

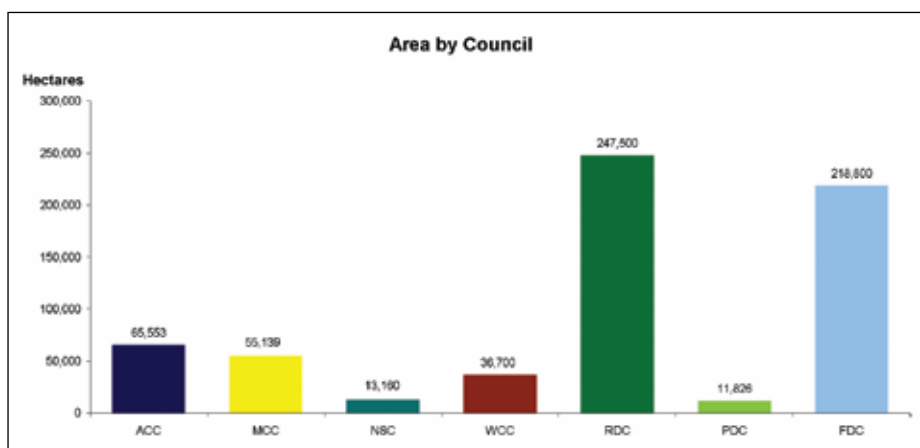
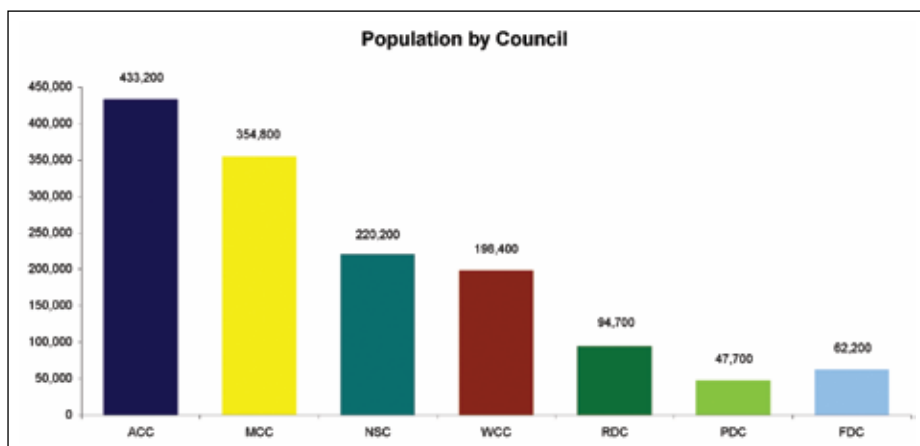
# Introduction to the Auckland Region

For the purposes of this Performance Review, the greater Auckland region stretches from Rodney District in the north, to Franklin District in the south; and Manukau in the east to Waitakere in the west. It encompasses a total land area of 648,700 ha and has a population of almost 1.4 million people.

Auckland City has the highest population which is concentrated in the central isthmus area (15,490 ha), although it also

has jurisdiction over a number of Hauraki Gulf islands including Waiheke and Great Barrier.

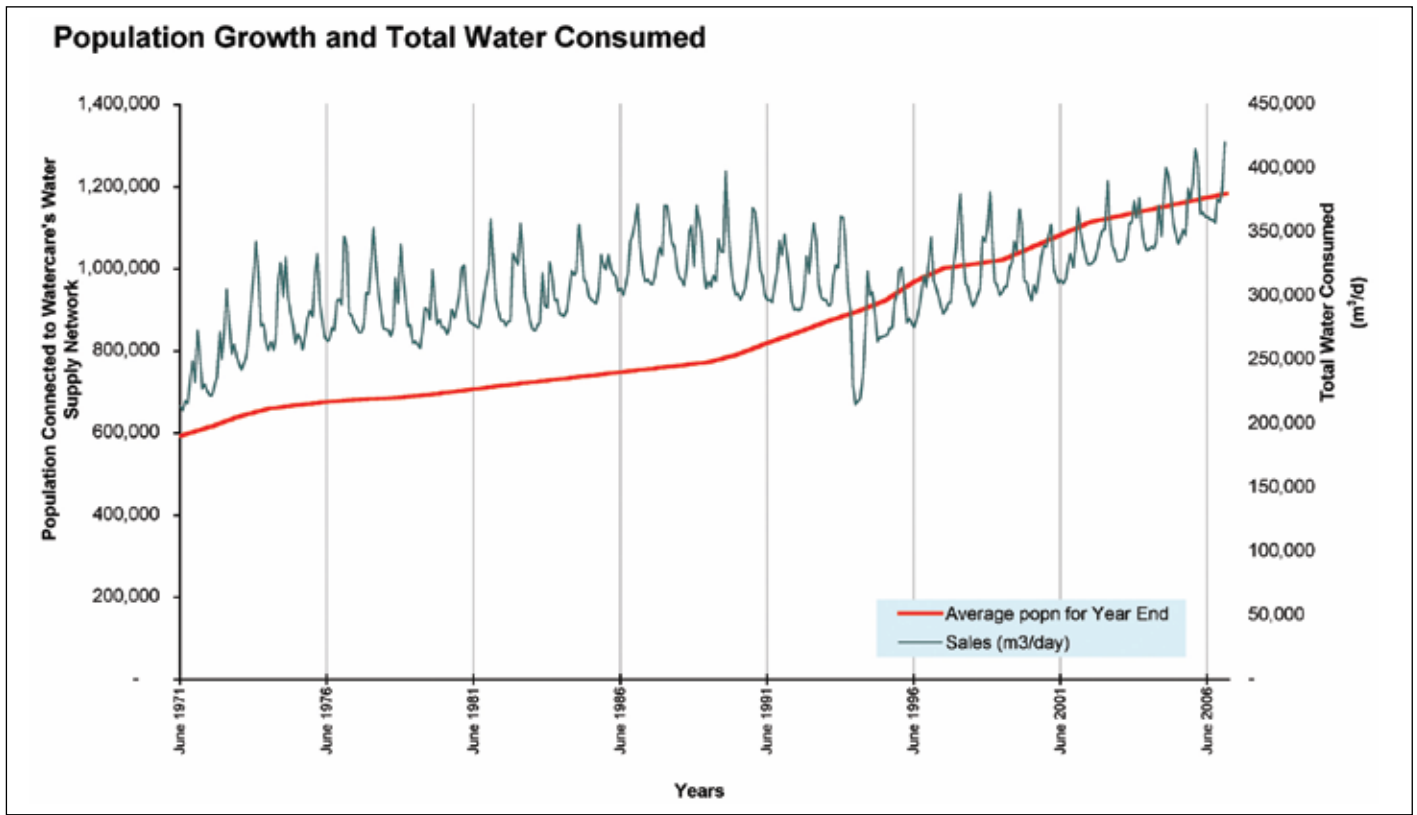
Rodney District (247,500 ha) and Franklin District (219,000 ha) have large areas of rural land and, along with Papakura District, smaller populations compared to the four main City Councils.



	Auckland City	Manukau City	North Shore City	Waitakere City	Rodney District	Papakura District	Franklin District
Population to June 2007	433,200	354,800	220,200	198,400	94,700	47,700	62,200
2026 Population estimate	553,600	490,100	275,100	257,200	127,500	59,900	81,400
Total Rating Properties	169,957	102,585	84,773	65,782	44,153	17,284	25,690
Residential properties	148,453	93,446	76,638	56,953	28,387	13,643	10,797
Business properties	20,674	6,528	7,301	2,752	1,655	1,121	1,118
Rural properties	830	2,611	709	6,053	1,708	2,054	13,775
Other properties	0	0	125	24	12,403	466	0
Area (ha)	65,553	55,139	13,160	36,700	247,500	11,826	218,800
Area within MUL (ha)	16,519 (25%)	14,541 (26%)	10,769 (82%)	8,208 (22%)	4,850 (2%)	2,539 (21%)	0

# Past Water Consumption

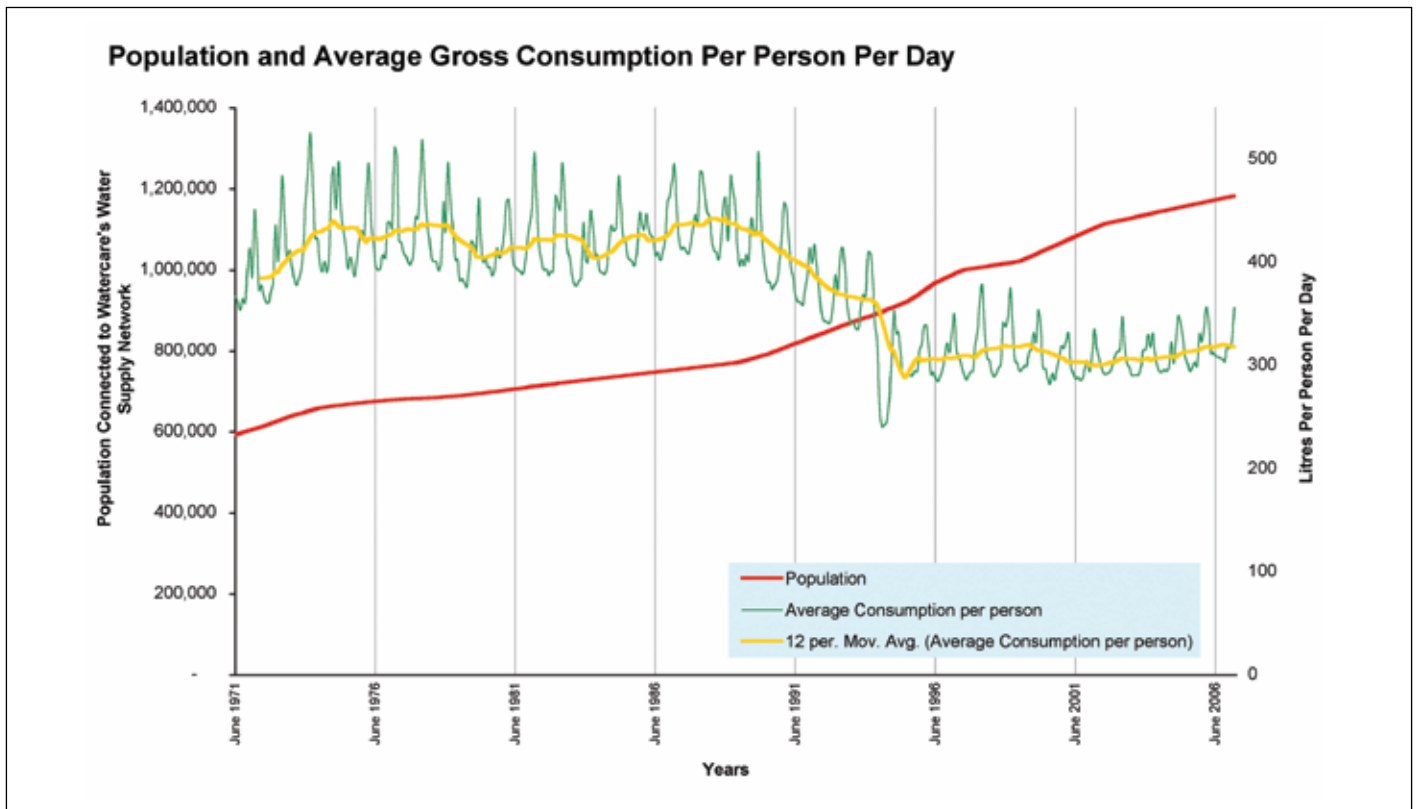
Over the last 35 years population growth within the Auckland Region has seen a proportional increase in the total volume of water consumed.



However in the late 1980s and early 1990s, although the population grew, water consumption dropped.

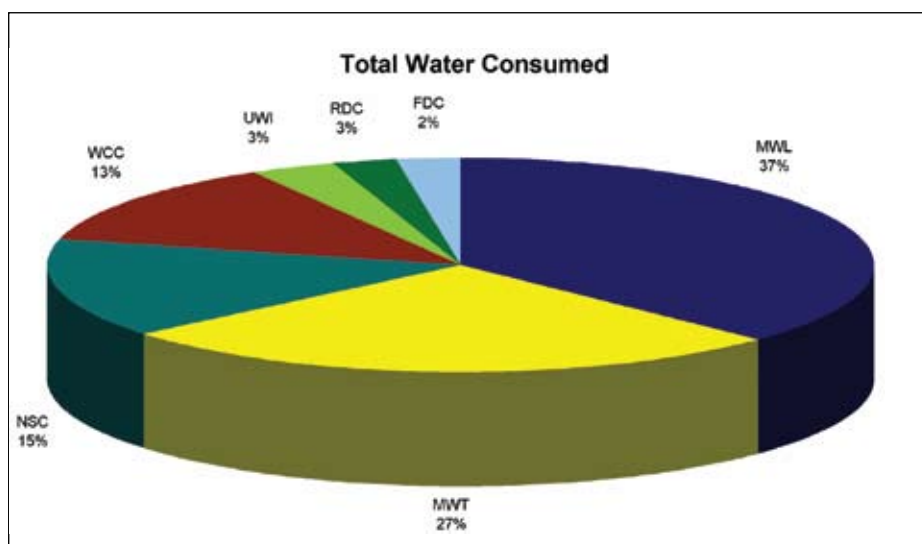
This occurred as a result of drought, the relocation of meat works and other manufacturing industry and the introduction of universal metering.

Since then overall water consumption per person has been stable.



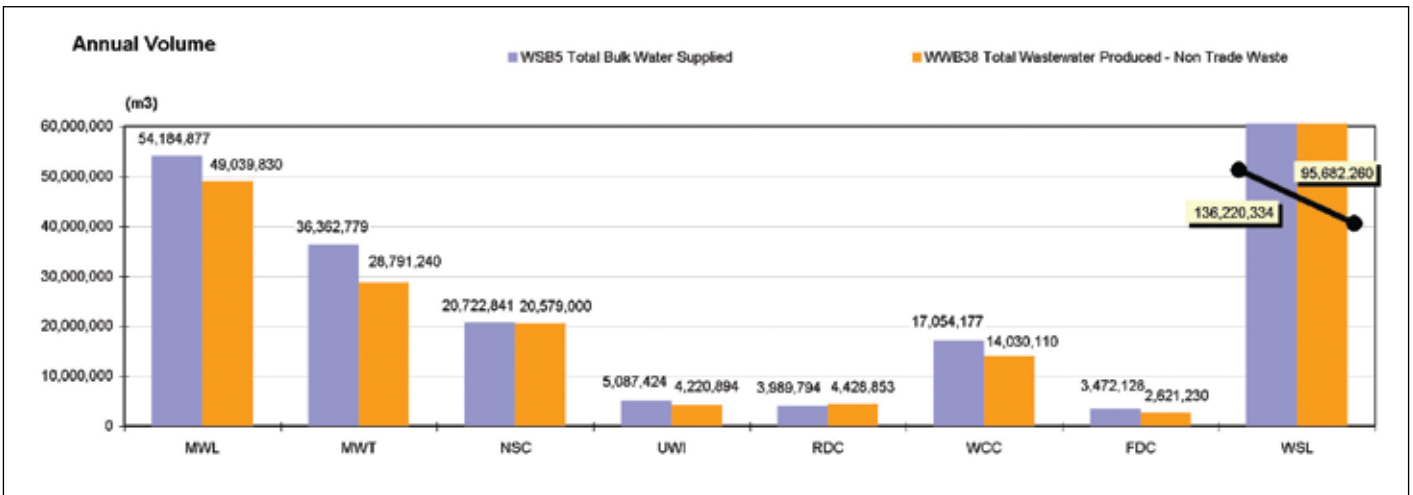
## Water

Around 136 million m<sup>3</sup> of treated potable water was supplied by the region's wholesaler Watercare to Waitakere City, Manukau Water (Manukau City), Metrowater (Auckland City), United Water (Papakura District), North Shore City and Rodney District Council which sourced a further 1 million m<sup>3</sup> of water from its own sources. Franklin District sourced all its own water and supplied around 3 million m<sup>3</sup> to customers. The average daily residential usage of water in Auckland was 543 litres per property per day, or 178 litres per person per day.

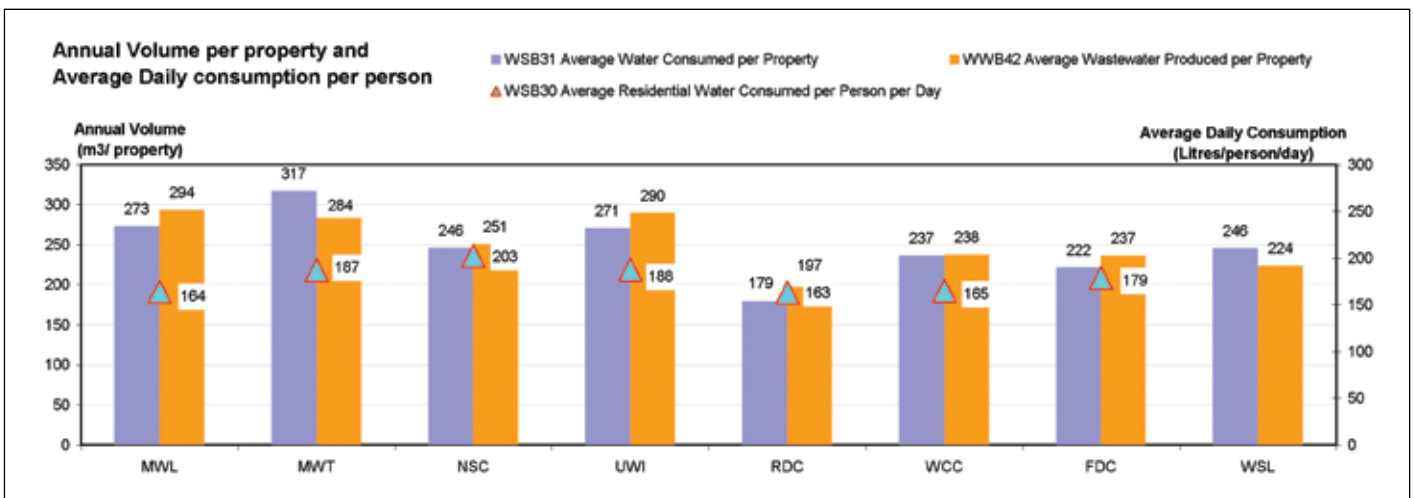


<b>WATER</b>	LNO <b>Metrowater</b>	LNO <b>Manukau Water</b>	TLA <b>North Shore City</b>	TLA <b>Waitakere City</b>	TLA <b>Rodney District</b>	LNO <b>United Water</b>	TLA <b>Franklin District</b>	Wholesaler <b>Watercare Services</b>
<i>Service Provided</i>	<i>Reticulation</i>	<i>Reticulation</i>	<i>Reticulation</i>	<i>Reticulation</i>	<i>Local Treatment Reticulation</i>	<i>Reticulation</i>	<i>Local Treatment Reticulation</i>	<i>Bulk Storage Treatment and Transfer</i>
Population Served	423,700	320,733	212,860	193,440	45,469	42,684	35,018	1,232,000
Total properties served	166,673	101,758	74,192	64,138	17,948	15,097	13,019	553,855
Residential properties served	147,642	94,184	70,968	61,431	16,285	14,108	12,075	440,000
Non-residential properties served	19,121	7,574	3,224	2,707	1,663	989	944	113,855
Total water serviced area (ha)	15,490	14,389	9,700	16,013	6,078	3,277	6,062	67,808
Water serviced area (ha) within MUL	100%	99.9%	99.8%	100%	97%	100%	0%	
Bulk water supplied to customers (m <sup>3</sup> annually)	54,184,877	36,362,779	20,722,841	17,054,177	3,989,794	5,087,424	3,472,128	136,220,334
Average water consumed per property per day (litres)	739	869	675	649	492	742	608	674
Average residential water consumed per person (m <sup>3</sup> annually)	60	68	74	60	59	68	65	
Length of watermains (km)	2,221	2,169	1,328	1,315	496	322	350	544
Water meters (no.)	145,197	100,251	76,834	64,876	17,371	15,097	13,019	289
Water pump stations (no.)	5	4	9	13	8	1	38	31
Fire hydrants (no.)	18,761	10,491	7,273	6,682	2,188	1,654	1,417	
Water valves (no.)	22,092	20,252	13,986	12,002	5,107	2,759	2,449	4,941
Reservoirs (no.)	3	0	3	19	23	1	40	53

# Water and wastewater volumes across the region



Total wastewater produced also includes stormwater from combined sewers and groundwater infiltration into pipes.

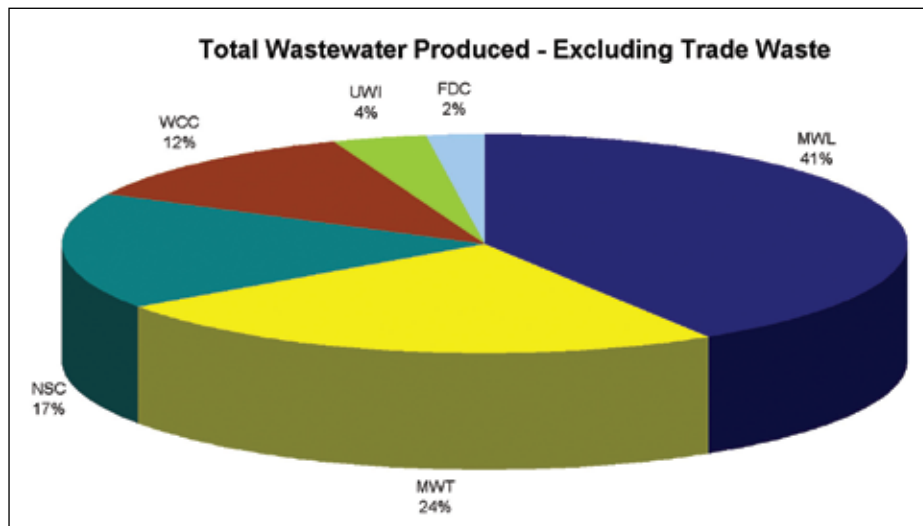


Pressure management is an integral part of water supply planning and operations.



## Wastewater

Around 133 million m<sup>3</sup> of wastewater (including trade waste) is treated annually in the region. 104 million m<sup>3</sup> of this is treated by Watercare at its Mangere facility and 21 million m<sup>3</sup> at North Shore's Rosedale Treatment Plant. United Water operated a treatment facility at Drury, Manukau Water has a facility at Beachlands–Maraetai and Metrowater operates a facility on Waiheke. Rodney District, North Shore City and Franklin District undertake all their own wastewater treatment. Trade Waste represents about 7% of the total wastewater produced in the Auckland region. The average daily flow



of wastewater (including trade waste) in Auckland was 798 litres per property per day or 287 litres per person per day.

These averages include stormwater from combined sewers and groundwater infiltration into pipes.

	LNO Metrowater	LNO Manukau Water	TLA North Shore City	TLA Waitakere City	TLA Rodney District	LNO United Water	TLA Franklin District	Wholesaler Watercare Services
<b>WASTEWATER</b>								
<i>Service Provided</i>	<i>Reticulation and Local Treatment</i>	<i>Reticulation and Local Treatment</i>	<i>Reticulation Trade waste Bulk Transfer and Treatment</i>	<i>Reticulation</i>	<i>Reticulation Trade Waste and Local Treatment</i>	<i>Reticulation and Local Treatment</i>	<i>Reticulation Trade waste and Local Treatment</i>	<i>Trade Waste Bulk Transfer and Treatment</i>
Population Served	423,700	328,311	216,837	177,252	55,466	38,361	29,412	939,000
Total properties served	166,763	101,448	81,884	58,988	22,473	14,544	11,058	426,744
Residential properties served	147,642	94,130	76,244	56,290	21,333	13,568	10,142	335,357
Non-residential properties served	19,121	7,318	5,640	2,698	1,140	976	916	91,387
Trade Waste properties	*	*	736	*	400	*	13	605
Total wastewater serviced area (ha)	15,520	14,887	10,578	8,602	4,710	1,762	2,628	34,200
Wastewater serviced area (ha) within MUL	100%	97%	99.3%	94%	47%	100%	0%	
Total wastewater produced - incl trade waste (m <sup>3</sup> /year)	52,793,830	31,631,240	21,194,000	15,159,110	4,456,228	5,080,894	2,766,073	104,265,260
Total wastewater produced - exc trade waste (m <sup>3</sup> /year)	49,039,830	28,791,240	20,579,000	14,030,110	4,428,853	4,220,894	2,621,230	95,682,260
Trade Waste (m <sup>3</sup> /year)	3,754,000	2,840,000	615,000	1,129,000	27,375	860,000	144,843	8,583,000
Wastewater treatment plants	1	1	1	0	10	1	4	1
Wastewater treatment plant capacity (m <sup>3</sup> /day)	80	1,700	230,000	-	11,385	650	9,390	360,000
Wastewater pump stations	83	76	89	50	88	27	44	52
Length of sewers (km)	1,591	1,835	1,326	1,051	571	240	253	307
Wastewater manholes	33,000	37,654	30,331	24,069	11,808	4,231	4,038	2,324

\* Trade waste properties included in Watercare total.

## Stormwater

Rain affects all aspects of the water cycle. Captured as drinking water, it is our most valuable resource.

However, in an urban environment stormwater can cause flooding, stream erosion and widespread degradation of the marine and freshwater environment. Consequently all Councils have programmes to reduce these adverse impacts. The Resource Management Act 1991 has recognised stormwater as both a natural resource to be protected and a hazard to be carefully managed.

Working together in the 1990s, the Auckland Territorial Local Authorities (TLAs) and the ARC formed the Stormwater Liaison Group and developed a regional stormwater management strategy. This included

a range of practical options for both stormwater quantity and quality control.

By April 2001, the TLAs had met the RMA requirement to apply for discharge consents for all stormwater outfalls. Detailed stormwater management strategies are now being determined by each authority through programmes of integrated catchment management plans. These plans assess current drainage system capacity, identify areas of flooding and the environmental effects of urban stormwater, and determine best practical options for minimising its impact.

Innovative approaches are now being implemented around the region, including rainwater harvesting, runoff sediment tanks, detention dams, water

quality ponds and natural wetland filtration areas. These devices reduce the erosive and polluting effects of stormwater while enhancing the natural environment for both human and animal habitation. There is still a long way to go.

The Auckland City isthmus has 296 km of combined sewers (down from 321 km in 2003/04). These combined sewers are progressively being separated into dedicated stormwater and wastewater systems that will provide significant environmental improvements to the receiving waters. Project CARE, a programme of wastewater system improvements on the North Shore, will also reduce the number of overflows to streams and beaches in that area.

	TLA Auckland City	TLA Manukau City	TLA North Shore City	TLA Waitakere City	TLA Rodney District	TLA Papakura District	TLA Franklin District
<b>STORMWATER</b>							
<i>Service Provided</i>	<i>Reticulation and Local Treatment</i>	<i>Reticulation and Local Treatment</i>	<i>Reticulation and Local Treatment</i>	<i>Reticulation and Local Treatment</i>	<i>Reticulation and Local Treatment</i>	<i>Reticulation and Local Treatment</i>	<i>Reticulation and Local Treatment</i>
Population served	423,700	341,372	216,443	183,590	52,795	41,265	16,616
Total properties served	168,014	89,759	83,567	60,872	30,315	14,485	6,878
Stormwater serviced area (ha)	15,502	13,674	10,627	8,626	4,580	2,322	2,203
• Soakage area (%)	36%	1%	6%	0%	7%	0%	11%
• Combined sewer area (%)	11%	-	-	-	-	-	-
• Impervious area (%)	48%	32%	39%	30%	33%	42%	41%
Stormwater serviced area within MUL	100%	88%	99.7%	95%	59%	96%	0%
Part of the total city/district area with ARC consent (ha)	15,502 (24%)	9,252 (17%)	7,907 (60%)	2,250 (6%)	21,720 (9%)	5,706 (48%)	1,909 (1%)
Stormwater Pipe Length (km)	1,310	1,802	1,065	828	525	187	170
Channel Length (km)	19	80	23	0.2	250	31	16
Estimated stream length (km)	108	152	228	960	4,400	40	3,000
Stormwater manholes (no.)	33,237	38,163	23,443	21,478	12,023	4,016	3,204
Treatment devices (no.)	29	37	147	118	54	12	18
Annual rainfall (mm) 2006/07	991	886	1,025	1,111	1,110	875	943

\*Note that part of the Franklin District area is located within Environment Waikato