

2024 Off-site Levies Bylaw Review Whitepaper September 18, 2023



Introduction

The purpose of this document is to provide background information on the infrastructure, benefit methodology and levy rate calculation being used to support the recreation portion in the 2024 Off-site Levies Bylaw.

The recreation infrastructure being considered in the 2024 Off-site Levies Bylaw is recreation centres required to service growth population in greenfield communities.

The preliminary recreation levy rate is \$52,510 per hectare. Once approved, this levy rate is anticipated to be updated periodically through bylaw amendments to reflect changes to any inputs, including infrastructure inclusions, cost estimates, land absorption, discount rates and escalation rate, policy amendments, and findings/needs research analysis to address service provision gaps.

This paper sets out:

- The recreation infrastructure needed to support growth.
- The benefit allocation, or degree (expressed as a percentage) to which that infrastructure will benefit different areas, and growth assumptions.
- The levy rate calculation.

Infrastructure

The costs of the following type of recreation infrastructure are included in the levy:

- **Recreation centre** is a recreation facility that offers a wide variety of activities and services. It provides at least one indoor pool, gymnasium, fitness, meeting spaces and support services (such as daycare and food services). The outdoor amenities, (e.g., outdoor fields) may also be part of the facility.

The population-based approach is used to calculate the number of recreation infrastructure required to service the population needs. Eight recreation centres will be required to meet the needs of future population in greenfield communities with Area Structure Plans (ASPs). This was derived using the following calculations:

- Total greenfield ASP population forecast at full buildout is 946,835 people.
- Existing capacity in the Greenfield Area is 354,886 people.
- Additional capacity needed at full buildout is for 591,949 people.
- The service level for the Greenfield Area is targeted to match the service level currently provided in the Established Area. The typical catchment for a recreation facility is 63,000 - 75,000 residents¹.

For more information on the population forecast, refer to Tabs 4 and 9 of the *Recreation Levy Rate Model 2024 Off-site Levies Bylaw*.

It is assumed that infrastructure required to meet the needs of future population in greenfield communities will be built by 2055.

¹ Based on the Recreation Facility Development and Enhancement Study conducted for the City of Calgary

The exact timing of the infrastructure construction and the location of the infrastructure will be refined based on the pace of the population growth. Where feasible and appropriate, recreation infrastructure will be collocated with municipal infrastructure including libraries.

Rationale for Infrastructure Inclusion

The recreation levy methodology includes infrastructure benefiting greenfield growth. The need for the recreation infrastructure is set in the ASPs which guides the specific land use, subdivision and development decisions that collectively determine the form the plan area will take. This includes guidance on land use, transportation systems, population and jobs, intensity, the sequence of development, and the provision of essential services and facilities.

The recreation infrastructure as described in the ASPs will continue to evolve as policies change or as new studies are completed. Any future infrastructure additions, removals, cost updates, or scope changes may be reflected in periodic updates to the Off-site Levies Bylaw, with the levy rate recalculated to reflect the most current information available.

Infrastructure Costs

The recreation infrastructure cost estimate described in Table 1 is developed using the average escalated costs of the three most recent recreation centres built by The City within the communities of Seton, Quarry Park and Rocky Ridge. Recreation centre capital costs include:

- Construction costs (these can include any materials to construct the building and develop site, labour costs, furniture and equipment, interior fixtures, design and planning, administrative costs, insurance, other fees).
- Project contingencies and escalation.
- Land acquisition cost.

Costs estimated in prior years were adjusted for inflation to Q2 2023 using Statistics Canada's Non-Residential Building Construction Price Index. This ensures that infrastructure cost estimates are current and reflect recent inflationary increases.

Infrastructure costs are included in Attachment 1 below.

Growth Assumptions and Allocation of Benefit

All recreation centres included in the recreation levy are located in the Greenfield Area and will provide it with similar reliability, quality, and levels of service provided in the Established Area, while maintaining or not affecting the current reliability, quality and level of service in the Established Area. Therefore, no benefit was allocated to the Established Area for this infrastructure.

100 per cent of the benefit is then allocated between levied lands and unlevied lands. This allocation is based on the forecast population in levied lands (where a development agreement has been executed and off-site levies have been paid), and unlevied lands (where no development agreement has been executed and no off-site levies have been paid).

It is assumed that all ASP lands within Calgary’s boundary will be developed by 2055 following current growth trends (the model allows for three additional years for levy collections based on the current collection schedule). It includes all lands within Calgary’s current boundary and does not assume any expansion or annexation of municipal boundaries during the forecast period. As of the end of 2022, there were 9,359 hectares of unlevied lands, forecast to be 9,069 hectares at the end of 2023 and to be developed by 2055.

The forecast population on the levied and unlevied lands at full buildout is 946,835 people; 529,843 people on the levied land and 416,991 people on the unlevied land.

The benefit allocated to unlevied lands in ASPs is calculated as follows:

$$\text{Benefit \%} = \frac{\text{Sum of forecast population in all unlevied lands in Greenfield Area}}{\text{Sum of total forecast population in all Greenfield Area}}$$

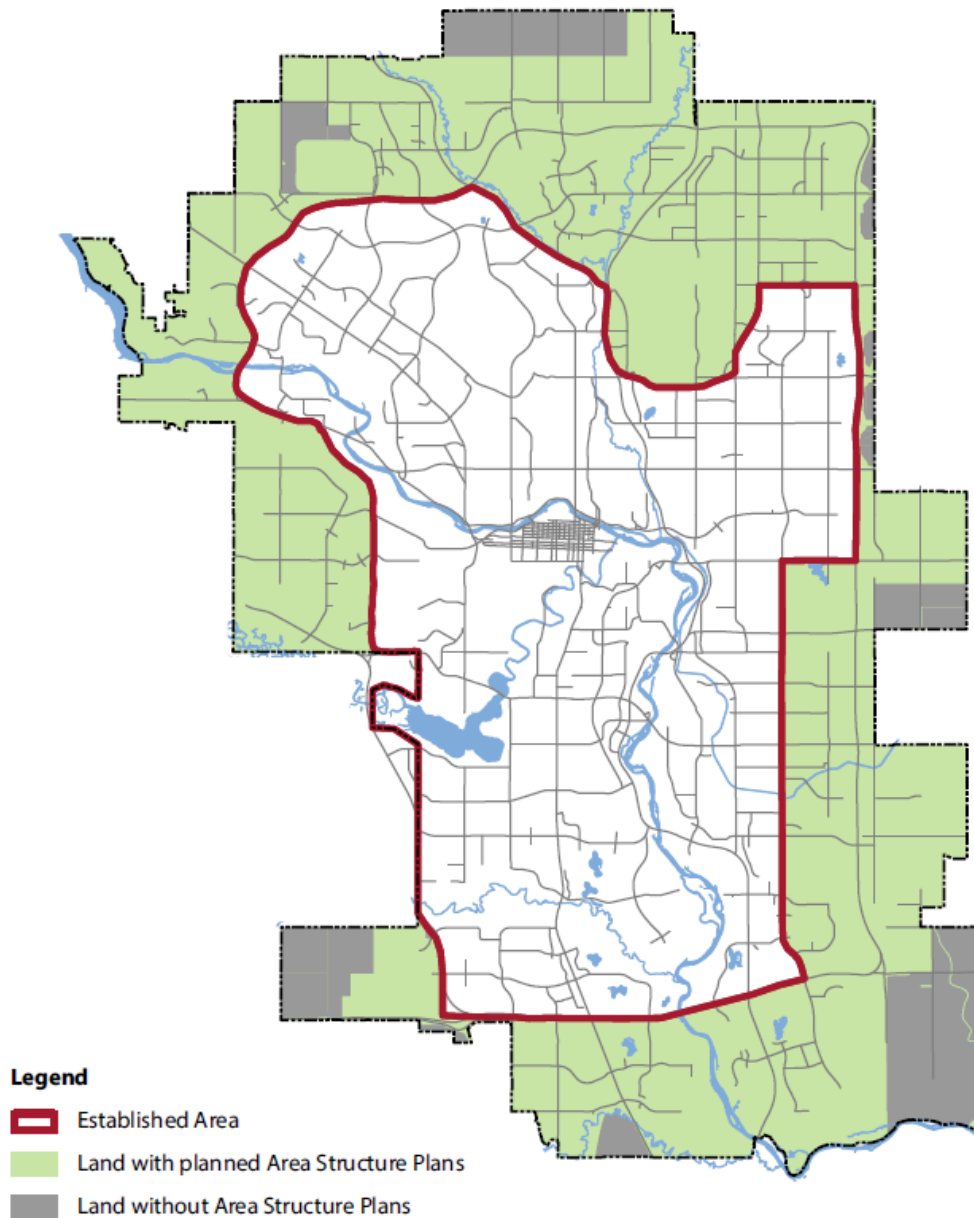
56 per cent of benefit is allocated to levied lands and 44 per cent of benefit is allocated to unlevied lands. The benefit percentage allocated to unlevied lands is then used to calculate the levy rate for the recreation infrastructure determined in section 2.

It has been assumed that the primary users of the recreation centre are residents of Calgary, so no regional benefit has been assigned.

The following map illustrates The City's Established Area, and Greenfield Area with and without ASPs.

Map 1: Off-site Levy Established Area Boundary, and Greenfield Area as of the end of 2022

Established Area and Greenfield Area as of December 31, 2022



Levy Rate Calculation

The levy rate calculations and supporting data are available in the *Recreation Levy Rate Model 2024 Off-site Levies Bylaw*. The calculation balances levy revenues with levy spending to ensure the levy fund has a balance of zero dollars at the end of the forecast period. This calculation:

- Accounts for the timing of both spending and developer contributions.
- Includes estimated annual income returned from investments made using the off-site levy balance.
- Incorporates a discount rate to reflect the time value of money.
- Incorporates an escalation rate to reflect inflation with respect to the cost of construction.
- Uses Excel’s Goal Seek function to generate the levy rate value that, when inserted into the model’s calculations, will result in an off-site levy fund balance of zero dollars at the end of the model period. This ensures that levy revenues (developer contributions plus investment income) match levy expenditures when all land has been levied and all expenditures have been completed.

<i>Iterative Annual Calculation</i> <i>applies escalation and discount rates</i>			Final Model Year
Year	y1... y2... y3... etc...		yN
Starting Levy Fund Balance	\$		
Capital Expenditures	Minus \$		
Developer Contributions (levy rate x ha)	Plus \$		
Investment Income	Plus \$		
Ending Levy Fund Balance	= \$		= \$0

Figure 1: Conceptual levy rate calculation

The steps for calculating the levy rate include:

1. Determining the number of hectares of unlevied land (9,069 hectares) and estimating annual land absorption through the model period.
2. Identifying the capital costs for infrastructure that benefits unlevied lands.
3. Determining the benefit allocations that apply to the infrastructure benefiting unlevied lands.
4. Determining the unlevied capital cost, as the sum of capital costs multiplied by benefit allocations.

5. Setting annual spending for each year in the model period. The escalation rate is applied to determine infrastructure costs in future dollars, and the discount rate is applied to determine the amount needed in today's dollars.
6. Using Excel's Goal Seek function to calculate the recreation off-site levy rate. This is the final input to the calculation that allows for the calculation of revenues that will offset the expenditures and result in a levy fund balance of zero dollars at the end of the model period:
 - a. The levy rate is multiplied by the annual land absorption to determine developer contributions.
 - b. The discount factor, or investment rate of return, is applied to each year's closing levy fund balance to estimate annual investment revenue.

The escalation factor used for levy rate calculation (3.58%) is a five-year smoothed average, determined using Non-Residential Building Construction Price Index (CPI) for Calgary. The discount rate of 4.29% is based on the asset mix of investments held in The City's capital deposits, and the Long-term Capital Market assumptions that The City uses in projecting returns from investment portfolios.

The levy will be updated periodically using a historic five-year smoothed average of the Non-Residential Building Construction Price Index for Calgary and through future bylaw amendments to reflect changes to any inputs, including infrastructure inclusions, cost estimates, land absorption, discount rates and escalation rates, policy amendments, and findings/needs research analysis to address service provision gaps.

Attachment 1: Levy Infrastructure

Table 1. Cost estimate for a recreation centre (approximately 150,000 sq. ft.)

Category	Value
Facility size (sq. ft.) [A]	150,000
Building cost (\$/sq. ft.) [B]	721
Building cost per facility (\$) [A] x [B] = [C]	108,150,000
Land required for each facility (acre) [D]	12
Land acquisition cost (\$/acre) [E]	1,200,000
Land acquisition cost per facility (\$) [D] x [E] = [F]	14,400,000
Site development cost (\$) [G]	8,611,756
Total facility cost (\$) [C] + [F] + [G]	131,161,756

