

BYLAW NO. 4721

A BYLAW OF THE CITY OF MEDICINE HAT to amend Bylaw No. 4157, the Off-Site Levy Bylaw.

WHEREAS the *Off-Site Levies Regulation AR 187/2017*, requires that the information used to calculate an off-site levy must be kept current;

AND WHEREAS Council has advertised its intention to consider this Bylaw pursuant to section 606 of the Act;

AND WHEREAS City Administration has consulted with the development industry concerning the amendments in this Bylaw;

NOW THEREFORE THE MUNICIPAL CORPORATION OF THE CITY OF MEDICINE HAT, IN COUNCIL ASSEMBLED, ENACTS AS FOLLOWS:

1. Bylaw No. 4157 is amended as set out in this Bylaw.
2. The fourth “**AND WHEREAS**” clause within the preamble is amended to read as follows:

“**AND WHEREAS** City Administration has consulted with representatives in the development industry and has presented the methodology for the OSL framework and rates”.
3. Section 2 is amended by adding a new definition, as subsection 2(b.1) as follows:

“2(b.1) “**benefitting area**” means one or more off-site levy areas that directly benefits from the leviable infrastructure, where the benefit is defined as furthering the availability of access or servicing. A map showing the twelve (12) benefitting areas within the City is included as Schedule “D” of this Bylaw.”
4. Subsection 5(a) is amended to read as follows:

“5(a) The City shall be divided into benefitting areas as shown on Schedule “D” for the purposes of calculating the levies to be imposed on land to be subdivided or development within those areas.”
5. Subsection 5(b) is deleted.
6. Section 6 is amended to read as follows:

- “6 (a) Subject to section 3, levies shall be imposed on all subdivision areas and development areas and shall be paid in accordance with Schedule “B”.
 - (b) Levies are not imposed on a subdivision area or development area, where the subdivision or development does not significantly increase the burden on off-site infrastructure, as determined by the Chief Administrative Officer.
 - (c) Levies are deemed to have been imposed whether or not the imposition of the levies is made a specific condition of subdivision or development approval.”
- 7. Subsection 9(a) is amended to read as follows:
 - “9(a) The City shall review the levy projects and the levy rates at least every two (2) years.”
- 8. Schedule “A” is deleted and replaced with Schedule “A” of this Bylaw.
- 9. A new subsection 1(a) is added to Schedule “B” as follows:
 - “1(a) Where levies are imposed, levy amounts are as per Schedule “A” at the date of plan endorsement”.
- 10. A new subsection 2(a) is added to Schedule “B” as follows:
 - “2(a) Where levies are imposed, levy amounts are as per Schedule “A” at the date of issuance of the development permit”.
- 11. Schedule “D” is deleted and replaced with Schedule “B” of this Bylaw.
- 12. Schedule “E” is deleted and replaced with Schedule “C” of this Bylaw.
- 13. Schedule “F” is deleted, including its reference in subsection 17(a) and 17(b)(ii).
- 14. This Bylaw will come into force on January 1, 2023.

READ A FIRST TIME in open Council on November 7, 2022.

READ A SECOND TIME in open Council on _____

READ A THIRD TIME in open Council on _____

SIGNED AND PASSED on _____

MAYOR – LINNSIE CLARK

CITY CLERK – ARLENE KARBASHEWSKI

Schedule “A”**Schedule “A”****AMOUNT OF LEVIES****Storm Sewer, Sanitary Sewer, Roads and Water**

1. The levy amount applicable to land to be subdivided or developed and located within a benefitting area identified in Schedule “D” shall be determined by reference to the benefitting area in which the land is located. Table A-1 of this schedule sets out the amount of the levies for land within each benefitting area.
2. The levies for storm sewer, sanitary sewer, roads and water shall be calculated in accordance with the following:

Storm Sewer Levy	=	amount referred to in Table A-1 of this schedule, as applicable	x	subdivision area or development area (in hectares)
Sanitary Sewer Levy	=	amount referred to in Table A-1 of this schedule, as applicable	x	subdivision area or development area (in hectares)
Roads Levy	=	amount referred to in Table A-1 of this schedule, as applicable	x	subdivision area or development area (in hectares)
Water Levy	=	amount referred to in Table A-1 of this schedule, as applicable	x	subdivision area or development area (in hectares)

TABLE A-1

Benefitting Area	Transportation Levies (\$/ha)	Water Levies (\$/ha)	Sanitary Levies (\$/ha)	Stormwater Levies (\$/ha)	Total Levies (\$/ha)
1	\$20,809	-	\$28,004	-	\$48,813
2	\$20,809	\$15,052	\$65,774	-	\$101,635
3	\$20,809	\$15,052	\$82,756	\$31,351	\$149,968
4	\$20,809	\$15,052	\$82,756	\$31,351	\$149,968
5	\$20,800	\$11,658	\$854	-	\$33,331
6	\$20,809	-	\$28,858	-	\$49,667
7	\$20,809	-	\$81,902	-	\$102,711

8	-	-	-	-	-
9	\$20,809	-	\$42,601	-	\$63,411
10	\$20,809	-	\$38,828	-	\$59,637
11	\$20,809	-	\$116,926	-	\$137,736
12	\$20,809	-	\$126,778	\$20,719	\$168,307

Schedule “B”

Schedule “D”
Map of Benefitting Areas



Benefitting Areas			
No.	Name	No.	Name
1	North Reserve Lands	7	Burnside
2	North West Industrial Park	8	Established Area
3	Box Springs Business Park	9	Airport Lands
4	Brier Park	10	Westvue
5	Brier Run	11	South West Residential
6	Ranchlands	12	South East Residential

Schedule “C”

Schedule “E”

CORVUS Off-Site Levy Review



City of Medicine Hat: Offsite Levy Rates Review

October 7th, 2022

Prepared by:

Greg Weiss, President
CORVUS Business Advisors
9670 – 95 Avenue
Edmonton, AB T6C 2A4
(780) 428-4110
gweiss@corvusbusinessadvisors.com



October 7th, 2022

City of Medicine Hat
580 First Street SE
Medicine Hat, Alberta
T1A 8E6

RE: City of Medicine Hat Offsite Levy Rates Review

Enclosed is our report underpinning the review of the City's offsite levy rates. If you have any questions do not hesitate to contact me.

Respectfully,

A handwritten signature in black ink, appearing to read "Greg Weiss", followed by a long horizontal line.

Greg Weiss
President

1 DOCUMENT INFORMATION

Version		
Number	Revision Date	Description
1.0	October 7 th , 2022	Final

2 CONTENTS

1	DOCUMENT INFORMATION	I
2	CONTENTS.....	II
3	INTRODUCTION.....	1
3.1	INTRODUCTION	1
3.2	METHODOLOGY	1
4	KEY FINDINGS.....	2
5	RATES	4
6	RECOMMENDATIONS.....	5
7	ACKNOWLEDGEMENTS.....	6
8	DISCLAIMER	6
	APPENDIX A: OFFSITE LEVY AREAS AND STAGING.....	7
	APPENDIX B: WATER OFFSITE INFRASTRUCTURE.....	11
	APPENDIX C: SANITARY OFFSITE INFRASTRUCTURE	19
	APPENDIX D: TRANSPORTATION OFFSITE INFRASTRUCTURE	30
	APPENDIX E: STORMWATER OFFSITE INFRASTRUCTURE.....	40
	APPENDIX F: RATE COMPARISON	48

3 INTRODUCTION

3.1 Introduction

Bylaw 4157 established by the City of Medicine Hat (“the City”) in 2013 and last updated in 2019 defines offsite levy charges for water, sanitary sewer, roads, and stormwater infrastructure in the municipality. The City wishes to update this bylaw, amending certain infrastructure in alignment with the City’s current capital plans, ensuring updated costs and development forecasts are reflected fairly and equitably in rates.

This report outlines the methodology and information used to update the offsite levy charges for the City, as well as other key findings and recommendations.

3.2 Methodology

The City maintains various capital plans, and these plans have been used to generate key inputs for this offsite levy rates review. City staff and their engineering advisors reviewed existing plans and identified offsite projects for water, sanitary sewer, roads, and stormwater¹. The City’s review also included determination of cost allocation to existing development, future development, benefiting areas, etc.

Support provided by CORVUS Business Advisors included:

- Incorporation of offsite levy area measurements and land development forecasts (provided by City staff).
- Incorporation of infrastructure costs and allocation percentages for existing development, new development, and other parties (provided by City staff).
- Reconciliation of offsite levy reserve opening balances (historical details provided by City staff).
- Development of offsite levy rates and associated report.
- Review of offsite levy rates with staff and Council.

Offsite levy rates within the City’s offsite levy model are forecast using a rolling 25-year review period. During this review, a cut-off date of **December 31st, 2020** was established (the most recent year-end when the project commenced), and so the 25-year review period stems from **2021 to 2045**. Project expenditures, offsite levy receipts etc. were gathered as “actuals” from City financial records up to the cut-off date. Beyond the cut-off date, all financial details are estimates. When the City completes its next rate update, information from January 1st, 2021 up to the new cut-off date will be converted from estimates to actuals.

Costs that benefit development prior to and within the review period are included in rates. Costs that benefit development beyond the review period (called “financial oversizing”) are excluded from rates. In future years, when rates are updated, and the rolling 25-year period

¹ It is not within CORVUS’ scope of work to review or assess capital plans. Infrastructure requirements, costs, allocations etc. are determined by the municipality and their engineering/consulting advisors.

moves further out, offsite infrastructure costs beyond 2045 will gradually find their way into rates.

4 KEY FINDINGS

Key findings pertaining to the update of City offsite levy rates are as follows:

- Offsite infrastructure costs to be included in the offsite levy bylaw total approximately **\$403.83 million** (current dollars). An overview of offsite infrastructure costs and maps is provided in Appendices B1, C1, D1, and E1.

Before determining how the infrastructure costs will be allocated to parties that benefit (e.g., existing development, new development, other municipalities etc.), financing provided by way of special ear-marked/conditional grants and other contributions are deducted from offsite infrastructure costs. For this update, the City has identified approximately **\$5.40 million** in special grants and contributions. An overview of special grants and contributions and resulting net costs is provided in Appendices B2, C2, D2, and E2.

The residual benefit allocated to existing development (the City's share) is approximately **\$253.64 million**. The share allocated to other stakeholders (e.g., neighbouring municipalities) is **\$1.08 million**.

That portion of cost which is allocated to future development totals approximately **\$143.71 million** (\$36.79 million + \$106.92 million) and is based on the allocations shown in Appendices B4, C4, D4, and E4. However, a portion of the cost allocated to future development is beyond the 25-year review period (called "financial oversizing"). Financial oversizing is determined based on the anticipated year of construction (construction staging) which is provided in Appendices B3, C3, D3, and E3.

Of the **\$143.71 million** in total offsite infrastructure costs allocated to future development, the share allocated to future development that is included in rates today (the offsite levy share) is approximately **\$106.92 million**, as shown in the table below. A complete summary of offsite infrastructure net cost "flow-thru" is provided in Appendices B6, C6, D6, and E6.

Summary of Infrastructure Costs & Allocations

Infrastructure	Special Grants & Contributions	Muni Share of Costs	Other Stakeholders' Share of Costs	Developer Cost Beyond 25 Yrs (Financial Oversizing)	Developer Costs (In Rates)	Total Costs
Transportation	\$ -	\$ 146,073,387	\$ -	\$ 9,645,762	\$ 29,183,873	\$ 184,903,022
Water	\$ -	\$ 34,426,135	\$ -	\$ 6,597,754	\$ 24,918,239	\$ 65,942,127
Sanitary	\$ 5,400,000	\$ 61,544,768	\$ 1,084,974	\$ 20,545,454	\$ 42,429,469	\$ 131,004,664
Stormwater	\$ -	\$ 11,591,979	\$ -	\$ -	\$ 10,386,986	\$ 21,978,965
Total	\$ 5,400,000	\$ 253,636,268	\$ 1,084,974	\$ 36,788,970	\$ 106,918,567	\$ 403,828,779

Before allocating infrastructure costs to benefitting lands, offsite levy costs must be reduced by the amount of levies collected to date. Up to December 31st, 2021, the City has collected **\$51.98 million** as shown in Appendices B5, C5, D5, and E5.

Summary of Offsite Levy Collections

Levies Collected To Date	
Transportation	\$ 17,264,429
Water	\$ 19,782,374
Sanitary	\$ 9,906,399
Stormwater	\$ 5,028,534
Total	\$ 51,981,737

- To facilitate the allocation of infrastructure costs to those lands that benefit from the infrastructure, the City is parsed into **12** offsite levy areas. The area boundaries, numbering schema, and area measurements are described in *Appendix A* along with an offsite levy map; and an overview of offsite infrastructure allocations to each benefitting area is provided in Appendices B7, C7, D7, and E7.
- To calculate offsite levy rates, it is necessary to forecast the amount of land that will develop during the 25-year review period. Land development forms the denominator of the rate calculation. A larger denominator reduces rates but could potentially result in under-collection thereby placing an increased burden on taxpayers. A smaller denominator increases rates but could potentially result in over-collection thereby placing an increased burden on future development. Accordingly, land development forecasts need to be (a) reasonable and reflect current planning assumptions including the current pace of development in the community, and (b) updated regularly.

For this update, the City is forecasting development of approximately **637 ha.** over the 25-year review period. The land development forecast and underpinning assumptions are shown in *Appendix A*.

- **Offsite Levy Accounts.** The City is managing offsite levy receipts and withdrawals via 4 accounts, in alignment with MGA requirements (i.e., one account for each infrastructure type). The reason that an account is required for each infrastructure type is because offsite levies can only be used for the type of infrastructure for which they were collected (e.g., water levies can only be used to construct water offsite infrastructure, not sanitary infrastructure etc.). An overview of updated account balances is shown in Appendices B8, C8, D8, and E8.
- **Interest.** Offsite levy accounts activities (both actual and forecast) are impacted by interest. Actual reserve inflows and forecast account balances that are in a positive position earn interest (as required by the MGA). Actual reserve outflows and forecast account balances that are in a negative position are charged interest (forecast balances that are negative indicate that front-ending will be required).

An overview of account interest rates and forecast balances over the 25-year review period is shown in Appendices B9, C9, D9, and E9.

- **Front-ending.** Front-ending is an extremely important concept that underpins rigorous management of offsite levies. Front-ending represents debts owed by future development to the municipality for past construction undertaken by the municipality on behalf of future development—i.e., a municipality will often pay for its share of an offsite infrastructure project in addition to that portion of the project which benefits future development when offsite levy reserve balances are insufficient to pay for

future development's share of the project.

Because front-ending balances represent debts owed to the municipality, they need to be clearly reflected in official City documents such as levy account balances, financial statements (e.g., front-ending notes), or accounts receivables, etc. This documentation enables the City to collect on these debts as future development occurs, and offsite levies are collected.

At end 2020, the overall net front-ending due to the City was **\$25.98 million**. A complete reconciliation of balances for each of the accounts is provided in Appendices B8, C8, D8, and E8.

Summary of Account Balances & Front-ending

Reserve Balance	
Transportation	\$ 3,828,643
Water	\$ 8,086,782
Sanitary	\$ (32,075,858)
Stormwater	\$ (5,815,593)
Total	\$ (25,976,026)

5 RATES

For future development to pay for its share of the **\$403.83 million** infrastructure costs either built already or contained in the City's future capital plans, rates are **\$102,012 per net hectare** on a weighted average basis. These rates reflect the actual cost of infrastructure required to facilitate development in the City. A comparison of offsite levy rates with other municipalities is summarized in *Appendix F*.

Since the last update, rates are decreasing an average of **~56%**. The primary reasons for this decrease are: (a) the updated infrastructure projects and reduced costs allocated to future development, and (b) the increase in forecast land development within the 25-year review period.

Summary of Offsite Levy Charges (Per Net Ha) ²

	Transportation	Water	Sanitary	Storm	Total
High	\$ 20,809	\$ 15,052	\$ 126,778	\$ 31,351	\$ 168,307
Low	\$ -	\$ -	\$ -	\$ -	\$ -
Weighted Average	\$ 20,809	\$ 4,828	\$ 67,014	\$ 9,361	\$ 102,012

² Highs, lows, and weighted averages are shown for information purposes only. Developers pay the actual offsite levy charges pertaining to their specific offsite levy area.

Area #	Transportation	Water	Sanitary	Storm	Total
1.0	\$ 20,809	\$ -	\$ 28,004	\$ -	\$ 48,813
2.0	\$ 20,809	\$ 15,052	\$ 65,774	\$ -	\$ 101,635
3.0	\$ 20,809	\$ 15,052	\$ 82,756	\$ 31,351	\$ 149,968
4.0	\$ 20,809	\$ 15,052	\$ 82,756	\$ 31,351	\$ 149,968
5.0	\$ 20,809	\$ 11,668	\$ 854	\$ -	\$ 33,331
6.0	\$ 20,809	\$ -	\$ 28,858	\$ -	\$ 49,667
7.0	\$ 20,809	\$ -	\$ 81,902	\$ -	\$ 102,711
8.0	\$ -	\$ -	\$ -	\$ -	\$ -
9.0	\$ 20,809	\$ -	\$ 42,601	\$ -	\$ 63,411
10.0	\$ 20,809	\$ -	\$ 38,828	\$ -	\$ 59,637
11.0	\$ 20,809	\$ -	\$ 116,926	\$ -	\$ 137,736
12.0	\$ 20,809	\$ -	\$ 126,778	\$ 20,719	\$ 168,307

6 RECOMMENDATIONS

CORVUS recommends the following:

1. Implement the updated offsite levy rates outlined in Section 5.
2. Amend the offsite levy account balances in City documentation to align with Appendices B8, C8, D8, and E8. In so doing, remove excess cash from offsite levy reserves (if any) as pay down of front-ending debts owed to the City.

7 ACKNOWLEDGEMENTS

CORVUS Business Advisors would like to thank all City of Medicine Hat staff who supported the work of this rate update.

8 DISCLAIMER

CORVUS Business Advisor has relied upon the City of Medicine Hat and its engineering/consulting advisors to provide all the data and information used to construct the offsite levy model and create the rates, such as planning data and assumptions, development forecasts and assumptions, infrastructure costs and costs estimates, allocations to benefitting parties, allocation to benefitting areas, historical financial details, and other assumptions etc. As such, CORVUS Business Advisors makes no guarantee as to the accuracy of the input data and information provided by these groups or the results that stem from this data and information.

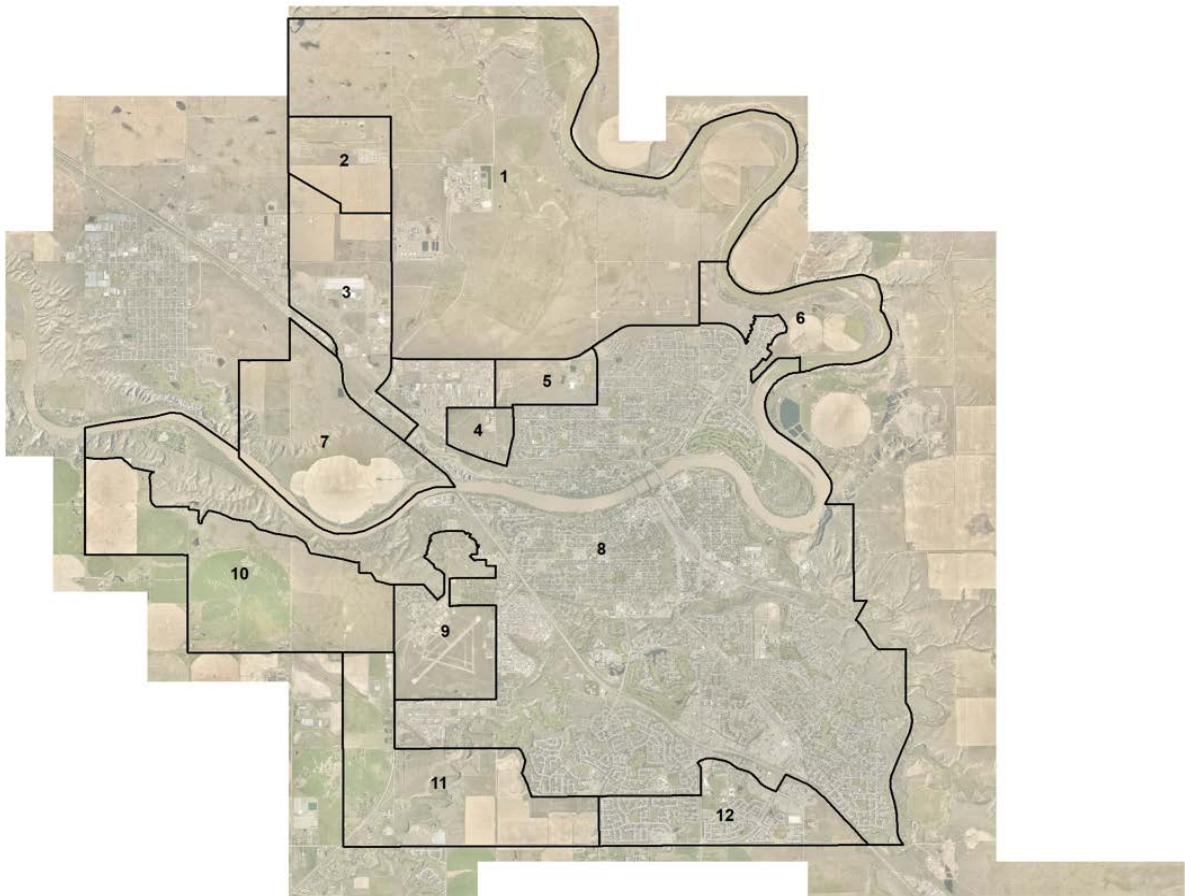
Offsite levy rates are not intended to stay static; they are based upon educated assumptions and the best available information of the day. Planning assumptions, cost estimates etc. can change each year. Accordingly, the Municipal Government Act requires that offsite levy rates be updated with the most available information on a regular basis and a status report provided to Council annually. When information changes, it will be reflected in a future update, and rates adjusted accordingly.

APPENDIX A: OFFSITE LEVY AREAS AND STAGING

A1. Offsite Levy Areas

The City is parsed into **12** offsite levy areas, as shown in the map below. Areas take into consideration existing/planned infrastructure basins as well as natural and man-made barriers (e.g., rivers, highways, etc.), developed areas, etc. All offsite levy infrastructure costs are allocated to one or more areas.

Offsite Levy Areas



Total net development area, the amount of land available for development across all offsite levy areas, is approximately **8720 net ha**. Allowances have been made to net development area calculations for environmental reserves, municipal reserves, and rights of way and other non-chargeable areas if applicable. As of December 31st, 2020 (the cut-off date), approximately **4084 net ha**. were developed, leaving a balance of approximately **4637 net ha**. for development in the future.

Offsite Levy Net Development Area

Area Ref. #	Development Area Location	Land Use	Gross Area (ha)	Environmental Reserves	Sub-total	Municipal Reserves	Arterial Right of Way and Other Non-Chargeable	Net Development Area
1	North Reserve Lands	Other	2,784.65	505.91	2,278.74	31.56	32.71	2,214.47
2	North West Industrial Park	Other	228.27	-	228.27	-	9.17	219.10
3	Box Springs Business Park	Other	462.17	-	462.17	-	53.70	408.47
4	Brier Park	Other	84.59	9.04	75.55	-	3.75	71.80
5	Brier Run	Other	128.32	-	128.32	3.63	10.45	114.24
6	Ranchlands	Other	330.43	183.47	146.96	14.69	-	132.27
7	Burnside	Other	634.08	201.51	432.57	39.88	27.80	364.89
8	Established Area	Other	5,115.81	1,560.45	3,555.36	-	245.48	3,309.88
9	Airport Lands	Other	340.15	-	340.15	-	12.13	328.02
10	Westvue	Other	812.21	-	812.21	79.72	14.99	717.50
11	South West Residential	Other	702.88	124.16	578.72	31.16	46.95	500.61
12	South East Residential	Other	388.60	0.97	387.63	8.46	39.95	339.22
Total			12,012.16	2,585.51	9,426.65	209.10	497.08	8,720.47

Summary of Offsite Levy Net Development Area

Description	ha.
Gross Development Area	12,012.16
Less Environment Reserve	2,585.51
Less Municipal Reserve	209.10
Less ROW Allowance	497.08
Net Development Area	8,720.47

*Note: 1 Hectare (ha.) = ~2.47 Acres

Net development area definitions will be applied in determining offsite levy obligations of developers on application for subdivision or development within the City of Medicine Hat. Net development area is defined as follows:

- Gross Area – The area of lands to be developed in hectares that have not previously paid an offsite levy.
 - o Less: Any environmental reserves contained within the development area.
 - o Less: A 10% allowance for Municipal Reserves.
 - o Less: Arterial road right of way that bisects the development lands and other non-chargeable areas if applicable.
- Equals: Net Developable Area, which is the area subject to offsite levies.

A2. Development Staging

A rate planning period of 25-years underpins the offsite levy model and rate calculations. Many municipalities use this planning period as it provides a reasonable timeframe to recoup the costs associated with offsite levy infrastructure construction, and it aligns with the timeframes of many municipal capital planning and construction cycles.

Of the **8720 net ha.** of development area available across all offsite levy development areas, planners estimate that approximately **637 net ha. (7%)** will develop during the next 25-years (the rate planning period) as shown in the tables below.

Summary of Anticipated Development during the 25-year Rate Planning Period

Description	ha.	
Developed to Date	4,083.90	46.8%
Developed In Next 25 Years	637.31	7.3%
Developed Beyond 25 Years	3,999.26	45.9%
Net Development Area	8,720.47	

Anticipated Development During the 25-year Rate Planning Period

Area Ref. #	Area Developed in Next 25 years (Net ha.)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	25.000	-	5.00	-	-	-	-	5.00	-	-	-	-	5.00	-	-	-	-	5.00	-	-	-	-	5.00	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	120.000	-	10.00	-	10.00	-	10.00	-	10.00	-	10.00	-	10.00	-	10.00	-	10.00	-	10.00	-	10.00	-	10.00	-	10.00	-
4	20.000	-	5.00	-	-	5.00	-	-	5.00	-	-	5.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	83.080	-	-	-	10.00	10.00	10.00	10.00	-	10.00	10.00	-	10.00	-	10.00	3.08	-	-	-	-	-	-	-	-	-	-
6	113.130	-	-	10.00	10.00	-	10.00	10.00	-	10.00	10.00	-	10.00	10.00	-	10.00	10.00	-	13.13	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	80.000	-	-	10.00	-	-	10.00	-	-	10.00	-	-	10.00	-	-	10.00	-	-	10.00	-	-	10.00	-	-	10.00	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	120.000	-	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
12	76.100	-	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	6.10	-	-	-	-	-	-	-	-	-
	637.31	-	30.00	30.00	40.00	25.00	50.00	35.00	25.00	40.00	40.00	15.00	55.00	20.00	30.00	33.08	31.10	10.00	38.13	5.00	15.00	15.00	20.00	5.00	25.00	5.00

APPENDIX B: WATER OFFSITE INFRASTRUCTURE

B1. Water Offsite Infrastructure Costs

To support future growth, water offsite infrastructure is required. The estimated cost of this infrastructure is based upon: (a) actual construction costs to the cut-off date, (b) debenture interest associated with financing, and (c) future cost estimates. Total cost is approximately **\$65.94 million** as outlined in the table below. Actual costs, debenture interest (if any), and cost estimates were provided by City staff. It is important to note that these costs represent “gross” costs, of which only a portion will go to support future development during the 25-year review period. The remainder of this section outlines how the “net” costs for future development are determined.

Summary of Water Offsite Infrastructure

Item	Project Description	Cost of Completed Work	Future Debenture Interest	Estimated Cost of Work Yet to be Completed	Total Project Estimated Cost
1	South Reservoir and Transmission Line	\$ 10,681,701	\$ -	\$ -	\$ 10,681,701
2	North Reservoir	\$ 8,618,112	\$ 1,298	\$ -	\$ 8,619,410
3	South Reservoir Cell #2	\$ 4,990,610	\$ 191,837	\$ -	\$ 5,182,447
4	South Reservoir Pump #4	\$ 366,957	\$ 10,258	\$ -	\$ 377,215
7	NW Booster and Transmission Main	\$ 14,651,020	\$ 755,334	\$ -	\$ 15,406,354
19	Transmission Line Expansion (NW Booster Station to Box Springs Road #2)	\$ -	\$ -	\$ 17,160,000	\$ 17,160,000
20	North West Booster Station Expansion Pump #4	\$ -	\$ -	\$ 100,000	\$ 100,000
21	North Reservoir Cell Expansion #2	\$ -	\$ -	\$ 3,375,000	\$ 3,375,000
23	South Ridge Reservoir Expansion Cell	\$ -	\$ -	\$ 5,040,000	\$ 5,040,000
100	Unallocated Offsite Levies Collected to Dec 31, 2012 - DO NOT DELETE	\$ -	\$ -	\$ -	\$ -
		\$ 39,308,399	\$ 958,728	\$ 25,675,000	\$ 65,942,127

*Costs estimates are reflected in current dollars.

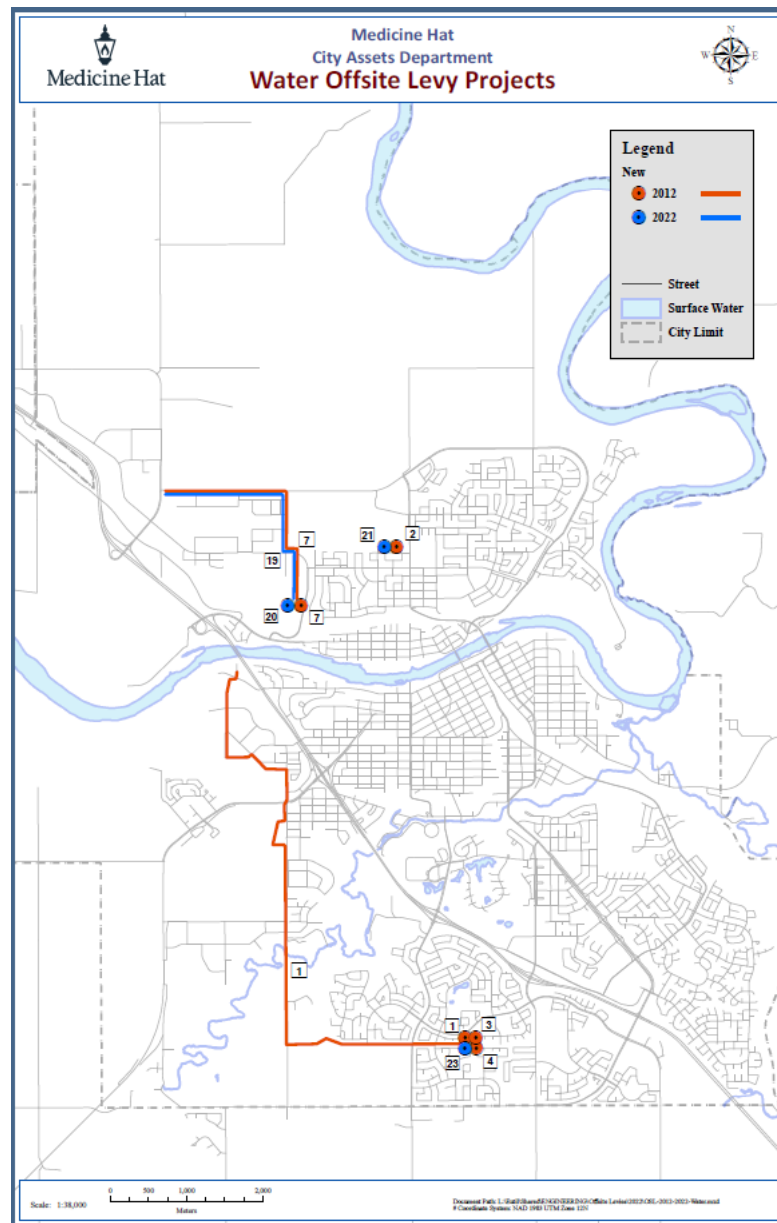
**Estimates include engineering costs and contingencies.

***Offsite levy project details, allocations, etc. were determined by City staff and their engineering/consulting advisors.

****Financing interest costs to date (if any) are included in the cost of work completed.

*****Project numbering may be out of sequence as rows containing deleted projects are hidden.

Location of Water Projects



B2. Water Offsite Infrastructure Grants & Contributions to Date

The MGA enables the City to allocate the costs of offsite infrastructure to future development, other than those costs that have been provided by way of special grant or contribution (i.e., contributed infrastructure). The City has/will receive **\$0.00** in special grants and contributions for water offsite levy infrastructure as shown in the table below (note, if the City receives other grants or contributions in the future, it will be reflected in one of the annual updates and rates adjusted accordingly). The result is that the total reduced project estimated cost is **\$65.94 million**.

Special Grants and Contributions for Water Offsite Infrastructure

Item	Project Description	Total Project Estimated Cost	Special Provincial Grants (Historic & Future)	Developer Agreement Contributions (Historic & Future)	Reduced Project Estimated Cost
1	South Reservoir and Transmission Line	\$ 10,681,701	\$ -	\$ -	\$ 10,681,701
2	North Reservoir	\$ 8,619,410	\$ -	\$ -	\$ 8,619,410
3	South Reservoir Cell #2	\$ 5,182,447	\$ -	\$ -	\$ 5,182,447
4	South Reservoir Pump #4	\$ 377,215	\$ -	\$ -	\$ 377,215
7	NW Booster and Transmission Main	\$ 15,406,354	\$ -	\$ -	\$ 15,406,354
19	Transmission Line Expansion (NW Booster Station to Box Springs Road #2)	\$ 17,160,000	\$ -	\$ -	\$ 17,160,000
20	North West Booster Station Expansion Pump #4	\$ 100,000	\$ -	\$ -	\$ 100,000
21	North Reservoir Cell Expansion #2	\$ 3,375,000	\$ -	\$ -	\$ 3,375,000
23	South Ridge Reservoir Expansion Cell	\$ 5,040,000	\$ -	\$ -	\$ 5,040,000
100	Unallocated Offsite Levies Collected to Dec 31, 2012 - DO NOT DELETE	\$ -	\$ -	\$ -	\$ -
		\$ 65,942,127	\$ -	\$ -	\$ 65,942,127

B3. Water Infrastructure Staging

The timing of construction is used to determine the impact of inflation on cost, the impact of forecast reserve balances, and the estimate of financial oversizing (described in the Section that follows). The City anticipates construction of offsite infrastructure as outlined in the table below. Note, if this schedule is adjusted in the future, it will be reflected in one of the annual rate/bylaw updates.

Water Infrastructure Staging

Item	Project Description	Construction Start Year
1	South Reservoir and Transmission Line	1998
2	North Reservoir	2000
3	South Reservoir Cell #2	2006
4	South Reservoir Pump #4	2006
7	NW Booster and Transmission Main	2008
19	Transmission Line Expansion (NW Booster Station to Box Springs Road #2)	2032
20	North West Booster Station Expansion Pump #4	2032
21	North Reservoir Cell Expansion #2	2030
23	South Ridge Reservoir Expansion Cell	2033

*The pro rata share of project cost beyond the 25-year review period are not included in rates today (see financial oversizing in next section).

**Costs are inflated to the year of construction using an inflation rate of 4% in the first year, 5% in the second year, 4% in the third year, and 3% thereafter.

B4. Water Offsite Infrastructure Benefiting Parties

The water offsite infrastructure previously outlined will benefit various parties to varying degrees as determined by City staff and engineering advisors. The potential benefiting parties were include:

- City of Medicine Hat – that portion of cost which is required to service existing residents.
- Other Stakeholders – other parties (such as neighboring municipalities) that benefit from the infrastructure.
- City of Medicine Hat Future Development (Financial Oversizing) – that portion of cost

which benefits future development beyond the 25-year review period.

- City of Medicine Hat Future Development (in Rates) – all growth-related infrastructure (i.e., leviable water infrastructure costs) during the 25-year rate planning period.

The table below outlines the allocation of water offsite levy infrastructure costs to benefiting parties.

Allocation of Water Infrastructure to Benefiting Parties

Item	Project Description	Reduced Project Estimated Cost	Muni Share %	Other Stakeholder Share	Developer Share Beyond 25 Yrs (Financial Oversizing %)	OSL / Developer Share %
1	South Reservoir and Transmission Line	\$ 10,681,701	81.860%		0.000%	18.140%
2	North Reservoir	\$ 8,619,410	88.170%		0.000%	11.830%
3	South Reservoir Cell #2	\$ 5,182,447	81.860%		0.000%	18.140%
4	South Reservoir Pump #4	\$ 377,215	81.860%		0.000%	18.140%
7	NW Booster and Transmission Main	\$ 15,406,354	20.000%		0.000%	80.000%
19	Transmission Line Expansion (NW Booster Station to Box Springs Road #2)	\$ 17,160,000	20.000%		35.200%	44.800%
20	North West Booster Station Expansion Pump #4	\$ 100,000	20.000%		35.200%	44.800%
21	North Reservoir Cell Expansion #2	\$ 3,375,000	61.000%		14.040%	24.960%
23	South Ridge Reservoir Expansion Cell	\$ 5,040,000	98.000%		0.960%	1.040%
100	Unallocated Offsite Levies Collected to Dec 31, 2012 - DO NOT DELETE	\$ -				100.0%

*Allocations to future development (vs municipal share etc.) were determined by City staff and their engineering/consulting advisors.

**Financial oversizing is determined by separating out the pro rata portion of developer cost beyond the 25-year review period, in comparison with the anticipated year of construction. As the years move forward and rates are updated, these additional developer costs will be included in rate calculations. For example, a project which is slated to be constructed in year 20 of the 25-year review period will have 20% (5/25) of its costs in rates today, and 80% (20/25) of its costs will sit beyond the 25-year review period.

B5. Existing Receipts & Adjusted Levy Cost

Using the offsite levy share percentages shown in the previous section and applying those percentages to project costs results in an offsite levy cost of approximately **\$24.92 million**. However, prior to allocating these costs to benefiting areas, existing offsite levy receipts collected from developers need to be considered in determining the residual/net costs to developers. The City has collected **\$19.78 million** (\$10.74 million + \$9.05 million) in offsite levies to date and results in an adjusted offsite levy cost of approximately **\$5.14 million**.

Offsite Levy Funds Collected to Date & Adjusted Levy Cost

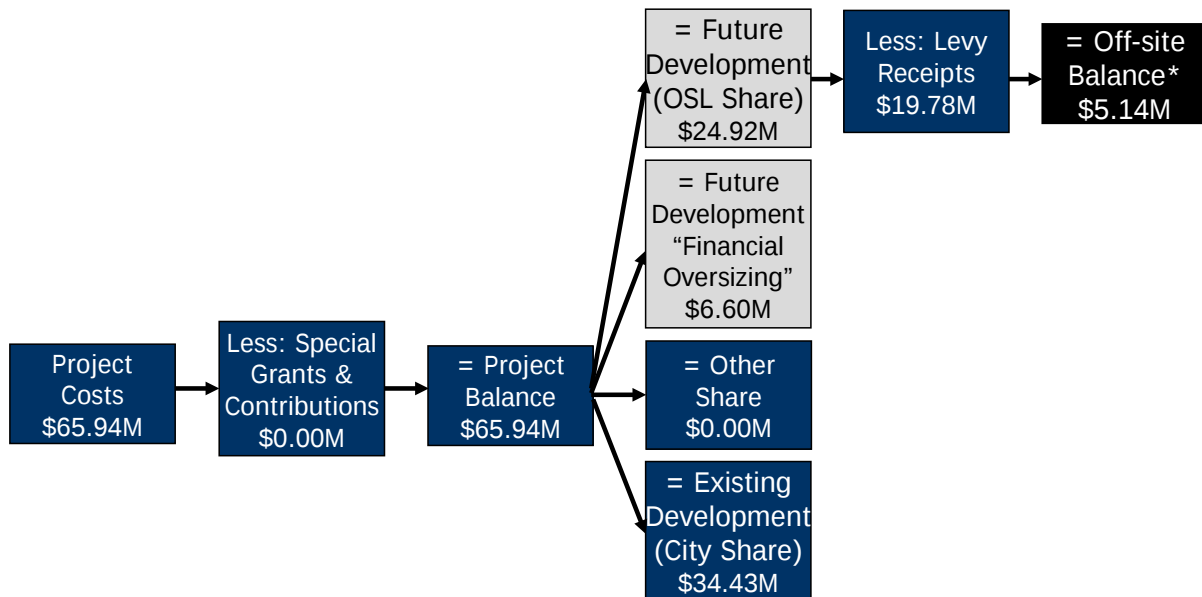
Item	Project Description	OSL / Developer Cost	Offsite Levy Funds Collected to Dec 31, 2012	Offsite Levy Funds Collected Starting Jan 1, 2013	Adjusted Developer (Levy) Cost
1	South Reservoir and Transmission Line	\$ 1,937,660	\$ 3,307,104	\$ -	\$ (1,369,443)
2	North Reservoir	\$ 1,019,676	\$ 2,699,793	\$ -	\$ (1,680,117)
3	South Reservoir Cell #2	\$ 940,096	\$ 761,034	\$ 72,770	\$ 106,291
4	South Reservoir Pump #4	\$ 68,427	\$ 55,958	\$ 5,067	\$ 7,401
7	NW Booster and Transmission Main	\$ 12,325,083	\$ 1,969,038	\$ 2,578,414	\$ 7,777,631
19	Transmission Line Expansion (NW Booster Station to Box Springs Road #2)	\$ 7,687,680	\$ -	\$ 5,160,617	\$ 2,527,063
20	North West Booster Station Expansion Pump #4	\$ 44,800	\$ -	\$ 30,074	\$ 14,726
21	North Reservoir Cell Expansion #2	\$ 842,400	\$ -	\$ 1,097,277	\$ (254,877)
23	South Ridge Reservoir Expansion Cell	\$ 52,416	\$ -	\$ 102,413	\$ (49,997)
100	Unallocated Offsite Levies Collected to Dec 31, 2012 - DO NOT DELETE	\$ -	\$ 1,942,816	\$ -	\$ (1,942,816)
		\$ 24,918,239	\$ 10,735,743	\$ 9,046,631	\$ 5,135,864

B6. Summary of Water Offsite Levy Cost Flow-through

As shown in the figure below, the total cost for water infrastructure that forms the basis of

the rate is approximately **\$5.14 million**. The cost allocations to each benefitting party are based on the benefitting percentages shown in Section B4. The offsite levy balance (due from developers) is allocated to various benefitting areas (as described in the next section).

Total Water Offsite Levy Costs



B7. Water Infrastructure Benefiting Areas

Net developer costs for each project have been allocated to multiple benefitting offsite levy area (see tables below). Allocations are denoted with a "1" below applicable area numbers. Benefitting areas were determined by City staff and their engineering advisors. The lands anticipated to develop over the 25-years in each offsite levy benefitting area are used to determine rates.

Benefiting Areas for Water Offsite Infrastructure

Item	Project Description	Developer Cost	1	2	3	4	5	6	7	8	9	10	11	12
1	South Reservoir and Transmission Line	\$ (1,369,443)											1	1
2	North Reservoir	\$ (1,680,117)					1	1						
3	South Reservoir Cell #2	\$ 106,291											1	1
4	South Reservoir Pump #4	\$ 7,401											1	1
7	NW Booster and Transmission Main	\$ 7,777,631		1	1	1	1							
19	Transmission Line Expansion (NW Booster Station to Box Springs R	\$ 2,527,063		1	1	1	1							
20	North West Booster Station Expansion Pump #4	\$ 14,726		1	1	1	1							
21	North Reservoir Cell Expansion #2	\$ (254,877)	1				1	1						
23	South Ridge Reservoir Expansion Cell	\$ (49,997)												1
100	Unallocated Offsite Levies Collected to Dec 31, 2012 - DO NOT DE	\$ (1,942,816)	1	1	1	1	1	1	1	1	1	1	1	1
		\$ 5,135,864												

B8. Reserve Balance

The balance of the City's water reserve at December 31st, 2020 is **\$8,086,781.61**. This updated balance takes into consideration expenditures up to end-2020 and assumes that front-ending debts will be drawn down via a withdrawal of all available cash in the account.

Water Offsite Levy Reserve Balance

Description	Dr	Cr	Balance
Unallocated OSL Receipts 2011 & Prior	\$ 2,594,314.73		\$ 2,594,314.73
OSL Receipt 2012	\$ 277,206.61		\$ 2,871,521.34
Project Expenditures - Account Withdrawals Applied to Projects 2012 & Prior		\$ 965,196.62	\$ 1,906,324.72
Interest Adjustment 2012	\$ 36,490.85		\$ 1,942,815.57
Account Balance per Muni Records 2012 & Prior			\$ 1,942,815.57
Project Expenditures - Additional Front-ending 2012 & Prior		\$ 1,482,378.57	\$ 460,437.00
Balance			\$ 460,437.00
2013			
Interest on Opening Balance	\$ 9,208.74	\$ -	\$ 460,437.00
Project Expenditures - Account Withdrawals Applied to Projects		\$ 965,196.99	\$ 469,645.74
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ (702,881.50)	\$ (495,551.25)
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ 207,330.25
OSL Receipts	\$ 390,001.34		\$ 207,330.25
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$ 597,331.59
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 8,445.47	\$ 597,331.59
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ 588,886.12
Interest Adjustment for OSL Receipts	\$ 3,900.01		\$ 588,886.12
Closing Balance			\$ 592,786.13
2014			
Interest on Opening Balance	\$ 11,855.72	\$ -	\$ 592,786.13
Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$ 604,641.85
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 244,225.19	\$ 604,641.85
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ 822,731.34
OSL Receipts	\$ 441,765.05		\$ 360,416.66
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$ 360,416.66
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ -	\$ 802,181.71
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ 802,181.71
Interest Adjustment for OSL Receipts	\$ 4,417.65		\$ 802,181.71
Closing Balance			\$ 806,599.36
2015			
Interest on Opening Balance	\$ 16,131.99	\$ -	\$ 806,599.36
Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$ 822,731.34
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 225,184.43	\$ 822,731.34
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ 597,546.91
OSL Receipts	\$ 333,491.31		\$ 597,546.91
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$ 931,038.22
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ -	\$ 931,038.22
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ 931,038.22
Interest Adjustment for OSL Receipts	\$ 3,334.91		\$ 931,038.22
Closing Balance			\$ 934,373.14
2016			
Interest on Opening Balance	\$ 18,687.46	\$ -	\$ 934,373.14
Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$ 953,060.60
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 205,142.36	\$ 953,060.60
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ 747,918.24
OSL Receipts	\$ 285,344.13		\$ 747,918.24
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$ 1,033,262.37
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ -	\$ 1,033,262.37
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ 1,033,262.37
Interest Adjustment for OSL Receipts	\$ 2,853.44		\$ 1,033,262.37
Closing Balance			\$ 1,036,115.81
2017			
Interest on Opening Balance	\$ 20,722.32	\$ -	\$ 1,036,115.81
Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$ 1,056,838.13
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 184,045.40	\$ 1,056,838.13
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ 872,792.73
OSL Receipts	\$ 1,013,256.72		\$ 872,792.73
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$ 1,886,049.45
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ -	\$ 1,886,049.45
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ 1,886,049.45
Interest Adjustment for OSL Receipts	\$ 10,132.57		\$ 1,886,049.45
Closing Balance			\$ 1,896,182.01

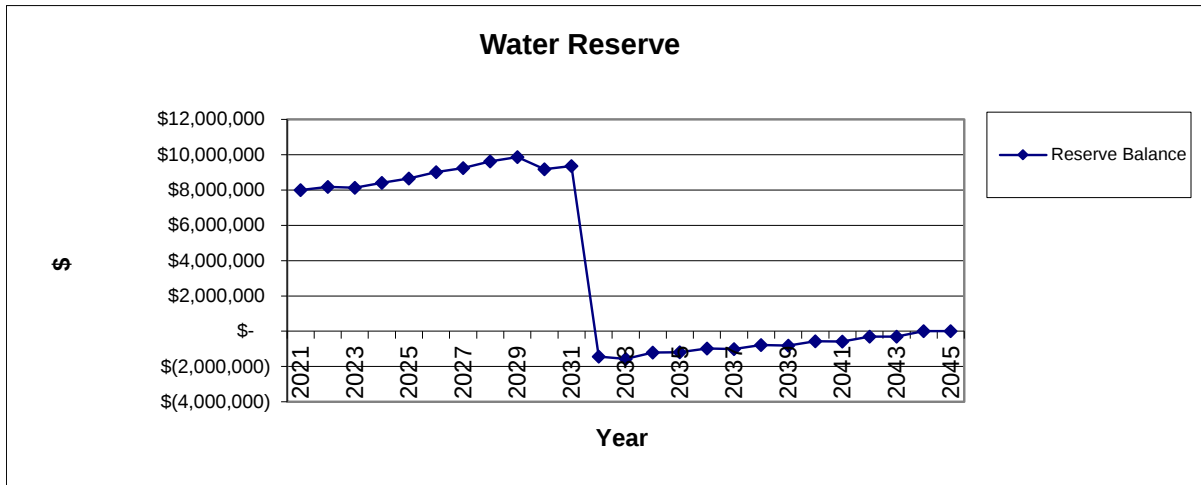
2018			
Interest on Opening Balance	\$ 37,923.64	\$ -	\$ 1,896,182.01
Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$ 1,934,105.65
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 163,119.32	\$ 1,934,105.65
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ 1,770,986.34
OSL Receipts	\$ 4,272,539.19		\$ 6,043,525.53
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$ 6,043,525.53
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ -	\$ 6,043,525.53
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ 6,043,525.53
Interest Adjustment for OSL Receipts	\$ 21,149.07		\$ 6,064,674.60
Closing Balance			\$ 6,064,674.60
2019			\$ 6,064,674.60
Interest on Opening Balance	\$ 121,293.49	\$ -	\$ 6,185,968.09
Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$ 6,185,968.09
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 145,765.34	\$ 6,040,202.75
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ 6,040,202.75
OSL Receipts	\$ 627,389.07		\$ 6,667,591.82
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$ 6,667,591.82
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ -	\$ 6,667,591.82
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ 6,667,591.82
Interest Adjustment for OSL Receipts	\$ 3,105.58		\$ 6,670,697.39
Closing Balance			\$ 6,670,697.39
2020			\$ 6,670,697.39
Interest on Opening Balance	\$ 133,413.95	\$ -	\$ 6,804,111.34
Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$ 6,804,111.34
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 129,925.61	\$ 6,674,185.73
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ 6,674,185.73
OSL Receipts	\$ 1,405,637.97		\$ 8,079,823.70
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$ 8,079,823.70
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ -	\$ 8,079,823.70
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ 8,079,823.70
Interest Adjustment for OSL Receipts	\$ 6,957.91		\$ 8,086,781.61
Closing Balance			\$ 8,086,781.61

B9. Development and Water Infrastructure Staging Impacts

Water offsite infrastructure will be constructed in staged fashion over the 25-year review period. We have reviewed the availability of offsite levy funds to meet these construction requirements and found that offsite levy reserve funds will not be sufficient to pay for construction of water infrastructure from time to time—front ending of infrastructure will be required. A front-end is the party that constructs and pays up front for infrastructure that benefits other parties. The front-end (be it a municipality or a developer) is reimbursed over time as levies are collected, and in accordance with the municipality's front-ending repayment policies.

To compensate parties for capital they provide in front-ending offsite infrastructure construction, a **3.62%** interest allowance has been charged to the reserve when it is forecast to be in a negative balance. Further, a **1.00%** interest credit has been provided to the reserve when it is forecast to be in a positive balance. The graph and table below outline the forecast water levy reserve balances over the 25-year development period.

If necessary, an interest staging adjustment has been applied to rates (slightly positive or slightly negative) to ensure that the forecast reserve balance at the end of the 25-year review period always returns to break-even (i.e., developers are not charged too much thereby providing a windfall to the City, nor are they charged too little thereby placing an unequitable burden on taxpayers).

Anticipated Water Offsite Levy Reserve Balances³Anticipated Water Offsite Levy Reserve Balances

Year	Receipts	Expenditure	Opening Balance	Interest	Balance
2021	\$ -	\$ 164,014	\$ 79,228	\$ 8,086,782	\$ 8,001,996
2022	\$ 234,811	\$ 145,569	\$ 80,912		\$ 8,172,150
2023	\$ -	\$ 125,410	\$ 80,467		\$ 8,127,208
2024	\$ 303,451	\$ 100,579	\$ 83,301		\$ 8,413,380
2025	\$ 224,520	\$ 71,280	\$ 85,666		\$ 8,652,286
2026	\$ 321,932	\$ 50,209	\$ 89,240		\$ 9,013,249
2027	\$ 144,796	\$ 11,863	\$ 91,462		\$ 9,237,643
2028	\$ 288,596	\$ 3,316	\$ 95,229		\$ 9,618,152
2029	\$ 153,614	\$ 1,382	\$ 97,704		\$ 9,868,088
2030	\$ 362,337	\$ 1,142,965	\$ 90,875		\$ 9,178,334
2031	\$ 105,119	\$ 23,909	\$ 92,595		\$ 9,352,139
2032	\$ 384,403	\$ 11,124,297	\$ (50,237)		\$ (1,437,991)
2033	\$ -	\$ 77,670	\$ (54,867)		\$ (1,570,529)
2034	\$ 407,813	\$ -	\$ (42,090)		\$ (1,204,806)
2035	\$ 56,494	\$ -	\$ (41,569)		\$ (1,189,880)
2036	\$ 243,723	\$ -	\$ (34,251)		\$ (980,408)
2037	\$ -	\$ -	\$ (35,491)		\$ (1,015,899)
2038	\$ 258,565	\$ -	\$ (27,415)		\$ (784,749)
2039	\$ -	\$ -	\$ (28,408)		\$ (813,157)
2040	\$ 274,312	\$ -	\$ (19,506)		\$ (558,351)
2041	\$ -	\$ -	\$ (20,212)		\$ (578,563)
2042	\$ 291,018	\$ -	\$ (10,409)		\$ (297,955)
2043	\$ -	\$ -	\$ (10,786)		\$ (308,741)
2044	\$ 308,741	\$ -	\$ (0)		\$ (0)
2045	\$ -	\$ -	\$ (0)		\$ (0)

³ In determining staging adjustments, the offsite levy model also applies inflation to future rates. In so doing it acknowledges that rates must keep pace with inflation just as costs do. Also, it acknowledges that an offsite levy rate of \$X paid today is not worth the same as the equivalent \$X rate paid in the future (i.e., it is discounted).

APPENDIX C: SANITARY OFFSITE INFRASTRUCTURE

C1. Sanitary Offsite Infrastructure Costs

To support future growth, sanitary offsite infrastructure is required. The estimated cost of this infrastructure is based upon: (a) actual construction costs to the cut-off date, (b) debenture interest associated with financing, and (c) future cost estimates. Total cost is approximately **\$131.00 million** as outlined in the table below. Actual costs, debenture interest (if any), and cost estimates were provided by City staff. It is important to note that these costs represent “gross” costs, of which only a portion will go to support future development during the 25-year review period. The remainder of this section outlines how the “net” costs for future development are determined.

Summary of Sanitary Offsite Infrastructure

Item	Project Description	Cost of Completed Work	Future Debenture Interest	Estimated Cost of Work Yet to be Completed	Total Project Estimated Cost
1	Parkview Siphon - Twin Lines (1996)	\$ 1,487,012	\$ -	\$ -	\$ 1,487,012
2	Porcelaine Avenue (IXL Yard) (1997)	\$ 1,081,559	\$ -	\$ -	\$ 1,081,559
3	SW Trunk Upgrade Spencer Street to Porcelaine Avenue (2001)	\$ 2,741,890	\$ -	\$ -	\$ 2,741,890
4	SW Sanitary Trunk - SW Industrial and Ajax Coulee (2002)	\$ 2,570,085	\$ 5,836	\$ -	\$ 2,575,921
5	Altawana Drive Pipe Tripling (2002)	\$ 365,520	\$ 1,285	\$ -	\$ 366,804
6	Purmal Forcemain Twin Lines (2003)	\$ 11,296,631	\$ 91,999	\$ -	\$ 11,388,630
7	SW Sanitary Trunk - Electric Yard (2004)	\$ 2,282,901	\$ 31,049	\$ -	\$ 2,313,949
9	Southlands Lift Station and Forcemain (2004)	\$ 10,439,155	\$ 148,345	\$ -	\$ 10,587,500
11	South Central Trunk Upgrade - Ronan Place (2006)	\$ 395,573	\$ 13,587	\$ -	\$ 409,160
12	3rd Street NW Trunk Line (2006)	\$ 3,501,913	\$ 137,951	\$ -	\$ 3,639,864
13	South Boundary Road Sanitary Trunk Main (2006)	\$ 7,663,118	\$ -	\$ -	\$ 7,663,118
14	South West Sector (Desert Blume) Lift Station and Forcemain (2006)	\$ 2,007,901	\$ 70,629	\$ -	\$ 2,078,530
16	SW Trunk Sanitary Sewer Upgrade - Ajax Coulee / Parks Yard (2011)	\$ 295,257	\$ 27,607	\$ -	\$ 322,863
21	Purmal Lift Station	\$ 6,555,287	\$ -	\$ 9,251	\$ 6,564,538
22	Crescent Heights Lift Station and Forcemain	\$ 6,501,436	\$ -	\$ 2,569	\$ 6,504,005
23	Brier Park Gravity Bypass Phase 1	\$ 5,878,851	\$ -	\$ -	\$ 5,878,851
24	Brier Park Gravity Bypass Phase 2	\$ 4,240,937	\$ -	\$ 18,954	\$ 4,259,892
25	Brier Park Gravity Bypass Phase 2B	\$ -	\$ -	\$ 2,254,656	\$ 2,254,656
26	Brier Park Gravity Bypass Phase 3	\$ -	\$ -	\$ 7,755,921	\$ 7,755,921
27	Brier Park Gravity Bypass Phase 4A	\$ -	\$ -	\$ 5,640,000	\$ 5,640,000
28	Brier Park Gravity Bypass Phase 4B	\$ -	\$ -	\$ 2,160,000	\$ 2,160,000
29	Brier Park Gravity Bypass Phase 5	\$ -	\$ -	\$ 1,320,000	\$ 1,320,000
30	Box Springs Lift Station	\$ -	\$ -	\$ 4,300,000	\$ 4,300,000
31	Box Springs Forcemain	\$ -	\$ -	\$ 18,000,000	\$ 18,000,000
33	Strachan Road/Dunmore Sanitary Upgrades	\$ -	\$ -	\$ 9,600,000	\$ 9,600,000
34	10th Avenue SW Trunk Sewer Expansion	\$ -	\$ -	\$ 300,000	\$ 300,000
35	Coulee Ridge Lift Station and Forcemain Expansion	\$ -	\$ -	\$ 4,300,000	\$ 4,300,000
36	Southlands 7 Lift Station	\$ -	\$ -	\$ 1,670,000	\$ 1,670,000
37	Southlands 7 Forcemain	\$ -	\$ -	\$ 3,840,000	\$ 3,840,000
100	Unallocated Offsite Levies Collected to Dec 31, 2012 - DO NOT DELETE	\$ -	\$ -	\$ -	\$ -
		\$ 69,305,027	\$ 528,287	\$ 61,171,351	\$ 131,004,664

*Costs estimates are reflected in current dollars.

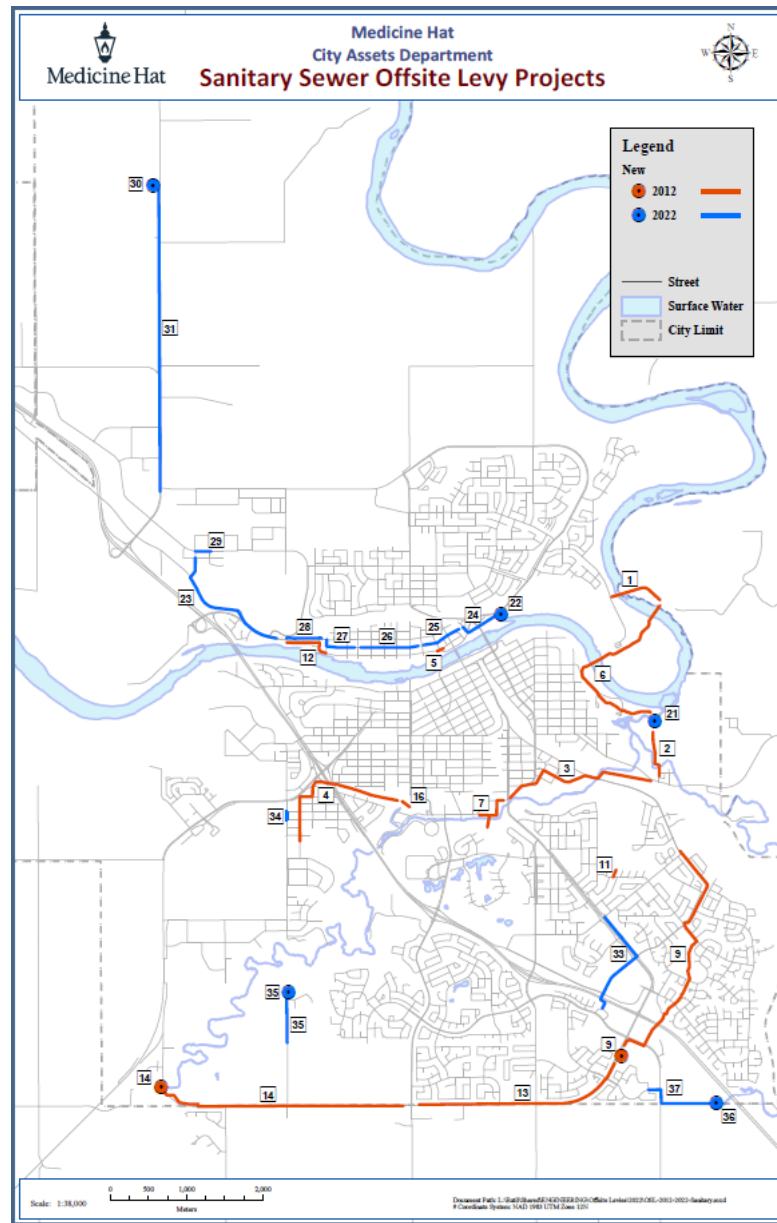
**Estimates include engineering costs and contingencies.

***Offsite levy project details, allocations, etc. were determined by City staff and their engineering/consulting advisors.

****Financing interest costs to date (if any) are included in the cost of work completed.

*****Project numbering may be out of sequence as rows containing deleted projects are hidden.

Location of Sanitary Projects



C2. Sanitary Offsite Infrastructure Grants & Contributions to Date

The MGA enables the City to allocate the costs of offsite infrastructure to future development, other than those costs that have been provided by way of special grant or contribution (i.e., contributed infrastructure). The City has/will receive **\$5.40 million** in special grants and contributions for sanitary offsite levy infrastructure as shown in the table below (note, if the City receives additional grants or contributions in the future, it will be reflected in one of the annual updates and rates adjusted accordingly). The result is that the total reduced project estimated cost is **\$125.60 million**.

Special Grants and Contributions for Sanitary Offsite Infrastructure

Item	Project Description	Total Project Estimated Cost	Special Provincial Grants (Historic & Future)	Developer Agreement Contributions (Historic & Future)	Reduced Project Estimated Cost
1	Parkview Siphon - Twin Lines (1996)	\$ 1,487,012	\$ -	\$ -	\$ 1,487,012
2	Porcelaine Avenue (IXL Yard) (1997)	\$ 1,081,559	\$ -	\$ -	\$ 1,081,559
3	SW Trunk Upgrade Spencer Street to Porcelaine Avenue (2001)	\$ 2,741,890	\$ -	\$ -	\$ 2,741,890
4	SW Sanitary Trunk - SW Industrial and Ajax Coulee (2002)	\$ 2,575,921	\$ -	\$ -	\$ 2,575,921
5	Altawana Drive Pipe Tripling (2002)	\$ 366,804	\$ -	\$ -	\$ 366,804
6	Purmal Forcmain Twin Lines (2003)	\$ 11,388,630	\$ -	\$ -	\$ 11,388,630
7	SW Sanitary Trunk - Electric Yard (2004)	\$ 2,313,949	\$ -	\$ -	\$ 2,313,949
9	Southlands Lift Station and Forcmain (2004)	\$ 10,587,500	\$ -	\$ -	\$ 10,587,500
11	South Central Trunk Upgrade - Ronan Place (2006)	\$ 409,160	\$ -	\$ -	\$ 409,160
12	3rd Street NW Trunk Line (2006)	\$ 3,639,864	\$ -	\$ -	\$ 3,639,864
13	South Boundary Road Sanitary Trunk Main (2006)	\$ 7,663,118	\$ -	\$ -	\$ 7,663,118
14	South West Sector (Desert Blume) Lift Station and Forcmain (2006)	\$ 2,078,530	\$ -	\$ -	\$ 2,078,530
16	SW Trunk Sanitary Sewer Upgrade - Ajax Coulee / Parks Yard (2011)	\$ 322,863	\$ -	\$ -	\$ 322,863
21	Purmal Lift Station	\$ 6,564,538	\$ -	\$ -	\$ 6,564,538
22	Crescent Heights Lift Station and Forcmain	\$ 6,504,005	\$ -	\$ -	\$ 6,504,005
23	Brier Park Gravity Bypass Phase 1	\$ 5,878,851	\$ -	\$ -	\$ 5,878,851
24	Brier Park Gravity Bypass Phase 2	\$ 4,259,892	\$ -	\$ -	\$ 4,259,892
25	Brier Park Gravity Bypass Phase 2B	\$ 2,254,656	\$ -	\$ -	\$ 2,254,656
26	Brier Park Gravity Bypass Phase 3	\$ 7,755,921	\$ 5,400,000	\$ -	\$ 2,355,921
27	Brier Park Gravity Bypass Phase 4A	\$ 5,640,000	\$ -	\$ -	\$ 5,640,000
28	Brier Park Gravity Bypass Phase 4B	\$ 2,160,000	\$ -	\$ -	\$ 2,160,000
29	Brier Park Gravity Bypass Phase 5	\$ 1,320,000	\$ -	\$ -	\$ 1,320,000
30	Box Springs Lift Station	\$ 4,300,000	\$ -	\$ -	\$ 4,300,000
31	Box Springs Forcmain	\$ 18,000,000	\$ -	\$ -	\$ 18,000,000
33	Strachan Road/Dunmore Sanitary Upgrades	\$ 9,600,000	\$ -	\$ -	\$ 9,600,000
34	10th Avenue SW Trunk Sewer Expansion	\$ 300,000	\$ -	\$ -	\$ 300,000
35	Coulee Ridge Lift Station and Forcmain Expansion	\$ 4,300,000	\$ -	\$ -	\$ 4,300,000
36	Southlands 7 Lift Station	\$ 1,670,000	\$ -	\$ -	\$ 1,670,000
37	Southlands 7 Forcmain	\$ 3,840,000	\$ -	\$ -	\$ 3,840,000
100	Unallocated Offsite Levies Collected to Dec 31, 2012 - DO NOT DELET	\$ -	\$ -	\$ -	\$ -
		\$ 131,004,664	\$ 5,400,000	\$ -	\$ 125,604,664

C3. Sanitary Infrastructure Staging

The timing of construction is used to determine the impact of inflation on cost, the impact of forecast reserve balances, and the estimate of financial oversizing (described in the Section that follows). The City anticipates construction of offsite infrastructure as outlined in the table below. Note, if this schedule is adjusted in the future, it will be reflected in one of the annual rate/bylaw updates.

Sanitary Infrastructure Staging

Item	Project Description	Construction Start Year
1	Parkview Siphon - Twin Lines (1996)	1996
2	Porcelaine Avenue (IXL Yard) (1997)	1997
3	SW Trunk Upgrade Spencer Street to Porcelaine Avenue (2001)	2001
4	SW Sanitary Trunk - SW Industrial and Ajax Coulee (2002)	2002
5	Altawana Drive Pipe Tripling (2002)	2002
6	Purmal Forcemain Twin Lines (2003)	2003
7	SW Sanitary Trunk - Electric Yard (2004)	2004
9	Southlands Lift Station and Forcemain (2004)	2004
11	South Central Trunk Upgrade - Ronan Place (2006)	2006
12	3rd Street NW Trunk Line (2006)	2006
13	South Boundary Road Sanitary Trunk Main (2006)	2006
14	South West Sector (Desert Blume) Lift Station and Forcemain (2006)	2006
16	SW Trunk Sanitary Sewer Upgrade - Ajax Coulee / Parks Yard (2011)	2011
21	Purmal Lift Station	2014
22	Crescent Heights Lift Station and Forcemain	2014
23	Brier Park Gravity Bypass Phase 1	2017
24	Brier Park Gravity Bypass Phase 2	2019
25	Brier Park Gravity Bypass Phase 2B	2021
26	Brier Park Gravity Bypass Phase 3	2022
27	Brier Park Gravity Bypass Phase 4A	2023
28	Brier Park Gravity Bypass Phase 4B	2024
29	Brier Park Gravity Bypass Phase 5	2025
30	Box Springs Lift Station	2046
31	Box Springs Forcemain	2046
33	Strachan Road/Dunmore Sanitary Upgrades	2030
34	10th Avenue SW Trunk Sewer Expansion	2027
35	Coulee Ridge Lift Station and Forcemain Expansion	2030
36	Southlands 7 Lift Station	2025
37	Southlands 7 Forcemain	2025

*The pro rata share of project cost beyond the 25-year review period are not included in rates today (see financial oversizing in next section).

**Costs are inflated to the year of construction using an inflation rate of 4% in the first year, 5% in the second year, 4% in the third year, and 3% thereafter.

C4. Sanitary Offsite Infrastructure Benefiting Parties

The sanitary offsite infrastructure previously outlined will benefit various parties to varying degrees as determined by City staff and engineering advisors. The potential benefiting parties were include:

- City of Medicine Hat – that portion of cost which is required to service existing residents.
- Other Stakeholders - other parties (such as neighboring municipalities) that benefit from the infrastructure.
- City of Medicine Hat Future Development (Financial Oversizing) - that portion of cost which benefits future development beyond the 25-year review period.
- City of Medicine Hat Future Development (in Rates) – all growth-related infrastructure (i.e., leviable sanitary infrastructure costs) during the 25-year rate planning period.

The table below outlines the allocation of sanitary offsite levy infrastructure costs to

benefiting parties.

Allocation of Sanitary Infrastructure to Benefiting Parties

Item	Project Description	Reduced Project Estimated Cost	Muni Share %	Other Stakeholder Share	Developer Share Beyond 25 Yrs (Financial Oversizing %)	OSL / Developer Share %
1	Parkview Siphon - Twin Lines (1996)	\$ 1,487,012	64.066%		0.000%	35.934%
2	Porcelaine Avenue (IXL Yard) (1997)	\$ 1,081,559	71.451%		0.000%	28.549%
3	SW Trunk Upgrade Spencer Street to Porcelaine Avenue (2001)	\$ 2,741,890	80.292%		0.000%	19.708%
4	SW Sanitary Trunk - SW Industrial and Ajax Coulee (2002)	\$ 2,575,921	64.340%		0.000%	35.660%
5	Altawana Drive Pipe Tripling (2002)	\$ 366,804	8.574%		0.000%	91.426%
6	Purmal Forcemain Twin Lines (2003)	\$ 11,388,630	48.458%		0.000%	51.542%
7	SW Sanitary Trunk - Electric Yard (2004)	\$ 2,313,949	70.480%		0.000%	29.520%
9	Southlands Lift Station and Forcemain (2004)	\$ 10,587,500	46.553%	4.799%	0.000%	48.648%
11	South Central Trunk Upgrade - Ronan Place (2006)	\$ 409,160	96.523%		0.000%	3.477%
12	3rd Street NW Trunk Line (2006)	\$ 3,639,864	41.488%		0.000%	58.512%
13	South Boundary Road Sanitary Trunk Main (2006)	\$ 7,663,118	46.553%	7.528%	0.000%	45.919%
14	South West Sector (Desert Blume) Lift Station and Forcemain (2006)	\$ 2,078,530			0.000%	100.000%
16	SW Trunk Sanitary Sewer Upgrade - Ajax Coulee / Parks Yard (2011)	\$ 322,863	66.604%		0.000%	33.396%
21	Purmal Lift Station	\$ 6,564,538	54.000%		0.000%	46.000%
22	Crescent Heights Lift Station and Forcemain	\$ 6,504,005	8.000%		0.000%	92.000%
23	Brier Park Gravity Bypass Phase 1	\$ 5,878,851	79.000%		0.000%	21.000%
24	Brier Park Gravity Bypass Phase 2	\$ 4,259,892	79.000%		0.000%	21.000%
25	Brier Park Gravity Bypass Phase 2B	\$ 2,254,656	79.000%		0.000%	21.000%
26	Brier Park Gravity Bypass Phase 3	\$ 2,355,921	79.000%		0.840%	20.160%
27	Brier Park Gravity Bypass Phase 4A	\$ 5,640,000	79.000%		1.680%	19.320%
28	Brier Park Gravity Bypass Phase 4B	\$ 2,160,000	79.000%		2.520%	18.480%
29	Brier Park Gravity Bypass Phase 5	\$ 1,320,000	79.000%		3.360%	17.640%
30	Box Springs Lift Station	\$ 4,300,000	19.000%		81.000%	0.000%
31	Box Springs Forcemain	\$ 18,000,000	19.000%		81.000%	0.000%
33	Strachan Road/Dunmore Sanitary Upgrades	\$ 9,600,000	98.000%		0.720%	1.280%
34	10th Avenue SW Trunk Sewer Expansion	\$ 300,000	85.000%		3.600%	11.400%
35	Coulee Ridge Lift Station and Forcemain Expansion	\$ 4,300,000	3.000%		34.920%	62.080%
36	Southlands 7 Lift Station	\$ 1,670,000	22.000%		12.480%	65.520%
37	Southlands 7 Forcemain	\$ 3,840,000	22.000%		12.480%	65.520%
100	Unallocated Offsite Levies Collected to Dec 31, 2012 - DO NOT DELET	\$ -				100.0%
		\$ 125,604,664				

*Allocations to future development (vs municipal share etc.) were determined by City staff and their engineering/consulting advisors.

**Financial oversizing is determined by separating out the pro rata portion of developer cost beyond the 25-year review period, in comparison with the anticipated year of construction. As the years move forward and rates are updated, these additional developer costs will be included in rate calculations. For example, a project which is slated to be constructed in year 20 of the 25-year review period will have 20% (5/25) of its costs in rates today, and 80% (20/25) of its costs will sit beyond the 25-year review period.

C5. Existing Receipts & Adjusted Levy Cost

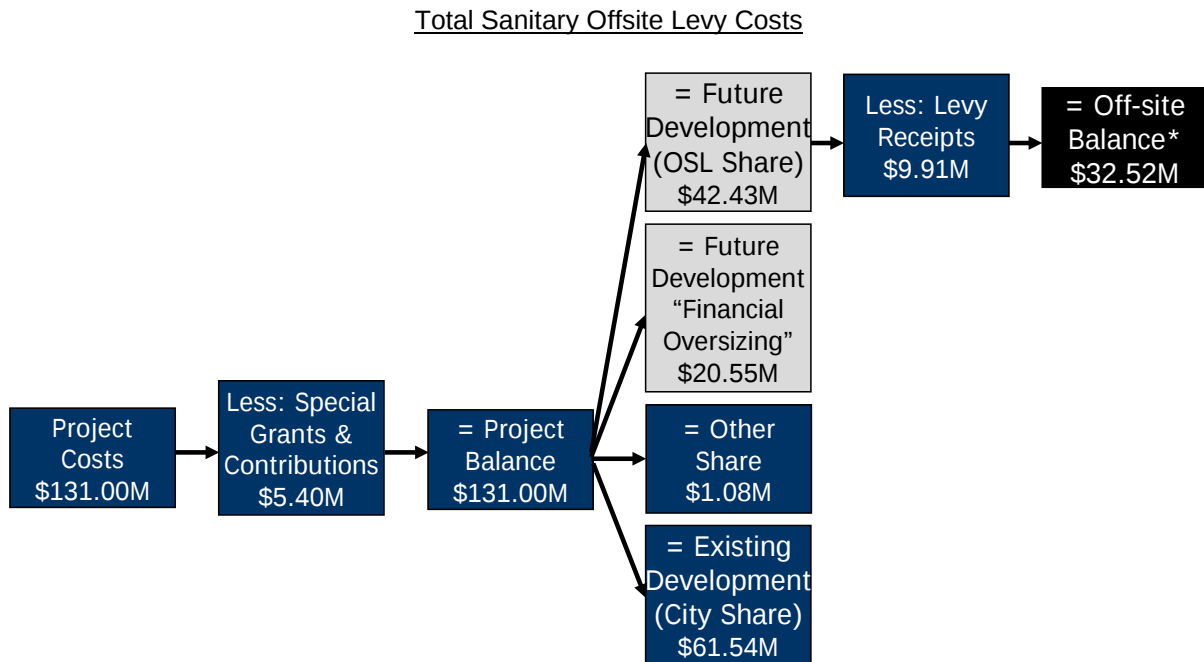
Using the offsite levy share percentages shown in the previous section and applying those percentages to project costs results in an offsite levy cost of approximately **\$42.43 million**. However, prior to allocating these costs to benefiting areas, existing offsite levy receipts collected from developers need to be considered in determining the residual/net costs to developers. The City has collected **\$9.91 million** (\$6.48 million + \$3.43 million) in offsite levies to date, and this results in an adjusted offsite levy cost of approximately **\$32.52 million**.

Offsite Levy Funds Collected to Date & Adjusted Levy Cost

Item	Project Description	OSL / Developer Cost	Offsite Levy Funds Collected to Dec 31, 2012	Offsite Levy Funds Collected Starting Jan 1, 2013	Adjusted Developer (Levy) Cost
1	Parkview Siphon - Twin Lines (1996)	\$ 534,343	\$ 313,865	\$ 3,623	\$ 216,855
2	Porcelaine Avenue (IXL Yard) (1997)	\$ 308,774	\$ 242,099	\$ 7,014	\$ 59,661
3	SW Trunk Upgrade Spencer Street to Porcelaine Avenue (2001)	\$ 540,372	\$ 459,471	\$ 2,705	\$ 78,196
4	SW Sanitary Trunk - SW Industrial and Ajax Coulee (2002)	\$ 918,574	\$ 498,694	\$ -	\$ 419,880
5	Altawana Drive Pipe Tripling (2002)	\$ 335,355	\$ 68,271	\$ 0	\$ 267,084
6	Purmal Forcmain Twin Lines (2003)	\$ 5,869,928	\$ 1,740,543	\$ 434,412	\$ 3,694,972
7	SW Sanitary Trunk - Electric Yard (2004)	\$ 683,078	\$ 395,882	\$ 9,603	\$ 277,593
9	Southlands Lift Station and Forcmain (2004)	\$ 5,150,607	\$ 1,351,786	\$ 562,671	\$ 3,236,150
11	South Central Trunk Upgrade - Ronan Place (2006)	\$ 14,226	\$ 40,667	\$ (7,768)	\$ (18,672)
12	3rd Street NW Trunk Line (2006)	\$ 2,129,757	\$ 372,493	\$ 51,938	\$ 1,705,327
13	South Boundary Road Sanitary Trunk Main (2006)	\$ 3,518,827	\$ 786,292	\$ 404,736	\$ 2,327,800
14	South West Sector (Desert Blume) Lift Station and Forcmain (2006)	\$ 2,078,530	\$ 204,706	\$ 277,546	\$ 1,596,278
16	SW Trunk Sanitary Sewer Upgrade - Ajax Coulee / Parks Yard (2011)	\$ 107,823	\$ 3,972	\$ -	\$ 103,851
21	Purmal Lift Station	\$ 3,019,687	\$ -	\$ 234,801	\$ 2,784,886
22	Crescent Heights Lift Station and Forcmain	\$ 5,983,685	\$ -	\$ 101,263	\$ 5,882,422
23	Brier Park Gravity Bypass Phase 1	\$ 1,234,559	\$ -	\$ 130,316	\$ 1,104,243
24	Brier Park Gravity Bypass Phase 2	\$ 894,577	\$ -	\$ 94,429	\$ 800,148
25	Brier Park Gravity Bypass Phase 2B	\$ 473,478	\$ -	\$ 49,979	\$ 423,499
26	Brier Park Gravity Bypass Phase 3	\$ 474,954	\$ -	\$ 50,135	\$ 424,819
27	Brier Park Gravity Bypass Phase 4A	\$ 1,089,648	\$ -	\$ 115,020	\$ 974,628
28	Brier Park Gravity Bypass Phase 4B	\$ 399,168	\$ -	\$ 42,135	\$ 357,033
29	Brier Park Gravity Bypass Phase 5	\$ 232,848	\$ -	\$ 24,579	\$ 208,269
30	Box Springs Lift Station	\$ -	\$ -	\$ 57,648	\$ (57,648)
31	Box Springs Forcmain	\$ -	\$ -	\$ 241,318	\$ (241,318)
33	Strachan Road/Dunmore Sanitary Upgrades	\$ 122,880	\$ -	\$ 90,257	\$ 32,623
34	10th Avenue SW Trunk Sewer Expansion	\$ 34,200	\$ -	\$ 1,372	\$ 32,828
35	Coulee Ridge Lift Station and Forcmain Expansion	\$ 2,669,440	\$ -	\$ 148,762	\$ 2,520,678
36	Southlands 7 Lift Station	\$ 1,094,184	\$ -	\$ 90,673	\$ 1,003,511
37	Southlands 7 Forcmain	\$ 2,515,968	\$ -	\$ 208,493	\$ 2,307,475
100	Unallocated Offsite Levies Collected to Dec 31, 2012 - DO NOT DELETE	\$ -	\$ -	\$ -	\$ -
		\$ 42,429,469	\$ 6,478,742	\$ 3,427,657	\$ 32,523,071

C6. Summary of Sanitary Offsite Levy Cost Flow-through

As shown in the figure below, the total costs for sanitary infrastructure that forms the basis of the rate is approximately **\$32.52 million**. The cost allocations to each benefitting party are based on the benefitting percentages shown in Section C4. The offsite levy balance (due from developers) is allocated to various benefitting areas (as described in the next section).



C7. Sanitary Infrastructure Benefiting Areas

Net developer costs for each project have been allocated to multiple benefiting offsite levy area (see tables below). Allocations are denoted with a "1" below applicable area numbers. Benefiting areas were determined by City staff. The lands anticipated to develop over the 25-years in each offsite levy benefiting area are used to determine rates.

Benefiting Areas for Sanitary Offsite Infrastructure

Item	Project Description	Developer Cost	1	2	3	4	5	6	7	8	9	10	11	12
1	Parkview Siphon - Twin Lines (1996)	\$ 216,855			1	1	1	1						
2	Porcelaine Avenue (IXL Yard) (1997)	\$ 59,661									1	1	1	1
3	SW Trunk Upgrade Spencer Street to Porcelaine Avenue (2001)	\$ 78,196									1	1	1	
4	SW Sanitary Trunk - SW Industrial and Ajax Coulee (2002)	\$ 419,880									1	1		
5	Altawana Drive Pipe Tripling (2002)	\$ 267,084							1					
6	Purmal Forcemain Twin Lines (2003)	\$ 3,694,972									1	1	1	1
7	SW Sanitary Trunk - Electric Yard (2004)	\$ 277,593									1		1	
9	Southlands Lift Station and Forcemain (2004)	\$ 3,236,150											1	1
11	South Central Trunk Upgrade - Ronan Place (2006)	\$ (18,672)												1
12	3rd Street NW Trunk Line (2006)	\$ 1,705,327			1	1			1					
13	South Boundary Road Sanitary Trunk Main (2006)	\$ 2,327,800											1	1
14	South West Sector (Desert Blume) Lift Station and Forcemain (2006)	\$ 1,596,278											1	
16	SW Trunk Sanitary Sewer Upgrade - Ajax Coulee / Parks Yard (2011)	\$ 103,851									1			
21	Purmal Lift Station	\$ 2,784,886									1	1	1	1
22	Crescent Heights Lift Station and Forcemain	\$ 5,882,422	1	1	1	1		1	1					
23	Brier Park Gravity Bypass Phase 1	\$ 1,104,243		1	1	1			1					
24	Brier Park Gravity Bypass Phase 2	\$ 800,148		1	1	1			1					
25	Brier Park Gravity Bypass Phase 2B	\$ 423,499		1	1	1			1					
26	Brier Park Gravity Bypass Phase 3	\$ 424,819		1	1	1			1					
27	Brier Park Gravity Bypass Phase 4A	\$ 974,628		1	1	1			1					
28	Brier Park Gravity Bypass Phase 4B	\$ 357,033		1	1	1			1					
29	Brier Park Gravity Bypass Phase 5	\$ 208,269		1	1	1			1					
30	Box Springs Lift Station	\$ (57,648)		1	1	1			1					
31	Box Springs Forcemain	\$ (241,318)		1	1	1			1					
33	Strachan Road/Dunmore Sanitary Upgrades	\$ 32,623												1
34	10th Avenue SW Trunk Sewer Expansion	\$ 32,828									1		1	
35	Coulee Ridge Lift Station and Forcemain Expansion	\$ 2,520,678											1	
36	Southlands 7 Lift Station	\$ 1,003,511												1
37	Southlands 7 Forcemain	\$ 2,307,475												1
100	Unallocated Offsite Levies Collected to Dec 31, 2012 - DO NOT DELETE	\$ -	1	1	1	1	1	1	1	1	1	1	1	1

C8. Reserve Balance

The balance of the City's sanitary reserve at December 31st, 2020 is **\$(32,075,857.86)**. This updated balance takes into consideration expenditures up to end-2020 and assumes that front-ending debts will be drawn down via a withdrawal of all available cash in the account.

Sanitary Offsite Levy Reserve Balance

Description	Dr	Cr	Balance
Unallocated OSL Receipts 2011 & Prior	\$ -		\$ -
OSL Receipt 2012	\$ 54,758.80		\$ 54,758.80
Project Expenditures - Account Withdrawals Applied to Projects 2012 & Prior		\$ 55,093.13	\$ (334.33)
Interest Adjustment 2012	\$ 334.33		\$ 0.00
Account Balance per Muni Records 2012 & Prior			\$ 0.00
Project Expenditures - Additional Front-ending 2012 & Prior		\$12,724,155.97	\$ (12,724,155.97)
Balance			\$(12,724,155.97)
2013			\$(12,724,155.97)
Interest on Opening Balance	\$ -	\$ 445,345.46	\$ (13,169,501.43)
Project Expenditures - Account Withdrawals Applied to Projects		\$ 418,507.33	\$ (13,588,008.76)
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 49,591.31	\$ (13,637,600.07)
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ (13,637,600.07)
OSL Receipts	\$ 403,388.02		\$ (13,234,212.05)
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ 3,896.77	\$ (13,238,108.82)
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 3,661.94	\$ (13,241,770.76)
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ (13,241,770.76)
Interest Adjustment for OSL Receipts	\$ 4,033.88		\$ (13,237,736.88)
Closing Balance			\$(13,237,736.88)

City of Medicine Hat Offsite Levy Rates Review

2014			
Interest on Opening Balance	\$ -	\$ 463,320.79	\$(13,237,736.88)
Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$(13,701,057.67)
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 521,325.11	\$(14,222,382.78)
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$(14,222,382.78)
OSL Receipts	\$ 236,324.45		\$(13,986,058.33)
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ 4,054.06	\$(13,990,112.39)
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ -	\$(13,990,112.39)
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$(13,990,112.39)
Interest Adjustment for OSL Receipts	\$ 2,363.24		\$(13,987,749.14)
Closing Balance			\$(13,987,749.14)
2015			\$(13,987,749.14)
Interest on Opening Balance	\$ -	\$ 489,571.22	\$(14,477,320.36)
Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$(14,477,320.36)
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 668,722.90	\$(15,146,043.26)
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$(15,146,043.26)
OSL Receipts	\$ 391,027.64		\$(14,755,015.62)
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ 4,283.75	\$(14,759,299.37)
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ -	\$(14,759,299.37)
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$(14,759,299.37)
Interest Adjustment for OSL Receipts	\$ 3,910.28		\$(14,755,389.09)
Closing Balance			\$(14,755,389.09)
2016			\$(14,755,389.09)
Interest on Opening Balance	\$ -	\$ 516,438.62	\$(15,271,827.71)
Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$(15,271,827.71)
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 1,576,457.21	\$(16,848,284.92)
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$(16,848,284.92)
OSL Receipts	\$ 82,579.80		\$(16,765,705.12)
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ 4,518.84	\$(16,770,223.96)
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ -	\$(16,770,223.96)
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$(16,770,223.96)
Interest Adjustment for OSL Receipts	\$ 825.80		\$(16,769,398.16)
Closing Balance			\$(16,769,398.16)
2017			\$(16,769,398.16)
Interest on Opening Balance	\$ -	\$ 586,928.94	\$(17,356,327.09)
Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$(17,356,327.09)
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 4,012,140.79	\$(21,368,467.89)
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$(21,368,467.89)
OSL Receipts	\$ 265,954.21		\$(21,102,513.67)
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ 5,135.63	\$(21,107,649.30)
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ -	\$(21,107,649.30)
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$(21,107,649.30)
Interest Adjustment for OSL Receipts	\$ 2,659.54		\$(21,104,989.76)
Closing Balance			\$(21,104,989.76)
2018			\$(21,104,989.76)
Interest on Opening Balance	\$ -	\$ 738,674.64	\$(21,843,664.40)
Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$(21,843,664.40)
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 3,658,414.41	\$(25,502,078.81)
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$(25,502,078.81)
OSL Receipts	\$ 704,534.14		\$(24,797,544.67)
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ 5,761.66	\$(24,803,306.34)
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ -	\$(24,803,306.34)
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$(24,803,306.34)
Interest Adjustment for OSL Receipts	\$ 3,487.44		\$(24,799,818.89)
Closing Balance			\$(24,799,818.89)
2019			\$(24,799,818.89)
Interest on Opening Balance	\$ -	\$ 867,993.66	\$(25,667,812.55)
Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$(25,667,812.55)
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 3,423,000.65	\$(29,090,813.20)
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$(29,090,813.20)
OSL Receipts	\$ 238,785.32		\$(28,852,027.89)
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ 6,770.35	\$(28,858,798.24)
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ -	\$(28,858,798.24)
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$(28,858,798.24)
Interest Adjustment for OSL Receipts	\$ 1,181.99		\$(28,857,616.25)
Closing Balance			\$(28,857,616.25)

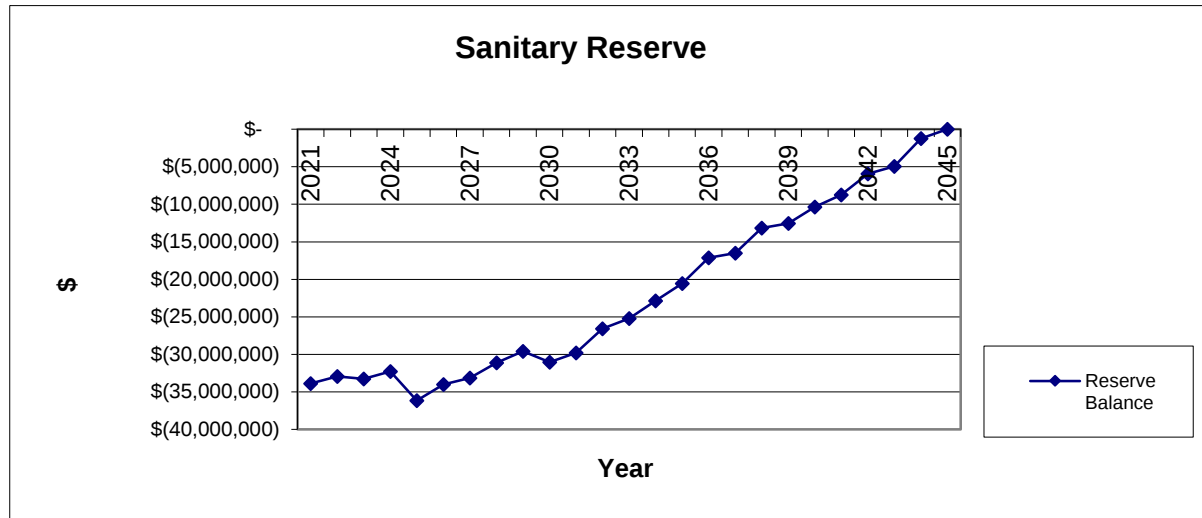
2020			
Interest on Opening Balance	\$ -	\$ 1,010,016.57	\$(28,857,616.25)
Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$(29,867,632.82)
Project Expenditures - Additional Front-Ending (Not Incl Financing Costs)		\$ 3,255,850.62	\$(33,123,483.44)
Project Expenditures - Additional Front-Ending (Financing/Debtenture Costs)		\$ -	\$(33,123,483.44)
OSL Receipts	\$ 1,050,304.70		\$(32,073,178.74)
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ 7,878.13	\$(32,081,056.87)
Interest Adjustment for Project Expenditures - Additional Front-Ending (Not Incl Financing Costs)		\$ -	\$(32,081,056.87)
Interest Adjustment for Project Expenditures - Additional Front-Ending (Financing/Debtenture Costs)		\$ -	\$(32,081,056.87)
Interest Adjustment for OSL Receipts	\$ 5,199.01		\$(32,075,857.86)
Closing Balance			\$(32,075,857.86)

C9. Development and Sanitary Infrastructure Staging Impacts

Sanitary offsite infrastructure will be constructed in staged fashion over the 25-year development period. We have reviewed the availability of offsite levy funds to meet these construction requirements and found that offsite levy reserve funds will not be sufficient to pay for construction of sanitary infrastructure from time to time—front ending of infrastructure will be required. A front-end is the party that constructs and pays up front for infrastructure that benefits other parties. The front-end (be it a municipality or a developer) is reimbursed over time as levies are collected, and in accordance with the municipality's front-ending repayment policies.

To compensate parties for capital they provide in front-ending offsite infrastructure construction, a **3.62%** interest allowance has been charged to the reserve when it is forecast to be in a negative balance. Further, a **1.00%** interest credit has been provided to the reserve when it is forecast to be in a positive balance. The graph and table below outline the forecast water levy reserve balances over the 25-year development period.

If necessary, an interest staging adjustment has been applied to rates (slightly positive or slightly negative) to ensure that the forecast reserve balance at the end of the 25-year review period always returns to break-even (i.e., developers are not charged too much thereby providing a windfall to the City, nor are they charged too little thereby placing an unequitable burden on taxpayers).

Anticipated Sanitary Offsite Levy Reserve Balances⁴Anticipated Sanitary Offsite Levy Reserve Balances

Year	Receipts	Expenditure	Opening Balance	
			Interest	Balance
2021	\$ -	\$ 625,172	\$ (1,183,777)	\$ (33,884,807)
2022	\$ 2,703,870	\$ 607,151	\$ (1,150,729)	\$ (32,938,817)
2023	\$ 2,110,955	\$ 1,274,174	\$ (1,162,094)	\$ (33,264,130)
2024	\$ 2,661,118	\$ 519,326	\$ (1,126,629)	\$ (32,248,966)
2025	\$ 1,919,372	\$ 4,534,129	\$ (1,262,067)	\$ (36,125,790)
2026	\$ 3,336,460	\$ 20,382	\$ (1,187,712)	\$ (33,997,423)
2027	\$ 2,054,646	\$ 34,412	\$ (1,157,574)	\$ (33,134,763)
2028	\$ 3,144,234	\$ 14,155	\$ (1,086,170)	\$ (31,090,855)
2029	\$ 2,556,306	\$ 4,312	\$ (1,033,107)	\$ (29,571,967)
2030	\$ 3,177,514	\$ 3,568,040	\$ (1,084,642)	\$ (31,047,136)
2031	\$ 2,279,902	\$ 163	\$ (1,041,380)	\$ (29,808,775)
2032	\$ 4,185,343	\$ -	\$ (927,568)	\$ (26,551,000)
2033	\$ 2,233,221	\$ 1,997	\$ (880,376)	\$ (25,200,152)
2034	\$ 3,135,880	\$ (1,612)	\$ (798,668)	\$ (22,861,329)
2035	\$ 3,043,073	\$ -	\$ (717,421)	\$ (20,535,677)
2036	\$ 4,006,098	\$ -	\$ (598,371)	\$ (17,127,950)
2037	\$ 1,208,557	\$ -	\$ (576,282)	\$ (16,495,675)
2038	\$ 3,808,578	\$ -	\$ (459,273)	\$ (13,146,370)
2039	\$ 1,034,417	\$ -	\$ (438,453)	\$ (12,550,406)
2040	\$ 2,573,620	\$ -	\$ (361,160)	\$ (10,337,946)
2041	\$ 1,897,086	\$ -	\$ (305,559)	\$ (8,746,419)
2042	\$ 3,001,066	\$ -	\$ (207,982)	\$ (5,953,335)
2043	\$ 1,164,246	\$ -	\$ (173,365)	\$ (4,962,454)
2044	\$ 3,770,456	\$ -	\$ (43,150)	\$ (1,235,148)
2045	\$ 1,235,148	\$ -	\$ (0)	\$ (0)

⁴ In determining staging adjustments, the offsite levy model also applies inflation to future rates. In so doing it acknowledges that rates must keep pace with inflation just as costs do. Also, it acknowledges that an offsite levy rate of \$X paid today is not worth the same as the equivalent \$X rate paid in the future (i.e., it is discounted).

APPENDIX D: TRANSPORTATION OFFSITE INFRASTRUCTURE

D1. Transportation Offsite Infrastructure Costs

To support future growth, transportation offsite infrastructure is required. The estimated cost of this infrastructure is based upon: (a) actual construction costs to the cut-off date, (b) debenture interest associated with financing, and (c) future cost estimates. Total cost is approximately **\$184.90 million** as outlined in the table below. Actual costs, debenture interest (if any), and cost estimates were provided by City staff. It is important to note that these costs represent “gross” costs, of which only a portion will go to support future development during the 25-year review period. The remainder of this section outlines how the “net” costs for future development are determined.

Summary of Transportation Offsite Infrastructure

Item	Project Description	Cost of Completed Work	Future Debenture Interest	Estimated Cost of Work Yet to be Completed	Total Project Cost
1	Parkview Drive Phase 2 (2012)	\$ 11,340,846	\$ -	\$ 639,154	\$ 11,980,000
2	South Ridge Drive Phase 1 (2012)	\$ 11,089,304	\$ -	\$ 463,838	\$ 11,553,142
3	Maple Avenue & 1st Street Intersection Upgrade	\$ 8,099,206	\$ -	\$ 28,052	\$ 8,127,258
4	College Avenue & Kipling Street Intersection Upgrade	\$ -	\$ -	\$ 4,000,000	\$ 4,000,000
5	Kingsway Avenue & Spencer Street Intersection Upgrade	\$ -	\$ -	\$ 6,000,000	\$ 6,000,000
6	West Boundary Road	\$ 2,500,000	\$ -	\$ -	\$ 2,500,000
7	Box Springs Road Upgrade Phase 1	\$ -	\$ -	\$ 2,700,000	\$ 2,700,000
8	Box Springs Road Upgrade Phase 2	\$ -	\$ -	\$ 5,600,000	\$ 5,600,000
9	Box Springs Road & 23rd Street Intersection Upgrade	\$ 3,907,437	\$ -	\$ 5,184	\$ 3,912,621
10	13th Avenue SE	\$ -	\$ -	\$ 9,000,000	\$ 9,000,000
12	South Boundary Road Phase 2)	\$ -	\$ -	\$ 11,000,000	\$ 11,000,000
13	South West Medicine Hat Connector	\$ -	\$ -	\$ 32,000,000	\$ 32,000,000
15	Parkview Drive Phase 1	\$ 5,800,000	\$ -	\$ -	\$ 5,800,000
16	Black & White Trail SE	\$ 4,650,000	\$ -	\$ -	\$ 4,650,000
17	South Boundary Road Phase 1	\$ 14,450,000	\$ -	\$ -	\$ 14,450,000
19	Rotary Centennial Drive	\$ -	\$ -	\$ 13,975,000	\$ 13,975,000
20	Box Springs Road Phase 3	\$ -	\$ -	\$ 4,225,000	\$ 4,225,000
21	Box Springs Road/Broadway Ave Intersection Upgrade	\$ -	\$ -	\$ 2,625,000	\$ 2,625,000
22	Broadway Avenue Upgrade	\$ -	\$ -	\$ 6,880,000	\$ 6,880,000
23	South Boundary Road and Southlands Dr Intersection	\$ -	\$ -	\$ 250,000	\$ 250,000
24	South Riidge Drive Upgrade	\$ -	\$ -	\$ 2,580,000	\$ 2,580,000
25	South Boundary Road Phase 3	\$ -	\$ -	\$ 15,695,000	\$ 15,695,000
26	Parkview Dr. Upgrade to Four Lane	\$ -	\$ -	\$ 5,400,000	\$ 5,400,000
100	Unallocated Offsite Levies Collected to Dec 31, 2012 - DO NOT	\$ -	\$ -	\$ -	\$ -
		\$ 61,836,794	\$ -	\$ 123,066,228	\$ 184,903,022

*Costs estimates are reflected in current dollars.

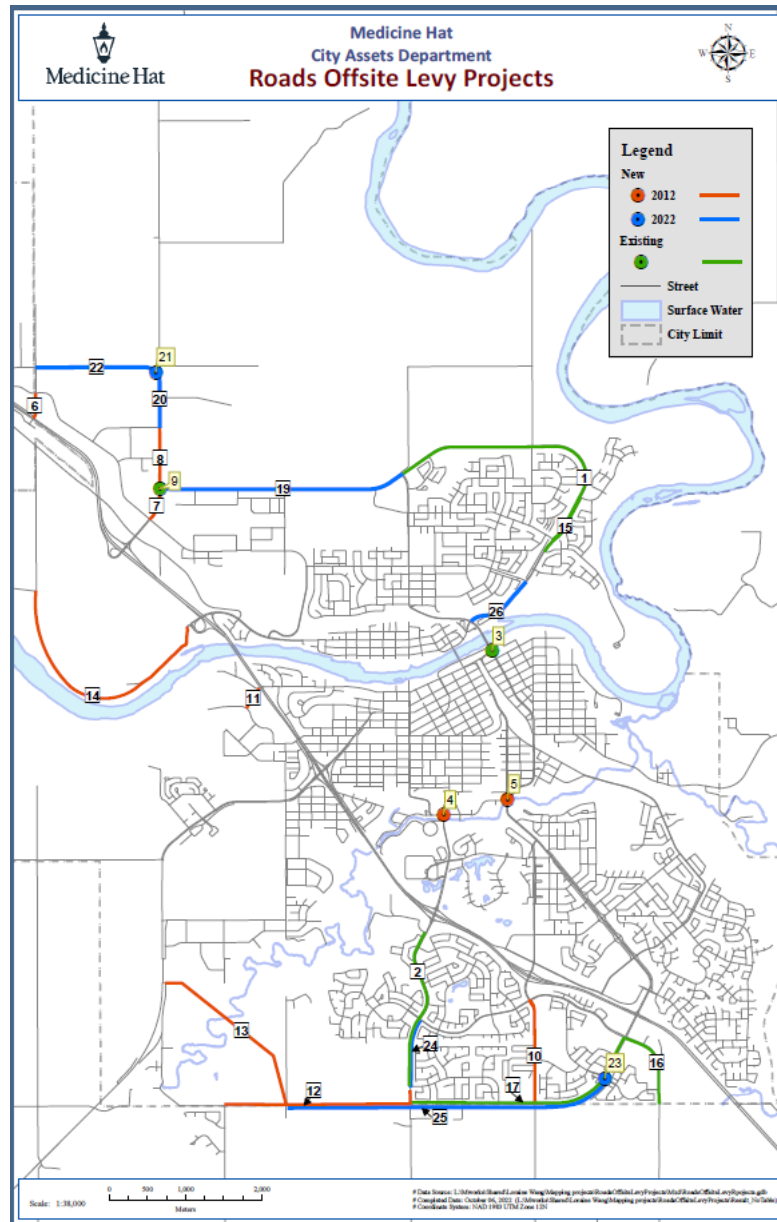
**Estimates include engineering costs and contingencies.

***Offsite levy project details, allocations, etc. were determined by City staff and their engineering/consulting advisors.

****Project numbering may be out of sequence as rows containing deleted projects are hidden.

*****Debenture Interest (if any) reflects only future interest. Interest incurred to date is included in the Cost of Completed Work.

Location of Transportation Projects



D2. Transportation Offsite Infrastructure Grants & Contributions to Date

The MGA enables the City to allocate the costs of offsite infrastructure to future development, other than those costs that have been provided by way of special grant or contribution (i.e., contributed infrastructure). The City has/will receive **\$0** in special grants and contributions for transportation offsite levy infrastructure as shown in the table below (note, if the City receives other grants or contributions in the future, it will be reflected in one of the annual updates and rates adjusted accordingly). The result is that the total reduced project estimated cost is **\$184.90 million**.

Special Grants and Contributions for Transportation Offsite Infrastructure

Item	Project Description	Total Project Cost	Special Provincial Grants (Historic & Future)	Developer Agreement Contributions (Historic & Future)	Reduced Project Cost
1	Parkview Drive Phase 2 (2012)	\$ 11,980,000	\$ -	\$ -	\$ 11,980,000
2	South Ridge Drive Phase 1 (2012)	\$ 11,553,142	\$ -	\$ -	\$ 11,553,142
3	Maple Avenue & 1st Street Intersection Upgrade	\$ 8,127,258	\$ -	\$ -	\$ 8,127,258
4	College Avenue & Kipling Street Intersection Upgrade	\$ 4,000,000	\$ -	\$ -	\$ 4,000,000
5	Kingsway Avenue & Spencer Street Intersection Upgrade	\$ 6,000,000	\$ -	\$ -	\$ 6,000,000
6	West Boundary Road	\$ 2,500,000	\$ -	\$ -	\$ 2,500,000
7	Box Springs Road Upgrade Phase 1	\$ 2,700,000	\$ -	\$ -	\$ 2,700,000
8	Box Springs Road Upgrade Phase 2	\$ 5,600,000	\$ -	\$ -	\$ 5,600,000
9	Box Springs Road & 23rd Street Intersection Upgrade	\$ 3,912,621	\$ -	\$ -	\$ 3,912,621
10	13th Avenue SE	\$ 9,000,000	\$ -	\$ -	\$ 9,000,000
12	South Boundary Road Phase 2)	\$ 11,000,000	\$ -	\$ -	\$ 11,000,000
13	South West Medicine Hat Connector	\$ 32,000,000	\$ -	\$ -	\$ 32,000,000
15	Parkview Drive Phase 1	\$ 5,800,000	\$ -	\$ -	\$ 5,800,000
16	Black & White Trail SE	\$ 4,650,000	\$ -	\$ -	\$ 4,650,000
17	South Boundary Road Phase 1	\$ 14,450,000	\$ -	\$ -	\$ 14,450,000
19	Rotary Centennial Drive	\$ 13,975,000	\$ -	\$ -	\$ 13,975,000
20	Box Springs Road Phase 3	\$ 4,225,000	\$ -	\$ -	\$ 4,225,000
21	Box Springs Road/Broadway Ave Intersection Upgrade	\$ 2,625,000	\$ -	\$ -	\$ 2,625,000
22	Broadway Avenue Upgrade	\$ 6,880,000	\$ -	\$ -	\$ 6,880,000
23	South Boundary Road and Southlands Dr Intersection	\$ 250,000	\$ -	\$ -	\$ 250,000
24	South Ridge Drive Upgrade	\$ 2,580,000	\$ -	\$ -	\$ 2,580,000
25	South Boundary Road Phase 3	\$ 15,695,000	\$ -	\$ -	\$ 15,695,000
26	Parkview Dr. Upgrade to Four Lane	\$ 5,400,000	\$ -	\$ -	\$ 5,400,000
100	Unallocated Offsite Levies Collected to Dec 31, 2012 - DO NOT	\$ -	\$ -	\$ -	\$ -
		\$ 184,903,022	\$ -	\$ -	\$ 184,903,022

D3. Transportation Infrastructure Staging

The timing of construction is used to determine the impact of inflation on cost, the impact of forecast reserve balances, and the estimate of financial oversizing (described in the Section that follows). The City anticipates construction of offsite infrastructure as outlined in the table below. Note, if this schedule is adjusted in the future, it will be reflected in one of the annual rate/bylaw updates.

Transportation Infrastructure Staging

Item	Project Description	Construction Start Year
1	Parkview Drive Phase 2 (2012)	2012
2	South Ridge Drive Phase 1 (2012)	2012
3	Maple Avenue & 1st Street Intersection Upgrade	2013
4	College Avenue & Kipling Street Intersection Upgrade	2027
5	Kingsway Avenue & Spencer Street Intersection Upgrade	2028
6	West Boundary Road	2016
7	Box Spings Road Upgrade Phase 1	2037
8	Box Spings Road Upgrade Phase 2	2031
9	Box Springs Road & 23rd Street Intersection Upgrade	2015
10	13th Avenue SE	2029
12	South Boundary Road Phase 2)	2030
13	South West Medicine Hat Connector	2032
15	Parkview Drive Phase 1	2007
16	Black & White Trail SE	2008
17	South Boundary Road Phase 1	2009
19	Rotary Centennial Drive	2028
20	Box Springs Road Phase 3	2026
21	Box Springs Road/Broadway Ave Intersection Upgrade	2026
22	Broadway Avenue Upgrade	2029
23	South Boundary Road and Southlands Dr Intersection	2027
24	South Riidge Drive Upgrade	2034
25	South Boundary Road Phase 3	2031
26	Parkview Dr. Upgrade to Four Lane	2036

*The pro rata share of project cost beyond the 25-year review period are not included in rates today (see financial oversizing in next section).

**Costs are inflated to the year of construction using an inflation rate of 4% in the first year, 5% in the second year, 4% in the third year, and 3% thereafter.

D4. Transportation Offsite Infrastructure Benefiting Parties

The transportation offsite infrastructure previously outlined will benefit various parties to varying degrees as determined by the City's staff and engineering advisors. The potential benefiting parties were include:

- City of Medicine Hat – that portion of cost which is required to service existing residents.
- Other Stakeholders - other parties (such as neighboring municipalities) that benefit from the infrastructure.
- City of Medicine Hat Future Development (Financial Oversizing) - that portion of cost which benefits future development beyond the 25-year review period.
- City of Medicine Hat Future Development (in Rates) – all growth-related infrastructure (i.e., leviable transportation infrastructure costs) during the 25-year rate planning period.

The table below outlines the allocation of transportation offsite levy infrastructure costs to benefiting parties. Project allocations were determined by City staff.

Allocation of Transportation Infrastructure to Benefiting Parties

Item	Project Description	Reduced Project Cost	Muni Share %	Other Stakeholder Share	Developer Share Beyond 25 Yrs (Financial Oversizing %)	OSL / Developer Share %
1	Parkview Drive Phase 2 (2012)	\$ 11,980,000	79.000%		0.000%	21.000%
2	South Ridge Drive Phase 1 (2012)	\$ 11,553,142	79.000%		0.000%	21.000%
3	Maple Avenue & 1st Street Intersection Upgrade	\$ 8,127,258	79.000%		0.000%	21.000%
4	College Avenue & Kipling Street Intersection Upgrade	\$ 4,000,000	79.000%		5.040%	15.960%
5	Kingsway Avenue & Spencer Street Intersection Upgrade	\$ 6,000,000	79.000%		5.880%	15.120%
6	West Boundary Road	\$ 2,500,000	79.000%		0.000%	21.000%
7	Box Springs Road Upgrade Phase 1	\$ 2,700,000	79.000%		13.440%	7.560%
8	Box Springs Road Upgrade Phase 2	\$ 5,600,000	79.000%		8.400%	12.600%
9	Box Springs Road & 23rd Street Intersection Upgrade	\$ 3,912,621	79.000%		0.000%	21.000%
10	13th Avenue SE	\$ 9,000,000	79.000%		6.720%	14.280%
12	South Boundary Road Phase 2)	\$ 11,000,000	79.000%		7.560%	13.440%
13	South West Medicine Hat Connector	\$ 32,000,000	79.000%		9.240%	11.760%
15	Parkview Drive Phase 1	\$ 5,800,000	79.000%		0.000%	21.000%
16	Black & White Trail SE	\$ 4,650,000	79.000%		0.000%	21.000%
17	South Boundary Road Phase 1	\$ 14,450,000	79.000%		0.000%	21.000%
19	Rotary Centennial Drive	\$ 13,975,000	79.000%		5.880%	15.120%
20	Box Springs Road Phase 3	\$ 4,225,000	79.000%		4.200%	16.800%
21	Box Springs Road/Broadway Ave Intersection Upgrade	\$ 2,625,000	79.000%		4.200%	16.800%
22	Broadway Avenue Upgrade	\$ 6,880,000	79.000%		6.720%	14.280%
23	South Boundary Road and Southlands Dr Intersection	\$ 250,000	79.000%		5.040%	15.960%
24	South Ridge Drive Upgrade	\$ 2,580,000	79.000%		10.920%	10.080%
25	South Boundary Road Phase 3	\$ 15,695,000	79.000%		8.400%	12.600%
26	Parkview Dr. Upgrade to Four Lane	\$ 5,400,000	79.000%		12.600%	8.400%
100	Unallocated Offsite Levies Collected to Dec 31, 2012 - DO NOT	\$ -				100.0%
		\$ 184,903,022				

*Allocations to future development (vs municipal share etc.) were determined by City staff and their engineering/consulting advisors.

**Financial oversizing is determined by separating out the pro rata portion of developer cost beyond the 25-year review period, in comparison with the anticipated year of construction. As the years move forward and rates are updated, these additional developer costs will be included in rate calculations. For example, a project which is slated to be constructed in year 20 of the 25-year review period will have 20% (5/25) of its costs in rates today, and 80% (20/25) of its costs will sit beyond the 25-year review period.

D5. Existing Receipts & Adjusted Levy Cost

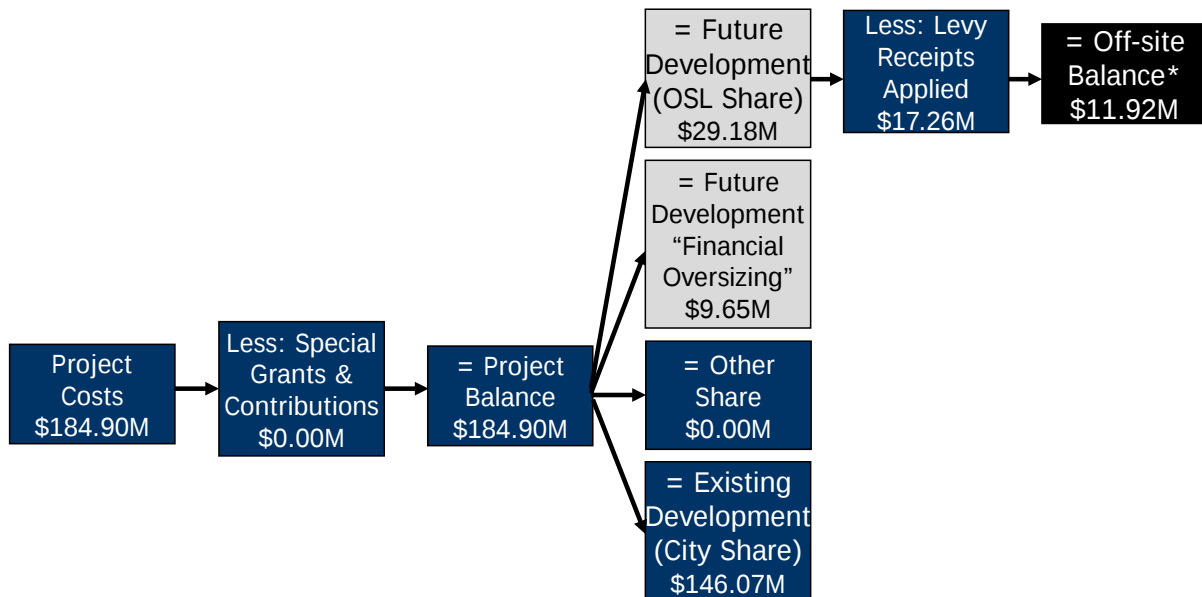
Using the offsite levy share percentages shown in the previous section and applying those percentages to project costs results in an offsite levy cost of approximately **\$29.18 million**. However, prior to allocating these costs to benefiting areas, existing offsite levy receipts collected from developers need to be considered in determining the residual/net costs to developers. The City has collected **\$17.26 million** (\$7.92 million + \$9.34 million) in offsite levies to date, and results in an adjusted offsite levy cost of approximately **\$11.92 million**.

Offsite Levy Funds Collected to Date & Adjusted Levy Cost

Item	Project Description	OSL / Developer Cost	Offsite Levy Funds Collected to Dec 31, 2012	Offsite Levy Funds Collected Starting Jan 1, 2013	Adjusted Developer (Levy) Cost
1	Parkview Drive Phase 2 (2012)	\$ 2,515,800	\$ -	\$ 842,008	\$ 1,673,792
2	South Ridge Drive Phase 1 (2012)	\$ 2,426,160	\$ 133,239	\$ 767,413	\$ 1,525,507
3	Maple Avenue & 1st Street Intersection Upgrade	\$ 1,706,724	\$ -	\$ 571,220	\$ 1,135,504
4	College Avenue & Kipling Street Intersection Upgrade	\$ 638,400	\$ -	\$ 213,665	\$ 424,735
5	Kingsway Avenue & Spencer Street Intersection Upgrade	\$ 907,200	\$ -	\$ 303,629	\$ 603,571
6	West Boundary Road	\$ 525,000	\$ -	\$ 175,711	\$ 349,289
7	Box Springs Road Upgrade Phase 1	\$ 204,120	\$ -	\$ 68,317	\$ 135,803
8	Box Springs Road Upgrade Phase 2	\$ 705,600	\$ -	\$ 236,156	\$ 469,444
9	Box Springs Road & 23rd Street Intersection Upgrade	\$ 821,650	\$ -	\$ 274,997	\$ 546,654
10	13th Avenue SE	\$ 1,285,200	\$ -	\$ 430,141	\$ 855,059
12	South Boundary Road Phase 2)	\$ 1,478,400	\$ -	\$ 494,803	\$ 983,597
13	South West Medicine Hat Connector	\$ 3,763,200	\$ -	\$ 1,259,498	\$ 2,503,702
15	Parkview Drive Phase 1	\$ 1,218,000	\$ -	\$ 407,650	\$ 810,350
16	Black & White Trail SE	\$ 976,500	\$ -	\$ 326,823	\$ 649,677
17	South Boundary Road Phase 1	\$ 3,034,500	\$ 1,133,748	\$ 636,159	\$ 1,264,593
19	Rotary Centennial Drive	\$ 2,113,020	\$ -	\$ 707,203	\$ 1,405,817
20	Box Springs Road Phase 3	\$ 709,800	\$ -	\$ 237,562	\$ 472,238
21	Box Springs Road/Broadway Ave Intersection Upgrade	\$ 441,000	\$ -	\$ 147,597	\$ 293,403
22	Broadway Avenue Upgrade	\$ 982,464	\$ -	\$ 328,819	\$ 653,645
23	South Boundary Road and Southlands Dr Intersection	\$ 39,900	\$ -	\$ 13,354	\$ 26,546
24	South Ridge Drive Upgrade	\$ 260,064	\$ -	\$ 87,040	\$ 173,024
25	South Boundary Road Phase 3	\$ 1,977,570	\$ -	\$ 661,869	\$ 1,315,701
26	Parkview Dr. Upgrade to Four Lane	\$ 453,600	\$ -	\$ 151,815	\$ 301,785
100	Unallocated Offsite Levies Collected to Dec 31, 2012 - DO NOT	\$ -	\$ 6,653,992	\$ -	\$ (6,653,992)
		\$ 29,183,873	\$ 7,920,979	\$ 9,343,450	\$ 11,919,443

D6. Summary of Transportation Offsite Levy Cost Flow-through

As shown in the figure below, the total cost for transportation infrastructure that forms the basis of the rate is approximately **\$11.92 million**. The cost allocations to each benefitting party are based on the benefitting percentages shown in Section D4. The offsite levy balance (due from developers) is allocated to various benefitting areas (as described in the next section).

Total Transportation Offsite Levy Costs**D7. Transportation Infrastructure Benefiting Areas**

Net developer costs for each project have been allocated to multiple benefiting offsite levy area (see tables below). Allocations are denoted with a "1" below applicable area numbers. Benefiting areas were determined by City staff. The lands anticipated to develop over the 25-years in each offsite levy benefiting area are used to determine rates.

Benefiting Areas for Transportation Offsite Infrastructure

Item	Project Description	Developer Cost	1	2	3	4	5	6	7	8	9	10	11	12
1	Parkview Drive Phase 2 (2012)	\$ 1,673,792	1	1	1	1	1	1	1		1	1	1	1
2	South Ridge Drive Phase 1 (2012)	\$ 1,525,507	1	1	1	1	1	1	1		1	1	1	1
3	Maple Avenue & 1st Street Intersection Upgrade	\$ 1,135,504	1	1	1	1	1	1	1	1		1	1	1
4	College Avenue & Kipling Street Intersection Upgrade	\$ 424,735	1	1	1	1	1	1	1		1	1	1	1
5	Kingsway Avenue & Spencer Street Intersection Upgrade	\$ 603,571	1	1	1	1	1	1	1		1	1	1	1
6	West Boundary Road	\$ 349,289	1	1	1	1	1	1	1	1		1	1	1
7	Box Springs Road Upgrade Phase 1	\$ 135,803	1	1	1	1	1	1	1		1	1	1	1
8	Box Springs Road Upgrade Phase 2	\$ 469,444	1	1	1	1	1	1	1		1	1	1	1
9	Box Springs Road & 23rd Street Intersection Upgrade	\$ 546,654	1	1	1	1	1	1	1	1		1	1	1
10	13th Avenue SE	\$ 855,059	1	1	1	1	1	1	1		1	1	1	1
12	South Boundary Road Phase 2)	\$ 983,597	1	1	1	1	1	1	1		1	1	1	1
13	South West Medicine Hat Connector	\$ 2,503,702	1	1	1	1	1	1	1	1		1	1	1
15	Parkview Drive Phase 1	\$ 810,350	1	1	1	1	1	1	1		1	1	1	1
16	Black & White Trail SE	\$ 649,677	1	1	1	1	1	1	1		1	1	1	1
17	South Boundary Road Phase 1	\$ 1,264,593	1	1	1	1	1	1	1	1		1	1	1
19	Rotary Centennial Drive	\$ 1,405,817	1	1	1	1	1	1	1		1	1	1	1
20	Box Springs Road Phase 3	\$ 472,238	1	1	1	1	1	1	1		1	1	1	1
21	Box Springs Road/Broadway Ave Intersection Upgrade	\$ 293,403	1	1	1	1	1	1	1	1		1	1	1
22	Broadway Avenue Upgrade	\$ 653,645	1	1	1	1	1	1	1		1	1	1	1
23	South Boundary Road and Southlands Dr Intersection	\$ 26,546	1	1	1	1	1	1	1		1	1	1	1
24	South Ridge Drive Upgrade	\$ 173,024	1	1	1	1	1	1	1	1		1	1	1
25	South Boundary Road Phase 3	\$ 1,315,701	1	1	1	1	1	1	1		1	1	1	1
26	Parkview Dr. Upgrade to Four Lane	\$ 301,785	1	1	1	1	1	1	1		1	1	1	1
100	Unallocated Offsite Levies Collected to Dec 31, 2012 - DO NOT	\$ (6,653,992)	1	1	1	1	1	1	1	1	1	1	1	1
		\$ 11,919,443												

D8. Reserve Balance

The balance of the City's transportation reserve at December 31st, 2020 is **\$3,828,642.93**. This updated balance takes into consideration expenditures up to end-2020 and assumes that front-ending debts will be drawn down via a withdrawal of all available cash in the account.

Transportation Offsite Levy Reserve Balance

Description	Dr	Cr	Balance
Unallocated OSL Receipts 2011 & Prior	\$ 6,406,247.28		\$ 6,406,247.28
OSL Receipts 2012	\$ 274,082.22		\$ 6,680,329.50
Project Expenditures - Account Withdrawals Applied to Projects 2012 & Prior		\$ 133,239.07	\$ 6,547,090.43
Interest Adjustment 2012	\$ 106,901.16		\$ 6,653,991.59
Account Balance per Muni Records 2012 & Prior			\$ 6,653,991.59
Project Expenditures - Additional Front-ending 2012 & Prior		\$ 7,076,257.82	\$ (422,266.23)
Balance			\$ (422,266.23)
2013			\$ (422,266.23)
Interest on Opening Balance	\$ -	\$ 14,779.32	\$ (437,045.55)
Project Expenditures - Account Withdrawals Applied to Projects		\$ 4,451,398.00	\$ (4,888,443.55)
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ (2,861,016.55)	\$ (2,027,427.00)
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ (2,027,427.00)
OSL Receipts	\$ 1,232,377.82		\$ (795,049.18)
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ 129.32	\$ (795,178.50)
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 38,949.73	\$ (834,128.23)
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ (834,128.23)
Interest Adjustment for OSL Receipts	\$ 12,323.78		\$ (821,804.45)
Closing Balance			\$ (821,804.45)
2014			\$ (821,804.45)
Interest on Opening Balance	\$ -	\$ 28,763.16	\$ (850,567.61)
Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$ (850,567.61)
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 1,575,570.78	\$ (2,426,138.39)
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ (2,426,138.39)
OSL Receipts	\$ 620,283.23		\$ (1,805,855.16)
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ 251.68	\$ (1,806,106.83)
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ -	\$ (1,806,106.83)
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ (1,806,106.83)
Interest Adjustment for OSL Receipts	\$ 6,202.83		\$ (1,799,904.00)
Closing Balance			\$ (1,799,904.00)
2015			\$ (1,799,904.00)
Interest on Opening Balance	\$ -	\$ 62,996.64	\$ (1,862,900.64)
Project Expenditures - Account Withdrawals Applied to Projects		\$ 893,000.00	\$ (2,755,900.64)
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 32,758.96	\$ (2,788,659.60)
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ (2,788,659.60)
OSL Receipts	\$ 1,096,112.68		\$ (1,692,546.92)
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ 551.22	\$ (1,693,098.14)
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 7,813.75	\$ (1,700,911.89)
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ (1,700,911.89)
Interest Adjustment for OSL Receipts	\$ 10,961.13		\$ (1,689,950.76)
Closing Balance			\$ (1,689,950.76)
2016			\$ (1,689,950.76)
Interest on Opening Balance	\$ -	\$ 59,148.28	\$ (1,749,099.04)
Project Expenditures - Account Withdrawals Applied to Projects		\$ 1,365,000.00	\$ (3,114,099.04)
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ (811,385.67)	\$ (2,302,713.37)
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ (2,302,713.37)
OSL Receipts	\$ 136,878.83		\$ (2,165,834.54)
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ 517.55	\$ (2,166,352.09)
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 11,943.75	\$ (2,178,295.84)
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ (2,178,295.84)
Interest Adjustment for OSL Receipts	\$ 1,368.79		\$ (2,176,927.05)
Closing Balance			\$ (2,176,927.05)
2017			\$ (2,176,927.05)
Interest on Opening Balance	\$ -	\$ 76,192.45	\$ (2,253,119.49)
Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$ (2,253,119.49)
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ (11,218.98)	\$ (2,241,900.51)
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ (2,241,900.51)
OSL Receipts	\$ 1,205,006.97		\$ (1,036,893.54)
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ 666.68	\$ (1,037,560.23)
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ -	\$ (1,037,560.23)
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ (1,037,560.23)
Interest Adjustment for OSL Receipts	\$ 12,050.07		\$ (1,025,510.16)
Closing Balance			\$ (1,025,510.16)

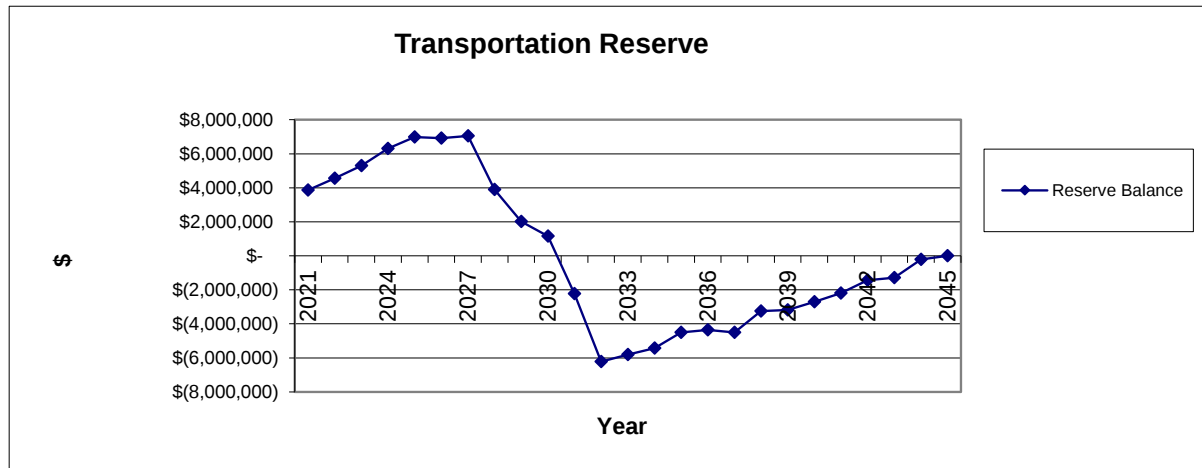
2018			\$ (1,025,510.16)
Interest on Opening Balance	\$ -	\$ 35,892.86	\$ (1,061,403.01)
Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$ (1,061,403.01)
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ (7,525.00)	\$ (1,053,878.01)
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ (1,053,878.01)
OSL Receipts	\$ 3,208,132.14		\$ 2,154,254.13
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ 279.96	\$ 2,153,974.17
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ -	\$ 2,153,974.17
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ 2,153,974.17
Interest Adjustment for OSL Receipts	\$ 15,880.25		\$ 2,169,854.42
Closing Balance			\$ 2,169,854.42
2019			\$ 2,169,854.42
Interest on Opening Balance	\$ 43,397.09	\$ -	\$ 2,213,251.51
Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$ 2,213,251.51
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 15,899.96	\$ 2,197,351.55
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ 2,197,351.55
OSL Receipts	\$ 447,456.46		\$ 2,644,808.00
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$ 2,644,808.00
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ -	\$ 2,644,808.00
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ 2,644,808.00
Interest Adjustment for OSL Receipts	\$ 2,214.91		\$ 2,647,022.91
Closing Balance			\$ 2,647,022.91
2020			\$ 2,647,022.91
Interest on Opening Balance	\$ 52,940.46	\$ -	\$ 2,699,963.37
Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$ 2,699,963.37
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ -	\$ 2,699,963.37
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ 2,699,963.37
OSL Receipts	\$ 1,123,120.11		\$ 3,823,083.48
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$ 3,823,083.48
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ -	\$ 3,823,083.48
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ 3,823,083.48
Interest Adjustment for OSL Receipts	\$ 5,559.44		\$ 3,828,642.93
Closing Balance			\$ 3,828,642.93

D9. Development and Transportation Infrastructure Staging Impacts

Transportation offsite infrastructure will be constructed in staged fashion over the 25-year review period. We have reviewed the availability of offsite levy funds to meet these construction requirements and found that offsite levy reserve funds will not be sufficient to pay for construction of transportation infrastructure from time to time—front ending of infrastructure will be required. A front-end is the party that constructs and pays up front for infrastructure that benefits other parties. The front-end (be it a municipality or a developer) is reimbursed over time as levies are collected, and in accordance with the municipality's front-ending repayment policies.

To compensate parties for capital they provide in front-ending offsite infrastructure construction, a **3.62%** interest allowance has been charged to the reserve when it is forecast to be in a negative balance. Further, a **1.00%** interest credit has been provided to the reserve when it is forecast to be in a positive balance. The graph and table below outline the forecast water levy reserve balances over the 25-year development period.

If necessary, an interest staging adjustment has been applied to rates (slightly positive or slightly negative) to ensure that the forecast reserve balance at the end of the 25-year review period always returns to break-even (i.e., developers are not charged too much thereby providing a windfall to the City, nor are they charged too little thereby placing an unequitable burden on taxpayers).

Anticipated Transportation Offsite Levy Reserve Balances⁵Anticipated Transportation Offsite Levy Reserve Balances

			Reserve Balance	\$ 3,828,643
Year	Receipts	Expenditure	Interest	Balance
2021	\$ -	\$ -	\$ 38,286	\$ 3,866,929
2022	\$ 649,254	\$ -	\$ 45,162	\$ 4,561,345
2023	\$ 681,717	\$ -	\$ 52,431	\$ 5,295,493
2024	\$ 945,314	\$ -	\$ 62,408	\$ 6,303,215
2025	\$ 608,546	\$ -	\$ 69,118	\$ 6,980,878
2026	\$ 1,253,605	\$ 1,386,533	\$ 68,479	\$ 6,916,429
2027	\$ 903,849	\$ 841,762	\$ 69,785	\$ 7,048,301
2028	\$ 664,975	\$ 3,860,499	\$ 38,528	\$ 3,891,304
2029	\$ 1,095,878	\$ 2,985,526	\$ 20,017	\$ 2,021,673
2030	\$ 1,128,754	\$ 2,004,801	\$ 11,456	\$ 1,157,083
2031	\$ 435,981	\$ 3,747,699	\$ (77,998)	\$ (2,232,633)
2032	\$ 1,646,556	\$ 5,413,911	\$ (217,200)	\$ (6,217,187)
2033	\$ 616,710	\$ -	\$ (202,737)	\$ (5,803,214)
2034	\$ 952,817	\$ 396,925	\$ (189,953)	\$ (5,437,275)
2035	\$ 1,082,159	\$ -	\$ (157,655)	\$ (4,512,771)
2036	\$ 1,047,908	\$ 734,473	\$ (152,016)	\$ (4,351,352)
2037	\$ 347,056	\$ 340,428	\$ (157,279)	\$ (4,502,002)
2038	\$ 1,363,026	\$ -	\$ (113,631)	\$ (3,252,608)
2039	\$ 184,096	\$ -	\$ (111,080)	\$ (3,179,592)
2040	\$ 568,857	\$ -	\$ (94,509)	\$ (2,705,243)
2041	\$ 585,923	\$ -	\$ (76,719)	\$ (2,196,040)
2042	\$ 804,667	\$ -	\$ (50,368)	\$ (1,441,741)
2043	\$ 207,202	\$ -	\$ (44,690)	\$ (1,279,230)
2044	\$ 1,067,089	\$ -	\$ (7,679)	\$ (219,820)
2045	\$ 219,820	\$ -	\$ (0)	\$ (0)

⁵ In determining staging adjustments, the offsite levy model also applies inflation to future rates. In so doing it acknowledges that rates must keep pace with inflation just as costs do. Also, it acknowledges that an offsite levy rate of \$X paid today is not worth the same as the equivalent \$X rate paid in the future (i.e., it is discounted).

APPENDIX E: STORMWATER OFFSITE INFRASTRUCTURE

E1. Stormwater Offsite Infrastructure Costs

To support future growth, stormwater offsite infrastructure is required. The estimated cost of this infrastructure is based upon: (a) actual construction costs to the cut-off date, (b) debenture interest associated with financing, and (c) future cost estimates. Total cost is approximately **\$21.98 million** as outlined in the table below. Actual costs, debenture interest (if any), and cost estimates were provided by City staff. It is important to note that these costs represent “gross” costs, of which only a portion will go to support future development during the 25-year review period. The remainder of this section outlines how the “net” costs for future development are determined.

Summary of Stormwater Offsite Infrastructure

Item	Project Description	Cost of Completed Work	Future Debenture Interest	Estimated Cost of Work Yet to be Completed	Total Project Estimated Cost
1	South Boundary Road Storm Trunk (2008)	\$ 11,689,000	\$ -	\$ -	\$ 11,689,000
2	Northwest Storm Trunk - Component A (2015)	\$ 10,289,965	\$ -	\$ -	\$ 10,289,965
100	Unallocated Offsite Levies Collected to Dec 31, 2012 - DO NOT DELETE	\$ -	\$ -	\$ -	\$ -
		\$ 21,978,965	\$ -	\$ -	\$ 21,978,965

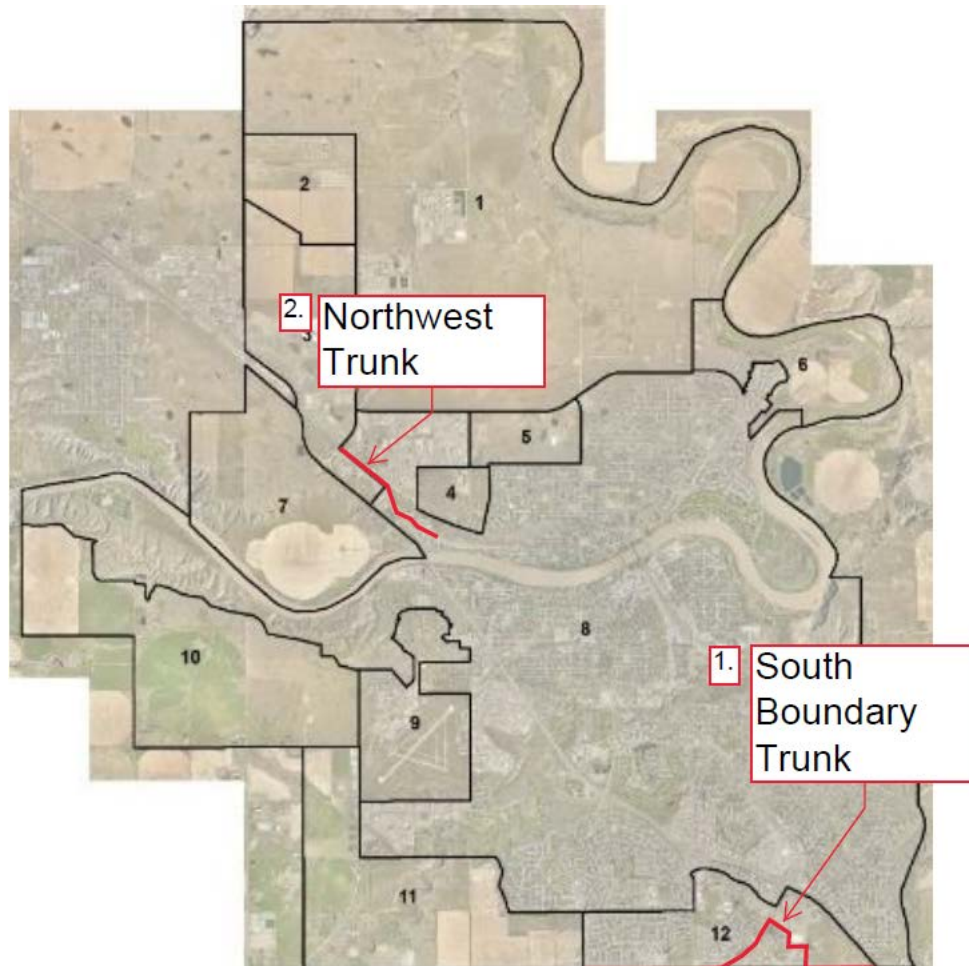
*Costs estimates are reflected in current dollars.

**Estimates include engineering costs and contingencies.

***Offsite levy project details, allocations, etc. were determined by City staff and their engineering/consulting advisors.

****Financing interest costs to date (if any) are included in the cost of work completed.

*****Project numbering may be out of sequence as rows containing deleted projects are hidden.

Location of Stormwater Projects**E2. Stormwater Offsite Infrastructure Grants & Contributions to Date**

The MGA enables the City to allocate the costs of offsite infrastructure to future development, other than those costs that have been provided by way of special grant or contribution (i.e., contributed infrastructure). The City has/will receive **\$0.00** in special grants and contributions for stormwater offsite levy infrastructure as shown in the table below (note, if the City receives other grants or contributions in the future, it will be reflected in one of the annual updates and rates adjusted accordingly). The result is that the total reduced project estimated cost is **\$21.98 million**.

Special Grants and Contributions for Stormwater Offsite Infrastructure

Item	Project Description	Total Project Estimated Cost	Special Provincial Grants (Historic & Future)	Developer Agreement Contributions (Historic & Future)	Reduced Project Estimated Cost
1	South Boundary Road Storm Trunk (2008)	\$ 11,689,000	\$ -	\$ -	\$ 11,689,000
2	Northwest Storm Trunk - Component A (2015)	\$ 10,289,965	\$ -	\$ -	\$ 10,289,965
100	Unallocated Offsite Levies Collected to Dec 31, 2012 - DO NOT DELETE	\$ -	\$ -	\$ -	\$ -
		\$ 21,978,965	\$ -	\$ -	\$ 21,978,965

E3. Stormwater Infrastructure Staging

The timing of construction is used to determine the impact of inflation on cost, the impact of forecast reserve balances, and the estimate of financial oversizing (described in the Section that follows). The City anticipates construction of offsite infrastructure as outlined in the table below. Note, if this schedule is adjusted in the future, it will be reflected in one of the annual rate/bylaw updates.

Stormwater Infrastructure Staging

Item	Project Description	Construction Start Year
1	South Boundary Road Storm Trunk (2008)	2008
2	Northwest Storm Trunk - Component A (2015)	2015

*The pro rata share of project cost beyond the 25-year review period are not included in rates today (see financial oversizing in next section).

**Costs are inflated to the year of construction using an inflation rate of 4% in the first year, 5% in the second year, 4% in the third year, and 3% thereafter.

E4. Stormwater Offsite Infrastructure Benefiting Parties

The stormwater offsite infrastructure previously outlined will benefit various parties to varying degrees as determined by City staff and engineering advisors. The potential benefiting parties were include:

- City of Medicine Hat – that portion of cost which is required to service existing residents.
- Other Stakeholders - other parties (such as neighboring municipalities) that benefit from the infrastructure.
- City of Medicine Hat Future Development (Financial Oversizing) - that portion of cost which benefits future development beyond the 25-year review period.
- City of Medicine Hat Future Development (in Rates) – all growth-related infrastructure (i.e., leviable stormwater infrastructure costs) during the 25-year rate planning period.

The table below outlines the allocation of stormwater offsite levy infrastructure costs to benefiting parties. Project allocations were determined by City staff.

Allocation of Stormwater Infrastructure to Benefiting Parties

Item	Project Description	Reduced Project Estimated Cost	Muni Share %	Other Stakeholder Share	Developer Share Beyond 25 Yrs (Financial Oversizing %)	OSL / Developer Share %
1	South Boundary Road Storm Trunk (2008)	\$ 11,689,000	71.000%		0.000%	29.000%
2	Northwest Storm Trunk - Component A (2015)	\$ 10,289,965	32.000%		0.000%	68.000%
100	Unallocated Offsite Levies Collected to Dec 31, 2012 - DO NOT DELETE	\$ -				100.000%
		\$ 21,978,965				

*Allocations to future development (vs municipal share etc.) were determined by City staff and their engineering/consulting advisors.

**Financial oversizing is determined by separating out the pro rata portion of developer cost beyond the 25-year review period, in comparison with the anticipated year of construction. As the years move forward and rates are

updated, these additional developer costs will be included in rate calculations. For example, a project which is slated to be constructed in year 20 of the 25-year review period will have 20% (5/25) of its costs in rates today, and 80% (20/25) of its costs will sit beyond the 25-year review period.

E5. Existing Receipts & Adjusted Levy Cost

Using the offsite levy share percentages shown in the previous section and applying those percentages to project costs results in an offsite levy cost of approximately **\$10.39 million**. However, prior to allocating these costs to benefiting areas, existing offsite levy receipts collected from developers need to be considered in determining the residual/net costs to developers. The City has collected **\$5.03 million** (\$2.48 million + \$2.55 million) in offsite levies to date, and results in an adjusted offsite levy cost of approximately **\$5.36 million**.

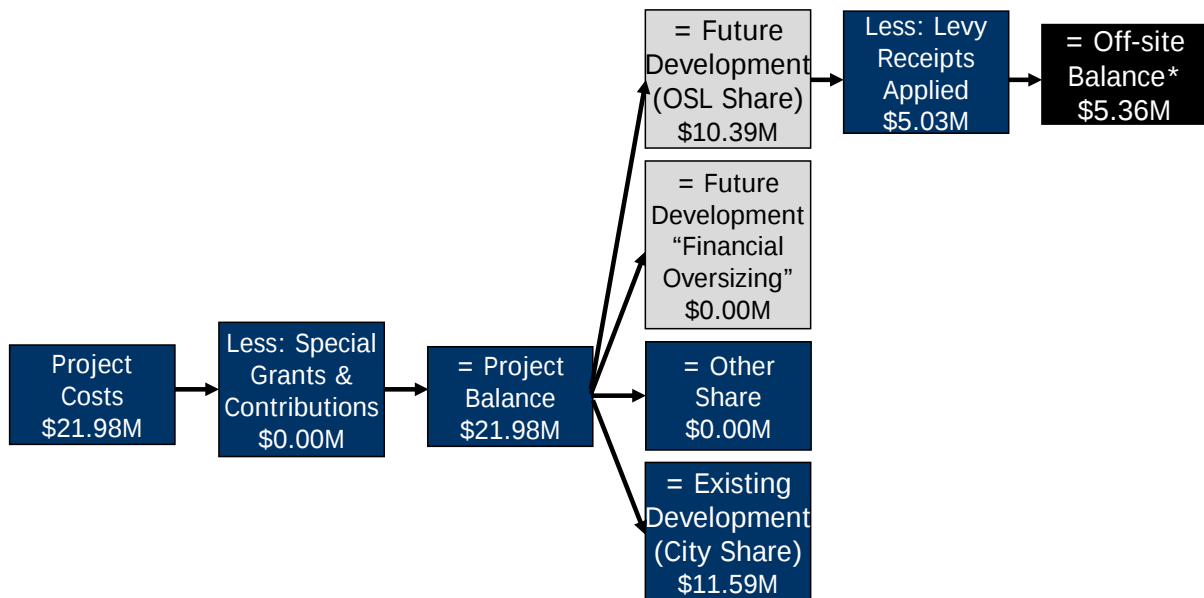
Offsite Levy Funds Collected to Date & Adjusted Levy Cost

Item	Project Description	OSL / Developer Cost	Offsite Levy Funds Collected to Dec 31, 2012	Offsite Levy Funds Collected Starting Jan 1, 2013	Adjusted Developer (Levy) Cost
1	South Boundary Road Storm Trunk (2008)	\$ 3,389,810	\$ 741,679	\$ 721,852	\$ 1,926,278
2	Northwest Storm Trunk - Component A (2015)	\$ 6,997,176	\$ -	\$ 1,830,603	\$ 5,166,574
100	Unallocated Offsite Levies Collected to Dec 31, 2012 - DO NOT DELETE	\$ -	\$ 1,734,400	\$ -	\$ (1,734,400)
		\$ 10,386,986	\$ 2,476,079	\$ 2,552,455	\$ 5,358,452

E6. Summary of Stormwater Offsite Levy Cost Flow-through

As shown in the figure below, the total cost for stormwater infrastructure that forms the basis of the rate is approximately **\$5.36 million**. The cost allocations to each benefiting party are based on the benefiting percentages shown in Section F4. The offsite levy balance (due from developers) is allocated to various benefiting areas (as described in the next section).

Total Stormwater Offsite Levy Costs



E7. Stormwater Infrastructure Benefiting Areas

Net developer costs for each project have been allocated to multiple benefiting offsite levy area (see tables below). Allocations are denoted with a "1" below applicable area numbers. Benefiting areas were determined by City staff. The lands anticipated to develop over the 25-years in each offsite levy benefitting area are used to determine rates.

Benefiting Areas for Stormwater Offsite Infrastructure

Item	Project Description	Developer Cost	1	2	3	4	5	6	7	8	9	10	11	12
1	South Boundary Road Storm Trunk (2008)	\$ 1,926,278												1
2	Northwest Storm Trunk - Component A (2015)	\$ 5,166,574			1	1								
100	Unallocated Offsite Levies Collected to Dec 31, 2012 - DO	\$ (1,734,400)	1	1	1	1	1	1	1	1	1	1	1	1
		\$ 5,358,452												

E8. Reserve Balance

The balance of the City's stormwater reserve at December 31st, 2020 is \$(5,815,592.54). This updated balance takes into consideration expenditures up to end-2020 and assumes that front-ending debts will be drawn down via a withdrawal of all available cash in the account.

Stormwater Offsite Levy Reserve Balance

Description	Dr	Cr	Balance
Unallocated OSL Receipts 2011 & Prior	\$ 1,673,074.38		\$ 1,673,074.38
OSL Receipt 2012	\$ 33,629.81		\$ 1,706,704.19
Project Expenditures - Account Withdrawals Applied to Projects 2012 & Prior		\$ -	\$ 1,706,704.19
Interest Adjustment 2012	\$ 27,695.46		\$ 1,734,399.65
Account Balance per Muni Records 2012 & Prior			\$ 1,734,399.65
Project Expenditures - Additional Front-ending 2012 & Prior		\$ 2,648,130.70	\$ (913,731.05)
Balance			\$ (913,731.05)
2013			\$ (913,731.05)
Interest on Opening Balance	\$ -	\$ 31,980.59	\$ (945,711.64)
Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$ (945,711.64)
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ -	\$ (945,711.64)
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ (945,711.64)
OSL Receipts	\$ 340,023.83		\$ (605,687.81)
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ 279.83	\$ (605,967.64)
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ -	\$ (605,967.64)
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ (605,967.64)
Interest Adjustment for OSL Receipts	\$ 3,400.24		\$ (602,567.40)
Closing Balance			\$ (602,567.40)
2014			\$ (602,567.40)
Interest on Opening Balance	\$ -	\$ 21,089.86	\$ (623,657.26)
Project Expenditures - Account Withdrawals Applied to Projects		\$ -	\$ (623,657.26)
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ -	\$ (623,657.26)
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ (623,657.26)
OSL Receipts	\$ 163,245.30		\$ (460,411.95)
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ 184.54	\$ (460,596.49)
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ -	\$ (460,596.49)
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ (460,596.49)
Interest Adjustment for OSL Receipts	\$ 1,632.45		\$ (458,964.04)
Closing Balance			\$ (458,964.04)
2015			\$ (458,964.04)
Interest on Opening Balance	\$ -	\$ 16,063.74	\$ (475,027.78)
Project Expenditures - Account Withdrawals Applied to Projects		\$ 138,529.50	\$ (613,557.28)
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ (44,329.44)	\$ (569,227.84)
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ (569,227.84)
OSL Receipts	\$ 310,994.78		\$ (258,233.06)
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ 140.56	\$ (258,373.61)
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 1,212.13	\$ (259,585.75)
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ (259,585.75)
Interest Adjustment for OSL Receipts	\$ 3,109.95		\$ (256,475.80)
Closing Balance			\$ (256,475.80)

City of Medicine Hat Offsite Levy Rates Review

2016			\$ (256,475.80)
Interest on Opening Balance	\$ -	\$ 8,976.65	\$ (265,452.45)
Project Expenditures - Account Withdrawals Applied to Projects		\$ 102,079.40	\$ (367,531.85)
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ (32,665.41)	\$ (334,866.44)
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ (334,866.44)
OSL Receipts	\$ 35,446.68		\$ (299,419.76)
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ 78.55	\$ (299,498.31)
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 893.19	\$ (300,391.50)
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ (300,391.50)
Interest Adjustment for OSL Receipts	\$ 354.47		\$ (300,037.03)
Closing Balance			\$ (300,037.03)
2017			\$ (300,037.03)
Interest on Opening Balance	\$ -	\$ 10,501.30	\$ (310,538.33)
Project Expenditures - Account Withdrawals Applied to Projects		\$ 52,578.49	\$ (363,116.82)
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 73,490.44	\$ (436,607.26)
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ (436,607.26)
OSL Receipts	\$ 110,862.58		\$ (325,744.68)
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ 91.89	\$ (325,836.57)
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 460.06	\$ (326,296.63)
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ (326,296.63)
Interest Adjustment for OSL Receipts	\$ 1,108.63		\$ (325,188.00)
Closing Balance			\$ (325,188.00)
2018			\$ (325,188.00)
Interest on Opening Balance	\$ -	\$ 11,381.58	\$ (336,569.58)
Project Expenditures - Account Withdrawals Applied to Projects		\$ 929,150.29	\$ (1,265,719.87)
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 3,280,298.25	\$ (4,546,018.12)
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ (4,546,018.12)
OSL Receipts	\$ 1,164,669.85		\$ (3,381,348.27)
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ 88.78	\$ (3,381,437.05)
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 7,247.37	\$ (3,388,684.42)
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ (3,388,684.42)
Interest Adjustment for OSL Receipts	\$ 5,765.12		\$ (3,382,919.30)
Closing Balance			\$ (3,382,919.30)
2019			\$ (3,382,919.30)
Interest on Opening Balance	\$ -	\$ 118,402.18	\$ (3,501,321.48)
Project Expenditures - Account Withdrawals Applied to Projects		\$ 772,524.26	\$ (4,273,845.74)
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 1,711,377.60	\$ (5,985,223.34)
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ (5,985,223.34)
OSL Receipts	\$ 189,476.77		\$ (5,795,746.57)
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ 923.54	\$ (5,796,670.11)
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 6,025.69	\$ (5,802,695.80)
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ (5,802,695.80)
Interest Adjustment for OSL Receipts	\$ 937.91		\$ (5,801,757.89)
Closing Balance			\$ (5,801,757.89)
2020			\$ (5,801,757.89)
Interest on Opening Balance	\$ -	\$ 203,061.53	\$ (6,004,819.41)
Project Expenditures - Account Withdrawals Applied to Projects		\$ 20,798.67	\$ (6,025,618.08)
Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ (6,655.57)	\$ (6,018,962.51)
Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ (6,018,962.51)
OSL Receipts	\$ 204,105.76		\$ (5,814,856.75)
Interest Adjustment for Project Expenditures - Account Withdrawals Applied to Projects		\$ 1,583.88	\$ (5,816,440.63)
Interest Adjustment for Project Expenditures - Additional Front-ending (Not Incl Financing Costs)		\$ 162.23	\$ (5,816,602.86)
Interest Adjustment for Project Expenditures - Additional Front-ending (Financing/Debtenture Costs)		\$ -	\$ (5,816,602.86)
Interest Adjustment for OSL Receipts	\$ 1,010.32		\$ (5,815,592.54)
Closing Balance			\$ (5,815,592.54)

E9. Development and Stormwater Infrastructure Staging Impacts

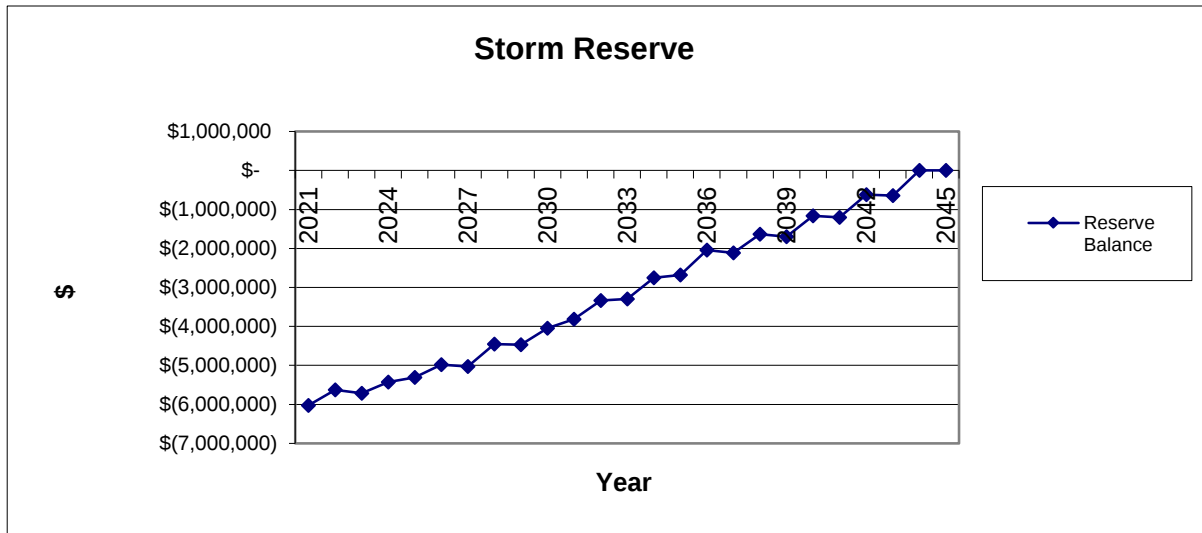
Stormwater offsite infrastructure will be constructed in staged fashion over the 25-year review period. We have reviewed the availability of offsite levy funds to meet these construction requirements and found that offsite levy reserve funds will not be sufficient to pay for construction of stormwater infrastructure from time to time—front ending of infrastructure will be required. A front-end is the party that constructs and pays up front for infrastructure that benefits other parties. The front-end (be it a municipality or a developer) is reimbursed over time as levies are collected, and in accordance with the municipality's front-ending repayment policies.

To compensate parties for capital they provide in front-ending offsite infrastructure

construction, a **3.62%** interest allowance has been charged to the reserve when it is forecast to be in a negative balance. Further, a **1.00%** interest credit has been provided to the reserve when it is forecast to be in a positive balance. The graph and table below outline the forecast water levy reserve balances over the 25-year development period.

If necessary, an interest staging adjustment has been applied to rates (slightly positive or slightly negative) to ensure that the forecast reserve balance at the end of the 25-year review period always returns to break-even (i.e., developers are not charged too much thereby providing a windfall to the City, nor are they charged too little thereby placing an unequitable burden on taxpayers).

Anticipated Stormwater Offsite Levy Reserve Balances⁶



⁶ In determining staging adjustments, the offsite levy model also applies inflation to future rates. In so doing it acknowledges that rates must keep pace with inflation just as costs do. Also, it acknowledges that an offsite levy rate of \$X paid today is not worth the same as the equivalent \$X rate paid in the future (i.e., it is discounted).

Anticipated Stormwater Offsite Levy Reserve Balances

		Opening Balance			\$ (5,815,593)
Year	Receipts	Expenditure	Interest	Balance	
2021	\$ -	\$ -	\$ (210,524)	\$ (6,026,117)	
2022	\$ 596,808	\$ -	\$ (196,541)	\$ (5,625,850)	
2023	\$ 113,127	\$ -	\$ (199,561)	\$ (5,712,283)	
2024	\$ 473,694	\$ -	\$ (189,637)	\$ (5,428,226)	
2025	\$ 304,543	\$ -	\$ (185,477)	\$ (5,309,160)	
2026	\$ 502,542	\$ -	\$ (174,000)	\$ (4,980,617)	
2027	\$ 128,562	\$ -	\$ (175,644)	\$ (5,027,700)	
2028	\$ 733,511	\$ -	\$ (155,450)	\$ (4,449,638)	
2029	\$ 136,391	\$ -	\$ (156,140)	\$ (4,469,387)	
2030	\$ 565,615	\$ -	\$ (141,317)	\$ (4,045,088)	
2031	\$ 363,641	\$ -	\$ (133,268)	\$ (3,814,715)	
2032	\$ 600,061	\$ -	\$ (116,370)	\$ (3,331,024)	
2033	\$ 153,510	\$ -	\$ (115,026)	\$ (3,292,541)	
2034	\$ 636,605	\$ -	\$ (96,145)	\$ (2,752,080)	
2035	\$ 162,858	\$ -	\$ (93,730)	\$ (2,682,952)	
2036	\$ 712,278	\$ -	\$ (71,338)	\$ (2,042,012)	
2037	\$ -	\$ -	\$ (73,921)	\$ (2,115,933)	
2038	\$ 538,545	\$ -	\$ (57,101)	\$ (1,634,490)	
2039	\$ -	\$ -	\$ (59,169)	\$ (1,693,658)	
2040	\$ 571,342	\$ -	\$ (40,628)	\$ (1,162,944)	
2041	\$ -	\$ -	\$ (42,099)	\$ (1,205,042)	
2042	\$ 606,137	\$ -	\$ (21,680)	\$ (620,586)	
2043	\$ -	\$ -	\$ (22,465)	\$ (643,051)	
2044	\$ 643,051	\$ -	\$ 0	\$ 0	
2045	\$ -	\$ -	\$ 0	\$ 0	

APPENDIX F: RATE COMPARISON

The table below compares the City of Medicine Hat offsite levy rates to rates in other municipalities.

Municipality / Area	Average Per Ha.
City of Beaumont* Residential (roads, water, sewer)	\$53,900 - \$77,600 (2019)
City of Lacombe* (roads, water, sewer, storm)	\$19,800 - \$120,100 (2013)
City of Brooks* (roads, water, sewer, storm)	\$79,823 (2021)
City of Beaumont* Industrial (roads, water, sewer)	\$80,900 - \$116,390 (2019)
City of Medicine Hat* (roads, water, sewer, storm)	\$102,012 (2022) In Progress
City of Cold Lake* (roads, water, sewer, storm)	\$103,000 (2007)
City of Fort Saskatchewan* (South Fort) (roads, water, sewer, storm)	\$104,100 (2017)
City of Lloydminster (roads, water, sewer)	\$112,900 (2011)
City of Leduc* (roads, water, sewer)	\$138,500 (2021)
City of Spruce Grove* (roads, water, sewer)	\$150,000 (2022) TBC In Progress
Town of Okotoks (roads, water, sewer)	\$198,600 (2020)
Town of Cochrane (roads, water, sewer, storm, recreation)	\$250,000 (2020)
City of Red Deer* (roads, water, sewer, storm)	\$203,300 (2019)
Red Deer County (Gasoline Alley) (roads, water, sewer, storm)	\$220,000 (2017)
Strathcona County (New Growth Areas)* (roads, water, sewer, storm)	\$ 251,000 (2021)
City of Lethbridge (roads, water, sewer, storm)	\$281,000 (2020)
City of Chestermere* (roads, water, sewer, storm, recreation)	\$295,960 (2022) In Progress
City of St. Albert* (roads, water, sewer, storm)	+\$325,000 (2022)
City of Edmonton (roads, water, sewer, storm)	+\$400,000
City of Calgary Green Field Area (roads, water, sewer, storm, comm svc, stabilization)	\$495,000 - \$544,000

*CORVUS clients

**Information adapted from recent online sources (2021). Note, some municipalities have updated (or are in the process of updating) levy rates, but these rates were not available online at the time of writing.