperance 17A & 18A	4	74	59
	Projects with expenditure under \$10k	0	0	0
	<b>TOTAL GOLDFIELDS REGION</b>	<b>4</b>	<b>74</b>	<b>59</b>
	<b><u>AGRICULTURAL REGION</u></b>			
C-S00615	Bruce Rock 1A, PS, PM & TP	0	0	8
C-S00618	Beverley 1A	0	0	1
C-S00763	York 2A, PS & PM and 1C	67	84	2,350
	Projects with expenditure under \$10k	5	6	0
	<b>TOTAL AGRICULTURAL REGION</b>	<b>72</b>	<b>90</b>	<b>2,359</b>
	<b>TOTAL STATEWIDE</b>	<b>38,428</b>	<b>24,138</b>	<b>30,061</b>

### ***Annual Cost Projection as at 30 June 2009***

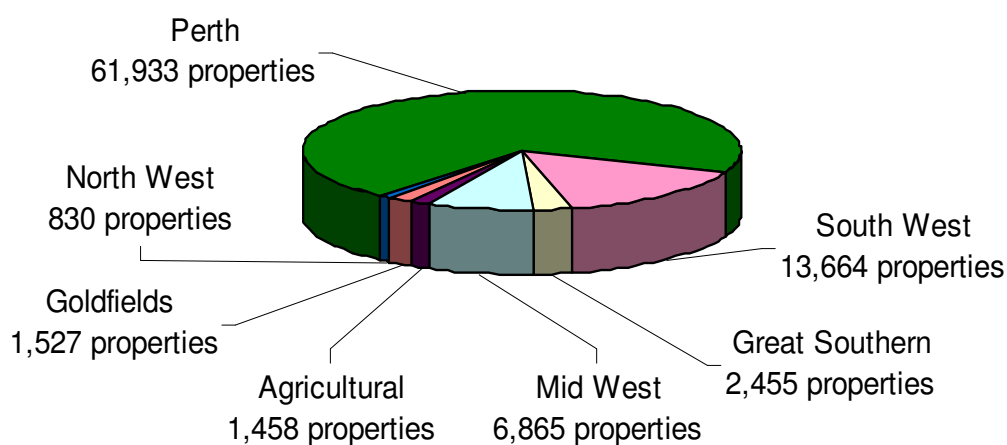
The budget (and therefore schedule) for the Infill Sewerage program is reviewed annually as part of normal State budget process. Once the program is again funded the Water Corporation will provide a preliminary project schedule for completion of the program.

Note that the program budget is prepared over a five-year term, as is the preliminary project schedule. Detailed project schedules are prepared over a shorter term (two to three years). This is appropriate, as project circumstances change over time and defining projects more than two years into the future results in wasted expenditure on investigations, design and approvals that expire and would need to be repeated. Projects within the program are identified for funding in any particular year based upon additional considerations, which include capital efficiency, contracting circumstances and opportunities that arise from time to time. Projects are not usually finalised in terms of budget or schedule until they are within two years of construction.

## Number of properties seweraged by the Region

REGION	From 1994/95 to 2005/06	2006/07	2007/08	2008/09	Total
Perth Region	60,452	544	209	728	61,933
South West Region	10,468	1,198	1,403	595	13,664
Great Southern Region	2,167	5	281	2	2,455
Mid West Region	6,370	495	0	0	6,865
Agricultural Region	1,364	3	2	89	1,458
Goldfields Region	1,527	0	0	0	1,527
North West Region	827	0	3	0	830
<b>TOTAL</b>	<b>83,175</b>	<b>2,245</b>	<b>1,898</b>	<b>1,414</b>	<b>88,732</b>

### NUMBER OF PROPERTIES SEWERAGED BY REGION from 1 July 1994 to 30 June 2009 Total properties seweraged 88,732



## ***Number of properties sewerred in Perth Metropolitan area***

<b>SUBURB</b>	<b>1994/95 to 2005/06</b>	<b>2006/07</b>	<b>2007/08</b>	<b>2008/09</b>	<b>Total</b>
Alfred Cove	117				117
Applecross	12				12
Armadale	419				419
Ascot	294				294
Ashfield	147				147
Balcatta	13				13
Balga	1,110				1,110
Bassendean	60	3			63
Bateman	304				304
Bayswater	1,456	2			1,458
Beaconsfield	501				501
Beckenham	1,300	1			1,301
Bedford	542				542
Beechboro	35				35
Bellevue	7	2			9
Belmont	336				336
Bentley	202			11	213
Bibra Lake	3				3
Bicton	1				1
Booragoon	58				58
Bull Creek	57				57
Bullsbrook	2				2
Byford	555				555
Calista	589				589
Cannington	377				377
Canning Vale	16				16
Carine	241				241
Carlisle	531				531
Churchlands	10				10
City Beach	589	2			591
Claremont	5		9		14
Cloverdale	1,409				1,409
Coogee	17				17
Coolbellup	1,834				1,834
Coolbinia	135				135
Cottesloe	6	32			38
Currambine	3				3
Dalkeith	1				1
Dianella	2,094				2,094
Doubleview	1,201				1,201
Duncraig	218				218
East Cannington	675	9			684
East Fremantle	45				45
East Rockingham	1				1
East Victoria Park	110				110
Eden Hill	177				177
Embleton	896				896
Floreat	1				1
Forrestfield	463				463
Fremantle	61				61
Glendalough	111				111

Gosnells	1,998				1,998
Greenmount	198				198
Guildford	12				12
Gwelup	337				337
Hamilton Hill	2,691		15		2,706
Hazelmere	228				228
Helena Valley	52				52
High Wycombe	1,028				1,028
Hilton	720				720
Huntingdale	2				2
Inglewood	11				11
Innaloo	1,323				1,323
Jandakot	4				4
Joondanna	51				51
Kalamunda	77				77
Kallaroo	1				1
Kardinya	464				464
Karrinyup	1,509				1,509
Kelmscott	782				782
Kenwick	192				192
Kewdale	709	1			710
Langford	2				2
Lathlain	1				1
Leederville	1				1
Leeming	2				2
Lynwood	1				1
Maddington	720		12		732
Maida Vale	46			115	161
Marmion	84	73	26		183
Martin	51				51
Maylands	125				125
Medina	1,068				1,068
Melville	703				703
Menora	5				5
Middle Swan	436				436
Midland	123				123
Midvale	6				6
Morley	4,169				4,169
Mosman Park	15	35			50
Mount Claremont	147				147
Mount Hawthorn	7				7
Mount Lawley	4				4
Mount Nasura	422				422
Mullaloo	736	2			738
Mundaring	79				79
Munster	4				4
Murdoch	2				2
Myaree	577				577
Nollamara	1,165				1,165
North Beach	733				733
North Fremantle	3				3
North Lake	6				6
North Perth	3				3
O'Connor	74				74

Osborne Park	198				198
Parkwood	1				1
Peppermint Grove	1				1
Perth	1				1
Port Kennedy	1				1
Queens Park	838				838
Quinns Rocks	123				123
Redcliffe	806				806
Ridgewood	1				1
Riverton	264				264
Rivervale	65				65
Rockingham	1,401				1,401
Safety Bay	1,403	1			1,404
Samson	63				63
Scarborough	931	68			999
Seville Grove	1				1
Shelley	193				193
Shenton Park	1				1
Shoalwater	1,015				1,015
Singleton	1				1
Sorrento	1,049	98	14		1,161
South Fremantle	4				4
South Guildford	332				332
South Perth	9				9
Spearwood	182	210	120	428	940
St James	279				279
Stirling	66				66
Subiaco	4				4
Success	1				1
Swan View	71				71
Swanbourne	2		3		5
Trigg	973				973
Tuart Hill	265				265
Viveash	173				173
Waikiki	329				329
Wanneroo	473				473
Warnbro	1,315	4	6		1,325
Waterford				30	30
Waterman	525		4		529
Wellard	1				1
Welshpool	12				12
Wembley Downs	519				519
West Leederville	3				3
West Perth	1				1
White Gum Valley	67	1		5	73
Willagee	326				326
Willetton	513				513
Wilson	666			139	805
Woodlands	176				176
Woodvale	1				1
Yokine	1,551				60,382
<b>TOTAL</b>	<b>60,452</b>	<b>544</b>	<b>209</b>	<b>728</b>	<b>61,933</b>

## Number of Properties sewered in Country Towns

Regions	1994/05 to 2005/06	2006/07	2007/08	2008/09	Total
South West Region	10,468	1,198	1,403	595	13,069
Great Southern Region	2,167	5	281	2	2,453
Mid West Region	6,370	495	0	0	6,865
Agricultural Region	1,364	3	2	89	1,369
Goldfields Region	1,527	0	0	0	1,527
North West Region	827	0	3	0	830
<b>TOTAL</b>	<b>22,723</b>	<b>1,701</b>	<b>1,689</b>	<b>686</b>	<b>26,799</b>

TOWN	1994/05 to 2005/06	2006/07	2007/08	2008/09	Total
Albany	1,199	3	281		1,483
Augusta	100				100
Australind	265			17	265
Beverley	424				424
Binningup	7				7
Boddington	15				15
Boyanup	199				199
Bremer Bay	230				230
Bridgetown	149				149
Broome	246		3		249
Bunbury	1,953	7			1,960
Burekup	4				4
Busselton	1,687	558	69	11	2,314
Capel	269				269
Carnarvon	311				311
Cervantes	2				2
Collie	63				63
Coral Bay	9				9
Corrigin	2				2
Cranbrook	85				85
Cunderdin	96				96
Dardanup	140				140
Denham	320	4			324
Denmark	68	1		2	69
Derby	25				25
Dongara	256				256
Donnybrook	206			142	206
Dunsborough	22				22
Eaton	828	420	33		1,281
Eneabba	4				4
Esperance	1,503				1,503
Geraldton	4,801	491			5,292
Harvey	119				119
Jurien	30				30
Kalbarri	178				178
Karratha	2				2

Katanning	17				17
Kellerberrin	7				7
Kojonup	26				26
Kulin	201				201
Kununurra	7				7
Ledge Point	21				21
Leonora	24				24
Mandurah	2,727	213	1,235	179	4,175
Manjimup	415			246	415
Margaret River	279		66		345
Merredin	5				5
Mount Barker	205				205
Mukinbudin	1				1
Nannup	158				158
Narembeen	1				1
Narrogin	47	1			48
Newdegate	3				3
Northam	8	3			11
Onslow	234				234
Pemberton	143				143
Pingelly	6				6
Pinjarra	87				87
Port Denison	438				438
Port Hedland	309				309
Quairading	354		2		356
Quindalup	18				18
Roebourne	3				3
Toodyay	270				270
Wagin	65				65
Walpole	245				245
Waroona	385				385
Wyndham	1				1
York	196			89	196
<b>Total</b>	<b>22,723</b>	<b>1,701</b>	<b>1,689</b>	<b>686</b>	<b>26,799</b>

## Lengths of sewer laid by Region

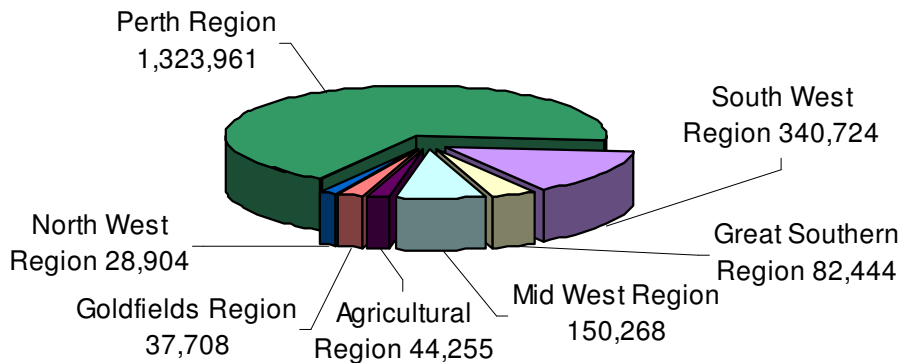
REGION	From 1994/95 to 2005/06	2006/07	2007/08	2008/09	TOTAL
Perth Region	1,301,026	6,430	1,489	15,016	1,323,961
South West Region	286,000	17,802	20,269	16,653	340,724
Great Southern Region	73,815	1,810	6,781	38	82,444
Mid West Region	141,205	7,069	1,994	0	150,268
Agricultural Region	41,839	0	152	2,264	44,255
Goldfields Region	37,425	193	90	0	37,708
North West Region	28,818	32	54	0	28,904
<b>TOTAL</b>	<b>1,910,128</b>	<b>33,336</b>	<b>30,829</b>	<b>33,971</b>	<b>2,008,264</b>

1. Length of sewer laid includes gravity, vacuum and pressure mains (in metres).
2. Lengths of off-takes into properties have not been included
3. Sewers, such as pressure mains and connecting sewers have been laid in some suburbs where properties have not been serviced.

## LENGTH OF SEWER MAINS LAID BY REGION

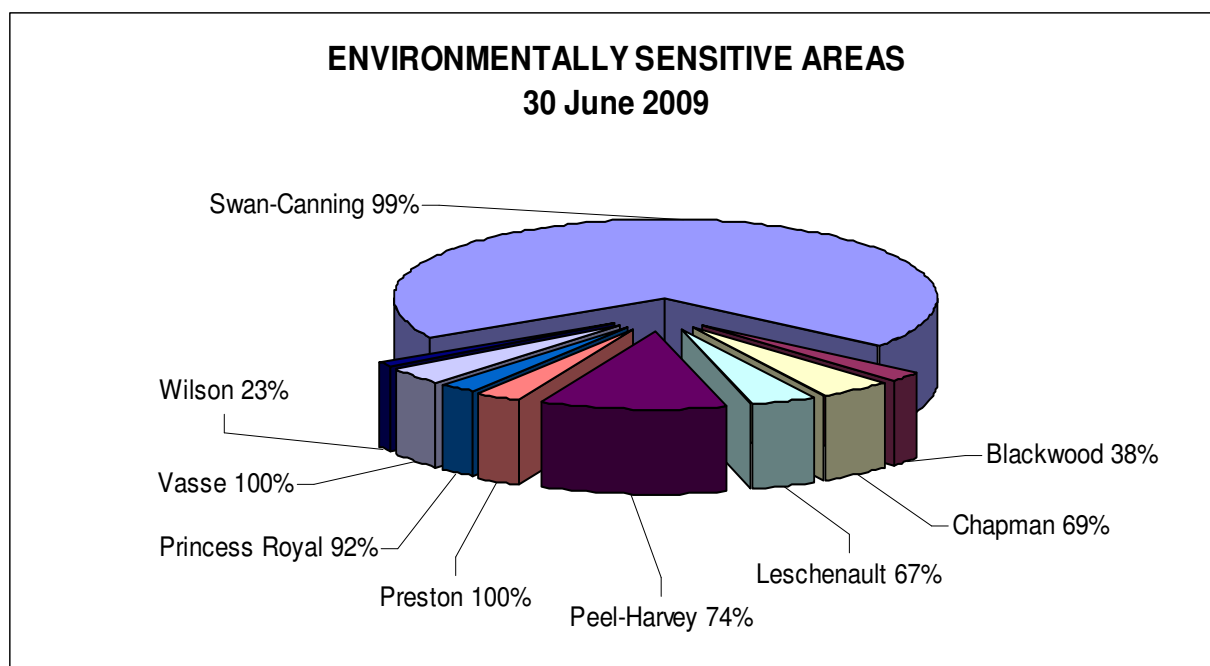
From 1 July 1994 to 30 June 2009

Total length of sewer mains laid 2,008,264 metres



## Environmentally sensitive areas in Waterway Catchment 30 June 2009

AREA	TOTAL LOTS	COMPLETED	NOT COMPLETED	% COMPLETED
Swan-Canning	40,239	39,821	419	99%
Blackwood	1,069	410	659	38%
Chapman	2,612	1,794	818	69%
Leschenault	2,284	1,526	758	67%
Peel-Harvey	6,406	4,729	1,677	74%
Preston	1,576	1,576	0	100%
Princess Royal	1,322	1,221	101	92%
Vasse	2,182	2,182	0	100%
Wilson	613	141	472	23%
<b>TOTAL</b>	<b>58,303</b>	<b>53,400</b>	<b>4,904</b>	<b>92%</b>



## ***Future for the Infill Sewerage Program***

State budget announcements in May 2009 required \$560 million savings in future years from the Water Corporation. The State's Infill Sewerage Program (\$85 million over 4 years) was a part of the savings offered by the Water Corporation. All projects in the Infill Sewerage Program but not yet not in construction were deferred until financial conditions improve.

Since that date, the Minister has received a significant number of enquiries/comments from members of the public, health surveyors and politicians. The enquiries resulted in a hearing before the Standing Committee on Environment and Public Affairs and a subsequent report (Report 18: Inquiry into Deep Sewerage in the Cockburn Area; Dec 2009). The report contains 17 findings and 9 recommendations, which include a review of the Infill Sewerage project priorities as well as a review of other areas not currently a part of the Infill Sewerage Program.

The Water Corporation commenced tendering for the remaining projects in Spearwood (Cockburn) following an announcement by the Minister for Water, Dr Graham Jacobs on 10 November 2009 ([view here](#)). There are currently three contractors on site in Spearwood and work is anticipated to be complete by June 2011.

At 30 June 2009, the program has serviced approximately 88,730 properties with in metropolitan Perth and in country towns. At 30 June 2009, there were a further 970 properties still under construction and not yet released for connection. As of 10 November 2009, the Spearwood projects (approximately 760 Lots) were added to the Infill Program.

The Program continues to be assessed as part of the annual State budget process, with its continuation subject to availability of funding. The management of funding is at the State Government's discretion, with further announcements anticipated in the Budget announcements on 20 May 2010.