Community Energy Funding Strategy

Council meeting

July 23, 2019

LLS.12920054

STRATHCONA COUNTY

Agenda

- History
- Business cases
- Financial impact
- Connection model
- Long term perspective
- Funding options

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History

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Why community energy?

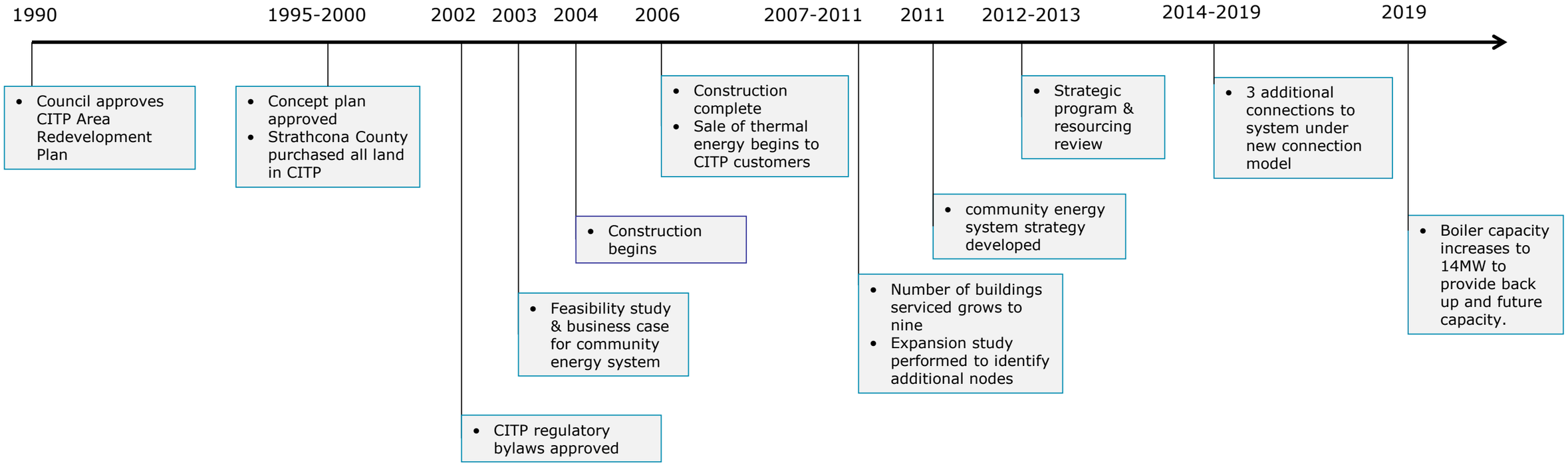
- Specific attributes of Centre in the Park (CITP) made district heating an attractive solution:
  - Lifecycle of boilers in municipal buildings – improves building energy efficiency
  - Established customer base from municipal buildings
  - Load smoothing – varied building uses increase system efficiency
  - High profile area that demonstrated leadership – aligned well with the County's Strategic Plan and sustainability platforms
  - Adaptability – provides a platform for future opportunities such as alternative fuels
  - Pilot – presented an opportunity for the County to put into practice its sustainability goals

Community energy benefits

- Environmental
  - Efficient production and distribution = reduction of 1,100 tonnes of greenhouse gas per year at full build-out
  - 18% reduction in greenhouse gas
  - Healthier buildings
  - Possible further reductions from fuel switching

- Social and economic
  - Fuel switching could protect from volatile energy prices
  - Energy dollars stay in the community
  - Resilience
  - Demonstrate leadership
  - Political and economic context in 2002

System timeline



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Original business case

(2003$CDN)	Boilers Only (13 MWt)	Cogeneration (2.5 MWe, 13 MWt)	Cogeneration (2.5 MWe, 13 MWt)	Cooling (800 Tons)
Market Heat Rate	na	10.8 GJ/MWh	13 GJ/MWh	na
Net Income	$520,600	$742,400	$976,400	$216,700
Capital Investment	$5,509,000	$10,069,000	$10,069,000	$2,597,000
Simple Payback	12 yrs	14 yrs	12 yrs	14 yrs
Return on Investment	**10.7%**	**7.4%**	**10.8%**	**9.3%**
Est. GHG Reduction	1,100 T/yr	10,000 T/yr	10,000 T/yr	620 T/yr

Feasibility study for Strathcona County Community Energy System, 2004

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Original business case vs current state

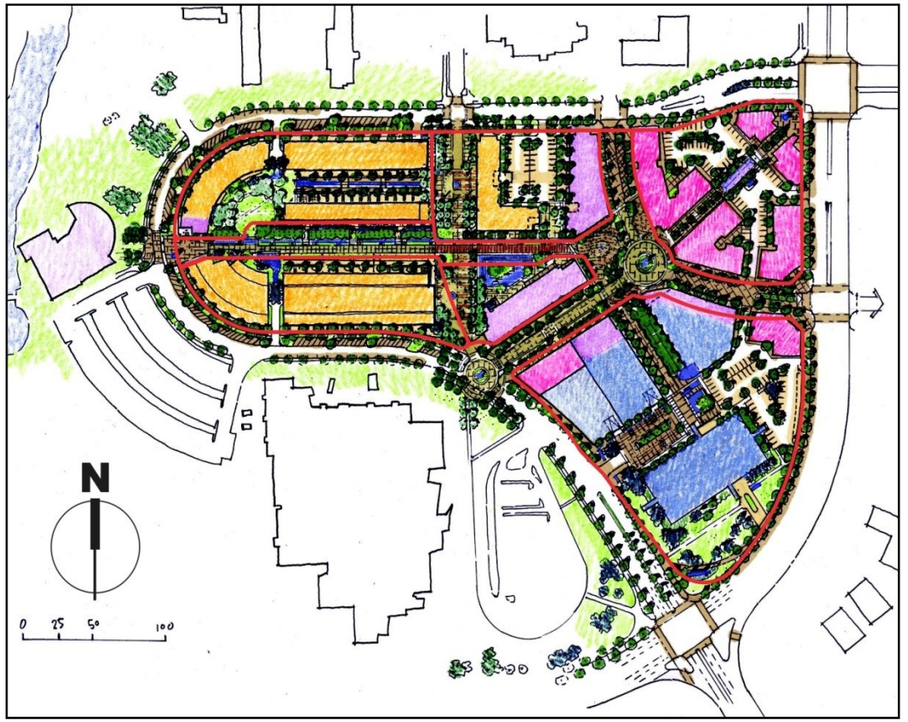
- The pace of development has negatively impacted the program

Item	Planned[1] (2004)	Actual (2018)	Actual vs. Planned (% diff)
Number of buildings	23	11	(52%)
Annual volume (MWH)	19,990	14,600	(37%)
Capital investment	$5,509,000	$9,501,358	72%
Annual revenues	$1,333,600	$826,556	(39%)
Annual total expenses (including amortization)	$1,293,250	$1,422,352	10%

1) Feasibility study for Strathcona County Community Energy System, 2004

Buildings not connected to system

- St. Theresa Catholic School, formerly Archbishop Jordan Catholic High School, and Salisbury Composite High School
  - These two buildings alone represent 20% of the customer load that was not connected
- Centre in the Park was originally planned for completion in 2008 but delays in development due to the economic downturn has led to at least 10 years of delayed customer connections to the system



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Financial impact

- The community energy system is not self-supporting and draws upon contributions from the utility reserve in order to cover annual net income losses and capital investments (2018 - $689,310)

- Current practice of cross subsidization occurring between utility lines of business is not ideal

Financial impact

- Given that the community energy system cannot fully fund its operations and consistently relies on funding from the utility reserve, it is desired to both:
  - Improve on its operational scale and asset utilization; and
  - Review funding mechanisms to ensure its financial sustainability
- Each new connection does provide a positive, yet small, cash contribution to the CITP system
- Long term perspective – turns cash flow positive once all the capital financing obligations are completed (year 26)

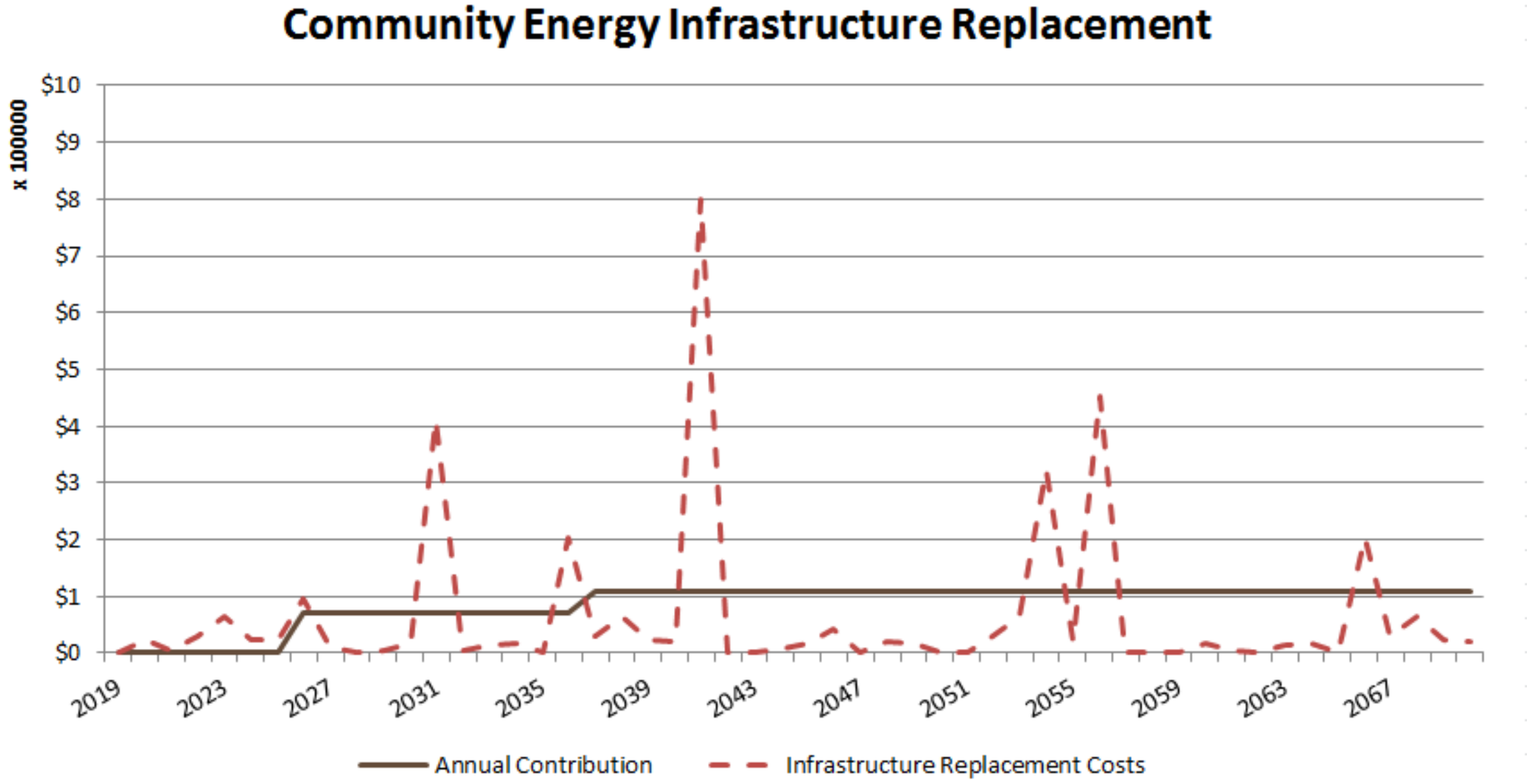
Connection model

- Connections are voluntary. Commitment has been achieved through Memorandums of Understanding with developers in CITP

- Original connections built upfront and future capital costs into the annual fixed charges that are applied to customers
  - These were based off of avoided capital calculations vs. actual costs

- Utilities introduced a new connection model in 2014 that required up front contribution of capital by the developer to cover connection costs
  - Under this model, the newest connections will be cash flow positive in year 8

Long term perspective



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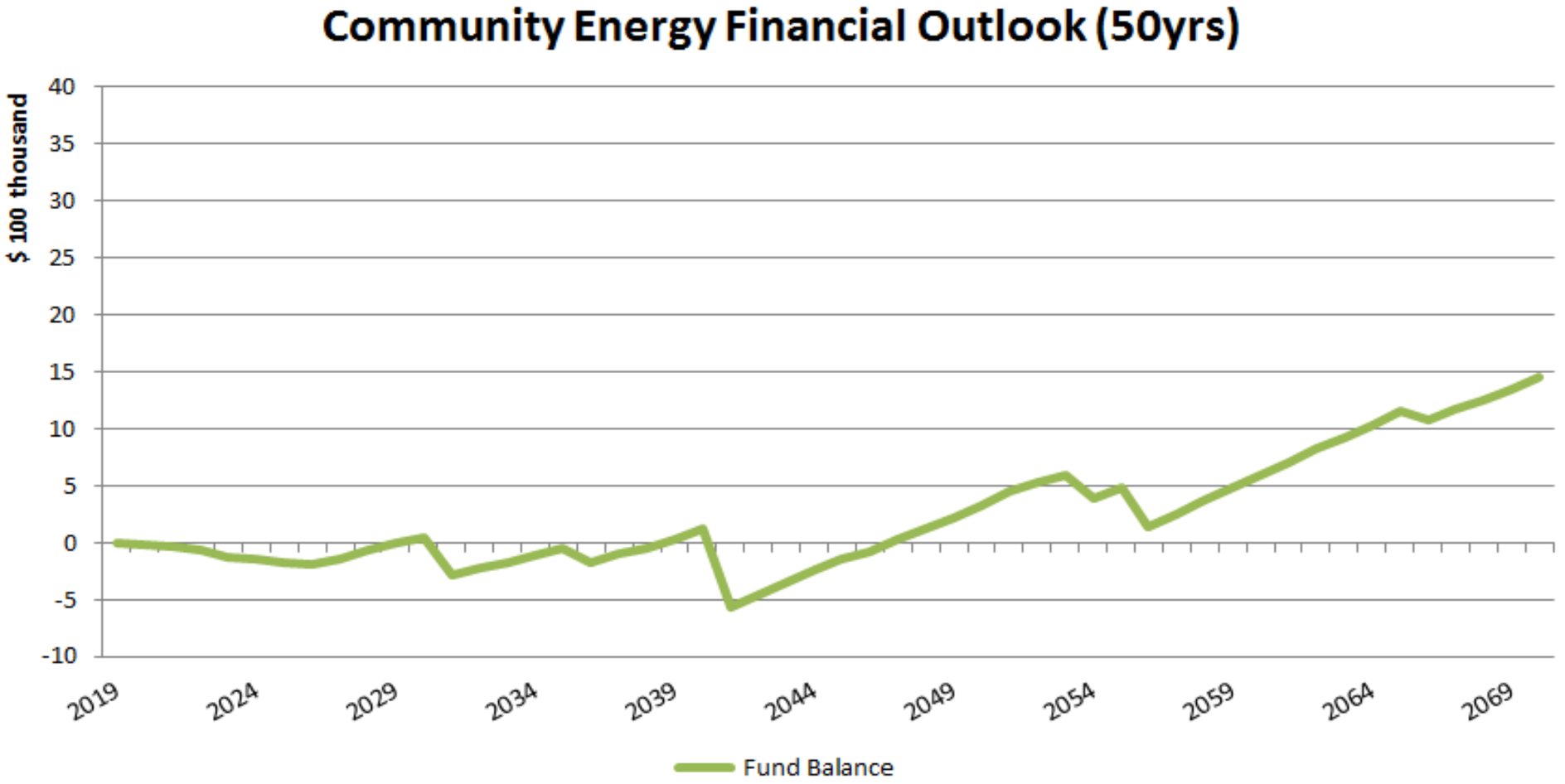
Long term perspective



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Discontinue community energy

- Contractually obligated to provide service to existing and external customers, therefore would be held liable for replacement of mechanical systems
- Replace all heating and domestic hot water infrastructure for 12 buildings
  - Low feasibility due to space requirements for traditional mechanical systems
  - New capital expenses in the order of $14 million
- Does not reverse our debt payments on original capital

Funding options

1. Remain status quo and continue to cross subsidize from the utility reserve for community energy system annual shortfalls

2. Fund annual shortfalls through municipal taxes to protect utility reserves from further impacts

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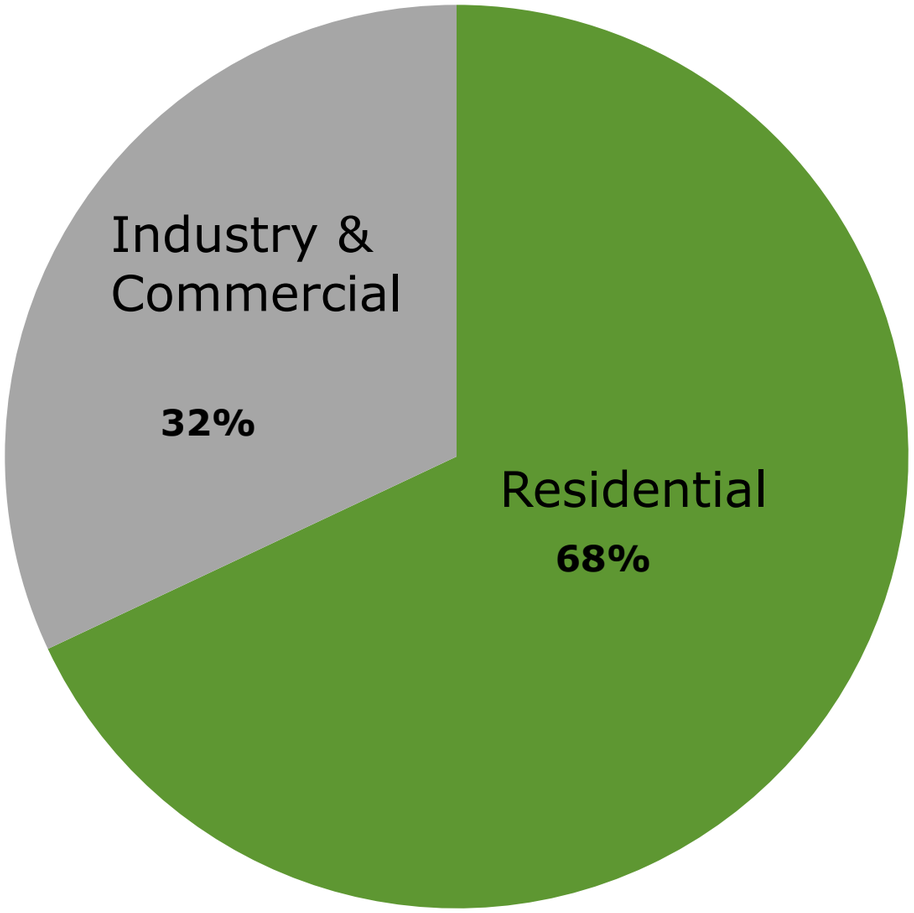
Option 1 : Utility reserve funding



- Volumetric based
- 24,543 households in Sherwood Park
- 202 households in Ardrossan
- Annual contribution by a typical household is $23.76 ($0.11/m^3)
- Cross subsidizing utility services
  - Reserve balance is sufficient to offset current and future shortfall obligations, however drawing from the utility reserve depletes the funds required for future wastewater infrastructure

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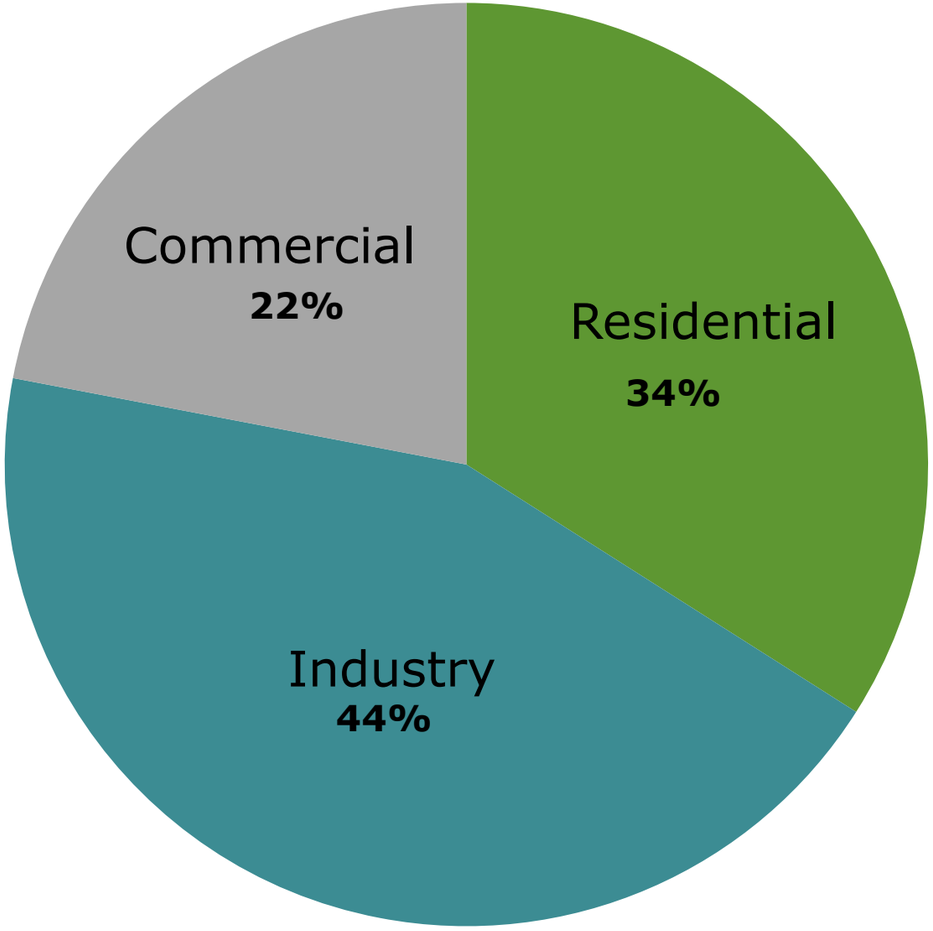
Option 2 : Municipal tax support



- Shifting annual shortfall will have an estimated annual impact of 0.32% increase to taxes for 2020 to 2027
- 34% of this increase will be supported by the residential sector (~$235,000)
- The average single family residential property would be impacted by an increase of approximately $5.84 per year

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Annual comparison

	Utility reserve funding	Municipal tax support
Funding principles	Strategic cash reserve that sets aside funds to meet future costs or financial obligations for that specific service area	A way of distributing the cost for local government services and programs fairly throughout a municipality
User portions	Volumetric • Commercial/Industrial – 32% • Residential – 68%	Property assessment • Commercial/Industrial – 66% • Residential – 34%
Average household contribution	$23.76	$5.84
Advantage of using funding mechanism	• Reserve balance is sufficient to offset current and future shortfall obligations	• Community investment in efficient energy for CITP with a reduction of greenhouse gases • 46% of the load is drawn by municipal buildings whose operations are tax supported
Disadvantage of using funding mechanism	• Less financial capacity to deal with utility infrastructure needs • Utility reserves have been generated under the premise of wastewater rates	Less financial capacity to deal with other priorities in the County

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