South East Kelowna Irrigation District
Water Rate Review 2013

July 31, 2013

econics

WaterWorth™ v2.6

Executive Summary

- Enhancements to provincial water quality standards, as well as rate payer demand for cleaner water, are driving the need for improvements to SEKID water system.
- Many options explored and most cost effective plan involves upgrades for $22,3m, termed the *Water Quality Improvement Program (WQIP).*
- One approach is to implement the WQIP in 2 phases over 10 years.
- Funding to cover the costs of the WQIP may include senior government support. Funding will also come from operating revenues.
- To be fair, it is suggested that customers receiving the service from the WQIP should pay the increased costs.
- This report explores five scenarios including with and without funding support from senior government.
- Since water meters would be introduced as part of the WQIP, an example of volume based rates for Residential customers is examined.

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Water Quality Improvement Program (WQIP)

Phase	Work Description	Approximate Cost in 2012$	Number of rate payers benefitting
1	Upgrade potable groundwater supply	$8m	2/3
2	Twin the system to bring potable water to rural areas	$16m	1/3

- Tax Payers rejected the option to borrow funds to complete WQIP without grant funding support.
- Senior Government has accepted this and is working out details to provide grant funding in support.
- SEKID has a Long Term Financial Plan for implementing WQIP without grant funding.
- Senior Government financial support will accelerate this plan.

Best Practices

	Best Practice	Analogy	Benefits
1	Full Cost Recovery		Achieve Revenue Sufficiency Operate Sustainably Supports Political Stability
2	Rate Equity		Establishing Fairness Public Acceptability
3	Conservation-Oriented Rates		Improve Resource Management Reduce Operating Costs Reduce Revenue Volatility

The process of reviewing and setting rates can be described using the *analogy of a pie*. The first step is to determine *how big the pie should be*. Next is to determine *how to cut the pie into equitable slices* representing the customer categories. Step 3 is to determine how to design a rate structure to achieve the required objectives for each slice.

Project Objectives

Revenue Sufficiency A prime objective of a rate structure is to ensure that revenue sufficiency is maintained.

Revenue Stability Rate structures with a variable component gives customers more control over their costs. However, this results in revenue variability as demand fluctuates year to year with variances in climate.

Resource Conservation Promotion of water conservation is a desirable goal and pricing signals can be used to encourage economy in certain instances of water use.

Easy to Understand A rate structure should aim to be easy to understand and send a clear and strong price signal to customers. This means that the price structure should empower customers to make decisions about water usage that are in line with the goals of the organization. Typically this is aimed at resource conservation and reducing excess water usage.

Equity & Fairness A rate structure should aim to allocate to the customer groups the costs of providing water services, commensurate with their demand characteristics.

Public Acceptability Any proposed changes in the rate structure should be undertaken in steps to ensure a smooth transition to avoid rate shock to the customers.

Political Acceptability A newly proposed rate structure will need the support of board of trustees.

Ease of Implementation A rate structure should take into consideration the implementation requirements particularly to the business processes and billing systems and aim for ease of implementation.

Rate Model Standards Development of a rate structure is guided by best practices whenever possible. The standards used to guide the rate design will be based on the AWWA Principles of Water Rates, Fees and Charges.

Summary of Scenarios

Scenario	Synopsis
1	Tolls increase 8.5% a year and max at $140 a month LEVY - Everyone pays additional LEVY until 2021, then levy drops and ONLY applies to those on new water Plus 2% increase in taxes on residential yearly charge (starts at $72.50 flat charge in 2013) Plus AG TAXES increase 2% a year every year and reach $80/acre by 2017 No Borrowing for project
2	Tolls increase 5% a year and max at $100 a month LEVY - Everyone pays additional LEVY until 2023, then levy drops and ONLY applies to those on new water Plus 2% increase in taxes on residential yearly charge(starts at $72.50 flat charge in 2013) Plus 13.4% annual AG TAXES increase to $120/acre by 2017 (4 years) then drops to 2% increases No Borrowing for project
3	Toll increase 5% per annum and max at $67 a month including LEVY LEVY - Only those receiving new water pay additional LEVY Plus 2% increase in taxes on residential yearly charge (72.50 flat charge in 2013) Plus AG TAXES increase 13.4% a year for 4 years reaching $120/acre by 2017 then increases 2% per annum after that No Borrowing for project
4	All tolls increase 8% in 2014 and 2% per yr after and max at $75 month including LEVY LEVY - Only those receiving new water pay additional LEVY Taxes increase 4% in 2014 then 2% per year after that on residential yearly charge (72.50 flat charge in 2013) Plus AG TAXES increase 4% a year every year and reach $85/acre by 2017 No Borrowing for project
5	All tolls increase 2% per annum and max at $78 month including LEVY LEVY -Only those receiving new water pay additional LEVY Plus 2% increase in taxes on residential yearly charge (72.50 flat charge in 2013) Plus AG TAXES increase 2% a year every year and reach $80/acre by 2018 No Borrowing for project

Note: detailed spreadsheets in appendices.

Summary of Scenarios

Scenario	WQIP Project Start	Project duration (years)	WQIP Inflated Project Cost	Grant funding	Impact to Residential (maximum monthly rate reached)	Impact to Agricultural (annual tax/acre by 2017)
1	2020	10	$27,4m	N/A	$140/month	$80/acre
2	2024	10	$29,7m	N/A	$100/month	$120/acre
3	2015	10	$24,8m	2/3	$67/month	$120/acre
4	2015	10	$24,8m	2/3	$75/month	$85/acre
5	2015	10	$24,8m	2/3	$78/month	$78/acre

Note: residential taxes increasing 2% per annum.

2. BASELINE INFORMATION

ASSETS
CUSTOMERS
DEMAND
REVENUES
COST COMPARISON
REVENUE VOLATILITY
MEASURE OF FAIRNESS

Assets

BUILDINGS		**626,122**
WATER SYSTEM		
Pipework	$	30,135,114
Water Facilities-Main		1,990,145
Service Connections - domestic		3,194,955
Service Connections - irrigation		1,495,304
Service Meters - domestic		314,100
Service Meters - irrigation		958,994
Other Fixtures		1,295,650
Total Water System	$	39,384,262
EQUIPMENT		
Heavy Equipment		493,862
Computers		83,473
Miscellaneous & Tools		261,579
Office & Office Furniture		120,058
Equipment - Trucks		235,769
Telemetry - includes communications		192,600
TOTAL EQUIPMENT	$	1,387,340
	$	41,397,723

The Water Delivery Service is made possible by the extensive water infrastructure that SEKID owns and maintains. This infrastructure enables SEKID to obtain, convey, treat, store and distribute potable water in a safe and secure way.

The replacement value of the City water infrastructure at 2009 was estimated to be about $41 million.

Customers

The customers receiving water delivery services are classified as shown in this table.

Category	Description
Residential	Services to domestic units on the current system.
Residential NEW!	Services to domestic units on the upgraded Water Quality Program system.
Multifamily / Mobile Home Parks	A service that supplies water to two or more domestic units, including townhomes and mobile home parks. These customers will have some outdoor green space but typically less green space per capita than Residential.
Commercial	Means the use of water for a wholesale or retail service or other service or trade that does not fall under the definition of “Domestic” or “Irrigation” and not considered primary agricultural production as defined under BC Regulation 411/95 of the Assessment Act.
Agriculture	Means the beneficial use of water for crops, gardens, parks and golf courses which are also defined as Grade A lots.

Services and Population

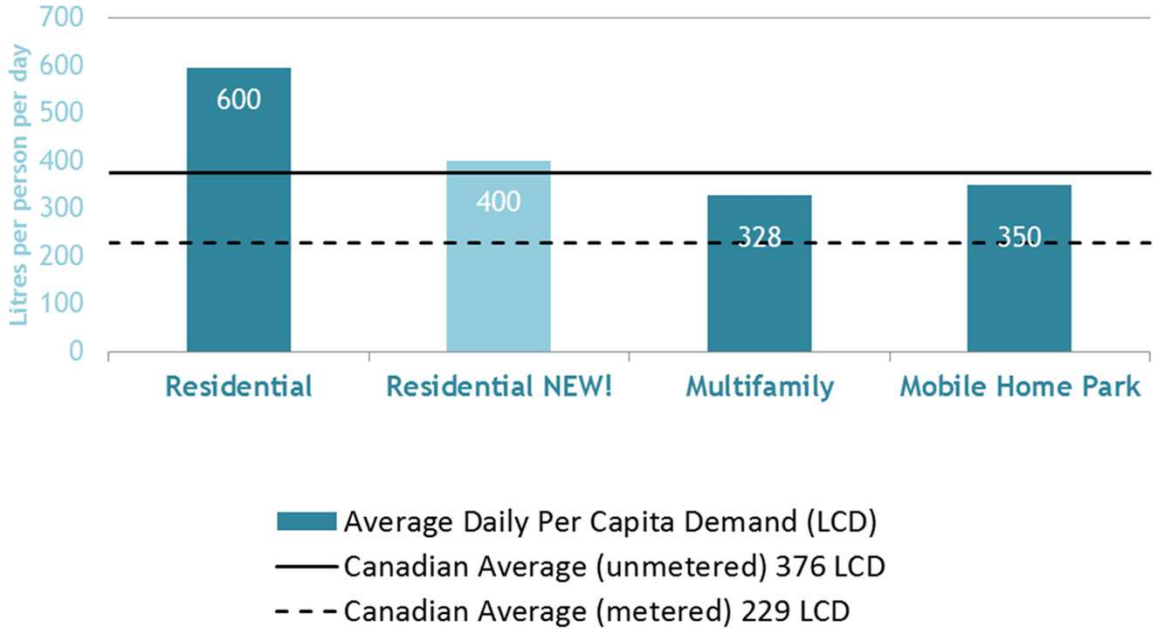
This table provides a breakdown of the number of customers and services and the estimated population served.

	Services		Population	
Customer Class	Total Service Connections	Units for Billing Purposes	Density	Population
Residential	1,862	1,862	2.50	4,655
Residential NEW!	0	0	0.00	0
Multifamily	7	147	2.50	368
Mobile Home Park	3	191	2.50	478
Commercial	31	31	0.00	0
Agricultural	511	511	0.00	0
total	2,414	2,742		5,500

Per Capita Demand

Measuring per capita demand is a widely recognized way to assess the relative efficiency of water use within a community. It enables a community to compare its water use with other communities as shown here.

Current Residential per capita demand is estimated to be as high as 600 Litres per capita per day (LCD). With meters installed under the new system, Residential demand is expected to decrease, initially to as low as 400 LCD.

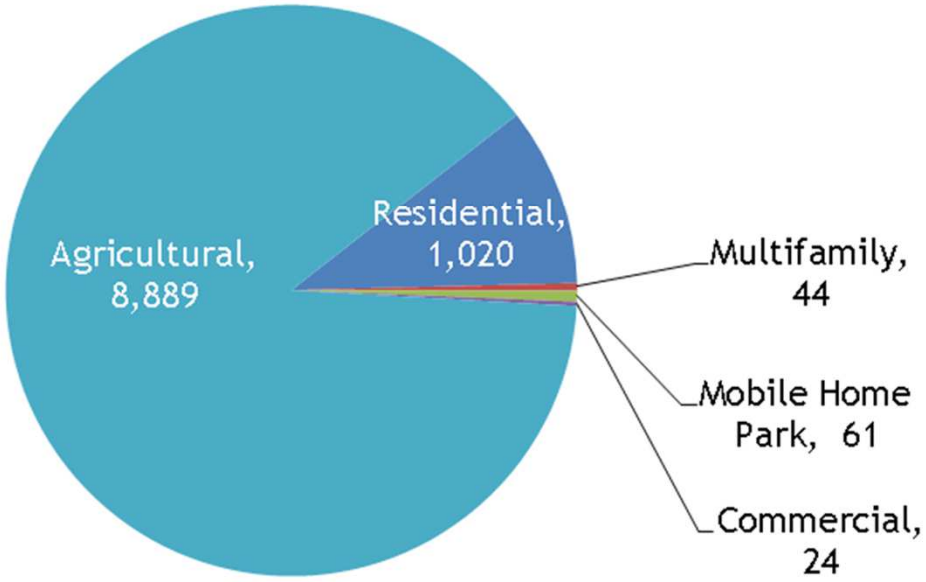


The average per capita demand is typically lower for multifamily than for residential use.

Per capita demand is expected to be higher than the Canadian average because of the high degree of water used for irrigation in the Okanagan Valley.

Overall Demand

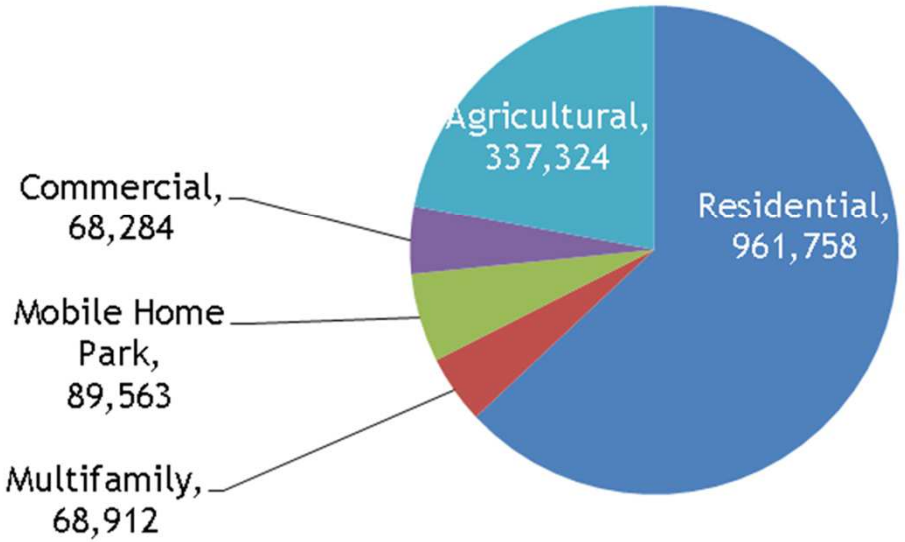
2012 Billable Demand: 10,038 ML



This pie chart shows the total water demand from each customer class. Agricultural and Residential customers use nearly all the water produced – about 99%.

Revenue Contributions

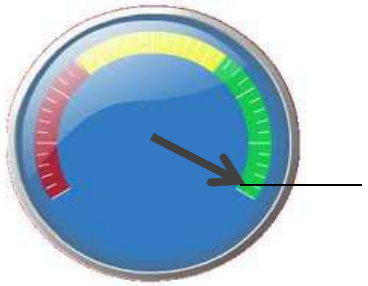
2012 Revenues $ 1,525,841



This pie chart shows how each customer class contributes towards operating revenues.

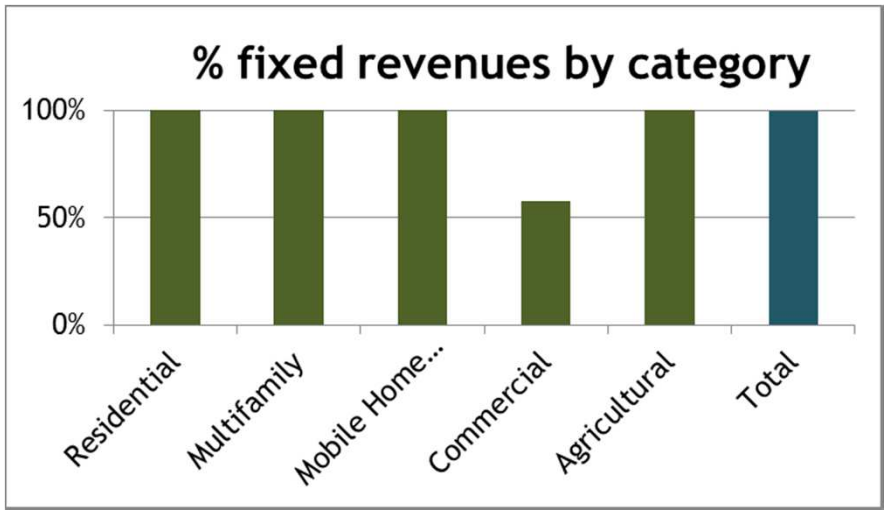
As is typically the case, the Residential category is the largest contributor.

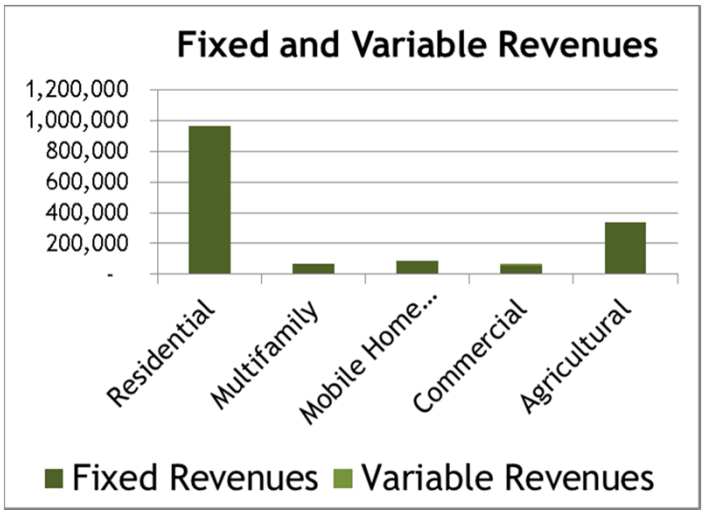
Revenue Volatility



~100% fixed revenues

A good rate structure balances a need for reliable revenues with the promotion of water conservation through a user pay system.
Variable revenues may vary from year to year due to climate influences and the natural decline of demand.

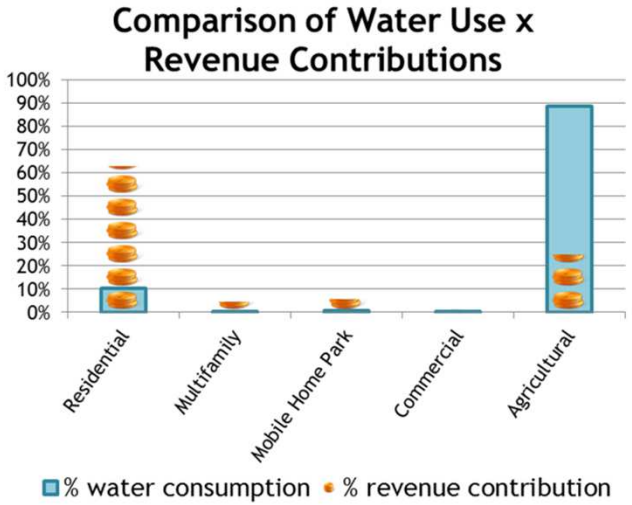




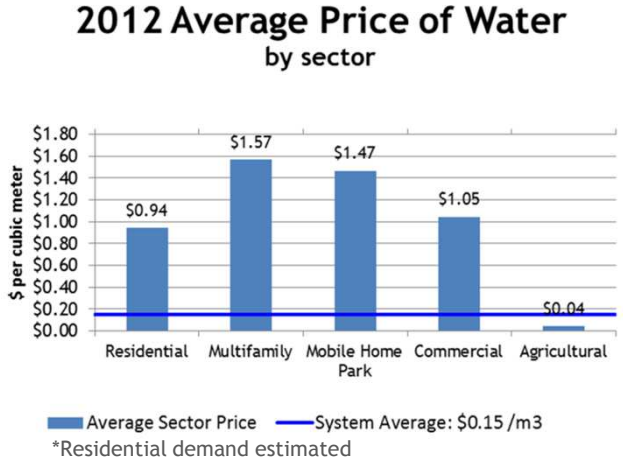
SEKID has almost 100% of revenues generated from fixed charges. Revenues are currently therefore highly predictable and not volatile at all. With volume billing some volatility to revenues will be introduced. This volatility can however be mitigated through the use of a *revenue stability fund*.

Measure of Fairness

These charts give simplified indicators of equity, comparing water demand with revenue contribution; and comparing average cost of water.



There is a difference between the percentage of revenues contributed by a customer category and the percentage of water consumed.



The average price of water for each sector is calculated by dividing the revenue collected from that sector by the volume of water delivered to customers in that sector.

…However…

Differences in water price shown above may at first seem unfair. However, because of differing demand characteristics, each category 'consumes' different proportions of the services provided. As such, the average cost of water delivery varies from category to category.

3. FULL COST RECOVERY

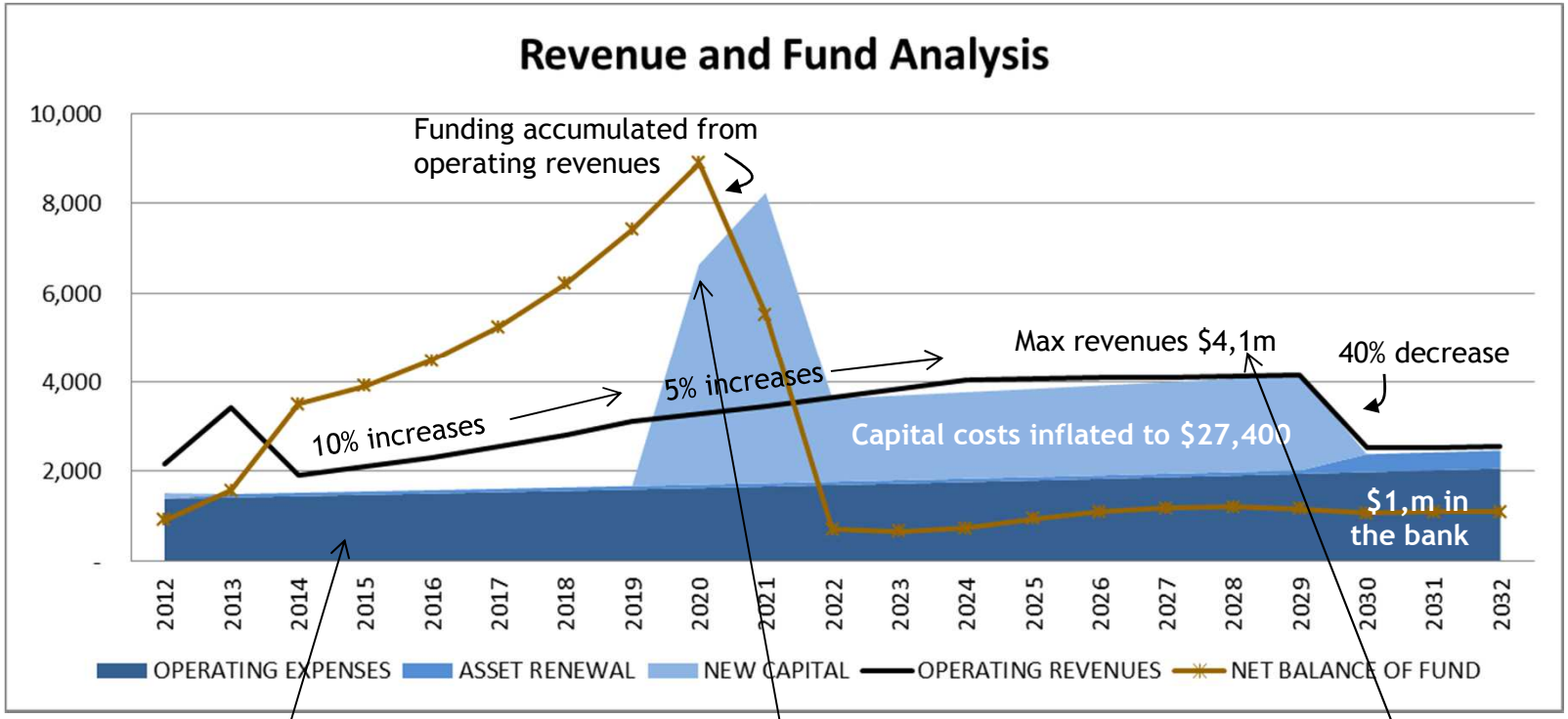
20 YEAR FINANCIAL MODEL
-WITHOUT GRANT FUNDING
SCENARIOS 1 & 2
-WITH 2/3 GRANT FUNDING
SCENARIOS 3, 4 & 5

Scenario 1

3. FULL COST RECOVERY

20 YEAR FINANCIAL MODEL
WITHOUT GRANT FUNDING
SCENARIO 1

The costs of owning and operating a water delivery service include operations and maintenance costs, asset renewal expenditures, and the expansion of the system functionality to meet regulatory requirements.



Operations and maintenance expenses are expected to increase with inflation, on average 2% per annum.

WQIP started in 2020 without use of grants or borrowing once accumulation in reserves sufficient.

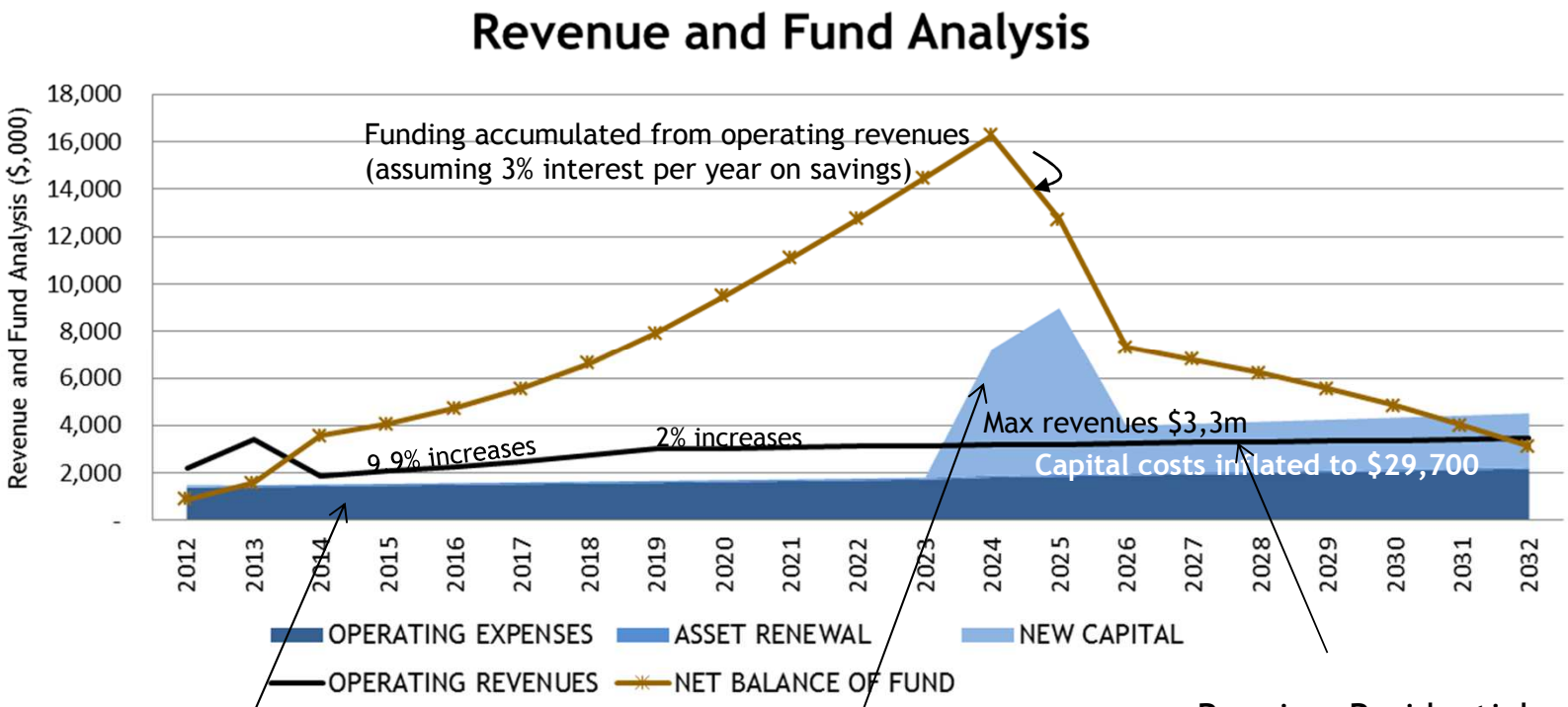
Requires Residential rates to be as high as $140/month including taxes!!

Scenario 2

Scenario 2 delays WQIP another 4 more years allowing further accumulation of funds. This eases the monthly cost to Residential customers fro m$140/month (Scenario 1) to $99/month.

3. FULL COST RECOVERY

20 YEAR FINANCIAL MODEL WITHOUT GRANT FUNDING SCENARIO 2



Operations and maintenance expenses are expected to increase with inflation, on average 2% per annum.

WQIP started in 2024 without use of grants or borrowing once accumulation in reserves sufficient.

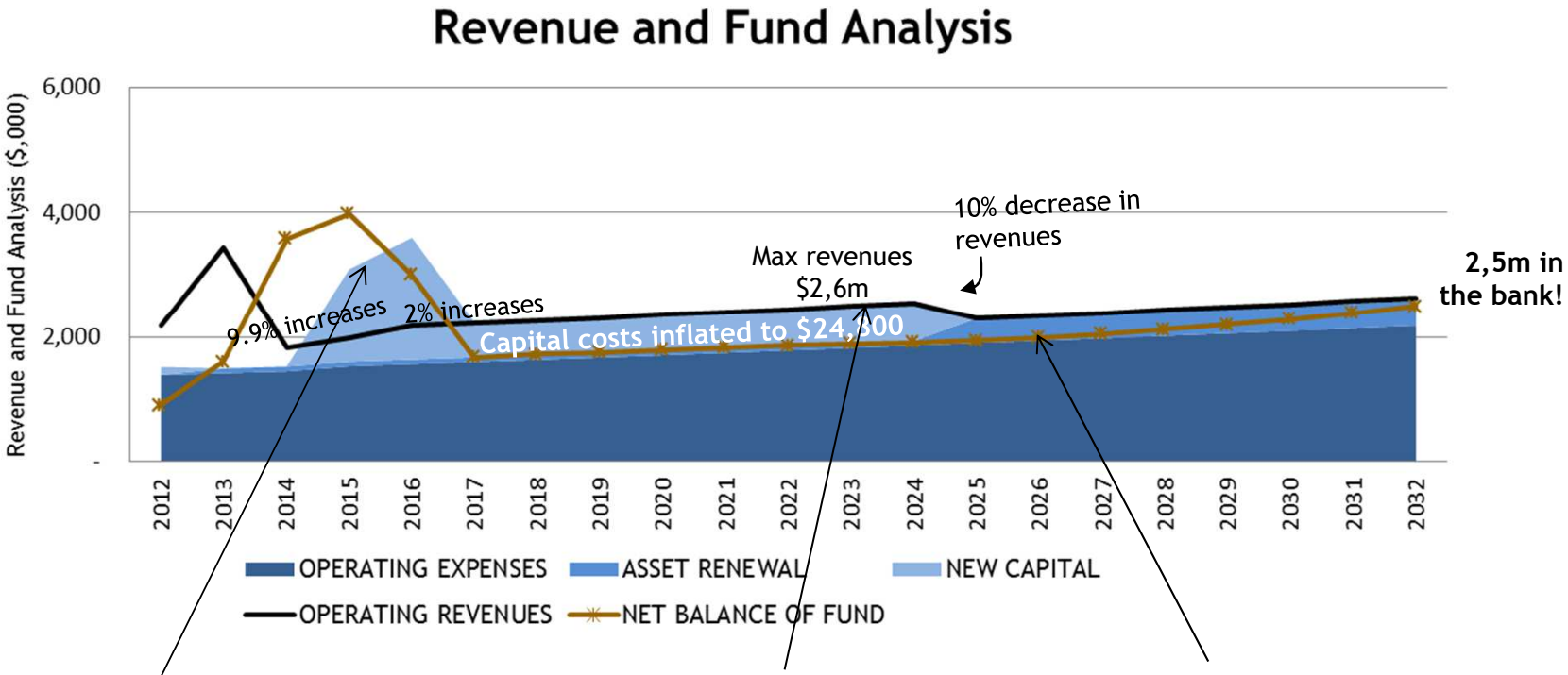
Requires Residential rates reach maximum of $100/month not including taxes!! Assumes Agricultural rates reach $120/acre by 2017.

Scenarios 3, 4 & 5

Scenarios 3-5 assume 2/3 grant funding for implementation of the WQIP. With grant funding support, the program is able to start immediately (2015) without greatly impacting Residential rates.

3. FULL COST RECOVERY

20 YEAR FINANCIAL MODEL WITH 2/3 GRANT FUNDING SCENARIOS 3, 4 & 5



Water Quality Program started in 2015 with senior government support and still without borrowing.

Total revenue requirements lower than Scenarios 1 and 2.

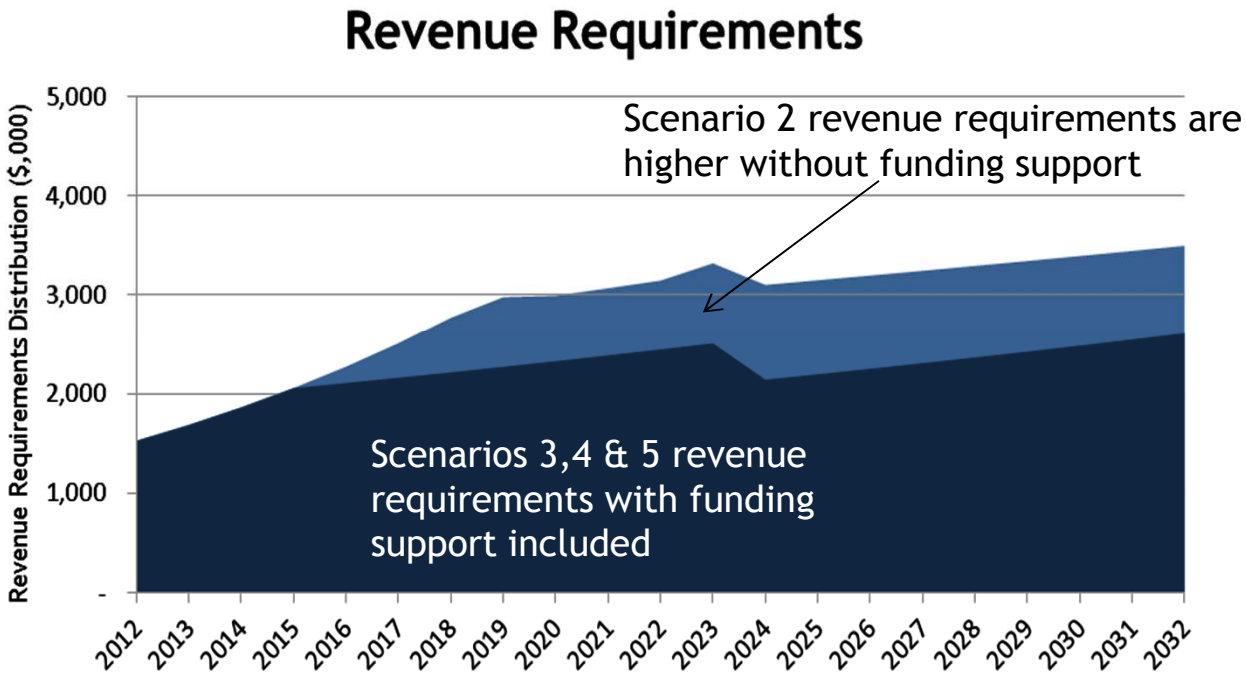
Annual Contributions for Asset Renewal (ACFAR) increased to $400k per year after WQIP completion.

Comparing Scenarios

This graph compares the difference in operating revenues needed to be generated with and without senior government support.

3. FULL COST RECOVERY

20 YEAR FINANCIAL MODEL
SCENARIOS 2, 3, 4 & 5



4. RATE EQUITY

LEVEL OF SERVICE
COST OF SERVICE
SCENARIOS

Demand Characteristics

4. RATE EQUITY

LEVEL OF SERVICE

COST OF SERVICE

ALL SCENARIOS

In addition to needing *an amount* of water (annual demand) each customer has different needs in terms of the *water quality* and *rate of use*. Some customers also need some pricing adjustments to respond to economic and affordability factors.

Customer Category		Annual Demand	Quality	Rate of Use	Pricing
Residential		High	Potable	High Peaking	
Residential NEW!		High	Potable	High Peaking	
Multifamily / Mobile Home Parks		Low	Potable	Med Peaking	Affordability
Commercial		Low	Potable	Low Peaking	
Agricultural		Highest	Non-potable	Seasonal Peaking	Pass on some economies of scale

Due to differences in demand characteristics, the amount that a customer category contributes to revenues differs from category to category. This amount is termed the *cost responsibility*. This difference in cost responsibility results in average-price-of-water differences between categories. This in turn leads to different rate structures for each customer category.

Service Components

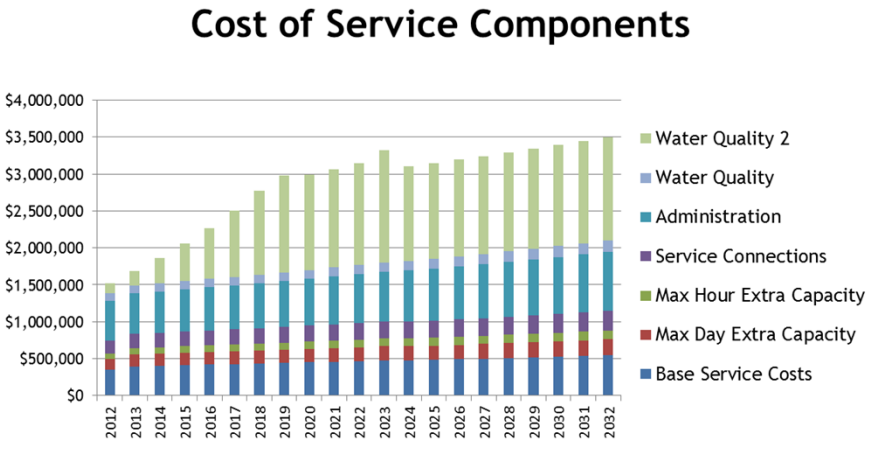
This table itemizes the different components that together make up the whole water delivery service provided by SEKID. Determining cost responsibility for customer categories is achieved by first determining the costs of the itemized service components listed here.

Service Component	Description
Base Service	Basic service of providing a volume of water to customers. Includes costs of watershed monitoring and management activities and water conservation programming.
Maximum Day Extra Capacity	Infrastructure required to meet peak day demand requirements.
Maximum Hour Extra Capacity	Infrastructure required to meet peak hour demand requirements
Service Connections & Meters	Management of service connections, measuring consumption and reporting to customers how much they are using.
Administration	Administrative activities including billing and customer support.
Water Quality	Current water treatment costs.
Water Quality 2	Additional costs of construction and operation of the Water Quality Improvement Program.

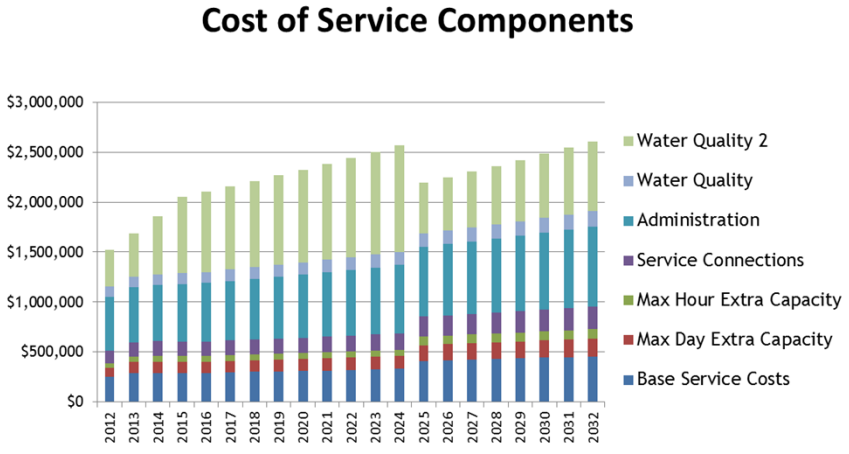
Cost of Service

The costs involved in meeting the demand characteristics of the customers includes operations, maintenance and infrastructure renewal expenditures. These costs are apportioned to the different service components as shown below.

These charts show how the cost of service changes over the next twenty years.



SCENARIO 2



SCENARIOS 3,4 & 5

A main difference between these two charts is that under Scenario 2, the entire costs of the Water Quality Program are generated from operating revenues.

Cost Responsibility

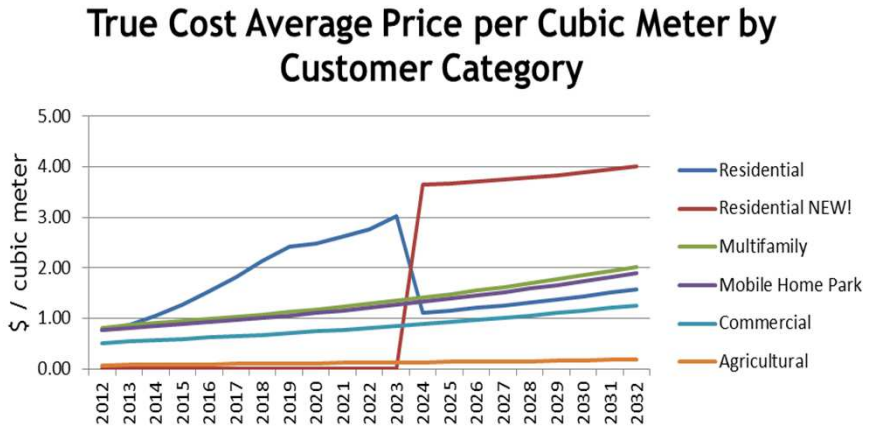
4. RATE EQUITY

LEVEL OF SERVICE

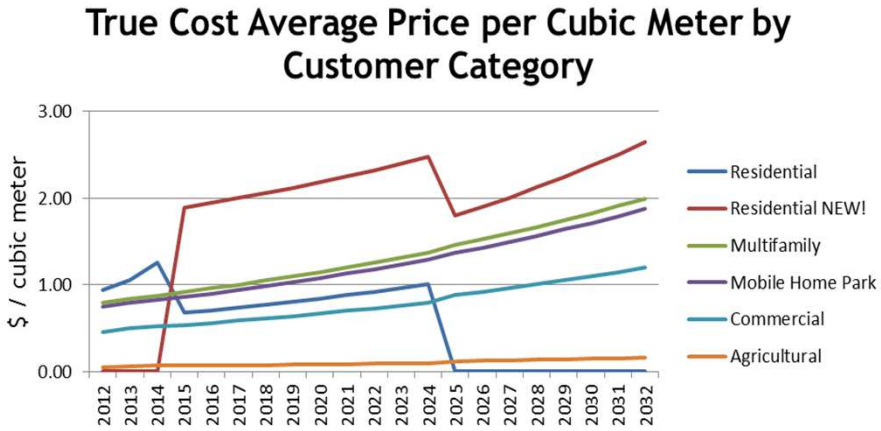
COST OF SERVICE

ALL SCENARIOS

The charts below show the True Cost of Service for each customer category. These are given in average price per cubic meter ($/m3). Because Residential customers are not metered, Residential Demand is estimated.



SCENARIO 2



SCENARIOS 3,4 & 5

5. RATE DESIGN

SCENARIOS
FIXED | VARIABLE CHARGE
RES | MULTI | COM | AG
4 YEAR PLAN
BILLING IMPACT

Proposed Changes to Rates

5. Rate Design

SCENARIO 2
FIXED CHARGE
RES | MULTI | COM | AG
4 YEAR PLAN
BILLING IMPACT

*20 year overview in appendix

Residential	2014	2015	2016	2017
Fixed Charge	+5%	+5%	+5%	+5%
Parcel Tax	+2%	+2%	+2%	+2%
Monthly Levy *Paid by all Residential	$10.00	$12.00	14.00	16.00

Multifamily & Mobile Home Parks	2014	2015	2016	2017
Parcel Tax	+2%	+2%	+2%	+2%

Commercial	2014	2015	2016	2017
Fixed Charge	-50%			
Parcel Tax	+2%	+2%	+2%	+2%

Agricultural	2014	2015	2016	2017
Parcel Tax	+13.4%	+13.4%	+13.4%	+13.4%

Proposed Changes to Rates

5. Rate Design

SCENARIO 3
FIXED CHARGE
RES | MULTI | COM | AG
4 YEAR PLAN
BILLING IMPACT

*20 year overview in appendix

Residential	2014	2015	2016	2017
Fixed Charge	+5%	+5%	+5%	+5%
Parcel Tax	+2%	+2%	+2%	+2%
Monthly Levy *Paid by new Residential only		$20.00	$20.00	$15.00

Multifamily & Mobile Home Parks	2014	2015	2016	2017
Parcel Tax	+2%	+2%	+2%	+2%

Commercial	2014	2015	2016	2017
Fixed Charge	-50%			
Parcel Tax	+2%	+2%	+2%	+2%

Agricultural	2014	2015	2016	2017
Parcel Tax	+13.4%	+13.4%	+13.4%	+13.4%

Proposed Changes to Rates

5. Rate Design

SCENARIO 4
FIXED CHARGE
RES | MULTI | COM | AG
4 YEAR PLAN
BILLING IMPACT

*20 year overview in appendix

Residential	2014	2015	2016	2017
Fixed Charge	+8%	+2%	+2%	+2%
Parcel Tax	+4%	+2%	+2%	+2%
Monthly Levy *Paid by new Residential only		$25.00	$25.00	$25.00

Multifamily & Mobile Home Parks	2014	2015	2016	2017
Parcel Tax	+4%	+2%	+2%	+2%

Commercial	2014	2015	2016	2017
Fixed Charge	8%			
Parcel Tax	+4%	+2%	+2%	+2%

Agricultural	2014	2015	2016	2017
Parcel Tax	+4%	+4%	+4%	+4%

Proposed Changes to Rates

5. Rate Design

SCENARIO 5
FIXED CHARGE
RES | MULTI | COM | AG
4 YEAR PLAN
BILLING IMPACT

*20 year overview in appendix

Residential	2014	2015	2016	2017
Fixed Charge	+2%	+2%	+2%	+2%
Parcel Tax	+2%	+2%	+2%	+2%
Monthly Levy *Paid by new Residential only		$30.00	$30.00	$30.00

Multifamily & Mobile Home Parks	2014	2015	2016	2017
Parcel Tax	+2%	+2%	+2%	+2%

Commercial	2014	2015	2016	2017
Fixed Charge	-50%			
Parcel Tax	+2%	+2%	+2%	+2%

Agricultural	2014	2015	2016	2017
Parcel Tax	+2%	+2%	+2%	+2%

Billing Impact

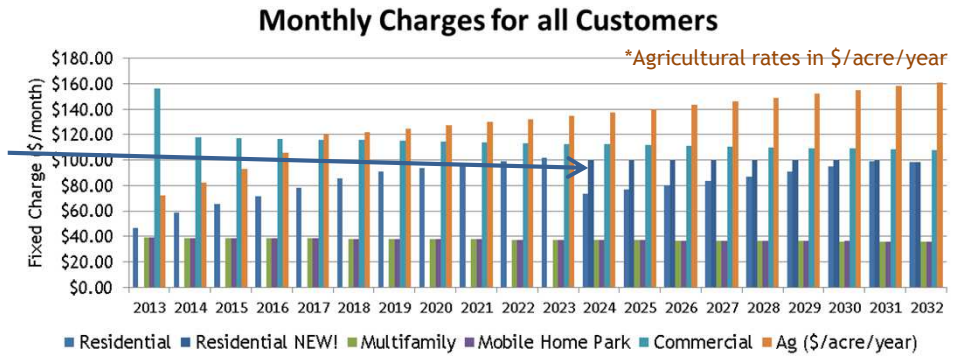
5. Rate Design

SCENARIOS 2 & 3
FIXED CHARGE
RES | MULTI | COM | AG
4 YEAR PLAN
BILLING IMPACT

These charts propose how cost responsibility could be apportioned to the customer categories.

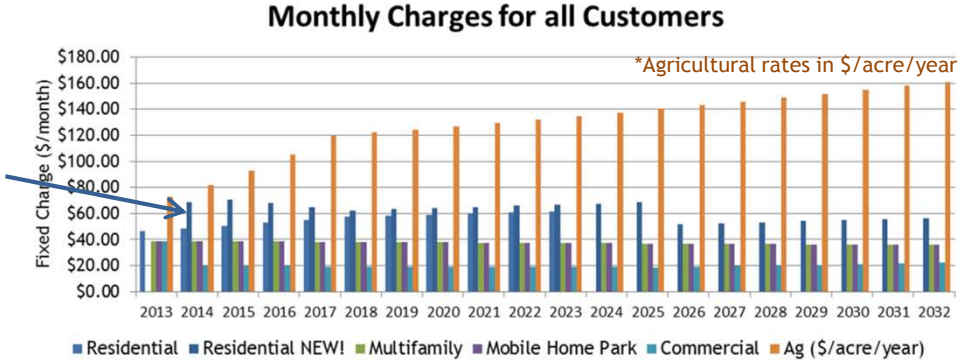
SCENARIO 2

Cost responsibility distributed equally to all residential customers while accumulating funds in reserve. In 2024 when program starts, only NEW! Residential customers pay the increased costs. Residential Toll rates reach $100/month ($105/month with parcel taxes); Agricultural rates reach $120/acre by 2017.



SCENARIO 3

With funding support, program starts in 2015 with only NEW! Residential customers paying the increased costs to a maximum of $67/month ($72/month including parcel taxes). Commercial costs reduced. Agricultural rates reach $120/acre by 2017.



Billing Impact

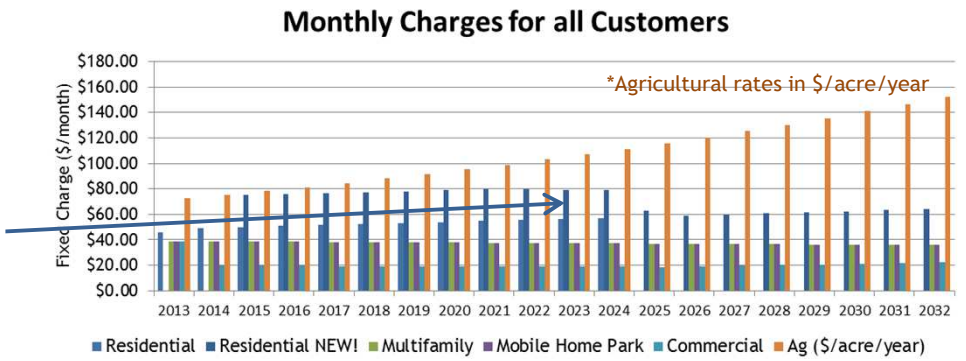
These charts propose how cost responsibility could be apportioned to the customer categories.

5. Rate Design

SCENARIOS 4 & 5
FIXED CHARGE
RES | MULTI | COM | AG
4 YEAR PLAN
BILLING IMPACT

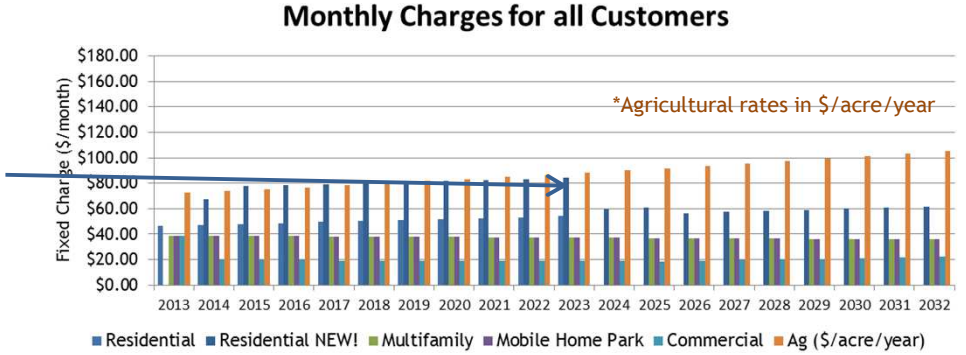
SCENARIO 4

Agricultural rates increased by 4% each year reaching $85/acre by 2017. Residential NEW! Toll rates reach maximum of $75/month including levy ($80/month including parcel taxes).



SCENARIO 5

Agricultural rates increased by 2% each year reaching $78/acre by 2017. Residential NEW! Toll rates reach maximum $78/month including Levy ($83/month including parcel taxes).

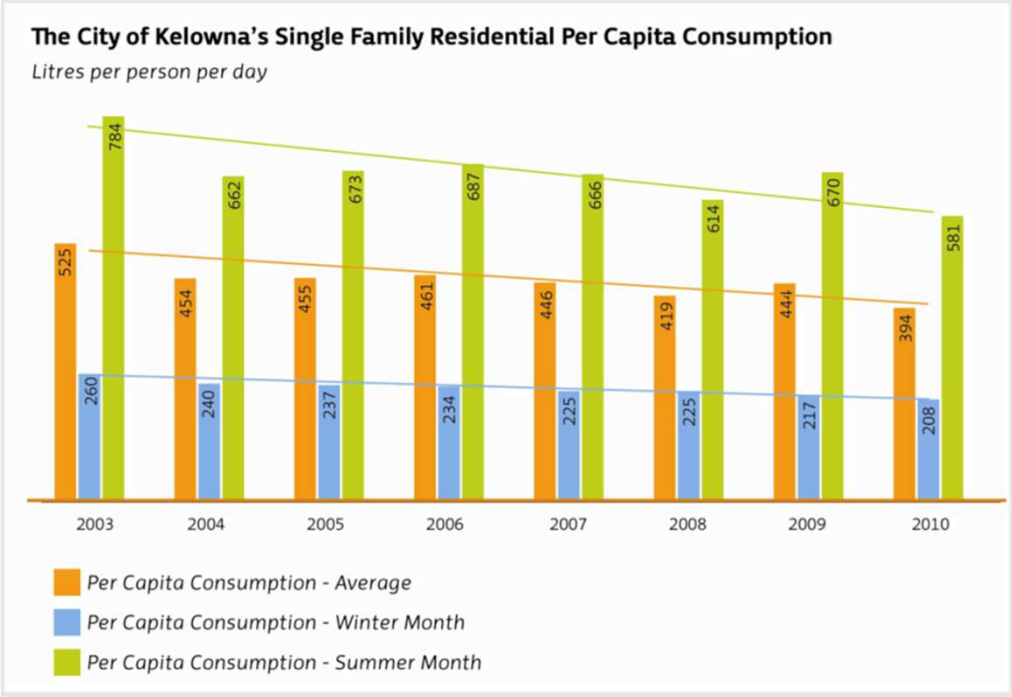


Residential Metered Rate

Example of variable rate under Scenario 3

Assumptions:

- All phase 1 customers (1,330 accounts) on meters by 2015
- Revenue contribution for 2015 (not including levy or taxes) = $742k
- If 40% contributions from fixed charges = $28/month
- Remaining 60% contributions from variable component = $300k/year



Assume demand will match Kelowna 2010 demand shown here.

Winter demand is at about 15m3 per household per month, and summer demand adds an additional 27 m3 per household per month.

See appendix note on basic household use.

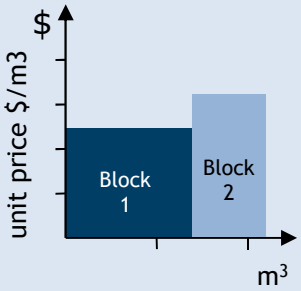
Residential Metered Rate

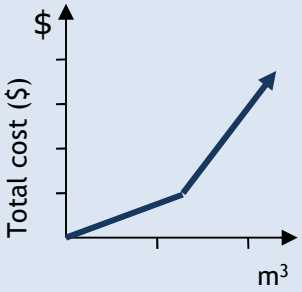
Example of variable rate under Scenario 3

Suppose 15m3 per month is considered basic use and will fall into block 1 of a 2 block rate structure. With 1,330 households, this totals 240,000 m3 per year. Seasonal use will add another 215,000 m3 per year. The following table shows how rates could be set to generate the required revenues using a two block rate structure. (More rate structures discussed in appendix.)

	Annual consumption	Annual demand	Rate	Revenues
Tier 1	Up to 15 m3 / month	240,000 m3	$0.50/m3	$120,000
Tier 2	> 15m3 / month	215,000 m3	$0.84/m3	$180,000

Inclining Block Rate





- Unit price of water increases in blocks as customers use more water.
- Sends a strong signal to conserve water
- Typically used with Residential customers
- Can implement more than 2 blocks
- Can also be combined with a fixed charge

6. APPENDIX

The Scale of Water

GENERAL INFORMATION ?

The Cubic Meter

1,000 Litres = 1 Cubic meter (m^3)

These 5 rain barrels add up to just less than a cubic meter

Five bath tubs full of water is equal to a cubic meter.

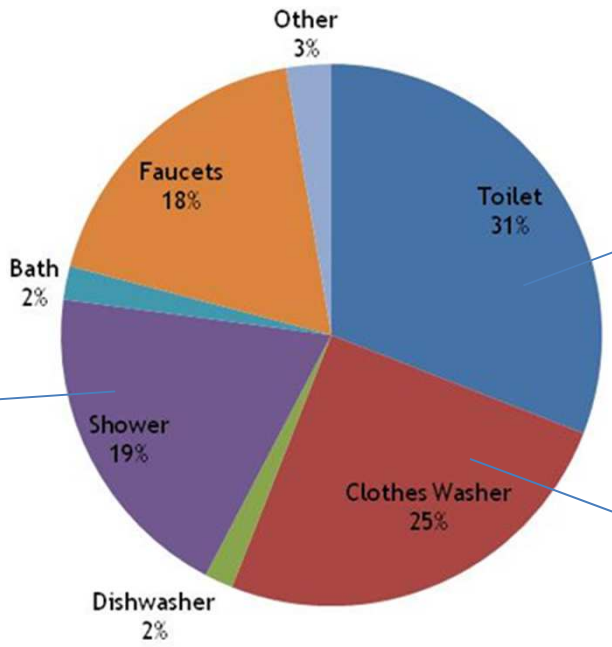
The Megalitre

Olympic Size Pool

2.5 ML = 2,500 m3 or 2.5 million Litres

Household Water Use

GENERAL INFORMATION ?

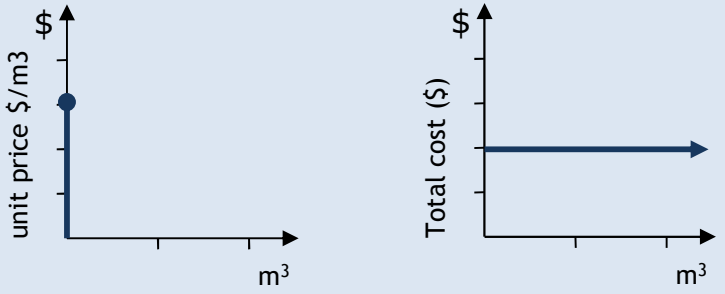


How water is used inside a typical stand-alone home.

Rate Structures 101

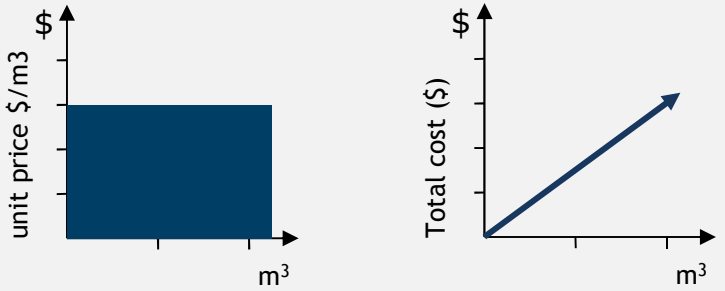
GENERAL INFORMATION ?

Flat Rate



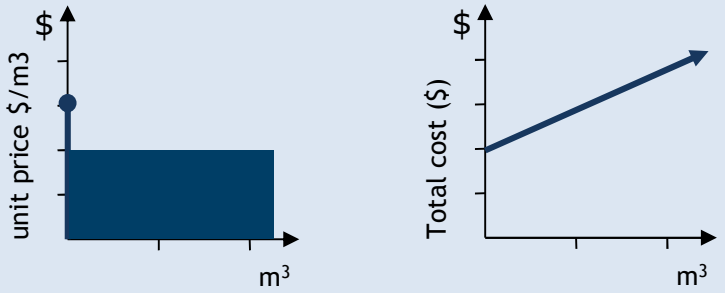
- Fixed price doesn't change with consumption
- 100% reliable revenues
- Does not promote conservation
- Only rate structure available when customers are not metered

Uniform Rate



- No fixed charge
- 100% variable revenues
- Promotes conservation
- Typically used for bulk water service

Base Charge + Uniform Rate

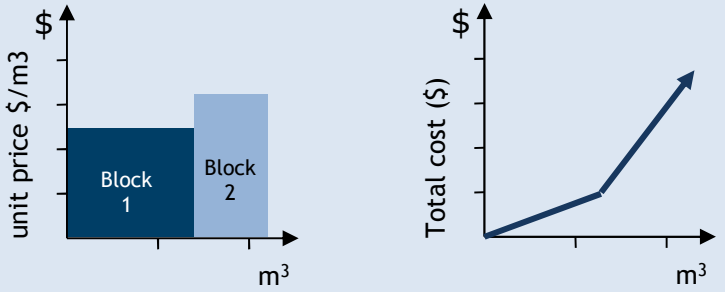


- Combines fixed and variable charges
- Promotes conservation
- Balances need for revenue reliability with need to send conservation signal to customers
- Most common rate structure

Rate Structures 101

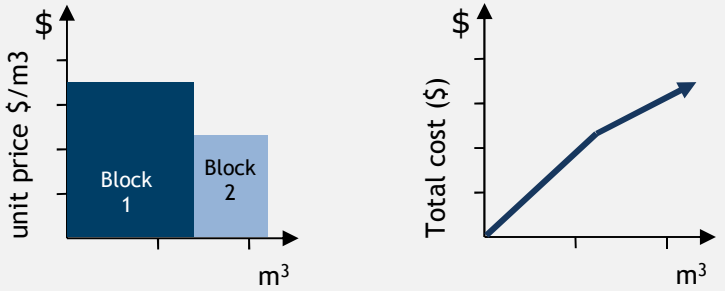
GENERAL INFORMATION ?

Inclining Block Rate



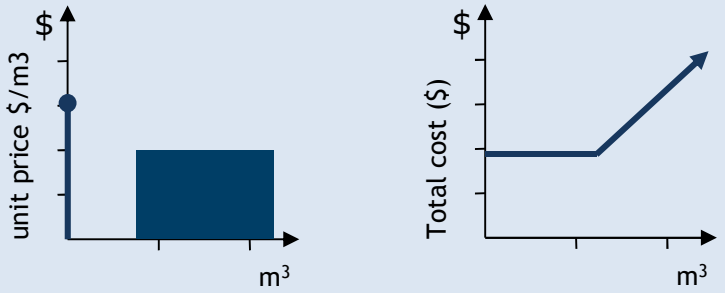
- Unit price of water increases in blocks as customers use more water.
- Sends a strong signal to conserve water
- Typically used with Residential customers
- Can implement more than 2 blocks
- Can also be combined with a fixed charge

Declining Block Rate



- Unit price of water decreases in blocks as customers use more water.
- Does not promote water conservation

Base with Allowance + Uniform Rate



- Can provide customers with a fixed, predictable bill for basic consumption while also promoting conservation at higher uses.
- Can be challenging to communicate, understand and to justify

Scenario 1

20 Year Overview

Scenario 1 - WQIP starts in 2020 - no borrowing no funding

Tolls increase 8.5% a year and max at $140 a month
LEVY - Everyone pays additional LEVY until 2021, then levy drops and ONLY applies to those on new water
Plus 2% increase in taxes on residental yearly charge(starts at $72.50 flat charge in 2013)
Plus AG TAXES increase 2% a year every year and reach $80/acre by 2017
No Borrowing for project

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Residential																				
Fixed (%)		8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	4.5%	4.5%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	-100.0%		
Fixed ($/month)	42.00	45.55	49.40	53.58	58.12	63.03	68.36	74.14	80.41	84.01	87.78	87.34	86.91	86.47	86.04	85.61	85.19	-	-	-
Levy (%)			45.0%	31.0%	23.7%	19.1%	16.1%	-41.5%	-50.0%	-100.0%										
Levy ($/month)	-	10.00	14.50	19.00	23.50	28.00	32.50	19.00	9.50	-	-	-	-	-	-	-	-	-	-	-
Total Monthly Tolls	42.00	55.55	63.90	72.58	81.62	91.03	100.86	93.14	89.91	84.01	87.78	87.34	86.91	86.47	86.04	85.61	85.19	-	-	-
Parcel Tax(%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Residential NEW!																				
Fixed (%)									8.5%	4.5%	4.5%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	-25.4%	-0.5%	-0.5%
Fixed ($/month)	-	-	-	-	-	-	-	74.14	80.41	84.01	87.78	87.34	86.91	86.47	86.04	85.61	85.19	63.57	63.26	62.94
Levy (%)									12.2%	10.8%	9.8%	8.9%	0.0%	0.0%	0.0%	0.0%	0.0%	-100.0%		
Levy ($/month)	-	-	-	-	-	-	-	37.00	41.50	46.00	50.50	55.00	55.00	55.00	55.00	55.00	55.00	-	-	-
Total Monthly Tolls	-	-	-	-	-	-	-	111.14	121.91	130.01	138.28	142.34	141.91	141.47	141.04	140.61	140.19	63.57	63.26	62.94
Parcel Tax(%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Agricultural																				
Parcel Tax(%)		2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Parcel Tax ($/acre/year)	72.50	73.95	75.43	76.94	78.48	80.05	81.65	83.28	84.95	86.64	88.38	90.14	91.95	93.79	95.66	97.58	99.53	101.52	103.55	105.62

Scenario 2

20 Year Overview

Scenario 2 - WQIP starts in 2024 -no funding

Tolls increase 5% a year and max at $100 a month

LEVY - Everyone pays additional LEVY until 2023, then levy drops and ONLY applies to those on new water

Plus 2% increase in taxes on residental yearly charge(starts at $72.50 flat charge in 2013)

Plus 13.4% AG TAXES per yr incr to $120/acre by 2017 (4 yrs) then drops to 2% increases

No Borrowing for project

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Residential																				
Fixed (%)		5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	0.0%
Fixed ($/month)	42.00	44.10	46.31	48.62	51.05	53.60	56.28	59.10	62.05	65.16	68.41	71.83	75.43	79.20	83.16	87.31	91.68	96.26	101.08	101.08
Levy (%)																				
Levy ($/month)		10.00	12.00	14.00	16.00	25.00	31.00	31.00	31.00	31.00	31.00	-	-	-	-	-	-	-	-	-
Total Monthly Tolls	42.00	54.10	58.31	62.62	67.05	78.60	87.28	90.10	93.05	96.16	99.41	71.83	75.43	79.20	83.16	87.31	91.68	96.26	101.08	101.08
Parcel Tax(%)		2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	0%
Residential NEW!																				
Fixed (%)		5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	0.0%
Fixed ($/month)	-	44.10	46.31	48.62	51.05	53.60	56.28	59.10	62.05	65.16	68.41	71.83	75.43	79.20	83.16	87.31	91.68	96.26	101.08	101.08
Levy (%)																				
Levy ($/month)	-	-	-	-	-	-	-	-	-	-	-	28.00	25.00	20.00	16.00	12.00	8.00	4.00	-	-
Total Month Tolls	-	44.10	46.31	48.62	51.05	53.60	56.28	59.10	62.05	65.16	68.41	99.83	100.43	99.20	99.16	99.31	99.68	100.26	101.08	101.08
Parcel Tax(%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Agricultural																				
Parcel Tax(%)		13%	13%	13%	13%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Tax ($/acre/year)	72.50	82.22	93.23	105.72	119.89	122.29	124.74	127.23	129.77	132.37	135.02	137.72	140.47	143.28	146.15	149.07	152.05	155.09	158.19	161.36

Scenario 3

20 Year Overview

Scenario 3 - WQIP starts in 2015 -assumes 2/3 grant funding for entire project

Tolls increase 5% a yr and max at $67 month
LEVY - Only those receiving new water pay additional LEVY
Plus 2% increase in taxes (4% in 2014) on residental yearly charge (72.50 flat charge in 2013)
Plus AG TAXES increase 13.4% a year for 4 years and reach $120/acre by 2017 then increase 2% per annum after that
No Borrowing for project

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Residential																				
Fixed (%)		5.0%	5.0%	5.0%	5.0%	5.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	-20.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Fixed ($/month)	42.00	44.10	46.31	48.62	51.05	53.60	54.68	55.77	56.88	58.02	59.18	60.37	48.29	50.23	52.23	54.32	56.50	58.76	61.11	63.55
Levy (%)																				
Levy ($/month)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Monthly Tolls	42.00	44.10	46.31	48.62	51.05	53.60	54.68	55.77	56.88	58.02	59.18	60.37	48.29	50.23	52.23	54.32	56.50	58.76	61.11	63.55
Parcel Tax(%)		2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Residential NEW!																				
Fixed (%)		5.0%	5.0%	5.0%	5.0%	5.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	-20.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Fixed ($/month)	-	44.10	46.31	48.62	51.05	53.60	54.68	55.77	56.88	58.02	59.18	60.37	48.29	50.23	52.23	54.32	56.50	58.76	61.11	63.55
Levy (%)				0.0%	-25.0%	-33.3%	-30.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-100.0%						
Levy ($/month)	-	-	20.00	20.00	15.00	10.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	-	-	-	-	-	-	-
Total Month Tolls	-	44.10	66.31	68.62	66.05	63.60	61.68	62.77	63.88	65.02	66.18	67.37	55.29	50.23	52.23	54.32	56.50	58.76	61.11	63.55
Parcel Tax(%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Agricultural																				
Parcel Tax(%)		13%	13%	13%	13%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Tax ($/acre/year)	72.50	82.22	93.23	105.72	119.89	122.29	124.74	127.23	129.77	132.37	135.02	137.72	140.47	143.28	146.15	149.07	152.05	155.09	158.19	161.36

Scenario 4

20 Year Overview

Scenario 4 - WQIP starts in 2015 -assumes 2/3 grant funding for entire project

All tolls increase 8% in 2014 and 2% per yr after and max at $75 month including LEVY

LEVY - Only those receiving new water pay additional LEVY

Taxes increase 4% in 2014 then 2% per year after that on residential yearly charge (72.50 flat charge in 2013)

Plus AG TAXES increase 4% a year every year and reach $85/acre by 2017

No Borrowing for project

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Residential																				
Fixed (%)		8.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Fixed ($/month)	42.00	45.36	46.27	47.19	48.14	49.10	50.08	51.08	52.10	53.15	54.21	55.29	56.40	57.53	58.68	59.85	61.05	62.27	63.51	64.79
Levy (%)																				
Levy ($/month)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Monthly Tolls	42.00	45.36	46.27	47.19	48.14	49.10	50.08	51.08	52.10	53.15	54.21	55.29	56.40	57.53	58.68	59.85	61.05	62.27	63.51	64.79
Parcel Tax(%)		4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Residential NEW!																				
Fixed (%)		8.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Fixed ($/month)	-	45.36	46.27	47.19	48.14	49.10	50.08	51.08	52.10	53.15	54.21	55.29	56.40	57.53	58.68	59.85	61.05	62.27	63.51	64.79
Levy (%)				0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-100.0%	#DIV/0!						
Levy ($/month)	-	-	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	-	-	-	-	-	-	-	-
Total Month Tolls	-	45.36	66.27	67.19	68.14	69.10	70.08	71.08	72.10	73.15	74.21	75.29	56.40	57.53	58.68	59.85	61.05	62.27	63.51	64.79
Parcel Tax(%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Agricultural																				
Parcel Tax(%)		4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Tax ($/acre/year)	72.50	75.40	78.42	81.55	84.81	88.21	91.74	95.41	99.22	103.19	107.32	111.61	116.07	120.72	125.55	130.57	135.79	141.22	146.87	152.75

Scenario 5

20 Year Overview

Scenario 5 - WQIP starts in 2015 -assumes 2/3 grant funding for entire project

All tolls increase 2% per annum and max at $78 month including LEVY

LEVY -Only those receiving new water pay additional LEVY

Plus 2% increase in taxes on residential yearly charge (72.50 flat charge in 2013)

Plus AG TAXES increase 2% a year every year and reach $80/acre by 2018

No Borrowing for project

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Residential																				
Fixed (%)		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	9.9%	9.9%	5.0%	5.0%	2.0%	2.0%	2.0%
Fixed ($/month)	42.00	42.84	43.70	44.57	45.46	46.37	47.30	48.24	49.21	50.19	51.20	52.22	53.27	58.54	64.33	67.55	70.93	72.35	73.79	75.27
Levy (%)																				
Levy ($/month)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Monthly Tolls	42.00	42.84	43.70	44.57	45.46	46.37	47.30	48.24	49.21	50.19	51.20	52.22	53.27	58.54	64.33	67.55	70.93	72.35	73.79	75.27
Parcel Tax(%)		2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Residential NEW!																				
Fixed (%)		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	9.9%	9.9%	5.0%	5.0%	2.0%	2.0%	2.0%
Fixed ($/month)	-	42.84	43.70	44.57	45.46	46.37	47.30	48.24	49.21	50.19	51.20	52.22	53.27	58.54	64.33	67.55	70.93	72.35	73.79	75.27
Levy (%)				0.0%	0.0%	0.0%	0.0%	-6.7%	0.0%	0.0%	-10.7%	0.0%	-60.0%	-50.0%						
Levy ($/month)	-	-	30.00	30.00	30.00	30.00	30.00	28.00	28.00	28.00	25.00	25.00	10.00	5.00	-	-	-	-	-	-
Total Month Tolls	-	42.84	73.70	74.57	75.46	76.37	77.30	76.24	77.21	78.19	76.20	77.22	63.27	63.54	64.33	67.55	70.93	72.35	73.79	75.27
Parcel Tax(%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Agricultural																				
Parcel Tax(%)		2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Tax ($/acre/year)	72.50	73.95	75.43	76.94	78.48	80.05	81.65	83.28	84.95	86.64	88.38	90.14	91.95	93.79	95.66	97.58	99.53	101.52	103.55	105.62