

Subject:	Regional Water and Wastewater Off-Site Levy Bylaw Update
Date:	April 16, 2024
Presenter:	Jeannette Lee, Manager
Department:	Capital & Engineering Services

REPORT SUMMARY

The Regional Water and Wastewater Off-Site Levy Bylaw provides for the fair and equitable allocation of Off-Site levies related to Water and Wastewater Infrastructure in accordance with the *Municipal Government Act*. Since the adoption of the bylaw, updates have been delivered regarding the collection of the levy and expenditures on various upgrades for the system. This report serves the purpose of offering an update to the bylaw, including an adjustment of the capacity committed to date and a recalculation of the rates for the water and wastewater system.

The County's Water and Wastewater Off-Site Levy Bylaw update was prepared following a comprehensive review of the County's Water and Wastewater systems and financials to the end of 2022. Key updates to the Bylaw include:

- Update schedules based on allocated capacity.
- Update schedules based on levies collected and outstanding debt.
- Updates to infrastructure expansion costs and accommodation for inflation.
- Amendment to schedule "C-1" – Langdon Wastewater Treatment Plant Levy to include provision to update the treatment technology from the mechanical Sequential Batch Reactor (SBR) to a moving bed biofilm reactor (MBBR) technology.
- Addition of Schedule "C-13a" and "C-13b" to capture the recent expansion of the system to the West Balzac area.

A summary of all the proposed changes to the Schedules within the Bylaw has been provided in Attachment A of this report. This report is intended to provide the Committee with the updated rate calculated based on the committed capacity and outstanding debt on the system. The next phase of this process would be to initiate the engagement process with external stakeholders prior to a report to Council with the amended Bylaw by Q4 of 2024.

ADMINISTRATION'S RECOMMENDATION

THAT the Governance Committee receives the Regional Water and Wastewater Off-Site Levy Bylaw update report as information.

BACKGROUND

The Regional Water and Wastewater Off-Site Levy Bylaw establishes a framework that aligns with Council's Strategic Plan thoughtfully managing growth and ensuring the County's financial prosperity. Growth resulting from new development creates opportunities for residents and businesses by fostering a vibrant and diverse economy and generating additional tax revenues to support County services. Growth also affects the costs of operating and maintaining the County's Infrastructure. Balancing the benefits and costs of growth is a key focus of the County's Strategic Plan, and the levy structure is a critical tool to help achieve that. It ensures that new development pays a proportionate share of the costs

needed for the addition, expansion, and long-term sustainability of the County's Water and Wastewater network resulting from that growth.

Key systems such as the East Rocky View Regional System, Dalroy Wastewater System, Cochrane Lake System, Bragg Creek System, and Blazer & Bearspaw Regional System are highlighted, each playing a crucial role in water supply and wastewater treatment for their respective areas. Recent acquisitions and planned expansions underscore the County's commitment to meeting the demands of a growing population while ensuring the long-term sustainability of its infrastructure and financial resources. A high-level summary of each of the systems can be found in Attachment C of this report.

DISCUSSION

In recent years, the expansion of the East Rocky View Regional System across Highway 2 has enabled servicing within the lands identified as West Balzac, situated west of Highway 2 and north of Highway 566. Therefore, a new schedule titled "West Balzac" has been added to this bylaw to capture the network expansion. The newly acquired systems, such as Horsecreek Water, Bearspaw, and Blazer regional systems, are not considered in this bylaw update. This is because they either have cost contribution and connection agreements in place, or no growth is anticipated, which would necessitate significant upgrades to support development. Future developments within these areas will continue to pay the appropriate connection fees under the current Master Rate Bylaw.

Offsite Levy Bylaw Summary

The proposed amendments to the current Bylaw is based on a comprehensive review of the financials to the end of 2022 along with the committed capacity, and updated construction costs to accommodate for inflation.

Offsite Levy Schedule	Cost	Service Area Map
WASTEWATER LEVIES	per m ³	
Schedule C-1: Langdon WWTP	\$8,437.88 \$7,951.66	B-1
Schedule C -2: ERVWWTM & Regional Lift Stations	\$7,599.49 \$8,846.43	B-2
Schedule C -3: Langdon Wastewater Utilities: Area 1: Area 2: Area 3:	\$1,332.21 \$2,003.30 \$1,063.76 \$2,112.70 \$633.73 \$690.74	B-3
Schedule C -4: Dalroy Regional LS and Wastewater Transmission Main	\$26,359.42 \$28,417.64	B-4
Schedule C -5: Cochrane Lakes Wastewater	\$2,395.85 \$2,624.67	B-5
POTABLE WATER LEVIES		
Schedule C -6: Graham Creek WTP & RWR	\$9,715.50 \$12,955.87	B-6
Schedule C -7a: East Balzac Transmission Main (Base)	\$926.12 \$1,071.86	B-7a
Schedule C -7b: East Balzac Transmission Main (Oversize)	\$244.23 \$323.55	B-7b
Schedule C -8: East Balzac Pump Station & Reservoir and RR293 Loop	\$1,157.84 \$1,353.20	B-8

Schedule C -9a: Conrich Transmission Main (Base)	\$1,247.61 \$1,916.34	B-9a
Schedule C -9b: Conrich Transmission Main (Oversize)	\$141.92 \$183.13	B-9b
Schedule C -10: Conrich Pump Station & Reservoir	\$2,419.04 \$3,725.73	B-10
Schedule C -11: East Rocky View Back-Up Loop	\$3,613.97 \$4,821.45	B-11
BRAGG CREEK LEVIES		
Schedule C-12a: Bragg Creek Wastewater Treatment Plant	\$23,727.68 \$24,313.63	B-12a
Schedule C-12b: Bragg Creek WTP & PWR	\$22,600.90 \$24,695.98	B-12b
WEST BALZAC LEVIES		
Schedule C-13a: West Balzac Wastewater Lift Station and Forcemain	\$2,403.28	B-13a
Schedule C-13b: West Balzac Water Transmission Main	\$2,011.94	B-13b

As per the MGA, all off-site levies allow a municipality to recover capital costs for these types of infrastructure based on the degree of benefit the development will receive from these facilities. It is a levy imposed by the Municipality's Council by the adoption of a bylaw. As the County's development proceeds, levy funds are collected, future servicing needs are refined and prioritized, and capital funding plans are developed. It is expected that the county will be required to review and update the levy rates when deemed necessary.

Pending the comments and feedback from the Governance Committee, additional engagement will be completed with external stakeholders on the details of the proposed changes. Administration anticipates a report to Council seeking approval of amendments to this Bylaw, inclusive of all the proposed changes in Q4 of 2024.

ALTERNATE DIRECTION

Administration does not have an alternate direction for the Governance Committee's consideration.

ATTACHMENTS

Attachment A: Proposed Regional Water & Wastewater Off-Site Levy Bylaw Schedules
Attachment B: Presentation
Attachment C: System Summaries

SCHEDULE "C-1"

LANGDON WASTEWATER TREATMENT PLANT LEVY

Description: Components of the Langdon Wastewater Treatment Plant (WWTP) include the existing WWTP and upgrades to bring capacity to the target of 8,000 m³/day average day flow. The existing WWTP consists of a ~~mechanical Sequential Batch Reactor (SBR) treatment plant with UV disinfection. The WWTP currently has a de-rated average day capacity of 3,710 m³/day (70% of maximum capacity to account for peak I&I flows).~~ **a mechanical Sequential Batch Reactor (SBR) treatment plant with UV disinfection.** The plant has had upgrades in 2020 to add a sewage lift station, dewatering facility, and moving bed biofilm reactor (MBBR) treatment. The WWTP has an average design capacity of 5,850 m³/day. Treated effluent from the WWTP discharges into Weed Lake.

The WWTP upgrades will consist **of converting the SBR Basin 1 (current treatment capacity 650 m³/day) to MBBR technology.**

~~2 stages as follows:~~

- ~~● Stage 1B:~~
 - ~~○ Convert the ASBR 3 to Continuous Flow, Constant Level SCR (CSBR) with full BNR treatment capacity. This includes constructing two new decant cells with a combined total volume of 2,000 m³.~~
 - ~~○ Add Anoxic and Anaerobic Mixed Cells for optimized BNR treatment.~~
- ~~● Stage 2:~~
 - ~~○ Construct new train (CSBR 4).~~
 - ~~○ Construct new blower building to house 2 new blowers.~~
 - ~~○ Repurpose the existing SBRs 1 & 2 to provide Aerobic Digestion if considered beneficial for RVC optimized sludge management.~~

Project Costs:

Original Capital:	\$27,475,838.77
Total Recoverable to RVC:	\$20,236,575.73 \$19,736,195.80
WWTP Upgrade Stage 1B:	\$ 6,700,000.00
<u>WWTP Upgrade Stage 2:</u>	<u>\$ 8,380,000.00 \$ 3,565,000.00</u>
Total Estimated Cost to Levy:	\$35,316,575.73 \$23,301,195.80

Upgrade Capacity (Average Day Flow):	8,000 m ³ /day
Capacity Committed (Average Day Flow):	3,815 5,070 m ³ /day
Remaining Capacity to Levy:	4,185 2,930 m ³ /day

Levy cost calculation: ~~\$35,316,575.73 / 4,185 m³/day = \$8,437.88~~ **\$23,301,195.80 / 2,930 m³/day = \$7,951.66** per m³/day (of projected average day flow)

Cost and Benefit Allocation Rationale (New and Existing Development):

The Lands benefitting from this project will be Lands with new development that will have wastewater treated at the Langdon WWTP system. This includes but is not limited to Lands located in East Balzac, Conrich and Langdon Development Areas (as shown on Schedule "A") which are within the Langdon Wastewater Treatment Plant Service Area (as shown on Schedule "B-1") together with any other Lands which are approved by the County to obtain wastewater servicing through the Langdon WWTP system.

There will be no measureable benefit to existing development as the upgrade will only increase capacity of the WWTP. The upgrades will not provide any greater reliability of service, improved quality of service, or longer lifetime of the service to existing development.

SCHEDULE "C-2"**ERVWWTM & REGIONAL LIFT STATIONS LEVY**

Description: Components of the East Rocky View Wastewater Transmission Main (ERVWWTM) and Regional Lift Stations include the existing ERVWWTM and regional lift stations and upgrades to bring capacity of the regional lift stations to the target of 8,000 m³/day average day flow.

The ERVWWTM and three regional lift stations convey wastewater from the Balzac and Conrich development lands to the Langdon WWTP. The ERVWWTM is a 600mm diameter pipe and is approximately 54 km long. The regional lift stations each have two pumps with the capability to add two more pumps for a total of four pumps at full capacity.

The regional lift stations upgrade will consist of the following:

- Addition of one pump to Balzac LS#1,
- Addition of one pump to Conrich LS#2,
- Addition of one pump to Chestermere LS#3.

Project Costs:

Original Capital: \$41,052,594.43

Total Recoverable to RVC: ~~\$38,674,919.92~~ \$40,211,513.44

Lift Station Upgrade Cost Estimate: ~~\$ 1,720,000.00~~ \$ 1,860,000.00

Total Estimated Cost to Levy: ~~\$40,394,919.92~~ \$42,071,513.44

Upgrade Capacity (Average Day Flow): 8,000 m³/day

Capacity Committed (Average Day Flow): ~~2,685~~ 3,244 m³/day

Remaining Capacity to Levy: ~~5,315~~ 4,756 m³/day

Levy cost calculation: $\$40,394,919.92 / 5,315 \text{ m}^3/\text{day} = \$7,599.49$ ~~\$7,599.49~~ $\$42,071,513.44 / 4,756 \text{ m}^3/\text{day} = \$8,846.43$ per m³/day (of projected average day flow)

Cost and Benefit Allocation Rationale (New and Existing Development):

The Lands benefitting from this project will be all Lands having new development that will connect to the ERVWWTM and Regional Lift Station system. This includes but is not limited to Lands located in the East Balzac and Conrich Development Areas (as shown on Schedule "A") which are within the ERVWWTM Service Area (as shown on Schedule "B-2") together with any other Lands that are approved by the County to obtain wastewater servicing through the ERVWWTM and Regional Lift Station.

There will be no measureable benefit to existing development as the upgrade will only increase capacity of the regional lift stations. The upgrades will not provide any greater reliability of service, improved quality of service, or longer lifetime of the service to existing development.

SCHEDULE "C-3"**LANGDON WASTEWATER UTILITIES LEVY**

Description: Components of the Langdon Wastewater Utilities include the existing lift stations and forcemain to convey the wastewater to the Langdon WWTP, and upgrades to add a pump to each of the three lift stations: West, Industrial and Boulder Creek lift stations.

The lift stations each have two pumps with the capability to add one more pump for a total of three pumps at full capacity. The lift station upgrades will consist of the following:

- Addition of one pump to each of the three lift stations

The three lift stations each have a separate service area (as shown on Map B-3), each with a separate off-site levy, as defined as follows:

- Area 1: West Lift Station Service Area
- Area 2: Industrial Lift Station Service Area
- Area 3: Boulder Creek Lift Station Service Area

Area 1: West Lift Station Service Area**Project Costs:**

Original Capital:	\$1,000,000.00
Total Recoverable to RVC:	\$1,149,643.47 \$1,257,851.69
Upgrade Cost Estimate:	\$ 160,000.00 \$ 170,000.00
Total Estimated Cost to Levy:	\$1,309,643.47 \$1,427,851.69

Upgrade Capacity (Average Day Flow):	1,550 m ³ /day
Capacity Committed (Average Day Flow):	567 837 m ³ /day
Remaining Capacity to Levy:	983 713 m ³ /day

Levy cost calculation: $\$1,309,643.47 / 983 \text{ m}^3/\text{day} = \$1,332.21$ **$\$1,427,851.69 / 713 \text{ m}^3/\text{day} = \$2,003.30$** per m³/day (of projected average day flow)

Area 2: Industrial Lift Station Service Area**Project Costs:**

Original Capital:	\$ 827,571.00
Total Recoverable to RVC:	\$ 774,926.62 \$ 837,523.59
Upgrade Cost Estimate:	\$ 160,000.00 \$ 170,000.00
Total Estimated Cost to Levy:	\$ 934,926.62 \$1,007,523.59

Upgrade Capacity (Average Day Flow):	1,067 m ³ /day
Capacity Committed (Average Day Flow):	488 590 m ³ /day

Remaining Capacity to Levy: ~~879~~ 477 m³/day

Levy cost calculation: $\$934,926.62 / 879 \text{ m}^3/\text{day} = \$1,063.76$ $\$1,007,523.59 / 477 \text{ m}^3/\text{day} = \$2,112.70$ per m³/day (of projected average day flow)

Area 3: Boulder Creek Lift Station Service Area

Project Costs:

Original Capital: \$ 955,000.00

Total Recoverable to RVC: ~~\$1,176,169.93~~ \$1,270,837.53

Upgrade Cost Estimate: ~~\$ 160,000.00~~ \$ 170,000.00

Total Estimated Cost to Levy: ~~\$1,336,169.93~~ \$1,440,837.53

Upgrade Capacity (Average Day Flow): 2,484 m³/day

Capacity Committed (Average Day Flow): ~~376~~ 398 m³/day

Remaining Capacity to Levy: ~~2,108~~ 2,086 m³/day

Levy cost calculation: $\$1,336,169.93 / 2,108 \text{ m}^3/\text{day} = \633.73 $\$1,440,837.53 / 2,086 \text{ m}^3/\text{day} = \690.74 per m³/day (of projected average day flow)

Cost and Benefit Allocation Rationale (New and Existing Development):

The Lands benefitting from this project will be all Lands having new development that will connect to the Langdon Wastewater Utilities. This includes but is not limited to Lands located in the Langdon Development Area (as shown on Schedule "A") which are within the Langdon Service Area (as shown on Schedule "B-3") together with any other Lands that are approved by the County to obtain wastewater servicing through the Langdon Wastewater Utilities.

Existing development which receives servicing through the Langdon Wastewater Utilities has already contributed off-site levies for this project.

SCHEDULE "C-4"**DALROY REGIONAL LIFT STATION AND WASTEWATER TRANSMISSION MAIN
LEVY**

Description: Components of the Dalroy Regional Lift Station and Wastewater Transmission Main Systems include the existing forcemain from Lakes of Muirfield to the Dalroy Transfer Station, the Dalroy Transfer Station, and the proposed upgrades to convey wastewater from the Transfer Station to the Langdon WWTP through a forcemain.

The current facilities allow for wastewater from Lakes of Muirfield to be pumped to the Transfer Station via a 4 km long forcemain. The wastewater is currently collected and stored at the Transfer Station until septic hauling trucks transport the wastewater to an approved treatment facility.

The upgrades will consist of the following:

- Conversion of the Transfer Station to a Regional Lift Station
- Forcemain from the Lift Station to the Langdon WWTP

Project Costs:

Original Capital:	\$ 4,057,054.22
Total Recoverable to RVC:	\$ 1,788,315.56 \$ 1,956,637.70
Upgrade Cost Estimate:	\$20,090,000.00 \$21,630,000.00
Total Estimated Cost to Levy:	\$21,878,315.56 \$23,586,637.70

Upgrade Capacity (Average Day Flow):	1,830 m ³ /day
Capacity Committed (Average Day Flow):	1,000 m ³ /day
Remaining Capacity to Levy:	830 m ³ /day

Levy cost calculation: $\frac{\$21,878,315.56}{830 \text{ m}^3/\text{day}} = \$26,359.42$ **$\frac{\$23,586,637.70}{830 \text{ m}^3/\text{day}} = \$28,417.64$** per m³/day (of projected average day flow)

Cost and Benefit Allocation Rationale (New and Existing Development):

The Lands benefitting from this project will be all Lands having new development that will connect to the Dalroy Regional Lift Station and Transmission Main system. This includes but is not limited to Lands located in the Dalroy Development Area (as shown on Schedule "A") which are within the Dalroy to Langdon Sanitary Lift Station and Wastewater Transmission Main Service Area (as shown on Schedule "B-4") together with any other Lands that are approved by the County to obtain wastewater servicing through the Dalroy Regional Lift Station and Transmission Main.

Existing development which receives servicing through the Langdon Sanitary Lift Station and Wastewater Transmission Main has already contributed to the capital costs for this project.

SCHEDULE "C-5"**COCHRANE LAKES WASTEWATER SYSTEM LEVY**

Description: Components of the Cochrane Lakes Wastewater Transmission system include the existing wastewater system to service 1,166 residential units at a peak rate of 48.1 L/s (by agreement with Cochrane) in the Cochrane Lakes service area.

Project Costs:

Original Capital:	\$ 1,750,000.00
Total Recoverable to RVC:	\$ 1,895,113.64 \$ 2,073,487.96
Upgrade Cost Estimate:	\$ --
Total Estimated Cost to Levy:	\$ 1,895,113.64 \$ 2,073,487.96

System Capacity (Average Day Flow):	1,049 m ³ /day
Capacity Committed (Average Day Flow):	258 258 m ³ /day
Remaining Capacity to Levy:	791 790 m ³ /day

Levy cost calculation: $\$1,895,113.64 / 791 \text{ m}^3/\text{day} = \$2,395.85$ $\$2,073,487.96 / 790 \text{ m}^3/\text{day} = \$2,624.67$ per m³/day (of projected average day flow)

Cost and Benefit Allocation Rationale (New and Existing Development):

The Lands benefitting from this project will be all Lands having new development that will connect to the Cochrane Lakes Wastewater system. This includes but is not limited to Lands located in the Cochrane Lakes Development Area (as shown on Schedule "A") which are located within the Cochrane Lakes Wastewater Transmission Main Service Area (as shown on Schedule "B-5") together with any other Lands that are approved by the County to obtain wastewater servicing through the Cochrane Lakes Wastewater system.

Existing development which receives servicing through the Cochrane Lakes Wastewater Transmission Main has already contributed off-site levies for this project.

SCHEDULE "C-6"**GRAHAM CREEK WTP AND RWR LEVY**

Description: Components of the Graham Creek WTP and RWR Project are comprised of an existing Water Treatment Plant (WTP) and a Raw Water Reservoir (RWR) and upgrades to bring capacity to the target of 8,000 m³/day average day flow.

The existing RWR and WTP are located at the Graham Reservoir site. The existing RWR consist of lift stations to pump raw water from the WID canal to a stilling basin and two aerated storage cells. The raw water is pumped from the storage cells to the WTP. The existing WTP has an average day capacity of 3,900 m³/day and includes three DAF filtration trains, three multi-media filters, UV disinfection and chlorine injection. Treated water is stored in a 700 m³ buried contact (CT) reservoir prior to being pumped out to the transmission system.

The RWR upgrade will consist of the following:

- New stilling basin and two storage cells,
- Lift station to transfer water from new cells to WTP,
- Groundwater interceptor system complete with lift station and tie to existing groundwater interceptor system,
- Aeration system in each storage cell,
- Land purchase.

The WTP upgrades will consist of the following:

- Stage 1: Doubling of the WTP building and CT reservoir with the same treatment system as the existing WTP, but with only two additional treatment trains added (for a total of five trains),
- Stage 2: Adding a third treatment train in the expanded building (for a total of six trains).

Project Costs:

Original Capital:	\$21,535,321.00
Total Recoverable to RVC:	\$ 6,460,541.96 \$ 3,634,412.62
RWR Upgrade Cost Estimate:	\$28,750,000.00 \$30,970,000.00
WTP Upgrade Stage 1:	\$16,050,000.00 \$17,280,000.00
WTP Upgrade Stage 2:	\$ 2,260,000.00 \$ 2,430,000.00
Total Estimated Cost to Levy:	\$53,520,541.96 \$54,314,412.62

Capacity (Average Day Flow):	8,000 m ³ /day
Capacity Committed (Average Day Flow):	2,491 3,808 m ³ /day
Remaining Capacity to Levy:	5,509 4,192 m ³ /day

Levy cost calculation: $\$53,520,541.96 / 5,509 \text{ m}^3/\text{day} = \$9,715.50$ $\$54,314,412.62 / 4,192 \text{ m}^3/\text{day} = \$12,955.87$ per m^3/day (of projected average day demand)

Cost and Benefit Allocation Rationale (New and Existing Development):

The Lands benefitting from this project will be all Lands having new development that will connect to the Graham Creek WTP and RWR supply system. This includes but is not limited to Lands located in East Balzac and Conrich Development Areas (as shown on Schedule "A") which are within the Graham Creek WTP and RWR Service Area (as shown on Schedule "B-6") together with any other Lands which are approved by the County to obtain water servicing through the Graham Creek WTP and RWR supply system.

There will be no measureable benefit to existing development as the upgrade will only increase capacity of the water supply system. The upgrades will not provide any greater reliability of service, improved quality of service, or longer lifetime of the service to the existing developments.

SCHEDULE "C-7a"**EAST BALZAC TRANSMISSION MAIN (BASE)**

Description: The East Balzac Transmission Main (Base) is comprised of a 400mm diameter water transmission main from the East Balzac WTP to the East Balzac Pump Station & Reservoir.

The average day design capacity of the East Balzac Transmission Main is 6,083 m³/day. The average day demand flow split from the East Balzac WTP with the target system capacity of 8,000 m³/day is assumed to be 2/3 to East Balzac (5,333 m³/day) and 1/3 to Conrich (2,667 m³/day) on a normal operating day.

Project Costs:

Original Capital:	\$ 7,402,348.31
Total Recoverable to RVC:	\$ 3,970,840.30 \$ 3,991,615.71
Upgrade Cost Estimate:	\$ --
Total Estimated Cost to Levy:	\$ 3,970,840.30 \$ 3,991,651.71

Capacity (Average Day Flow):	6,083 m ³ /day
Capacity Committed (Average Day Flow):	1,795 2,359 m ³ /day
Remaining Capacity to Levy:	4,288 3,724 m ³ /day

Levy cost calculation: $\$3,970,840.30 / 4,288 \text{ m}^3/\text{day} = \926.12 $\$3,991,615.71 / 3,724 \text{ m}^3/\text{day} = \$1,071.86$ per m³/day (of projected average day demand)

Cost and Benefit Allocation Rationale (New and Existing Development):

The Lands benefitting from this project will be all Lands having new development that will connect to the East Balzac transmission main and/or distribution system. This includes Lands located in the East Balzac Development Area (as shown on Schedule "A") which are located within the East Balzac Transmission Main (Base) Service Area (as shown on Schedule "B-7a") together with any other Lands which are approved by the County to obtain water servicing from the East Balzac transmission main and/or distribution system.

There will be no measureable benefit to the existing developments as there are no upgrades planned for this transmission main. Existing development which receives servicing through the East Balzac Transmission Main has already contributed off-site levies for this project.

SCHEDULE "C-7b"**EAST BALZAC TRANSMISSION MAIN (OVERSIZE)**

Description: The East Balzac Transmission Main (Oversize) is comprised of the oversizing of the 400mm diameter water transmission main from the East Balzac WTP to the East Balzac Pump Station & Reservoir. The oversizing will be utilized when the Back-Up Loop is constructed and the East Balzac Transmission Main is used to convey water around to Conrich during emergency shutdown of the Conrich Transmission Main.

The average day design capacity of the East Balzac Transmission Main is 6,083 m³/day. In emergency situations the transmission main will utilize its full 6,083 m³/day capacity to meet the 8,000 m³/day demand in conjunction with other components of the East Rocky View Back-Up Loop (Schedule B-11), such as storage. The East Balzac average day demand is projected to be 5,333 m³/day (assumed at 2/3 of target system capacity). The Back-Up Loop system will convey the remaining average day water demand of 2,667 m³/day from Balzac to Conrich.

Project Costs:

Original Capital:	\$ 2,530,405.69
Total Recoverable to RVC:	\$ 1,319,969.38 \$ 1,356,414.11
Upgrade Cost Estimate:	\$ --
Total Estimated Cost to Levy:	\$ 1,319,969.38 \$ 1,356,414.11

Capacity (Average Day Flow):	8,000 m ³ /day
Capacity Committed (Average Day Flow):	2,595 3,808 m ³ /day
Remaining Capacity to Levy:	5,405 4,192 m ³ /day

Levy cost calculation: ~~\$ 1,319,969.38 / 5,405 m³/day = \$244.23 per m³/day~~ \$1,356,414.11 / 4,192 m³/day = \$323.55 per m³/day (of projected average day demand)

Cost and Benefit Allocation Rationale (New and Existing Development):

The Lands benefitting from this project will be all Lands having new development that will connect to the East Balzac Transmission Main and/or Distribution system or the Conrich Pump Transmission Main and/or Distribution system. This includes but is not limited to Lands located in the East Balzac and Conrich Development Areas (as shown on Schedule "A") located within the East Balzac Transmission Main and/or Distribution system Service Area or the Conrich Pump Transmission Main and/or Distribution system Service Area (as shown on Schedule "B-7b") together with any other Lands which are approved by the County to obtain water servicing through the two named systems.

There will be no measureable benefit to the existing development as there are no upgrades planned for this transmission main oversize. Existing development which receives servicing through the East Balzac Transmission Main has already contributed off-site levies for this project.

SCHEDULE "C-8"**EAST BALZAC PUMP STATION & RESERVOIR AND RR293 LOOP**

Description: This includes the existing East Balzac Pump Station & Reservoir and RR293 Distribution Loop. The design capacity of the East Balzac Pump Station & Reservoir and RR293 Loop are 6,083 m³/day.

Project Costs:

Original Capital:	\$ 9,211,649.00
Total Recoverable to RVC:	\$ 4,964,205.15 \$ 5,039,316.82
Upgrade Cost Estimate:	\$ --
Total Estimated Cost to Levy:	\$ 4,964,205.15 \$ 5,039,316.82

Capacity (Average Day Flow):	6,083 m ³ /day
Capacity Committed (Average Day Flow):	4,795 2,359 m ³ /day
Remaining Capacity to Levy:	4,288 3,724 m ³ /day

Levy cost calculation: $\$4,964,205.15 / 4,288 \text{ m}^3/\text{day} = \$1,157.81$ **$\$5,039,316.82 / 3,724 \text{ m}^3/\text{day} = \$1,353.20$** per m³/day (of projected average day demand)

Cost and Benefit Allocation Rationale (New and Existing Development):

The Lands benefitting from this project will be all Lands having new development that will connect to the East Balzac Pump Station & Reservoir distribution system. This includes but is not limited to Lands located in the East Balzac Development Area (as shown on Schedule "A") which is within the East Balzac Pump Station & Reservoir and RR293 Loop Service Area (as shown on Schedule "B-8") together with any other Lands which are approved by the County to obtain water servicing through the East Balzac Pump Station & Reservoir distribution system.

There will be no measureable benefit to existing development as there are no upgrades planned for this East Balzac Pump Station & Reservoir or RR293 Loop. Existing development which receives servicing through the East Balzac Pump Station & Reservoir distribution system has already contributed off-site levies for this project.

SCHEDULE "C-9a"**CONRICH TRANSMISSION MAIN (BASE)**

Description: The Conrich Transmission Main (Base) is comprised of a 300mm diameter water transmission main from the East Balzac WTP to the Conrich Pump Station & Reservoir.

The average day design capacity of the Conrich Transmission Main is 2,932 m³/day. The average day demand flow split from the East Balzac WTP with the target system capacity of 8,000 m³/day is assumed to be 2/3 to East Balzac (5,333 m³/day) and 1/3 to Conrich (2,667 m³/day) on a normal operating day.

Project Costs:

Original Capital:	\$ 8,624,389.13
Total Recoverable to RVC:	\$ 2,659,907.69 \$ 2,842,415.59
Upgrade Cost Estimate:	\$ --
Total Estimated Cost to Levy:	\$ 2,659,907.69 \$ 2,842,415.59

Capacity (Average Day Flow):	2,932 m ³ /day
Capacity Committed (Average Day Flow):	800 1,449 m ³ /day
Remaining Capacity to Levy:	2,132 1,483 m ³ /day

Levy cost calculation: ~~\$2,659,907.69 / 2,132 m³/day = \$1,247.61~~ \$2,842,415.59 / 1,483 m³/day = \$1,916.34 m³/day (of projected average day demand)

Cost and Benefit Allocation Rationale (New and Existing Development):

The Lands benefitting from this project will be all Lands having new development that will connect to the Conrich Transmission Main and/or Distribution system. This includes but is not limited to Lands located in the Conrich Development Area (as shown on Schedule "A") which is within the Conrich Transmission Main (Base) Service Area (as shown on Schedule "B-9a") together with any other Lands which are approved by the County to obtain primary water servicing through the Conrich Transmission Main and/or Distribution system.

There will be no measureable benefit to existing development as there are no upgrades planned for this transmission main base. Existing development which receives servicing through the Conrich Transmission Main has already contributed off-site levies for this project.

SCHEDULE " C-9b"**CONRICH TRANSMISSION MAIN (OVERSIZE)**

Description: The Conrich Transmission Main (Oversize) is comprised of the oversizing of the 300mm diameter water transmission main from the East Balzac WTP to the Conrich Pump Station & Reservoir. The oversizing will be utilized when the Back-Up Loop is constructed and the Conrich Transmission Main is used to convey water around to Balzac during emergency shutdown of the East Balzac Transmission Main.

The average day design capacity of the Conrich Transmission Main is 2,932 m³/day. In emergency situations the transmission main will utilize its full capacity of 2,932 m³/day to meet the 8,000 m³/day demand, in conjunction with other components of the East Rocky View Back-Up Loop (Schedule B-11), such as storage. The Conrich average day demand is projected to be 2,667 m³/day (1/3 of target system capacity). The Back-Up Loop system will be utilized to provide the additional flow to Balzac that is required to meet the target average day flow rate of 5,333 m³/day to Balzac.

Project Costs:

Original Capital:	\$ 2,531,511.87
Total Recoverable to RVC:	\$ 766,997.80 \$ 767,726.31
Upgrade Cost Estimate:	\$ --
Total Estimated Cost to Levy:	\$ 766,997.80 \$ 767,726.31

Capacity (Average Day Flow):	8,000 m ³ /day
Capacity Committed (Average Day Flow):	2,595 3,808 m ³ /day
Remaining Capacity to Levy:	5,405 4,192 m ³ /day

Levy cost calculation: $\$766,997.80 / 5,405 \text{ m}^3/\text{day} = \141.92 $\$767,726.31 / 4,192 \text{ m}^3/\text{day} =$
\$183.13 m³/day (of projected average day demand)

Cost and Benefit Allocation Rationale (New and Existing Development):

The Lands benefitting from this project will be all new development on Lands that will connect to the East Balzac Transmission Main and/or Distribution system or the Conrich Transmission Main and/or Distribution system. This includes Lands located in the East Balzac and Conrich Development Areas (as shown on Schedule "A") located within the Conrich Transmission Main (Oversize) Service Area (as shown on Schedule "B-9b") together with any other Lands which are approved by the County to obtain water servicing through the two named systems.

There will be no measureable benefit to existing development as there are no upgrades planned for this transmission main oversize. Existing development which receives servicing through the Conrich Transmission Main has already contributed off-site levies for this project.

SCHEDULE "C-10"**CONRICH PUMP STATION & RESERVOIR**

Description: This includes the existing Conrich Pump Station & Reservoir and upgrades to the Reservoir to an average day capacity of 2,932 m³/day (to the same capacity as the Conrich Transmission Main). The existing capacity of the Conrich Pump Station & Reservoir is 1,400 m³/day. The upgrade will consist of a 1,000 m³ reservoir expansion to a total volume of 5,500 m³.

Project Costs:

Original Capital:	\$ 9,394,375.00
Total Recoverable to RVC:	\$ 2,897,384.38 \$ 3,096,186.57
Upgrade Cost Estimate:	\$ 2,260,000.00 \$ 2,430,000.00
Total Estimated Cost to Levy:	\$ 5,157,384.38 \$ 5,526,186.57

Upgrade Capacity (Average Day Flow):	2,932 m ³ /day
Capacity Committed (Average Day Flow):	800 1,449 m ³ /day
Remaining Capacity to Levy:	2,132 1,483 m ³ /day

Levy cost calculation: $\$5,157,384.38 / 2,132 \text{ m}^3/\text{day} = \$2,419.04$ $\$5,526,186.57 / 1,483 \text{ m}^3/\text{day} = \$3,725.73 \text{ m}^3/\text{day}$ (of projected average day demand)

Cost and Benefit Allocation Rationale (New and Existing Development):

The Lands benefitting from this project will be all Lands having new developments that will connect to the Conrich Pump Station & Reservoir distribution system. This includes but is not limited to Lands located in the Conrich Development Area and, if Dalroy connects to this water distribution system, the Dalroy Development Area (as shown on Schedule "A") which are within the Conrich Pump Station & Reservoir Service Area (as shown on Schedule "B-10") together with any other Lands which are approved by the County to obtain water servicing through the Conrich Pump Station & Reservoir distribution system.

There will be no measureable benefit to existing development as the upgrade will only increase capacity of the treated water reservoir. The upgrades will not provide any greater reliability of service, improved quality of service, or longer lifetime of the service to existing development.

SCHEDULE "C-11"**EAST ROCKY VIEW BACK-UP LOOP**

Description: The East Rocky View Back-Up Loop will be comprised of a 400 mm diameter water transmission main between Balzac and Conrich, and a 3,000 m³ Potable Water Reservoir.

The East Rocky View Back-Up Loop will include a new transmission main and potable water reservoir to provide back-up of the existing transmission system in the event that either the Balzac or Conrich transmission mains are out of service (emergency condition). The Water Reservoir will be utilized to provide the additional volume required to meet the target average day flow rate. The design of the Back-Up Loop system assumes that three average days of storage is to be available, as this is established as a reasonable time to locate, repair a line break and put the system back into service. This schedule includes the purchase of land for the Potable Water Reservoir.

Project Costs:

Original Capital:	\$	--
Total Recoverable to RVC:	\$	--
Back-Up Loop Cost Estimate:	\$21,280,000.00	\$22,910,000.00
Total Off-site Levies Collected:	(\$ 1,747,931.57)	(\$ 2,697,062.47)
Total Estimated Cost to Levy:	\$19,532,068.43	\$20,212,937.53

Capacity (Average Day Flow):	8,000 m ³ /day
Capacity Committed (Average Day Flow):	2,595 3,808 m ³ /day
Remaining Capacity to Levy:	5,405 4,192 m ³ /day

Levy cost calculation: $\$19,532,068.43 / 5,405 \text{ m}^3/\text{day} = \$3,613.97$ ~~\$3,613.97~~ $\$20,212,937.53 / 4,192 \text{ m}^3/\text{day} = \$4,821.45 \text{ m}^3/\text{day}$ (of projected average day demand)

Cost and Benefit Allocation Rationale (New and Existing Development):

The Lands benefitting from this project will be all Lands having new development that will connect to the East Balzac Transmission Main and/or Distribution system or the Conrich Transmission Main and/or Distribution system. This includes new development on Lands located in the East Balzac and Conrich Development Areas (as shown on Schedule "A") which are within the East Rocky View Back-Up Loop Service Area (as shown on Schedule "B-11") together with any other Lands which are approved by the County to obtain water servicing through the two named systems.

There will be no measureable benefit to existing development. The Back-Up Loop system will benefit future development by providing the same level of system reliability to future development that is currently provided to existing development. The current level of system reliability provided to existing development will be maintained but not improved upon by the Back-Up Loop System.

SCHEDULE "C-12a"**BRAGG CREEK WASTEWATER TREATMENT PLANT (WWTP)**

Description: Components of the Bragg Creek Wastewater Treatment Plant (WWTP) include the existing WWTP and upgrades to bring capacity to target of 513 m³/day average day flow (maximum day capacity of 821 m³/day assuming maximum day factor of 1.62).

The existing WWTP consists of two membrane bioreactor (MBR) treatment units with UV disinfection. The WWTP currently has an average day capacity of 285 m³/day (maximum day capacity of 463 m³/day assuming a maximum day factor of 1.62). Treated effluent from the WWTP discharges into the Elbow River. The outfall diffuser has a capacity of 821 m³/day of treated effluent.

The proposed WWTP upgrades will include the following:

- Two Equova 50K MBR treatment systems,
- A building expansion complete with additional EQ Tanks and Biofilter.

Project Costs:

Total Recoverable to RVC:	\$ 1,560,426.18	\$ 1,646,903.43
WWTP Upgrade:	\$ 7,290,000.00	\$ 7,850,000.00
Total Estimated Cost to Levy:	\$ 8,850,426.18	\$ 9,496,903.43

Upgrade Capacity (Average Day Flow):	513 m ³ /day
Capacity Committed (Average Day Flow):	140 122 m ³ /day
Remaining Capacity to Levy:	373 391 m ³ /day

Levy cost calculation: $\frac{\$8,850,426.18}{373 \text{ m}^3/\text{day}} = \$23,727.68$ **$\frac{\$9,496,903.43}{391 \text{ m}^3/\text{day}} = \$24,313.63$** per m³/day (of projected average day flow)

Cost and Benefit Allocation Rationale (New and Existing Development):

The Lands benefitting from this project will be Lands with new development that will have wastewater treated at the Bragg Creek WWTP system. This includes but is not limited to Lands located in Bragg Creek Development Areas (as shown on Schedule "A") which are within the Bragg Creek Wastewater Treatment Plant Service Area (as shown on Schedule "B-12a") together with any other Lands which are approved by the County to obtain wastewater servicing through the Bragg Creek WWTP system.

There will be no measureable benefit to existing development as the upgrade will only increase capacity of the WWTP. The upgrades will not provide any greater reliability of service, improved quality of service, or longer lifetime of the service to existing development.

SCHEDULE "C-12b"**BRAGG CREEK WTP AND PWR**

Description: Components of the Bragg Creek WTP and PWR Levy are comprised of an existing Water Treatment Plant (WTP), Potable Water Reservoir (PWR) and upgrades to bring capacity to the target of 604 m³/day average day demand.

The existing WTP is located at the north end of Burnside Drive in Bragg Creek. The existing treatment system includes two membrane treatment units, UV disinfection and chlorine injection. Potable water is stored in a 500 m³ above ground steel reservoir prior to being pumped out to the Bragg Creek distribution system. The existing PWR does not provide fire storage. Water is also pumped from the WTP to the Lower Elkana Pump house where it is pumped to the Upper Elkana Reservoir and Pump house to the Elkana service area.

The WTP and PWR upgrade will consist of the following:

- Expansion of the WTP building,
- Two additional membrane units
- Additional 500 m³ above ground potable water reservoir.

Project Costs:

Total Recoverable to RVC:	\$ 996,367.64 \$1,022,602.41
WTP and PWR Upgrade:	\$8,270,000.00 \$8,920,000.00
Total Estimated Cost to Levy:	\$9,266,367.64 \$9,942,602.41

Upgrade Capacity (Average Day Flow):	604 m ³ /day
Capacity Committed (Average Day Flow):	194 201 m ³ /day
Remaining Capacity to Levy:	410 403 m ³ /day

Levy cost calculation: ~~\$9,266,367.64 / 410 m³/day = \$22,600.90~~ **\$9,942,602.41 / 403 m³/day = \$24,695.98** per m³/day (of projected average day demand)

Cost and Benefit Allocation Rationale (New and Existing Development):

The Lands benefitting from this project will be all Lands having new development that will connect to the Bragg Creek WTP and PWR supply system. This includes but is not limited to Lands located in Bragg Creek Development Areas (as shown on Schedule "A") which are within the Bragg Creek WTP Service Area (as shown on Schedule "B-6") together with any other Lands which are approved by the County to obtain water servicing through the Bragg Creek WTP supply system.

There will be no measureable benefit to existing development as the upgrade will only increase capacity of the water supply system. The upgrades will not provide any greater reliability of service, improved quality of service, or longer lifetime of the service to the existing developments.

SCHEDULE "C-13a"**WEST BALZAC WASTEWATER LIFT STATION AND FORCEMAIN**

Description: Components of the West Balzac wastewater system include an existing +/-1.8 km 350 mm diameter HDPE forcemain, +/-0.4 km 600 mm PVC sanitary trunk, and existing local lift station with a capacity of 1,000 m³/day (average day flow) at Stage 1 and an ultimate target capacity of 2,240 m³/day (average day flow) after the pump upgrade at the lift station.

The overall forcemain is approximately 2.2 km long. Sanitary flow is collected from the West Balzac Service Area to a local lift station, pumped to the East Balzac Regional Sanitary Lift Station (LS #1), which pumps to the Langdon Wastewater Treatment Plant.

Project Costs:

Original Capital: \$ 5,084,547.00

Total Recoverable to RVC: \$ 5,084,547.00

Lift Station Upgrade Cost Estimate: \$ 300,000.00

Total Estimated Cost to Levy: \$ 5,384,547.00

Upgrade Capacity (Average Day Flow): 2,240 m³/day

Capacity Committed (Average Day Flow): 0 m³/day

Remaining Capacity to Levy: 2,240 m³/day

Levy cost calculation: $\$5,384,547.00 / 2,240 \text{ m}^3/\text{day} = \$2,403.82 \text{ per m}^3/\text{day}$ (of projected average day flow)

Cost and Benefit Allocation Rationale (New and Existing Development):

The Lands benefitting from these components will be all Lands having new development that will connect to the West Balzac wastewater system. This includes but is not limited to Lands located in the West Balzac Development Areas (as shown on Schedule "A" and Schedule "B-13a") which are within the West Balzac Service Area (as shown on Schedule "B-13a") together with any other Lands that are approved by the County to obtain wastewater servicing through the West Balzac wastewater system.

There will be no measurable benefit to existing development as the system will be built to service new development connections only. There is no existing development currently serviced by the West Balzac wastewater system.

SCHEDULE "C-13b"**WEST BALZAC WATER TRANSMISSION MAIN**

Description: The West Balzac Water Transmission Main is comprised of +/-3.2 km 400mm diameter looped water transmission main from the East Balzac to West Balzac.

The average day design capacity of the Transmission Main is 2,240 m³/day average day flow.

Project Costs:

Original Capital: \$4,506,755.50

Total Recoverable to RVC: \$4,506,755.50

Upgrade Cost Estimate: \$ 0.00

Total Estimated Cost to Levy: \$4,506,755.50

Upgrade Capacity (Average Day Flow): 2,240 m³/day

Capacity Committed (Average Day Flow): 0 m³/day

Remaining Capacity to Levy: 2,240 m³/day

Levy cost calculation: $\$4,506,755.50 / 2,240 \text{ m}^3/\text{day} = \$2,011.94 \text{ m}^3/\text{day}$ (of projected average day demand)

Cost and Benefit Allocation Rationale (New and Existing Development):

The Lands benefitting from these components will be all Lands having new development that will connect to the West Balzac Water Transmission Main. This includes but is not limited to Lands located in the West Balzac Development Areas (as shown on Schedule "A" and Schedule "B-13a") which are within the West Balzac Service Area (as shown on Schedule "B-13a") together with any other Lands that are approved by the County to obtain potable water servicing through the West Balzac Water Transmission Main.

There will be no measurable benefit to existing development as the system will be built to service new development connections only. There will be no measurable benefit to existing development as no upgrades are included for the existing pump station and development which receives servicing through the existing distribution system has already contributed Off-Site Levies. There is no existing development currently serviced by the West Balzac Water Transmission Main.

SCHEDULE "D"

OFF-SITE LEVY SUMMARIES

1. Off-Site Levies calculations for both Water and Wastewater Utilities are based upon the anticipated per m³ water volume required to service the proposed development on the Lands, as estimated by the Developer and agreed upon by the County in writing at the time of Development permit application or Subdivision approval application for the Lands.
2. Table D.1 sets out the per m³ levy amounts for the purpose of calculating the appropriate Off-Site Levy amount for all Wastewater Utilities and Water Utilities.
3. The per m³ levy capacity estimates shall not be less than as stipulated in Table D.2 unless specifically approved by the County, in its sole discretion, in writing. If the Developer wants to use a flow rate less than that stipulated in Table D.2 for the purpose of estimating water volume required to service the proposed development, the Developer must submit sufficient justification which is acceptable to the County for using the proposed lower flow rate before the County will consider accepting a lower per m³ levy capacity calculation. Where a lower flow rate is accepted by the County, the proposed development may be subject to special conditions such as phasing and/or monitoring over time.
4. The County reserves the right to incorporate flow control devices to serviced Lands to limit actual flow to the Water Utility and/or Wastewater Utility servicing capacity agreed upon for the purpose of calculating the appropriate Off-Site Levy amount pursuant to this Bylaw.
5. Where the actual Water Utility and/or Wastewater Utility servicing capacity requirement for development on the Lands exceeds the estimated capacity agreed upon for the purpose of this Bylaw, any additional servicing capacity approved by the County to be provided to the Lands which exceeds the servicing capacity amount agreed upon for the purpose of this Bylaw may be subject to such additional terms, connection fees, rates, charges and contributions as deemed appropriate by the County pursuant to Section 34 of the ***Municipal Government Act***, R.S.A. 2000 Chapter M-26 and any applicable County bylaw including but not limited to any applicable Wastewater Utility bylaw, Water Utility bylaw and/or master rates bylaw.
6. As a general reference guide only, Table D.3 provides a summary of what Off-Site Levies for Water Utilities and Wastewater Utilities will typically be attributable to Lands within the various Development Areas (as shown on Schedule "A") and Service Areas (as shown on Schedule "B"). The exact Off-Site Levy(ies) imposed upon any specific Lands will be subject to which Wastewater Utilities and/or Water Utilities will be servicing the proposed development on the Lands, as approved by the County.

SCHEDULE "D"**Table D.1: Off-Site Levy Summary**

Offsite Levy Schedule	Cost	Service Area Map
WASTEWATER LEVIES	per m ³	
Schedule C-1: Langdon WWTP	\$8,437.88 \$7,951.66	B-1
Schedule C -2: ERVWWTM & Regional Lift Stations	\$7,599.49 \$8,846.43	B-2
Schedule C -3: Langdon Wastewater Utilities: Area 1: Area 2: Area 3:	\$1,332.21 \$2,003.30 \$1,063.76 \$2,112.70 \$633.73 \$690.74	B-3
Schedule C -4: Dalroy Regional LS and Wastewater Transmission Main	\$26,359.42 \$28,417.64	B-4
Schedule C -5: Cochrane Lakes Wastewater	\$2,395.85 \$2,624.67	B-5
POTABLE WATER LEVIES		
Schedule C -6: Graham Creek WTP & RWR	\$9,715.50 \$12,955.87	B-6
Schedule C -7a: East Balzac Transmission Main (Base)	\$926.12 \$1,071.86	B-7a
Schedule C -7b: East Balzac Transmission Main (Oversize)	\$244.23 \$323.55	B-7b
Schedule C -8: East Balzac Pump Station & Reservoir and RR293 Loop	\$1,157.81 \$1,353.20	B-8
Schedule C -9a: Conrich Transmission Main (Base)	\$1,247.61 \$1,916.34	B-9a
Schedule C -9b: Conrich Transmission Main (Oversize)	\$141.92 \$183.13	B-9b
Schedule C -10: Conrich Pump Station & Reservoir	\$2,419.04 \$3,725.73	B-10
Schedule C -11: East Rocky View Back-Up Loop	\$3,613.97 \$4,821.45	B-11
BRAGG CREEK LEVIES		
Schedule C-12a: Bragg Creek Wastewater Treatment Plant	\$23,727.68 \$24,313.63	B-12a
Schedule C-12b: Bragg Creek WTP & PWR	\$22,600.90 \$24,695.98	B-12b
WEST BALZAC LEVIES		
Schedule C-13a: West Balzac Wastewater Lift Station and Forcemain	\$2,408.28	B-13a
Schedule C-13b: West Balzac Water Transmission Main	\$2,011.94	B-13b

Table D.2: Minimum Projected Water and Wastewater Flows

Type of Development	Minimum Projected Average Day Water Demand (m ³ /day)	Minimum Projected Average Day Wastewater Flow (m ³ /day)
Residential	950 L/day/unit	855 L/day/unit
Commercial	The County will require the Developer to submit specific projected flows for both water and wastewater together with sufficient and acceptable justification for the projected flows for all proposed Development permit applications or Subdivision applications.	
Industrial		

Table D.3: Summary of Development Areas and Applicable Off-site Levy Schedules

Development Area	Wastewater Facilities							Water Facilities							Bragg Creek		West Balzac
	Langdon WWTP	ERVWWTM and Regional Lift Stations	Langdon Wastewater Utilities	Dalroy Regional Lift Station and Wastewater Transmission Main	Cochrane Lakes Wastewater Main	Graham Creek WTP & RWR	East Balzac Transmission Main (Base)	East Balzac Transmission Main (Oversize)	Conrich Pump Station & Reservoir and RR293 Loop	Conrich Transmission Main (Base)	Conrich Transmission Main (Oversize)	East Rocky View Back-Up Loop	Bragg Creek Wastewater Treatment Plant	Bragg Creek WTP and PWR	West Balzac Wastewater Lift Station and Forcemain	West Balzac Water Transmission Main	
Map Schedule	B-1	B-2	B-3	B-4	B-5	B-6	B-7a	B-7b	B-8	B-9a	B-9b	B-10	B-11	B-12a	B-12b	B-13a	B-13b
Off-Site Levy	C-1	C-2	C-3	C-4	C-5	C-6	C-7a	C-7b	C-8	C-9a	C-9b	C-10	C-11	C-12a	C-12b	C-13a	C-13b
East Balzac	Y	Y	N	N	N	Y	Y	Y	Y	N	Y	N	Y	N	N	N	N
Conrich	Y	Y	N	N	N	Y	N	Y	N	Y	Y	Y	Y	N	N	N	N
Langdon	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Dalroy	Y	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N
Cochrane Lakes	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N
Bragg Creek	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	Y	N	N
West Balzac	Y	Y	N	N	N	Y	Y	Y	Y	N	Y	N	Y	N	N	Y	Y

Y = YES - Schedule is applicable

N = NO - Schedule is not applicable

Note: Development areas are as shown on Schedule A

Regional Water & Wastewater Off-site Levy Bylaw Proposed Updates

April 16, 2024

Jeannette Lee, Manager Capital & Engineering Services



Municipal Government Act, RSA 2000, M-26

- Municipality can improve the Off-Site Levy to recover capital costs of new or expanded infrastructure associated with new or expanded:
 - Water supply and treatment, storage and transmission;
 - Sanitary treatment, movement or disposal;
 - Stormwater drainage facilities;
 - Transportation network improvements;
 - Community recreation facilities;
 - Fire hall facilities;
 - Police station facilities;
 - Libraries; and
 - Land required for or in connection with any facilities above; and
- Imposition of the levy can only be collected once for each purpose on the subject land.
- Off-Site Levy may only be triggered as a condition of subdivision approval or the issuance of Development Permits. Levy cannot be imposed at the time of Building Permits or issuance of occupancy.
- Off-Site Levy Bylaw will require consultation with stakeholders, ongoing reporting and transparency its determination.



Current Bylaw Servicing Area

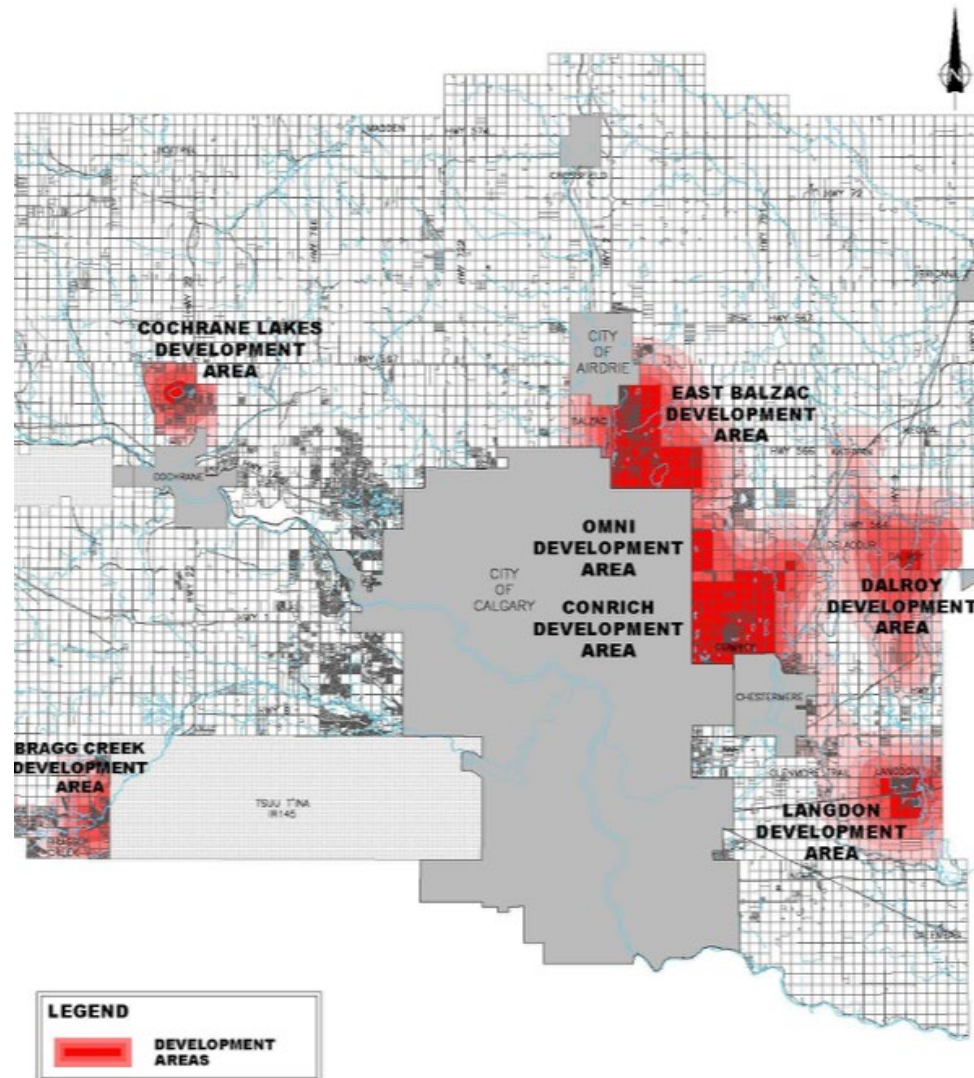
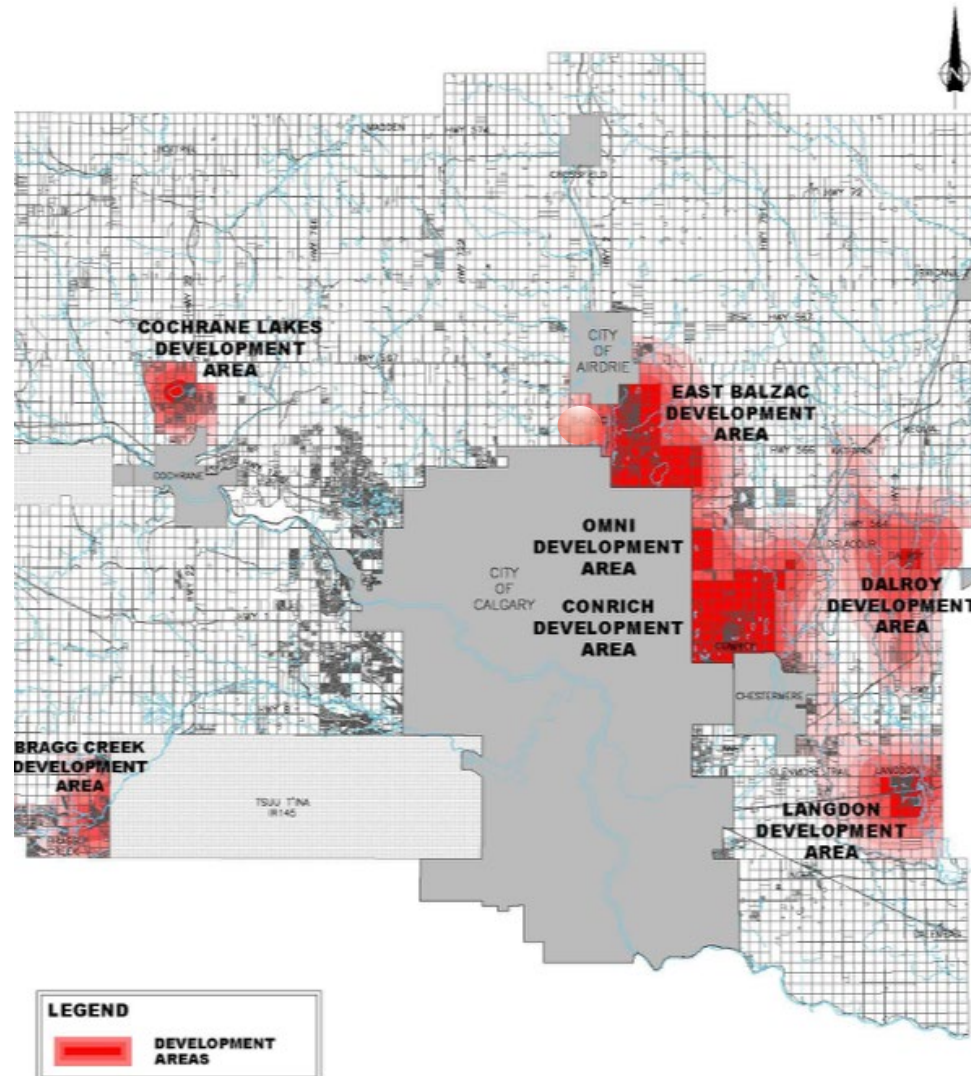


Table D.1: Off-Site Levy Summary

Offsite Levy Schedule	Cost	Service Area Map
WASTEWATER LEVIES		
Schedule C-1: Langdon WWTP	\$8,437.88 per m ³	B-1
Schedule C -2: ERVWWTM & Regional Lift Stations	\$7,599.49 per m ³	B -2
Schedule C -3: Langdon Wastewater Utilities:		
Area 1:	\$1,332.21 per m ³	B -3
Area 2:	\$1,063.76 per m ³	
Area 3:	\$ 633.73 per m ³	
Schedule C -4: Dalroy Regional LS and Wastewater Transmission Main	\$26,359.42 per m ³	B -4
Schedule C -5: Cochrane Lakes Wastewater	\$2,395.85 per m ³	B -5
Schedule C-12a: Bragg Creek Waste Water Treatment Plant	\$23,727.68 per m ³	B-12
POTABLE WATER LEVIES		
Schedule C -6: Graham Creek WTP & RWR	\$9,715.50 per m ³	B -6
Schedule C -7a: East Balzac Transmission Main (Base)	\$926.12 per m ³	B -7a
Schedule C -7b: East Balzac Transmission Main (Oversize)	\$244.23 per m ³	B -7b
Schedule C -8: East Balzac Pump Station & Reservoir and RR293 Loop	\$1,157.81 per m ³	B -8
Schedule C -9a: Conrich Transmission Main (Base)	\$1,247.61 per m ³	B -9a
Schedule C -9b: Conrich Transmission Main (Oversize)	\$141.92 per m ³	B -9b
Schedule C -10: Conrich Pump Station & Reservoir	\$2,419.04 per m ³	B -10
Schedule C -11: East Rocky View Back-Up Loop	\$3,613.97 per m ³	B -11
Schedule C-12b: Bragg Creek Water Treatment Plant & Reservoir	\$22,600.90 per m ³	B-12



Scope of Work



What's Changed Since 2020 Bylaw Adopted

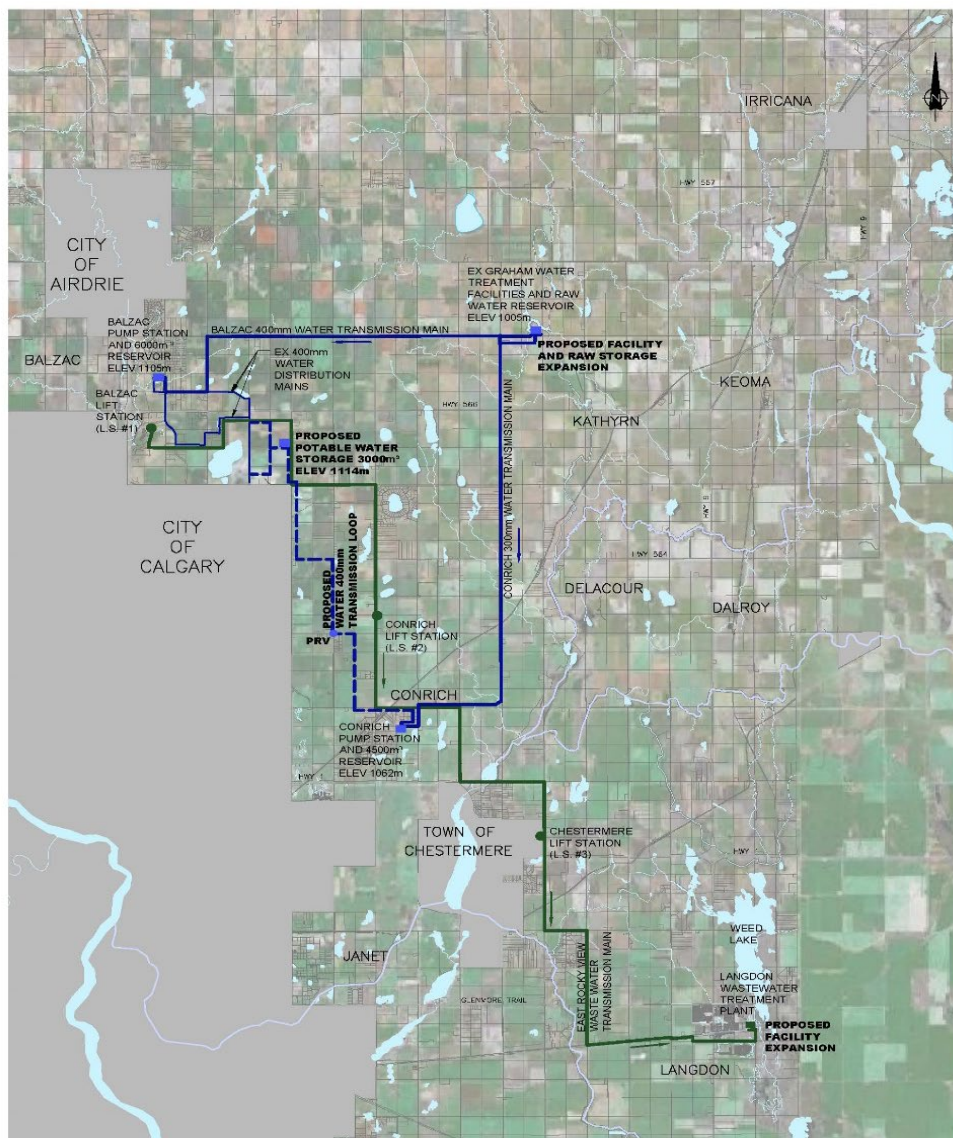
- Extension of services to West Balzac
- Completed the Stage 1 upgrade of the Langdon WWTP to a capacity of 5,850 m³/day
- Acquisition of the Blazer Water
- Acquisition of the Bearspaw Wastewater System
- Acquisition of the Cochrane Lakes Water System

Proposed Scope

- Update Langdon WWTP technology for Stage 2 upgrades to meet ultimate capacity of 8,000 m³/day
- Update Cost to Current Year in All Levy Schedules
- Review of Allocated Capacity of System Components
- Introduce West Balzac Servicing Area and schedule
- Assessment of the Blazer Water System
- Assessment of the Bearspaw Wastewater System
- Assessment of the New Cochrane Lakes Water Servicing Area



East Rocky View Water & Wastewater



Current Service Area Includes:

- Langdon (Wastewater Only)
- Conrich
- Omni
- East Balzac

Main Facilities:

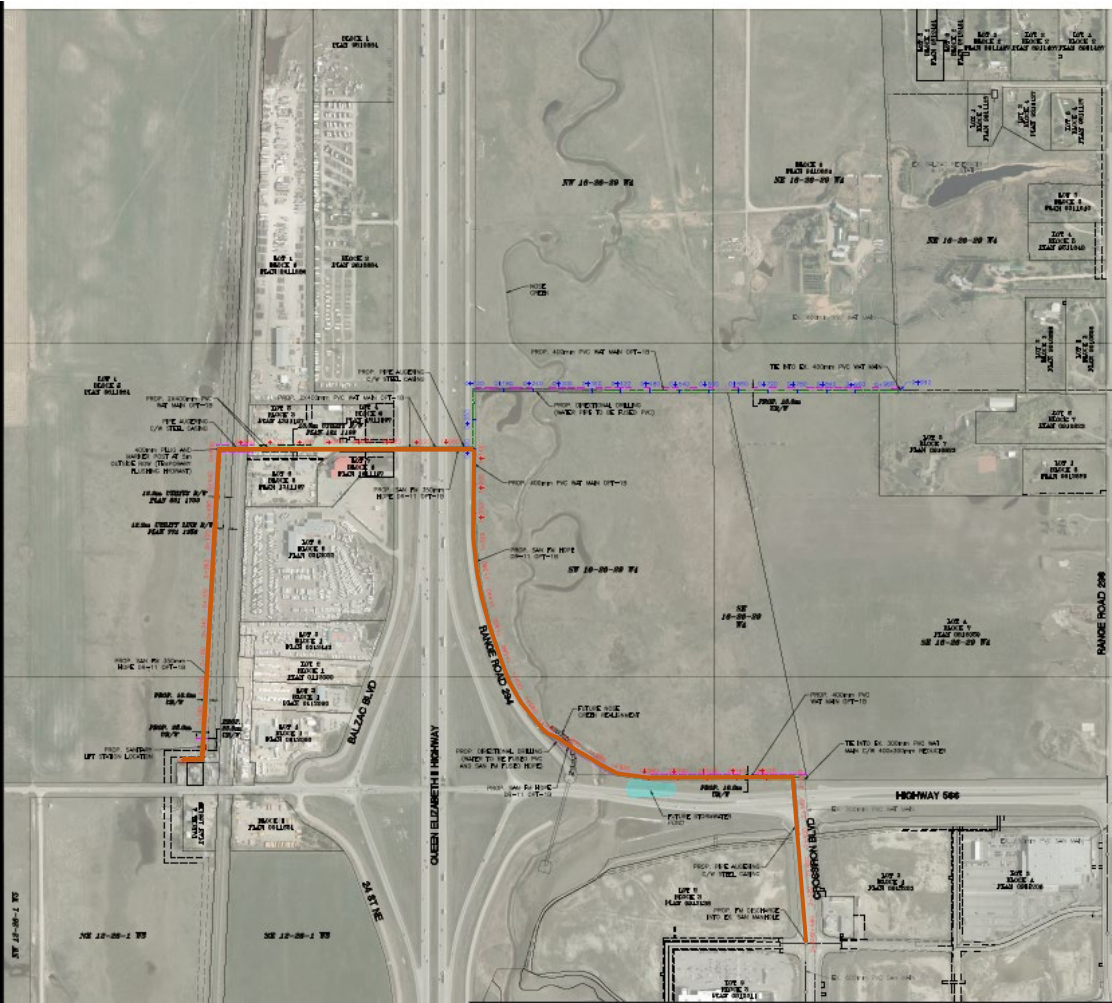
- Langdon WWTP
- Graham Creek WTP
- ERVWWTM & Regional Lift Stations
- Potable Reservoirs (Conrich & Balzac)
- Water Transmission Mains
- Back-up Loop

Recently completed:

- Extension of water and wastewater services to West Balzac



New West Balzac Wastewater Servicing



Extension Wastewater Servicing:

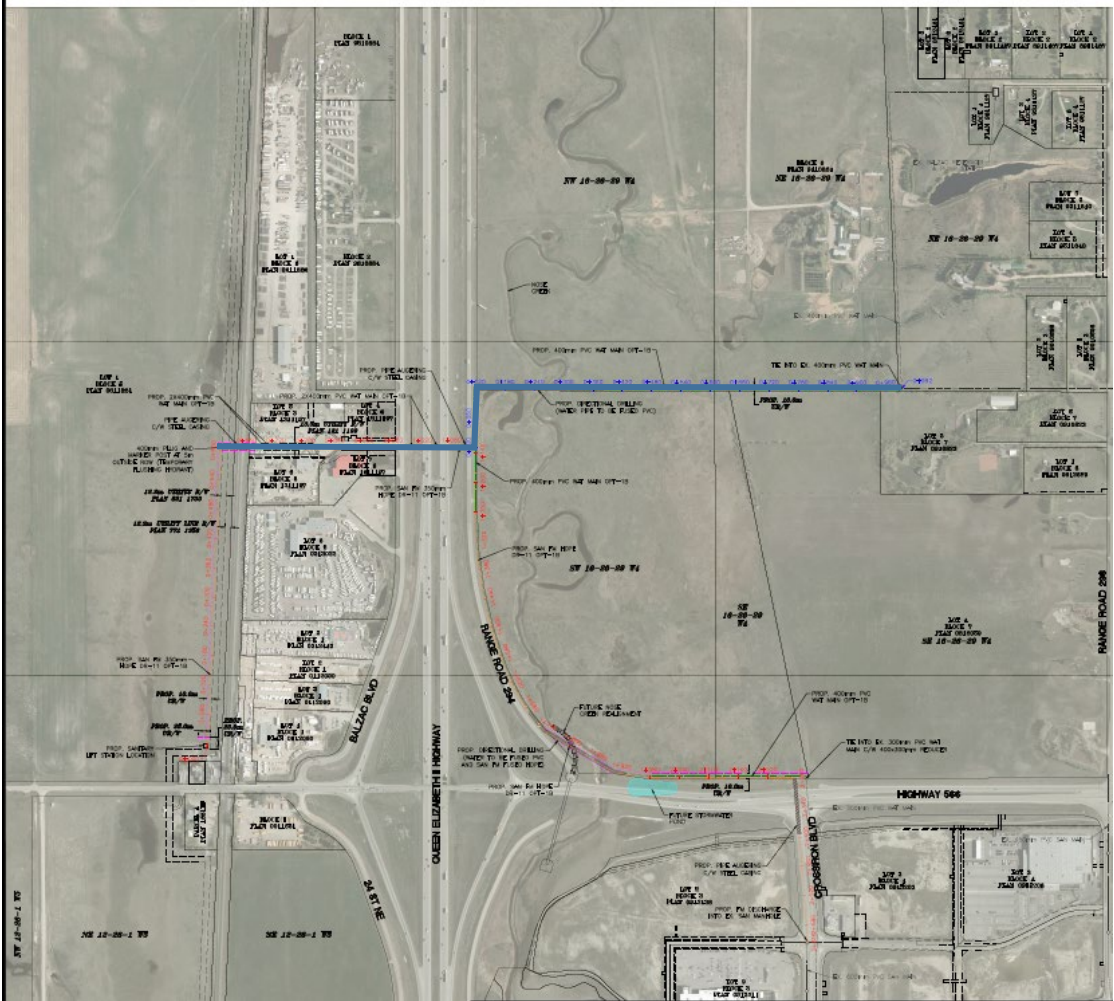
- 350 mm HDPE sanitary force main
- Lift Station
- Stage 1: Capacity of 1,000 m³/day
- Stage 2: Capacity of 2,240 m³/day

Levy Calculation

Original Capital Budget:	\$5,084,547.00
Future Lift Station Pump Upgrade	\$ 300,000.00
Total Recoverable	\$5,384,547.00
Total Estimated Cost to Levy	\$5,384,547.00
Capacity (average day flow)	2,240 m ³ /day
Capacity Committed (average day flow)	0 m ³ /day
Remaining Capacity to Levy	2,240 m ³ /day
Levy Cost Calculation	\$ 2,403.82/m ³ /day



New West Balzac Water Servicing



Extension Wastewater Servicing:

- 400 mm water feeder main
- Target Capacity of 2,240 m3/day

Levy Calculation

Original Capital Budget:	\$4,506,755.50
Total Recoverable	\$4,506,755.50
Total Estimated Cost to Levy	\$4,506,755.50
Capacity (average day flow)	2,240 m3/day
Capacity Committed (average day flow)	0 m3/day
Remaining Capacity to Levy	2,240 m3/day
Levy Cost Calculation	\$ 2,011.94/m3/day



Langdon WWTP Schedule Update

What's changed since 2020 bylaw adopted?

❖ **Stage 1:**

- Introduction of new technology that resulted in a shift from the Continuous Flow, Constant Level SCR to a Moving Bed Biofilm Reactor (MBBR) system to increase capacity to 5,850 m³/day. This included the conversion of the existing SBR #2 to a MBBR system.

❖ **Stage 2:**

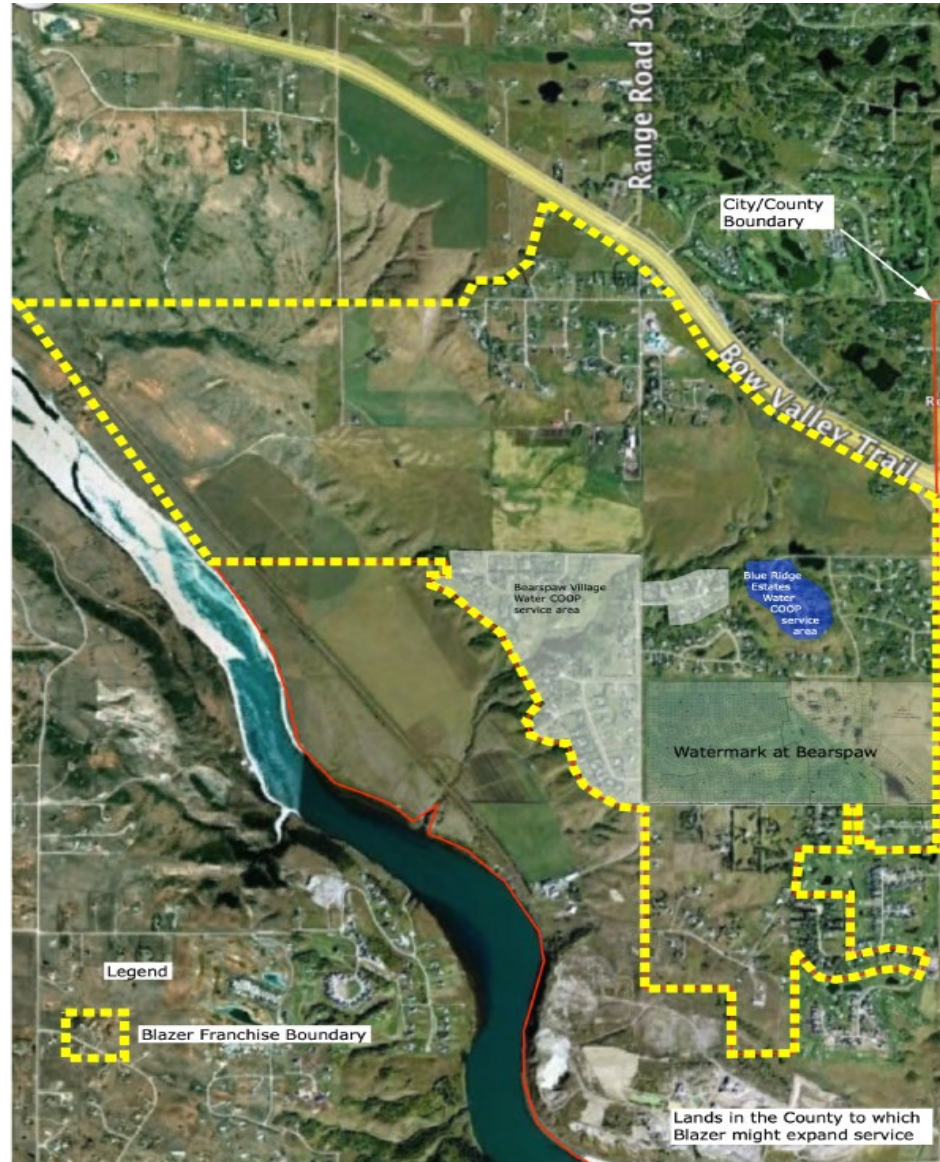
- Convert SBR 1 to a MBBR system to provide treatment for the ultimate 8,000 m³/day capacity.

Target Average Day Capacity	8,000 m ³ /day
Total Committed Flow	5,070 m ³ /day
Remaining Capacity	2,930 m ³ /day

Total Recoverable	\$19,736,195
Upgrade Cost Estimate	\$3,565,000
Total Levy Costs	\$23,301,195
Levy Rate	\$7,951.66 m³/day



New Blazer Water Servicing



The County acquired the Blazer Water System:

- Raw Water and Pump House
 - Water Treatment Plant & Reservoir
 - 200 mm raw water intake watermain
 - Water Treatment Plant current capacity is 1,640 m³/day
-
- No significant growth is anticipated that would necessitate significant upgrades to support future growth and development.
 - Administration continues to utilize the connection fee as per the current Master Rate Bylaw to facilitate water servicing within the area.



New Bearspaw Wastewater Servicing

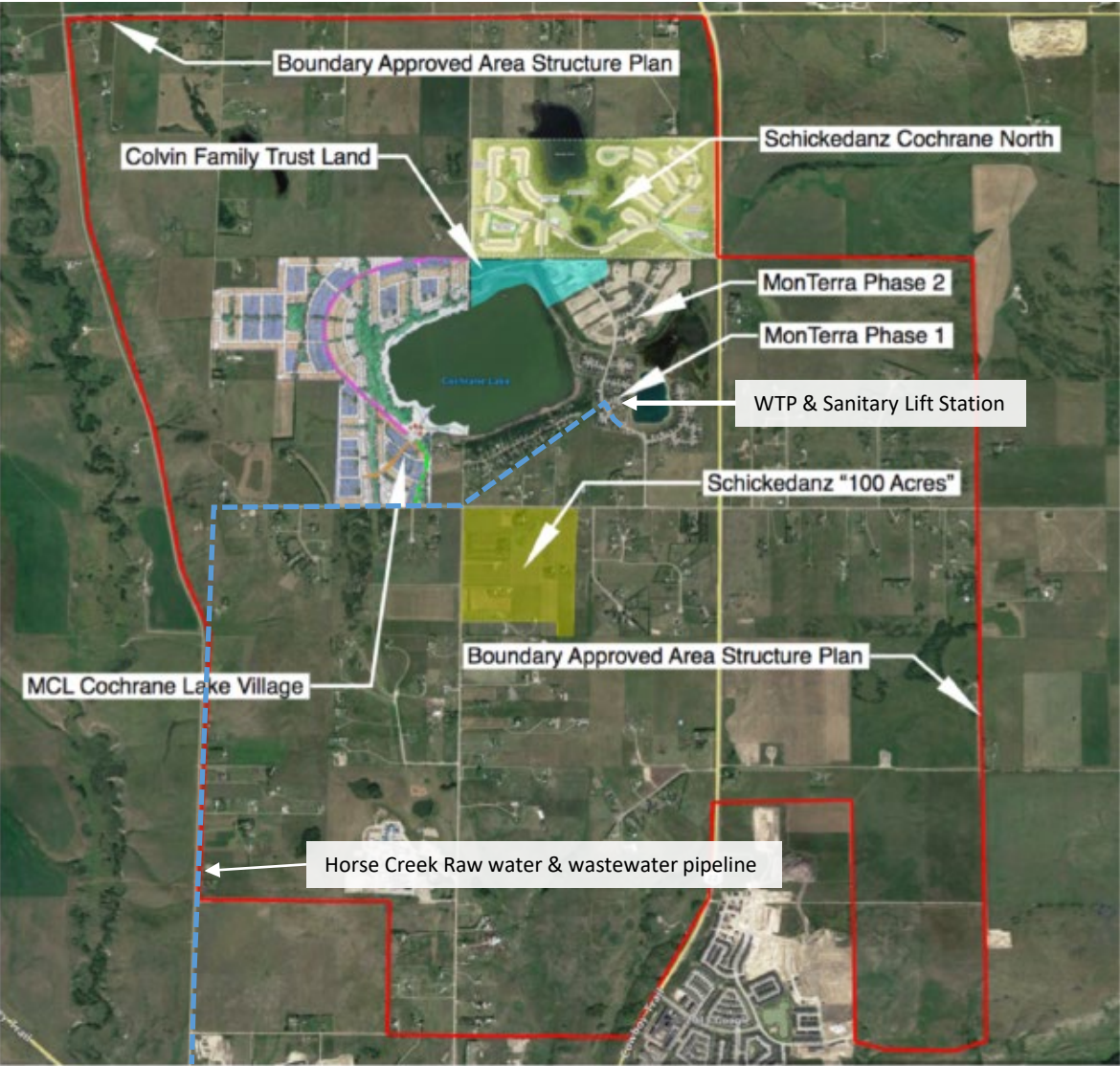


Transfer of the BRWWTP to the County:

- WWTP and Lift Station
 - 250 mm Sanitary Forcemain from WWTP to the Bow River
 - WWTP current Capacity is 350 m³/day
 - Potential system expansion to 1,400 m³/day
-
- No significant growth is anticipated that would necessitate significant upgrades to support future growth and development.
 - Administration continues to utilize the connection fee as per the current Master Rate Bylaw to facilitate wastewater servicing within the area.



New Cochrane Lakes Water & Wastewater Servicing



Existing Horse Creek Water & Wastewater Servicing:

- WTP capacity is 2,488 m³/day
- Wastewater flow to the Town of Cochrane is limited to 48 l/s (4,233 m³/day) due to constraints within the Town's internal system.
- Cost Contribution and Connection Agreement with the developers within the area for yearly payments or contributions towards the water system's debt payment.
- Wastewater system schedule has been updated

Target Average Day Capacity	1,049 m ³ /day
Total Committed Flow	258 m ³ /day
Remaining Capacity	790 m ³ /day
Total Recoverable	\$2,073,487
Upgrade Cost Estimate	\$
Total Levy Costs	\$2,073,487
Levy Rate	\$2,624.67 m ³ /day

Proposed Updated Schedule of Levy

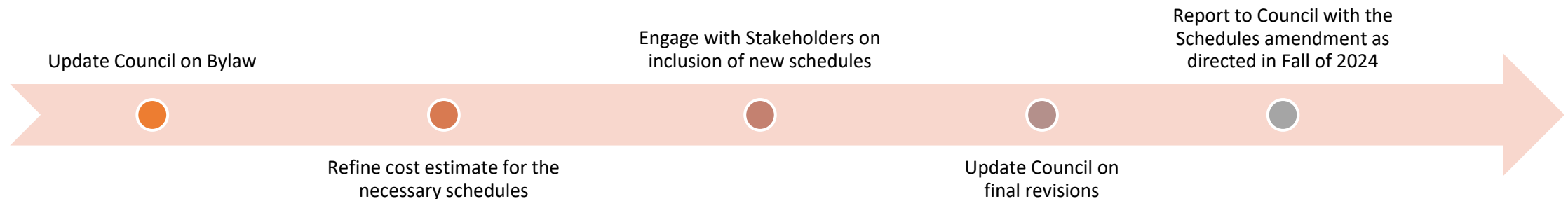
Offsite Levy Schedule	Cost	Service Area Map
WASTEWATER LEVIES	per m ³	
Schedule C-1: Langdon WWTP	\$8,437.88 \$7,951.66	B-1
Schedule C -2: ERVWWTM & Regional Lift Stations	\$7,599.49 \$8,846.43	B-2
Schedule C -3: Langdon Wastewater Utilities: Area 1: Area 2: Area 3:	 \$1,332.24 \$2,003.30 \$1,063.76 \$2,112.70 \$633.73 \$690.74	B-3
Schedule C -4: Dalroy Regional LS and Wastewater Transmission Main	\$26,359.42 \$28,417.64	B-4
Schedule C -5: Cochrane Lakes Wastewater	\$2,395.85 \$2,624.67	B-5
POTABLE WATER LEVIES		
Schedule C -6: Graham Creek WTP & RWR	\$9,715.50 \$12,955.87	B-6
Schedule C -7a: East Balzac Transmission Main (Base)	\$926.12 \$1,071.86	B-7a
Schedule C -7b: East Balzac Transmission Main (Oversize)	\$244.23 \$323.55	B-7b
Schedule C -8: East Balzac Pump Station & Reservoir and RR293 Loop	\$1,157.84 \$1,353.20	B-8
Schedule C -9a: Conrich Transmission Main (Base)	\$1,247.64 \$1,916.34	B-9a
Schedule C -9b: Conrich Transmission Main (Oversize)	\$141.92 \$183.13	B-9b
Schedule C -10: Conrich Pump Station & Reservoir	\$2,419.04 \$3,725.73	B-10
Schedule C -11: East Rocky View Back-Up Loop	\$3,613.97 \$4,821.45	B-11

Offsite Levy Schedule	Cost	Service Area Map
BRAGG CREEK LEVIES		
Schedule C-12a: Bragg Creek Wastewater Treatment Plant	\$23,727.68 \$24,313.63	B-12a
Schedule C-12b: Bragg Creek WTP & PWR	\$22,600.90 \$24,695.98	B-12b
WEST BALZAC LEVIES		
Schedule C-13a: West Balzac Wastewater Lift Station and Forcemain	\$2,408.28	B-13a
Schedule C-13b: West Balzac Water Transmission Main	\$2,011.94	B-13b



Next Steps....

- Stakeholder Consultation on Bylaw
- Website – Supporting Information
- Engage industry representatives and stakeholders on updates/changes
 - Rocky View 2020
 - BILD Calgary Region
- Final Edits & Consolidate Feedback
- Prepare final bylaw package for Council consideration
- Bylaw would then apply to development after the date of adoption



Comments and Questions



System Summaries

The Regional Water and Wastewater Off-Site Levy Bylaw set out to establish a framework that aligns with Council's Strategic Plan, focusing on two key pillars: responsible management of growth and the commitment to maintain the County's financial health. Growth resulting from new development creates opportunities for residents and businesses by fostering a vibrant and diverse economy and generating additional tax revenues to support County services. Growth also affects the costs of operating and maintaining the County's Infrastructure. Balancing the benefits and costs of growth is a key focus of Administration's Corporate Business Plan and the levy structure is a critical tool to help achieve that. It ensures that new development pays a proportionate share of the costs needed for the addition, expansion, and long-term sustainability of the County's Water and Wastewater network resulting from that growth.

East Rocky View Regional System

Water

The County receives raw water from the Western Irrigation District (WID) canal system during the summer months from May 1 to September 30. The source of flow for the WID is from the Bow River, diverted and stored in the County's raw water reservoir adjacent to the Graham Water Treatment Plant (WTP). The water is pumped from the raw water reservoir to the WTP for treatment. Transmission pumps at the WTP transfer treated water from the WTP through two transmission mains: one to the Balzac Pump Station and Reservoir and the other to the Conrich Pump Station and Reservoir. The Balzac Pump Station and Reservoir delivers water to all of East Balzac and recently extended to service West Balzac. The Conrich Pump Station and Reservoir delivers treated water to the area of Conrich and recently to the Prince of Peace area. The system is currently designed to achieve a capacity of 8,000 m³/day average demand flow, the current average daily treatment capacity of the WTP is 3,900 m³/day.

Wastewater

Effluent is collected via a 600-diameter forcemain with a length of approximately 54 km constructed in 2005-2007, spanning from Balzac through Conrich and Langdon. Various lift stations along the forcemain convey the wastewater to the Wastewater treatment plant in Langdon, treated, and eventually discharged into Weed Lake. The Langdon WWTP is a mechanical Sequential Batch Reactor (SBR) treatment plant with UV disinfection. An SBR is an activated sludge process that treats the wastewater in batches instead of continuously, as in a conventional activated sludge process. Stage 1 upgrade to the wastewater treatment plant was completed in 2022 with a conversion of one of the SBR units to an MBBR (Moving Bed Biofilm Reactor) that brought the plant capacity to 5,850 m³/day. The system is currently designed to achieve a capacity of 8,000 m³/day average demand.

Dalroy Wastewater System

The existing system consists of a forcemain from Wheatland County Subdivision (located at Lyalta) to the Dalroy Transfer Station. Wastewater is collected and stored until it can be haul to the Langdon Wastewater Treatment Plant for treatment and disposal. The Transfer Station was constructed in 2007-2009 as a temporary arrangement to accommodate anticipated wastewater flows from the Phase 1 Wheatland County development of 184 houses. The Dalroy Transfer Station has a large holding tank with twin cells, each with 400 m³ storage capacity (total 800 m³ storage). One cell is normally used as a holding tank, and the other is used only for emergency overflow. The average day wastewater flow

capacity is 244 m³/day. The ultimate plan for the system is to connect this Transfer Station to the East Rocky View Regional System with the construction of the forcemain to the Langdon WWTP.

Cochrane Lake System

Water

The County purchased the Horse Creek Water System 2021. The existing Horse Creek Water System consist of a raw water pump station from the Bow River, a raw water transmission main, water treatment plant (WTP) and raw water storage. The WTP is located within the community of Monterra, near intersection of Sheriff Rd. and Montenaro Bay. The WTP has two filter trains with each filter having a capacity of 1,244 m³/day resulting in an overall capacity of 2,488 m³/day. The filter capacity can be expanded to produce 1,702 m³/day for each train. The WTP building also has space for another treatment train if additional capacity is required in the future. The Horsecreek water system is currently not being considered in the Offsite Levy Bylaw. The County has a signed Cost Contribution and Connection Agreement with the developers within the area for yearly payments or contributions towards the system's debt payment.

Wastewater

The County purchased the Horse Creek Sanitary System in 2021. The existing Horse Creek sanitary sewer system is made up of a local gravity collection system and a duplex pump lift station located within the community of Monterra, near the WTP. The lift station discharges to the Town of Cochrane's sanitary sewer system through a force main. The existing wastewater force main is 250 mm in size and approximately 8,700 m in length. The Cochrane Lake Wastewater Servicing Area was established by Rocky View County by way of an agreement with the Town of Cochrane. This agreement established a peak servicing flow rate of 48L/s. The actual capacity of the force main based on a hydraulic calculation is approximately 65 L/s.

Bragg Creek System

Water

The existing Bragg Creek WTP was built in 2011 and is located at the north end of Burnside Drive. The treatment system includes two membrane treatment units, UV disinfection and chlorine injection. Potable Water Reservoir (PWR) is stored in a 500 m³ aboveground steel reservoir prior to being pumped out to the Bragg Creek distribution system. The existing PWR does not provide fire storage. Water is also pumped from the WTP to the Lower Elkana Pump House where it is pumped to the Upper Elkana Reservoir and Pump House. The water is distributed from the Upper Elkana Pump House to the Elkana service area. The current WTP capacity is 302 m³/day, with a targeted capacity of 604 m³/day.

Wastewater

The Wastewater Treatment Plant (WWTP) consists of two Membrane Bioreactor (MBR) trains; for a total average day treatment capacity of 285 m³/day. The treated effluent is discharged to the Elbow River upstream of the Bragg Creek's raw water intake. The wastewater collection system was constructed in 2013 and consists of HDPE low-pressure forcemains, primarily 75 mm in diameter with privately owned grinder pump systems on each property serviced. The Elbow River crossing from the collection network to the WWTP consists of a 100 mm forcemain. The current average day capacity of the WWTP is 285 m³/day, with a targeted capacity of 513 m³/day.

Blazer & Bearspaw Regional System*Water*

The County purchased the water supply system from Blazer Water Systems Ltd., a subsidiary of Macdonald Communities Limited, in February 2022. The original system was constructed in the late 80's/early 90's. The plant was expanded in 2014 with further upgrades between 2011 and 2021, to support the current service and the build-out of the Watermark Community. The Blazer water system consists of a source water system with a raw water intake and pump house on the Bow River, an irrigation pump station, WTP, and water distribution infrastructure. The WTP is located in Lynx Ridge, west of the City of Calgary and serves Watermark and adjacent communities. There is a space allowance within the existing WTP building for an additional two new treatment trains similar to the existing trains to increase the plant's capacity from 1,640 m³/day to the targeted capacity of 3,280 m³/day.

Wastewater

The County obtained full operational control of the wastewater treatment plant (WWTP) from Macdonald Communities Limited in February of 2022. The original WWTP was designed with an average daily flow of 350 m³/day. Additional land northwest of the WWTP offers the potential for expanding the treatment plant with a targeted capacity of 1,400 m³/day.