

PROPOSED

Report PFC2018-0973
ATTACHMENT 1

BYLAW NUMBER 41M2018

BEING A BYLAW OF THE CITY OF CALGARY TO AMEND BYLAW 2M2016 THE OFF-SITE LEVY BYLAW

WHEREAS Council has considered Reports C2018-0900 and C2018-0787 and considers it necessary to ensure a funding source exists for a substantial part of the infrastructure required to support new communities approved through the New Communities Growth Strategy 2018;

AND WHEREAS Council further considers it necessary to update the list of infrastructure included in the calculation of the off-site levies prior to scheduled review of the Off-Site Levies Bylaw 2M2016 in order that the proportionate share of the cost of off-site infrastructure attributable to new growth that provides servicing to these new communities is incorporated into 2M2016, including new rates for water, sanitary sewer, storm sewer and transportation infrastructure;

AND WHEREAS following an engagement and consultation process, The City of Calgary has updated the levies based on the application of the principles and criteria set out in the Off-Site Levies Regulation, Alta Reg 187/2017, and as outlined in The City of Calgary Off-Site Levy and Community Services Charges Background Report Addendum, contained as Schedule “B” of this bylaw;

AND WHEREAS notice of this bylaw has been provided pursuant to the provisions of sections 606 and 648 of the Municipal Government Act;

NOW, THEREFORE, THE COUNCIL OF THE CITY OF CALGARY ENACTS AS FOLLOWS:

1. Bylaw 2M2016, the Calgary Off-site Levies Bylaw, is hereby amended as follows:
 - a. Section 4(2) is amended by inserting the following after the words “Schedule “C”:
“, as amended by The City of Calgary Off-Site Levy and Community Service Charges Background Report Addendum attached to this Bylaw as Schedule “D””;
 - b. Schedule “B” is amended by deleting Table 1, entitled “Levy Rates in the Greenfield Area”, in its entirety and replacing it with a new Table 1, entitled “Levy Rates in the Greenfield Area”, attached hereto as Schedule “A”; and
 - c. Add a new Schedule “D”, attached hereto as Schedule “B”.

PROPOSED

BYLAW NUMBER 41M2018

2. This bylaw comes into force on December 31, 2018.

READ A FIRST TIME ON _____

READ A SECOND TIME ON _____

READ A THIRD TIME ON _____

MAYOR

SIGNED ON _____

CITY CLERK

SIGNED ON _____

PROPOSED

BYLAW NUMBER 41M2018

SCHEDULE "A"

TABLE 1 - Levy Rates in the Greenfield Area

LEVY	2018 Rate (\$/ha)
<i>Transportation levy</i>	\$133,740.00
Bow River	\$8,340.00
Elbow River	\$0
Fish Creek	\$21,511.00
<i>storm sewer levy</i> (by watershed)	\$16,868.00
Nose Creek	\$18,943.00
Pine Creek	\$44,110.00
Shepard	\$50,127.00
<i>sanitary sewer levy</i>	\$43,413.00
<i>water levy</i>	\$138,359.00
<i>treatment plant levy</i>	

PROPOSED

BYLAW NUMBER 41M2018

SCHEDULE "B"

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BYLAW NUMBER 41M2018

Calgary



**SCHEDULE "D"
TO BYLAW 2M2016**

The City of Calgary

Off-Site Levy and Community Services Charges Background Report Addendum

October 2018



PROPOSED

BYLAW NUMBER 41M2018

Off-Site Levy and Community Services Charges Background Report
Addendum

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PROPOSED

BYLAW NUMBER 41M2018

Off-Site Levy and Community Services Charges Background Report
Addendum

EXECUTIVE SUMMARY

On 30 July 2018, Council approved the New Community Growth Strategy 2018. Certain transportation and water resources infrastructure required to service these new communities was not contemplated at the time of the 2016 Off-site Levy Bylaw. Council directed that this infrastructure be incorporated into the existing Bylaw 2M2016.

This Off-site Levy & Community Services Charges Background Report Addendum (hereafter referred to as the "Background Report Addendum") in combination with the Off-site Levy & Community Services Charges Background Report (December 2015) (the "2015 Background Report") forms part of the Off-site Levy Bylaw. The Background Report Addendum details the amended assumptions, infrastructure projects and capital costs underpinning the revisions to the levies based on the inclusion of new growth-related infrastructure to be funded through the Off-site Levy program. Jointly with the 2015 Background Report, the Background Report Addendum details the process used to deliver the update, infrastructure needs, calculation methodology and assumptions utilized to establish the amended Off-Site Levies.

These amendments are limited to only consider the inclusion of new growth-related infrastructure that provides servicing to new communities not previously contemplated under the 2016 Off-site Levy Bylaw. To support development of these new communities, additional infrastructure is required under the following infrastructure types: a

- Transportation
- Water Distribution
- Wastewater Collection
- Drainage Systems

This Background Report Addendum outlines amendments made in the determination of the Off-Site Levies to incorporate the new transportation and utility infrastructure. No changes are proposed for the Water Treatment Plant levies or the Community Services Charges, which means the levies applied in the Established Areas are unchanged. The proposed amendments align with the guiding principles established in consultation with stakeholders in 2015 and apply a consistent calculation methodology to the 2016 Off-site Levy Bylaw.

In alignment with the 2016 Off-site Levy Bylaw, the amendments ensure those who will use and benefit from the infrastructure pay their share of the costs in a fair and equitable manner. The amendments create certainty by providing stable charges to the development industry and by allowing the orderly and timely construction of infrastructure as determined by The City.



PROPOSED

BYLAW NUMBER 41M2018

Off-Site Levy and Community Services Charges Background Report
Addendum

Table 1 provides a summary of the Levy Rates amended based on the inclusion of new infrastructure as detailed in the Background Report Addendum.

Table 1 – Amended Off-site Levy Rates for Greenfield Area

Infrastructure	2018 Rate (\$/Ha)
Transportation	\$133,740
Water Distribution	\$43,413
Wastewater Collection	\$50,127
Drainage Systems - By Catchment	
Bow River	\$8,340
Elbow River	\$0
Fish Creek	\$21,511
Nose Creek	\$16,868
Pine Creek	\$18,943
Shepard	\$44,110



PROPOSED

BYLAW NUMBER 41M2018

Off-Site Levy and Community Services Charges Background Report
Addendum

1.0 INTRODUCTION

Calgary is a great city known worldwide for its quality of life and robust economy. As a result, it has continued to experience rapid growth. Despite the recent economic downturn, Calgary is forecast to grow by 1.3 million people in the next 60 years. Growth provides numerous benefits along with a requirement for investment in services and infrastructure to support the growth.

Developers fund the capital cost of the local infrastructure within new communities such as roads, sidewalks, parks and underground utilities. Growth also creates a need for additional or expanded infrastructure that is off-site from these communities such as water and wastewater systems, and major roads and interchanges. One of the tools used to help fund the capital cost of this infrastructure is to charge developers off-site levies. The Municipal Government Act (MGA) authorizes municipalities to create off-site levies that can be imposed at the time of subdivision or development permit approval.

In 2015, The City initiated a review and major update of off-site levies related to new or expanded transportation, water resources and community services infrastructure. Extensive stakeholder engagement contributed to the review and development of the 2016 Off-site Levy Bylaw, which was approved by Council on 2016 January 11.

On 30 July 2018, Council approved 14 new greenfield communities for development as part of the New Community Growth Strategy 2018. Certain transportation and water resources infrastructure required to service these new communities was not contemplated at the time of the 2016 Off-site Levy Bylaw. Council directed that this infrastructure be incorporated into the existing Bylaw 2M2016.

To reflect the approval of new growth areas, this Background Report Addendum has been developed to outline amendments made to the levy calculations to support the inclusion of new growth-related infrastructure to be funded through the Off-site Levy. The Background Report Addendum in combination with the Off-site Levy 2015 Background Report forms part of the Off-site Levy Bylaw.

1.1 Purpose of the Background Report Addendum

The amendments outlined within the Background Report Addendum are limited to the incorporation of new growth-related infrastructure not previously contemplated under the 2016 Off-site Levy Bylaw that provides servicing to the new communities. It adds to, but does not replace, the 2015 Background Report.

Additional infrastructure has been identified for the following infrastructure types:

- Transportation
- Water Distribution
- Wastewater Collection
- Drainage Systems

No changes are proposed for the Treatment Plant Levy or the Community Services Charges, which means the levies applied in the Established Areas are unchanged. Amendments outlined within the Background Report Addendum remain consistent with the guiding principles established in consultation with stakeholders in 2015. In response to the guiding principles of *Certainty, Clarity and Transparency* and *Efficiency*, the methodology and fundamental, underlying assumptions utilized to calculate the levy rates adopted in 2016 have not been altered. However, the amendments articulated in the Background Report Addendum recognize the additional infrastructure needs and ensure those that benefit from the infrastructure, pay for the infrastructure (*Benefit Allocation*) and that the *Financial Sustainability* of the Off-site Levy Program remains robust.



PROPOSED

BYLAW NUMBER 41M2018

Off-Site Levy and Community Services Charges Background Report
Addendum

2.0 STAKEHOLDER ENGAGEMENT

Extensive stakeholder engagement contributed to the review and development of the 2016 Off-site Levy Bylaw, which was approved by Council 2016 January 11. As the proposed amendments will not impact established area landowners, and given the nature of the amendments, a more focused approach was utilized to consult with greenfield stakeholders. This approach is consistent with the Principles and Criteria for Off-Site Levies Regulation within the MGA, which requires that "...the municipality must consult in good faith on the calculation of the levy with stakeholders in the benefiting area where the levy will apply" (Alberta Regulation 187/2017).

Administration worked with BILD Calgary Region to formulate a working group consisting of greenfield developers with and without newly identified infrastructure requirements to service the new growth areas. The working group met four times between 2018 August 27 and 2018 September 18. The intent of these meetings was to review, discuss and provide feedback related to the proposed infrastructure being added, amendment approach and levy calculations.

In addition to consulting with the working group, an information package related to the amendments was distributed to Industry organizations (BILD, NAIOP, BOMA) to notify stakeholders of the proposed amendments and provide opportunities for feedback. Lastly, an information session was held on 2018 September 21, to provide an in-person opportunity for stakeholders to attend and provide feedback on the proposed amendments. Stakeholders were notified through the information package, meetings with industry, and through BILD Calgary Region circulation for the information session; approximately 35 members of industry attended.



PROPOSED

BYLAW NUMBER 41M2018

Off-Site Levy and Community Services Charges Background Report
Addendum

3.0 GROWTH PROJECTIONS

Growth projections identify the benefiting area and population over which infrastructure costs are allocated. Dividing the growth infrastructure cost by the benefiting area or population produces the levy rate per hectare or unit amounts referenced in the Bylaw.

Overall growth projections, as outlined in Chapter 4 of the Off-site Levy 2015 Background Report, along with the residential, non-residential, and industrial share of annual growth remain consistent with the December 2015 Background Report. Through the approval of the New Community Growth Strategy 2018, the projected distribution of residential growth between the watershed catchments from 2019-2024 was amended to reflect a revised growth pattern accounting for the new areas. This redistribution impacts the drainage system levies, which are calculated with a catchment-based methodology; the city-wide levies are unaffected by these revisions.

4.0 AMENDMENTS

4.1 Transportation

The City of Calgary's Municipal Development Plan and Calgary Transportation Plan set out a clear framework for development growth over a 60-year timeline with associated transportation infrastructure requirements to build out the plans, as envisioned. The transportation Off-site Levy provides a mechanism for greenfield growth to contribute to the cost of transportation infrastructure based on the benefit allocated to greenfield development.

4.1.1 INFRASTRUCTURE NEEDS

Through the approval of the New Community Growth Strategy 2018 on 2018 July 30, the 80th Avenue / Stoney Trail Overpass was identified as an additional infrastructure need not contemplated in the 2016 Bylaw. Details related to the 80th Avenue / Stoney Trail Overpass are described in Table 2. The cost estimates are based on a Class V cost estimate, as per the Corporate Project Management Framework definitions. Cost estimates for new infrastructure were determined through the New Community Growth Strategy 2018 process.

Table 2 – New Transportation Infrastructure Costs

Infrastructure	New Greenfield Area Project	Total New Greenfield Area Transportation Infrastructure Cost (\$millions)
Interchanges	80 th Avenue / Stoney Trail Overpass	\$8.5

Appendix A of the Background Report Addendum has been updated to include the newly identified infrastructure project.

The total transportation greenfield capital costs identified in the 2016 Bylaw were \$2,620 million. Inclusion of the 80th Avenue / Stoney Trail Overpass results in a revised greenfield capital cost of \$2,629 million as displayed in Table 3.

Table 3 – Total Transportation Infrastructure Costs

Infrastructure	Total Transportation Infrastructure Costs (\$millions)
Established Areas Projects	\$6,062
Greenfield Areas Projects	\$2,629

4.1.2 AMENDMENT APPROACH

The transportation levy is based on a city-wide approach over a 60-year time horizon. The amendment approach does not contemplate adjustments to the growth projections or the allocation of benefit assigned to greenfield growth determined in the 2016 Bylaw. The new infrastructure identified contributes to the overall city transportation network and provides benefit to greenfield growth anticipate over 60-year time horizon. As such, the amendment approach recalculates the 2016 levy based on the new total transportation infrastructure costs allocated to greenfield development over the 60-year time horizon. The recalculated levy is then adjusted annually to determine the 2019 transportation levy rate.

4.1.3 LEVY CALCULATION

Details of the methodology and benefit allocation remain unchanged from Chapter 5 of the Off-site Levy 2015 Background Report.

The levy calculation remains unchanged from the original 2015 Background Report methodology:

$$\text{Levy Rate} = \frac{\text{GF Area Reduction (\%)} \times [(\text{GF Costs (\$)} \times \text{GF Benefit (\%)} + \text{Established Costs (\$)} \times \text{GF Benefit (\%)}]}{60 \text{ year GF Developable Area (Ha)}}$$

Based on the updated total greenfield transportation costs identified in Table 3 the amended levy calculation is as follows:

$$\text{Levy Rate (2016 Recalculation)} = \frac{0.9 \times [(\$2.629\text{M} \times 67\%) + (\$6.062\text{M} \times 17\%)]}{18,345 \text{ Ha}} = \$136,976/\text{Ha}$$

The transportation levy is adjusted annually on January 1 in the amount of the percentage equal to the average Statistics Canada non-residential construction price index (NRCPI) for Calgary for the previous four published quarters. The transportation levy rate effective 2018 December 31 is \$133,740 per hectare, as displayed in Table 4. This rate will be subject to the annual adjustment, which will be applied on 2019 January 1.

Table 4: Transportation Levy

Year	Transportation Levy
2018	\$133,740

4.2 Water Resources

The Water Resources Off-site Levy program is divided into the following three components:

- Water Distribution & Wastewater Collection – including upgrades and extensions to water distribution infrastructure and wastewater collection infrastructure.
- Drainage Systems – including new and upgraded drainage facilities and collection systems
- Water and Wastewater Treatment – including new plants, upgrades and capacity for wastewater and water treatment

A variety of additional water distribution, wastewater collection and drainage systems infrastructure needs were identified to provide service to new growth areas that were not contemplated in the 2016 Bylaw. No additional infrastructure needs were identified for water and wastewater treatment; these levies remain unchanged from the 2015 Background Report.

Through development of the Water Resources levy program in 2015 four Guiding Principles, as described in Section 2.3 of the 2015 Background Report, were particularly important. These specific principles guided the amendment approach utilized and are as follows:

- **Certainty** – A primary objective of the water resources program is to provide revenue assurance to the utilities.
- **Financial Sustainability** – Long term financial sustainability of the utilities is extremely important. There are two parts to this objective. The first is resiliency to ensure that the framework for funding and financing of growth infrastructure is responsive to changing growth levels. The second part is to manage financial risks in the business.
- **Fairness and Equity** – Fairness and equity ensures that those benefiting from the infrastructure are paying for that benefit.
- **Efficiency** – Finally, the water resources program provides an efficient levy process that is simple to administer and understand.

4.2.1 AMENDMENT APPROACH

In 2015 the Water Resources levy program methodology to calculate water distribution, wastewater collection and drainage systems levy rates was updated. The levy program was based on a 10-year timeframe reflective of The City's 10-year capital planning process (2015-2024). When the Bylaw was passed in 2016 the levy calculation was adjusted to 9 years based on the timeframe remaining in the 10-year capital plan.

In alignment with the guiding principles articulated above, the amendment approach updates the new infrastructure needs identified within the remaining 6-year timeframe (2019-2024) based on the new growth areas and recalculates the water, wastewater and drainage systems levy rates. Recognition of the new infrastructure needs in the levy rates reflects a responsiveness to the funding and financing of new infrastructure needs to support development of the new communities along with a reciprocal need to ensure those benefiting pay for the infrastructure. This provides a consistent approach to the levy calculation methodology established through extensive stakeholder engagement in 2015.

The levy calculation in the 2015 Background Report included a number of assumptions to calculate the levy rate, including interest rate projections and project timelines. All assumptions remain consistent with the 2016 Bylaw, save for total project costs to allow for the inclusion of new growth infrastructure and residential growth distribution to account for the new growth areas.

4.2.2 INFRASTRUCTURE NEEDS

The water distribution and wastewater collection off-site levies are applied across all greenfield areas, while application of the drainage system levy is dependent on which of the six major watershed catchments areas the subject lands are located within. These catchments are: Bow River, Elbow River, Fish Creek, Nose Creek, Pine Creek and Shepard.

Table 5 summarises the total costs for water distribution, wastewater collection and drainage systems infrastructure required to service growth from 2016 – 2024. Further details on costs are provided in Appendix B of the Background Report Addendum.

Table 5 - Water Distribution, Wastewater Collection and Drainage Systems Total Infrastructure Costs

Infrastructure	Total Infrastructure Costs -2016 Bylaw (\$millions)	Total New Infrastructure Costs (\$millions)	Total Infrastructure Costs – 2016 – 2024 (\$millions)
Water Distribution	266.4	98.3	364.7
Wastewater Collection	497.0	29.1	526.1
Drainage Systems	67.9	24.0	91.9
Total	831.3	151.3	982.6

Cost estimates used in the levy calculation are generally Class V cost estimates, as per the Corporate Project Management Framework definitions. These estimates include engineering, contingency and project administration. Cost estimates for new infrastructure were determined through the New Community Growth Strategy 2018 process.

4.2.3. ALLOCATION OF BENEFIT

Water Distribution & Wastewater Collection

The approach to allocating costs to greenfield growth for the new infrastructure needs identified is consistent with the 2016 Bylaw - all sanitary and water linear extensions to serve new development areas are 100% attributable to new growth, while costs allocated to growth for upgrades are undertaken on a project by project basis. Detailed allocations can be found in Appendix B of the Background Report Addendum.

Table 6 summarises the allocation of water distribution and wastewater collection infrastructure costs to greenfield growth. The allocation includes infrastructure identified in the 2016 Bylaw plus the new infrastructure needs identified.

Table 6 - Greenfield Allocation of Water Distribution & Wastewater Collection Infrastructure Costs

Infrastructure	Total Infrastructure Costs – 2016 – 2024 (\$millions)	Greenfield Water Distribution & Wastewater Collection Infrastructure Costs – 2016 - 2024 (\$millions)
Water Distribution	364.7	186.2
Wastewater Collection	526.1	231.6
Total	890.8	417.8

Drainage Systems

The approach to allocating costs to greenfield growth for new infrastructure needs identified is consistent with the 2016 Bylaw - none of the drainage projects included in the levy calculation benefit existing development or regional areas and drainage system levy rates only include the project costs determined to benefit the Greenfield Area of the drainage catchment.

Table 7 summarises the allocation of drainage system infrastructure costs to green growth. The allocation includes infrastructure identified in the 2016 Bylaw plus the new infrastructure needs identified.

Table 72 – Greenfield Allocation of Drainage System Infrastructure Costs

Infrastructure	Total Infrastructure Costs – 2016 – 2024 (\$millions)	Greenfield Drainage System Infrastructure Costs – 2016 - 2024 (\$millions)
Greenfield Area	91.9	68.5



PROPOSED

BYLAW NUMBER 41M2018

Off-Site Levy and Community Services Charges Background Report
Addendum

4.2.4. LEVY CALCULATION

The calculation utilized for the amended levy rates for water distribution, wastewater collection and drainage systems is consistent with Chapter 6 of the Off-site Levy 2015 Background Report. The amended calculation accounts for the inclusion of new infrastructure costs and adjusts the residential distribution of growth to reflect future growth within new growth areas. The calculation utilized for water, wastewater, and drainage systems levy rates is as follows.

$$\text{Debt Servicing for Greenfield Growth-Related Capital Costs (9 yrs.)} = \text{Cost Base Future Value}$$

$$\frac{\text{Cost Base Future Value}}{(1 + \text{Discount Rate})^{n1 \dots n9}} = \text{Cost Base Present Value}$$

$$\frac{\text{Cost Base Present Value}}{\text{Greenfield Developable Land Forecast (9 yrs.)}} = \text{Off-site Levy}$$
Table 83 – 2018 Water Distribution and Wastewater Collection Levy Rate (\$/Ha.)

Water Distribution	\$43,413
Wastewater Collection	\$50,127

The proposed Off-site Levy for drainage systems is shown in the following table.

Table 9 – 2018 Drainage System Levy Rate by Catchment

Catchment	\$ per Hectare
Bow River	\$8,340
Elbow River	-
Fish Creek	\$21,511
Nose Creek	\$16,868
Pine Creek	\$18,943
Shepard	\$44,110

Water distribution, wastewater collection and drainage system levy rates are increased annually on January 1 by 3.3 per cent. The proposed rates in Tables 8 and 9 will be effective 2018 December 31. These rates will be subject to the annual January 1 increases, which will be applied on 2019 January 1.

5.0 SUMMARY OF OFF-SITE LEVIES

5.1 Summary of Amended Off-site Levy Rates for Greenfield Area

Table 10 below provides a summary of the 2018 Levy Rates amended based on the inclusion of new infrastructure as detailed in the Background Report Addendum. These rates will come into effect 31 December 2018 and be subject to the annual adjustments applied on 1 January 2019.

Table 10 – Amended Off-site Levy Rates for Greenfield Area

Infrastructure	2018 Rate (\$/Ha)
Transportation	\$133,740
Water Distribution	\$43,413
Wastewater Collection	\$50,127
Drainage Systems - By Catchment	
Bow River	\$8,340
Elbow River	-
Fish Creek	\$21,511
Nose Creek	\$16,868
Pine Creek	\$18,943
Shepard	\$44,110

APPENDIX A - TRANSPORTATION

Table 11 (Update to Table 34 in 2015 Background Report) – Greenfield Infrastructure Transportation Project List
New infrastructure is identified in red text.

Category	Project Name	Total Cost (millions)
Interchanges	Métis Tr / Airport Tr I/C	\$70.0
	Airport Tr / Stoney Tr NE (Ultimate)	\$60.0
	Macleod Tr / 194 AV SE I/C	\$70.0
	Macleod Tr / 210 AV SE I/C	\$70.0
	West 22X/53 St SW Interchange	\$70.0
	West 22X/ 85th St W Interchange	\$70.0
	West 22X/69 St W interchange	\$70.0
	Deerfoot Tr / 212 AV SE I/C	\$16.0
	104 St / Marquis of Lorne (Fly Over) SE	\$30.0
	120 St / Marquis of Lorne I/C SE	\$70.0
	East Freeway/130th Ave SE I/C (To/from the North)	\$40.0
	East Freeway/106th Ave Trail Fly Over	\$30.0
	Glenmore Tr / 68 ST SE I/C	\$70.0
	Glenmore / Garden Rd SE	\$70.0
	Glenmore / 116th E I/C Se (Second Structure and Upgrade requirements)	\$70.0
	Peigan Tr / 52 ST NE I/C	\$70.0
	Peigan Trail/68th St I/C	\$60.0
	East Freeway / Memorial Dr Flyover	\$30.0
	16 AV NE / 68 ST NE I/C	\$70.0
	East Freeway/ 32 AV NE Flyover	\$30.0
	64 Ave / East Freeway Flyover	\$30.0
	Airport Trail/36th St NE I/C	\$40.0
	Airport Trail/60th St NE I/C	\$75.0
	Métis Tr / 64 AV NE I/C	\$70.0
	Metis Trail/128th Ave NE I/C	\$70.0
	60 St / Stoney Tr I/C NE	\$50.0
	Deerfoot Tr / 128 AV NE I/C	\$60.0
	Deerfoot Tr / Country Hills Blvd I/C (second structure)	\$30.0
	Deerfoot Tr/Airport Trail Ultimate	\$50.0
	160 Ave / Hwy 2 NE (second structure and upgrade requirements)	\$30.0
	11th Street/Stoney Trail I/C	\$50.0
	Centre St / Stoney Tr (second structure and upgrade requirements)	\$15.0
	14 St / Stoney I/C	\$40.0
	Shaganappi Tr/Stoney Tr (second structure and upgrade requirements)	\$15.0
	Centre St / Hwy 566 I/C	\$80.0
	Crowchild Tr / 12 Mile Coulee Rd I/C	\$70.0
	80 th Avenue / Stoney Trail Overpass	\$8.5
	Total	\$1,919.5

PROPOSED

BYLAW NUMBER 41M2018

Off-Site Levy and Community Services Charges Background Report Addendum: Appendix "A"

Road Structures over Rail/Creek	CP Rail at 194th Ave SW	\$25.0
	CP Rail at 210th Ave SW	\$25.0
	210 Ave SW at Pine Creek	\$20.0
	Pine Creek Crossing in South Macleod	\$25.0
	CP Rail at 114th Ave SE	\$25.0
	WID Canal Crossing at Glenmore Trail SE	\$20.0
	144th Ave at West Nose Creek	\$25.0
	160th Ave at West Nose Creek	\$25.0
	160th Ave at Rail and Creek Crossing (6 Lane X-section over creek, rail, service road)	\$53.0
	11th St at Nose Creek/CPR Rail Crossing	\$20.0
Total		\$263.0
Expressways	Airport Tr - Barlow Tr, Airport - 19 St interchanges and widening 36 St to 60 St NE	\$83.0
	88 Street SE skeletal road extension	\$17.0
	Total	\$100.0
Ring Road Connections	SW and West Ring Road Connections	\$133.3
	Total	\$133.3
Greenfield Traffic	296 signals required	\$81.4
	Total	\$81.4
Pedestrian Overpasses	Stoney Tr, between Centre St and 14 St NW	\$6.0
	Stoney Tr, between Centre St and 11 St NE	\$6.0
	Airport Tr, east of Metis Tr, between Cityscape and Savannah	\$6.0
	Country Hill Bv NE, west of Stoney Trail, between North Cornerstone and South Cornerstone	\$6.0
	52 Street SE, between Auburn Bay and Mahogany	\$6.0
	Bow River, between Legacy and Cranston	\$12.0
	Total	\$42.0
BRT Infrastructure	162 Avenue SW, SW Ring Road to west side of Providence	\$90.0
	Total	\$90.0
Greenfield Transportation Infrastructure List: TOTAL		\$2,629.2

APPENDIX B – WATER RESOURCES

Table 12 (Update to Table 35 in 2015 Background Report) – Water Distribution, Wastewater Collection and Drainage Systems Infrastructure Project Lists
New infrastructure is identified in red text.

Category	Project Name	Allocation				Total Cost (millions)
		% Growth	% Greenfield	% Established	% Regional	
Water Distribution & Wastewater Collection						
Water Linear Extension Infrastructure	Ogden Feeder Main	100.0%	27.9%	55.0%	17.1%	\$38.5
	Lower Sarcee Feeder Main	100.0%	71.1%	15.7%	11.8%	\$30.9
	210 Ave SW Pump Station	100.0%	69.1%	17.8%	13.0%	\$15.0
	210 Ave Feeder Main	100.0%	69.1%	17.8%	13.0%	\$12.0
	East McKenzie FM	100.0%	29.8%	54.6%	15.6%	\$6.4
	Northridge FM Ph 1 and 2	100.0%	83.2%	16.8%	0.0%	\$30.7
	Northridge Reservoir Land	100.0%	83.2%	16.8%	0.0%	\$3.2
	Northridge Reservoir	100.0%	83.2%	16.8%	0.0%	\$12.1
	North Ridge West Leg Feedermain	100.0%	83.2%	16.8%	0.0%	\$20.8
	Belvedere Water Feeder Main Ph 1 and 2	100.0%	100.0%	0.0%	0.0%	\$23.0
	Haskayne Feedermain	100.0%	100.0%	0.0%	0.0%	\$11.3
	Providence 146 Ave Feedermain, Starlight East Pump Station and Westview Reservoir and Land	100.0%	100.0%	0.0%	0.0%	\$31.1
		Total				
Sanitary Linear Extension Infrastructure	North Ridge Macdonald Trunk	100.0%	100.0%	0.0%	0.0%	\$7.1
	West Pine Creek Sanitary Trunk Ph 2	100.0%	100.0%	0.0%	0.0%	\$46.6
	Seton Tunnel Ph 1	100.0%	100.0%	0.0%	0.0%	\$31.8
	Seton Tunnel Ph 2	100.0%	100.0%	0.0%	0.0%	\$18.8
	144 Ave NE San Trunk	100.0%	100.0%	0.0%	0.0%	\$24.1
	North Beddington San Ph 2 CFA	100.0%	100.0%	0.0%	0.0%	\$8.9
	Beddington Creek II East Leg	100.0%	100.0%	0.0%	0.0%	\$2.7
	Belvedere Sanitary Trunk	100.0%	100.0%	0.0%	0.0%	\$6.0
	Glacier Ridge East Basin Sanitary Trunk	100.0%	100.0%	0.0%	0.0%	\$4.0
	Glacier Ridge West Basin Sanitary Trunk	100.0%	100.0%	0.0%	0.0%	\$8.2
	Haskayne Sanitary Trunk	100.0%	100.0%	0.0%	0.0%	\$3.9
	Rangeview Sanitary Trunk Laterals	100.0%	100.0%	0.0%	0.0%	\$7.0
		Total				
Sanitary Upgrade Infrastructure	Redevelopment	TBD	0.0%	100.0%	0.0%	\$20.9
	Saddle Ridge Sanitary Upgrade	100.0%	46.2%	53.8%	0.0%	\$5.1
	Bowness Trunk Upgrade	87.0%	19.3%	40.5%	40.2%	\$48.6
	Shouldice Trunk Upgrade	61.0%	11.6%	69.3%	19.1%	\$24.0
	Nose Creek Trunk Upgrade	88.0%	48.4%	18.3%	33.3%	\$87.7
	Inglewood Trunk Upgrade	87.0%	24.0%	57.4%	18.7%	\$55.9
	McKenzie Siphon Upgrade	38.0%	40.5%	59.5%	0.0%	\$7.4
	17th Ave Trunk Upgrade	TBD	0.0%	100.0%	0.0%	\$4.6
	Beltline Trunk Upgrade	TBD	0.0%	100.0%	0.0%	\$1.5
	Forest Lawn LS Sewer Upgrading 1	55.0%	0.0%	100.0%	0.0%	\$6.7
	Forest Lawn LS Sewer Upgrading 2	68.0%	0.0%	100.0%	0.0%	\$6.6

PROPOSED

BYLAW NUMBER 41M2018

Off-Site Levy and Community Services Charges Background Report Addendum: Appendix "B"

	Fish Creek West Sub Trunk	TBD	0.0%	TBD	TBD	\$14.3
	Tsui Tina Connection Upgrade	TBD	0.0%	TBD	TBD	\$9.4
	Elbow Drive Trunk Upgrade 1	TBD	0.0%	100.0%	0.0%	\$1.4
	Elbow Drive Trunk Upgrade 2	TBD	0.0%	100.0%	0.0%	\$16.1
	Penbrooke Trunk Upgrades	89.0%	0.0%	100.0%	0.0%	\$46.7
	Total					\$356.9
Category	Project Name	Allocation				Total Cost (millions)
		% Growth	% Greenfield	% Established	% Regional	
Water Upgrade Infrastructure	Airdrie FM Tie-in and Meter Chamber Relocation	100.0%	100.0%	0.0%	0.0%	\$1.4
	Pump Station 36 Installation	100.0%	83.2%	16.8%	0.0%	\$0.2
	Redevelopment	TBD	0.0%	100.0%	0.0%	\$11.5
	South Glenmore Reservoir Basin II	60.0%	29.8%	54.6%	15.6%	\$40.4
	Bearspaw Pump Station STN012 Upgrade	37.0%	28.3%	40.6%	31.1%	\$6.6
	Bearspaw Pump Station STN020 Upgrade	37.0%	28.3%	40.6%	31.1%	\$2.0
	Nose Hill Feedermain	37.0%	28.3%	40.6%	31.1%	\$37.8
	Country Hills Blvd Uptown Feedermain	37.0%	28.3%	40.6%	31.1%	\$29.8
	Total					\$129.6
Drainage Facilities & Network						
Drainage Facilities & Network	North Ridge Macdonald Trunk	100.0%	100.0%	0.0%	0.0%	\$7.5
	Redevelopment	TBD	0.0%	100.0%	0.0%	\$20.8
	Priddis Storm Trunk Outfall	100.0%	100.0%	0.0%	0.0%	\$23.8
	144 Av NE Storm Trunk Outfall*	100.0%	100.0%	0.0%	0.0%	\$10.4
	North Beddington Storm Trunk	100.0%	100.0%	0.0%	0.0%	\$1.7
	Riverbend Trunk Pond	TBD	0.0%	100.0%	0.0%	\$2.6
	Seton Storm Trunk	100.0%	100.0%	0.0%	0.0%	\$8.0
	Seton Storm Trunk Ph 2	100.0%	100.0%	0.0%	0.0%	\$3.5
	Glacier Ridge West Basin Storm Trunk and Outfall	100.0%	100.0%	0.0%	0.0%	\$3.8
	Haskayne Storm Outfall	100.0%	100.0%	0.0%	0.0%	\$2.0
	Providence Storm Trunk and Outfall	100.0%	100.0%	0.0%	0.0%	\$7.8
	Total					\$91.9

*144 Av NE Storm Trunk Outfall was included in the 2015 Background Report with no project cost. This has been amended in the Background Report Addendum to reflect the projected project cost.