

Inquiry into Secondary Water Use – Territory and Municipal Services Directorate Submission

The Territory and Municipal Services Directorate (TAMS) delivers a wide range of services, manages a number of major assets and oversees a number of commercial operations. Secondary water use throughout the Directorate therefore takes many forms and is not centrally managed as such. TAMS does, however, manage its resources consistent with the ACT Government's environment and sustainability objectives. This submission therefore includes responses from a number of different areas, using a variety of data from a range of sources. Not all of the information relates specifically to secondary water use (ie water that has been used productively for a second time) however the source of the water is identified in most cases and is included for the sake of completeness and because of the different interpretations that may be placed on the term 'secondary water'.

It is recognised that this submission is a response to a request for information prepared over a short period and may therefore be incomplete in some respects. TAMS remains committed to fully supporting the Inquiry and would be happy to respond to requests for further information and to make its officers available to the Commission.

Parks and City Services

The information provided in Attachment A is for the irrigated parklands in Canberra and shows the comparison of potable water usage over two consecutive years covering around 90% of irrigated parks. The 2010-11 financial year was a wet year and water consumption fell by 56%. The remaining 10% of parklands may have dual systems on the one water metre such as toilets and grass irrigation. Water consumption on parklands was 158,455 kilolitres for 2010-11 and 281,044 kilolitres for 2009-10. A comparison of water usage for public toilets over the two financial years is also included at Attachment A.

Attachment B shows the non potable water usage for 2010-11 through water abstraction from lakes or dams.

Newly planted trees are hand watered. The amount of non-potable water used for such watering is not great (at about 10,000 kilolitres each summer). On comparison the average amount of water used by a typical home in Canberra is about 300 kilolitres, so this equates to the water used by 30 homes. The use of non-potable water for tree watering achieves a saving of more than \$45,000 per annum, however this is offset by the transport cost to access non-potable water stand pipes or drafting from lakes.

If the infrastructure and recycled water (that satisfied health regulations) was provided to supply water to high use areas that are currently watered through potable water, the Parks and City Services Directorate of TAMS would use recycled water. The areas where recycled water could be used include:

- irrigated parkland and Northbourne Avenue (lake water is currently used in parks around a number of urban lakes and ponds);

- toilets both public and ones within buildings eg library toilets;
- fountains; and
- water features (lake water is currently used in Weston and John Knight District Parks).

In relation to the National Arboretum, which is also managed by Parks and City Services, non-potable water has primarily been used on site for the irrigation of the new forests being established across the 250 hectare site, though it has also been used in the construction and civil works projects (eg the visitors centre and dust suppression). Currently the Arboretum has 127ML water entitlements on site.

An irrigation master plan for the Arboretum and has been developed and is being progressively implemented. As part of this process a water demand table has been developed based on estimated water usage for the site. The following water and irrigation facilities have been built on site: a 40ML dam; swales and other measures to capture water; a bore (near the dam); 5 x 120,000L tanks and a 1.6ML storage tank on Dairy Farmers Hill; and connections to the dam and the bore to the tanks. Each forest has in ground irrigation fed by one or two 10,000 litre tanks. Currently these small tanks in each forest are filled from water trucks that get the water from non potable water sources.

Though it would be prudent to retain a balance of on-site surface and ground water entitlements, it is theoretically possible to tap into the sewerage line running past the Arboretum to the Lower Molonglo (ie black water treatment) though this is not currently being pursued and would have to be fully tested and costed.

TAMS is in the process of providing the visitors' centre at the Arboretum with potable water, sewerage, gas, electricity and optic fibre and anticipates completion by September 2012.

Other

ACT NOWaste

The impact on ACT NOWaste in relation to secondary water use would be minor and would most likely impact on leachate disposal at Mugga Lane Resource Management Centre (already charged) and water abstraction charges (minimal but already charged).

ACT Property Group

ACT Property Group continues to be interested in using recycled stormwater through onsite water storage systems and imported non-potable water in appropriate areas where it is feasible for the maintenance of buildings and fountains. At times this has included using non-potable water to top up fountains in the city and recycled storm water for garden maintenance and toilets. However, a large disincentive to using non-potable water not collected and stored on site is the cost of it compared to potable water. While the water itself is cost effective and may be suitable, the cartage costs significantly increase the unit price to equal or greater than the cost of obtaining on-site potable water.

Gungahlin Cemetery

A table of potable and surface/bore water use at Gungahlin Cemetery over the years from 2003 to 2010-11 is at Attachment C.

TAMS' responses to the questions listed in the ICRC Issues Paper on Secondary Water use in the ACT are at Attachment D.

Water Usage on selected Parks - July 09 - June 10

<i>Parks_enq</i>			<i>ConsumptionkL</i>	<i>Total_cost</i>
<i>Acton Park</i>				
Public toilets - Acton	28/07/2009	WC0605:1	154	1,094.89
Public toilets - Acton	28/10/2009	WC0605:1	432	2,203.49
Public toilets - Acton	27/01/2010	WC0605:1	494	2,442.09
Public toilets - Acton	30/04/2010	WC0605:1	300	1,687.74
		0.45 HA	1,380	\$7,428
<i>Arabanoo Plc Phillip</i>				
Park Arabanoo Plc Phillip	20/07/2009	LE0090:1	867	3,137.91
Park Arabanoo Plc Phillip	16/10/2009	LE0090:1	471	1,756.16
		0.9 HA	1,338	\$4,894
<i>Black Mountian Pennisular</i>				
Public toilets +watering n Park	30/04/2010	LD0194:1	609	3,366.48
Public toilets +watering n Park	28/07/2009	LD0194:1	257	1,949.75
Public toilets +watering n Park	12/11/2009	LD0194:1	1306	6,077.89
Public toilets +watering n Park	27/01/2010	LD0194:1	580	3,263.86
		1.7 HA	2,752	\$14,658
<i>Bowen Park Barton</i>				
Bowen Park Barton	13/05/2010	LE0025:1	1817	7,008.26
Bowen Park Barton	10/02/2010	LE0025:1	3483	13,508.83
Bowen Park Barton	10/08/2009	LE0025:1	3973	14,774.18
Bowen Park Barton	10/11/2009	LE0025:1	474	1,769.47
Bowen Park Barton	13/05/2010	WE0032	2105	8,131.46
Bowen Park Barton	10/08/2009	WE0032	1205	4,435.16
Bowen Park Barton	9/02/2010	WE0032	0	436.03
Bowen Park Barton	9/02/2010	WE0032	131	436.03
Bowen Park Barton	10/11/2009	WE0032	159	540.97
		6.1 HA	13,347	\$51,040
<i>City Hill</i>				
City Hill watering	15/07/2009	WE0154	907	3,285.91
City Hill watering	1/10/2009	WE0154	0	22.38
City Hill watering	2/10/2009	WE0154	11725	45,032.54
City Hill watering	31/12/2009	WE0154	363	1,341.90
City Hill watering	29/03/2010	WE0154	5792	22,515.00
City Hill watering	6/01/2010	WE0154	363	1,384.38
		4.0 HA	19,150	\$73,582
<i>Corroboree Park</i>				
Corroboree Park	15/03/2010	WE0038	2433	9,414.90
Corroboree Park	15/12/2009	WE0038	1563	6,019.77
Corroboree Park	11/09/2009	WE0038	33	85.23
Corroboree Park	15/09/2009	WE0038	462	1,540.11
Corroboree Park	15/06/2010	WE0038	1388	5,337.30
		2.9 HA	5,879	\$22,397
<i>Cotter - Watering Heritage trees</i>				
Public toilets + Herritage trees	14/04/2010	LE0076	2226	8,724.39
Public toilets + Herritage trees	12/01/2010	LE0076	1616	6,345.39
Public toilets + Herritage trees	9/10/2009	LE0076	193	795.43
Public toilets + Herritage trees	13/07/2009	LE0076	2791	10,370.70
		HA	6,826	\$26,236
<i>Diddams close Belconnen</i>				
Diddams close Belconnen	4/01/2010	WD0216	1214	4,659.73
Diddams close Belconnen	6/04/2010	WD0216	1978	7,640.40
Diddams close Belconnen	2/10/2009	WD0216	8	37.78
Diddams close Belconnen	2/07/2009	WD0216	1460	5,328.96
Diddams close Belconnen	6/04/2010	WD0348	4068	15,791.40
Diddams close Belconnen	2/07/2009	WD0348	2108	7,726.56

<i>Parks_enq</i>			<i>ConsumptionkL</i>	<i>Total_cost</i>	
Diddams close Belconnen	2/10/2009	WD0348	9	39.73	
Diddams close Belconnen	4/01/2010	WD0348	2975	11,527.63	
		HA	13,820		\$52,752
<i>Eddison Park</i>					
Eddison Park Phillip	1/02/2010	LA0816:1	115	0.00	
Eddison Park Phillip	19/04/2010	LG0005	19152	36,099.51	
Eddison Park Phillip	1/02/2010	LG0005	15433	61,033.23	
Eddison Park Phillip	21/10/2009	LG0005	67	0.00	
Eddison Park Phillip	20/01/2010	LG0005	687	0.00	
Eddison Park Phillip+ toilets	21/07/2009	MG63	3330	12,463.22	
Eddison Park Phillip	21/10/2009	WA0181	123	880.29	
		7.8 HA	38,907		\$110,476
<i>Fadden Pines toilets and irrigation</i>					
Fadden Pines toilets and irrigation	10/02/2010	MD956:1	10	617.00	
Fadden Pines toilets and irrigation	10/08/2009	MD956:1	0	617.00	
Fadden Pines toilets and irrigation	19/08/2009	MD956:1	644	2,342.92	
Fadden Pines toilets and irrigation	10/11/2009	MD956:1	0	617.00	
Fadden Pines toilets and irrigation	15/02/2010	MD956:1	4142	16,078.93	
Fadden Pines toilets and irrigation	12/05/2010	MD956:1	0	617.12	
Fadden Pines toilets and irrigation	2/06/2010	MD956:1	3453	0.00	
Fadden Pines toilets and irrigation	13/11/2009	MD956:1	1107	4,242.43	
		2.4 HA	9,356		\$25,132
<i>Glebe Park</i>					
Glebe Park	11/01/2010	LE0113:1	4741	18,419.63	
Glebe Park	16/04/2010	LE0113:1	11586	45,111.92	
Glebe Park	2/07/2009	LE0113:1	5042	18,585.41	
Glebe Park	2/10/2009	LE0113:1	218	757.33	
		4.7 HA	21,587		\$82,874
<i>Greenway Foreshore "Nguru Beach"</i>					
Greenway Foreshore "Nguru Beac	26/05/2010	W321667:1	62	44.42	
Greenway Foreshore "Nguru Beac	18/02/2010	W321667:1	27	75.03	
Greenway Foreshore "Nguru Beac	3/09/2009	W321667:1	24	22.38	
		HA	113		\$142
<i>Greenway Town Park</i>					
Greenway Town Park Anketell st	25/05/2010	CE2702:1	0	22.41	
Greenway Town Park Anketell st	3/03/2010	CE2702:1	0	22.38	
Greenway Town Park Anketell st	26/11/2009	CE2702:1	0	22.38	
Greenway Town Park Anketell st	3/09/2009	CE2702:1	0	22.38	
		HA	0		\$90
<i>John Knight Park</i>					
John Knight Park	31/03/2010	ME796	15035	0.00	
John Knight Park	2/10/2009	ME796	59	136.13	
John Knight Park	6/04/2010	ME796	23035	44,940.63	
John Knight Park	2/07/2009	ME796	2922	5,426.95	
John Knight Park	4/01/2010	ME796	8751	17,086.83	
		10.7 HA	49,802		\$67,591
<i>Kambah District Park</i>					
District Park - Springbet St	16/04/2010	LE0120:1	5091	19,772.55	
District Park - Springbet St	16/10/2009	LE0120:1	250	895.11	
District Park - Springbet St	14/07/2009	LE0120:1	1171	4,262.71	
District Park - Springbet St	11/01/2010	LE0120:1	2286	8,845.88	
		1.8 HA	8,798		\$33,776
<i>Lennox's Gardens</i>					
verge Flynn Drive	1/07/2009	WF0012	0	21.25	
		HA	0		\$21
<i>Margaret Timpson park</i>					
Margaret Timpson Park	2/07/2009	WD0171:1	1504	5,491.76	
Margaret Timpson Park	6/04/2010	WD0171:1	1526	5,877.60	

<i>Parks_enq</i>			<i>ConsumptionkL</i>	<i>Total_cost</i>
Margaret Timpson park	2/10/2009	WF0071:1	0	22.38
Margaret Timpson park	2/07/2009	WF0071:1	0	21.25
Margaret Timpson park	4/01/2010	WF0071:1	0	22.38
Margaret Timpson park	6/04/2010	WF0071:1	0	22.38
		0.6 HA	3,030	\$11,458
<i>median Northb Av</i>				
median Northb Av	12/02/2010	LE0007:1	1108	0.00
median Northb Av	3/08/2009	LE0007:1	88	0.00
median Northb Av	17/11/2009	LE0012:1	370	0.00
median Northb Av	12/02/2010	LE0012:1	1944	0.00
median Northb Av	4/05/2010	LE0012:1	1436	24,941.21
median Northb Av	3/08/2009	LE0012:1	373	3,462.21
median Northb Av	4/05/2010	ME817	1112	0.00
median Northb Av	17/11/2009	ME817	48	0.00
median Northb Av	3/08/2009	ME817	182	0.00
median Northb Av	12/02/2010	ME817	1295	0.00
median Northb Av	3/08/2009	WE0072	301	0.00
median Northb Av	17/11/2009	WE0072	546	4,578.15
median Northb Av	12/02/2010	WE0072	3765	31,563.00
median Northb Av	4/05/2010	WE0072	2903	0.00
		HA	15,471	\$64,545
<i>median Northb Av - Antill St</i>				
Medstrip Nthbourne Ave - Antill St	28/05/2010	LD0046:1	1615	12,014.10
Medstrip Nthbourne Ave - Antill St	1/09/2009	LD0046:1	54	167.00
Medstrip Nthbourne Ave - Antill St	3/12/2009	LD0046:1	883	0.00
Medstrip Nthbourne Ave - Antill St	26/02/2010	LD0046:1	3722	0.00
		HA	6,274	\$12,181
<i>median Northb Av- Info Centre</i>				
Medstrip Nthbourne Ave - Info Cent	3/12/2009	WD0062	1484	5,705.25
Medstrip Nthbourne Ave - Info Cent	1/09/2009	WD0062	10	0.00
Medstrip Nthbourne Ave - Info Cent	28/05/2010	WD0062	1485	0.00
Medstrip Nthbourne Ave - Info Cent	26/02/2010	WD0062	3722	28,640.52
		HA	6,701	\$34,346
<i>Narra Park Flynn Drive</i>				
Narra Park Flynn Drive	29/06/2010	LF0062:1	3830	14,861.10
Narra Park Flynn Drive	29/03/2010	LF0062:1	10040	39,085.41
Narra Park Flynn Drive	30/12/2009	LF0062:1	3305	12,811.43
Narra Park Flynn Drive	1/10/2009	LF0062:1	89	267.59
		HA	17,264	\$67,026
<i>Park Mullion St Harrison</i>				
Park Mullion St Harrison	19/03/2010	LD0149:1	3	607.38
Park Mullion St Harrison	6/05/2010	LD0149:1	2921	11,317.03
Park Mullion St Harrison	3/06/2010	LD0149:1	490	1,837.23
		HA	3,414	\$13,762
<i>Point Hutt District Park</i>				
Point Hutt District Park	17/06/2010	WD0313	31	203.93
Point Hutt District Park	19/03/2010	WD0313	29	199.99
Point Hutt District Park	21/12/2009	WD0313	33	207.79
Point Hutt District Park	17/09/2009	WD0313	52	245.84
		3.1 HA	145	\$858
<i>sundry parkland watering</i>				
Park Tyagarah St	5/08/2009	CD199	0	22.38
Park Tyagarah St	4/11/2009	CD199	0	22.38
Park Tyagarah St	19/04/2010	CD199	0	23.02
sundry park watering	2/07/2009	M110775:22	27	92.45
sundry park watering	2/02/2010	M110775:22	9	39.63
sundry park watering	3/02/2010	M110775:22	119	383.90
Park Picnic ground Cotter Rd	12/01/2010	M50111:1	80	233.93
Park Picnic ground Cotter Rd	14/07/2009	M50111:1	12	43.45

<i>Parks_enq</i>			<i>ConsumptionkL</i>	<i>Total_cost</i>
Park Picnic ground Cotter Rd	13/10/2009	M50111:1	52	128.12
sundry park watering	26/11/2009	W307753	0	22.38
sundry park watering	1/06/2010	W307753	2	26.31
sundry park watering	26/02/2010	W307753	0	22.38
toilets irrigation/Rangers cottage?	19/03/2010	WC0266	585	2,210.91
toilets irrigation/Rangers cottage?	23/12/2009	WC0266	320	1,543.27
toilets irrigation/Rangers cottage?	18/09/2009	WC0266	33	1,198.61
		HA	1,239	\$6,013

sundry watering City

sundry watering City	1/07/2009	8491M:1	0	1,217.30
sundry watering City	9/02/2010	8491M:1	10	1,389.73
sundry watering City	6/04/2010	8491M:1	1	22.38
sundry watering City	1/07/2009	LB0137	275	0.00
sundry watering City	12/10/2009	LB0137	305	1,095.74
sundry watering City	29/03/2010	LB0137	192	675.00
sundry watering City	31/12/2009	LB0137	262	953.35
sundry watering City	29/12/2009	LD2028:1	352	1,299.00
sundry watering City	26/03/2010	LD2028:1	440	1,641.77
sundry watering City	30/09/2009	LD2028:1	49	145.66
sundry watering City	28/06/2010	LD2028:1	141	475.06
sundry watering City	26/03/2010	LD2028:1	0	23.02
sundry watering City	26/03/2010	LD2028:1	440	1,641.13
sundry watering City	26/03/2010	LD2028:1	440	1,641.13
sundry watering City	1/07/2009	LD2028:1	93	330.26
sundry watering City	1/07/2009	LD2233:1	16	0.00
sundry watering City	26/03/2010	LD2233:1	24	0.00
sundry watering City	16/04/2010	M92348:1	0	22.38
sundry watering City	2/10/2009	M92348:1	0	22.38
sundry watering City	11/01/2010	M92348:1	0	22.38
sundry watering City	15/07/2009	M92348:1	0	21.25
sundry watering City	30/09/2009	MB32798	447	0.00
sundry watering City	30/09/2009	MB32798	297	0.00
sundry watering City	9/10/2009	MB33033:1	3	28.13
sundry watering City	1/07/2009	MB33033:1	0	21.25
sundry watering City	29/12/2009	MB33033:1	0	22.38
sundry watering City	29/06/2010	MB33033:1	0	22.41
sundry watering City	26/03/2010	MB33033:1	0	22.38
sundry watering City	31/03/2010	MC1446	437	6,568.22
sundry watering City	22/01/2010	MC1446	1130	4,324.65
sundry watering City	30/09/2009	MC1446	955	0.00
sundry watering City	26/03/2010	WE0027	0	22.38
sundry watering City	23/03/2010	WE0027	0	22.38
		HA	6,309	\$23,693

Teloepa Park

Teloepa Park	10/11/2009	LD2196:1	476	4,339.57
Teloepa Park	13/05/2010	LD2196:1	1601	23,123.06
Teloepa Park	10/08/2009	LD2196:1	618	24,095.38
Teloepa Park	13/05/2010	MD1646	1773	0.00
Teloepa Park	10/08/2009	MD1646	2564	0.00
Teloepa Park	9/02/2010	MD1646	9482	36,904.93
Teloepa Park	10/11/2009	MD1646	426	0.00
Teloepa Park	10/08/2009	WD0127	2196	0.00
Teloepa Park	10/11/2009	WD0127	93	0.00
Teloepa Park	13/05/2010	WE0067	2574	0.00
Teloepa Park	10/11/2009	WE0067	138	0.00
Teloepa Park	10/08/2009	WE0067	1081	0.00
		HA	23,022	\$88,463

Veterans Prk City

Veterans Prk City	1/07/2009	MD1659	386	1,356.18
Veterans Prk City	31/12/2009	MD1659	336	1,229.12
Veterans Prk City	29/03/2010	MD1659	510	1,919.48

<i>Parks_enq</i>			<i>ConsumptionkL</i>	<i>Total_cost</i>
Veterans Prk City	30/09/2009	MD1659	117	377.48
		HA	1,349	\$4,882
<i>Weston Park Pescott lane</i>				
Weston Park	9/02/2010	LF0053	1171	4,428.75
Weston Park	9/02/2010	LF0053	1452	5,583.67
Weston Park - Prescott Lane	1/04/2010	MC1506	1148	4,404.48
		HA	3,771	\$14,417
<i>Woden Town Park</i>				
Town centre Phillip	16/10/2009	MD1690	0	22.38
Town centre Phillip	20/01/2010	MD1690	0	22.38
		.06 HA	0	\$45
Totals	Total area	291	Kilo Lts	281,044
				\$914,778

Water Usage on selected Parks - July 10 - June 11

<i>Parks_enq</i>			<i>ConsumptionkL</i>	<i>Total_cost</i>
<i>Acton Park</i>				
Public toilets - Acton	2/08/2010	WC0605:1	458	2,352.65
Public toilets - Acton	27/10/2010	WC0605:1	108	988.50
Public toilets - Acton	27/04/2011	WC0605:1	207	1,392.22
Public toilets - Acton	28/01/2011	WC0605:1	226	1,457.28
		0.45 HA	999	\$6,191
<i>Arabanoo Plc Phillip</i>				
Park Arabanoo Plc Phillip	27/01/2011	LE0090:1	971	3,815.39
Park Arabanoo Plc Phillip	20/10/2010	LE0090:1	0	23.02
Park Arabanoo Plc Phillip	20/07/2010	LE0090:1	0	22.41
Park Arabanoo Plc Phillip	19/04/2011	LE0090:1	911	3,580.30
		0.9 HA	1,882	\$7,441
<i>Black Mountain Pennisular</i>				
Public toilets +watering n Park	28/01/2011	LD0194:1	237	2,025.03
Public toilets +watering n Park	27/10/2010	LD0194:1	255	2,082.69
Public toilets +watering n Park	27/04/2011	LD0194:1	204	1,884.99
Public toilets +watering n Park	2/08/2010	LD0194:1	365	2,494.56
		1.7 HA	1,061	\$8,487
<i>Bowen Park Barton</i>				
Bowen Park Barton	13/09/2010	LE0025:1	4554	17,804.96
Bowen Park Barton	31/05/2011	LE0025:1	1817	7,219.97
Bowen Park Barton	9/03/2011	WE0032	1123	4,411.89
Bowen Park Barton	10/05/2011	WE0032	714	2,815.66
Bowen Park Barton	13/08/2010	WE0032	1305	5,046.30
Bowen Park Barton	17/11/2010	WE0032	95	301.53
		6.1 HA	9,608	\$37,600
<i>City Hill</i>				
City Hill watering	1/07/2010	WE0154	811	3,081.65
		4.0 HA	811	\$3,082
<i>Corroboree Park</i>				
Corroboree Park	10/06/2011	WE0038	1336	5,299.97
Corroboree Park	1/04/2011	WE0038	3456	13,767.02
Corroboree Park	22/12/2010	WE0038	157	555.68
Corroboree Park	22/09/2010	WE0038	15	52.72
		2.9 HA	4,964	\$19,675
<i>Cotter - Watering Heritage trees</i>				
Public toilets + Herritage trees	21/07/2010	LE0076	2155	8,450.73
		HA	2,155	\$8,451
<i>Diddams close Belconnen</i>				
Diddams close Belconnen	2/07/2010	WD0216	0	22.41
Diddams close Belconnen	5/01/2011	WD0216	0	23.02
Diddams close Belconnen	15/10/2010	WD0216	0	23.02
Diddams close Belconnen	27/04/2011	WD0216	0	23.02
Diddams close Belconnen	15/10/2010	WD0348	11	44.92
Diddams close Belconnen	10/01/2011	WD0348	217	791.85
Diddams close Belconnen	2/07/2010	WD0348	1206	4,627.50
Diddams close Belconnen	27/04/2011	WD0348	566	2,189.87
		HA	2,000	\$7,746
<i>Eddison Park</i>				
Eddison Park Phillip	18/11/2010	LA0816:1	72	9,512.50
Eddison Park Phillip	27/04/2011	LA0816:1	64	0.00
Eddison Park Phillip	20/01/2011	LA0816:1	64	3,445.16
Eddison Park Phillip	20/07/2010	LA0816:1	130	1,603.36
Eddison Park Phillip	20/07/2010	LG0005	179	0.00
Eddison Park Phillip	18/11/2010	LG0005	2195	0.00

<i>Parks_enq</i>			<i>ConsumptionkL</i>	<i>Total_cost</i>
Eddison Park Phillip	27/04/2011	LG0005	4604	19,147.92
		7.8 HA	7,308	\$33,709
<i>Fadden Pines toilets and irrigation</i>				
Fadden Pines toilets and irrigation	9/02/2011	MD956:1	0	656.76
Fadden Pines toilets and irrigation	11/05/2011	MD956:1	0	656.87
Fadden Pines toilets and irrigation	10/11/2010	MD956:1	0	656.76
Fadden Pines toilets and irrigation	9/08/2010	MD956:1	0	656.76
		2.4 HA	0	\$2,627
<i>Glebe Park</i>				
Glebe Park	2/07/2010	LE0113:1	5604	21,771.15
Glebe Park	28/06/2011	LE0113:1	1239	5,315.09
Glebe Park	5/01/2011	LE0113:1	4120	16,676.65
		4.7 HA	10,963	\$43,763
<i>Greenway Foreshore "Nguru Beach"</i>				
Greenway Foreshore "Nguru Beac	21/09/2010	W321667:1	30	81.97
Greenway Foreshore "Nguru Beac	24/11/2010	W321667:1	34	91.02
Greenway Foreshore "Nguru Beac	7/04/2011	W321667:1	30	83.02
Greenway Foreshore "Nguru Beac	26/05/2011	W321667:1	66	201.77
		HA	160	\$458
<i>Greenway Town Park</i>				
Greenway Town Park Anketell st	26/05/2011	CE2702:1	0	23.02
Greenway Town Park Anketell st	15/09/2010	CE2702:1	0	23.02
		HA	0	\$46
<i>John Knight Park</i>				
John Knight Park	2/07/2010	ME796	5689	16,806.06
		10.7 HA	5,689	\$16,806
<i>Kambah District Park</i>				
District Park - Springbet St	16/07/2010	LE0120:1	1140	4,373.31
District Park - Springbet St	14/10/2010	LE0120:1	7	36.97
District Park - Springbet St	20/01/2011	W311790	2	27.02
District Park - Springbet St	19/04/2011	W311790	894	3,509.92
		1.8 HA	2,043	\$7,947
<i>Lennox's Gardens</i>				
Public Toilets - Lennox's Gardens	2/07/2010	unmetered13	0	22.41
		HA	0	\$22
<i>Margaret Timpson park</i>				
Margaret Timpson Park	5/10/2010	WD0171:1	4	30.97
Margaret Timpson Park	10/01/2011	WD0171:1	261	964.89
Margaret Timpson Park	2/07/2010	WD0171:1	582	2,193.90
Margaret Timpson Park	27/04/2011	WD0171:1	2583	10,262.99
Margaret Timpson park	2/05/2011	WF0071:1	0	23.02
Margaret Timpson park	2/07/2010	WF0071:1	0	22.41
Margaret Timpson park	5/01/2011	WF0071:1	0	23.02
		0.6 HA	3,430	\$13,521
<i>median Northb Av</i>				
median Northb Av	10/08/2010	LE0012:1	38	97.37
median Northb Av	1/03/2011	LE0012:1	196	1,444.29
median Northb Av	10/05/2011	WE0072	4762	19,032.73
		HA	4,996	\$20,574
<i>median Northb Av - Antill St</i>				
Medstrip Nthbourne Ave - Antill St	24/05/2011	LD0046:1	1572	0.00
Medstrip Nthbourne Ave - Antill St	31/08/2010	LD0046:1	39	99.87
Medstrip Nthbourne Ave - Antill St	29/11/2010	LD0046:1	324	1,227.54
Medstrip Nthbourne Ave - Antill St	27/05/2011	LD0046:1	1572	12,198.90
Medstrip Nthbourne Ave - Antill St	2/03/2011	LD0046:1	610	4,157.41
		HA	4,117	\$17,684
<i>median Northb Av- Info Centre</i>				

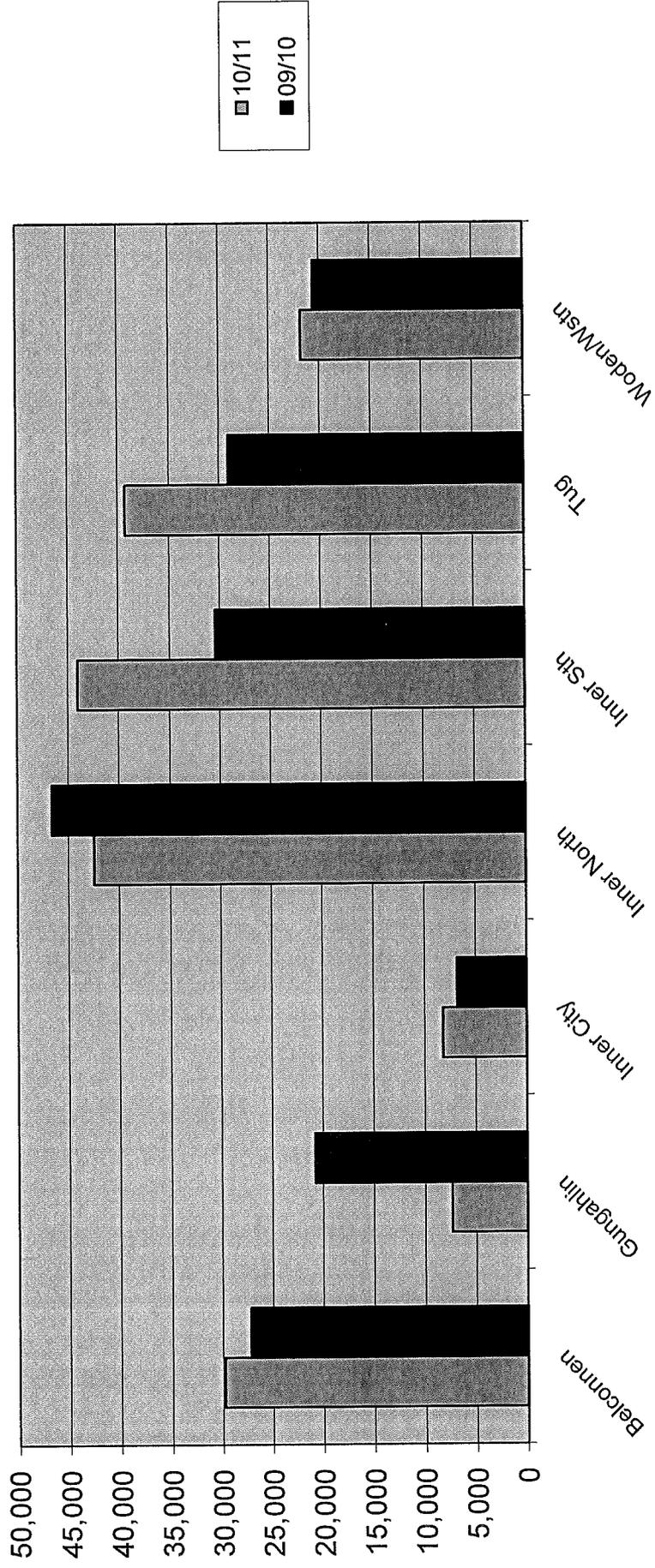
<i>Parks_enq</i>			<i>ConsumptionkL</i>	<i>Total_cost</i>
Medstrip Nthbourne Ave - Info Cent	2/03/2011	WD0062	443	0.00
Medstrip Nthbourne Ave - Info Cent	27/05/2011	WD0062	1488	0.00
Medstrip Nthbourne Ave - Info Cent	27/05/2011	WD0062	1488	12,198.90
		HA	3,419	\$12,199
<i>Narra Park Flynn Drive</i>				
Narra Park Flynn Drive	29/09/2010	LF0062:1	48	118.37
Narra Park Flynn Drive	3/02/2011	LF0062:1	3164	12,612.94
Narra Park Flynn Drive	15/06/2011	LF0062:1	4500	17,968.91
		HA	7,712	\$30,700
<i>Park Mullion St Harrison</i>				
Park Mullion St Harrison	2/12/2010	LD0149:1	0	25.02
Park Mullion St Harrison	2/06/2011	LD0149:1	14	74.04
		HA	14	\$99
<i>Point Hutt District Park</i>				
Point Hutt District Park	17/06/2011	WD0313	18	189.41
Point Hutt District Park	12/04/2011	WD0313	28	211.01
Point Hutt District Park	22/09/2010	WD0313	16	183.74
Point Hutt District Park	21/12/2010	WD0313	21	199.24
		3.1 HA	83	\$783
<i>ndry parkland watering</i>				
Park Tyagarah St	6/05/2011	CD199	0	23.54
Park Tyagarah St	2/11/2010	CD199	0	23.02
Park Tyagarah St	25/02/2011	CD199	0	23.78
Park Picnic ground Cotter Rd	27/04/2011	M50111:1	82	247.20
Park Picnic ground Cotter Rd	19/01/2011	M50111:1	80	242.48
Park Picnic ground Cotter Rd	21/07/2010	M50111:1	65	179.73
Park Picnic ground Cotter Rd	24/11/2010	M50111:1	52	129.91
sundry park watering	10/12/2010	W307753	8	23.02
sundry park watering	17/03/2011	W307753	2	27.02
sundry park watering	20/06/2011	W307753	0	23.02
toilets irrigation/Rangers cottage?	17/06/2011	WC0266	345	1,410.80
toilets irrigation/Rangers cottage?	21/12/2010	WC0266	409	1,598.89
toilets irrigation/Rangers cottage?	23/03/2011	WC0266	394	1,569.72
toilets irrigation/Rangers cottage?	21/09/2010	WC0266	470	1,787.11
toilets irrigation/Rangers cottage?	17/06/2011	WC0266	345	1,311.75
		HA	2,252	\$8,621
<i>sundry watering City</i>				
sundry watering City	6/07/2010	8491M:1	0	1,327.58
sundry watering City	7/10/2010	8491M:1	1	1,417.79
sundry watering City	11/04/2011	LB0137	0	411.20
sundry watering City	11/04/2011	LB0137	176	631.23
sundry watering City	5/10/2010	LB0137	270	994.68
sundry watering City	30/12/2010	LB0137	231	853.50
sundry watering City	30/12/2010	LB0137	231	853.50
sundry watering City	5/10/2010	LB0137	270	994.68
sundry watering City	5/10/2010	LB0137	270	994.68
sundry watering City	1/07/2010	LB0137	239	850.85
sundry watering City	12/04/2011	LD2028:1	446	1,724.67
sundry watering City	3/01/2011	LD2028:1	118	429.97
sundry watering City	30/09/2010	LD2028:1	25	72.67
sundry watering City	3/01/2011	LD2028:1	118	429.97
sundry watering City	2/07/2010	M92348:1	0	22.41
sundry watering City	5/01/2011	MB32798	91	0.00
sundry watering City	2/07/2010	MB32798	147	0.00
sundry watering City	10/12/2010	MB33033:1	0	23.02
sundry watering City	30/12/2010	MB33033:1	0	23.02
sundry watering City	11/04/2011	MB33033:1	0	23.98
sundry watering City	29/06/2011	MB33033:1	0	23.28
sundry watering City	2/07/2010	MC1446	425	6,744.45
sundry watering City	27/04/2011	MC1446	1539	6,077.66

<i>Parks_eng</i>			<i>ConsumptionkL</i>	<i>Total_cost</i>
sundry watering City	5/05/2011	MC1446	148	2,249.38
sundry watering City	8/07/2010	WE0027	0	22.41
sundry watering City	8/10/2010	WE0027	17	56.82
		HA	4,762	\$27,253
<i>Telopea Park</i>				
Telopea Park	13/08/2010	D22836M	426	0.00
Telopea Park	6/04/2011	LD2196:1	161	0.00
Telopea Park	13/08/2010	MD1646	252	2,690.79
Telopea Park	6/04/2011	MD1646	1831	12,932.63
Telopea Park	10/05/2011	MD1646	2729	10,881.00
Telopea Park	6/04/2011	WD0127	727	0.00
Telopea Park	6/04/2011	WE0067	527	0.00
Telopea Park	17/11/2010	WE0067	1	25.02
		HA	6,654	\$26,529
<i>Tuggeranong Town Park</i>				
Tuggeranong Town Park	12/11/2010	WU50	67800	17,298.50
		6.6 HA	67,800	\$17,299
<i>Veterans Prk City</i>				
Veterans Prk City	12/04/2011	MD1659	343	1,286.10
Veterans Prk City	1/07/2010	MD1659	135	448.46
Veterans Prk City	3/01/2011	MD1659	145	508.64
Veterans Prk City	5/10/2010	MD1659	29	80.67
Veterans Prk City	28/06/2011	MD1659	200	742.41
		HA	852	\$3,066
<i>Weston Park Pescott lane</i>				
Weston Park	6/01/2011	LF0053	1400	5,555.73
Weston Park	12/04/2011	LF0053	654	4,897.30
Weston Park - Prescott Lane	12/04/2011	MC1506	575	0.00
		HA	2,629	\$10,453
<i>Yerrabi Ponds</i>				
Yerrabi Ponds	14/01/2011	WD0017	21	205.21
Yerrabi Ponds	22/10/2010	WD0017	21	193.89
Yerrabi Ponds	13/07/2010	WD0017	26	194.18
Yerrabi Ponds	2/05/2011	WD0017	24	202.83
		2.2 HA	92	\$796
Totals	Total area	207	Kilo Lts	158,455
				\$393,630

00/0

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Water usage - Public toilets 09/10 - 10/11 - by District \$\$



Note
Chisholm toilet major water usage under investigation 10/11

Public toilets July 10 to June 2011

<i>District</i>	<i>Suburb</i>	<i>location of meter</i>		<i>totalcost</i>	
Belconnen					
Belconnen					
	<i>Public toilets</i>	<i>Ginindera Drive Blk2 - Diddams close B</i>	LA0444	215.00	19669.87
	Sum	<i>Summary for 'Suburb' = Belconnen (16 detail records)</i>			
Charnwood					
	<i>Public toilets</i>	<i>toilets - Charnwood pl Charnwood</i>	L08324:1	20.00	5804.43
	Sum	<i>Summary for 'Suburb' = Charnwood (7 detail records)</i>			
Hawker					
	<i>Public toilets</i>	<i>Public toilets - Hawker</i>	L31010	100.00	2644.39
	Sum	<i>Summary for 'Suburb' = Hawker (3 detail records)</i>			
Holt					
	<i>Public toilets</i>	<i>toilets - Kippax Fair</i>	L19181	11.00	1715.22
	Sum	<i>Summary for 'Suburb' = Holt (4 detail records)</i>			
		Sum	<i>Summary for 'District1' = Belconnen (30 detail records)</i>		29,833.91
Coree					
Cotter					
	<i>Public toilets</i>	<i>Toilets Camping Ground - Cotter Cotter r</i>	LD2017	223.00	2278.34
	Sum	<i>Summary for 'Suburb' = Cotter (4 detail records)</i>			
		Sum	<i>Summary for 'District1' = Coree (4 detail records)</i>		2,278.34
Cotter District					
Cotter					
	<i>Public toilets</i>	<i>Toilets - Cotter Ave cotter (main Picnic ar</i>	M60975	0.00	599.6
	Sum	<i>Summary for 'Suburb' = Cotter (4 detail records)</i>			
		Sum	<i>Summary for 'District1' = Cotter District (4 detail records)</i>		599.60
Gungahlin					
Gungahlin					
	<i>Public toilets</i>	<i>toilet BBQ & floodlight Yerrabi pond Gun</i>	WD0017	21.00	4574.81
	Sum	<i>Summary for 'Suburb' = Gungahlin (7 detail records)</i>			
Hall					
	<i>Public toilets</i>	<i>toilet - Gladstone St Hall</i>	L02080:1	38.00	354.22
	Sum	<i>Summary for 'Suburb' = Hall (1 detail record)</i>			
Mitchell					
	<i>Public toilets</i>	<i>Toilet Baille Lane - Pedestrian Park Heffe</i>	L01927	44.00	2435.42
	Sum	<i>Summary for 'Suburb' = Mitchell (4 detail records)</i>			
		Sum	<i>Summary for 'District1' = Gungahlin (12 detail records)</i>		7,364.45
Inner city					
City					
	<i>Public toilets</i>	<i>toilets - Glebe Park - Cooyong St City</i>	LA0664	87.00	8165.62
	Sum	<i>Summary for 'Suburb' = City (15 detail records)</i>			
		Sum	<i>Summary for 'District1' = Inner city (15 detail records)</i>		8,165.62
Inner North					
Acton					
	<i>Public toilets</i>	<i>Toilets Ferry terminal Barrine Driver A</i>	WC0605:1	458.00	14677.92
	Sum	<i>Summary for 'Suburb' = Acton (8 detail records)</i>			
Ainslie					
	<i>Public toilets</i>	<i>toilet - Edgar St Ainslie</i>	L44954	30.00	662.15
	Sum	<i>Summary for 'Suburb' = Ainslie (3 detail records)</i>			
<i>Wednesday, 3 August 2011</i>		<i>Some toilets also run off irrigation meters</i>		<i>Page 1 of 3</i>	

<i>District</i>	<i>Suburb</i>	<i>location of meter</i>		<i>totalcost</i>	
Braddon					
	<i>Public toilets</i>	<i>Public toilets Haig Park Northbourne Ave</i>	WA0438	46.00	1706.09
	Sum	<i>Summary for 'Suburb' = Braddon (2 detail records)</i>			
Campbell					
	<i>Public toilets</i>	<i>toilet - Molongo Reach Districk Park Ca</i>	L21708:1	180.00	6125.32
	Sum	<i>Summary for 'Suburb' = Campbell (4 detail records)</i>			
Dickson					
	<i>Public toilets</i>	<i>Toilet block - Cowper St</i>	LA0700	245.00	8324.19
	Sum	<i>Summary for 'Suburb' = Dickson (6 detail records)</i>			
Downer					
	<i>Public toilets</i>	<i>Toilets Fenham Plc Downer</i>	W205461:1	56.00	1638.66
	Sum	<i>Summary for 'Suburb' = Downer (4 detail records)</i>			
Lyneham					
	<i>Public toilets</i>	<i>Public Toilets - Hall St Lyneham</i>	L17204	132.00	3489.76
	Sum	<i>Summary for 'Suburb' = Lyneham (4 detail records)</i>			
O'Connor					
	<i>Public toilets</i>	<i>Toilets - Sargood St O'Connor</i>	L06444:1	238.00	5856.42
	Sum	<i>Summary for 'Suburb' = O'Connor (4 detail records)</i>			
		Sum	<i>Summary for 'District1' = Inner North (35 detail records)</i>		42,480.51
Inner South					
Barton					
	<i>Public toilets</i>	<i>toilets - Telopea Park Barton</i>	L08632:1	30.00	2446.51
	Sum	<i>Summary for 'Suburb' = Barton (3 detail records)</i>			
Deakin					
	<i>Public toilets</i>	<i>toilets Duff Pl Deakin</i>	W304844	81.00	5862.08
	Sum	<i>Summary for 'Suburb' = Deakin (8 detail records)</i>			
Fyshwick					
	<i>Public toilets</i>	<i>Toilets - Maryborough St</i>	LA0263:1	107.00	9980.64
	Sum	<i>Summary for 'Suburb' = Fyshwick (9 detail records)</i>			
Griffith					
	<i>Public toilets</i>	<i>toilets - Barker St Griffith</i>	L03907:1	96.00	2280.04
	Sum	<i>Summary for 'Suburb' = Griffith (4 detail records)</i>			
Kingston					
	<i>Public toilets</i>	<i>Eyre St Excell Loo Kingston</i>	WB0201	49.00	962.54
	Sum	<i>Summary for 'Suburb' = Kingston (4 detail records)</i>			
Narrabundah					
	<i>Public toilets</i>	<i>toilets - Iluka St Narrabundah location</i>	M122570	42.00	2526
	Sum	<i>Summary for 'Suburb' = Narrabundah (5 detail records)</i>			
Red Hill					
	<i>Public toilets</i>	<i>Look out Red Hill Drive - possible Public</i>	C1288M	0.00	2765.01
	Sum	<i>Summary for 'Suburb' = Red Hill (5 detail records)</i>			
Yarralumla					
	<i>Public toilets</i>	<i>Public toilets Mariner Pl Yarralumla</i>	WC0382:1	19.00	17204.94
	Sum	<i>Summary for 'Suburb' = Yarralumla (23 detail records)</i>			
		Sum	<i>Summary for 'District1' = Inner South (61 detail records)</i>		44,027.76
Kowen District					
Kowen					
	<i>Public toilets</i>	<i>Molongo Gorge Sutton Rd</i>	WC0266	409.00	7678.27
	Sum	<i>Summary for 'Suburb' = Kowen (5 detail records)</i>			
		Sum	<i>Summary for 'District1' = Kowen District (5 detail records)</i>		7,678.27
Paddys River					

<i>District</i>	<i>Suburb</i>	<i>location of meter</i>		<i>totalcost</i>	
Cotter					
	<i>Public toilets</i>	<i>Toilet - Cotter Ave Paddy River Rd - Wat</i>	LE0076	2,155.00	8450.73
		Sum	<i>Summary for 'Suburb' = Cotter (1 detail record)</i>		
		Sum	<i>Summary for 'District1' = Paddys River (1 detail record)</i>		8,450.73
Stromlo					
Cotter					
	<i>Public toilets</i>	<i>toilet - Casauria Sands Cotter Road</i>	M100812	0.00	5906.17
		Sum	<i>Summary for 'Suburb' = Cotter (13 detail records)</i>		
		Sum	<i>Summary for 'District1' = Stromlo (13 detail records)</i>		5,906.17
Tuggeranong					
Chisholm					
	<i>Public toilets</i>	<i>toilets - Halley St Chisholm</i>	L23720:1	300.00	11418.68
		Sum	<i>Summary for 'Suburb' = Chisholm (4 detail records)</i>		
Greenway					
	<i>Public toilets</i>	<i>Toilet Town Park Anketell st Greenway</i>	LC0177:1	110.00	10560.81
		Sum	<i>Summary for 'Suburb' = Greenway (9 detail records)</i>		
mbah					
	<i>Public toilets</i>	<i>toilets Springbett St pinic area Kambah</i>	W311791	56.00	14887.68
		Sum	<i>Summary for 'Suburb' = Kambah (13 detail records)</i>		
Tuggeranong					
	<i>Public toilets</i>	<i>Toilets - Point Hutt Crossing</i>	MA1533	48.00	2437.79
		Sum	<i>Summary for 'Suburb' = Tuggeranong (4 detail records)</i>		
		Sum	<i>Summary for 'District1' = Tuggeranong (30 detail records)</i>		39,304.96
Woden/Weston					
Chifley					
	<i>Public toilets</i>	<i>Public toilets Chifley Plc Chifley</i>	W333421	22.00	387.58
		Sum	<i>Summary for 'Suburb' = Chifley (2 detail records)</i>		
Curtin					
	<i>Public toilets</i>	<i>Curtin Plc Curtin (Drfn 178)</i>	W304547:1	0.00	2671.71
		Sum	<i>Summary for 'Suburb' = Curtin (4 detail records)</i>		
Hughes					
	<i>Public toilets</i>	<i>Toilets - Hughes Shops pl Hughes</i>	LA0220:1	128.00	2789.68
		Sum	<i>Summary for 'Suburb' = Hughes (3 detail records)</i>		
Mawson					
	<i>Public toilets</i>	<i>Mawson Place Mawson</i>	L40109:1	138.00	5963.41
		Sum	<i>Summary for 'Suburb' = Mawson (5 detail records)</i>		
Phillip					
	<i>Public toilets</i>	<i>interchange toilets - Bowes Plc Phillip</i>	LD2216:1	101.00	10027.74
		Sum	<i>Summary for 'Suburb' = Phillip (8 detail records)</i>		
		Sum	<i>Summary for 'District1' = Woden/Weston (22 detail records)</i>		21,840.12
Grand Total					\$217,930.

Public toilets July 09 to June 2010

<i>District</i>	<i>Suburb</i>	<i>location of meter</i>		<i>totalcost</i>
Belconnen				
	Belconnen			
	<i>Public toilets</i>	<i>Ginindera Drive Blk2 - Diddams clo</i>	83	19227.56
		<i>Summary for 'Suburb' = Belconnen (17 detail recor</i>		
	Charnwood			
	<i>Public toilets</i>	<i>toilets - Charnwood pl Charnwood</i>	20	1546.83
		<i>Summary for 'Suburb' = Charnwood (2 detail recor</i>		
	Hawker			
	<i>Public toilets</i>	<i>Public toilets - Hawker</i>	29	5535.9
		<i>Summary for 'Suburb' = Hawker (9 detail records)</i>		
	Holt			
	<i>Public toilets</i>	<i>toilets - Kippax Fair</i>	29	1737.17
		<i>Summary for 'Suburb' = Holt (4 detail records)</i>		
		Sum <i>Summary for 'District1' = Belconnen (32 detail records)</i>		28,047.46
ree				
	Cotter			
	<i>Public toilets</i>	<i>Toilets Camping Ground - Cotter Cot</i>	295	5809.41
		<i>Summary for 'Suburb' = Cotter (4 detail records)</i>		
		Sum <i>Summary for 'District1' = Coree (4 detail records)</i>		5,809.41
Cotter District				
	Cotter			
	<i>Public toilets</i>	<i>Toilets - Cotter Ave cotter (main Picn</i>	0	562.52
		<i>Summary for 'Suburb' = Cotter (4 detail records)</i>		
		Sum <i>Summary for 'District1' = Cotter District (4 detail records)</i>		562.52
Gungahlin				
	Gungahlin			
	<i>Public toilets</i>	<i>Public toilets - Wunderlich St Gunga</i>	339	4751.3
		<i>Summary for 'Suburb' = Gungahlin (4 detail record</i>		
	Hall			
	<i>Public toilets</i>	<i>toilet - Gladstone St Hall</i>	19	2425.87
		<i>Summary for 'Suburb' = Hall (4 detail records)</i>		
	Mitchell			
	<i>Public toilets</i>	<i>Toilet Baille Lane - Pedestrian Park</i>	42	2834.5
		<i>Summary for 'Suburb' = Mitchell (5 detail records)</i>		
		Sum <i>Summary for 'District1' = Gungahlin (13 detail records)</i>		10,011.67
Inner city				
	City			
	<i>Public toilets</i>	<i>toilets - Glebe Park - Cooyong St Cit</i>	110	8950.9
		<i>Summary for 'Suburb' = City (12 detail records)</i>		
		Sum <i>Summary for 'District1' = Inner city (12 detail records)</i>		8,950.90
Inner North				
	Acton			
	<i>Public toilets</i>	<i>Toilets Ferry terminal Barrine Driv</i>	154	22086.19
		<i>Summary for 'Suburb' = Acton (8 detail records)</i>		
	Ainslie			
	<i>Public toilets</i>	<i>Wakefield Av Ainslie</i>	266	4593.4
		<i>Summary for 'Suburb' = Ainslie (4 detail records)</i>		

<i>District</i>	<i>Suburb</i>	<i>location of meter</i>		<i>totalcost</i>
Braddon	<i>Public toilets</i>	<i>Public toilets Haig Park Northbourne</i>	38	1930.43
		<i>Summary for 'Suburb' = Braddon (4 detail records)</i>		
Campbell	<i>Public toilets</i>	<i>toilet - Molongo Reach Districk Park</i>	131	4352.84
		<i>Summary for 'Suburb' = Campbell (4 detail records)</i>		
Dickson	<i>Public toilets</i>	<i>Toilet block - Cowper St</i>	141	3766.06
		<i>Summary for 'Suburb' = Dickson (4 detail records)</i>		
Downer	<i>Public toilets</i>	<i>Toilets Fencham Plc Downer</i>	43	1462.18
		<i>Summary for 'Suburb' = Downer (4 detail records)</i>		
Lyneham	<i>Public toilets</i>	<i>Public Toilets - Hall St Lyneham</i>	121	3415.92
		<i>Summary for 'Suburb' = Lyneham (4 detail records)</i>		
O'Connor	<i>Public toilets</i>	<i>Toilets - Sargood St O'Connor</i>	298	5342.75
		<i>Summary for 'Suburb' = O'Connor (4 detail record)</i>		
		Sum <i>Summary for 'District1' = Inner North (36 detail records)</i>		46,949.77

Inner South

Barton	<i>Public toilets</i>	<i>toilets - Telopea Park Barton</i>	26	3762.72
		<i>Summary for 'Suburb' = Barton (4 detail records)</i>		
Deakin	<i>Public toilets</i>	<i>toilets Duff Pl Deakin</i>	28	3412.73
		<i>Summary for 'Suburb' = Deakin (8 detail records)</i>		
Fyshwick	<i>Public toilets</i>	<i>Toilets - Maryborough St</i>	131	8369.02
		<i>Summary for 'Suburb' = Fyshwick (8 detail records)</i>		
Griffith	<i>Public toilets</i>	<i>toilets - Barker St Griffith</i>	40	2035.11
		<i>Summary for 'Suburb' = Griffith (4 detail records)</i>		
Kingston	<i>Public toilets</i>	<i>Eyre St Excell Loo Kingston</i>	52	969.93
		<i>Summary for 'Suburb' = Kingston (5 detail records)</i>		
Narrabundah	<i>Public toilets</i>	<i>toilets - Iluka St Narrabundah loca</i>	23	2331.86
		<i>Summary for 'Suburb' = Narrabundah (5 detail rec)</i>		
Red Hill	<i>Public toilets</i>	<i>Look out Red Hill drive possible Pub</i>	10	2328.08
		<i>Summary for 'Suburb' = Red Hill (4 detail records)</i>		
Yarralumla	<i>Public toilets</i>	<i>Public toilets Mariner Pl Yarraluml</i>	14	14451.83
		<i>Summary for 'Suburb' = Yarralumla (21 detail rec)</i>		
		Sum <i>Summary for 'District1' = Inner South (59 detail records)</i>		37,661.28

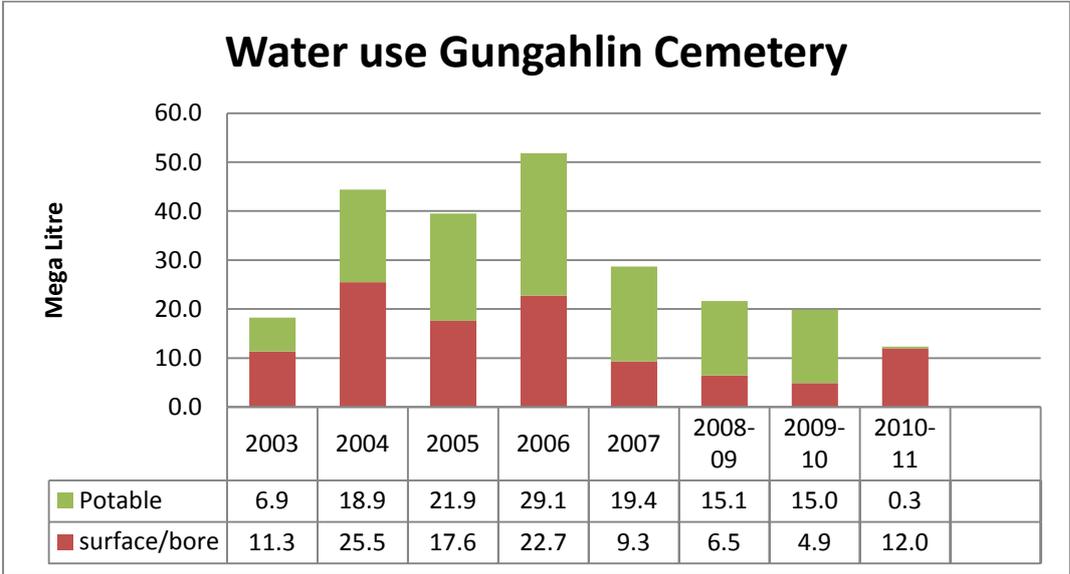
Kowen District

Kowen	<i>Public toilets</i>	<i>Molongo Gorge Sutton Rd</i>	33	4952.79
		<i>Summary for 'Suburb' = Kowen (3 detail records)</i>		
		Sum <i>Summary for 'District1' = Kowen District (3 detail records)</i>		4,952.79

Paddys River

<i>District</i>	<i>Suburb</i>	<i>location of meter</i>		<i>totalcost</i>
Cotter				
	<i>Public toilets</i>	<i>Toilet - Cotter Ave Paddy River Rd -</i>	2791	26235.91
		<i>Summary for 'Suburb' = Cotter (4 detail records)</i>		
		Sum <i>Summary for 'District1' = Paddys River (4 detail records)</i>		26,235.91
Stromlo				
Cotter				
	<i>Public toilets</i>	<i>toilet - Casauria Sands Cotter Road</i>	11	12385.56
		<i>Summary for 'Suburb' = Cotter (12 detail records)</i>		
		Sum <i>Summary for 'District1' = Stromlo (12 detail records)</i>		12,385.56
Tuggeranong				
Chisholm				
	<i>Public toilets</i>	<i>toilets - Halley St Chisholm</i>	745	10529.07
		<i>Summary for 'Suburb' = Chisholm (4 detail records)</i>		
Greenway				
	<i>Public toilets</i>	<i>Toilet Town Park Anketell st Green</i>	67	17965.72
		<i>Summary for 'Suburb' = Greenway (7 detail record)</i>		
Kambah				
	<i>Public toilets</i>	<i>toilets Springbett St pinic area Kam</i>	30	9295.56
		<i>Summary for 'Suburb' = Kambah (12 detail record)</i>		
Tuggeranong				
	<i>Public toilets</i>	<i>Toilets - Point Hutt Crossing</i>	16	1186.34
		<i>Summary for 'Suburb' = Tuggeranong (4 detail rec)</i>		
		Sum <i>Summary for 'District1' = Tuggeranong (27 detail records)</i>		38,976.69
Woden/Weston				
Chifley				
	<i>Public toilets</i>	<i>Public toilets Chifley Plc Chifley</i>	14	719.35
		<i>Summary for 'Suburb' = Chifley (4 detail records)</i>		
Curtin				
	<i>Public toilets</i>	<i>Curtin Plc Curtin (Drfn 178)</i>	0	2468.12
		<i>Summary for 'Suburb' = Curtin (4 detail records)</i>		
Duffy				
	<i>Public toilets</i>	<i>Deeks drive off Cotter road</i>	0	88.39
		<i>Summary for 'Suburb' = Duffy (4 detail records)</i>		
Hughes				
	<i>Public toilets</i>	<i>Toilets - Hughes Shops pl Hughes</i>	16	3051.99
		<i>Summary for 'Suburb' = Hughes (4 detail records)</i>		
Mawson				
	<i>Public toilets</i>	<i>Public toilets Mawson Place</i>	157	7031.23
		<i>Summary for 'Suburb' = Mawson (3 detail records)</i>		
Phillip				
	<i>Public toilets</i>	<i>interchange toilets - Bowes Plc Philli</i>	100	9587.11
		<i>Summary for 'Suburb' = Phillip (8 detail records)</i>		
		Sum <i>Summary for 'District1' = Woden/Weston (27 detail records)</i>		22,946.19
Grand Total				\$243,490.15

						Attachment B
	Period 2010 - 2011 City Services Non Potable water use					
	SupplyChargeWater	SupplyChargeConsumption	ConsumptionkL	Water Type	Suburb	Parkland watered
	\$0.00	\$6,106.60	23,033	Water abstraction	Gungahlin	Lake Gin/Yerrabi
	\$0.00	\$1,239.19	4,006	Water abstraction	Tugg tree stock	
	\$0.00	\$174.18	0	Water abstraction	Woden	Eddison Park
	\$2.47	\$0.00	10	Water abstraction	Yarralumla	Weston Park
	\$0.00	\$145.79	583	Water abstraction	Yarralumla	Weston Park
	\$0.00	\$3,744.73	14,978	Water abstraction	Yarralumla	Weston Park
	\$360.10	\$18.00	0	Water abstraction	Tharwa	
	\$0.00	\$17,298.50	67,800	Water abstraction	Greenway	Tuggeranong Town Park
	\$360.10	\$938.38	3,754	Water Abstraction	Tidbinbilla	
	\$360.10	\$526.25	210	Water abstraction	Tidbinbilla	
	\$360.10	\$533.25	213	Water abstraction	Greenway	Tuggeranong Town Park
	\$360.10	\$4,186.75	1,675	Water abstraction	Gungahlin	Lake Gin/Yerrabi
	\$360.10	\$767.65	307	Water abstraction	Tugg tree stock	
	\$360.10	\$1,189.75	475	Water abstraction	Woden	Eddison Park
	\$2,523.17	\$36,869.02	117,044	Water abstraction	All	All



Questions from Secondary Water Use In The Act – Parks and City Services

1. What is the market for recycled water in the ACT?

If available and infrastructure and ongoing maintenance costs of infrastructure is provided TAMS would use it instead of potable water wherever possible.

- a. What types of commercial recycled water services are currently being (or could be) provided to the ACT residential and business sectors (new developments or retro-fit)?

Nil for Parks and City Services who use lake water for irrigating high profile or high public use open space areas. ESD have undertaken investigations on this aspect under the Canberra Integrated Urban Waterways feasibility study (irrigation for Canberra racecourse, golf courses, school ovals , dust suppression & compaction for road construction and land development works could be provided).

- b. How do they work?

Pump from large water bodies ie lakes for directly irrigating parks and ovals or accessing second class water from overhead stand pipes at specified locations, i.e. lower Molonglo Sewerage Works, Yarralumla Nursery and then transporting the water to site for tree watering and road construction. Second class water (acceptable to ACT Health) is used in fountains and is purchased from a clean bore water site in NSW and transported to the site.

- c. How much potable water, if any, do they save?

N/A

- d. What are their installation and maintenance costs and how long do they last?

The cost to install secondary use water infrastructure is dependent on the size of the pump required to irrigate the parkland. In general pumps cost approximately \$110,000 to irrigate 10 ha of parkland or \$190,000 to install the Civic fountain pump.

Parks and City Services maintains approximately 30 pumps to irrigate parks with lake water. It costs approximately \$1,500 to service the pumps between three and four times per annum (\$4,500-\$6000 per pump per annum or \$120,000 - \$180,000 for 30 pumps per annum). Replacement filters and motors are additional costs, eg. it recently cost \$14,000 to replace a pump motor at Weston Park. Pumps generally last 10-15 years depending on the water quality and frequency of servicing.

Parks and City Services also maintain seven pumps in fountains.

Water pumps are affected by the quality of the water used (notably grit and sediment), particularly pumps used in fountains, hence they are more costly to maintain when using second class water. For example, to maintain Civic Square fountain pump in accordance with maintenance specifications is approximately \$40,000 per annum.

The Environment and Sustainable Development Directorate (ESD) are able to provide information on installation costs of pumps and infrastructure associated with ponds currently being installed in public open spaces.

2. Are there any barriers or impediments to businesses supplying commercial recycled water services in the ACT?

Infrastructure to provide the water where it is needed and retro fitting buildings so it can be used in toilets.

Ownership of infrastructure and who is the utility provider

ESD have undertaken studies and are trialling the commercial supply of stormwater from lakes and

Questions from Secondary Water Use In The Act – Parks and City Services

ponds to end users for irrigation.

The cost for maintenance of infrastructure needs to be included in the cost of the water, hence increasing the cost of recycled/non-potable water.

3. What are the advantages and disadvantages of the Commission’s preliminary methodological approach to the inquiry?

Advantages are the holistic approach to all water capturing and the possibilities of engaging other industries into the market to provide competition and increase research/technology. Disadvantages are that the ACT Government is a share holder of ACTEWAGL and takes the benefits from profit made, and reinvests it back into the City, competition may reduce the profit and it may over time force up the potable water prices which then places pressure on the disadvantaged and social equity.

ACTEWAGL have not participated in the trial being implemented by ESD to market lake/pond water to stakeholders. TAMS’ Roads ACT have become the utility provider for this trial. ESD can provide detailed information on this initiative.

4. What are the reasons for choosing to install a recycled water system rather than relying on reticulated mains water?

Takes the reliance off potable water and means that the water can be used many times before being released back into the water cycle. Economics will play a part in decision making.

Non-potable water (storm water)

The cost of non-potable water is considerably cheaper than potable water (need to include maintenance costs of infrastructure).

When water restrictions are put in place by ACTEWAGL, non-potable water from large water bodies provides an alternative source for irrigation, but also places other stresses on that ecosystem by lowering the water levels.

During the severe water restriction period building and construction activities were impacted and alternative sources of water were required.

In relation to ACTION buses, ACTION chose to install bus washes that recycle water rather than bus washes that use only reticulated water for a number of reasons including:

- to reduce water wastage,
- to reduce costs; and
- to reduce the risks associated with the imposition of water restrictions.

With the installation of bus washes that reuse water, ACTION has been able to significantly reduce the amount of reticulated water it uses to wash buses.

a. Do individuals and businesses have different reasons?

N/A

b. What is the recycled water used for?

Stormwater collected in lakes and ponds is used for irrigating parks or for hand watering of trees and shrubs. This is undertaken in accordance with water licences issued by ESD.

In the road construction industry recycled water is used for compaction and dust suppression.

Roads ACT uses non-potable water abstracted from rivers to do gravel re-sheeting and grading operations on the unsealed roads within the ACT. The stormwater maintenance contractor uses potable water which is recycled to clean blocked stormwater pipes. These activities are undertaken in accordance with a water licence issued by ESD.

Questions from Secondary Water Use In The Act – Parks and City Services

5. Does recycled water replace reticulated water or is recycled water used in addition to reticulated water?

Both apply to the water used by Parks and City Services. In relation to buses, ACTION's new bus washes recycle a majority of the water used to wash buses; however, a portion of the water used will always need to be potable (to ensure effective washing of the buses). At the moment, ACTION continues to use reticulated water for this purpose but is investigating options for installing rainwater tanks to replace the use of reticulated water.

Both apply to the water used by Roads ACT. Minor amounts of reticulated water are used in the asphalt rolling and traffic loop cutting operations.

6. What is the scope for efficiently increasing the use of greywater in the ACT?

Potential is high but health issues need to be addressed for use in public places.

7. What impact has changed procedures for managing stormwater in new urban areas had on the cost of land developments, and what environmental benefits have been achieved?

The change from hard storm water infrastructure to soft landscaping for ponds/wetlands/lakes and natural water channels has transferred some of the management and maintenance responsibility from Roads ACT to Parks and City Services. The introduction of Water Sensitive Urban Design has significantly increased the number of gross pollutant traps (GPT's) in the stormwater network and increased the maintenance cost of maintaining GPT's and trash racks adjacent to ponds/wetlands/lakes. New proprietary GPT products require increased cleaning frequencies and increased maintenance costs due to the specialised equipment required to clean the GPT's. No additional funding has been provided for ongoing maintenance of these assets. This includes weed control, maintaining water clarity, litter management, landscape maintenance, safety concerns (including signage) removal of debris and removal of silt/sediment to maintain a functional stormwater asset.

Environmental benefits have been significant, as they provide wildlife habitat, slow water movement and filter nutrients and sediment, accommodate flooding, provide amenity and recreational opportunities for the Canberra community.

In some situations the retrofitting of more natural creeks and channels will require significant infrastructure changes for flood control by requiring the construction of levee retaining structures to prevent flooding of residential areas. The slowing down of the channel discharge increases the height of the flood waters.

8. Are there examples of urban waterways and stormwater harvesting programs other than the ACT Government's Canberra Integrated Urban Waterways Project which the Commission should consider? If so, please provide details.

Rouse Hill Sydney water recycling scheme, Kardinia Park, Grinter Reserve, Eastern Park, Weddell Road stormwater harvesting projects in the City of Geelong, City of Sydney's Green Square Town centre project, Brisbane Cities South Bank Rain bank stormwater harvesting and reuse project, Countries in the middle east such as Oman are good at recycling water and using it to beautify their capital Muscat and for agriculture.

9. What are the key economic, environmental and social factors relevant to the Commission's

Questions from Secondary Water Use In The Act – Parks and City Services

inquiry into recycled water in the ACT?

ESD Input

10. What are the implications of the draft Murray–Darling Basin Plan for water use (potable and non-potable) in the ACT? The Commission notes that responses to this issue will be informed by the expected release of the draft Basin Plan on 28 November 2011.

ESD Input

11. Are there any water conservation measures that the Commission should consider? If so, please provide details.

Capturing large scale stormwater run-off from buildings and car parks into underground storage tanks for irrigating parks within the built up areas of Canberra where retrofitting with lakes and ponds cannot be considered.

12. How have developers responded to the challenge of meeting the 40 per cent reduction in mains water usage in new dwellings?

N/A