Appendix P

Volumetric Sewer Tariffs

Western Water

Wastewater Tariffs:
Addition of Volumetric Component
Results of Customer Impact Analyses
January 2007

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Associates

Outline

- Objectives
- Assumptions
- Scenarios modelled
- Results
- Conclusions & policy issues
- Next steps

Objectives

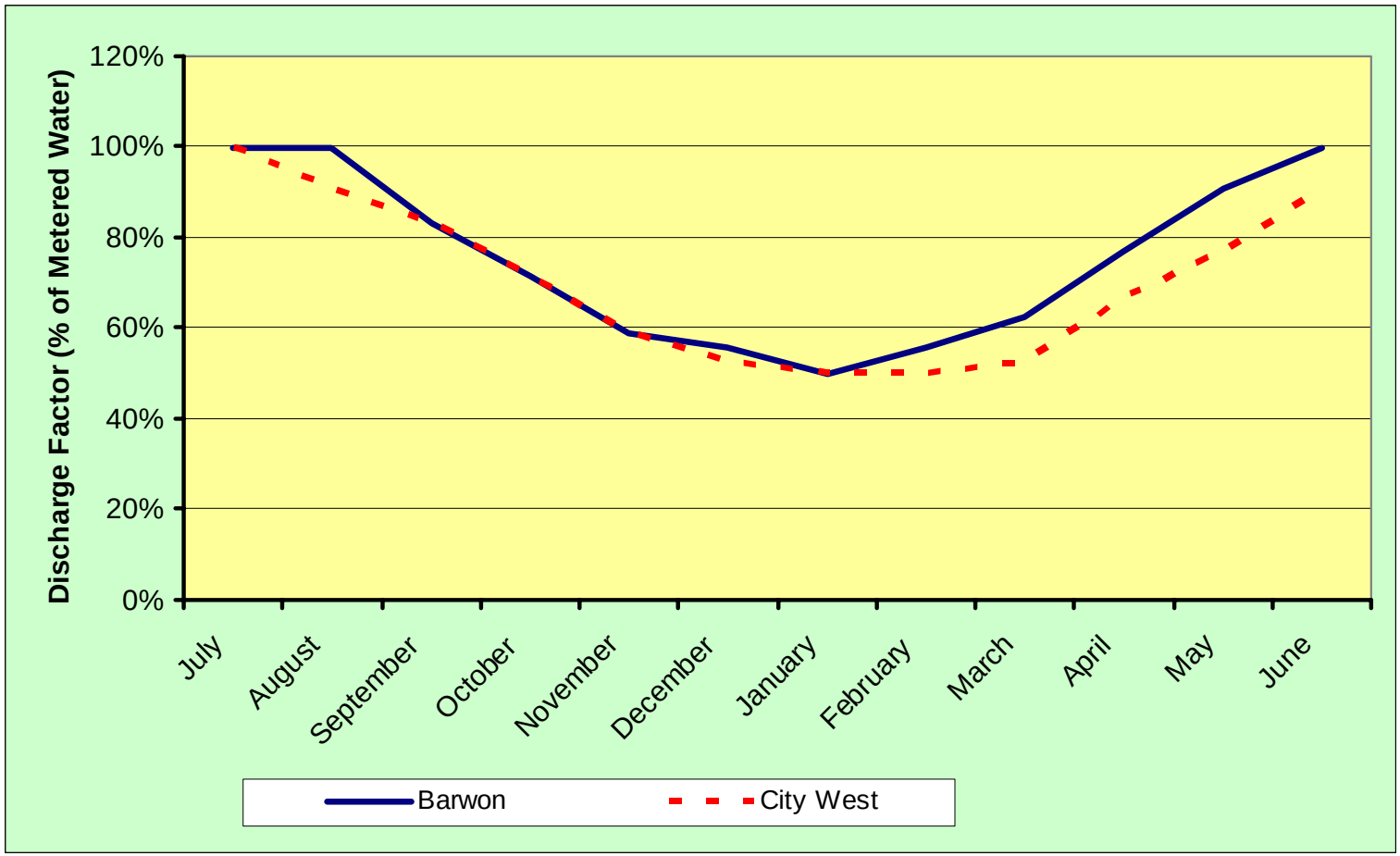
- Overview and agreement on assumptions
- Refinement of tariff parameters
- Understanding of impacts
- Business and customers advantages & disadvantages of changed tariff
- Understanding of policy issues
- Development of timetable

Assumptions – Discharge Volume

- Sewage discharge not metered
  - Proxy therefore required

- Discharge volume = MW x SF x DF
  - Where:
    - MW = metered water
    - SF = seasonal factor
    - DF = discharge factor

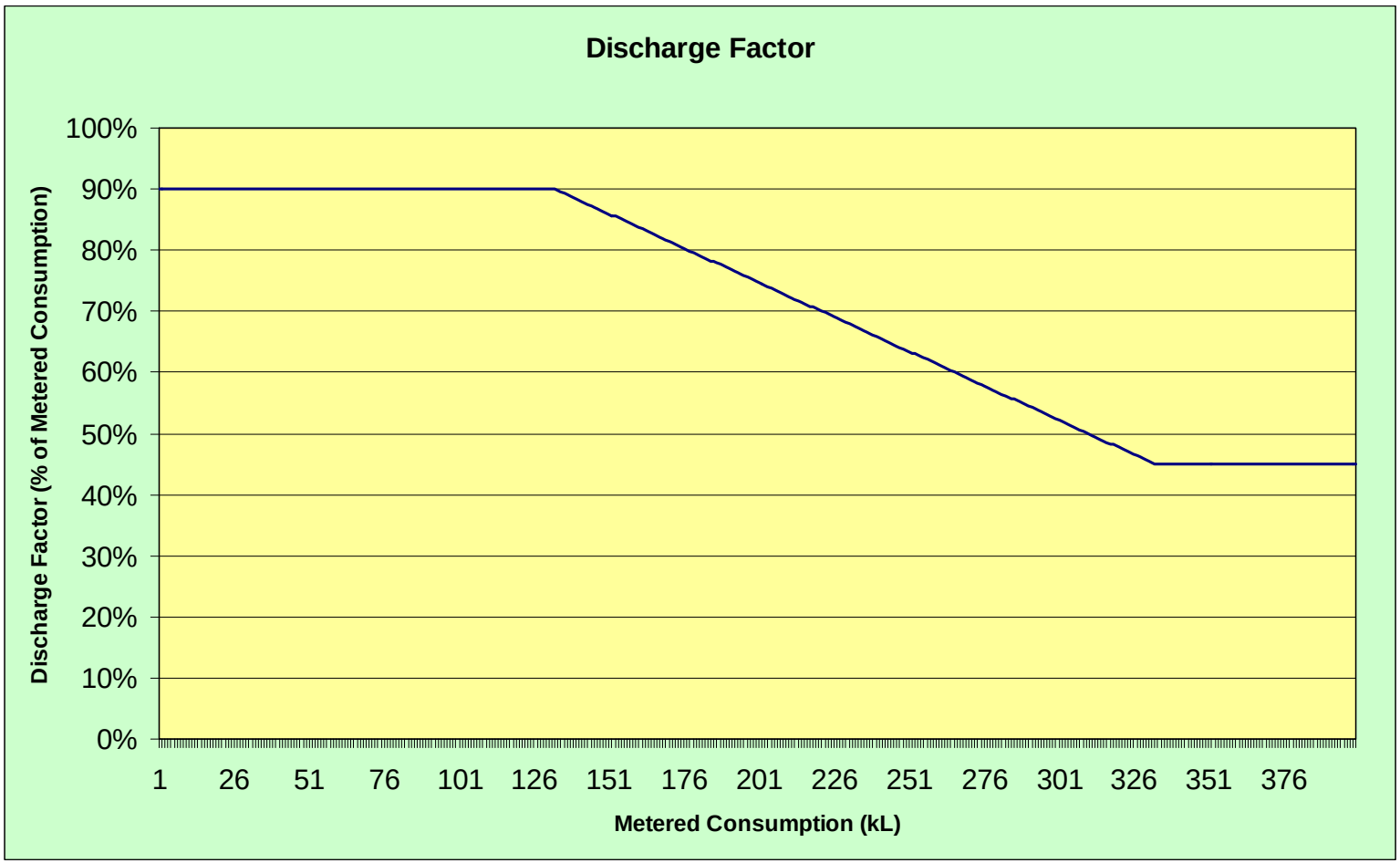
Assumptions – Seasonal Factors



Application of Seasonal Factors to Western Water's Billing Cycle

Billing Cycle	Barwon	City West
November	87%	85%
March	55%	53%
June	80%	69%

Assumptions – Consumption limits



Assumptions – Consumption limits

Consumption Limits	Barwon Water		City West		Western Water	
	Usage (kL)	Factor	Usage (kL)	Factor	Usage (kL)	Factor
Less Than	100	90%	125	90%	133	90%
Greater Than	250	66%	250	45%	333	45%

Note: BW and CWW based on quarterly bills and WW based on trimester bills

Uniform Access Charge

- Consistent with Board policy modelling based on uniform wastewater tariff across all districts
- Implicit assumption of revenue neutrality
  - Therefore, any volumetric charge will need to be offset by reduction in uniform charge
  - Reduction achieved by constant factor applied to forecast 2007/08 wastewater charge of $389.52
  - Three volumetric charges modelled:
    - $1.00/kL, $0.75/kL and $0.50/kL

Uniform Access Charge & $1.00/kL

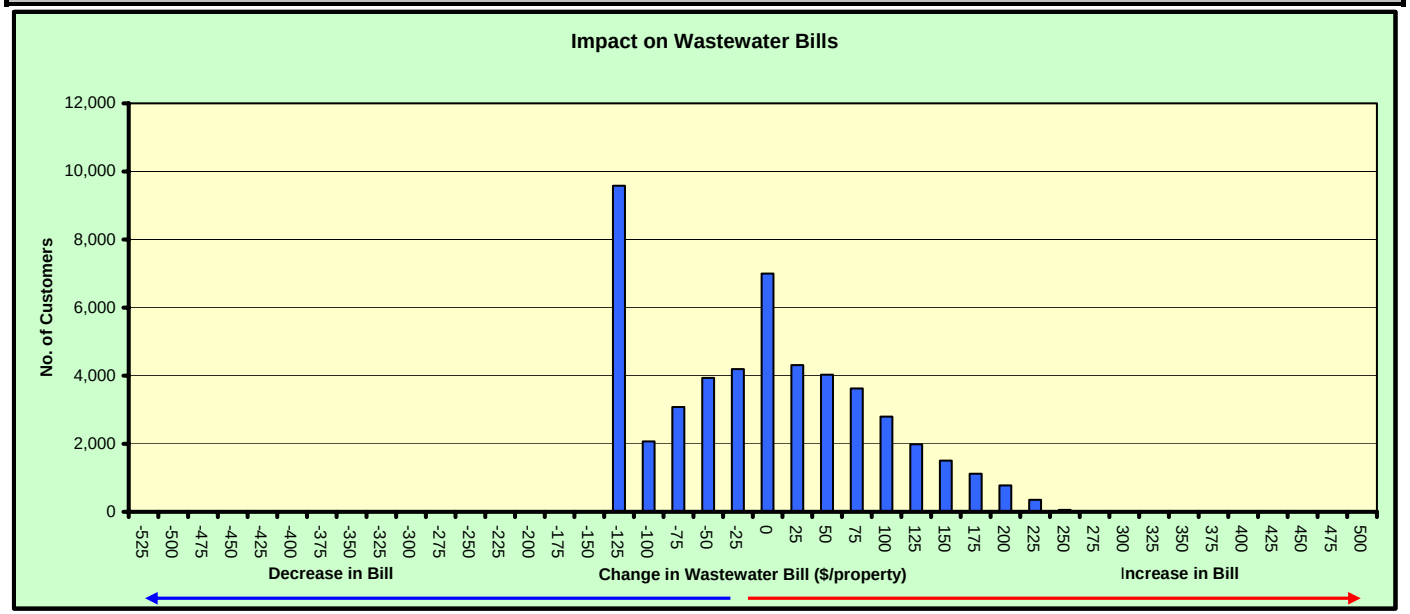
Seasonal Factor	Nov	Mar	Jun
Factor	85%	53%	69%
Vol. Charge	$1.000		

Limits	Discharge Factor	
Less than (kL)	133	90%
Greater than (kL)	333	45%

	Fixed	Volumet.	Total
Revenue ($000s)	12,424	4,531	16,954

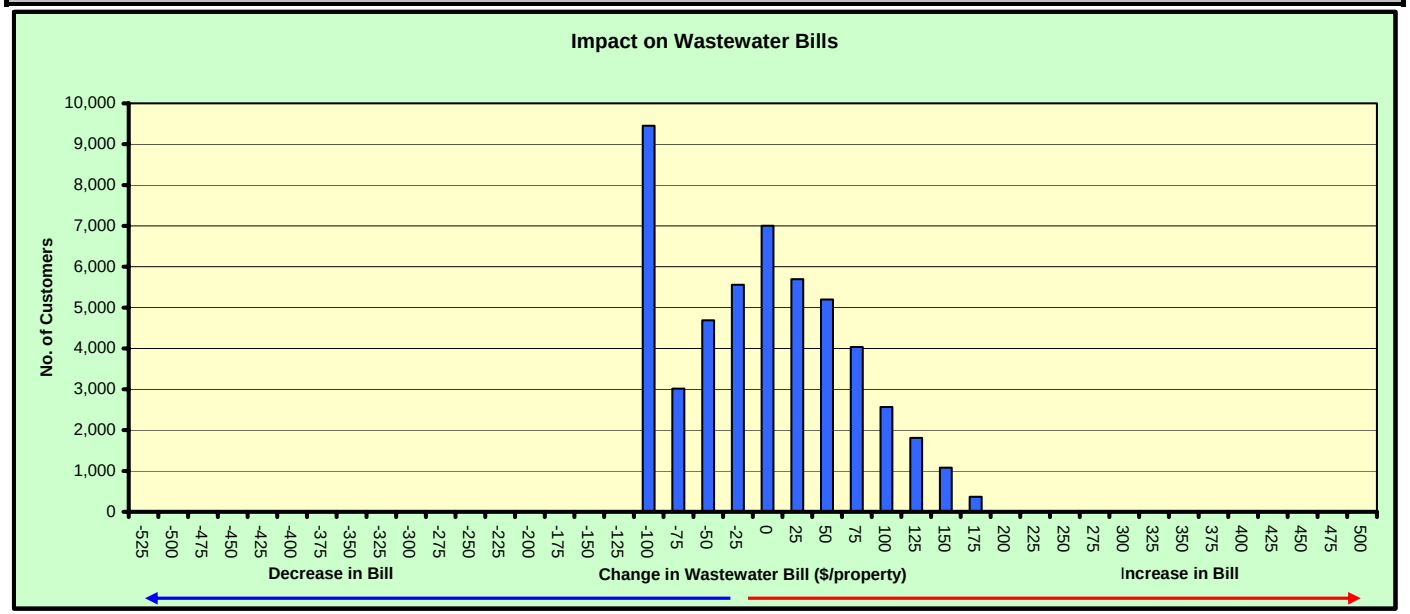
Fixed Charge		
Macedon	1	$285.43
Bacchus	2	$285.43
Romsey	3	$285.43

Maximum Change	$3,241.71
Minimum Change	-$104.09
Revenue Difference	$0



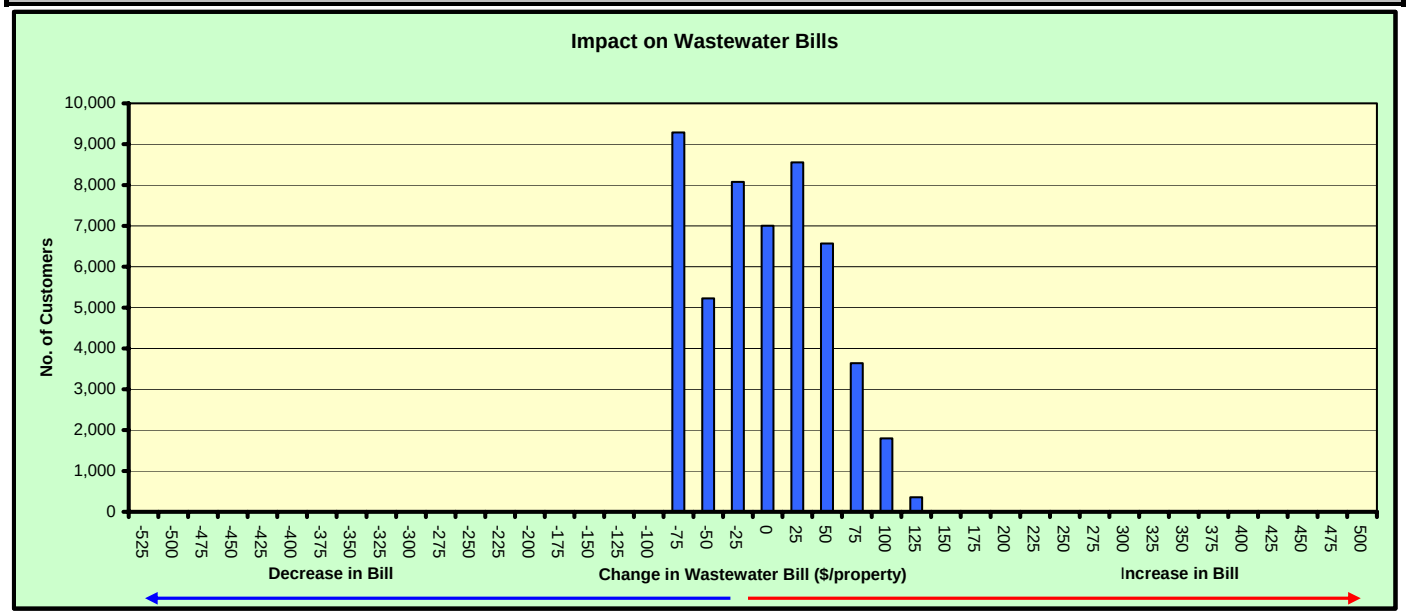
Uniform Access Charge & $0.75/kL

Seasonal Factor				Fixed Charge		
	Nov	Mar	Jun	Macedon	1	$312.08
Factor	85%	53%	69%	Bacchus	2	$312.08
Vol. Charge	$0.750			Romsey	3	$312.08
Limits	**Discharge Factor**			Maximum Change		$1,804.58
Less than (kL)	133	90%		Minimum Change		-$77.44
Greater than (kL)	333	45%				
	Fixed	**Volumet.**	**Total**	Revenue Difference		$0
Revenue ($000s)	13,584	3,370	16,954			



Uniform Access Charge & $0.50/kL

Seasonal Factor				Fixed Charge		
	Nov	Mar	Jun	Macedon	1	$338.32
Factor	85%	53%	69%	Bacchus	2	$338.32
Vol. Charge	$0.500			Romsey	3	$338.32
Limits	**Discharge Factor**			Maximum Change		$785.25
Less than (kL)	133	90%		Minimum Change		-$51.20
Greater than (kL)	333	45%				
	Fixed	**Volumet.**	**Total**	Revenue Difference		-$0
Revenue ($000s)	14,726	2,229	16,954			



Combined tariff scenarios

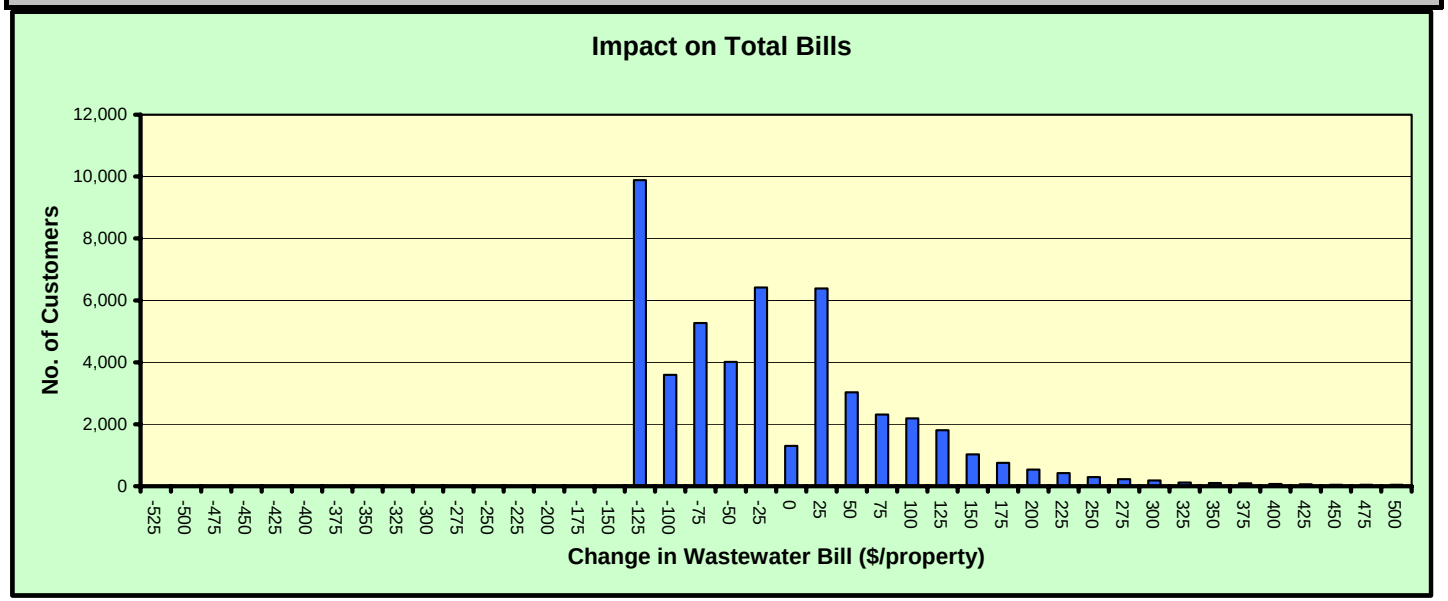
- Adjustment to water volumetric charge
  - Additional revenue based on revenue derived from wastewater volumetric charge at:
    - $0.50/kL - $2.229M
    - $0.75/kL - $3.370M
    - $1.00/kL - $4.531M
- Impacts assessed in terms of change in total combined bill

Adjustment to water volumetric charge

($4.53M based on $1.00/kL on wastewater charge)

Combined Water and Wastewater Tariff

Wastewater Tariff		Water Tariff			
Macedon	$285.43	Access		$135.41	
Bacchus	$285.43	Block 1	53 kL	$1.225	/kL
Romsey	$285.43	Block 2	106 kL	$1.437	/kL
		Block 3		$2.123	/kL
Volumetric	$0.00 /kL				
		Maximum Change		$10,832	
Revenue Shortfall	-$4,530,578	Minimum Change		-$104	



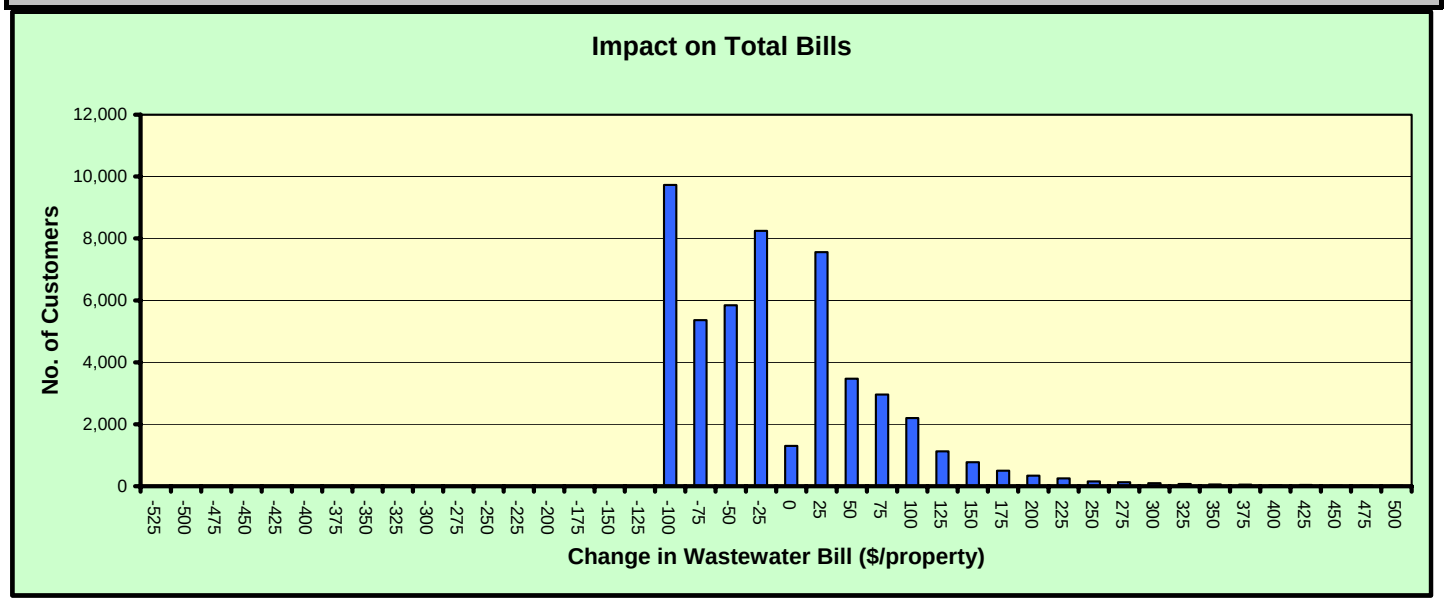
Adjustment to water volumetric charge

($3.37M based on $0.75/kL on wastewater charge)

Combined Water and Wastewater Tariff

Wastewater Tariff		
Macedon	$312.08	
Bacchus	$312.08	
Romsey	$312.08	
Volumetric	$0.00	/kL
Revenue Shortfall	-$3,370,453	

Water Tariff			
Access		$135.41	
Block 1	53 kL	$1.125	/kL
Block 2	106 kL	$1.319	/kL
Block 3		$1.949	/kL
Maximum Change		$8,058	
Minimum Change		-$77	

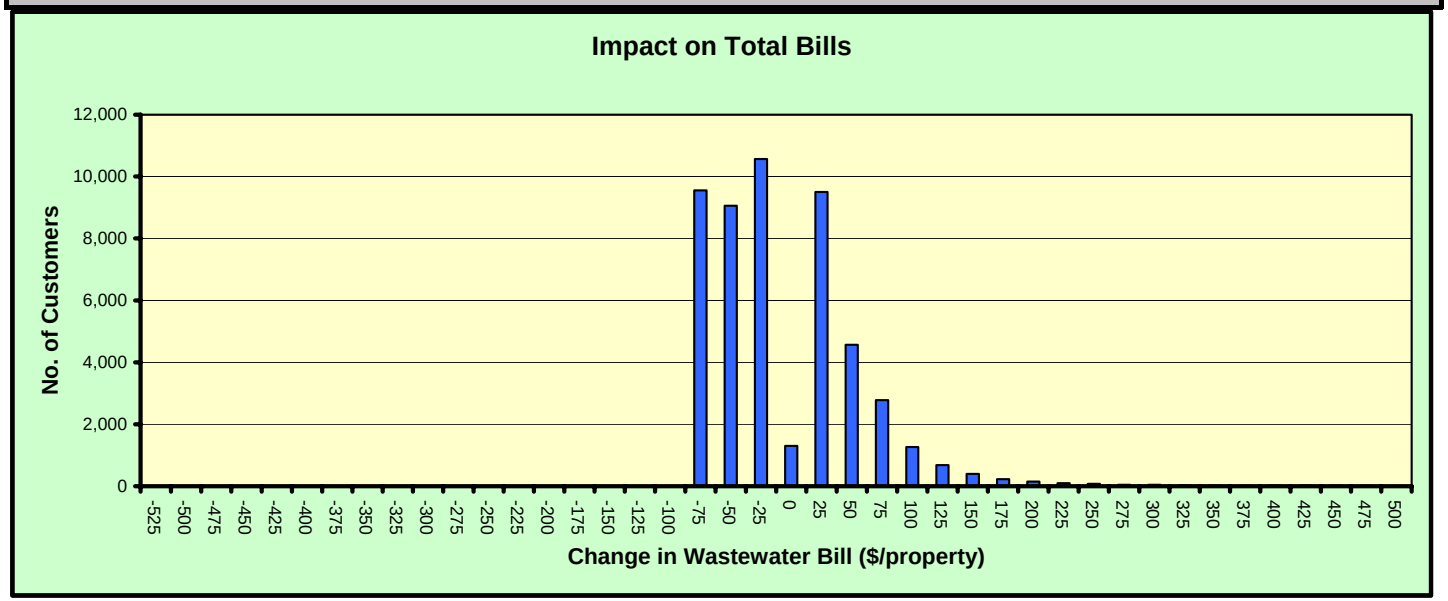


Adjustment to water volumetric charge

($2.228M based on $0.50/kL on wastewater charge)

Combined Water and Wastewater Tariff

Wastewater Tariff		Water Tariff			
Macedon	$338.32	Access		$135.41	
Bacchus	$338.32	Block 1	53 kL	$1.026	/kL
Romsey	$338.32	Block 2	106 kL	$1.204	/kL
		Block 3		$1.779	/kL
Volumetric	$0.00 /kL				
		Maximum Change		$5,328	
Revenue Shortfall	-$2,228,649	Minimum Change		-$51	

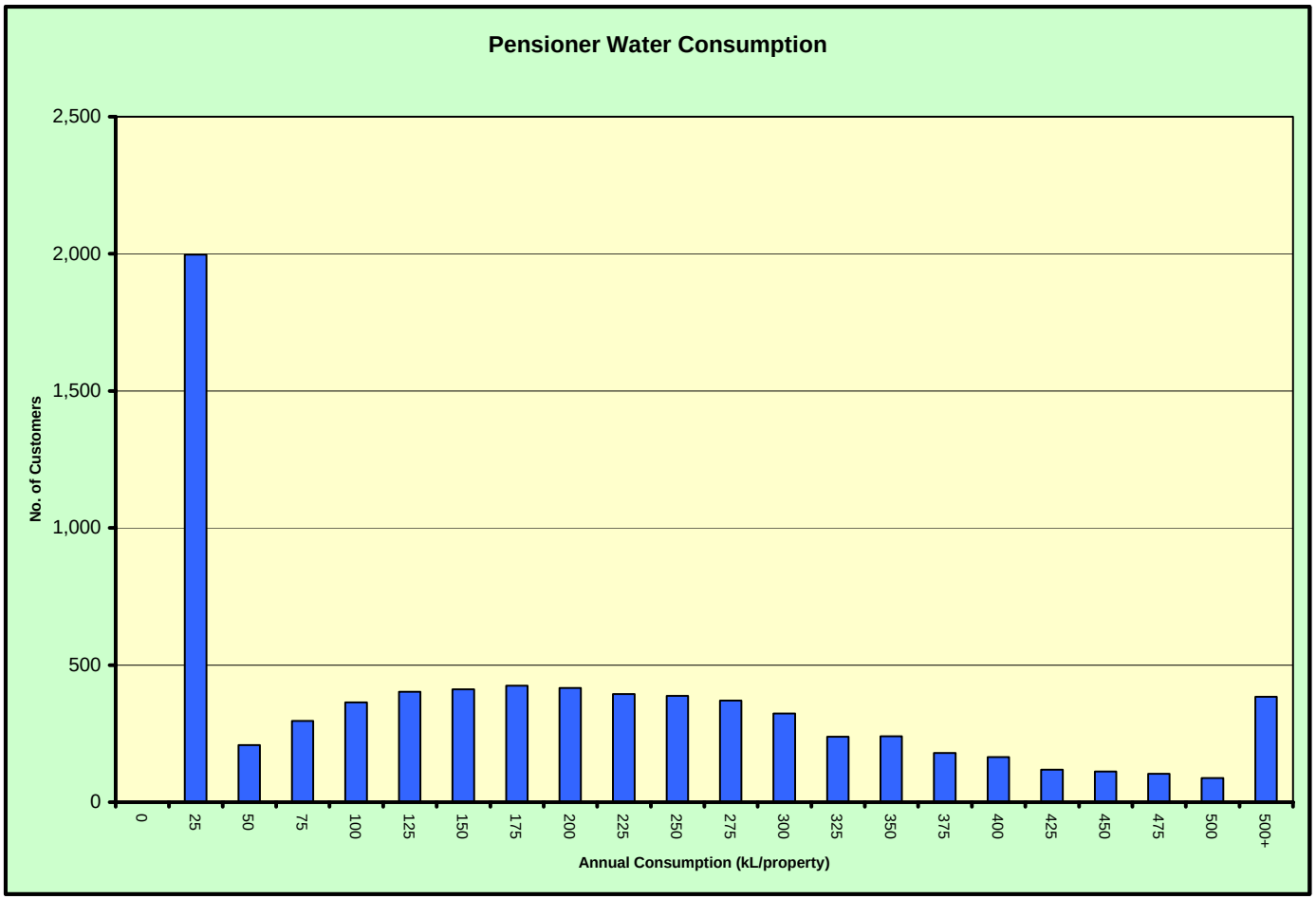


Pensioner Impacts

Scenarios modelled

- Impacts Uniform Wastewater tariff @
  - $1.00/kL
  - $0.75/kL
  - $0.50/kL
- Combined bill impacts based on uniform tariff outcomes for whole authority i.e. same tariff parameters as calculated for total business

Pensioner Impacts - Consumption



Pensioner Impacts – Wastewater @ $1.00/kL

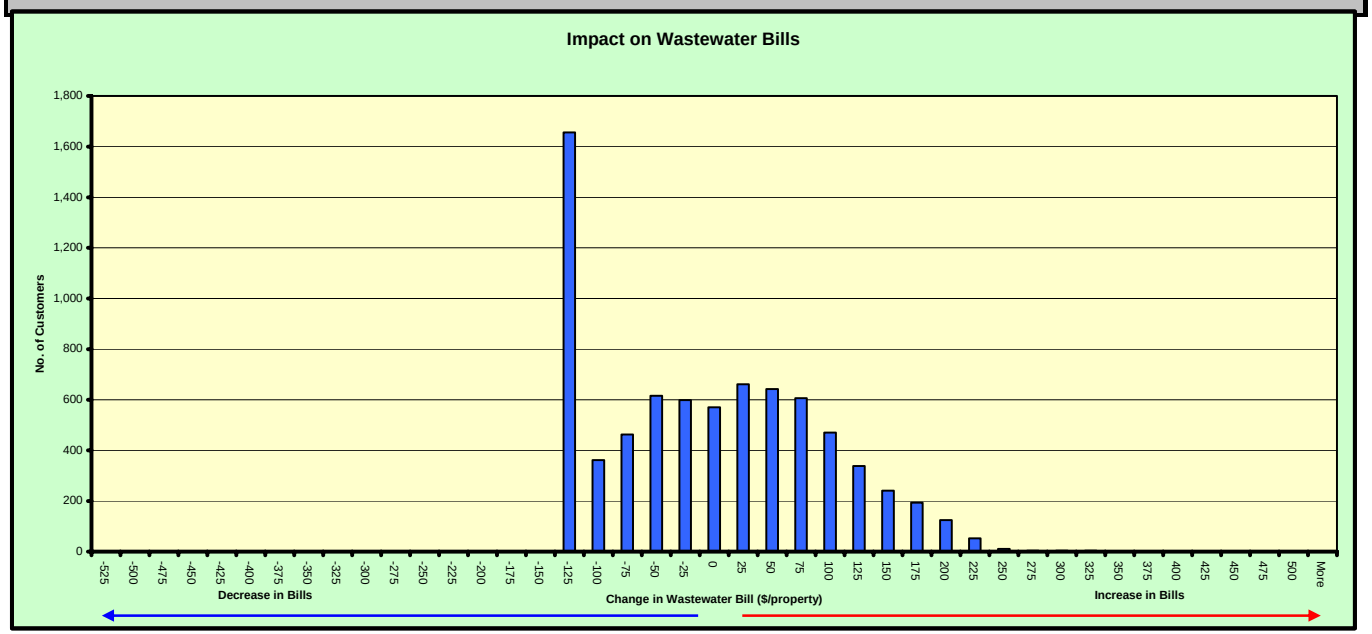
Seasonal Factor	Nov	Mar	Jun
Factor	85%	53%	69%
Vol. Charge	$1.000		

Limits	Discharge Factor
Less than (kL)	133 90%
Greater than (kL)	333 45%

	Fixed	Volumet.	Total
Revenue ($000s)	2,015	733	2,747

Fixed Charge		
Macedon	1	$285.43
Bacchus	2	$285.43
Romsey	3	$285.43

Maximum Change	$3,241.71
Minimum Change	-$104.09
Revenue Difference	-$1,773



Pensioner Impacts – Wastewater @ $.75/kL

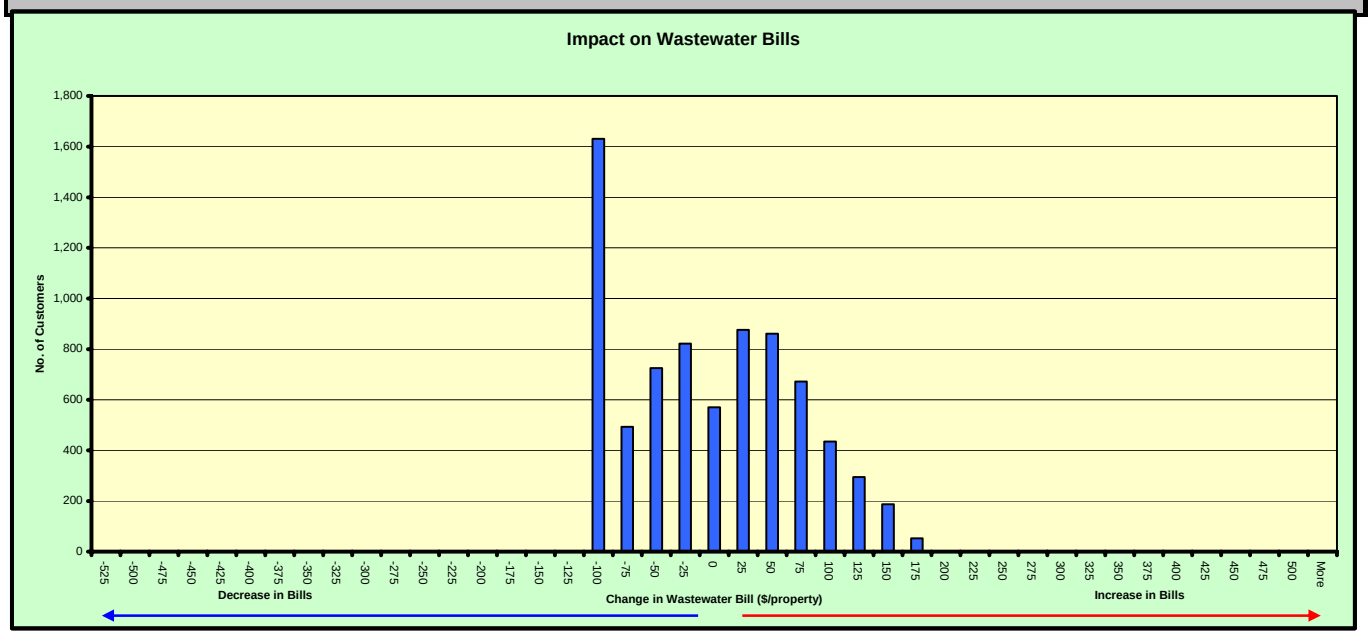
Seasonal Factor	Nov	Mar	Jun
Factor	85%	53%	69%
Vol. Charge	$0.750		

Limits	Discharge Factor
Less than (kL)	133
Greater than (kL)	333

	Fixed	Volumet.	Total
Revenue ($000s)	2,203	544	2,747

Fixed Charge		
Macedon	1	$312.08
Bacchus	2	$312.08
Romsey	3	$312.08

Maximum Change	$1,804.57
Minimum Change	-$77.44
Revenue Difference	-$2,466



Pensioner Impacts – Wastewater @ $0.50/kL

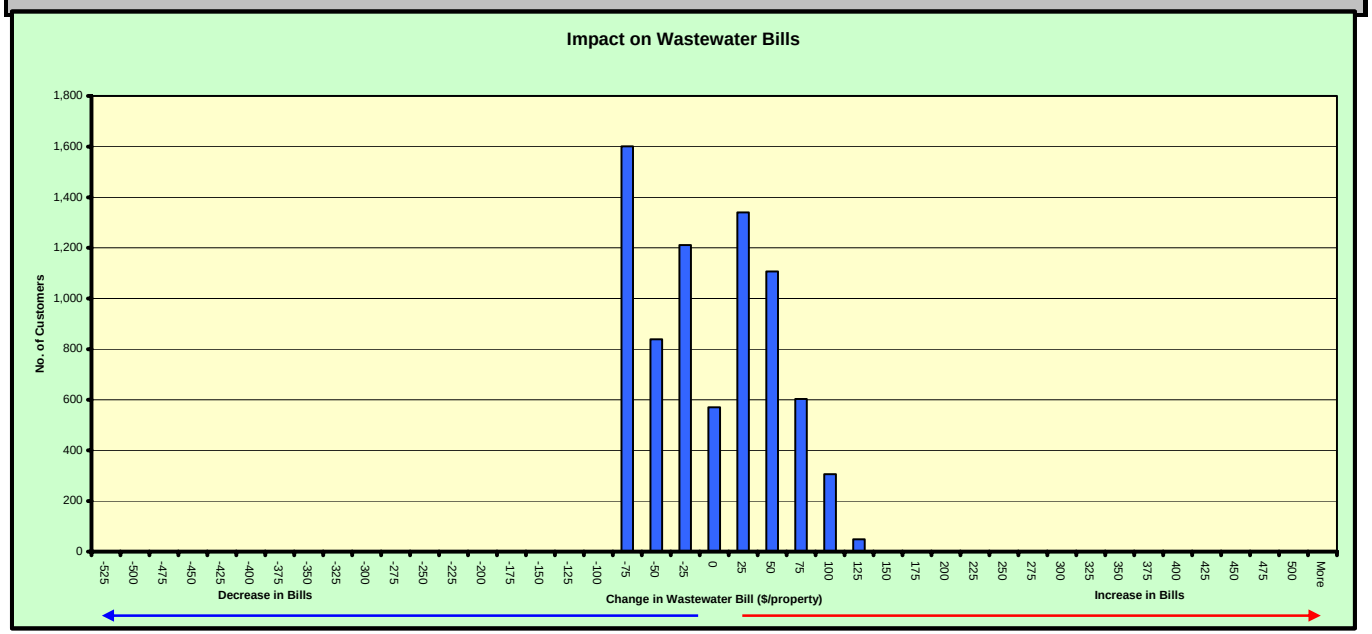
Seasonal Factor	Nov	Mar	Jun
Factor	85%	53%	69%
Vol. Charge	$0.500		

Limits	Discharge Factor
Less than (kL)	133
Greater than (kL)	333

	Fixed	Volumet.	Total
Revenue ($000s)	2,388	359	2,747

Fixed Charge		
Macedon	1	$338.32
Bacchus	2	$338.32
Romsey	3	$338.32

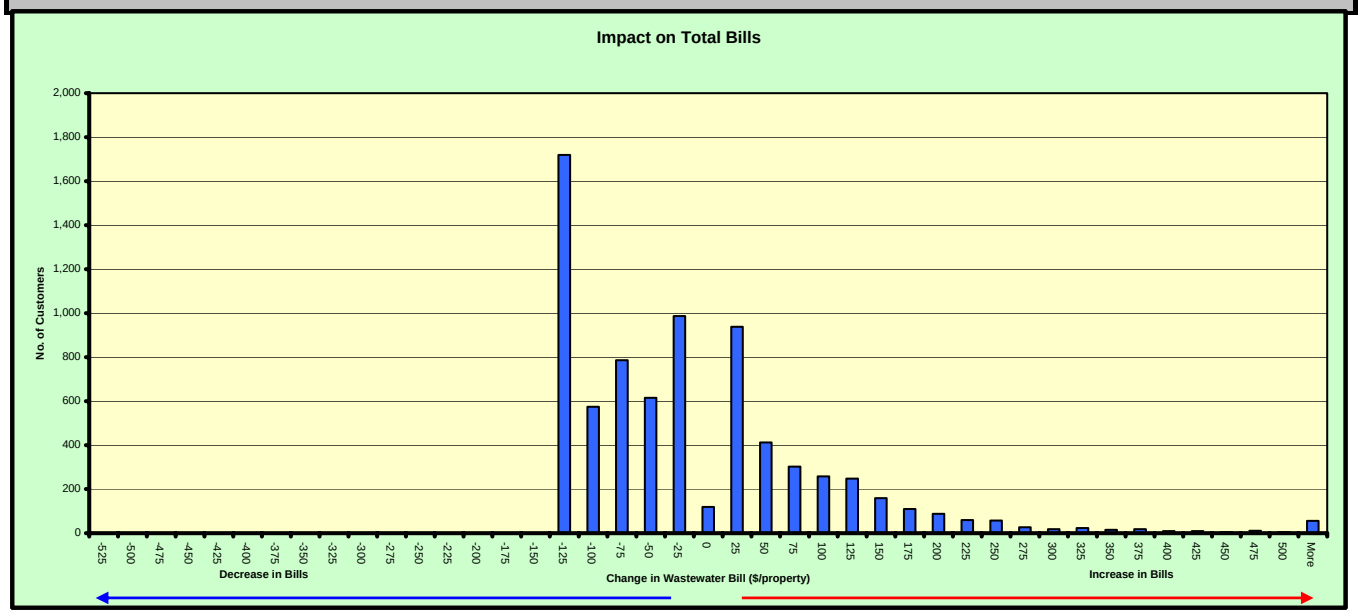
Maximum Change	$785.25
Minimum Change	-$51.20
Revenue Difference	-$2,343



Pensioner Impacts – Combined @ $1.00/kL

Combined Water and Wastewater Tariff

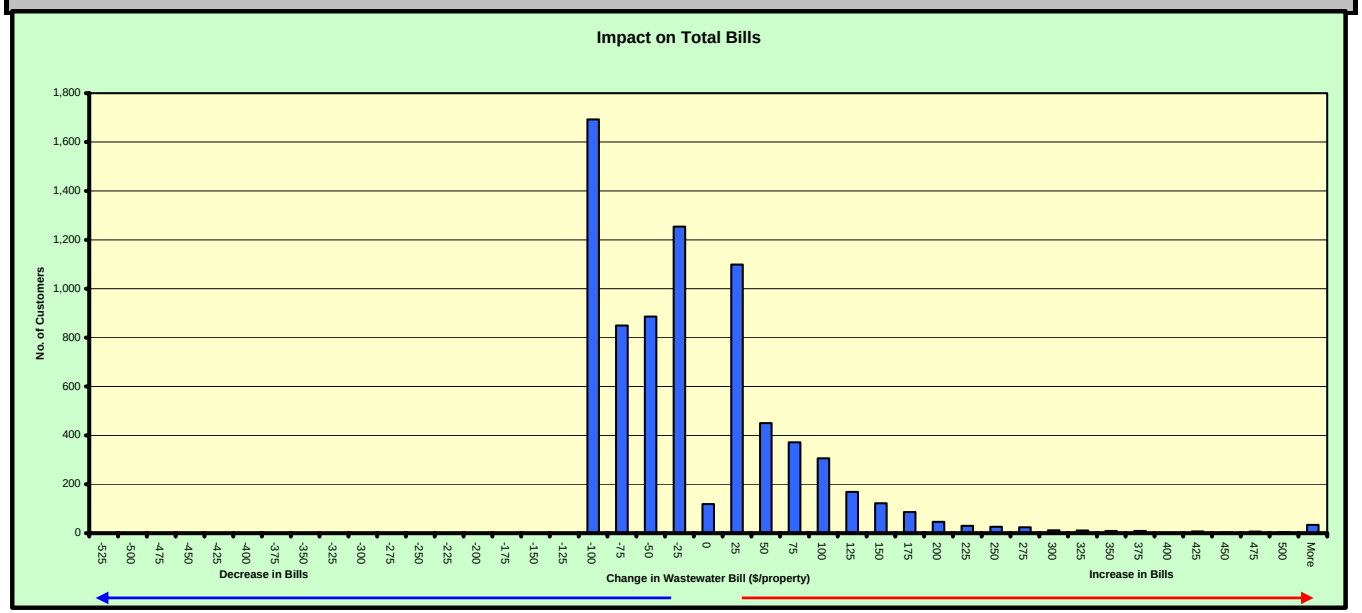
Wastewater Tariff		**Water Tariff**			
Macedon	$285.43	Access		$135.41	
Bacchus	$285.43	Block 1	53 kL	$1.225	/kL
Romsey	$285.43	Block 2	106 kL	$1.437	/kL
		Block 3		$2.123	/kL
Volumetric	$1.00 /kL				
		Maximum Change		$10,838	
Revenue Difference	-$28,085	Minimum Change		-$104	



Pensioner Impacts – Combined @ $0.75/kL

Combined Water and Wastewater Tariff

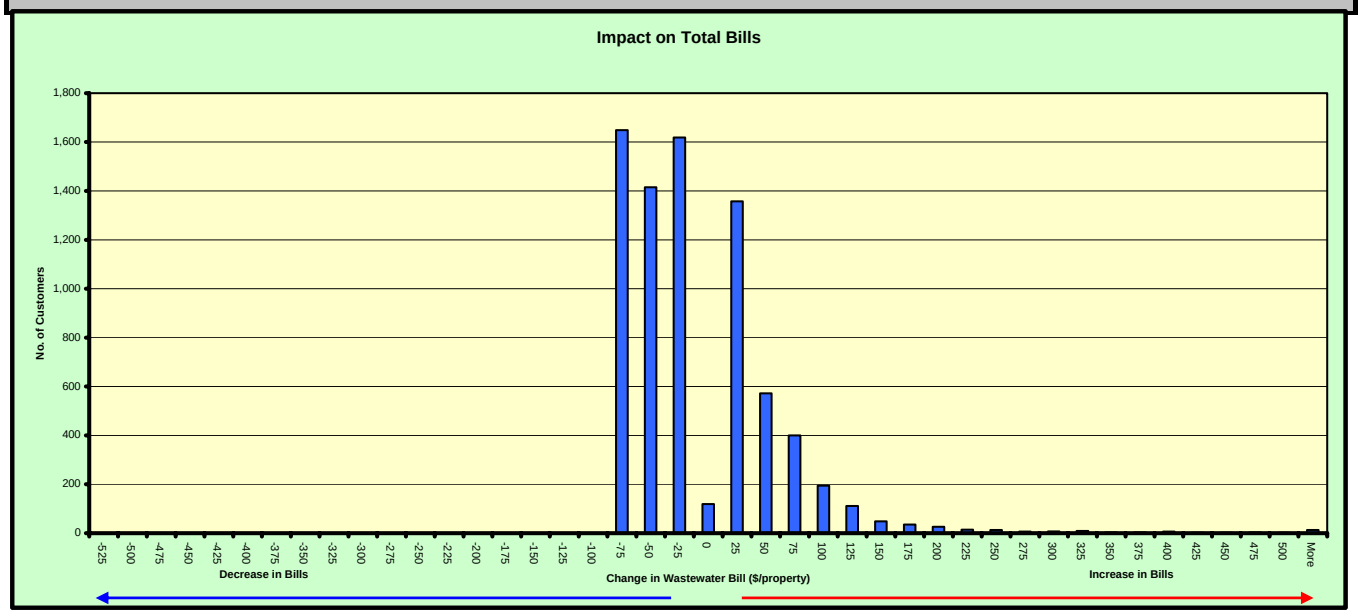
Wastewater Tariff		**Water Tariff**			
Macedon	$312.08	Access		$135.41	
Bacchus	$312.08	Block 1	53 kL	$1.125	/kL
Romsey	$312.08	Block 2	106 kL	$1.319	/kL
		Block 3		$1.949	/kL
Volumetric	$0.75 /kL				
		Maximum Change		$8,053	
Revenue Difference	-$21,330	Minimum Change		-$77	



Pensioner Impacts – Combined @ $0.50/kL

Combined Water and Wastewater Tariff

Wastewater Tariff		**Water Tariff**		
Macedon	$338.32	Access		$135.41
Bacchus	$338.32	Block 1	53 kL	$1.026 /kL
Romsey	$338.32	Block 2	106 kL	$1.204 /kL
		Block 3		$1.779 /kL
Volumetric	$0.50 /kL			
		Maximum Change		$5,332
Revenue Difference	-$14,145	Minimum Change		-$51



Conclusions

1. Volumetric Wastewater Tariff
   - Artificial construct
     - Requires proxy factors – seasonal & discharge
     - Raises issues over customer comprehension and responsiveness
     - Low price elasticity for internal use
   - Pensioner impacts significant in number of cases
   - Large family impacts
2. Added to Water Bill
   - Significant increases in unit volumetric charges
     - 2nd & 3rd tier charges likely to be well above water LRMC
       - Implications for economic efficiency
       - Further work to understand whether above combined LRMC for water and wastewater across whole business
     - Pensioner and large family impacts