Off-site Levy Bylaw Review

Water Resources Session #8

July 28, 2022

Today's Agenda

1. Welcome, Introductions & Agenda Overview
2. Meeting Norms (Hybrid)
3. Refresher on Methodology & Formula
4. Leviable Land
5. Benefit Allocation & Example
6. Treatment Methodology
7. Next Steps
8. Discussion

Meeting Norms (Hybrid)

- **Presentations:** Hold questions until the end.
- **Tone:** Keep a positive tone. Discuss ideas on addressing issues.
- **Listen & Respect:** Every voice is an important voice. Everyone participates, no one dominates.
- **Sounds:** Mute your mic when you are not talking (online). Speak-up so that those online can hear (in-person).
- **Sights:** You are encouraged to turn on your camera (online) and face the camera (in-person).
- **Discussion:** If you would like to comment or have a question, please raise your hand (in-person and online). We will get you in order as best as we can.

Formula – Greenfield Linear Water, Wastewater, Stormwater

Capital Costs ($)

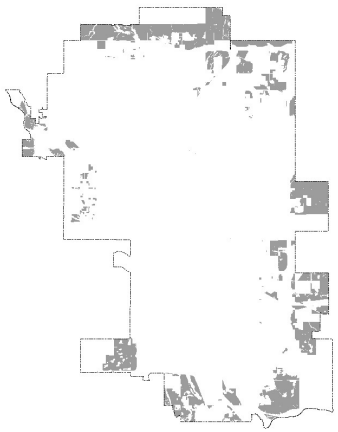
NPV of forecasted principal & interest costs

x

Benefit (%)

Approved, Leviable Land (ha)

= **Levy Rate per Hectare**

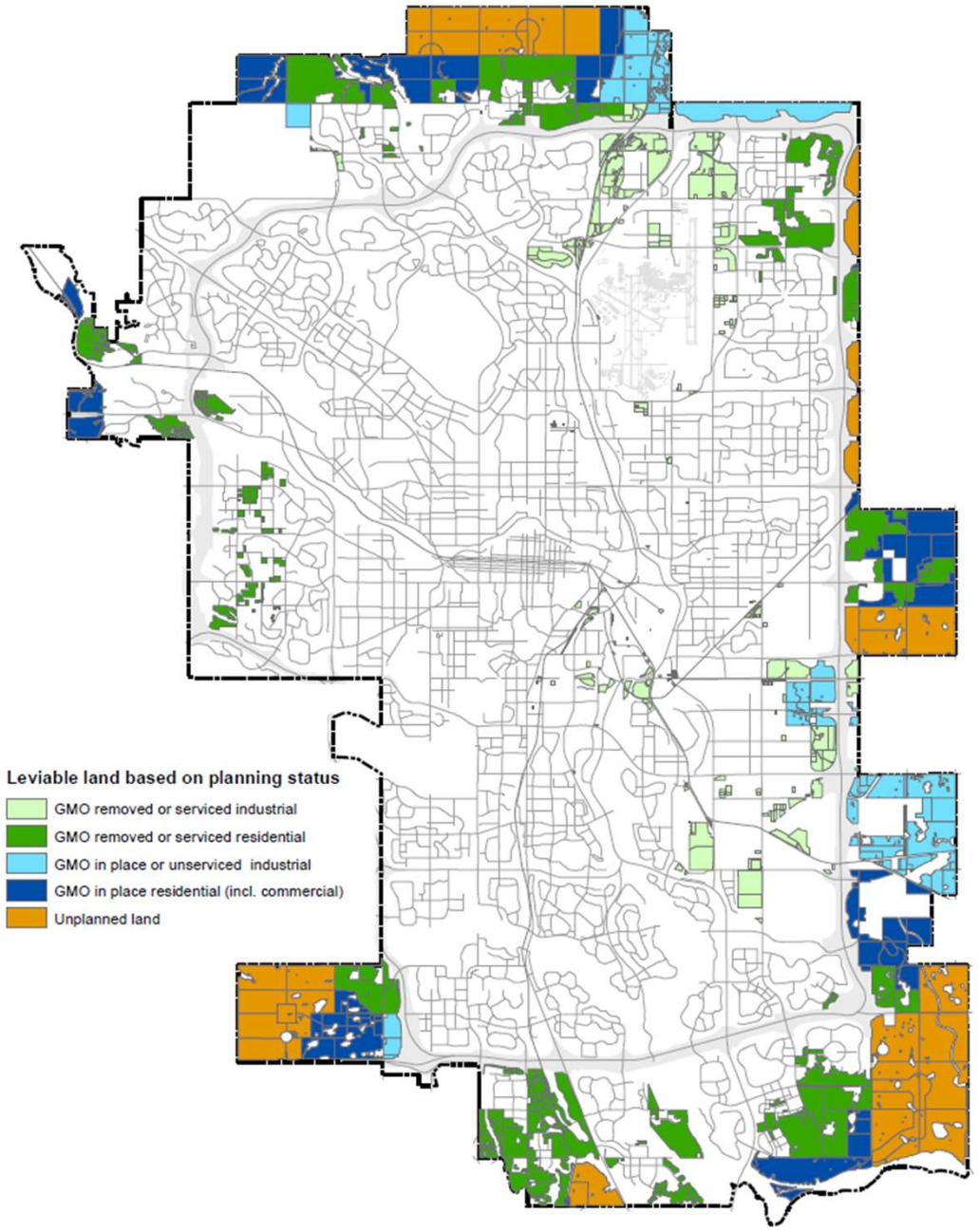


Approved, Leviable Land

- Approved (GMO removed), Leviable Land as of April 2022:
  - Residential: 4,460ha
  - Industrial: 1,664ha
- Total: 6,124ha

- Denominator anticipated to be finalized by December 2022

- Changes to the leviable land depend on approvals (increase) and executed development approvals (decrease)



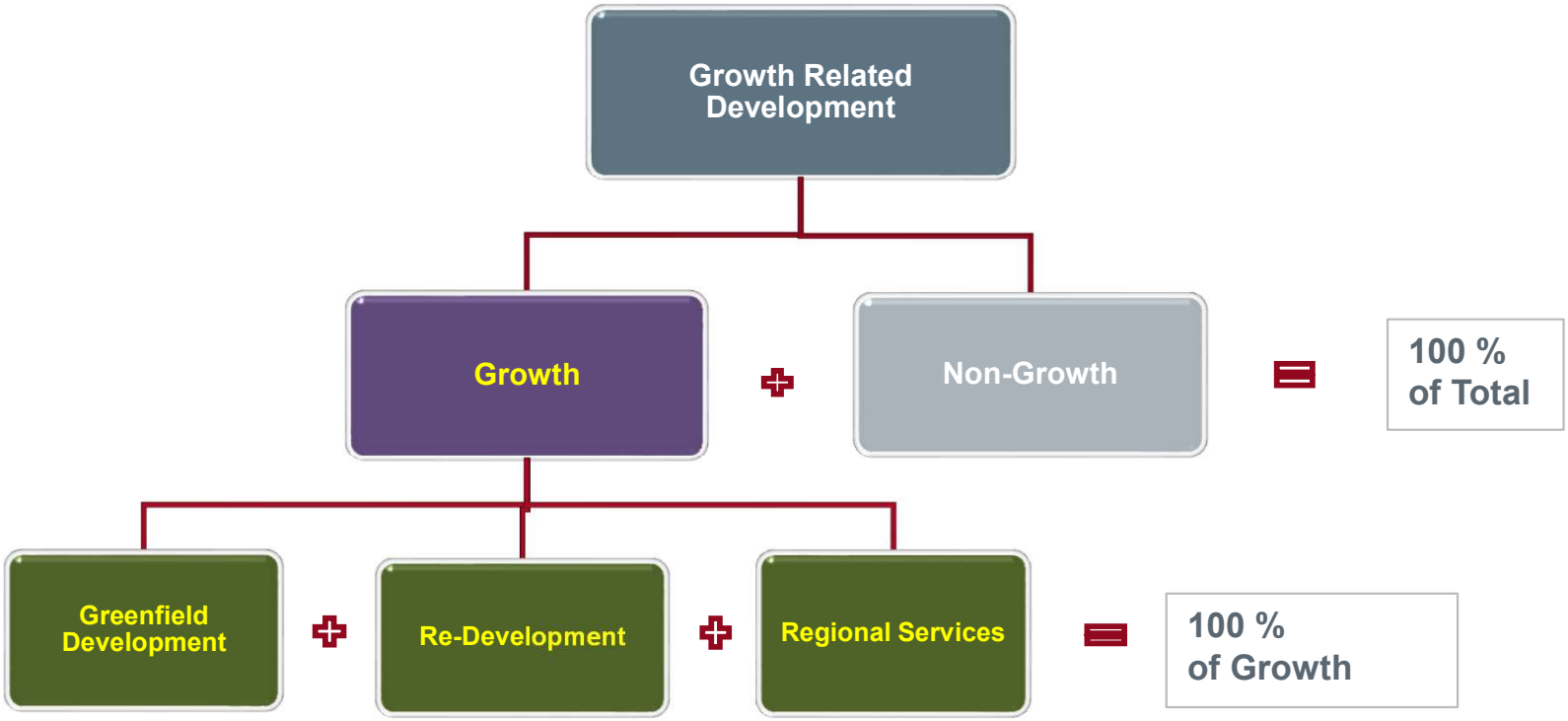
Benefit Allocation – Equivalent Population (EP)

- Benefit is determined based on ***population***
- How do we compare residential vs. employment water consumption?
  - Equivalent population
- Analysis of billing data between Residential, Industrial, Commercial & Institutional (ICI) customers
- Residential: 297L/day per capita; ICI: 180L/day per capita

Therefore: 1 Residential Person = 1EP

1 ICI Employee = (180/297) = 0.61EP

Benefit Allocation



Benefit Allocation – Example
Ogden Feedermain (Extension)

- Why does an extension to serve Greenfield benefit Redevelopment & Regional?
  - Extension provides redundancy for the entire Pressure Zone
- 2041 – Assumed full buildout of the area served

VBEL0

Benefit Allocation – Example
Ogden Feedermain (Extension)

Year	Total Population in Study Area (PZ301: Glenmore)					Growth Inside Calgary								Regional Growth		
						GREENFIELD				REDEVELOPMENT				REGIONAL		
	Residential	Employment	Equivalent	Incremental	% Growth	Residential	Employment	Equivalent	% Greenfield	Residential	Employment	Equivalent	% Re'dvlpmnt	Total Population*	Incremental Population	% Regional
2018	526,307	446,192	798,484		**0%**	29,868	4,072	32,352		458,764	442,120	728,457		37,675	-	
2041	823,397	584,568	1,179,984	381,500	**100%**	126,001	21,151	138,903	**27.9%**	594,666	563,417	938,350	**55.0%**	102,730	65,056	**17.1%**

Formula – Treatment Plant Levy

Capital Costs ($)

NPV of forecasted principal & interest costs

x

Benefit (%)

Equivalent Population (EP)

= **Levy Rate per EP**

Water Treatment Levy

How is the treatment plant levy calculated?

1. Assess the Present Value of Current Costs (up to 2021) and Forecasted Costs (2022+) for Growth related projects

2. Assess how much treatment capacity was added in past projects, and how much capacity is forecasted to be built

3. Assess the Unit of Capacity ($/EP) for Current and Forecasted projects

4. Assess the Available Capacity remaining
   - Note: Water conservation efforts may change this rating over time

5. Assess the value of Available Capacity for Current and Forecasted Projects

6. Take an average of Current and Forecasted Unit of Capacity

Water Treatment Levy

	Present Value Calgary Growth (*) Total Costs (A)	Added Capacity for Calgary Growth (B)	Unit of Capacity (C) = (A) / (B)	Available Capacity (D)	Value of Available Capacity (E) = (C) * (D)	Average Unit Value of Available Capacity (F) = (E) / (D)	Capacity Charge by Hectare (G) = (F) * 60 EP/Ha
Current Capacity	$98,835,190	284,199EP	348$/EP	224,395EP	$78,037,375		
Forecasted Future Capacity	$348,834,314	692,359EP	504$/EP	692,359EP	$348,834,314		
Total	**$447,669,504**	976,558EP		916,754EP	**$426,871,689**	**465$/EP**	**27,900$/Ha**
	Step 1 Present Value of the Actual and Forecasted growth related costs for Calgary.	**Step 2** Total current and forecasted capacity built or to be built.	**Step 3** Determine the value of a unit of added capacity. Step 1 divided by Step 2.	**Step 4** Total available current capacity plus forecasted capacity to be built.	**Step 5** Determine the total value of available capacity. Step 3 multiplied by Step 4.	**Step 6** Determine the average value of a unit of available capacity. Step 5 divided by Step 4.	**Step 7** Determine the total offsite levy by hectare. Step 6 multiplied by a density of 60 EP/Ha.

Water Treatment Levy

Rate Comparison	2022 Rates (Published)	Proposed Rate
Per EP	476	465
Per Ha (Greenfield)	28,579	27,900

Next Steps

- Next session planned for August 25
- One to two more sessions planned for September-November for Wastewater Treatment, Stormwater & Linear Infrastructure
- Finalize project costs, denominator & rates

Questions & Answers

Thank you for attending, we appreciate your time!