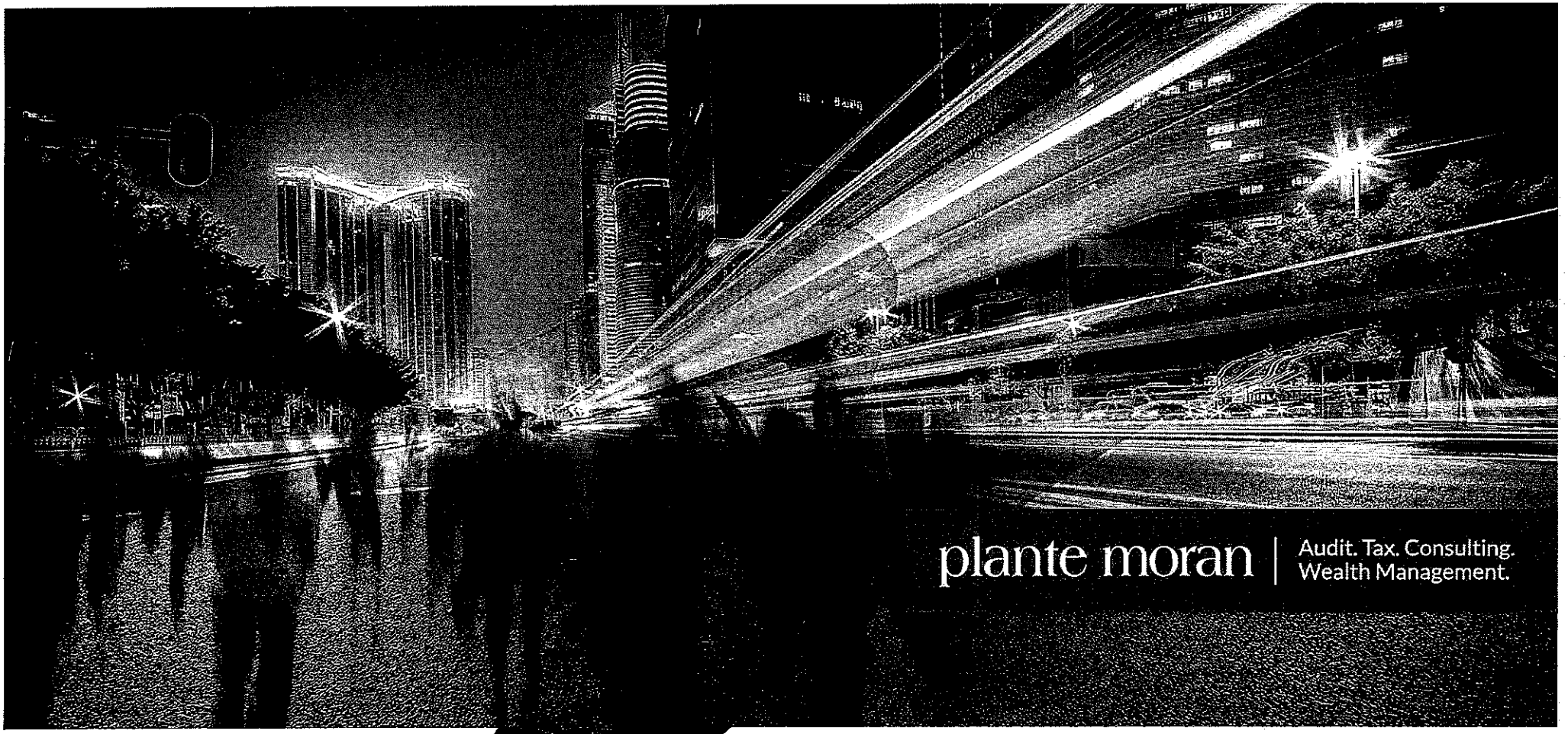


City of South Lyon
Utility Rate Model - REVISED

FY2021 to FY2030

Utility Rate Model - Objectives

- Although City has raised utility rates over the years, the City has not reevaluated the fixed meter charge or the minimum usage requirement in a very long time.

- Based on recommendations from the City's engineers, the City is planning significant capital outlay in the near future to both the Water and Sewer systems. The existing cash on hand and rates are not sufficient to pay for all of the necessary system improvements.

- The model will calculate the necessary rate increases over 10 years in order to pay for the capital outlay and maintain existing cash reserves. This will be accomplished without new long-term debt (bonds), thereby saving hundreds of thousands of dollars in interest expense.

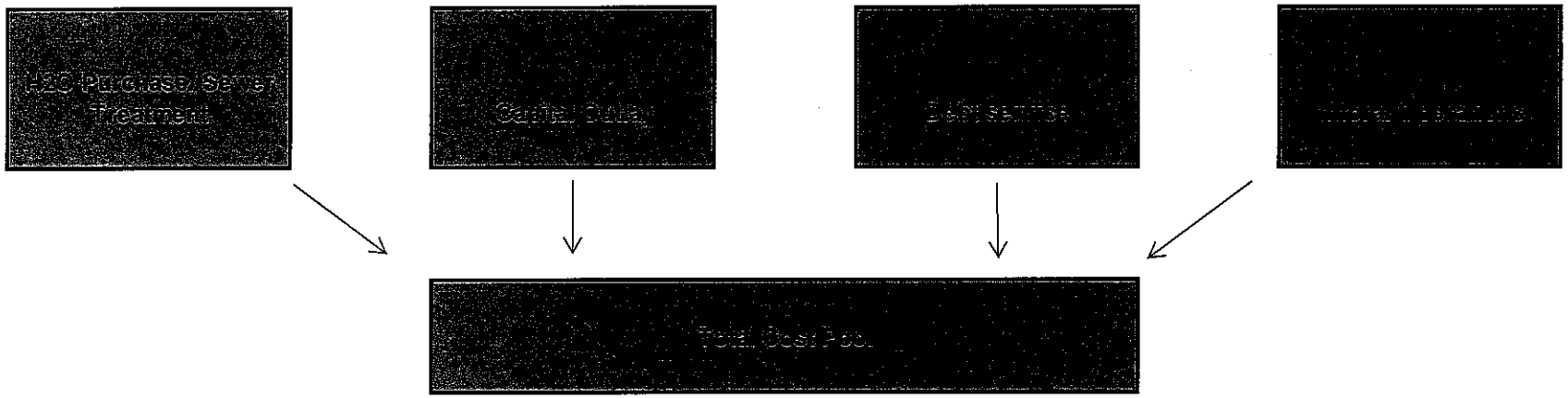
Utility Rate Model

- **"Cash-needs Basis"** – The model sets rates based on anticipated cash needs. Depreciation and accrual accounting is excluded from the model. This method requires the City to maintain lower cash reserves (and lower utility rates) than it would if rates were set to fund depreciation expense.

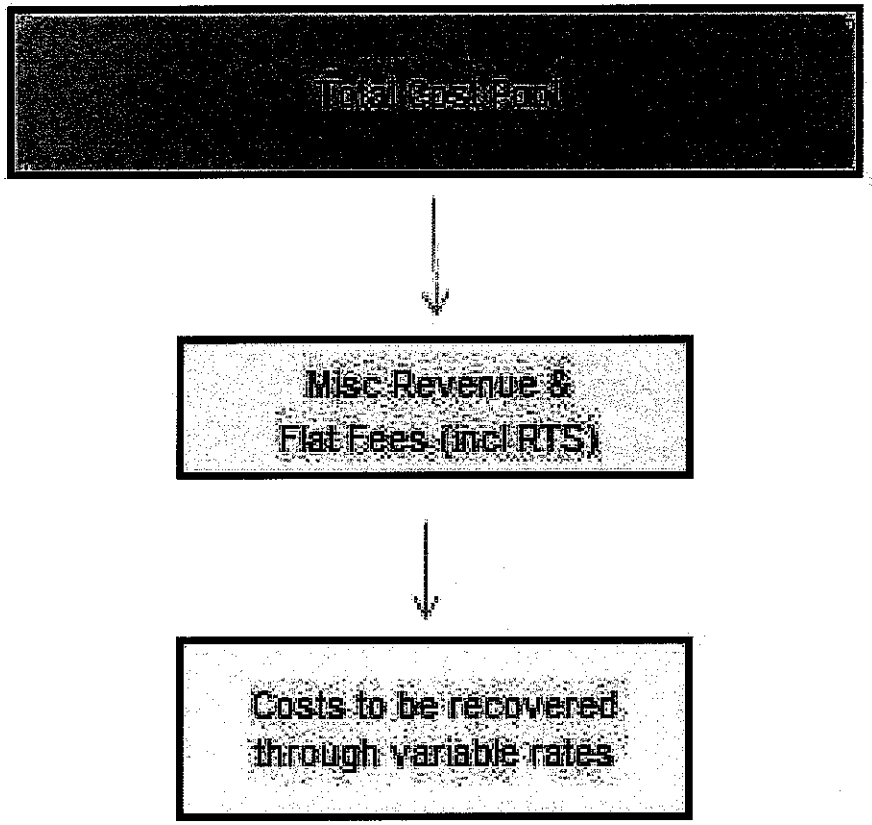
- **10 years (2021-2030)** – By utilizing a 10 year projection, the City is paying for capital improvements over a long enough period of time that the cost of these improvements will be bourne by the customers of the system who will benefit from the improvements in future years (and may not even live in the city yet).

- **Change in fee methodology (philosophy)** – There is no single "right" way to set rates; however, there are inherent risks in setting rates that include minimum usage requirements. The model suggests a change to the overall methodology the City utilizes - A higher fixed fee (called a "Readiness to Serve" charge or RTS) and a variable rate for every unit used.

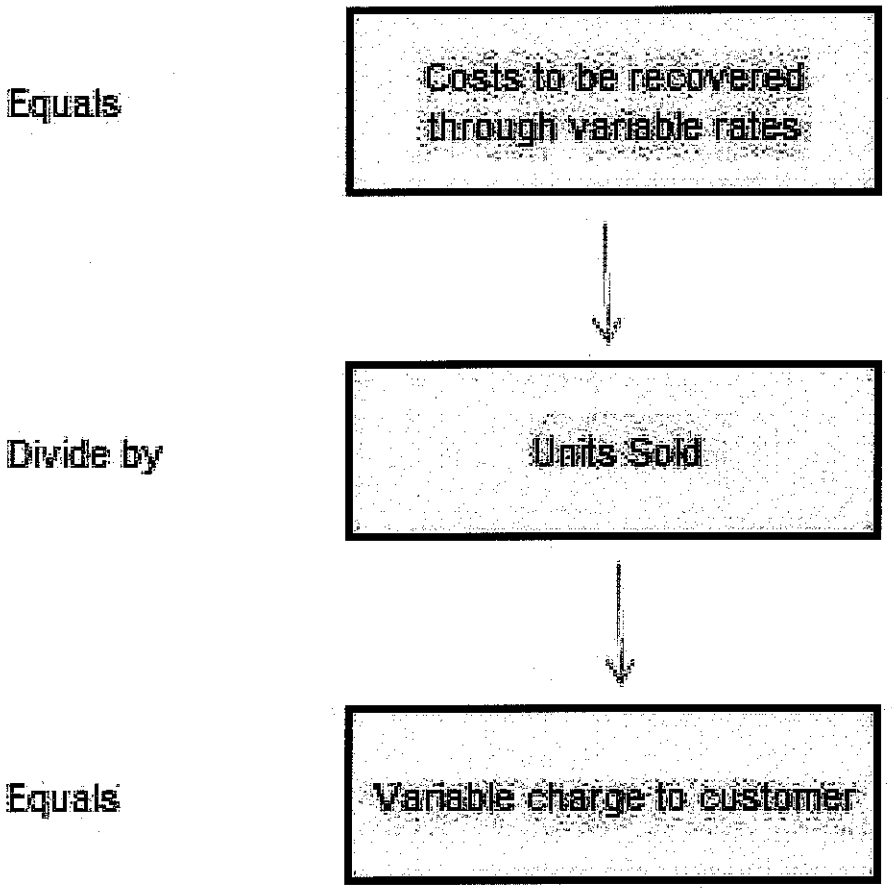
Rate Model – Step 1
Calculate the Total Cost Pool



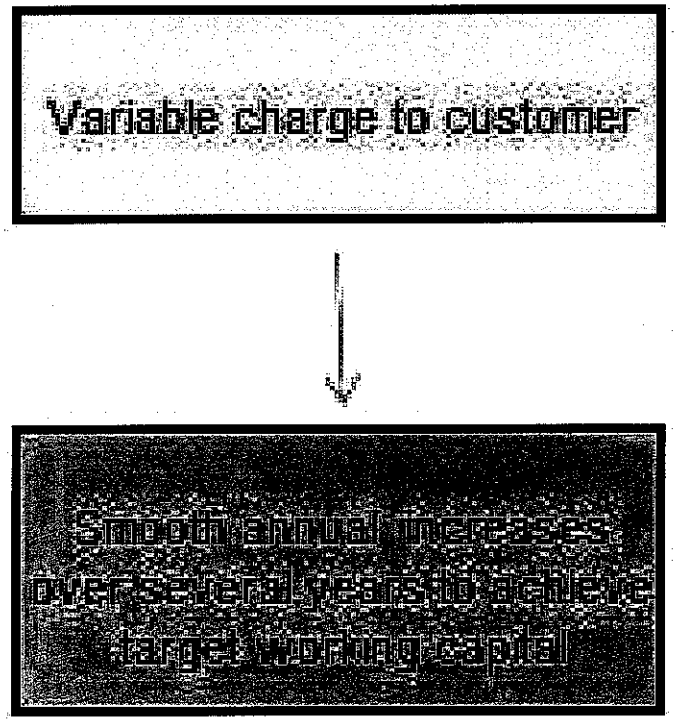
Rate Model – Step 2
Calculate the "Readiness To Serve" charge



Rate Model – Step 3
Calculate the Variable Rate



Rate Model – Step 4 (Multi-Year Models)



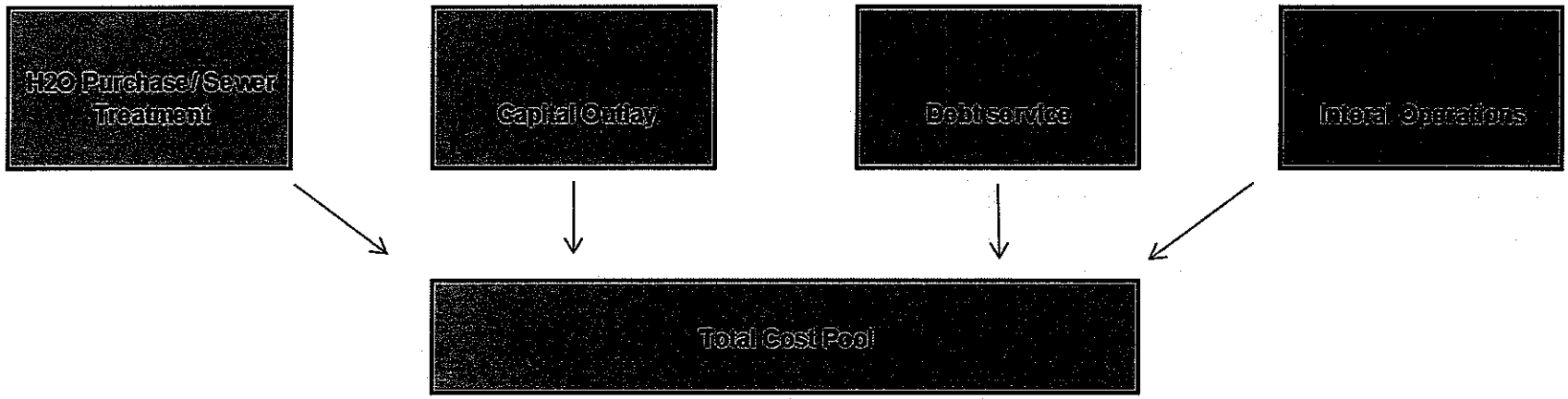
What is "Target Working Capital"?

- Maintain some amount of cash and current assets (net of liabilities) in the bank at the end of the model.

- 4 "buckets" of working capital
  1. Operating reserve – 120 days
  2. One year of debt service payments
  3. Emergency capital replacement
  4. Planned capital replacement

- After everything is said and done after 10 years, the City will maintain its current amount of working capital

Rate Model – Step 1
Calculate the Total Cost Pool



Rate Model – Step 1
Calculate the Total Cost Pool

- Internal Operations – No substantial change to internal operations or costs. Inflationary cost increases.

- Debt service – No new debt issued in next 10 years.
  - 2003 wastewater loan paid off in 2026
  - 2013 water loan paid off in 2034

- The City's existing cash reserves make self-financing possible. After 10 years, City will be in a financial position to self-finance again for the next wave of capital improvements.

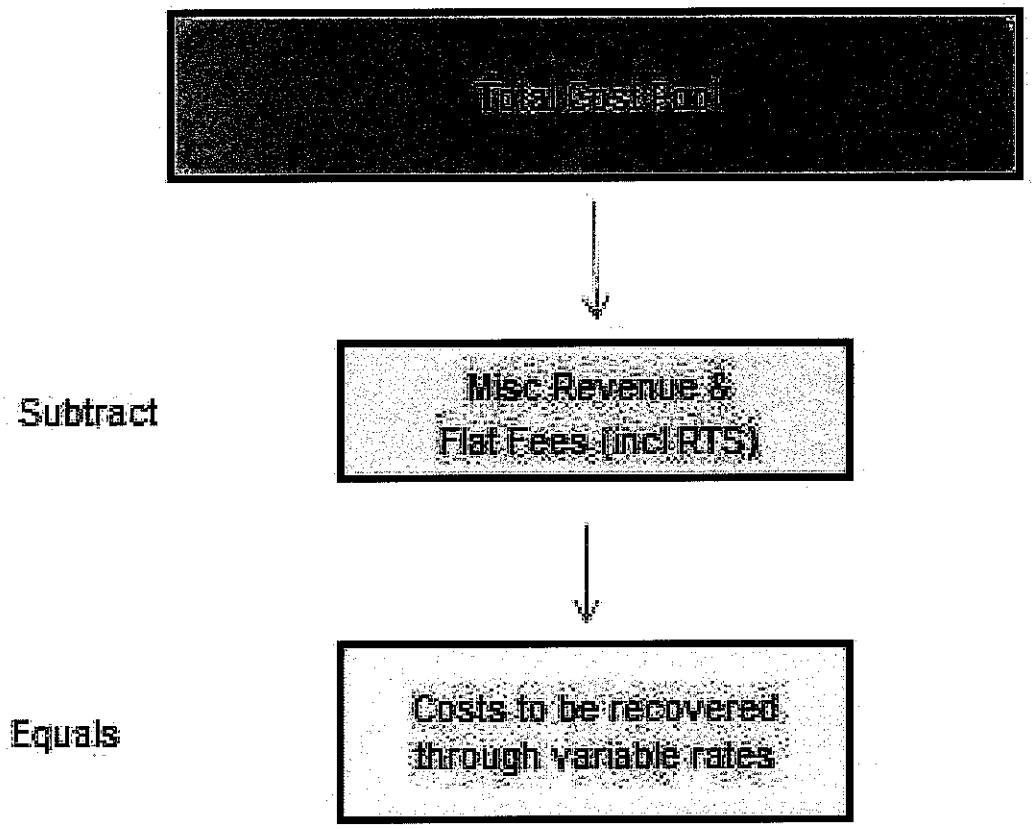
Rate Model – Step 1
Calculate the Total Cost Pool

- Planned Capital Outlay is substantial
  - Water - $7.6M
  - Wastewater - $3.6M

List of capital projects found on pg 2 and 3 of written deliverable report (currently in DRAFT form).

Capital projects are the primary cause of the calculated rate increases.

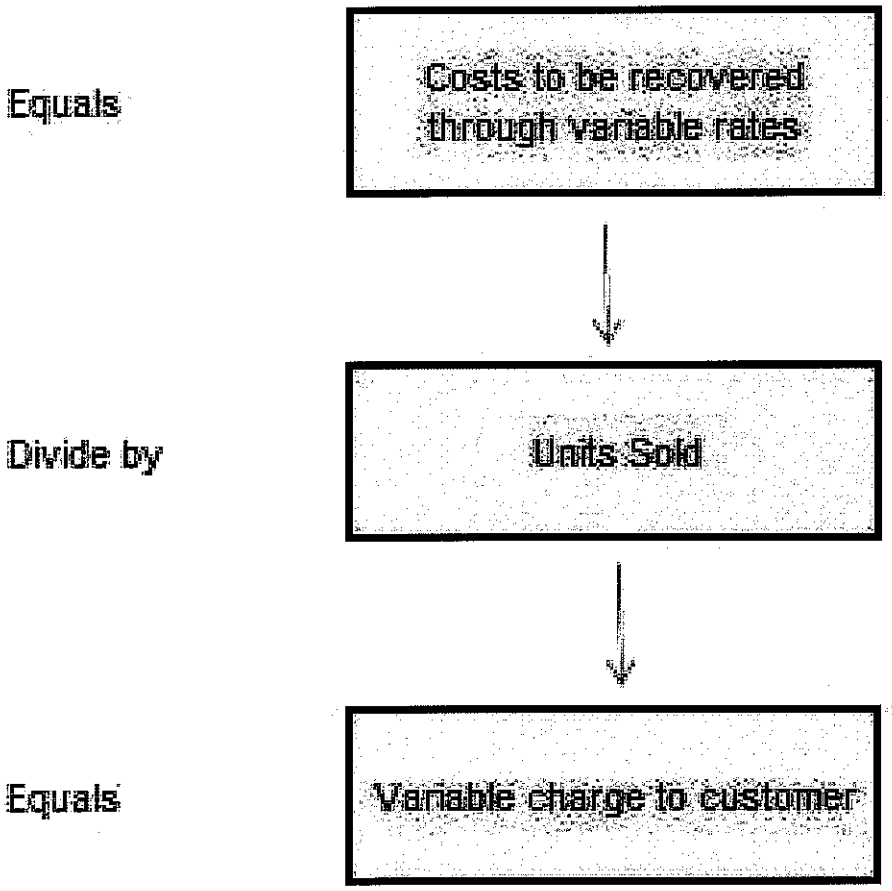
Rate Model – Step 2
Calculate the "Readiness To Serve" charge



Readiness to Serve Charge

- A "fixed" or "flat" charge to every customer. This pays for some or all of the City's internal operational costs (costs that the City has to pay for regardless of how much water or treatment it sells).
- This will replace South Lyon's $6/quarter meter charge and some of the effect of the minimum usage requirement.
- The model calculates the RTS on a graduated scale driven by the size of the customer's meter, based on recommendations from the American Water and Wastewater Association. A bigger meter pays a higher RTS.
- The City has to decide how much of its internal operational costs will be recouped through the RTS (0-100%).
- We have completed the model under 2 scenarios: RTS will cover either 10% or 25% of internal operational costs.

Rate Model – Step 3
Calculate the Variable Rate



Rate Model – Step 3
Calculate the Variable Rate

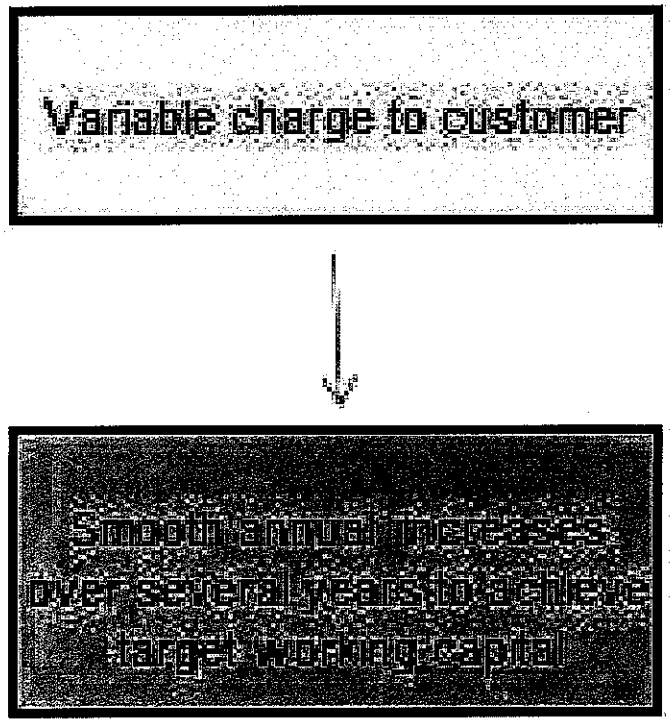
- Estimate the volume of water to be sold, sewer to be sold

Year Ended June 30	Units Sold
2015	344,218
2016	374,278
2017	385,037
2018	389,307
2019	384,431

Year Ended June 30	Units Sold
2015	292,298
2016	292,709
2017	286,113
2018	290,117
2019	294,520

- Model assumes City will keep its summer sewer billing methodology
- Model assumes future sales will be consistent with 2 year average (FY18 and FY19). Impact of additional future customers is negligible.

Rate Model – Step 4 (Multi-Year Models)



Working Capital

- Beginning of Model:
  - Water - $2.6M
  - Sewer - $6.2M

- Water's planned capital outlay is substantially higher than Sewer's, but Sewer has more working capital to start with.

- Although Water and Sewer are separate activities and the model treats them independently, the City maintains both activities in the same Fund (this is OK).

- Water will "borrow" from Sewer to pay for capital, but will repay it over the 10 years of the model.

- At the end of 10 years, Water has fully repaid Sewer and both have maintained their original $2.6M and $6.2M of working capital.

Water Working Capital

Water Rate Calculation

Fiscal Year Ended	Forecast 2021	Forecast 2022	Forecast 2023	Forecast 2024	Forecast 2025	Forecast 2026	Forecast 2027	Forecast 2028	Forecast 2029	Forecast 2030
Beginning of Year Working Capital	2,578,789	(1,316,230)	(3,357,502)	(3,114,718)	(2,612,616)	(2,468,183)	(1,717,731)	(856,958)	149,359	1,292,307
Units used by customers	387,000	387,000	387,000	387,000	387,000	387,000	387,000	387,000	387,000	387,000
Rate Charged	2.67	2.89	3.13	3.39	3.67	3.98	4.31	4.67	5.06	5.48
Sale of Water Total	1,031,450	1,117,507	1,210,744	1,311,761	1,421,205	1,539,781	1,668,250	1,807,437	1,958,237	2,121,619
Ready to Serve Charge	192,829	197,751	202,844	208,116	213,573	219,225	225,080	231,148	237,438	243,962
Miscellaneous Other revenue	57,267	58,224	59,198	60,188	61,196	62,220	63,263	64,323	65,401	66,497
Total addition to cash	1,281,545	1,373,483	1,472,787	1,580,065	1,695,974	1,821,226	1,956,592	2,102,907	2,261,076	2,432,078
Internal Operational Costs	771,314	791,005	811,378	832,462	854,291	876,899	900,319	924,591	949,753	975,846
Capital improvements	4,235,500	2,452,000	250,000	75,000	525,000	25,000	25,000	-	-	-
Annual debt service	169,750	171,750	168,625	170,500	172,250	168,875	170,500	172,000	168,375	169,750
Total use of cash	5,176,564	3,414,755	1,230,003	1,077,962	1,551,541	1,070,774	1,095,819	1,096,591	1,118,128	1,145,596
Net addition (use) of cash	(3,895,019)	(2,041,272)	242,784	502,102	144,432	750,452	860,773	1,006,317	1,142,948	1,286,482
End of Year Working Capital	(1,316,230)	(3,357,502)	(3,114,718)	(2,612,616)	(2,468,183)	(1,717,731)	(856,958)	149,359	1,292,307	2,578,789

Sewer Working Capital

Sewer Rate Calculation

Fiscal Year Ended	Forecast 2021	Forecast 2022	Forecast 2023	Forecast 2024	Forecast 2025	Forecast 2026	Forecast 2027	Forecast 2028	Forecast 2029	Forecast 2030
Beginning of Year Working Capital	6,214,015	6,249,220	6,013,272	5,636,934	5,058,945	4,989,014	5,106,824	5,337,028	5,604,244	5,896,058
Units used by customers	292,000	292,000	292,000	292,000	292,000	292,000	292,000	292,000	292,000	292,000
Rate Charged	**4.62**	**4.72**	**4.83**	**4.93**	**5.04**	**5.16**	**5.27**	**5.39**	**5.51**	**5.63**
Sale of Sewer Total	**1,349,098**	**1,379,004**	**1,409,574**	**1,440,821**	**1,472,761**	**1,505,408**	**1,538,780**	**1,572,891**	**1,607,759**	**1,643,399**
Ready to Serve Charge	353,720	362,725	372,036	381,666	391,629	401,939	412,613	423,666	435,115	446,979
Miscellaneous Other revenue	1,146,595	1,149,090	1,150,382	1,151,060	1,151,130	1,148,004	63,263	64,323	65,401	66,497
Total addition to cash	**2,849,412**	**2,890,820**	**2,931,992**	**2,973,548**	**3,015,519**	**3,055,352**	**2,014,655**	**2,060,879**	**2,108,274**	**2,156,875**
Internal Operational Costs	1,414,879	1,450,902	1,488,146	1,526,665	1,566,516	1,607,758	1,650,452	1,694,663	1,740,461	1,787,917
Capital improvements	310,000	585,000	729,000	934,000	429,000	244,000	134,000	99,000	76,000	51,000
Annual debt service	1,089,328	1,090,866	1,091,184	1,090,872	1,089,934	1,085,784	-	-	-	-
Total use of cash	**2,814,207**	**3,126,768**	**3,308,330**	**3,551,537**	**3,085,450**	**2,937,542**	**1,784,452**	**1,793,663**	**1,816,461**	**1,838,917**
Net addition (use) of cash	**35,205**	**(235,948)**	**(376,338)**	**(577,990)**	**(69,931)**	**117,811**	**230,204**	**267,216**	**291,813**	**317,958**
End of Year Working Capital	**6,249,220**	**6,013,272**	**5,636,934**	**5,058,945**	**4,989,014**	**5,106,824**	**5,337,028**	**5,604,244**	**5,896,058**	**6,214,015**

Combined Water/Sewer Working Capital

	Estimated 2020	Forecast 2021	Forecast 2022	Forecast 2023	Forecast 2024	Forecast 2025	Forecast 2026	Forecast 2027	Forecast 2028	Forecast 2029	Forecast 2030
Water - End of Year Working Capital	2,578,789	(1,316,230)	(3,357,502)	(3,114,718)	(2,612,616)	(2,468,183)	(1,717,731)	(856,958)	149,359	1,292,307	2,578,789
Sewer - End of Year Working Capital	6,214,015	6,249,220	6,013,272	5,636,934	5,058,945	4,989,014	5,106,824	5,337,028	5,604,244	5,896,058	6,214,015
Total Working Capital	8,792,804	4,932,990	2,655,770	2,522,216	2,446,329	2,520,831	3,389,094	4,480,070	5,753,603	7,188,365	8,792,804

The model begins and ends with $8.8M of working capital. During the course of the decade, the Water operations borrow from Sewer to pay for the initial capital outlay and then pays Sewer back in full.

This internal financing prevents the City from issuing bonds and paying hundreds of thousands in interest expense to external lenders.

Rate Changes

- Year 1 changes are more severe because of the implementation of the RTS and elimination of minimum usage. Some customers could see a rate DECREASE while others see a rate INCREASE.

- Year 2 and forward, rates change the same for everyone. Everyone sees a rate increase.

Rate Changes - Revised

	Current	Current Minimum Bill (3/4" line)	Option 1 10% of Internal Operational Expenses to be recouped through RTS Charge	Option 2 25% of Internal Operational Expenses to be recouped through RTS Charge	Option 3 18% of Internal Operational Expenses to be recouped through RTS Charge
Water					
Usage Charge	$2.46/unit	$17.71	$2.70/unit	$2.67/unit	$2.68/unit
			10%	9%	9%
Sewer					
Usage Charge	$4.52/unit	$32.54	$4.74/unit	$4.62/unit	$4.68/unit
			5%	2%	3.5%
Water - Ready to Serve	$6.00/quarter	$6.00			
3/4"			$4.67/quarter	$11.67/quarter	$8.40/quarter
1"			$4.67/quarter	$11.67/quarter	$8.40/quarter
1.5"			$9.34/quarter	$23.34/quarter	$16.80/quarter
2"			$14.94/quarter	$37.34/quarter	$26.89/quarter
3"			$29.87/quarter	$74.69/quarter	$53.77/quarter
4"			$46.68/quarter	$116.70/quarter	$84.02/quarter
Sewer - Ready to Serve					
3/4"			$8.56/quarter	$21.41/quarter	$15.41/quarter
1"			$8.56/quarter	$21.41/quarter	$15.41/quarter
1.5"			$17.13/quarter	$42.81/quarter	$30.83/quarter
2"			$27.40/quarter	$68.50/quarter	$49.32/quarter
3"			$54.80/quarter	$137.00/quarter	$98.64/quarter
4"			$85.63/quarter	$214.06/quarter	$154.13/quarter

Example Customer #1-Revised

Residential, low volume

	RTS/Meter	Water	Sewer	Total	% Increase(Decrease) Current/Future Years
Current	$ 6.00	$ 17.71	$ 32.54	$ 56.25	
Option 1	$ 13.23	$ 11.95	$ 20.97	$ 46.15	(18%)/+6%
Option 2	$ 33.08	$ 11.81	$ 20.44	$ 65.33	+16%/+4%
Option 3	$ 23.81	$ 11.86	$ 20.71	$ 56.38	0%/5%

Under all 3 Options, the customer pays more in RTS than it did in meter charge, but the variable charge for both Water and Sewer is now lower because of the elimination of minimum usage requirement.

In Option 1, this customer pays less than they did under the City's existing rate structure. This is our only example of a customer paying less with the new rate structure.

In Option 3, the customer pays 13 cents more per year than under existing rates.

Example Customer #2-Revised

Residential, high volume

	RTS/Meter	Water	Sewer	Total	% Increase Current/Future Years
Current	$ 6.00	$ 56.75	$ 109.25	$ 172.00	
Option 1	$ 13.23	$ 69.39	$ 121.82	$ 204.44	+19%/+6%
Option 2	$ 33.08	$ 68.62	$ 118.73	$ 220.43	+28%/+4%
Option 3	$ 23.81	$ 68.88	$ 120.28	$ 212.97	+24%/6%

Example Customer #3 - Revised

Commercial (2 inch), high volume

	RTS/Meter	Water	Sewer	Total	% Increase Current/Future Years
Current	$ 6.00	$2,853.42	$5,242.86	$8,102.28	
Option 1	$ 42.34	$3,131.80	$5,498.04	$8,672.18	+7%/+7%
Option 2	$ 105.84	$3,097.00	$5,358.85	$8,561.69	+6%/+5%
Option 3	$ 76.21	$3,108.60	$5,428.45	$8,613.26	+6%/+6%

Example Customer #4 - Revised

Commercial (2 inch), low volume

	RTS/Meter	Water	Sewer	Total	% Increase Current/Future Years
Current	$ 6.00	$ 517.28	$ 950.44	$1,473.72	
Option 1	$ 42.34	$ 567.74	$ 996.70	$1,606.78	+9%/+7%
Option 2	$ 105.84	$ 561.43	$ 971.47	$1,638.74	+11%/+4%
Option 3	$ 76.21	$ 563.54	$ 984.09	$1,623.84	+10%/+6%

Next Steps - Revised

1. Model needs to be finalized –
    1. City makes decision on RTS (10%, 25%, or 18%)
    2. PM finalizes model and written report
    3. PM Standards Department performs quality control review
    4. PM publishes written report; delivers written report and model to City

2. City Council approves rate increase and implementation date

3. City updates BS&A software for rate changes

Thank you for the opportunity to serve the City of South Lyon

For more information, please contact:

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