



Havelock Water Charging Options



**MARLBOROUGH
DISTRICT COUNCIL**

Agenda

- Recap
- Meter installation
- Water Consumption Data
- Water Savings
- Residential Water Rates
- Savings to Operating Costs
- How Metering Options Could Work
- Comparison of Options
- Ballot

Recap

- What has been decided to date
- Issues with current water supply
- Future Capital Upgrades
- Reducing Water Consumption

Metering installation

- Meter trial
- Will provide data to the community over a summer
- Installation during 2017
- Depending on decisions meters ready for charging from July 2018

Water Consumption data

Havelock total annual average water demand
263,000 m³

Havelock annual average metered water demand
84,000 m³

Havelock residential average water demand
179,000 m³

Residential = 730 m³/property/year = 909 litres/person/day
= 11 baths per person per day

But if leakage is considered as 35% & is eliminated
= 475 m³/property/year = 590 litres/person/day
= 7 baths per person per day

Water Savings

- Using water meters is estimated to save
- 25 % to 35% on average use

Residential Water Rates

- Operating costs for Havelock residential is \$115,005 (GST Inclusive)
- 265 residential properties currently pay a Uniform Annual Charge (UAC) & 31 half UAC (empty sections)
- UAC is \$410 in 2017/18 (Combined Water Schemes)
- Hvlk water supply capital charge \$137 / year (LV \$155,000)

Savings to Operating Costs

- Savings will be in the variable costs
- 35% saving in water use will provide an annual saving of
- \$5,480 on current operating costs
- A reduction in water demand will reduce the capital costs for treatment plant upgrades

Reducing Consumption - Universal Water Metering

- Rates – Havelock sample property rate charge 2016/2017

Category	Land Value	Capital Value	2016	2017	\$ Mov	% Mov
Geo. Area General Rate	155,000	360,000	466	494	28	5.93
Geo. Area General Charge			470	501	31	6.60
Hav Sew Cap Works Rate			126	121	-5	-3.73
Hav Sewerage User Charge			388	386	-2	-0.52
Hav Water Cap Works Rate			251	137	-114	-45.28
Havelock Water User Charge			524	410	-114	-21.76
	155,000	360,000	2,225	2,049	-176	-7.89

- Under the Local Government Act - local assets can not be sold. Currently contract out services successfully.

How much water do we use?

HOW MUCH HOW MUCH WATER DO YOU USE?

This page shows the average daily water use in a home. One bucket holds an average of 10 litres. Use this information to answer the following questions..



- How much water would you use if you left the garden sprinklers on for two hours?
- If you had a leaking pipe (1.5mm hole), how many litres of water would you use every day?
- How much water would you waste if you had a leaky tap and didn't fix it for a week?
- How much water do you use in a day? What about your whole family?

Kitchen

Function	Water Used	Buckets	2 Persons/Dwelling
Dishwashing by hand	12 to 15 litres per wash	1 - 1½	-
Dishwasher	20 to 60 litres per wash	2 - 6	30 L/d
Drinking, Cooking, Cleaning	8 litres per person	¾ - 1	16 L/d

Bathroom

Function	Water Used	Buckets	2 Persons/Dwelling
Toilet	4.5 to 11 litres per flush	7 - 8	60 L/d
Bath	50 to 120 litres (half full)	5 - 12	20 L/d (1/week)
Shower (8 minutes)	70 to 160 litres per 8 minutes	4 - 5	280 L/d
Hand basin	5 litres	4 - 5	15 L/d
Tap Running (Cleaning Teeth, Washing hands)	5 litres	½	10 L/d
Leaking Tap	200 litres	20	-

Laundry

Function	Water Used	Buckets	2 Persons/Dwelling
Washing Machine (Front Loading)	23 litres per kg of dry clothing	4 - 5	-
Washing Machine (Top Loading)	31 litres per kg of dry clothing	5 - 6	15 L/d
Dripping Tap	200 litres	20	*

Total of 446 L/d (for 2 people)

Outside

Function	Water Used	Buckets
Hand Watering by Hose	600 to 900 litres per hour	60 - 90
Garden Sprinkler	Up to 1500 litres per hour	150
Car Wash with Hose	100 to 300 litres	10 - 30
Filling Swimming Pool	20,000 to 50,000 litres	2,000 - 5,000
Leaking Pipe (1.5mm hole)	300 litres per day	30

How much water does your household use in one day!! That's a lot of water in just one day!

THINK ABOUT EVERY DROP YOU USE AND HOW YOU CAN SAVE WATER TODAY.

Household Consumption estimates (excluding irrigation of gardens & lawns)

litres per person per day	150	200	250	300
Number of persons in the house	m ³ per household per year			
1	55	73	91	110
2	110	146	183	219
3	164	219	274	329
4	219	292	365	438
5	274	365	456	548
6	329	438	548	657
Havelock 2013 census avg person/household				
m ³ per year for 2.2 people	120	161	201	241

Irrigation Use

- During summer evapotranspiration peaks at approx 5 mm per day (water loss from plants and soil)
- The average flow from a hose tap will deliver 900 litres per hour
- This spread over 400 m² of garden & lawn = 2.25 mm water depth

Irrigation Use (cont'd)

- Therefore to overcome evapotranspiration the hose needs to be running over this area for 2.2 hours
- In that time it will use 1.98 m³ (1980 litres) of water
- Over 30 days this will use 59.4 m³ (59,400 litres)
- On line irrigation calculator - <http://mycatchment.info/> & attached

Irrigation Use (cont'd)

Irrigation Calculation

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total m ³
M ³ across 400 m ²	20.8	42	63.2	63.2	63.2	42	20.8	315.2
m ³ /day across 400 m ²	0.67	1.4	2.04	2.04	2.26	1.36	0.69	
2.2 persons annually at 250 L/p/d								201
								516

Charging Options

Base + Volumetric

Example 40/60

	200 m ³ /y	300 m ³ /y	400 m ³ /y	500 m ³ /y	600 m ³ /y	700 m ³ /y
Base Fee + \$0.90 / m ³						
Hvfk Water Cap Works Rate	137	137	137	137	137	137
Hvfk Water User Charge Base UAC	155	155	155	155	155	155
Hvfk Water User Charge Volumetric	0	90	180	270	360	450
Total UAC + Volumetric	155	245	335	425	515	605
Total water rates	292	382	472	562	652	742

Base + Volumetric

Example 60/40

	200 m ³ /y	300 m ³ /y	400 m ³ /y	500 m ³ /y	600 m ³ /y	700 m ³ /y
Base Fee + \$0.60 / m ³						
Hvbk Water Cap Works Rate	137	137	137	137	137	137
Hvbk Water User Charge Base UAC	233	233	233	233	233	233
Hvbk Water User Charge Volumetric	0	60	120	180	240	300
Total UAC + Volumetric	233	293	353	413	473	533
Total water rates	370	430	490	550	610	670

Block Tariff Example

	UAC	\$0.5 /m ³	\$0.8 /m ³	\$0.8 /m ³	\$1.1 /m ³	\$1.1 /m ³
Block Tariff	200 m ³ /y	300 m ³ /y	400 m ³ /y	500 m ³ /y	600 m ³ /y	700 m ³ /y
Hv/k Water Cap Works Rate	137	137	137	137	137	137
Hv/k Water User Charge Base UAC	233	233	233	233	233	233
Hv/k Water User Charge Volumetric	0	50	130	210	320	430
Total UAC + Block volumetric	233	283	363	443	553	663
Total water rates	370	420	500	580	690	800

Comparison water rate Examples

Comparisons	200 m ³ /y	300 m ³ /y	400 m ³ /y	500 m ³ /y	600 m ³ /y	700 m ³ /y
Proposed rate 2017/18 Combined Schemes	410	410	410	410	410	410
Base Fee + Vol - Total UAC + volumetric 40/60	155	245	335	425	515	605
Base Fee + Vol - Total UAC + volumetric 60/40	233	293	353	413	473	533
Block Tariff - Total UAC + Block volumetric	233	283	363	443	553	663

Water Rate now compared to meter charging examples using 500 m³

Category	Land Value	Capital Value	2016 /17	Combined Water Schemes 2017/18	Base Fee + (500m ³) 40/60	Base Fee + (500m ³) 60/40	Block Tariff (500m ³)
Benchmark Property	155,000	360,000					
Havelock Water Cap Works Rate			251	137	137	137	137
Havelock Water User Charge			524	410	425	413	443
			775	547	562	550	580