Agenda Overview
Village of Carmangay
Regular Council Meeting
Carmangay Community Centre
August 19, 2025
7:00 p.m.

1. **Call to Order**

2. **Approval of Agenda** for Tuesday, August 19, 2025 Regular Council Meeting

3. **Public Hearing** re: Bylaw #858 Road Closure

4. **Guests:**

5. **Question Period**

6. **Approval of Minutes**
   a) Tuesday, July 15, 2025 – see pages 4 to 6
   b) Wednesday, July 30, 2025 – see page 7 to 8

7. **Public Works Report**
   a) See pages 9 to 13

8. **Administrator Report**
   - Completed EBX training for ATB and rolled out new operating system
   - Worked on Health and Safety Policy
   - MPC and Council meeting
   - Development inquiries and clarifications
   - Lot sale documentation
   - Completed First Aid and WHMIS training
   - Communications with Alberta Environment re: lagoon
   - Updated computer and installed software on new computer
   - Training on new Munisoft programs
   - Spoke with Municipal Affairs re: petition guidelines
   - Attended OHS inspection of water plant
   - Attended meeting in Vulcan to meet with Minister of Municipal Affairs
   - Met with Actizyme rep and toured lagoon
   - Received a proposal for lagoon treatment for two years
   - Decorated Village float for Sports Day parade
   - Attempted to install Itron meter reading software on new computer
   - IT to complete installation
   - Special Council Meeting

- Submitted documentation to OHS for office inspection
- Communicated with bylaw officer re: unsightly yards complaints
- Attended meeting with Vulcan County CAO and Fire Chief re: bylaw enforcement processes
- Created emergency response plan and hazard assessments for office
- Obtained First Aid/CPR/AED certification
- Coordinated sewer services and repairs
- Working on quotes for Roving Energy Manager grant opportunity
- Spoke with Municipal Affairs re: approval of LGFF projects
- Working on starting Infrastructure Master Plan project
- Work on agenda for Council and minutes of previous meetings

9. Correspondence

- Funding letter for CCBF received

10. Financial Reports

- See pages 14 to 22

11. Old Business

a) Bylaw #858 – Road Closure Bylaw
- Page 23

b) LGFF Grant
- Projects have been submitted, awaiting approvals

c) Subdivision Request of 309 Alta Vista Blvd.
- Update

d) Roving Energy Manager Grant
- Update

e) Unsightly Properties Update
- Update

f) Health and Safety Policy
- Submitted under separate cover due to size of document

12. New Business

a) Library Board Nominations:

Motion to appoint the following individual to the Village of Carmangay Library Board for the specified terms:

- *Andrea Piazza – term expiry date August 19th, 2028*

- Kathleen Wilson - *term expiry date August 19th, 2028*
- Carole Cheswick - *term expiry date August 19th, 2028*
- Blanche Anderson - *term expiry date August 19th, 2028*
- Dan Doell - *term expiry date August 19th, 2028*
- Sue Dahl - *term expiry date August 19th, 2028*
- Carla deJager - *term expiry date August 19th, 2028*

b) Fire Hydrant Policy 2025
   - see pages 24 to 26
   - Draft policy created by Chief Headrick
   - Copies sent to Public Works and Carmangay Fire Chief and both have approved the contents

c) Actizyme Proposal
   - See pages 27 to 56 for details

13. <u>Reports</u>

d) ORRSC:
e) Marquis Foundation:
f) Vulcan District Solid Waste:
g) SouthGrow:
h) Twin Valley Regional Water Services Commission:
i) Mayors and Reeves of Southern Alberta:
j) Vulcan County Regional Emergency Partnership Committee:
k) FCSS:
l) Vulcan County Communications Meeting

14. Closed Session – FOIP Section 16 – Third Party Business Interests

15. Adjournment

5. Approval of Minutes:

Minutes
Village of Carmangay
Regular Council Meeting
Carmangay Community Centre
July 15, 2025
7:00 p.m.

16. Call to Order: **Mayor Kym Nichols calls the meeting to order at 7:40 p.m.**

    Attendance: Mayor Kym Nichols, Deputy Mayor Doug Fraser, Councilor Sue Dahl, CAO Kelly McLeod

17. Approval of Agenda for Tuesday, July 15, 2025 Regular Council Meeting

    Deputy Mayor Doug Fraser motions to approve the agenda for Tuesday, July 15, 2025 Regular Council Meeting.

    CARRIED

18. Guests – none

19. Question Period

20. Approval of Minutes

    Councillor Sue Dahl motions to approve the minutes of Tuesday, June 17, 2024 Regular Council Meeting.

    CARRIED

21. Public Works Report

22. Administrator Report

    Deputy Mayor Doug Fraser motions to accept the Public Works Report and the Administrator Report for information.

    CARRIED

23. Correspondence

    Letters received from Southgrow and RCMP.

24. Financial Reports

    Councillor Sue Dahl motions to accept the Financial Reports for information.

    CARRIED

25. Old Business

    a) LGFF Grant
        - For information

b) Fire Hydrant Repairs
    - For information

c) Subdivision Request of 309 Alta Vista Blvd.
Councillor Sue Dahl motions to table this item to next meeting or special meeting to allow Administration to receive legal advice on the topic.

CARRIED

d) Bylaw #859 – Cemetery Bylaw
Deputy Mayor Doug Fraser motions to pass first reading of Bylaw #859 – Cemetery Bylaw.

CARRIED

Mayor Kym Nichols motions to pass second reading of Bylaw #859 – Cemetery Bylaw.

CARRIED

Councillor Sue Dahl motions for permission to pass third and final reading of Bylaw #859 – Cemetery Bylaw.

CARRIED UNANIMOUSLY

Deputy Mayor Doug Fraser motions to pass third reading of Bylaw #859 – Cemetery Bylaw.

CARRIED

e) MCCAC Final Report from Roving Energy Manager Program
    - For information

26. New Business

a) Bylaw #858 – Road Closure Bylaw
Councillor Sue Dahl motions to pass first reading of Bylaw #858 – Road Closure Bylaw.
CARRIED

b) Jamboree Days Parade
    - For information

c) Health and Safety Policy
    - Tabled to allow Public Works the opportunity to read over

d) Unsightly Properties
    - For information

e) Munisoft Updates and Computer Upgrade
    - For info

27. Reports

a) ORRSC – no meeting
b) Marquis Foundation – lodge respite room is being used, occupancy of lodge is 32 residents, AAHP funding has been denied
c) Vulcan District Solid Waste – no meeting
d) SouthGrow – no meeting
e) Twin Valley Regional Water Services Commission – no meeting
f) Mayors and Reeves of Southern Alberta – no meeting
g) Vulcan County Regional Emergency Partnership Committee – no meeting
h) FCSS – no attendee
i) Vulcan County Communications Meeting – no meeting
j) Carmangay Rec Board -- no meeting

28. Closed Session –

a) FOIP Section 16 – Third Party Business Interests

Doug Fraser motions to enter closed session at 8:37 p.m.
Mayor Kym Nichols motions to exit closed session at 9:08 p.m.

Motions arising from Closed Session:

Councillor Sue Dahl motions to accept conditional offer to purchase 213 Camburn Street, pending approval of development permit application.

CARRIED

Doug Fraser motions to direct administration to enter into a Development Agreement with C&N Salvage.

CARRIED

29. Adjournment

Mayor Kym Nichols adjourns meeting at 9:10 p.m.

_____ _____

Date

Mayor Kym Nichols

_____

CAO Kelly McLeod

Minutes
Village of Carmangay
Special Council Meeting
Village Office
Wednesday, July 30, 2025
7:00 p.m.

1. Call to Order

   Mayor Kym Nichols opens the meeting at 7:05 p.m.

2. Attendance: Mayor Kym Nichols, Deputy Mayor Doug Fraser, Councillor Sue Dahl, CAO Kelly McLeod
3. Guests: None
4. Approval of Agenda for Wednesday, July 30, 2025 Special Council Meeting

   Councillor Sue Dahl approved the agenda for Wednesday, July 30, 2025 Special Council Meeting with the addition of New Business (b) Public Hearing for Road Closure Bylaw #858.

   CARRIED

5. New Business:

   a) Water Service Request for Proposed Subdivision

   Deputy Mayor Doug Fraser motions to approve the connection of the two proposed subdivisions to municipal water, provided the results of a capacity study shows there is capacity available for these additional developments. The developer of these properties shall use MPE Engineering to conduct the water capacity study at the cost of the developer. The developer shall be responsible for any costs associated with any required upgrades to the water lines, plus the installation of the water lines to the subdivided properties from the municipal line. The developer shall enter into a development agreement with the Village of Carmangay in relation to the aforementioned.

   CARRIED

   b) Public Hearing for Road Closure Bylaw #858

   Councillor Sue Dahl motions to set the date for the public hearing for Bylaw #858 for Tuesday, August 19, 2025 at 7 p.m.

CARRIED

6. Adjournment

Mayor Kym Nichols adjourned the meeting at 7:10 p.m.

_____ _____

Date

Deputy Mayor Doug Fraser

_____

CAO Kelly McLeod

7. Public Works Report:

10-Jul	Water plant / Lift station	Sc
10-Jul	Office check in	Sc
10-Jul	Mowed town lots	Sc
10-Jul	Mowed [redacted] Camburn property 1 hour	Sc
10-Jul	Mowed 218-220 Elmore lots	Sc
10-Jul	Took pics of tree at 210 Grand	Sc
10-Jul	Checked meter and took picks at [redacted]	Sc
10-Jul	Looked at culverts at [redacted] Grand Ave	Sc
11-Jul	Water plant / Lift station	Sc
11-Jul	office check in	Sc
11-Jul	Cleaned and sharpened blades on mower decks	Sc
11-Jul	Mowing	Sc
14-Jul	Water plant / Lift station	Sc
14-Jul	Shop clean up	Sc
14-Jul	Did the months end paperwork sheets electronically for the water plant	Sc
14-Jul	Branch pick up	Sc
15-Jul	Water plant / Lift station	Sc
15-Jul	OHS visited lift station	Sc
15-Jul	Picked up mess in recycling building	Sc
15-Jul	Took garbage from recycle to transfer station	Sc
15-Jul	Painted dates and put Fair days signs out at highway	Sc
15-Jul	Mowing	Sc
16-Jul	Water plant / Lift station	Sc
16-Jul	Marked property pins at [redacted] Elmore	Sc
16-Jul	Marked industrial area property at Alberta/George found 1 pin	Sc
16-Jul	Marked Prairie Ave North end of town water line	Sc
16-Jul	Tree company came for quotes on job	Sc
16-Jul	Called MPE about H2S system and left a message to call back	Sc
16-Jul	Called [redacted] Elmore owner about gravel/Left message	Sc

17-Jul	Water plant / Lift station	Sc
17-Jul	Branch trimming	Sc
17-Jul	Talked to MPE	Sc
17-Jul	Hauled branches to transfer station	Sc
17-Jul	Fixed some potholes around town	Sc
17-Jul	Called PTW Energy and left a message	Sc
17-Jul	Talked to [redacted] Elmore owner about gravel , Get back to me in 2 weeks	Sc
18-Jul	Water plant / Lift station	Sc
18-Jul	Fixed Prarie potholes	Sc
18-Jul	Mowed north end of town streets	Sc
18-Jul	Trimmed more branches for mowing under	Sc
21-Jul	Water plant / Lift station	Sc
21-Jul	Got student going on mowing	Sc
21-Jul	Vulcan for Bacti sample	Sc
21-Jul	Cleaned recycle out again	Sc
21-Jul	Calibrated CL2 analyzer on wall in water plant	Sc
21-Jul	Cleaned up in water plant	Sc
21-Jul	Shop clean up	Sc
21-Jul	Tree company came for the second quotes in town	Sc
22-Jul	Water plant / Lift station	Sc
22-Jul	Office check in	Sc/Tf
22-Jul	Water plant clean up	Sc/Tf
22-Jul	Shop clean up	Sc/Tf
23-Jul	Water plant / Lift station	Sc
23-Jul	Office check in	Sc/Tf
23-Jul	Weed eating south end of town	Sc/Tf
23-Jul	Mowed Pacific Ave and around water plant	Sc
23-Jul	Mowed Carman street	Tf
24-Jul	Water plant / Lift station	Sc
24-Jul	Office check in	Sc/Tf
24-Jul	OHS visit at the water plant	Sc

24-Jul	Mowed wind mill blade lot	Sc
24-Jul	Mowed Stephen Ave	Sc
24-Jul	Mowed Grand Ave	Tf
24-Jul	Mowed lots beside shop	Tf
25-Jul	Water plant / Lift station	Sc
25-Jul	Office check in	Sc/Tf
25-Jul	Trimmed trees over parade route	Sc/Tf
25-Jul	Took branches to transfer station	Sc/Tf
25-Jul	Put decoy cameras up in recycle building with signs	Sc/Tf
25-Jul	Mowed north end of Grand Ave	Sc
25-Jul	Mowed Armstrong	Tf
25-Jul	Mowed Arnold St	Sc
28-Jul	Water plant / Lift station	Sc
28-Jul	Weed eat Carman ashpalt of weeds	Sc/Tf
28-Jul	Weed eat Grand / Armstrong / Whitney / Truman	Sc/Tf
28-Jul	Mowed CPR fields where parade starts	Sc
28-Jul	Mowed Armstrong / Whitney / Prairie / Truman	Tf
29-Jul	Water plant / Lift station	Sc
29-Jul	Washed dump truck	Sc
29-Jul	Put float in dump truck	Sc/Tf
29-Jul	Mowed Pacific and large lots	Sc
29-Jul	Fixed parade route roads / Fixed Alberta / Whitney	Sc
29-Jul	Mowed Carman and Curling rink	Tf
30-Jul	Water plant / Lift station	Sc
30-Jul	Office check in	Sc
30-Jul	Garbage pick up at Tipi Rings	Sc/Tf
30-Jul	Mowed north end of Pacific	Sc
30-Jul	Mowed north end side roads	Sc
30-Jul	Lagoon check with Acti-Zyme dealer	Sc
30-Jul	Mowed Elmore / Armstrong / Senior center	Tf
31-Jul	Water plant / Lift station	Sc
31-Jul	Met with Barons PW at water plant	Sc

31-Jul	Talked with TA Excavating	Sc
31-Jul	Mowed 218/220 Elmore and put for sale signs up	Sc
31-Jul	Mowed large lot beside manor	Sc
31-Jul	Mowed large lot South of shop	Sc
31-Jul	Mowed Elmore	Tf
31-Jul	Mowed north end of Alberta	Tf
31-Jul	Mowed playground	Tf
6-Aug	Water plant / Lift station	Sc
6-Aug	Took down sports days signs at highway	Sc
6-Aug	Office check in	Sc
6-Aug	Put down float in dump truck	Sc
6-Aug	Put Acti-Zyme in lagoon	Sc
6-Aug	Cleared a sewer at [redacted] Whitney	Sc
6-Aug	Shut curb valve off at [redacted] Whitney	Sc
7-Aug	Water plant / Lift station	Sc
7-Aug	Office check in	Sc
7-Aug	Tried to camera [redacted] Whitney but completly under water	Sc
7-Aug	Called Mr Rooter	Sc
7-Aug	Met with D&M Construction for quote on shop	Sc
7-Aug	2 hours trying to clear [redacted] Whitney but needs to be pressure jetted	Sc
8-Aug	Water plant / Lift station	Sc
8-Aug	Branch pick up from storm	Sc
8-Aug	Office check in	Sc
8-Aug	Went to [redacted] Whitney to do sewer,wants to wait till monday , to muddy	Sc
8-Aug	Cleaned bathroom in shop and cleaned up	Sc
8-Aug	Cleaned up in water plant	Sc
11-Aug	Water plant / Lift station	Sc
11-Aug	Turned [redacted] Whitney st curb valve on	Sc
11-Aug	Camera and snaked [redacted] Whitney st sewer	Sc/Tf
11-Aug	Vulcan for Bacti Sample	Sc

11-Aug	Mowed Camburn / Truman st	Tf
11-Aug	Mowed village lot on grand/camburn Pacific/Camburn	Sc
12-Aug	Water plant / Lift station	Sc
12-Aug	Ordered THM and Lead kit	Sc
12-Aug	Office check in	Sc/Tf
12-Aug	Pulled babys breath at lagoon	Sc/Tf
12-Aug	Put Acti-Zyme in lagoon cells	Sc
12-Aug	Fixed lagoon gate	Sc
12-Aug	Mowed cemetery	Sc/Tf
12-Aug	Took float out of dump truck	Sc/Tf
12-Aug	Fixed Pacific Ave of pot holes	Sc

Financial Reports:

Statement of Cash Position as of July 31, 2025 and August 14, 2025

	31-Jul-25	14-Aug-25	Interest Income
Current Cash (operating account)	$ 161,223.65	$ 149,525.25	$ 477.41
Current Cash (ATB deposit account)	$ 10,113.73	$ 12,113.73	$ 27.41
Reserves	$ 160,743.14	$ 160,743.14	$ 435.68
AMWWP Grant Account	$ 5,765.12	$ 5,765.12	$ 15.63
ACF Loan (rec'd March 15, 2023)	$ 147.87	$ 147.87	$ 0.40
Investments	$ 39,551.96	$ 39,551.96	$ 112.21
CCBF Grant	$ 10,398.05	$ 10,398.05	$ 28.18
MSI Operating Grant	$ 530.86	$ 530.86	$ 1.44
MSI Capital Grant Account	$ 150,814.24	$ 150,814.24	$ 408.77
Savings Account	$ 9,244.50	$ 9,244.50	$ 24.57
Accounts Receivable	$ 496.73	$ 13,618.19	
Tax Arrears Owing	$ 26,330.64	$ 24,933.14	
Current Tax Owing	$ 67,322.71	$ 63,902.84	
Overdue & Current Utilities Owing	$ 6,939.35	$ 2,969.29	
Revolving Credit	$ -	$ -	$ -
Mastercard	-$ 2,062.25	-$ 1,526.02	$ -
Total Cash & Near Cash	**$ 647,560.30**	**$ 642,732.16**	**$ 1,531.70**

Village of Carmangay
Budgetary Control
For the Period 2025-01-01 - 2025-08-31
Cash Budget

Account #/Description		Current	Year to Date	Budget	Variance	%
1-10-110 - Municipal Taxes		0.00	270,560.01	271,490.00	-929.99	-0.34
1-10-111 - DIP Revenue		0.00	53.62	50.00	3.62	7.24
1-10-114 - Provincial School Requisition		0.00	70,788.34	70,935.52	-147.18	-0.21
1-10-115 - Seniors Requisition		0.00	6,717.74	7,500.00	-782.26	-10.43
1-10-510 - Tax Penalties		0.00	1,303.88	5,500.00	-4,196.12	-76.29
1-12-206 - CLEARING ACCT FOR COMMUNITY GRANTS		0.00	39,345.00	0.00	39,345.00	0.00
1-12-410 - General Administration Revenue		139.00	2,630.27	3,000.00	-369.73	-12.32
1-12-420 - Interest Revenue		5.21	7,454.33	20,000.00	-12,545.67	-62.73
1-12-540 - Franchise Revenue		0.00	25,105.02	32,000.00	-6,894.98	-21.55
1-12-560 - Leases and Rents		247.00	10,776.00	18,000.00	-7,224.00	-40.13
1-12-565 - STEP GRANTS		0.00	0.00	2,025.00	-2,025.00	-100.00
1-12-570 - ADMIN REVENUE OTHER		0.00	102.96	0.00	102.96	0.00
1-12-595 - Agency Bank Revenue		0.00	14,000.00	24,000.00	-10,000.00	-41.67
1-12-600 - Provincial and Other Grants		0.00	238,729.27	54,936.00	183,793.27	334.56
1-12-700 - SOLAR REVENUE		0.00	16,984.49	38,000.00	-21,015.51	-55.30
1-27-110 - Bylaw and Dog License Revenue		0.00	784.00	1,300.00	-516.00	-39.69
1-31-110 - Public Works Revenue		0.00	314.40	0.00	314.40	0.00
1-31-200 - PW - FOREMAN		0.00	100.00	0.00	100.00	0.00
1-31-204 - PW - SNOW REMOVAL		0.00	275.00	800.00	-525.00	-65.62
1-31-500 - PW - DEBRIS REMOVAL		0.00	275.00	0.00	275.00	0.00
1-41-110 - Water Flat Fee Revenue		55.33	46,552.36	92,400.00	-45,847.64	-49.62
1-41-120 - Water Usage Revenue		11.69	23,970.58	68,252.66	-44,282.08	-64.88
1-41-252 - PW - WATER REPAIRS		0.00	155.00	0.00	155.00	0.00
1-41-400 - Bulk Water Sales		0.00	265.00	500.00	-235.00	-47.00
1-41-401 - PW - GRAVEL		0.00	120.00	100.00	20.00	20.00
1-42-110 - Sanitary Flat Fee Revenue		24.02	17,291.04	34,294.56	-17,003.52	-49.58
1-42-253 - PW - SEWER CAMERA/TRACER		0.00	700.00	1,000.00	-300.00	-30.00
1-42-254 - PW - VAC TRUCK		0.00	0.00	1,000.00	-1,000.00	-100.00
1-43-120 - Weekly Garbage Revenue		45.23	37,303.93	74,056.44	-36,752.51	-49.63
1-56-110 - Cemetery Sales & Service		0.00	-1,000.00	500.00	-1,500.00	-300.00
1-61-110 - Development Revenue		200.00	2,350.00	2,000.00	350.00	17.50
1-72-130 - PW - MOWER WITH OPERATOR		0.00	100.00	500.00	-400.00	-80.00
1-73-300 - FUEL CHARGES TO FIRE DEPT		0.00	832.80	1,500.00	-667.20	-44.48
1-94-110 - Land Sales		14,000.00	51,000.00	37,000.00	14,000.00	37.84
	Revenue Totals:	14,727.48	885,940.04	862,640.18	23,299.86	2.70
2-10-114 - Provincial School Requisition		0.00	28,971.70	70,935.52	41,963.82	59.16
2-10-115 - Seniors Requisition		0.00	6,734.00	6,734.00	0.00	0.00

Village of Carmangay
Budgetary Control
For the Period 2025-01-01 - 2025-08-31
Cash Budget

Account #/Description	Current	Year to Date	Budget	Variance	%
2-10-116 - FCSS	0.00	1,607.67	3,800.00	2,192.33	57.69
2-10-150 - Fire Services Requisition	0.00	0.00	19,000.00	19,000.00	100.00
2-10-160 - Police Requisition	0.00	13,046.00	13,046.00	0.00	0.00
2-11-101 - Council Stipend & Meeting Fees	0.00	410.00	3,000.00	2,590.00	86.33
2-11-200 - MEETING ROOM EXP & MILEAGE	50.00	279.30	2,000.00	1,720.70	86.04
2-12-100 - Admin Salaries	0.00	43,263.59	76,000.00	32,736.41	43.07
2-12-101 - Admin Employer Benefits Contributions	0.00	17,868.40	31,500.00	13,631.60	43.27
2-12-200 - Admin Travel Expense	0.00	603.90	500.00	-103.90	-20.78
2-12-203 - Admin Insurance	0.00	23,978.00	23,978.00	0.00	0.00
2-12-206 - ADMIN - OTHER	0.00	7,845.00	500.00	-7,345.00	-1469.00
2-12-215 - Admin Postage	0.00	933.11	2,000.00	1,066.89	53.34
2-12-217 - Admin Telephone	0.00	401.79	700.00	298.21	42.60
2-12-220 - Admin Advertising	0.00	135.00	200.00	65.00	32.50
2-12-230 - Admin Professional Services	998.49	71,057.11	80,000.00	8,942.89	11.18
2-12-250 - Admin Office Supplies	0.00	1,359.33	3,000.00	1,640.67	54.69
2-12-300 - Admin Memberships	0.00	1,500.87	2,000.00	499.13	24.96
2-12-320 - Admin Training and Development	0.00	159.99	2,000.00	1,840.01	92.00
2-12-500 - Admin Computer and Contracts	2,376.34	7,845.82	7,200.00	-645.82	-8.97
2-12-507 - COMPUTER SUPPLIES	0.00	0.00	2,500.00	2,500.00	100.00
2-12-514 - Parade Expenses	0.00	0.00	250.00	250.00	100.00
2-12-600 - Alberta Capital Finance Loan Repayment	0.00	9,946.75	19,731.49	9,784.74	49.59
2-12-700 - Admin Building Maintenance	0.00	0.00	1,000.00	1,000.00	100.00
2-12-800 - Admin Cencus and Election	0.00	722.47	1,000.00	277.53	27.75
2-12-810 - Admin Bank Charges	0.00	1,627.81	3,200.00	1,572.19	49.13
2-12-900 - Admin Utilities	0.00	1,796.81	5,000.00	3,203.19	64.06
2-23-100 - Emergency Services Requisitions	0.00	2,842.71	2,600.00	-242.71	-9.34
2-23-200 - Emergency Preparedness	0.00	0.00	250.00	250.00	100.00
2-24-100 - Solar Facility Repairs	0.00	0.00	3,000.00	3,000.00	100.00
2-27-110 - Bylaw Expense	0.00	631.23	1,800.00	1,168.77	64.93
2-31-100 - PW Salaries	0.00	32,967.79	65,000.00	32,032.21	49.28
2-31-101 - PW Employer Benefits Contributions	0.00	7,846.71	16,350.00	8,503.29	52.01
2-31-108 - PW Workers Compensation	0.00	3,670.35	5,400.00	1,729.65	32.03
2-31-217 - PW Telephone	0.00	125.02	180.00	54.98	30.54
2-31-320 - PW Training and Development	0.00	44.99	750.00	705.01	94.00
2-31-520 - PW Fuel	0.00	6,581.89	15,000.00	8,418.11	56.12
2-31-600 - PW Goods and Supplies	0.00	1,704.10	4,000.00	2,295.90	57.40
2-31-650 - CONTRACTED SERVICES FOR EXTERNAL JOBS	0.00	3,126.00	3,126.00	0.00	0.00
2-31-700 - PW Building and Equip Repairs	6,406.00	12,000.21	15,000.00	2,999.79	20.00

Village of Carmangay
Budgetary Control
For the Period 2025-01-01 - 2025-08-31
Cash Budget

Account #/Description	Current	Year to Date	Budget	Variance	%
2-31-900 - PW Utilities	0.00	3,544.13	8,000.00	4,455.87	55.70
2-32-215 - Roads Freight	0.00	0.00	200.00	200.00	100.00
2-32-531 - Roads Gravel/Dust Abatement	0.00	0.00	4,500.00	4,500.00	100.00
2-32-534 - Roads Signs	0.00	0.00	50.00	50.00	100.00
2-32-542 - Roads CPR Crossing	0.00	2,193.00	4,400.00	2,207.00	50.16
2-32-600 - Roads Goods and Supplies	0.00	0.00	500.00	500.00	100.00
2-32-900 - Roads Utilities	0.00	9,928.15	20,000.00	10,071.85	50.36
2-41-100 - Water Salaries	0.00	6,579.00	7,000.00	421.00	6.01
2-41-120 - Water Usage	0.00	38,214.05	96,495.14	58,281.09	60.40
2-41-215 - Water Freight	0.00	428.41	600.00	171.59	28.60
2-41-250 - EQUIPMENT RENTAL/PURCHASE WATER	0.00	42.00	0.00	-42.00	0.00
2-41-252 - WATER EQUIPMENT REPAIRS	0.00	0.00	10,000.00	10,000.00	100.00
2-41-253 - WATER ANALYSIS	0.00	176.00	2,500.00	2,324.00	92.96
2-41-300 - Water Memberships	0.00	0.00	100.00	100.00	100.00
2-41-320 - Water Training and Development	0.00	265.33	0.00	-265.33	0.00
2-41-511 - Water Meters	450.00	3,887.50	0.00	-3,887.50	0.00
2-41-542 - Water Travel	0.00	0.00	300.00	300.00	100.00
2-41-600 - Water Goods and Supplies	0.00	1,355.15	2,000.00	644.85	32.24
2-41-700 - Water TVRWC Admin and Contract Services	0.00	18,750.00	30,786.98	12,036.98	39.10
2-41-900 - Water Utilities	0.00	5,969.55	13,000.00	7,030.45	54.08
2-42-320 - Sanitary Training	0.00	0.00	750.00	750.00	100.00
2-42-600 - Sanitary Goods and Supplies	0.00	1,070.66	3,000.00	1,929.34	64.31
2-42-700 - Sanitary Equipment	0.00	0.00	500.00	500.00	100.00
2-42-800 - Sanitary Contracted Services	0.00	0.00	1,500.00	1,500.00	100.00
2-42-900 - Sanitary Utilities	0.00	907.37	2,000.00	1,092.63	54.63
2-43-110 - Transfer Station Requisition	0.00	61,917.01	61,917.01	0.00	0.00
2-43-120 - Weekly Garbage Expense	0.00	7,560.00	13,770.00	6,210.00	45.10
2-56-100 - Cemetery Salaries	0.00	0.00	250.00	250.00	100.00
2-56-200 - Cemetery Requisition	0.00	0.00	500.00	500.00	100.00
2-61-110 - Dev Municipal Planning Commission	0.00	2,750.00	700.00	-2,050.00	-292.86
2-62-200 - Dev Contracted Services	0.00	3,911.77	7,800.00	3,888.23	49.85
2-72-600 - Parks Goods and Supplies	0.00	155.96	400.00	244.04	61.01
2-72-700 - Parks Contracted Services	0.00	8,400.00	0.00	-8,400.00	0.00
2-72-750 - Parks Recreation Board	0.00	2,500.00	3,000.00	500.00	16.67
2-73-900 - Campground Utilities	0.00	1,032.78	3,500.00	2,467.22	70.49
2-74-200 - Library Maintenance	0.00	23.37	250.00	226.63	90.65
2-74-540 - Library Requisitions	0.00	3,059.94	3,100.00	40.06	1.29
2-74-900 - Library Utilities	0.00	1,505.10	3,600.00	2,094.90	58.19

Village of Carmangay
Budgetary Control
For the Period 2025-01-01 - 2025-08-31
Cash Budget

Account #/Description		Current	Year to Date	Budget	Variance	%
2-99-992 - Transfer to Reseves		0.00	0.00	30,000.00	30,000.00	100.00
	Expenditure Totals:	10,280.83	499,761.65	850,200.14	350,438.49	41.22
	Total Net Surplus/Deficit:	4,446.65	386,178.39	12,440.04	373,738.35	3004.32

Accounts Printed: 113

Village of Carmangay
Income Statement
For the Period 2025-01-01 - 2025-08-31

REVENUES		
1-10-110 - Municipal Taxes	270,560.01	
1-10-111 - DIP Revenue	53.62	
1-10-114 - Provincial School Requisition	70,788.34	
1-10-115 - Seniors Requisition	6,717.74	
1-10-510 - Tax Penalties	1,303.88	
1-12-206 - CLEARING ACCT FOR COMMUNITY GRANTS	39,345.00	
1-12-410 - General Administration Revenue	2,630.27	
1-12-420 - Interest Revenue	7,454.33	
1-12-540 - Franchise Revenue	25,105.02	
1-12-560 - Leases and Rents	10,776.00	
1-12-570 - ADMIN REVENUE OTHER	102.96	
1-12-595 - Agency Bank Revenue	14,000.00	
1-12-600 - Provincial and Other Grants	238,729.27	
1-12-700 - SOLAR REVENUE	16,984.49	
1-27-110 - Bylaw and Dog License Revenue	784.00	
1-31-110 - Public Works Revenue	314.40	
1-31-200 - PW - FOREMAN	100.00	
1-31-204 - PW - SNOW REMOVAL	275.00	
1-31-500 - PW - DEBRIS REMOVAL	275.00	
1-41-110 - Water Flat Fee Revenue	46,552.36	
1-41-120 - Water Usage Revenue	23,970.58	
1-41-252 - PW - WATER REPAIRS	155.00	
1-41-400 - Bulk Water Sales	265.00	
1-41-401 - PW - GRAVEL	120.00	
1-42-110 - Sanitary Flat Fee Revenue	17,291.04	
1-42-253 - PW - SEWER CAMERA/TRACER	700.00	
1-43-120 - Weekly Garbage Revenue	37,303.93	
1-56-110 - Cemetery Sales & Service	(1,000.00)	
1-61-110 - Development Revenue	2,350.00	
1-72-130 - PW - MOWER WITH OPERATOR	100.00	
1-73-300 - FUEL CHARGES TO FIRE DEPT	832.80	
1-94-110 - Land Sales	51,000.00	
Total Revenues		885,940.04
EXPENDITURES		
2-10-114 - Provincial School Requisition	28,971.70	
2-10-115 - Seniors Requisition	6,734.00	
2-10-116 - FCSS	1,607.67	
2-10-160 - Police Requisition	13,046.00	
2-11-101 - Council Stipend & Meeting Fees	410.00	
2-11-200 - MEETING ROOM EXP & MILEAGE	279.30	
2-12-100 - Admin Salaries	43,263.59	
2-12-101 - Admin Employer Benefits Contributions	17,868.40	
2-12-200 - Admin Travel Expense	603.90	
2-12-203 - Admin Insurance	23,978.00	
2-12-206 - ADMIN - OTHER	7,845.00	
2-12-215 - Admin Postage	933.11	
2-12-217 - Admin Telephone	401.79	
2-12-220 - Admin Advertising	135.00	
2-12-230 - Admin Professional Services	71,057.11	
2-12-250 - Admin Office Supplies	1,359.33	
2-12-300 - Admin Memberships	1,500.87	
2-12-320 - Admin Training and Development	159.99	

2-12-500 - Admin Computer and Contracts	7,845.82	
2-12-600 - Alberta Capital Finance Loan Repayment	9,946.75	
2-12-800 - Admin Cencus and Election	722.47	
2-12-810 - Admin Bank Charges	1,627.81	
2-12-900 - Admin Utilities	1,796.81	
2-23-100 - Emergency Services Requisitions	2,842.71	
2-27-110 - Bylaw Expense	631.23	
2-31-100 - PW Salaries	32,967.79	
2-31-101 - PW Employer Benefits Contributions	7,846.71	
2-31-108 - PW Workers Compensation	3,670.35	
2-31-217 - PW Telephone	125.02	
2-31-320 - PW Training and Development	44.99	
2-31-520 - PW Fuel	6,581.89	
2-31-600 - PW Goods and Supplies	1,704.10	
2-31-650 - CONTRACTED SERVICES FOR EXTERNAL JOBS	3,126.00	
2-31-700 - PW Building and Equip Repairs	12,000.21	
2-31-900 - PW Utilities	3,544.13	
2-32-542 - Roads CPR Crossing	2,193.00	
2-32-900 - Roads Utilities	9,928.15	
2-41-100 - Water Salaries	6,579.00	
2-41-120 - Water Usage	38,214.05	
2-41-215 - Water Freight	428.41	
2-41-250 - EQUIPMENT RENTAL/PURCHASE WATER	42.00	
2-41-253 - WATER ANALYSIS	176.00	
2-41-320 - Water Training and Development	265.33	
2-41-511 - Water Meters	3,887.50	
2-41-600 - Water Goods and Supplies	1,355.15	
2-41-700 - Water TVRWC Admin and Contract Services	18,750.00	
2-41-900 - Water Utilities	5,969.55	
2-42-600 - Sanitary Goods and Supplies	1,070.66	
2-42-900 - Sanitary Utilities	907.37	
2-43-110 - Transfer Station Requisition	61,917.01	
2-43-120 - Weekly Garbage Expense	7,560.00	
2-61-110 - Dev Municipal Planning Commission	2,750.00	
2-62-200 - Dev Contracted Services	3,911.77	
2-72-600 - Parks Goods and Supplies	155.96	
2-72-700 - Parks Contracted Services	8,400.00	
2-72-750 - Parks Recreation Board	2,500.00	
2-73-900 - Campground Utilities	1,032.78	
2-74-200 - Library Maintenance	23.37	
2-74-540 - Library Requisitions	3,059.94	
2-74-900 - Library Utilities	1,505.10	
Total Expenditures		499,761.65
Net Surplus (Deficit)		386,178.39

Village of Carmangay
Payment Register

Bank Code: ATB MC - ATB MASTERCARD

Payment #	Vendor	Date	Amount
Credit Card			
25111648607025	AMAZON	2025-07-11	72.40
7042025	AMAZON	2025-07-04	94.49
3007	CANADA POST CORPORATION	2025-07-03	130.20
8364	RECORDXPRESS DOCUMENT STC	2025-07-07	30.10
17357415	REYNOLDS MIRTH RICHARDS & FA	2025-07-08	382.73
01 716324	WOLFE'S HARDWARE	2025-07-21	12.27
		Total for Credit Card:	722.19
		Total for ATB MC:	722.19

Village of Carmangay
Payment Register

Bank Code: GEN - ATB Business Account

Payment #	Vendor	Date	Amount
Computer Cheque			
3611	BENCHMARK ASSESSMENT	2025-07-09	2,323.13
3612	Carmangay Community Centre	2025-07-09	52.50
3613	DELL CANADA INC.	2025-07-09	1,049.06
3614	KYM NICHOLS	2025-07-09	110.00
3615	ORRSC	2025-07-09	1,250.00
3617	SOUTHGROW REGIONAL ECONOI	2025-07-31	291.00
3616	TIRECRAFT	2025-07-09	340.64
3618	TOWN OF VULCAN	2025-07-31	535.89
3619	TRS AERIAL SURVEYS LTD	2025-07-31	1,050.00
		Total for Computer Cheque:	7,002.22
Other			
7072025	AMSC INSURANCE SERVICES LTD	2025-07-07	2,428.35
790451829	ATB FINANCIAL MASTERCARD	2025-07-06	1,072.96
7292025	AUMA	2025-07-29	2,907.65
794540753	BELL MOBILITY INC.	2025-07-31	18.75
7032025	BIG ROCK POWER	2025-07-03	35.53
7312025	BIG ROCK POWER	2025-07-31	574.56
87zay-4157602	CANADA REVENUE AGENCY	2025-07-15	2,492.82
098694740745	CANOE PROCUREMENT GROUP O	2025-07-21	1,918.76
098694740741	CARMANGAY LIBRARY BOARD	2025-07-09	1,580.36
098694740742	CARMANGAY LIBRARY BOARD	2025-07-09	972.50
098694740739	CPKC (NON FREIGHT)	2025-07-09	365.50
790420532	DIRECT ENERGY REGULATED	2025-07-10	49.68
790420540	DIRECT ENERGY REGULATED	2025-07-10	59.87
790421644	DIRECT ENERGY REGULATED	2025-07-10	64.72
790424308	DIRECT ENERGY REGULATED	2025-07-10	64.76
098731117565	Friesen, Tiana	2025-07-31	100.54
098731117562	KELLY MCLEOD	2025-07-31	185.06
098731117564	KELLY MCLEOD	2025-07-31	10.49
098731117574	KELLY MCLEOD	2025-07-31	179.85
098731117573	LAPP	2025-07-31	1,832.67
7312025	MUNISOFT	2025-07-31	489.57
794546995	TELUS MOBILITY	2025-07-24	60.27
098694740738	TVRWC	2025-07-31	13,276.19
098731117569	VULCAN DISTRICT WASTE COMM	2025-07-31	1,080.00
098731117575	VULCAN DISTRICT WASTE COMM	2025-07-31	61,917.01
7152025	WORKERS COMPENSATION BOAR	2025-07-15	309.39
098694740740	XEROX CANADA LTD	2025-07-09	226.22
		Total for Other:	94,274.03
		Total for GEN:	101,276.25

Payments Printed: 42

VILLAGE OF CARMANGAY

BYLAW #858

A BYLAW OF THE **VILLAGE OF CARMANGAY** FOR THE PURPOSE OF CLOSING TO PUBLIC TRAVEL AND CREATING TITLE TO AND DISPOSING OF PORTIONS OF A PUBLIC HIGHWAY IN ACCORDANCE WITH SECTION 22 OF THE MUNICIPAL GOVERNMENT ACT, CHAPTER M26, REVISED STATUTES OF ALBERTA 2000, AS AMENDED.

WHEREAS, the lands hereafter described are no longer required for public travel,

WHEREAS, application has been made to Council to have the roadway closed, and

WHEREAS, the Council of the **VILLAGE OF CARMANGAY** deems it expedient to provide for a bylaw for the purpose of closing to public travel certain roads or portions thereof, situated in the said municipality and thereafter creating title to and disposing of same, and

WHEREAS, notice of intention of Council to pass a bylaw has been given in accordance with Section 606 of the Municipal Government Act, and

WHEREAS, Council was not petitioned for an opportunity to be heard by any person claiming to be prejudicially affected by the bylaw

NOW THEREFORE BE IT RESOLVED that the Council of the **VILLAGE OF CARMANGAY** in the Province of Alberta does hereby close to Public Travel and creating title to and disposing of the following described highways, subject to rights of access granted by other legislation.

PLAN 3103 AB
BLOCK 21
ALL THAT PORTION OF LANE FORMING PART OF LOT 37, BLOCK 21, PLAN 251 _ _ _ _
CONTAINING 0.084 HECTARES (0.208 ACRES) MORE OR LESS
EXCEPTING THEREOUT ALL MINES AND MINERALS

Received first reading this _____ day of _____, 20__.

_____
Chief Elected Official

Seal _____
Chief Administrative Officer

Approved this ____ day of _____, 20__

_____
Minister of Transportation and
Economic Corridors

Received second reading this _____ day of _____, 20__.

Received third reading and finally passed this _____ day of _____, 20__.

_____
Chief Elected Official

Seal _____
Chief Administrative Officer

Village of Carmangay

Fire Hydrant Policy

1. Purpose

The purpose of this policy is to ensure the proper use, maintenance, and oversight of all fire hydrants within the Village of Carmangay in accordance with standards established by the Standards Council of Canada (SCC) and the National Fire Protection Association (NFPA), specifically NFPA 25 (Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems) and NFPA 291 (Recommended Practice for Fire Flow Testing and Marking of Hydrants).

2. Scope

This policy applies to:

- All fire hydrants owned and operated by the Village of Carmangay.
- Any third parties, contractors, or organizations seeking to access fire hydrants.
- Public Works personnel responsible for hydrant maintenance, monitoring, and operation.

3. Hydrant Operation and Access

3.1 Authorized Use

- Only Village of Carmangay Public Works employees, Fire Department personnel, or authorized contractors may operate hydrants.
- Unauthorized use of hydrants is prohibited and may result in penalties.

3.2 Third-Party Use

- All third-party access to fire hydrants must be approved by the Village Administration in advance.
- Third parties must utilize a calibrated flow meter and backflow prevention device during hydrant use to ensure water use accountability and system protection.
- Public Works must be present on-site during all third-party hydrant operations.

4. Oversight Requirements

- The Public Works Department must be present during any hydrant operation, including third-party access, repairs, maintenance, and testing.
- Hydrant locations, flow test results, and maintenance records must be documented and retained for a minimum of five (5) years.

5. Fire Flow Testing and Maintenance

5.1 Testing Standards

- Hydrant flow tests shall be conducted in accordance with NFPA 291.
- Minimum fire flow performance shall be measured and documented.

5.2 Inspection and Maintenance Schedule

Hydrant inspections and maintenance shall follow this schedule based on NFPA 25:

Task	Frequency	Description
Visual Inspection	Semi-Annually	Check for leaks, obstructions, vandalism, paint condition, and accessibility
Operational Test	Annually	Ensure Full Valve operations, drainage, and lubrication. Check caps and gaskets
Flow Test	Annually best practice, however every 5 years if the system has no issues.	Preform and record static, residual and flow pressure. Ensure compliance with fire flow requirements.
Painting and Marking	As needed (min every 5 years)	Maintain color coding per NFPA 291 to indicate flow capacity
Winterization	Annually (Fall)	Ensure Hydrants are drained and frost protected.

6. Color Coding and Marking (NFPA 291 Compliance)

Fire hydrants shall be painted and marked to indicate flow rates as follows:

- **Red**: Less than 500 GPM
- **Orange**: 500-999 GPM
- **Green**: 1000-1499 GPM
- **Blue**: 1500+ GPM

Barrels should remain chrome yellow unless otherwise directed.

7. Record Keeping

- A hydrant log shall be maintained by Public Works, including installation date, inspection/test records, flow test data, repair history, and GPS location.
- Records must comply with SCC-aligned documentation standards and be available for regulatory review.

8. Enforcement and Penalties

- Unauthorized use of fire hydrants may result in fines and/or legal action.
- Any damage to hydrants due to unauthorized use shall be the financial responsibility of the offending party.
- Third parties violating meter requirements or failing to coordinate with Public Works will be barred from future hydrant access.

9. Policy Review

This policy shall be reviewed annually by the Village Council in coordination with the Public Works Manager and Fire Chief to ensure ongoing compliance with NFPA and SCC standards.

Approved by Village of Carmangay Council on:

Next Review Date:

Authorized Signature:

The What, How and Why ?

What is Acti-Zyme?





Acti-Zyme is an enhanced biocatalyst product for improved breakdown and digestion of built-up sludge in wastewater systems. Acti-Zyme blends use a patented **Syntrophic Oxidation Bacteria** consortium. Acti-Zyme's consortium contains over 70 different strains of bacteria that tackle multiple pollutants and environments. Acti-Zyme not only use a SOB consortium, but also have proprietary **Microbial Enhancement Technology** formulations containing a broad range of bacteria, enzymes specific to proteins, lipids, carbohydrates and cellulose, supported by buffers and neutralizers all working together to achieve successful treatment in wastewater management.

Acti-Zyme is more resistant to aggressive environments, toxic shocks and can digest difficult to degrade polysaccharides found in secondary sludge.

How does Acti-Zyme work?

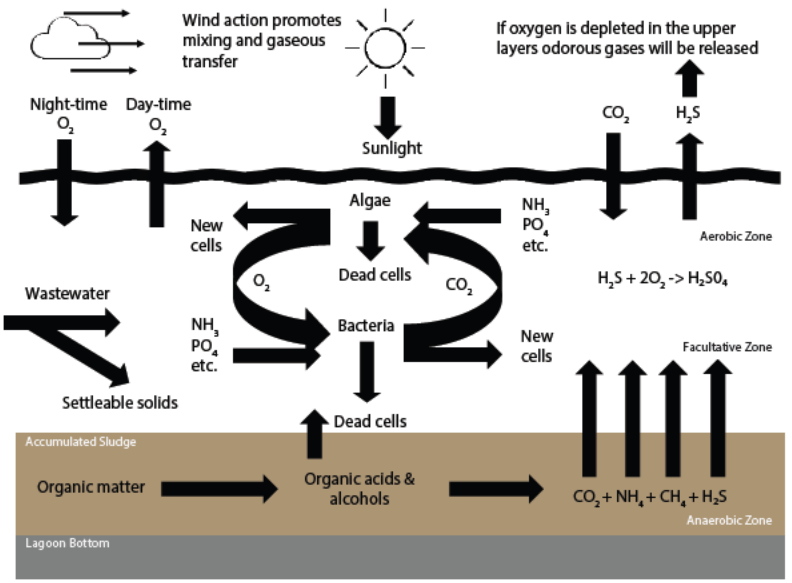
Acti-Zyme focuses on **biological processes enhancement**, or **bioaugmentation.** When any of the Acti-Zyme products are applied to organic wastewater it increases the biological activity. The improved active components speed up the natural biological processes that compromise the main reactions that take place in wastewater treatment systems. With the improved reactions the contaminants found in wastewater are broken down faster.

Acti-Zyme is a non-toxic, **all natural product** that focuses only on the increased digestion and removal of contaminants. Acti-Zyme safeguards infrastructure, leaving it unharmed, helping the system to **return to its normal operating capacity**. Acti-Zyme does not require the wastewater treatment process to stop and allows for the removal of organics from all parts and sections of the system. Acti-Zyme is applied simply with pre-measured amounts in water soluble bags, directly to the wastewater system where biological build up is found. Typically applications are made to **collection lines, lift stations, bioreactors and lagoons.**

Natural biological process enhancement for improved wastewater treatment, biosolids management, and fat oil and grease build up.

Why biological processes enhancement?

The use of Acti-Zyme **complements the natural biological processes** found in wastewater systems. Within each zone anaerobic, facultative, and aerobic, Acti-Zyme's targeted components **increase the biological reactions** thereby increasing the system performance. From hydrolysis to methanogenesis, to bio-oxidation, each biological process enhancement **increases the systems ability** to utilize each process including the important nitrogen and phosphorus cycles.



Why use Acti-Zyme?

Acti-Zyme is uniquely suited to **handle difficult challenges** faced by the majority of wastewater systems. It provides a more effective, environmentally safe and economical method compared to contemporary methods for treatment and disposal of biosolids. It reduces organic residues **"in-situ"** rather than transporting and disposing of sludge to landfills or agriculture lands. It's process enhancement **helps systems meet the Federal and Provincial regulations** and virtually eliminates pathogens and foul odors.

It is an easy to use technology that effectively improves treatment to reach system objectives.

Digests & Liquefies Biosolids
Decreases Environmental Impacts
Restores Systems Capacity
Improves Effluent Quality

Digests Fat, Oil, & Grease Build up
Decreases Odor
Tested and Proven Technology
New & Improved Formulas

See what our clients say about Acti-Zyme

Over 67 Years of Proven Success

www.ActiZyme.com

Canadian Owned & Operated
MADE IN CANADA
Possédé, exploité et fabrique au Canada

Sales@ActiZyme.com **1-(250)-442-2777**

Non-toxic, all natural, biological technology for rehabilitation and maintenance of wastewater systems.

Lagoon Bioremediation & Advanced Biosolids Reduction Proposal

A powerful in-situ biological enhancement process, reducing impacts and biosolids management costs for municipalities and utilities.

Prepared by Chad Dean

Re: Carmangay Lagoon Cell #1

Kelly McLeod, and Scott Carrier

cao@villageofcarma.com

scarrier@villageofcarma.com

8/8/25

Acti-Zyme Products Ltd.
Box 46 Grand Forks, BC. V0H 1H0 Canada. +1-(250)-442-2777
info@ActiZyme.com www.ActiZyme.com

PROJECT BACKGROUND

Acti-Zyme Products Ltd. (Acti-Zyme) presents this letter to Kelly McLeod, and Scott Carrier at the village of Carmangay on behalf of their wastewater Lagoon Cell #1, Population of 300 people. This proposal is for the removal of bio-solids found in Municipal wastewater, as per my conversation with Kelly McLeod and Scott Carrier. Cell #1 is estimated 35% to 40% full of sludge. Estimated working capacity of this lagoon is 1,160m3. 65% of the working capacity is estimated solids, which is 754m3. With an estimated of total bio-sludge of 490.1m3. Making it a total of estimated non-bio solids of 263.9m3. Estimated target is 65% of organic sludge build up in the lagoon system, reducing the overall volume of sludge and improving water treatment. It is important to note that the projected organic content was determine through sampling sludge and lab analysis. Organic content can be greater or lower than this estimate.

Acti-Zyme presents the following proposal as an **"in-situ bio-dredge solution"** to deal with the removal of biosolids, both compact and suspended, necessary to return the system to its normal operating capacity to avoid the expensive alternative of manual removal. Acti-Zyme is a long term, reliable supplier to over 500 municipalities across Canada and has been in business for over 70 years. Acti-Zyme products digest and break down soft organic material found in wastewater systems, ***as it seeks out its food source***, the organic component in biosolids. The use of Acti-Zyme complements the natural treatment process and increases the removal of organics throughout the lagoon system. This lagoon bioremediation and advanced biosolids reduction proposal is to decrease the current demand on infrastructure, and provide a cost-effective solution compared to other contemporary methods.

Acti-Zyme intends to use its proprietary formula that contains ***Microbial Enhancement Technology (MET) granules***, to treat and increase the rate of digestion of the biosolids build up through the process of ***bioaugmentation***. Our compounds are specifically designed and manufactured for removal of biosolids build up in overloaded systems. The compounds are made with a proprietary, exclusive formula, which has been developed and manufactured in Canada. The MET granules found in the compounds are the result of ***sophisticated bio-engineering*** both in the Field and in the Laboratory, yet its application is very simple and economical.

PROTOCOL AND PROCEDURES

Bioremediation projects employ Acti-Zyme products directly to each section of the treatment system with higher concentrations in areas of significant build up, i.e. visual build up in the lagoon. Acti-Zyme develops the protocols and procedures to follow during the length of the biosolids management project. A full detailed set of protocols, and treatment schedule are provided below.

Enhanced Lagoon Treatment Application Program: It is recommended that the Municipality complete ***up to a Two-Year*** enhanced lagoon treatment. We recommend commencing the initial seeding of the Municipality's system with Acti-Zyme's biocatalytic products in June 2026. The remaining treatment process would take place in the summer months and applications should be **made once a week.**

Enhanced Application Program	**Technology Applications**	**Dosage**
Year 1 - Initial Application (2026)	1 Application	75 bags first day of treatment (15 bags per location, total 3 Tubs)
Year 1 - Summer – Mid June to September (2026)	12 Applications (12 weeks)	10 bags once a week (2 bags per location, total 5 tubs)
Optional 2nd Year Initial Application (2027)	1 Application	75 bags first day of treatment (15 bags per location, total 3 Tubs)
Year 2 - Summer – June to September (2027)	12 Applications (12 weeks)	10 bags once a week (2 bags per location, total 5 tubs)

Annual Preventative Maintenance Application Program: It is also recommended that an annual preventative maintenance program be implemented to apply Acti-Zyme's biocatalytic products to continue to reduce biosolids from ongoing raw wastewater influent and help the system to maintain proper treatment levels.

Annual Maintenance (On-going)	**Technology Applications**	**Dosage**
Is quoted in Proposal for Cell#2		

Treatment Protocols

The following provides the maps and locations for the applications as outlined above. (Close approximate locations is enough, no need to apply by boat)



Application Target Area

Acti-Zyme Products Ltd.
Box 46 Grand Forks, BC. V0H 1H0 Canada. +1-(250)-442-2777
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Bio-Enhancement Treatment Impacts

There are various important impacts when considering biological enhanced treatment.

1. ***Biological In-situ treatment*** decreases the requirement for biosolids handling and disposal.
2. ***Environmental impacts*** are decreased as biosolids are treated within the designated system and do NOT impact the environment compared to conventional disposal methods.
3. ***Bioaugmentation*** removes both compact and suspended biosolids and improves treatment of the whole wastewater system increasing the ability to reach permit requirements.
4. ***Bioaugmentation*** does not require significant manpower, electricity, heavy equipment thereby lowering the over resources required to manage biosolids.
5. ***Bioaugmentation*** increases the rate of digestion of organics. This enhancement produces intermittent pockets of biogas to form under the surface of the biosolids. Occasional shoots of biosolids may rise to the surface as the biogas escapes.

Records and Reports: It is recommended that the wastewater operators applying the Acti-Zyme product take photo records of each application for documentation of the changes to the lagoons system. There are reports at the end of this proposal to help provide a recording keeping of each application.

Effluent Quality Assessment: The wastewater semi-annual effluent quality tests will be tracked and measured against the recent reports. These comparisons will help track the changes to BOD5, TP, TSS, pH, CBOD, etc. during this bioaugmentation process. As Acti-Zyme focuses on the reduction of accumulated biosolids, the root cause of treatment failure, the bioaugmentation process will also target all suspended solids which will improve the effluent quality by reducing the BOD5, TSS and CBOD.

Biosolids Assessment: It is recommended that additional biosolids surveys be completed one year from the start of the treatment process to provide Acti-Zyme and the Municipality with details on the reduction of biosolids. As the main reference for accumulated biosolids was the operator's sludge judge survey. It is important that the same methods, protocols and reports should be used to evaluate the changes to the total biosolids.

These assessments will allow Acti-Zyme to make any required adjustments to application rates, and treatment protocols to reach the intended goal of removing organic biosolids. At each assessment, determinations on changes of accumulated biosolids will be completed, decisions will be made on whether the subsequent year's treatment is still required to achieve the desired results. As history has shown in previous projects, often just one year's treatment is sufficient.

Expectations: Acti-Zyme does not guarantee the removal of all biosolids as its formulas only ***removes soft organic matter.*** All non-organic matter including sand, slit or mud will not be digested or dispersed. High levels of non-organic material may result in a slower than normal rate of remediation. **Product effectiveness will be affected by using or disposal of any chemicals or caustic products.** Use of chemicals such as polymers can slow down the process of bioaugmentation as its designed purpose is to bind solids together. Septic haulage may impact the results of treatment and needs to be tracked. Septic trucks often carry waste that can kill all biological activity. Results may vary depending upon the environmental operating conditions, lagoon system design, operating efficiency, and the density and composition of the biosolids build up. Therefore, it is recommended to complete all periods of treatments mentioned within this proposal to remove the desired level of biosolids, harmful nutrients and reach outflow regulations.

Bioaugmentation speeds up the digestion of biosolids from solids to liquids and natural gases. This natural ongoing process always occurs in wastewater systems. Augmenting this process increases the speed of digestion and occasionally creates collateral shoots of organics from the bottom of the lagoon to the top as biogases are formed beneath the surfaces of the biosolids.

PROJECT COSTS

The costs associated with this project to remove the **490.1m^3** of organic sludge within the biosolids at the Carmangay lagoons Cell #1 will be as follows:

1st Year Biological Treatment Estimated Costs	Quantity	Rate	Total
Acti-Zyme (AZ+ - Sludge Reduction)	440 lbs.	$23.45/lb	$10,318.00
Annual Total (*Pricing is in CAD, plus taxes and shipping)			**$10,318.00***

Payment Terms: Payment is due within 60 days after delivery of product.

Thank you for your time and consideration of this ***in-situ biological enhancement process*** proposal. Feel free to reach out by phone or email with any questions that you have. ***Please find additional company, product information, case studies and references below.***

Sincerely,

Thomas Chad Dean

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Lagoon Bioaugmentation Treatment Schedule

Start Date: _____

Location:

Divide the bags equally among all the application areas. Prioritize sites with sludge build up.

Week	Application Rate	1st Application	Date	2nd Application	Date	Name
1	75 Bags					
2	5 Bags x 2					
3	5 Bags x 2					
4	5 Bags x 2					
5	5 Bags x 2					
6	5 Bags x 2					
7	5 Bags x 2					
8	5 Bags x 2					
9	5 Bags x 2					
10	5 Bags x 2					
11	5 Bags x 2					
12	5 Bags x 2					
13	45 Bags x 2					

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ACTI-ZYME BACKGROUND

Acti-Zyme Products Ltd, commonly referred to as Acti-Zyme or AZ has been actively treating and restoring wastewater treatment systems for over 66 years with over 500 clients in Western Canada. Our team has extensive expertise and leadership in wastewater management, to properly treat all organic wastewater biosolids produced by wastewater plants and lagoon/pond systems. Acti-Zyme owns and manufactures proprietary, exclusive formulas, which has been developed and perfected in Canada. Acti-Zyme uses its proprietary Microbial Enhancement Technology (MET) granules to treat biosolids, fat, grease or other organic build up, through the process of 'Bioaugmentation' to digest and breakdown soft organic biosolids found in wastewater treatment systems. This technology and process safeguards current infrastructure, leaving it unharmed while increasing the biological activity to return the system to its normal operating capacity. Acti-Zyme has focused on technical development, product testing and partnerships with consultants, and utilities for technical third-party verification, and pilot projects. With a combined 110 years of experience in the field we have:

- Independently **verified** the effectiveness of Acti-Zyme in over 40 independent studies,
- **Documented** and continue to study results in full scale and pilot scale applications with municipalities, including conducting analysis of before and after outflow readings to verify effectiveness
- Improved the quality of inputs, including a new **very effective** bacteria consortium which has proven to be extremely effective in wastewater management,
- Developed **new products to solve important issues** including:
  - Specific Fat, Oils and Grease management in sewage lines and grease traps
  - Anaerobic digestion enhancement
  - Rehabilitation biosolids filled wastewater systems
- Partnered with Dr. Pierre Fanfan, a **bio-scientist**, to pioneer new biological solutions
- Conducting Research & Development on new biological wastewater products that will allow for **advanced treatment** and management of emerging contaminants of concern,
- Completed full scale anaerobic digestions studies with a focus in wastewater management, project development and environmental & economic sustainability.

PRODUCT AND PROCESS BACKGROUND

Acti-Zyme products are designed to speed up the break down the soft organic material found in wastewater systems. Any proposed augmentation with Acti-Zyme would not require the wastewater treatment process to stop and allows for the removal of organics from all parts and sections of the system. This process augmented digestion through Acti-Zyme products will help to restore the system's capacity. The desire of treating biosolids is to decrease the demand on infrastructure, and provide a cost-effective solution compared to manual removal. With the decreases in the organic portions of the biosolids, the system will recover capacity delaying the need to perform manual removal of non-organics.

Acti-Zyme uses its proprietary formulas that contains Microbial Enhancement Technology (MET) granules, to treat and increase the digestion of the biosolids build up. This technology uses the process of bioaugmentation to digest and disperse the organic biosolids found in the lagoon treatment system. Each compound is specifically designed and manufactured for removal of specified biosolids build up in the overloaded systems.

Acti-Zyme compounds are made with a proprietary, exclusive formula, which has been developed and perfected in Canada. The MET granules found in these products are the result of sophisticated bio-engineering both in the field and in the laboratory, yet its application is very simple and economical. This technology and process will safeguard the current infrastructure, leaving it unharmed and increasing the system's capacity.

PRODUCT KEY BENEFITS

To provide a little more detail, the key benefits of Acti-Zyme MET Granules are:

- It provides a more effective, ***environmentally safe and economical*** method compared to other contemporary methods and disposal of biosolids.
- It contributes in an effective manner to ***help meet the Federal and Provincial regulations*** that regulate the treatment and disposal of wastewater and biosolids.
- It allows municipalities to treat wastewater and ***reduce organic residues in-situ*** rather than transporting and disposing of biosolids to landfills or agriculture lands.
- It achieves significant savings in the operation and maintenance costs of wastewater treatment, and biosolids management systems.
- It liquefies accumulated organic biosolids, ***as it follows its food source*** throughout the system, thereby reducing the total volume of biosolids.
- It ***reduces or eliminates the costs of manually removing*** biosolids, and the problems and diseases that can be generated with their final disposal.
- It ***virtually eliminates pathogens*** and foul odors.
- It is easy to apply and does ***not require highly qualified*** personnel.
- It's a safe, non-toxic, ecologic, biodegradable, sustainable, and ***economical solution***.

BACTERIA AND ENZYMES

Bacteria are a key component in wastewater management, yet not all bacteria are equal. It is not uncommon to see companies representing their effectiveness using bacteria counts as a guide to quality and success, with the implication that all pharmaceutical grade bacteria are equal, and THE barometer for effectiveness of biological wastewater management. In only referencing bacteria counts, it implies that all bacteria are equal, which is incorrect as there is a broad range of bacteria available. All bacteria are not equal. Moreover, when it comes to wastewater treatment, contrary to the food processing industry, efficacy is the result of diversity and not plate counts. Acti-Zyme blends use Syntrophic Oxidation Bacteria.

This consortium of naturally occurring microbes lives symbiotically as a community. They are versatile and are able to cope with very rough environments such as biosolids and waste. It is very difficult to plate count this consortium as it is only one or two strains that will be effectively counted.

Why use a syntrophic consortium?

- Diversity is power, Acti-Zyme consortium contains ***over 70 different*** strains of bacteria;
- They can ***tackle multiple various pollutants*** and environments;
- They are ***facultative microbes***, meaning they can thrive with or without the presence of oxygen;
- They are ***more resistant*** to aggressive environments and toxic shocks;
- They can ***digest difficult to degrade*** polysaccharides found in secondary biosolids

In the formulation of Acti-Zyme, bacteria are only one aspect of the blend. Acti-Zyme's inhouse propriety formulations contain a broad range of bacteria, enzymes specific to proteins, lipids, carbohydrates and cellulose, supported by buffers and neutralizers all working together to achieve successful treatment in wastewater management. Many years of trials in real life situations, along with recently conducted technical evaluations of various blends through the University of Calgary, has verified effectiveness of Acti-Zyme products. Acti-Zyme's products are fully bio-degradable and ecologically responsible. Its exclusive MET granules make it much more effective than other biologic compounds used for similar purposes. Acti-Zyme Products, Ltd. has a constant commitment to perfect its products continuously through its experience and studies, both on the field and in laboratories and manufacturing plant. This business philosophy has allowed the Acti-Zyme to successfully compete and to remain in the market for 66 years, a feat none of its competitors have achieved.

PROJECT SCOPE, AND SERVICES

System Assessments: Any proposed bioaugmentation project goes through a preliminary assessment to determine details about the wastewater system. Acti-Zyme requires a system survey to be completed in order to provide the preliminary assessment. This would include questions like the systems size and capacity, volume of biosolids built up, system stresses, flow, treatment processes, biosolids composition etc. The scope of each project is developed with input and discussion from the utility and Acti-Zyme. Timelines, application protocols and recommendations are developed prior to final approval of any project.

Enhance Process of Digestion: Organic material goes through a four-stage process of digestion. The four-stage digestion process, from Hydrolysis, Acidogenesis, Acetogenesis, and finally Methanogenesis, is enhanced with the use of Acti-Zyme products. During these four stages, the organic material found in wastewater systems move from a solid state into liquid state and finally into a gas. This natural ongoing process always occurs in wastewater systems. Augmenting this process increases the speed of digestion and occasionally creates collateral shoots of organics from the bottom of the lagoon to the top as biogases are formed beneath the surfaces of the biosolids. This movement of organics from the bottom to the top of the system is typical.

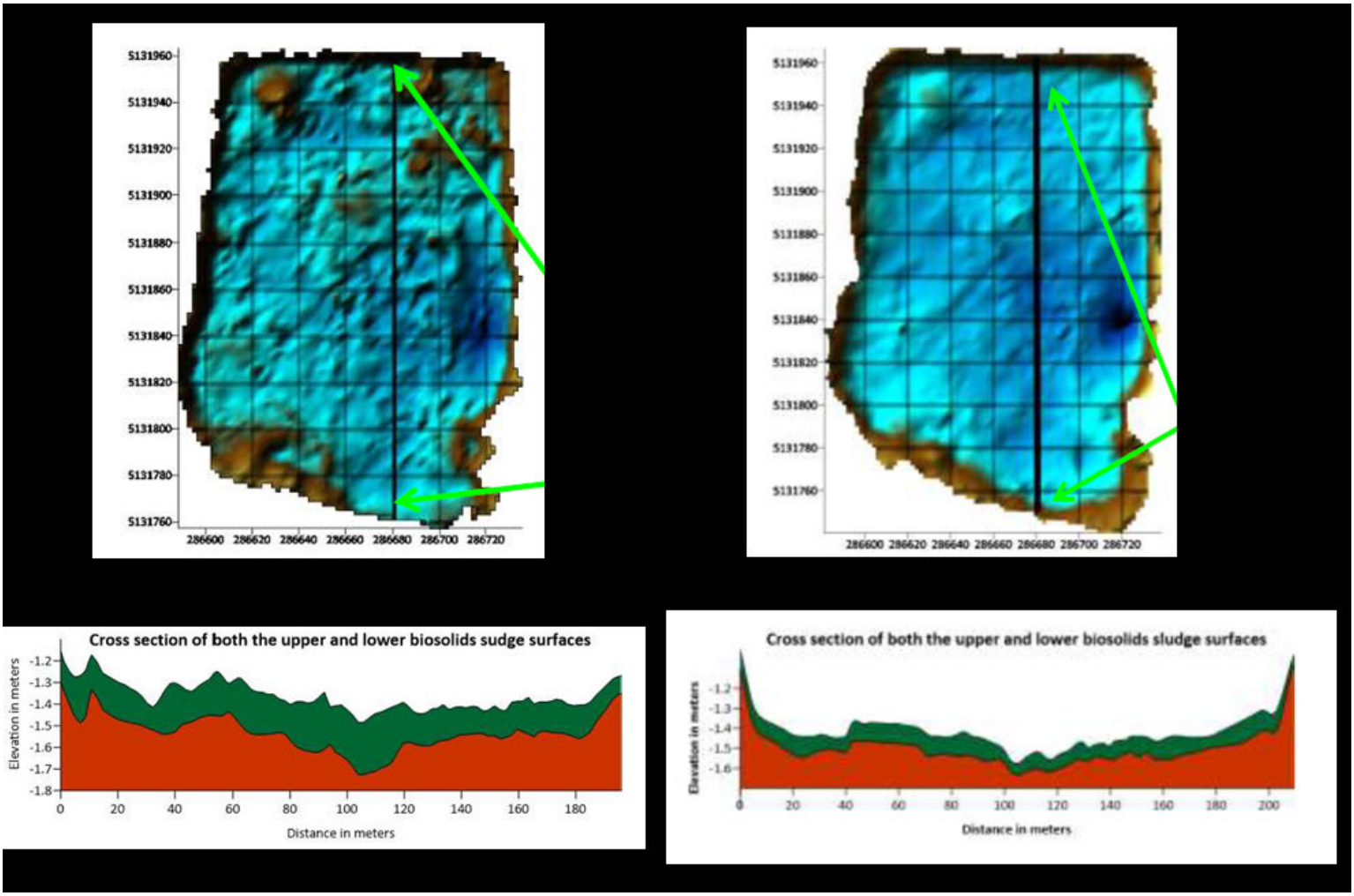
Protocol and procedures: Remediation projects employ Acti-Zyme products directly to each section of the treatment system with higher concentrations in areas of significant build up, i.e. visual build up in the system. Acti-Zyme develops the protocols and procedures to follow during the length of the remediation project. A full detailed set of protocols and specific application sites will be provided upon the request for proposal.

Optimization: It is the goal of Acti-Zyme to optimize all treatments for bioremediation and annual maintenance so that the best results are achieved at the minimum costs to the Municipality. Adjustments are made to increase or decrease application rates as seen fit to this end.

Biosolids Removal

1. Town of Bruce Mines, ON.

In May 2021, the town approved the proposal from Acti-Zyme Products Ltd. to clean up their system with its MET granules. The town through a third-party sonar sludge assessment estimated the volatile solids accumulation to be 6,441 m3. After reviewing the subsequent sonar test the total sludge was reduced by 6,849 m3. The results of bioaugmentation to date exceed expectations. The level of reduction achieved after one year was expected after two years of product application. The town now continues to use Acti-Zyme products to maintain its system. Below is one diagram and cross-section of the lagoon. Additional information can be made available upon request. ***Kevin Spec Fegan, Town Manager (705)862-1638, Sr. Operations Manager*** KSpec@ocwa.com



2. Village of Delburne.

In 2014 the Village of Delburne, AB had completed a biosolids survey that determined that its four anaerobic cells where heavily overloaded with biosolids build up. They searched for potential solutions for over one year and had difficulty finding an economical solution that would be effective and affordable. In May 2015, the town approved the proposal from Acti-Zyme Products to clean up their system with its MET granules. The following is the results that were achieved over the one-year clean-up process from May 2015 to May 2016. Over the period of one year 71% of the biosolids was removed through the process of digestion and dispersion by only using the MET granules provided by Acti-Zyme.

Karen Fegan, Town Manager (403) 749-3606 *karen.fegan@delburne.ca*

Gary Rusaw, Town Foreman, (403) 373-8434.



Removed 71% sludge in one year, saved $94,500

"One year later completed a second sludge survey which showed a decrease of 71% of the sludge volume. The costs of this whole clean up project was only $30,500.00 which saved our town $94,500.00 and now have a very clean lagoon. Wow, what an amazing difference, we are extremely pleased with the results. We would be happy to recommend this to anyone!"

Karen Fegan, CAO, Delburne, Alberta, Canada

3. Town of Bow Island.

In 2018, the town of Bow Island removed over 5,000 m3 of biosolids and saving the Town $210,000 dollars by implementing a desludging program with Acti-Zyme. “Our question was how does Acti-Zyme get rid of that think black, gooey biosolids. We were nervous, it was a lot of money. I have four anaerobic cells, and when we measured them [after treatment] we gained thirteen feet of space, about eight thousand cubic meters (8,000 m^3). For a small town like us that is huge. Acti-Zyme eat all the biomatter. We also struggled with 18 inches of floating biomass on top of the cells. That is gone too. The quote for manual removal was $250,000 plus we had to find a place to put it. The other important thing is that my lift stations used to smell for blocks, now they don’t smell. We don’t have that anymore. In my opinion it works, and it will work no matter where it is. Acti-Zyme doesn’t do exactly what they say it would do, it does more. I am an advocate, because it works.” ***William Lyons, Town Forman.***



4. Village of Vibank.

The Village of Vibank, SK had a company quoted the Village a cost of $60,000 to manually remove the built up biosolids plus the cost of digging a biosolids pit for disposal. The biosolids had mounded over the water level and was causing considerable alarm for the village. The village starting used Acti-Zyme MET granules and after the four months of treatment from May to August 2013, the town was able to remove approx. 6 ft of biosolids. "*Council is very pleased with Acti-Zyme and are definitely committed to continuing with this product. This product has saved the Village of Vibank thousands of dollars*." **Jeanette Schaeffer, Town Administrator – (306) 762-2130, or Warren, Town Forman.**



Removed 6 feet sludge mound, saved $49,000

"Our lagoon had serious problems with a sludge mound that rose above the water. We contracted a company that would remove the sludge. They quoted the Village a cost of $60,000 plus the cost of digging a sludge pit.

The Acti-Zyme program started on May 7th, of 2013. July Garth noticed a huge difference. The product was working beyond his expectations.

Council is very pleased with Acti-Zyme and are definitely committed to continuing with this product. This product has saved the Village of Vibank thousands of dollars.

Jeanette Schaeffer, Administrator, Vibank, SK, Canada

5. Municipality of Chegutu, Zimbabwe

The town of Chegutu has a population of 120,000 people. The ZMDC Wastewater Treatment Plant is one of two serving this town, and receives flow in excess of 2 ML/Day. The product demonstration and tests, both photographic and laboratory certified, conclusively show what the product can accomplish.

"... the Municipality of Chegutu, have successfully tried the use of Acti-Zyme in the treatment of one or our primary sewage ponds ... From the results obtained in the trial, we have no hesitation in recommending and endorsing the use of Acti-Zyme in the treatment of heavily loaded and dysfunctional/malfunctioning sewage treatment works and reticulation networks." **Douglas Chimhande, Town Planner**



Reduction of 11,250 m3 of Sludge in Facultative Lagoon, 4 months.

"The trial has been very successful and produced very good results. From the results obtained in the trial, we have no hesitation in recommending and endorsing the use of Acti-Zyme in the treatment of heavily loaded and dysfunctional/ malfunctioning sewage treatment works"

Douglas Chimhande, Chegutu, Zimbabwe

6. **Hepburn.** The town of Hepburn had visual build up of biosolids that was on the verge of affecting the systems ability to treat the towns wastewater. After contact with Acti-Zyme the town foreman starting used Acti-Zyme treatment technology and after the four months of treatment from June to September 2014, the town was able to remove approx. 7 ft of biosolids.

"*I thought it would do something, but I was surprise how well it removed all the biosolids. There is literally nothing left. Incredible*." **Tim Harms, Town Foreman – (306) 947-2170.**

7. **Broadview.** The town of Broadview, after assessing the biosolids build up in the towns lagoon system, were advised by an engineering firm that the town had to manually remove the biosolids estimated to cost thousands of dollars outside of the towns budget. The town had already been using Acti-Zyme to some existent but not sufficient for biosolids maintenance. After council with Acti-Zyme they increase dosage to properly de-biosolids the lagoon, after which the biosolids was digested, and the system increased its capacity. **Brent Bagshaw, Town Foreman – (306) 696-7765.**

Lagoon Bioremediation & Advanced Biosolids Reduction Proposal

A powerful in-situ biological enhancement process, reducing impacts and biosolids management costs for municipalities and utilities.

Prepared by Chad Dean

Re: Carmangay Lagoon Cell #2

Kelly McLeod, and Scott Carrier

cao@villageofcarma.com

scarrier@villageofcarma.com

8/8/25

Acti-Zyme Products Ltd.

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PROJECT BACKGROUND

Acti-Zyme Products Ltd. (Acti-Zyme) presents this letter to Kelly McLeod, and Scott Carrier at the village of Carmangay on behalf of their wastewater Lagoon Cell #2 Population of 300 people. This proposal is for the removal of bio-solids found in Municipal wastewater. As per my conversation with Kelly McLeod, and Scott Carrier. Cell #2 is estimated 60% to 65% full of sludge. Estimated working capacity of this lagoon is 1496.8m3. 65% of the working capacity is estimated solids, which is 973.05m3. With an estimated of total bio-sludge of 632.48m3. Making it a total of estimated non-bio solids of 340.57m3. Estimated target is 65% of organic sludge build up in the lagoon system, reducing the overall volume of sludge and improving water treatment. It is important to note that the projected organic content was determine through sampling sludge and lab analysis. Organic content can be greater or lower than this estimate.

Acti-Zyme presents the following proposal as an **"in-situ bio-dredge solution"** to deal with the removal of biosolids, both compact and suspended, necessary to return the system to its normal operating capacity to avoid the expensive alternative of manual removal. Acti-Zyme is a long term, reliable supplier to over 500 municipalities across Canada and has been in business for over 70 years. Acti-Zyme products digest and break down soft organic material found in wastewater systems, ***as it seeks out its food source***, the organic component in biosolids. The use of Acti-Zyme complements the natural treatment process and increases the removal of organics throughout the lagoon system. This lagoon bioremediation and advanced biosolids reduction proposal is to decrease the current demand on infrastructure, and provide a cost-effective solution compared to other contemporary methods.

Acti-Zyme intends to use its proprietary formula that contains ***Microbial Enhancement Technology (MET) granules***, to treat and increase the rate of digestion of the biosolids build up through the process of ***bioaugmentation***. Our compounds are specifically designed and manufactured for removal of biosolids build up in overloaded systems. The compounds are made with a proprietary, exclusive formula, which has been developed and manufactured in Canada. The MET granules found in the compounds are the result of ***sophisticated bio-engineering*** both in the Field and in the Laboratory, yet its application is very simple and economical.

PROTOCOL AND PROCEDURES

Bioremediation projects employ Acti-Zyme products directly to each section of the treatment system with higher concentrations in areas of significant build up, i.e. visual build up in the lagoon. Acti-Zyme develops the protocols and procedures to follow during the length of the biosolids management project. A full detailed set of protocols, and treatment schedule are provided below.

Enhanced Lagoon Treatment Application Program: It is recommended that the Municipality complete ***up to a Two-Year*** enhanced lagoon treatment. We recommend commencing the initial seeding of the Municipality's system with Acti-Zyme's biocatalytic products in June 2026. The remaining treatment process would take place in the summer months and applications should be **made once a week.**

Enhanced Application Program	Technology Applications	Dosage
Year 1 - Initial Application (2026)	1 Application	100 bags first day of treatment (20 bags per location, total 4 Tubs)
Year 1 - Summer – June to September (2026)	12 Applications (12 weeks)	10 bags once a week (2 bags per location, total 5 tubs)
Optional 2nd Year Initial Application (2027)	1 Application	100 bags first day of treatment (20 bags per location, total 4 Tubs)
Year 2 - Summer – June to September (2027)	12 Applications (12 weeks)	10 bags once a week (2 bags per location, total 5 tubs)

Annual Preventative Maintenance Application Program: It is also recommended that an annual preventative maintenance program be implemented to apply Acti-Zyme's biocatalytic products to continue to reduce biosolids from ongoing raw wastewater influent and help the system to maintain proper treatment levels.

Annual Maintenance (On-going)	Technology Applications	Dosage
Year round	50 Applications	1 bags every week, alternating cells (Total 2 tubs, 110 Lbs.) Applied directly in to lagoon, or in lift station (only when frozen over).

Treatment Protocols

The following provides the maps and locations for the applications as outlined above. (Close approximate locations is enough, no need to apply by boat)



Application Target Area

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PROJECT DETAILS

Bio-Enhancement Treatment Impacts

There are various important impacts when considering biological enhanced treatment.

1. ***Biological In-situ treatment*** decreases the requirement for biosolids handling and disposal.
2. ***Environmental impacts*** are decreased as biosolids are treated within the designated system and do NOT impact the environment compared to conventional disposal methods.
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4. ***Bioaugmentation*** does not require significant manpower, electricity, heavy equipment thereby lowering the over resources required to manage biosolids.
5. ***Bioaugmentation*** increases the rate of digestion of organics. This enhancement produces intermittent pockets of biogas to form under the surface of the biosolids. Occasional shoots of biosolids may rise to the surface as the biogas escapes.

Records and Reports: It is recommended that the wastewater operators applying the Acti-Zyme product take photo records of each application for documentation of the changes to the lagoons system. There are reports at the end of this proposal to help provide a recording keeping of each application.

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Bioaugmentation speeds up the digestion of biosolids from solids to liquids and natural gases. This natural ongoing process always occurs in wastewater systems. Augmenting this process increases the speed of digestion and occasionally creates collateral shoots of organics from the bottom of the lagoon to the top as biogases are formed beneath the surfaces of the biosolids.

PROJECT COSTS

The costs associated with this project to remove the **632.48 m^3** of organic sludge within the biosolids at the Carmangay lagoons Cell #2 will be as follows:

1st Year Biological Treatment Estimated Costs	Quantity	Rate	Total
Acti-Zyme (AZ+ - Sludge Reduction)	495 lbs.	$23.45/lb	$11,607.75
Acti-Zyme (AZ – Maintenance)	110 lbs.	$19.45/lb	$2,139.50
Annual Total (*Pricing is in CAD, plus taxes and shipping)			**$13,747.25***

Payment Terms: Payment is due within 60 days after delivery of product.

Thank you for your time and consideration of this ***in-situ biological enhancement process*** proposal. Feel free to reach out by phone or email with any questions that you have. ***Please find additional company, product information, case studies and references below.***

Sincerely,

Thomas Chad Dean



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Lagoon Bioaugmentation Treatment Schedule

Start Date: _____

Location:

Divide the bags equally among all the application areas. Prioritize sites with sludge build up.

Week	Application Rate	1st Application	Date	2nd Application	Date	Name
1	100 Bags					
2	5 Bags x 2					
3	5 Bags x 2					
4	5 Bags x 2					
5	5 Bags x 2					
6	5 Bags x 2					
7	5 Bags x 2					
8	5 Bags x 2					
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10	5 Bags x 2					
11	5 Bags x 2					
12	5 Bags x 2					
13	5 Bags x 2					

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