



MUNICIPAL DISTRICT OF GREENVIEW No. 16

REGULAR COUNCIL MEETING AGENDA

September 14, 2020

9:00 AM

Administration Building
Valleyview, AB

| | | | |
|----|--------------------|---|-----|
| #1 | CALL TO ORDER | | |
| #2 | ADOPTION OF AGENDA | | |
| #3 | MINUTES | 3.1 Regular Council Meeting minutes held August 24, 2020. | 3 |
| | | 3.2 Business Arising from the Minutes | |
| #4 | PUBLIC HEARING | 4.1 Bylaw 20-855 "Advertising" | 9 |
| #5 | DELEGATION | | |
| #6 | BYLAWS | 6.1 Bylaw 20-854 "Schedules of Fees" | 12 |
| | | 6.2 Bylaw 20-855 "Advertising" | 83 |
| | | 6.3 Bylaw 20-857 "Electronic Transmission of Documents" | 87 |
| #7 | BUSINESS | 7.1 DeBolt Lift Station Force Main Upgrade | 91 |
| | | 7.2 Grande Cache Wastewater Treatment Plant Upgrade Engineering Proposal | 118 |
| | | 7.3 Grande Cache Track Loader | 390 |
| | | 7.4 Council Compensation | 393 |
| | | 7.5 Grande Spirit – DeBolt Seniors Development | 395 |
| | | 7.6 WD Stevenson Demolition | 397 |

| | | |
|-----|--|-----|
| | 7.7 Letter to Minister – Gun Ban | 400 |
| | 7.8 CAO/Managers Reports | 404 |
| #8 | NOTICE OF MOTION | |
| #9 | CLOSED SESSION | |
| | 9.1 Information Harmful to Economic and Other Interests of a Public Body <i>(FOIPP; Section 25)</i> | |
| | 9.2 Information Harmful to Personal Privacy <i>(FOIPP; Section 17)</i> | |
| #10 | MEMBERS REPORTS/EXPENSE CLAIMS | 429 |
| | <ul style="list-style-type: none"> • Ward 4 • Ward 6 • Ward 7 • Ward 9 | |
| #11 | ADJOURNMENT | |

Minutes of a
REGULAR COUNCIL MEETING
MUNICIPAL DISTRICT OF GREENVIEW NO. 16
Greenview Administration Building,
Valleyview, Alberta on Monday August 24, 2020

#1
CALL TO ORDER

Reeve Dale Smith called the meeting to order at 9:02 a.m.

Present

| | |
|--------|--|
| Ward 5 | Reeve Dale Smith |
| Ward 9 | Deputy Reeve Tyler Olsen |
| Ward 1 | Councillor Winston Delorme(Teleconference) |
| Ward 2 | Councillor Dale Gervais |
| Ward 3 | Councillor Les Urness |
| Ward 4 | Councillor Shawn Acton |
| Ward 6 | Councillor Tom Burton |
| Ward 7 | Councillor Roxie Rutt |
| Ward 8 | Councillor Bill Smith(Teleconference) |
| Ward 9 | Councillor Duane Didow |

ATTENDING

| | |
|--|-----------------|
| Chief Administrative Officer | Denise Thompson |
| Assistant Chief Administrative Officer | Stacey Wabick |
| General Manager, Infrastructure & Planning | Roger Autio |
| Chief Financial Officer | Aleks Nelson |
| Marketing & Communication Manager | Stacey Sevilla |
| Recording Secretary | Lianne Kruger |

ABSENT

#2
AGENDA

MOTION: 20.08.413. Moved by: COUNCILLOR TOM BURTON
That Council adopt the August 24, 2020 Regular Council Meeting Agenda with the following additions,

- 7.6 Development Permit Application in Direct Control District – Plan 0425096, Block 38, Lot 11
- 9.1 FOIPP; Section 16 Disclosure Harmful to Business Interests of a Third Party
- 9.2 FOIPP; Section 21 Disclosure Harmful to Intergovernmental Relations
- 9.3 FOIPP; Section 27 Privileged Information

CARRIED

#3
MINUTES

MOTION: 20.08.414. Moved by: COUNCILLOR TOM BURTON
That Council adopt the minutes of the Regular Council Meeting held on Monday July 27, 2020 as presented.

CARRIED

**#3.1
BUSINESS ARISING
FROM THE MINUTES**

3.1 BUSINESS ARISING FROM MINUTES

**#4
PUBLIC HEARING**

4.0 PUBLIC HEARING

**#5
DELEGATIONS**

5.0 DELEGATIONS

There are no Delegation presenting.

**#6
BYLAWS**

6.0 BYLAWS

6.1 BYLAW 20-855 SCHEDULING OF A PUBLIC HEARING

**BYLAW 20-855
PUBLIC HEARING**

MOTION: 20.08.415. Moved by: COUNCILLOR SHAWN ACTON
That Council Schedule a Public Hearing for Bylaw 20-855 “Advertising” for
9:15 a.m. on September 14, 2020.

CARRIED

6.2 BYLAW 20-854 SCHEDULES OF FEES

**BYLAW 20-854
SECOND READING**

MOTION: 20.08.416. Moved by: DEPUTY REEVE TYLER OLSEN
That Council give second reading to Bylaw 20-854 “Schedules of Fees”, as
amended;

- Schedule ‘C’ Recreation – Recreation Grande Cache – Remove one
column of “Fee in \$”

CARRIED

6.3 BYLAW 20-857 “ELECTRONIC TRANSMISSION OF DOCUMENTS”

**BYLAW 20-857
FIRST READING**

MOTION: 20.08.417. Moved by: COUNCILLOR ROXIE RUTT
That Council give first reading to Bylaw 20-857 “Electronic Transmission
of Documents”.

CARRIED

**#7
BUSINESS**

7.0 BUSINESS

7.1 POLICY 1036 SOCIAL MEDIA

POLICY 1036

MOTION: 20.08.418. Moved by: COUNCILLOR DUANE DIDOW
That Council approve Policy 1036 “Social Media” as presented.

CARRIED

7.2 EVERGREENS FOUNDATION REQUISITIONS

EVERGREEN FOUNDATION

MOTION: 20.08.419. Moved by: COUNCILLOR WINSTON DELORME
That Council approve the capital requisition request in the amount of \$1,267,423.21 from Evergreens Foundation, funds to come from the Contingency Reserve.

CARRIED

Reeve Dale Smith recessed the meeting at 10:00 a.m.
Reeve Dale Smith reconvened the meeting at 10:12 a.m.

7.3 GRANDE SPIRIT FOUNDATION – LETTER OF SUPPORT

GRANDE SPIRIT FOUNDATION

MOTION: 20.08.420. Moved by: COUNCILLOR DALE GERVAIS
That Council approve Administration provide a letter of support to the Grande Spirit Foundation to borrow up to \$4 million capital funds for the construction of 24 new units at Pleasantview Lodge in Spirit River, Alberta.

CARRIED

7.4 GRANDE PRAIRIE BUCKWILD ASSOCIATION SPONSORSHIP REQUEST

GRANDE PAIRIE BUCKWILD ASSOCIATION

MOTION: 20.08.421. Moved by: COUNCILLOR WINSTON DELORME
That Council approve a sponsorship in the amount of \$10,000.00 to the Grande Prairie Buckwild Association for the annual bull riding event, with funds to come from the Community Services Miscellaneous Grants budget.

CARRIED

7.5 APPOINTMENT OF PEST INSPECTOR

PEST INSPECTOR APPOINTMENT

MOTION: 20.08.422. Moved by: COUNCILLOR DALE GERVAIS
That Council appoint: Kail Czaban as Pest Inspector for the Municipal District of Greenview No. 16 under Section 10 of the Agricultural Pests Act A-8 for the term of his employment.

CARRIED

**7.6 DEVELOPMENT PERMIT APPLICATION INDIRECT CONTROL DISTRICT
– PLAN 0425096, BLOCK 38, LOT 11**

**DEVELOPMENT PERMIT
APPLICATION**

MOTION: 20.08.423. Moved by: COUNCILLOR DUANE DIDOW
That Council approve development permit application D20-360 for an industrial /Commercial Office to operate in the Direct Control DC District located at Lot 11; Block 38; Plan 0425096; 9811 Hoppe Avenue, Grande Cache, subject to the conditions listed in Appendix A.

CARRIED

**#8
NOTICE OF MOTION**

8.0 NOTICE OF MOTION

There were no Notice of Motion requested.

**#9
CLOSED SESSION**

9.0 CLOSED SESSION

CLOSED SESSION

MOTION: 20.08.424. Moved by: COUNCILLOR TOM BURTON
That the meeting go to Closed Session, at 10:46 a.m., pursuant to Section 197 of the Municipal Government Act, 2000, Chapter M-26 and amendments thereto, and Division 2 of Part 1 of the Freedom of Information and Protection of Privacy Act, Revised Statutes of Alberta 2000, Chapter F-25 and amendments thereto, to discuss Privileged Information with regards to the Closed Session.

CARRIED

**9.1 DISCLOSURE HARMFUL TO BUSINESS INTERESTS OF A THIRD PARTY
(FOIPP; Section 16)**

**9.2 DISCLOSURE HARMFUL TO INTERGOVERNMENTAL RELATIONS
(FOIPP; Section 21)**

**9.3 PRIVILEGED INFORMATION
(FOIPP; Section 27)**

OPEN SESSION

MOTION: 20.08.425. Moved by: COUNCILLOR ROXIE RUTT
That, in compliance with Section 197(2) of the Municipal Government Act, this meeting come into Open Session at 12:13 p.m.

CARRIED

Reeve Dale Smith recessed the meeting at 12:14 p.m.
Reeve Dale Smith reconvened the meeting at 1:04 p.m.

Councillor Bill Smith and Councillor Winston Delorme did not return after the recess.

**#10
MEMBER REPORTS &
EXPENSE CLAIMS**

11.0 MEMBERS BUSINESS

WARD 1 **COUNCILLOR WINSTON DELORME** was unavailable to give an update on his activities.

WARD 2 **COUNCILLOR DALE GERVAIS** updated Council on his recent activities, which include;
July 27, 2020 Regular Council Meeting
Alberta No. 1 Electronic Meetings
RMA District 4 Zone Meeting

WARD 3 **COUNCILLOR LES URNESS** updated Council on his recent activities, which include;
July 27, 2020 Regular Council Meeting
RMA District 4 Zone Meeting
Little Smoky Ski Hill Meeting

WARD 4 **COUNCILLOR SHAWN ACTON** submitted his update to Council on his recent activities, which include;
July 27, 2020 Regular Council Meeting
Fox Creek Library Board Meeting
RMA – District 4 Zone Meeting

WARD 5 **REEVE DALE SMITH** submitted his update to Council on his recent activities, which include;
July 27, 2020 Regular Council Meeting
RMA – District 4 Zone Meeting
Little Smoky Ski Hill Meeting
Met with Minister Travis Toews

WARD 6 **COUNCILLOR TOM BURTON** submitted his update to Council on his recent activities, which include;
July 27, 2020 Regular Council Meeting
Assessment Model Review
MD of Greenview Library Board Meeting
MD of Greenview Library Board Meeting
RMA – District 4 Zone Meeting
Community Planning Association of Alberta Meeting
East Smoky Recreation Board Meeting
MD of Greenview Library Board Meeting

MD of Greenview Library Board Meeting

WARD 7

COUNCILLOR ROXIE RUTT submitted her update to Council on her recent activities, which include;
July 27, 2020 Regular Council Meeting
RMA – District 4 Zone Meeting
East Smoky Recreation Board Meeting

WARD 8

COUNCILLOR BILL SMITH was unavailable to give an update on his activities.

Ward 9

COUNCILLOR DUANE DIDOW submitted his update to Council on his recent activities, which include;
July 27, 2020 Regular Council Meeting
RMA – District 4 Zone Meeting

Ward 9

COUNCILLOR TYLER OLSEN submitted his update to Council on his recent activities, which include;
July 27, 2020 Regular Council Meeting
Library Board Meeting
Nitehawk
Road Tour – Grande Cache Area

MEMBERS BUSINESS

MOTION: 20.08.426. Moved by: DEPUTY REEVE TYLER OLSEN
That Council accept the Members Business Reports as presented.

CARRIED

**#11
ADJOURNMENT**

12.0 ADJOURNMENT

MOTION: 20.08.427. Moved by: COUNCILLOR DALE GERVAIS
That Council adjourn this Regular Council Meeting at 1:45 p.m.

CARRIED

CHIEF ADMINISTRATIVE OFFICER

REEVE



September 14, 2020 Bylaw No. 20-857 Public Hearing Background Information

PROPOSAL

Bylaw 20-857 “Advertising” allows Greenview to advertise bylaws, resolutions, meetings, notices, public hearings and other things required by the Municipal Government Act online, instead of limiting advertising to newspapers. This bylaw also gives Greenview the option to advertise in newspapers and social media.

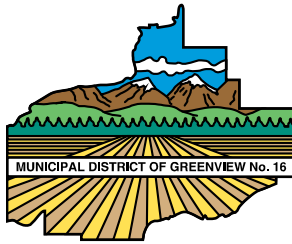
BACKGROUND AND DISCUSSION

Section 606.1 of the Municipal Government Act, permits municipalities to pass a bylaw to advertise bylaws, resolutions, meetings, notices, public hearings and other things required by the Municipal Government Act online. Previously, Greenview was required to advertise these things in the local newspaper. Over the last few years, local newspapers in the Greenview area have stopped circulation. The only remaining newspaper is the Daily Herald Tribune, which has a limited reach in Greenview.

In order to reach a greater number of residents, Greenview Administration recommends moving to online advertising on our website and social media pages. These pages are readily accessible to the public. In order to address concerns that not all ratepayers have internet or computer access, Greenview will have notices and advertisements available at the Administration buildings. Additionally, Greenview has the option to advertise in the paper or circulate notices directly to the public.

STAKEHOLDER COMMUNICATIONS OR ENGAGEMENT

This bylaw and public hearing was advertised in the Daily Herald Tribune September 2 and 9, 2020 in accordance with the requirements in the Municipal Government Act. As of September 4, no submissions or comments have been received from the public regarding this bylaw. The public has until September 10, 2020 to provide any comments or submissions. Any written comments received prior to the opening of the public hearing will be presented to Council directly.



BYLAW NO. 20- 855 **of the Municipal District of Greenview No. 16**

A Bylaw of the Municipal District of Greenview No. 16, in the Province of Alberta, to establish alternate methods of advertising statutory notices.

WHEREAS, the M.D. of Greenview No. 16 is required to advertise certain bylaws, resolutions, meetings, notices, public hearings, and other things in accordance with Section 606 of the Municipal Government Act;

AND WHEREAS, Section 606.1 of the Municipal Government Act allows Council to pass a bylaw to provide for one or more alternate methods to advertise certain bylaws, resolutions, meetings, notices, public hearings, and other things required under Section 606;

AND WHEREAS, Council is satisfied that the advertising methods set out in this Bylaw are likely to bring the matter to the attention of substantially all residents in the relevant areas;

NOW THEREFORE, the Council of the M.D. of Greenview No. 16, duly assembled, enacts as follows:

1. Title

- 1.1 This bylaw may be cited as the “Advertising Bylaw”.

2. Definitions

- 2.1 **Council** means the Council of the M.D. of Greenview No. 16, duly assembled.
- 2.2 **Detailed Notice** means a notice containing all of the information required under Section 606 of the Municipal Government Act.
- 2.3 **Greenview** means the Municipal District of Greenview No. 16.
- 2.4 **Municipal Government Act** means the Municipal Government Act, R.S.A. 2000, Chapter M-26 as amended.
- 2.5 **Social Media** means any electronic online form of communication through which a group of users share information and content.

3. Application

- 3.1 This bylaw applies specifically to those items identified in Section 606 of the Municipal Government Act.
- 3.2 This bylaw does not apply to those items addressed in other Sections of the Act that require alternative advertising requirements such as advertising of public auctions as identified in Section 421 of the Act.



BYLAW NO. 20- 855 of the Municipal District of Greenview No. 16

4. Methods of Advertising

4.1 Greenview will advertise bylaws, resolutions, meetings, notices, public hearings, and other things as required under the Municipal Government Act by publishing detailed notices on the Greenview website.

4.2 Greenview may also choose one or more of the following methods to advertise or to advertise detailed notices or summaries of website notices:

- a) Newspaper(s)
- b) Official Greenview social media sites
- c) Greenview Administration will also make public notices available for viewing at any M.D. of Greenview Administration Building.
- d) Any other method as directed by Council policy.

4.3 Greenview will make detailed notices available at Greenview Administration Buildings.

5. Severability

5.1 If any provision of this Bylaw is declared invalid for any reason by a court of competent jurisdiction, all other provisions of this Bylaw shall remain valid and enforceable.

This Bylaw shall come into force and effect upon the day of final passing and signing.

Read a first time this 27th day of July, 2020.

Read a second time this 27th day of July, 2020.

Read a third time and passed this ____ day of ____, 2020.

REEVE

CHIEF ADMINISTRATIVE OFFICER



REQUEST FOR DECISION

SUBJECT: **Bylaw 20-854 Schedules of Fees**

SUBMISSION TO: REGULAR COUNCIL MEETING

MEETING DATE: September 14, 2020

DEPARTMENT: CAO SERVICES

STRATEGIC PLAN: Level of Service

REVIEWED AND APPROVED FOR SUBMISSION

CAO: DT

GM:

MANAGER:

PRESENTER: DL

RELEVANT LEGISLATION:

Provincial (cite) – Municipal Government Act, R.S.A. 2000, Chapter M-26.

Council Bylaw/Policy (cite) –Bylaw 19-816 Schedules of Fees and Bylaw 19-836 Schedules of Fees Amendment.

RECOMMENDED ACTION:

MOTION: That Council give third reading to Bylaw 20-854 “Schedules of Fees”.

BACKGROUND/PROPOSAL:

A number of updates were provided to the Schedules of fees. Due to the volume of changes, the previous versions passed in 2019 are recommended for repeal and will be replaced with Bylaw 20-854. For clarity, the changes made are highlighted in red. These will not be marked when the bylaw is published.

Summary of Changes:

Agriculture Services

- 3-point hitch mount seeder
- Magpie traps
- Beaver Bounty (Removed after First Reading along with Wolf Bounty as they are covered in policy)
- Cleaning fees revised. \$75.00 disposal fee in addition to \$60.00/ hour. All equipment returned unclean treated as though it may contain clubroot.

Recreation

- Greenview Regional Multiplex (GRM) Fees and rental rates were added to the schedules of fees.

Environmental Services

- Gravity Sewer Connection fee added for Grovedale
- Grande Cache Landfill fees were added for Sump and Freon.
-

Finance

- Non-Sufficient Funds (NSF) Fees were added.

Operations/Infrastructure

- Schedule was amended to reflect policy change of Alberta Roadbuilders & Heavy Construction Association (ARHCA) rates at 100% of previous year rather than 85% of 2015 rate.
- Tax Exemptions were added for Tipping fees and snow plowing in accordance with the recommendations from the GST Audit.

ROW Acquisition fees:

Council requested that the area around Sturgeon Lake be increased to the same values as DeBolt Phase 1. The area is highlighted as DeBolt Phase 6 to avoid confusion of the different phases on the map, but the values in the chart for the Phase 6 Sturgeon Lake area are the same as Phase 1.

BENEFITS OF THE RECOMMENDED ACTION:

1. An updated fees listing will be in place in a consolidated bylaw.

DISADVANTAGES OF THE RECOMMENDED ACTION:

1. There are no perceived disadvantages.

ALTERNATIVES CONSIDERED:

Alternative #1: Council may determine additional or revised fees.

FINANCIAL IMPLICATION:

There are no anticipated financial implications.

STAFFING IMPLICATION:

There are no staffing implications to the recommended motion.

PUBLIC ENGAGEMENT LEVEL:

Greenview has adopted the IAP2 Framework for public consultation.

INCREASING LEVEL OF PUBLIC IMPACT

Inform

PUBLIC PARTICIPATION GOAL

Inform - To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.

PROMISE TO THE PUBLIC

Inform - We will keep you informed.

FOLLOW UP ACTIONS:

Administration will update the bylaw register and the public on the changes.

ATTACHMENT(S):

- Bylaw 19-836
- Bylaw 20-854



BYLAW NO. 19- 836
of the Municipal District of Greenview No. 16

A Bylaw of the Municipal District of Greenview No. 16, in the Province of Alberta to amend Bylaw 19-816 being the "Schedules of Fees" Bylaw for the Municipal District of Greenview No. 16.

THEREFORE, pursuant to Section 191(1) of the Municipal Government Act, Chapter M-26, R.S.A 2000, as amended, the Council of the Municipal District of Greenview No. 16, duly assembled enacts as follows:

1. This bylaw shall be referred to as the "Schedules of Fees Amendment Bylaw".
2. That Section 9 Business License Commercial/ Industrial Titled Land, subsection (i) and (ii) be removed from Schedule 'I' of the Schedules of Fees.
3. That Section 2 Development Permits, General, subsection (iii) of Schedule 'I' be amended to a maximum of \$10,000.
4. This Bylaw shall come into force and effect upon the day of final passing.

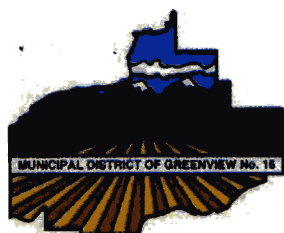
Read a first time this 9th day of December, 2019.

Read a second time this 9th day of December, 2019.

Read a third time and passed this 13th day of January, 2020


REEVE


CHIEF ADMINISTRATIVE OFFICER



Schedules of Fees Bylaw 19-836

Schedule 'A' Agricultural Services

| | Description | GST Status* | Fee in \$ |
|---|---|-------------|--|
| Agricultural Services | | | |
| <i>All decisions being at the Agricultural Fieldsman's discretion</i> | | | |
| 1. | Haying or Pasturing Permits | | |
| i. | Application fee | E | \$100.00 |
| ii. | Plus Annual per Acre Charge | E | \$15.00 |
| 2. | Spray Exemption Signs | | |
| i. | Spray Exemption Signs (One-Time Free Only) | T | Free |
| ii. | Lost or Replacement Signs (each) | T | \$30.00 |
| 3. | Guides | | |
| i. | Guide to Crop Protection - Chemical/Cultural | T | \$12.00 |
| ii. | Weed Seedling Guide | T | \$10.00 |
| 4. | Picnic Tables | | |
| i. | Non-Profit Organizations - Community Event | | No charge |
| ii. | Private Affair, Non-Public Event - Maximum of 10 days | T | \$10.00 per day |
| iii. | Delivery Charge, per loaded km | T | \$2.00 per km |
| 5. | Barbecue | | |
| i. | Non-Profit Organizations - Community Event | | No charge |
| ii. | Private Affair, Non-Public Event – (Maximum of 10 days) | T | \$100.00 per day |
| iii. | Deposit (All Organizations) | E | \$200.00 |
| iv. | Delivery charge (per loaded km) | T | \$2.00 per km |
| 6. | Weed & Insect Control Equipment | | |
| i. | Field Sprayer c/w GPS <i>All Locations</i> | T | \$50.00 Each Day (3 Days Maximum if Lineup) |



Schedules of Fees Bylaw 19-836

| | Description | GST Status* | Fee in \$ |
|----------------------------------|---|-------------|---|
| ii. | Boomless Sprayer <i>Valleyview, Grovedale</i> | T | \$20.00 Each Day (3 Days Maximum if Lineup) |
| iii. | Water Tank on Trailer (For Spraying) <i>Valleyview, Grovedale</i> | T | \$25.00 Each Day (3 Days Maximum if Lineup) |
| iv. | Estate Sprayer (Pull Type) <i>All Locations</i> | T | \$20.00 Each Day (3 Days Maximum if Lineup) |
| v. | Estate Sprayer (3 Point Hitch) <i>Valleyview</i> | T | \$20.00 Each Day (3 Days Maximum if Lineup) |
| vi. | Quad Mount Sprayer <i>All Locations</i> | T | \$10.00 Each Day (3 Days Maximum if Lineup) |
| vii. | Backpack Sprayer (15 Liters) <i>Valleyview, Grovedale</i> | T | \$5.00 Each Day (3 Days Maximum if Lineup) |
| viii. | Granular Pesticide Bait Applicator (Holds 135 lbs Bran) <i>Valleyview</i> | T | \$30.00 Each Day (3 Days Maximum if Lineup) |
| 7. Spreaders | | | |
| i. | Manure Spreader <i>Valleyview, Grovedale</i> | T | \$200.00 Each Day (3 Days Maximum if Lineup) |
| ii. | Fertilizer Spreader <i>Valleyview</i> | T | \$100.00 Each Day (3 Days Maximum if Lineup) |
| 8. Earth Moving Equipment | | | |



Schedules of Fees Bylaw 19-836

| | Description | GST Status* | Fee in \$ |
|-----------------------------|--|-------------|---|
| i. | 1000 Earth Mover <i>Valleyview, Crooked Creek</i> | T | \$200.00 Each Day (3 Days Maximum if Lineup) |
| ii. | 900 Earth Mover <i>Grovedale</i> | T | \$150.00 Each Day (3 Days Maximum if Lineup) |
| iii. | 425 Earth Mover <i>Grovedale</i> | T | \$100.00 Each Day (3 Days Maximum if Lineup) |
| iv. | 12' Pull-Type Blade <i>Valleyview</i> | T | \$50.00 Each Day (3 Days Maximum if Lineup) |
| v. | Vee Ditcher <i>Valleyview</i> | T | \$50.00 Each Day (3 Days Maximum if Lineup) |
| 9. Post Pounders | | | |
| i. | Post Pounder <i>All Locations</i> | T | \$125.00 Each Day (3 Days Maximum if Lineup) |
| ii. | Post Pounder <i>All Locations</i> | T | ½ day rate \$65.00 each |
| 10. Bin Crane | | | |
| i. | Bin Crane <i>Valleyview, Grovedale</i> | T | \$100.00 Each Day (3 Days Maximum if Lineup) |
| 11. Cattle Equipment | | | |
| i. | Cattle Squeeze <i>All Locations</i> | T | \$25.00 Each Day (3 Days Maximum if Lineup) |



Schedules of Fees Bylaw 19-836

| | Description | GST Status* | Fee in \$ |
|------------|---|-------------|--|
| ii. | Loading Chute <i>All Locations</i> | T | \$25.00 Each Day (3 Days Maximum if Lineup) |
| iii. | Panel Trailer <i>Valleyview, Grovedale</i> | T | \$25.00 Each Day (3 Days Maximum if Lineup) |
| iv. | Spare Panels <i>Crooked Creek, Grovedale</i> | T | Free First 3 Days, \$5.00 Each Additional Day |
| v. | Tag Reader <i>Valleyview</i> | T | Free, \$100.00 Deposit Required (3 Days Maximum if Lineup) |
| | | | |
| 12. | Conservation Equipment | | |
| i. | 50' Heavy Harrow with Granular Applicator <i>Valleyview</i> | T | \$150.00 Each Day (3 Days Maximum if Lineup) |
| ii. | 33' Heavy Harrow with Granular Applicator <i>Grovedale</i> | T | \$150.00 Each Day (3 Days Maximum if Lineup) |
| iii. | 30' Land Roller <i>Valleyview, Grovedale</i> | T | \$200.00 Each Day (3 Days Maximum if Lineup) |
| iv. | 14' Heavy Disc <i>Valleyview, Grovedale</i> | T | \$250.00 Each Day (3 Days Maximum if Lineup) |
| v. | No Till Drill <i>Valleyview</i> | T | \$150.00 Each Day (3 Days Maximum if Lineup) |
| | | | |



Schedules of Fees Bylaw 19-836

| | Description | GST Status* | Fee in \$ |
|------------|---|-------------|---|
| 13. | Broadcast Seeders | | |
| i. | Truck Mount Seeder <i>Valleyview</i> | T | \$10.00 Each Day (3 Days Maximum if Lineup) |
| ii. | Quad Mount Seeder <i>Valleyview</i> | T | \$10.00 Each Day (3 Days Maximum if Lineup) |
| iii. | Hand Seeder <i>Valleyview</i> | T | Free First 3 Days, \$5.00 Each Additional Day |
| 14. | Water Pumping Equipment | | |
| i. | Water Pump and Pipe Trailer (AB. Agriculture Unit) <i>Valleyview</i> | T | \$250.00 Each Day (3 Days Maximum if Lineup) |
| 15. | Miscellaneous Equipment | | |
| i. | Bag Roller <i>Valleyview</i> | T | \$50.00 Each Day (3 Days Maximum if Lineup) |
| ii. | Survey Equipment <i>Valleyview</i> | T | \$10.00 Each Day (3 Days Maximum if Lineup) |
| iii. | Metal Detector <i>Valleyview</i> | T | \$10.00 Each Day (3 Days Maximum if Lineup) |
| iv. | Hay Sampler, Measuring Wheel, Bin Probe, Soil Sampler <i>Valleyview</i> | T | Free First 3 Days, \$5.00 Each Additional Day |
| v. | Scare Cannons <i>Valleyview</i> | T | Free First 3 Days, \$5.00 Each Additional Day |



Schedules of Fees Bylaw 19-836

| | Description | GST Status* | Fee in \$ |
|------------|---|-------------|---|
| vi. | Rodent Traps (Two Styles) <i>Valleyview, Grovedale</i> | T | \$10.00 Each Week, \$100 Deposit Required (1 Week Maximum if Lineup) |
| vii. | Grain Vacuum <i>Valleyview</i> | T | \$50.00 Each Day (3 Days Maximum if Lineup) |
| viii. | Bale Wagon <i>Valleyview, Grovedale</i> | T | \$150.00 Each Day (3 Days Maximum if Lineup) |
| ix. | Pressure Washer on Trailer <i>Valleyview</i> | T | \$50.00 Each Day (3 Days Maximum if Lineup) |
| 16. | Recovery of A.S.B. Equipment **Minimum one hour charge for recovery of equipment** | | |
| i. | Recovery of Rental Equipment Requiring 1-ton min. for Transport | T | \$100.00 per hour |
| ii. | Recovery of Rental Equipment Requiring Vehicle under 1-ton for Transport | T | \$75.00 per hour |
| iii. | Cleaning (when equipment is returned unclean) | T | \$60.00 per hour |
| iv. | Removal of Contaminated Soil (Remediation Purposes for Club Root) | T | \$60.00 per hour + Disposal Fee |
| v. | Repair of Damaged Rental Equipment due to Negligent Use | E | Full cost of repair |
| 17. | Adult Wolf Carcass | E | \$300.00 |



Schedules of Fees Bylaw 19-836

Schedule 'B' Family and Community Support Services

| Family and Community Support Services | | | |
|---------------------------------------|--|---|----------|
| 1. | Home Support <i>*This fee can be varied as evaluated and approved by the FCSS Manager.</i> | E | \$20.00* |
| 2. | Summer Day Camps | E | \$40.00 |

Schedule 'C' Recreation

| Recreation | | | | |
|------------|--|-------------|---------------------------|---------------------------|
| | Description | GST Status* | Fee in \$ | |
| 1. | Grande Cache Arena Rentals (With Ice/ per hour) | | June 1, 2018-May 31, 2019 | June 1, 2019-May 31, 2020 |
| i. | Adult rate | T | \$169.75 | \$170.00 |
| ii. | Adult Non-Prime (Before 3:30 p.m. on Regular School Days) | T | \$107.00 | \$109.25 |
| iii. | Youth Rate | T | \$86.50 | \$88.25 |
| iv. | Youth Non-prime (Before 3:30 p.m. on Regular School Days) | T | \$53.75 | \$55.00 |
| v. | Public Skating Sponsorship | T | \$146.00 | 148.00 |
| 2. | Arena and Curling Rink Surfaces (No Ice) | | | |



Schedules of Fees Bylaw 19-836

| | | | | |
|-----------|-------------------------------------|---|----------------------------------|----------------------------------|
| i. | Adult Rate per Hour | T | \$75.00 | \$76.00 |
| ii. | Youth Rate per Hour | T | \$37.50 | \$38.00 |
| iii. | Maximum Day Rate | T | \$366.00 | \$373.00 |
| | | | | |
| 3. | Aquatic Centre | | July 1, 2018-May 31, 2019 | June 1, 2018-May 31, 2020 |
| i. | Private Rental | T | \$131.75 | \$134.50 |
| ii. | Lane Pool/ Swim Club | T | \$86.75 | \$88.50 |
| iii. | Wave Crashers (During Public Swim) | T | \$104.75 | \$107.00 |
| iv. | Grande Bash (Private Rental) | T | \$170.00 | \$180.00 |
| v. | Extra Lifeguard | T | \$29.75 | \$30.50 |
| vi. | Sponsorship | T | \$182.00 | \$184.00 |
| | | | | |
| 4. | Locker Rental | | July 1, 2018-May 31, 2019 | June 1, 2018-May 31, 2020 |
| i. | Annual (Private Locker) | T | \$100.00 | \$100.00 |
| ii. | Lost or Damaged Key Replacement | T | \$35.00 | \$35.00 |
| | | | | |
| 5. | Recreation Centre Fees | | | |
| i. | Daily Pass | | | |
| | Family | T | \$14.50 | |
| | Adult (18+) | T | \$6.75 | |
| | Youth (5-17) | T | \$5.00 | |
| | Senior (60-69) | T | \$5.50 | |
| | Senior (70+) and Children (Under 5) | T | Free | |
| | | | | |
| ii. | 10x Pass | | | |
| | Family | T | \$115.75 | |
| | Adult (18+) | T | \$53.75 | |
| | Youth (5-17) | T | \$37.75 | |
| | Senior (60-69) | T | \$42.50 | |
| | Senior (70+) and Children (Under 5) | T | Free | |
| | | | | |
| iii. | Monthly Pass | | | |
| | Family | T | \$126.75 | |



Schedules of Fees Bylaw 19-836

| | | | |
|-----|---|---|--------------------|
| | Adult (18+) | T | \$58.75 |
| | Youth (5-17) | T | \$41.00 |
| | Senior (60-69) | T | \$46.00 |
| | Senior (70+) and Children (Under 5) | T | Free |
| | | | |
| iv. | 3-Month Pass | | |
| | Family | T | \$316.75 |
| | Adult (18+) | T | \$146.25 |
| | Youth (5-17) | T | \$101.25 |
| | Senior (60-69) | T | \$114.25 |
| | Senior (70+) and Children (Under 5) | T | Free |
| | | | |
| v. | 6-Month Pass | | |
| | Family | T | \$569.75 |
| | Adult (18+) | T | \$262.25 |
| | Youth (5-17) | T | \$182.75 |
| | Senior (60-69) | T | \$205.25 |
| | Senior (70+) and Children (Under 5) | T | Free |
| | | | |
| vi. | Annual Pass | | |
| | Family | T | \$949.50 |
| | Adult (18+) | T | \$437.00 |
| | Youth (5-17) | T | \$304.25 |
| | Senior (60-69) | T | \$342.25 |
| | Senior (70+) and Children (Under 5) | T | Free |
| | | | |
| 6. | Meeting or Banquet Rooms and Curling Club Lounge | | |
| i. | Rental Rate with Clean- up | T | \$38.75 per hour |
| ii. | Association Rate/ Not- for-Profit | T | \$23.50 per hour |
| | | | |
| 7. | Equipment Rental | | |
| i. | Portable Sound System | T | \$100.00 per event |



Schedules of Fees Bylaw 19-836

| | | | |
|------------------------------------|---|---|----------------------|
| ii. | Portable Stage | T | \$170.00 per event |
| iii. | Portable Floor (Damage Deposit Required) | T | \$100.00 per event |
| iv. | Tables (Not Included in the Facility Rental) | T | \$6.50 per table |
| v. | Chairs (Those not Included in the in the Facility Rental) | T | \$3.00 per chair |
| vi. | Boom Lift (Includes Operator) | T | \$140.00 per hour |
| 8. Advertising | | | |
| i. | Wall Rink Board | T | \$425.00 per year |
| ii. | Ice Logo | T | \$650.00 per year |
| iii. | Zamboni | T | \$650.00 per side |
| 9. Administrative Items | | | |
| i. | Labour (Clean-up, Set- up, etc.) | T | \$57.00 per person |
| ii. | Event and Equipment Rental Damage Deposit | T | \$400.00 per booking |
| iii. | Photocopying, Black and White, | T | \$0.10 per page |
| iv. | Photocopying, Color | T | \$0.15 per page |
| v. | Replacement Membership cards | T | \$5.00 per card |
| 10. Ball Diamonds | | | |
| i. | Rental Rate | T | \$40.50 per Game |
| ii. | Tournament Rate (Maximum Day Rate per Ball Diamond) | T | \$121.50 |
| 11. Grande Cache Campground | | | |
| i. | Full Service (Includes Power, Water and Sewer) | T | \$38.10 per night |



Schedules of Fees Bylaw 19-836

| | | | |
|---|--|--|-------------------|
| ii. | Partial Service (Includes Power and Water) | T | \$33.33 per night |
| iii. | Open Tent area | T | \$23.81 per night |
| iv. | Monthly site rate (30 days) full service | T | \$975.00 |
| 12. Grande Cache Tourism and Information Centre | | | |
| i. | Chamber Room (used for meetings or workshops, sits 40-50 people) | Includes: 20" Television, projector screen, DVD/VHS player, flip chart, whiteboard, refrigerator, coffee maker, kettle *Note: if time extends beyond 9 hours, the cost is \$30.00 per hour for every extra hour | |
| | Per Hour | T | \$30.00 |
| | Per Day | T | \$150.00 |
| ii. | Theatre Room (Used for meetings, workshops, movies, sits 30-40 people) | Includes: projector screen, DVD, VHS player, flip chart, kitchen facilities *Note: if time extends beyond 9 hours, the cost is \$30.00 per hour for every extra hour | |
| | Per Hour | T | \$30.00 |
| | Per Day | T | \$150.00 |
| iii. | Mezzanine Level (used for receptions, open houses, book launches. Can be included with the Chamber Room). | Includes: access to outside balcony *Note: if time extends beyond 9 hours, the cost is \$30.00 per hour for every extra hour | |
| | Per Hour | T | \$30.00 |
| | Per Day | T | \$150.00 |
| | Per Hour with Chamber Room | T | \$50.00 |
| | Per Day with Chamber Room | T | 250.00 |
| 13. Eagles Nest Hall (Capacity up to 65 people with tables and chairs) | | | |
| | Per Hour | T | \$12.50 |
| | Per Day | T | \$62.50 |



Schedules of Fees Bylaw 19-836

| 14. | Grande Cache Cemetery | | May 15 to November 15 | November 16 to May 14 |
|------|---|---|---|--------------------------|
| i. | Open and Close Fees | | | |
| | Full Casket Adult | T | \$600.00 | \$700.00 |
| | Full Casket Child | T | \$400.00 | \$500.00 |
| | Cremation | T | \$450.00 | \$550.00 |
| | Surcharge (After 4:00 p.m. Working Days) | T | \$150.00 | |
| | Disinterment | T | Double the cost of opening and closing | |
| ii. | Purchase of Plot | T | \$550.00 | |
| iii. | Columbarium Fees | | | |
| | Niche Price (Includes Opening/Closing Fee) | | \$1,050.00 | |
| | Note: Each Niche can Hold 2 Urns | | | |

Schedule 'D' Hamlet of Grande Cache Animal Control

| Hamlet of Grande Cache Animal Control | | | |
|---------------------------------------|---|---|---------|
| 1. | Licensing Fees for Dogs | | |
| i. | Female (Unaltered) Before February 1 | E | \$30.00 |
| ii. | Male (Unaltered) Before February 1 | E | \$30.00 |
| iii. | Altered Dog (Spayed or Neutered) Before February 1 | E | \$20.00 |
| iv. | License after February 1 (In addition to the relevant fee above) | E | \$10.00 |
| v. | Replacement Tag | E | \$5.00 |
| 2. | Dog Team/Kennel License | | |



Schedules of Fees Bylaw 19-836

| | | | |
|-----------|---|---|--|
| i. | Kennel (Requires a Development Permit and Business License for Commercial Kennel) | E | Cost of Development Permit/business license where applicable |
| ii. | Per Dog Fee as listed above | E | As per Section 1 |
| 3. | Licensed Dog Impoundment | | |
| i. | First Impoundment | E | \$50.00 |
| ii. | Second Impoundment | E | \$100.00 |
| iii. | Third Impoundment | E | \$150.00 |
| iv. | All Subsequent Impoundments | E | \$200.00 |
| 4. | Unlicensed Dog Impoundment | | |
| i. | First Impoundment | E | \$100.00 |
| ii. | Second Impoundment | E | \$165.00 |
| iii. | Third Impoundment | E | \$215.00 |
| iv. | All Subsequent Impoundments | E | \$290.00 |
| 5. | Viscous Dog Impoundment | | |
| i. | First Impoundment | E | \$200.00 |
| ii. | Second Impoundment | E | \$500.00 |
| iii. | Third and All Subsequent Impoundments | E | \$1,000.00 |
| 6. | Other Domestic Animals Impoundment | | |
| i. | First Impoundment | E | \$35.00 |
| ii. | Second Impoundment | E | \$50.00 |
| iii. | Third and All Subsequent Impoundments | E | \$75.00 |
| 7. | Livestock Impoundment | | |
| i. | First Impoundment | E | \$150.00 |
| ii. | Second Impoundment | E | \$250.00 |
| iii. | Third and All Subsequent Impoundments | E | \$750.00 |
| 8. | Custodial Fees | | |
| i. | Dog per Day (Plus Actual Cost to Board) | E | \$9.50 |
| ii. | Other Domestic Animal per Day (Plus Actual Cost to Board) | E | \$2.00 |
| iii. | Livestock (Plus \$10.00, Care and Sustenance per day and Veterinary Services) | E | \$25.00 |



Schedules of Fees Bylaw 19-836

| | | | |
|-----------|--|---|--|
| | iv Disposal Charge for Pathological Waste | E | \$0.30 per Pound, minimum of \$7.00 per disposal |
| | v. Euthanasia (In Addition to the Above Charges) | E | \$35.00 |
| 9. | Animal Attractants | | |
| i. | Improper Storage of Animal Attractant | E | \$500.00 |
| ii. | Attempt/Feed Wild Life Purposely | E | \$500.00 |
| iii. | Disposal of Animal Attractant | E | \$1,000.00 |

Schedule 'E' Finance and Administration

| | Description | GST Status | Fee in \$ |
|-------------------------------------|---|------------|-------------------------|
| Finance & Administration | | | |
| 1. | Photocopying | | |
| i. | Tax, Utilities, and Other Documents | T | \$0.50 per page |
| ii. | Minutes or Bylaws | T | \$1.00 per page |
| 2. | Documents | | |
| i. | Planning or Otherwise, Any Size | T | \$10.00 |
| ii. | Faxed Copies (Incoming/Outgoing) | T | \$1.00 per page |
| iii. | Access to Information (FOIP), Research | T | \$25.00 per hour |
| 3. | Taxes | | |
| i. | Tax Certificate to Registered Landowner | E | No charge |
| ii. | Tax Certificate to Others | E | \$50.00 per roll number |
| iii. | Tax Search to Others | E | \$50.00 per roll number |
| iv. | Online Tax Certificate to Others | E | \$25.00 |



Schedules of Fees Bylaw 19-836

| | | | |
|----------------------|--------------------------------|---|-------------------------|
| v. | Online Tax Search | E | \$15.00 |
| vi. | Tax Notification Charges | E | \$75.00 |
| 4. Assessment | | | |
| i. | Assessment Record to Landowner | E | \$5.00 per roll number |
| ii. | Assessment Record to Others | E | \$10.00 per roll number |

Schedule 'F'

Infrastructure and Planning General

| | Description | GST Status | Fee in \$ |
|--|---|------------|------------------------|
| Infrastructure and Planning General | | | |
| 1. | Road Closure | | |
| i. | Application Fee | E | \$1,500.00 |
| ii. | Sale of Road Allowance for the Purpose of Road Closure. As Determined by Accurate Assessment. | E | Fair Market Value |
| 2. | Approaches | | |
| i. | Approach Application Request Fee (Non-Refundable) | E | \$175.00 per approach |
| ii. | Construction: Gravel Approach | E | \$2000.00 per approach |
| iii. | Upgrade/Relocation: Gravel Approach | E | \$2500.00 per approach |
| iv. | Construction: Asphalt Approach | E | \$5000.00 per approach |
| v. | Upgrade/Relocation: Asphalt Paved Approach | E | \$5500.00 per approach |
| 3. | Road Allowance License | | |
| i. | Application Fee | E | \$100.00 |
| ii. | Road Allowance License Sign (One-Time Free Only) | E | Free |
| iii. | Road Allowance Sign Replacement | E | \$30.00 |



Schedules of Fees Bylaw 19-836

| | Description | GST Status | Fee in \$ |
|-----------|--|------------|---------------------------|
| 4. | Inspections | | |
| i. | Seismic Pre-Inspections | E | \$100.00 per occurrence |
| ii. | Seismic Post-Inspections | E | \$100.00 per occurrence |
| iii. | Seismic Non-Compliance | E | \$100.00 per inspection |
| 5. | Land Acquisition | | |
| i. | Right-of-Way from Properties up to 40 Acres | T | See Schedule "I" |
| ii. | Right-of-Way from Properties Over 40 Acres | T | \$2400.00 per acre |
| iii. | Right-of-Way from Properties Minimum Payment | T | \$150.00 per occurrence |
| iv. | On parcels more than 40 Acres, Where an Existing Residence is on the Property, for up to 50 Meters Each Side of the Residential Driveway | T | \$3,000 per acre |
| v. | Borrow Pit Acquisition and Access and Damages | T | \$1.00 per m ³ |
| vi. | Shelterbelt Loss, per 5m Width, Tree Height Under 10 feet | T | \$1.50 per m |
| vii. | Shelterbelt Loss, per 5m Width, Tree Height Over 10 feet | T | \$2.50 per m |
| 6. | Fencing | | |
| i. | Removal of Old Fence by Landowner | T | \$1.25 per m |
| ii. | Removal of Old Fence and Installation of New Fence by Landowner with Greenview Supplying Material | T | \$3.75 per m |
| iii. | Removal of Old Fence and Installation of New Fence by Landowner Including Labour and Materials | T | \$6.25 per m |
| iv. | Removal of Old Fence and Installation of New Fence by Greenview | T | No Compensation |



Schedules of Fees Bylaw 19-836

| | Description | GST Status | Fee in \$ |
|--|-------------|------------|-----------|
|--|-------------|------------|-----------|

Schedule 'G' Environmental Services

| Environmental Services | | | |
|------------------------|---|--|--|
| | <i>Accounts for metered services and bulk accounts if not paid within 30 days of the billing date will incur a 1.5% penalty monthly.</i> | | |
| | <i>Where work is done at cost, the cost will include the amount expended by Greenview for all expenditures incurred doing the work, including administration. All invoices will be paid within 30 days of billing. If not paid within 30 of billing, are subject to interest.</i> | <i>1.5% penalty/month</i> | |
| | <i>Water Meter/Replacement (Owner Responsibility)</i> | <i>Based on actual replacement costs</i> | |
| | | | |
| 1. | Requested Services | | |
| i. | Regular Hours | T | \$50.00 per hour per member of staff (1 hour min.) |
| ii. | After Hours | T | 50.00 per hour per member of staff (1 hour min.) |
| | | | |
| 2. | Hamlet Water Distribution Systems (Grovedale, Landry Heights, and Little Smoky) | | |
| i. | Residential Rate (0 - 30 m ³ /Month) | E | \$3.50 per m ³ |
| ii. | Residential Rate (Over 30 m ³ /Month) | E | \$4.00 per m ³ |
| iii. | Non Residential Rate | E | \$4.00 per m ³ |
| iv. | Installation Fee (To install from Main Line to Property Line) | E | \$8,000.00 deposit (based on actual invoice) |



Schedules of Fees Bylaw 19-836

| | Description | GST Status | Fee in \$ |
|---|--|------------|---|
| v. | Connection Fee (Rights to Connect) | E | \$12,500.00 per service |
| vi. | Utilities Account Deposit | E | \$100.00 |
| 3. Hamlet Water Distribution Systems (Grande Cache, DeBolt and Ridgevalley) | | | |
| i. | Residential Rate (0 - 30 m ³ /Month) | E | \$3.50 per m ³ |
| ii. | Residential Rate (Over 30 m ³ /Month) | E | \$4.00 per m ³ |
| iii. | Non Residential Rate | E | \$4.00 per m ³ |
| iv. | Installation Fee (To install from Main Line to Property Line) | E | \$8,000.00 deposit (based on actual invoice) |
| v. | Connection Fee (Rights to Connect) | E | \$500.00 per service |
| vi. | Utilities Account Deposit | E | \$100.00 |
| 4. Rural Water Distribution System (Valleyview Rural) | | | |
| i. | Residential Rate (0-30m ³ /Month) | E | \$3.50 per m ³ |
| ii. | Residential Rate (Over 30 m ³ /Month) | E | \$10.00 per m ³ |
| iii. | Non Residential Rate | E | \$10.00 per m ³ |
| iv. | Connection Fee | E | \$12,500.00 per service |
| v. | Utilities Account Deposit | E | \$100.00 |
| 5. Rural Water Distribution System (Crooked Creek and Ridgevalley) | | | |
| i. | Residential Rate (0-30 m ³ /Month) | E | \$3.50 per m ³ |
| ii. | Residential Rate (Over 30 m ³ /Month) | E | \$10.00 per m ³ |
| iii. | Non Residential Rate | E | \$10.00 per m ³ |
| iv. | Connection Fee | E | \$12,500.00 |
| v. | Utilities Account Deposit | E | \$100.00 |
| 6. Water Point Facilities | | | |
| i. | Potable Water Points Residential/Agriculture | E | \$3.50 per m ³ |
| ii. | Potable Water Points Commercial | E | \$8.50 per m ³ |
| iii. | Non-Potable Water Points | E | \$2.00 per m ³ |
| 7. Gravity Wastewater Collection System (DeBolt, Grande Cache & Ridgevalley) | | | |



Schedules of Fees Bylaw 19-836

| | Description | GST Status | Fee in \$ |
|---|--|------------|--|
| i. | Sanitary Service Installation Fee | E | \$8,000.00 deposit (based on actual invoice) |
| ii. | Connection Fee | E | \$500.00 per service |
| 8. Low Pressure Wastewater Collection System (Little Smoky, Grovedale & Ridgevalley) | | | |
| i. | Sanitary Service Installation Fee | E | \$8,000.00 deposit (based on actual invoice) |
| ii. | Connection Fee | E | \$500.00 per service |
| 9. Septage Classification | | | |
| i. | Residential – Single Family Dwelling | E | \$1.00 per m ³ (minimum \$24.00) |
| ii. | Residential – Duplex (per dwelling unit) | E | \$1.00 per m ³ (minimum \$24.00) |
| iii. | Residential – Multi Family Dwelling (per Self-Contained Dwelling Unit) | E | \$1.00 per m ³ (minimum \$24.00) |
| iv. | Commercial – General Store | E | \$1.00 per m ³ (minimum \$36.00) |
| v. | Commercial – Laundromat | E | \$1.00 per m ³ (minimum \$56.00) |
| vi. | Commercial – Hotels (Rooms & Beer Parlor) | E | \$1.00 per m ³ (minimum \$80.00) |
| vii. | Commercial – Cafes | E | \$1.00 per m ³ (minimum \$48.00) |
| viii. | Commercial – Garages | E | \$1.00 per m ³ (minimum \$48.00) |



Schedules of Fees Bylaw 19-836

| | Description | GST Status | Fee in \$ |
|--|---|------------|--|
| ix. | Commercial – Office | E | \$1.00 per m ³ (minimum \$36.00) |
| x. | Commercial – Not Elsewhere Classified | E | \$1.00 per m ³ (minimum \$36.00) |
| xi. | Community Halls & Other Recreation Facilities | E | \$1.00 per m ³ (minimum \$48.00) |
| xii. | Churches | E | \$1.00 per m ³ (minimum \$24.00) |
| xiii. | Schools (per Classroom) | E | \$1.00 per m ³ (minimum \$24.00) |
| xiv. | Royal Canadian Legion Hall | E | \$1.00 per m ³ (minimum \$24.00) |
| xv. | Senior Citizen's Drop-In Centre | E | \$1.00 per m ³ (minimum \$24.00) |
| 10. Wastewater Lagoon | | | |
| i. | Commercial/Industrial Tipping Rate | T | \$10.00 per m ³ |
| 11. Lagoon Keys | | | |
| i. | Key Fob (Initial/Replacement) | T | \$100.00 |
| 12. Waste Collection and Disposal | | | |
| i. | Residential Rates | | |
| | Residential Waste Collection Fee | T | \$10.00 per month |
| | Recycle Fee | T | \$10.00 per month |
| i. | Commercial Rates | | |
| | Commercial Waste Collection | T | \$50.00 per month |
| | Recycle Fee | T | \$10.00 per month |
| | Dumping Fee, Standard Service, per Bin | T | \$80.00 per month |



Schedules of Fees Bylaw 19-836

| | Description | GST Status | Fee in \$ |
|---------------------------------------|---|------------|--|
| 13. Penalties and Fines | | | |
| i. | General Penalties | | |
| | Setting out Prohibited Materials for Collection | E | \$200.00 |
| | Placing Hazardous Waste or Dangerous Goods out for Collection | E | \$200.00 |
| | Failure to use Appropriate Containers | E | \$200.00 |
| | Waste or Recycling Deposit Without Consent | E | \$200.00 |
| | Collection Interference | E | \$200.00 |
| | Dumping Outside the Landfill | E | \$1000.00 |
| | Failure to Store Containers Properly | E | \$200.00 |
| | Accumulation of Building Waste | E | \$200.00 |
| | Failure to Contain Construction Waste | E | \$200.00 |
| | Unsecured Load | E | double cost of materials as per schedule of fees |
| 14. Grande Cache Landfill Fees | | | |
| i. | Greenview Residents | | No Fees |
| | Mixed Load Disposal Fee (Residents and Commercial) | T | \$210.00 per tonne |
| ii. | Commercial Waste | T | \$105.00 per tonne |
| | Clean Mulch/Woodchips | T | \$55.00 per tonne |
| | Class II Acceptable Soils | T | \$55.00 per tonne |
| | Burnable Wood (Excludes Creosote, Treated Wood and Similar Materials) | T | \$55.00 per tonne |
| | Metal | T | \$55.00 per tonne |
| | Cement/Concrete | T | \$55.00 per tonne |



Schedules of Fees Bylaw 19-836

| | Description | GST Status | Fee in \$ |
|--|-------------|------------|-----------|
|--|-------------|------------|-----------|

Schedule 'H' Operations

| Operations | | | |
|---|---|---|--|
| <i>Greenview's Equipment Rates will be the same as the EOIP rates</i> | | | |
| 1. | Snowplowing Signs | | |
| i. | Any Driveway up to 400 Meters | T | \$50.00 |
| ii. | Any Driveway Greater than 400 Meters | T | \$50.00 + \$100.00 per hour for time over the first ½ hour |
| iii. | Lost or Replacement Signs | T | \$30.00 per hour |
| 2. | Culverts – Used or Salvaged | | |
| i. | 500 mm or Less | T | \$13.00 per m |
| ii. | 600 mm | T | \$15.00 per m |
| iii. | 700 mm | T | \$16.00 per m |
| iv. | 800 mm | T | \$25.00 per m |
| v. | 900 mm | T | \$28.00 per m |
| vi. | 1000 mm | T | \$29.00 per m |
| vii. | 1200 mm or Greater | T | \$30.00 per m |
| 3. | Grade Blades | | |
| i. | Used | T | \$5.00 per each blade |
| 4. | Dust Control | | |
| i. | Application of Calcium Product for Residents and Landowners (up to April 15 th Each Year) | E | \$150.00 per 200 m |
| ii. | Plus: for sections over 200 meters | E | \$5.35 per m |
| iii. | Application of Calcium Product for Multi- Parcel Subdivisions | E | \$100.00 per 100 m |



Schedules of Fees Bylaw 19-836

| | Description | GST Status | Fee in \$ |
|-------------------------------|--|------------|----------------------------|
| iv. | Application of Calcium Product for Industrial and Road Use Agreement Holders (up to April 15 th Each Year) <i>If in front of a residence, the industrial user will be charged the residential rate for a maximum distance of 200 meters</i> | E | \$1605.00 per 300 m |
| v. | Plus: for sections over 300 meters | E | \$5.35 per m |
| 5. Road Bond | | | |
| i. | Overload Road Bond Fees (Non-Refundable Payment) | T | \$1,125.00 per km |
| ii. | Plus: Security Deposit (Refundable Subject to Final Inspections) | | \$6,375.00 per km |
| iii. | Fixed Fee for the TRAVIS MJ Permitting System | E | \$15.00 per permit |
| 6. Community Aggregate | | | |
| i. | Community Aggregate Payment Levy | E | \$0.30 per tonne |
| 7. Equipment Rental | | | |
| i. | All Equipment Rentals will be Paid out of the 2015 ARCHA Book. | T | 89% of the 2015 ARCHA rate |

Schedule 'I' Planning and Development

| Planning and Development | | | |
|--------------------------|--|---|------------|
| 1. | Planning Bylaw (New or Amended) | | |
| ii. | Land Use Bylaw Amendment Application (Re-zoning) | E | \$1,500.00 |
| iii. | New Developer's Area Structure Plan | E | \$2,500.00 |
| iv. | Amendments to any ASP and MDP or Minor ASP | E | \$1,500.00 |



Schedules of Fees Bylaw 19-836

| | Description | GST Status | Fee in \$ |
|-----------|---|------------|---|
| 2. | Development Permits, General | | |
| i. | Residential - Single Detached Dwellings, Duplexes, Manufactured/ Modular/RTM/Suites) | E | \$150.00 |
| ii. | Residential - Multiple Dwellings (Triplex/Fourplex/Row Housing/Apartments, etc.) | E | \$75.00 per unit |
| iii. | All other Non-Residential/Mixed-Use/New Construction / Accessory Uses (Home Occupation / Accessory Buildings (Garages, Decks, Hot tubs, Pools, Wheelchair Ramps), Additions and All Other Uses) | E | \$50.00 fee per \$100,000.00 of completed project cost (up to a maximum of a \$10,000.00 fee) |
| iv. | Signage – Permanent / Temporary / Renewal | T | \$50.00 per sign |
| v. | Variance Request | E | \$150.00 |
| vi. | Time Extension Request by Developer per Application | E | \$150.00 |
| 3. | Subdivisions (including Bare Land Condominium Plans) | | |
| i. | Subdivision and Condominium Plan Applications, Single Lot or Consolidation | E | \$450.00 |
| | Plus: each additional lot/unit created | E | \$150.00 |
| ii. | Plan of Subdivision Endorsement Fees | E | \$150.00 per title created |
| iii. | Condominium Plan Endorsement Fees | E | \$40.00 per unit |
| iv. | Time Extension Request by Developer per Application | E | \$500.00 |
| 4. | Subdivision and Development Appeal Board | | |
| i. | Development Appeal Fee (Refundable if Applicant is Successful in their Appeal) | E | \$500.00 |
| ii. | Subdivision Appeal Fee (Refundable if Applicant is Successful in their Appeal) | E | \$500.00 |
| 5. | Development Agreement Review | | |
| i. | Residential: up to 4 Lot Subdivision | E | \$1,500.00 |
| ii. | Residential: Greater than 4 Lot Subdivision | E | \$3,000.00 |



Schedules of Fees Bylaw 19-836

| | Description | GST Status | Fee in \$ |
|--|---|------------|---------------------|
| iii. | All Other Recreational, Commercial and Industrial Subdivisions | E | \$3,000.00 |
| 6. Business Licensing | | | |
| i. | Business License Fee - New application (January 1) | E | \$100.00 |
| ii. | Business License- New Application (After July 1) or Annual Renewal | E | \$50.00 |
| 7. Business License Temporary/Special Event | | | |
| i. | Resident | E | \$30.00 |
| ii. | Non-Resident | E | \$50.00 |
| 8. Hawkers or Peddlers | | | |
| i. | Resident Annual | E | \$45.00 |
| ii. | Resident per Day | E | \$35.00 |
| iii. | Non-Resident Annual | E | \$130.00 |
| iv. | Non-Resident per Day | E | \$50.00 |
| 9. Rural Addressing Signage | | | |
| i. | Signage Permanent/ Replacement | T | \$50.00 per sign |
| 10. Signage for Subdivisions | | | |
| i. | Individual Lot Sign | T | \$50.00 per sign |
| ii. | Large Address Sign with Address Tab for Subdivisions of 4 Lots or Greater | T | \$1,000.00 per sign |
| 11. Orthographic Printing | | | |
| | <i>Based on size and quality of paper, image and graphics</i> | | |
| i. | Colour 8 ½" x 11" Orthographic (Aerial) Photo | T | \$10.00 |
| ii. | Colour 11" x 17" Orthographic (Aerial) Photo | T | \$20.00 |
| 12. Landowner Map Pricing | | | |
| i. | Hardcopy – Landowner Map (sheets 1-5). Valleyview, DeBolt, Grovedale, Grande Cache and Greenview Overview Elevation | T | \$25.00 per sheet |



Schedules of Fees Bylaw 19-836

| | Description | GST Status | Fee in \$ |
|------------|--|------------|---------------------|
| 13. | Certificate of Compliance | E | \$200.00 |
| 14. | Letter of Concurrence for Communication Tower | E | \$100.00 |
| 15. | Environmental Site Assessment Inquiries | E | \$200.00 per parcel |

*Note: GST Status- 'E' refers to tax exempt or GST included in the listed rate or fee.
'T' refers to taxable, or GST not included in the listed rate or fee.



Schedules of Fees Bylaw 19-836

Schedule 'J' Land Acquisition by Greenview for Right of Way

Valleyview Area

| Titled Parcel Size in Acres | RIGHT OF WAY FOR PROPERTIES UP TO 40 ACRES | | | | |
|--------------------------------|--|-----------|-----------|-----------|-----------|
| | Phase 1 | Phase 2 | Phase 3 | Phase 4 | Phase 5 |
| 0-1 | \$ 30,000 | \$ 22,600 | \$ 16,600 | \$ 13,600 | \$ 12,600 |
| 1-3 | \$ 12,600 | \$ 12,000 | \$ 8,750 | \$ 7,350 | \$ 7,275 |
| 3-5 | \$ 8,900 | \$ 8,600 | \$ 6,300 | \$ 5,300 | \$ 5,250 |
| 5-10 | \$ 6,100 | \$ 5,850 | \$ 4,350 | \$ 3,700 | \$ 3,650 |
| 10-20 | \$ 3,900 | \$ 3,900 | \$ 2,850 | \$ 2,700 | \$ 2,600 |
| 20-30 | \$ 2,800 | \$ 2,750 | \$ 2,700 | \$ 2,600 | \$ 2,550 |
| 30-40 | \$ 2,500 | \$ 2,500 | \$ 2,500 | \$ 2,500 | \$ 2,500 |
| 40+ | \$ 2,400 | \$ 2,400 | \$ 2,400 | \$ 2,400 | \$ 2,400 |

DeBolt Area

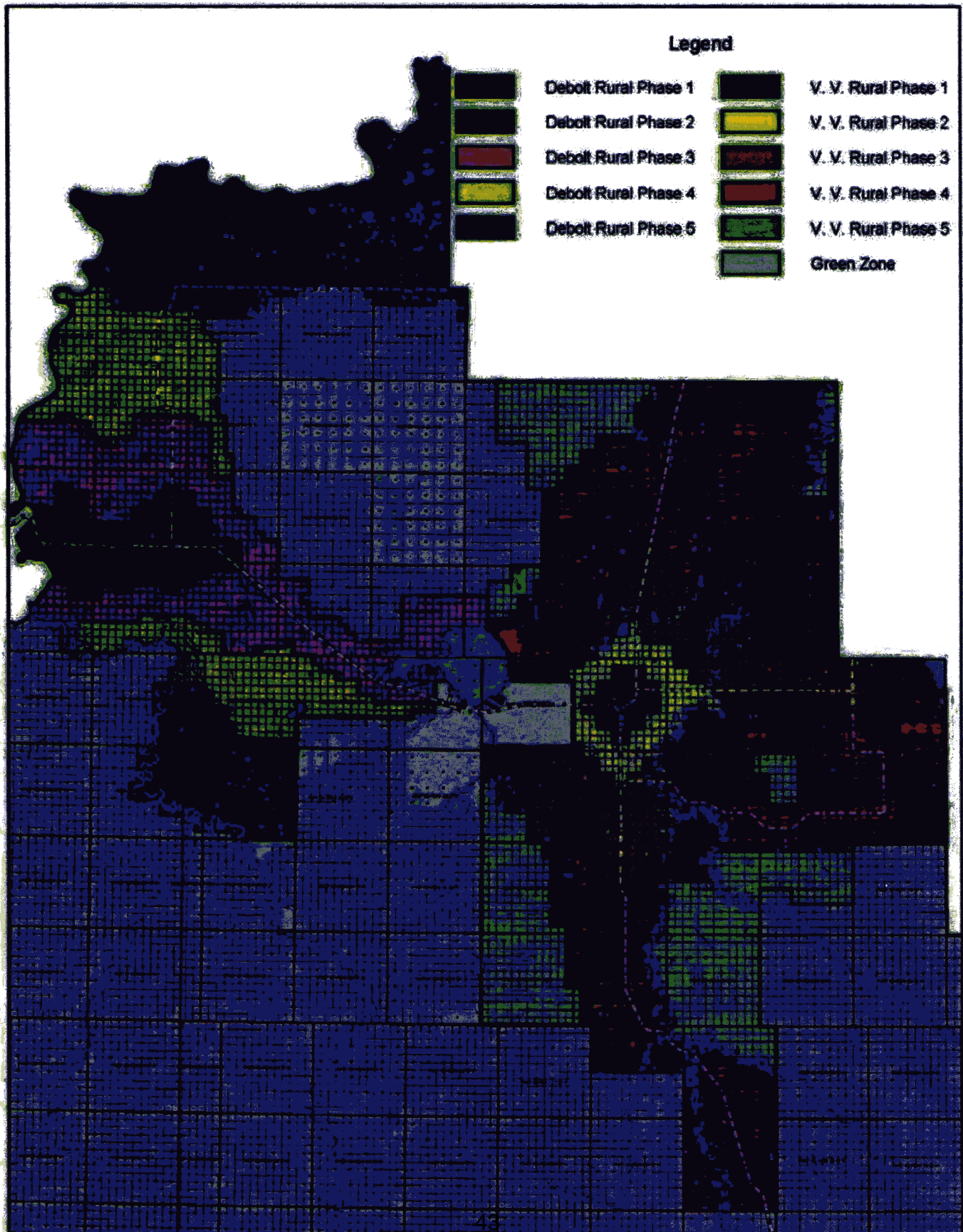
| Titled Parcel Size in Acres | RIGHT OF WAY FOR PROPERTIES UP TO 40 ACRES | | | | |
|--------------------------------|--|-----------|-----------|-----------|-----------|
| | Phase 1 | Phase 2 | Phase 3 | Phase 4 | Phase 5 |
| 0-1 | \$ 40,600 | \$ 36,600 | \$ 32,600 | \$ 24,600 | \$ 16,600 |
| 1-3 | \$ 20,600 | \$ 8,600 | \$ 16,400 | \$ 12,600 | \$ 8,600 |
| 3-5 | \$ 14,750 | \$ 13,250 | \$ 11,600 | \$ 9,050 | \$ 6,200 |
| 5-10 | \$ 9,900 | \$ 8,900 | \$ 7,850 | \$ 6,150 | \$ 4,250 |
| 10-20 | \$ 6,250 | \$ 5,650 | \$ 5,000 | \$ 3,950 | \$ 2,850 |
| 20-30 | \$ 3,810 | \$ 3,950 | \$ 3,550 | \$ 2,850 | \$ 2,700 |
| 30-40 | \$ 3,450 | \$ 3,150 | \$ 2,800 | \$ 2,500 | \$ 2,500 |
| 40+ | \$ 2,400 | \$ 2,400 | \$ 2,400 | \$ 2,400 | \$ 2,400 |

Grovedale Area

| Titled Parcel Size in Acres | Landry Heights Price/Acre | Grovedale Price/Acre | Aspen Grove Price/Acre | RIGHT OF WAY FOR PROPERTIES UP TO 40 ACRES | | | | | |
|--------------------------------------|------------------------------|-------------------------|---------------------------|--|-----------|-----------|-----------|-----------|-----------|
| | | | | Phase 1 | Phase 2 | Phase 3 | Phase 4 | Phase 5 | Phase 6 |
| 0-1 | \$ 55,600 | \$ 43,600 | \$ 23,600 | \$ 49,000 | \$ 47,600 | \$ 30,600 | \$ 29,100 | \$ 26,600 | \$ 25,600 |
| 1-3 | \$ 27,900 | \$ 22,200 | \$ 12,400 | \$ 25,100 | \$ 2,410 | \$ 15,400 | \$ 14,900 | \$ 13,700 | \$ 13,250 |
| 3-5 | \$ 19,750 | \$ 15,750 | \$ 8,900 | \$ 17,750 | \$ 17,100 | \$ 10,950 | \$ 10,600 | \$ 9,800 | \$ 9,450 |
| 5-10 | \$ 13,150 | \$ 10,550 | \$ 6,050 | \$ 11,850 | \$ 11,450 | \$ 7,400 | \$ 7,200 | \$ 6,650 | \$ 6,450 |
| 10-20 | \$ 8,250 | \$ 6,650 | \$ 3,900 | \$ 7,450 | \$ 7,200 | \$ 4,750 | \$ 4,600 | \$ 4,250 | \$ 4,150 |
| 20-30 | \$ 5,700 | \$ 4,600 | \$ 2,800 | \$ 5,200 | \$ 5,000 | \$ 3,400 | \$ 3,300 | \$ 3,050 | \$ 2,950 |
| 30-40 | \$ 4,600 | \$ 3,600 | \$ 2,500 | \$ 4,050 | \$ 3,900 | \$ 2,700 | \$ 2,600 | \$ 2,500 | \$ 2,500 |
| 40+ | \$ 2,400 | \$ 2,400 | \$ 2,400 | \$ 2,400 | \$ 2,400 | \$ 2,400 | \$ 2,400 | \$ 2,400 | \$ 2,400 |

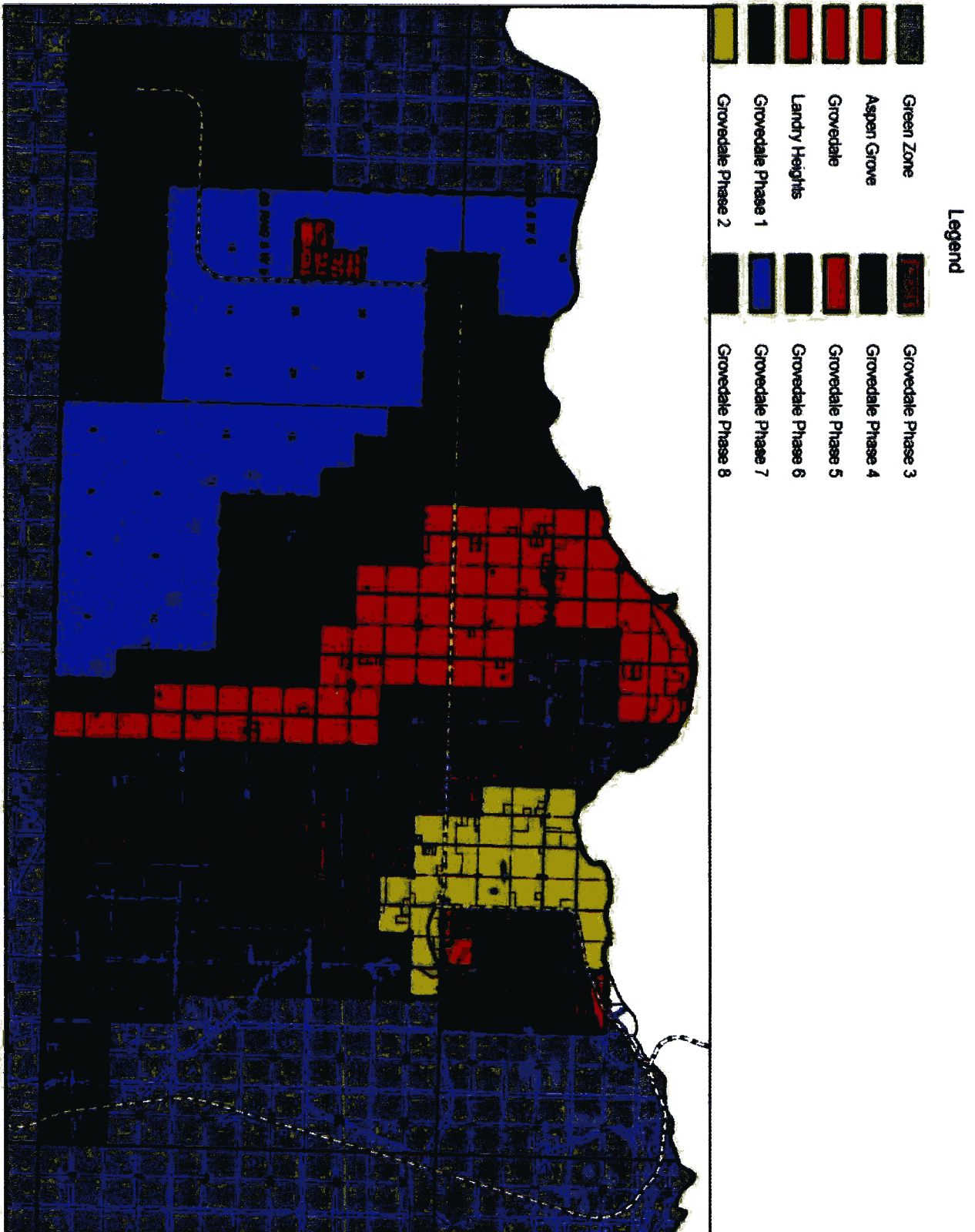


Schedules of Fees Bylaw 19-836





Schedules of Fees Bylaw 19-836





BYLAW NO. 19- 836
of the Municipal District of Greenview No. 16

A Bylaw of the Municipal District of Greenview No. 16, in the Province of Alberta to amend Bylaw 19-816 being the "Schedules of Fees" Bylaw for the Municipal District of Greenview No. 16.

THEREFORE, pursuant to Section 191(1) of the Municipal Government Act, Chapter M-26, R.S.A 2000, as amended, the Council of the Municipal District of Greenview No. 16, duly assembled enacts as follows:

1. That Section 9 Business License Commercial/ Industrial Titled Land, subsection (i) and (ii) be removed from Schedule 'I' of the Schedules of Fees.
2. That Section 2 Development Permits, General, subsection (iii) of Schedule 'I' be amended to a maximum of \$10,000.
3. This Bylaw shall come into force and effect upon the day of final passing.

Read a first time this 9th day of December, 2019.

Read a second time this 9th day of December, 2019.

Read a third time and passed this 13th day of January, 2020

REEVE

CHIEF ADMINISTRATIVE OFFICER



BYLAW NO. 20-854 of the Municipal District of Greenview No. 16

A Bylaw of the Municipal District of Greenview No. 16, in the Province of Alberta for the purpose of establishing rates and fees for the provision of goods and services, or on behalf of Greenview, as attached to this bylaw as the Schedules of Fees.

Whereas, pursuant to Section 7 and 8 of the Municipal Government Act R.S.A 2000, Chapter M-26 as amended, the Planning Act, Chapter P-9, R.S.A. and amendments thereto, and the Taxation Act, Chapter M-31, R.S.A. and amendments thereto, a municipal Council has the authority to pass a bylaw establishing fees for the provision of services; and

Whereas, The Council of the Municipal District of Greenview No. 16, duly assembled deems it expedient to revise the Schedules of Fees for the Municipality;

Therefore, the Council of the Municipal District of Greenview No. 16, duly assembled enacts as follows:

1. Title

1.1 This bylaw may be cited as the “Schedules of Fees Bylaw”.

2. Definitions

2.1 **Greenview** means the Municipal District of Greenview No. 16.

3. Application

3.1 This bylaw establishes the rates, fees and charges for certain goods and services provided by Greenview.

3.2 This bylaw and the attached Schedules will be reviewed as required and amendments to any of the rates and fees must be made by Council bylaw in accordance with Section 191(1) of the Municipal Government Act.

3.3 All fees, fines, rates and penalties provided for in other current bylaws shall remain in full force and effect and may be charged in addition to the provisions stated in this bylaw.

4. Rates and fees

4.1 The rates and fees are established in the attached Schedules ‘A’ through ‘J’ and form part of this bylaw.

5. Severability and Effect

5.1 Should any provision of this bylaw be found to be invalid by a Court of competent jurisdiction, then such invalid provision shall be severed, and the remaining bylaw shall be maintained.



BYLAW NO. 20-854
of the Municipal District of Greenview No. 16

5.2 Bylaw 19-816 and Bylaw 19-836 are hereby repealed.

5.3 This bylaw shall come into force and effect upon the day of final passing.

Read a first time this 13th day of July, 2020.

Read a second time this 24th day of August, 2020.

Read a third time and passed this ____ day of _____, 2020

REEVE

CHIEF ADMINISTRATIVE OFFICER



Schedules of Fees
Bylaw 20-854

Schedule 'A' Agricultural Services

| | Description | GST Status* | Fee in \$ |
|---|---|-------------|--|
| Agricultural Services | | | |
| <i>All decisions being at the Agricultural Fieldsman's discretion</i> | | | |
| 1. | Haying or Pasturing Permits | | |
| i. | Application fee | E | \$100.00 |
| ii. | Plus Annual per Acre Charge | E | \$15.00 |
| 2. | Spray Exemption Signs | | |
| i. | Spray Exemption Signs (One-Time Free Only) | T | Free |
| ii. | Lost or Replacement Signs (each) | T | \$30.00 |
| 3. | Guides | | |
| i. | Guide to Crop Protection - Chemical/Cultural | T | \$12.00 |
| ii. | Weed Seedling Guide | T | \$10.00 |
| 4. | Picnic Tables | | |
| i. | Non-Profit Organizations - Community Event | | No charge |
| ii. | Private Affair, Non-Public Event - Maximum of 10 days | T | \$10.00 per day |
| iii. | Delivery Charge, per loaded km | T | \$2.00 per km |
| 5. | Barbecue | | |
| i. | Non-Profit Organizations - Community Event | | No charge |
| ii. | Private Affair, Non-Public Event – (Maximum of 10 days) | T | \$100.00 per day |
| iii. | Deposit (All Organizations) | E | \$200.00 |
| iv. | Delivery charge (per loaded km) | T | \$2.00 per km |
| 6. | Weed & Insect Control Equipment | | |
| i. | Field Sprayer c/w GPS <i>All Locations</i> | T | \$50.00 Each Day (3 Days Maximum if Lineup) |



Schedules of Fees Bylaw 20-854

| | Description | GST Status* | Fee in \$ |
|-----------|---|-------------|---|
| ii. | Boomless Sprayer <i>Valleyview, Grovedale</i> | T | \$20.00 Each Day (3 Days Maximum if Lineup) |
| iii. | Water Tank on Trailer (For Spraying) <i>Valleyview, Grovedale</i> | T | \$25.00 Each Day (3 Days Maximum if Lineup) |
| iv. | Estate Sprayer (Pull Type) <i>All Locations</i> | T | \$20.00 Each Day (3 Days Maximum if Lineup) |
| v. | Estate Sprayer (3 Point Hitch) <i>Valleyview</i> | T | \$20.00 Each Day (3 Days Maximum if Lineup) |
| vi. | Quad Mount Sprayer <i>All Locations</i> | T | \$10.00 Each Day (3 Days Maximum if Lineup) |
| vii. | Backpack Sprayer (15 Liters) <i>Valleyview, Grovedale</i> | T | \$5.00 Each Day (3 Days Maximum if Lineup) |
| viii. | Granular Pesticide Bait Applicator (Holds 135 lbs Bran) <i>Valleyview</i> | T | \$30.00 Each Day (3 Days Maximum if Lineup) |
| | | | |
| 7. | Spreaders | | |
| i. | Manure Spreader <i>Valleyview, Grovedale</i> | T | \$200.00 Each Day (3 Days Maximum if Lineup) |
| ii. | Fertilizer Spreader <i>Valleyview</i> | T | \$100.00 Each Day (3 Days Maximum if Lineup) |
| | | | |
| 8. | Earth Moving Equipment | | |



Schedules of Fees Bylaw 20-854

| | Description | GST Status* | Fee in \$ |
|------------|--|--------------|---|
| i. | 1000 Earth Mover <i>All Locations</i> | T | \$200.00 Each Day (3 Days Maximum if Lineup) |
| ii. | 900 Earth Mover <i>Grovedale</i> | T | \$150.00 Each Day (3 Days Maximum if Lineup) |
| iii. | 425 Earth Mover <i>Grovedale</i> | T | \$100.00 Each Day (3 Days Maximum if Lineup) |
| iv. | 12' Pull-Type Blade <i>Valleyview</i> | T | \$50.00 Each Day (3 Days Maximum if Lineup) |
| v. | Vee Ditcher <i>Valleyview</i> | T | \$50.00 Each Day (3 Days Maximum if Lineup) |
| | | | |
| 9. | Post Pounders | | |
| i. | Post Pounder <i>All Locations</i> | T | \$125.00 Each Day (3 Days Maximum if Lineup) |
| ii. | Post Pounder <i>All Locations</i> | T | ½ day rate \$65.00 each |
| 10. | Bin Crane | | |
| i. | Bin Crane <i>Valleyview, Grovedale</i> | T | \$100.00 Each Day (3 Days Maximum if Lineup) |
| | | | |
| 11. | Cattle Equipment | | |
| i. | Cattle Squeeze <i>All Locations</i> | T | \$25.00 Each Day (3 Days Maximum if Lineup) |



Schedules of Fees Bylaw 20-854

| | Description | GST Status* | Fee in \$ |
|------------|---|-------------|--|
| ii. | Loading Chute <i>All Locations</i> | T | \$25.00 Each Day (3 Days Maximum if Lineup) |
| iii. | Panel Trailer <i>Valleyview, Grovedale</i> | T | \$25.00 Each Day (3 Days Maximum if Lineup) |
| iv. | Spare Panels <i>Crooked Creek, Grovedale</i> | T | Free First 3 Days, \$5.00 Each Additional Day |
| v. | Tag Reader <i>Valleyview</i> | T | Free, \$100.00 Deposit Required (3 Days Maximum if Lineup) |
| | | | |
| 12. | Conservation Equipment | | |
| i. | 50' Heavy Harrow with Granular Applicator <i>Valleyview</i> | T | \$150.00 Each Day (3 Days Maximum if Lineup) |
| ii. | 33' Heavy Harrow with Granular Applicator <i>Grovedale</i> | T | \$150.00 Each Day (3 Days Maximum if Lineup) |
| iii. | 30' Land Roller <i>Valleyview, Grovedale</i> | T | \$200.00 Each Day (3 Days Maximum if Lineup) |
| iv. | 14' Heavy Disc <i>Valleyview, Grovedale</i> | T | \$250.00 Each Day (3 Days Maximum if Lineup) |
| v. | No Till Drill <i>Valleyview</i> | T | \$150.00 Each Day (3 Days Maximum if Lineup) |
| | | | |



Schedules of Fees Bylaw 20-854

| | Description | GST Status* | Fee in \$ |
|------------|---|-------------|---|
| 13. | Broadcast Seeders | | |
| i. | Truck Mount Seeder <i>Valleyview</i> | T | \$10.00 Each Day (3 Days Maximum if Lineup) |
| ii. | Quad Mount Seeder <i>Valleyview</i> | T | \$10.00 Each Day (3 Days Maximum if Lineup) |
| iii. | Hand Seeder <i>Valleyview</i> | T | Free First 3 Days, \$5.00 Each Additional Day |
| iv. | Three Point Hitch Mount Seeder | T | \$15.00 |
| 14. | Water Pumping Equipment | | |
| i. | Water Pump and Pipe Trailer (AB. Agriculture Unit) <i>Valleyview</i> | T | \$250.00 Each Day (3 Days Maximum if Lineup) |
| 15. | Miscellaneous Equipment | | |
| i. | Bag Roller <i>Valleyview</i> | T | \$50.00 Each Day (3 Days Maximum if Lineup) |
| ii. | Survey Equipment <i>Valleyview</i> | T | \$10.00 Each Day (3 Days Maximum if Lineup) |
| iii. | Metal Detector <i>Valleyview</i> | T | \$10.00 Each Day (3 Days Maximum if Lineup) |
| iv. | Hay Sampler, Measuring Wheel, Bin Probe, Soil Sampler <i>Valleyview</i> | T | Free First 3 Days, \$5.00 Each Additional Day |
| v. | Scare Cannons <i>Valleyview</i> | T | Free First 3 Days, \$5.00 Each Additional Day |



Schedules of Fees Bylaw 20-854

| | Description | GST Status* | Fee in \$ |
|--|---|-------------|---|
| vi. | Rodent Traps (Two Styles) <i>Valleyview, Grovedale</i> | T | \$10.00 Each Week, \$100 Deposit Required (1 Week Maximum if Lineup) |
| vii. | Purchase Magpie Traps | E | \$150.00 |
| viii. | Grain Vacuum <i>Valleyview</i> | T | \$50.00 Each Day (3 Days Maximum if Lineup) |
| ix. | Bale Wagon <i>Valleyview, Grovedale</i> | T | \$150.00 Each Day (3 Days Maximum if Lineup) |
| x. | Pressure Washer on Trailer <i>Valleyview</i> | T | \$50.00 Each Day (3 Days Maximum if Lineup) |
| 16. Recovery of A.S.B. Equipment **Minimum one hour charge for recovery of equipment** | | | |
| i. | Recovery of Rental Equipment Requiring 1-ton min. for Transport | T | \$100.00 per hour |
| ii. | Recovery of Rental Equipment Requiring Vehicle under 1-ton for Transport | T | \$75.00 per hour |
| iii. | Cleaning and Removal of Contaminated Soil (Remediation Purposes for Club Root) | T | \$60.00 per hour + \$75.00 Disposal Fee |
| iv. | Repair of Damaged Rental Equipment due to Negligent Use | E | Full cost of repair |
| 17. Adult Wolf Carcass | | | |
| | | E | \$300.00 |
| 18. | Beaver Tail | E | \$30.00 |



Schedules of Fees Bylaw 20-854

Schedule 'B' Family and Community Support Services

| Family and Community Support Services | | | |
|---------------------------------------|--|---|----------|
| 1. | Home Support <i>*This fee can be varied as evaluated and approved by the FCSS Manager.</i> | E | \$20.00* |
| 2. | Summer Day Camps | E | \$40.00 |

Schedule 'C' Recreation

| Recreation Grande Cache | | | |
|-------------------------|--|-------------|-----------|
| | Description | GST Status* | Fee in \$ |
| 1. | Grande Cache Arena Rentals (With Ice/ per hour) | | |
| i. | Adult rate | T | \$170.00 |
| ii. | Adult Non-Prime (Before 3:30 p.m. on Regular School Days) | T | \$109.25 |
| iii. | Youth Rate | T | \$88.25 |
| iv. | Youth Non-prime (Before 3:30 p.m. on Regular School Days) | T | \$55.00 |
| v. | Public Skating Sponsorship | T | 148.00 |
| 2. | Arena and Curling Rink Surfaces (No Ice) | | |
| i. | Adult Rate per Hour | T | \$76.00 |
| ii. | Youth Rate per Hour | T | \$38.00 |
| iii. | Maximum Day Rate | T | \$373.00 |
| 3. | Aquatic Centre | | |
| i. | Private Rental | T | \$134.50 |



Schedules of Fees Bylaw 20-854

| | | | |
|-----------|-------------------------------------|---|----------|
| ii. | Lane Pool/ Swim Club | T | \$88.50 |
| iii. | Wave Crashers (During Public Swim) | T | \$107.00 |
| iv. | Grande Bash (Private Rental) | T | \$180.00 |
| v. | Extra Lifeguard | T | \$30.50 |
| vi. | Sponsorship | T | \$184.00 |
| | | | |
| 4. | Locker Rental | | |
| i. | Annual (Private Locker) | T | \$100.00 |
| ii. | Lost or Damaged Key Replacement | T | \$35.00 |
| | | | |
| 5. | Recreation Centre Fees | | |
| i. | Daily Pass | | |
| | Family | T | \$14.50 |
| | Adult (18+) | T | \$6.75 |
| | Youth (5-17) | T | \$5.00 |
| | Senior (60-69) | T | \$5.50 |
| | Senior (70+) and Children (Under 5) | T | Free |
| | | | |
| ii. | 10x Pass | | |
| | Family | T | \$115.75 |
| | Adult (18+) | T | \$53.75 |
| | Youth (5-17) | T | \$37.75 |
| | Senior (60-69) | T | \$42.50 |
| | Senior (70+) and Children (Under 5) | T | Free |
| | | | |
| iii. | Monthly Pass | | |
| | Family | T | \$126.75 |
| | Adult (18+) | T | \$58.75 |
| | Youth (5-17) | T | \$41.00 |
| | Senior (60-69) | T | \$46.00 |



Schedules of Fees Bylaw 20-854

| | | | |
|-----------|---|---|--------------------|
| | Senior (70+) and Children (Under 5) | T | Free |
| | | | |
| iv. | 3-Month Pass | | |
| | Family | T | \$316.75 |
| | Adult (18+) | T | \$146.25 |
| | Youth (5-17) | T | \$101.25 |
| | Senior (60-69) | T | \$114.25 |
| | Senior (70+) and Children (Under 5) | T | Free |
| | | | |
| v. | 6-Month Pass | | |
| | Family | T | \$569.75 |
| | Adult (18+) | T | \$262.25 |
| | Youth (5-17) | T | \$182.75 |
| | Senior (60-69) | T | \$205.25 |
| | Senior (70+) and Children (Under 5) | T | Free |
| | | | |
| vi. | Annual Pass | | |
| | Family | T | \$949.50 |
| | Adult (18+) | T | \$437.00 |
| | Youth (5-17) | T | \$304.25 |
| | Senior (60-69) | T | \$342.25 |
| | Senior (70+) and Children (Under 5) | T | Free |
| | | | |
| 6. | Meeting or Banquet Rooms and Curling Club Lounge | | |
| i. | Rental Rate with Clean- up | T | \$38.75 per hour |
| ii. | Association Rate/ Not- for-Profit | T | \$23.50 per hour |
| | | | |
| 7. | Equipment Rental | | |
| i. | Portable Sound System | T | \$100.00 per event |



Schedules of Fees Bylaw 20-854

| | | | |
|------------|---|---|----------------------|
| ii. | Portable Stage | T | \$170.00 per event |
| iii. | Portable Floor (Damage Deposit Required) | T | \$100.00 per event |
| iv. | Tables (Not Included in the Facility Rental) | T | \$6.50 per table |
| v. | Chairs (Those not Included in the in the Facility Rental) | T | \$3.00 per chair |
| vi. | Boom Lift (Includes Operator) | T | \$140.00 per hour |
| | | | |
| 8. | Advertising | | |
| i. | Wall Rink Board | T | \$425.00 per year |
| ii. | Ice Logo | T | \$650.00 per year |
| iii. | Zamboni | T | \$650.00 per side |
| | | | |
| 9. | Administrative Items | | |
| i. | Labour (Clean-up, Set- up, etc.) | T | \$57.00 per person |
| ii. | Event and Equipment Rental Damage Deposit | T | \$400.00 per booking |
| iii. | Photocopying, Black and White, | T | \$0.10 per page |
| iv. | Photocopying, Color | T | \$0.15 per page |
| v. | Replacement Membership cards | T | \$5.00 per card |
| | | | |
| 10. | Ball Diamonds | | |
| i. | Rental Rate | T | \$40.50 per Game |
| ii. | Tournament Rate (Maximum Day Rate per Ball Diamond) | T | \$121.50 |
| | | | |
| 11. | Grande Cache Campground | | |
| i. | Full Service (Includes Power, Water and Sewer) | T | \$38.10 per night |



Schedules of Fees Bylaw 20-854

| | | | |
|------------|--|--|-------------------|
| ii. | Partial Service (Includes Power and Water) | T | \$33.33 per night |
| iii. | Open Tent area | T | \$23.81 per night |
| iv. | Monthly site rate (30 days) full service | T | \$975.00 |
| | | | |
| 12. | Grande Cache Tourism and Information Centre | | |
| i. | Chamber Room (used for meetings or workshops, sits 40-50 people) | Includes: 20" Television, projector screen, DVD/VHS player, flip chart, whiteboard, refrigerator, coffee maker, kettle *Note: if time extends beyond 9 hours, the cost is \$30.00 per hour for every extra hour | |
| | Per Hour | T | \$30.00 |
| | Per Day | T | \$150.00 |
| ii. | Theatre Room (Used for meetings, workshops, movies, sits 30-40 people) | Includes: projector screen, DVD, VHS player, flip chart, kitchen facilities *Note: if time extends beyond 9 hours, the cost is \$30.00 per hour for every extra hour | |
| | Per Hour | T | \$30.00 |
| | Per Day | T | \$150.00 |
| iii. | Mezzanine Level (used for receptions, open houses, book launches. Can be included with the Chamber Room). | Includes: access to outside balcony *Note: if time extends beyond 9 hours, the cost is \$30.00 per hour for every extra hour | |
| | Per Hour | T | \$30.00 |
| | Per Day | T | \$150.00 |
| | Per Hour with Chamber Room | T | \$50.00 |
| | Per Day with Chamber Room | T | 250.00 |
| | | | |
| 13. | Eagles Nest Hall (Capacity up to 65 people with tables and chairs) | | |
| | Per Hour | T | \$12.50 |
| | Per Day | T | \$62.50 |



Schedules of Fees Bylaw 20-854

| | | | | |
|---|---|---|---|--------------------------|
| 14. | Grande Cache Cemetery | | May 15 to November 15 | November 16 to May 14 |
| i. | Open and Close Fees | | | |
| | Full Casket Adult | T | \$600.00 | \$700.00 |
| | Full Casket Child | T | \$400.00 | \$500.00 |
| | Cremation | T | \$450.00 | \$550.00 |
| | Surcharge (After 4:00 p.m. Working Days) | T | \$150.00 | |
| | Disinterment | T | Double the cost of opening and closing | |
| ii. | Purchase of Plot | T | \$550.00 | |
| iii. | Columbarium Fees | | | |
| | Niche Price (Includes Opening/Closing Fee) | | \$1,050.00 | |
| | Note: Each Niche can Hold 2 Urns | | | |
| | | | | |
| Recreation Greenview Regional Multiplex | | | | |
| 15. | Recreation Centre Fees | | | |
| i. | Daily Pass | | | |
| | Family | T | \$19.50 | |
| | Adult (18+) | T | \$8.50 | |
| | Youth (13-17) | T | \$6.00 | |
| | Child (3-12) | T | \$4.50 | |
| | Senior (60-69) | T | \$6.00 | |
| | Senior (70+) and Children (Under 3) | T | Free | |
| | | | | |
| ii. | 10x Pass | | | |
| | Family | T | \$175.50 | |
| | Adult (18+) | T | \$76.50 | |
| | Youth (13-17) | T | \$54.00 | |
| | Child (3-12) | T | \$40.50 | |
| | Senior (60-69) | T | \$54.00 | |



Schedules of Fees Bylaw 20-854

| | | | |
|------|--|---|-----------|
| | Senior (70+) and Children (Under 3) | T | Free |
| | | | |
| iii. | Monthly Pass | | |
| | Family | T | \$110.00 |
| | Adult (18+) | T | \$50.00 |
| | Youth (13-17) | T | \$35.00 |
| | Child (3-12) | T | \$25.00 |
| | Senior (60-69) | T | \$35.00 |
| | Senior (70+) and Children (Under 3) | T | Free |
| | | | |
| iv. | 6-Month Pass | | |
| | Family | T | \$605.00 |
| | Adult (18+) | T | \$275.00 |
| | Youth (13-17) | T | \$192.50 |
| | Child (3-12) | T | \$137.50 |
| | Senior (60-69) | T | \$192.50 |
| | Senior (70+) and Children (Under 3) | T | Free |
| | | | |
| v. | Annual Pass | | |
| | Family | T | \$1100.00 |
| | Adult (18+) | T | \$500.00 |
| | Youth (13-17) | T | \$350.00 |
| | Child (3-12) | T | \$250.00 |
| | Senior (60-69) | T | \$350.00 |
| | Senior (70+) and Children (Under 3) | T | Free |
| | | | |
| 16. | Recreation Centre Fees (Corporate Rate – 15% Discount) | | |
| | | | |
| i. | 10x Pass | | |
| | Family | T | \$149.00 |



Schedules of Fees Bylaw 20-854

| | | | |
|------------|---|---|----------|
| | Adult (18+) | T | \$65.00 |
| | Youth (13-17) | T | \$46.00 |
| | Child (3-12) | T | \$34.50 |
| | Senior (60-69) | T | \$46.00 |
| | Senior (70+) and Children (Under 3) | T | Free |
| | | | |
| ii. | Monthly Pass | | |
| | Family | T | \$93.50 |
| | Adult (18+) | T | \$42.50 |
| | Youth (13-17) | T | \$29.50 |
| | Child (3-12) | T | \$21.50 |
| | Senior (60-69) | T | \$29.50 |
| | Senior (70+) and Children (Under 3) | T | Free |
| | | | |
| iii. | 6-Month Pass | | |
| | Family | T | \$514.25 |
| | Adult (18+) | T | \$233.75 |
| | Youth (13-17) | T | \$162.25 |
| | Child (3-12) | T | \$118.25 |
| | Senior (60-69) | T | \$162.25 |
| | Senior (70+) and Children (Under 3) | T | Free |
| | | | |
| iv. | Annual Pass | | |
| | Family | T | \$935.00 |
| | Adult (18+) | T | \$425.00 |
| | Youth (13-17) | T | \$297.50 |
| | Child (3-12) | T | \$212.50 |
| | Senior (60-69) | T | \$297.50 |
| | Senior (70+) and Children (Under 3) | T | Free |
| | | | |
| 17. | Personal Training Rates | | |



Schedules of Fees Bylaw 20-854

| | | | |
|------------|---|---|----------------|
| i. | One Person | T | |
| | 3 Sessions | T | \$131.25 |
| | 5 Sessions | T | \$212.50 |
| | 10 Sessions | T | \$412.50 |
| | 20 Sessions | T | 800.00 |
| | | | |
| ii. | Small Group (2 People) | | |
| | 1 Session | | \$65.00 |
| | 3 Sessions | T | \$180.00 |
| | 5 Sessions | T | \$275.00 |
| | 10 Sessions | T | \$500.00 |
| | 20 Sessions | T | \$900.00 |
| | | | |
| iii. | Small Group (3 People) | | |
| | 1 Session | T | \$90.00 |
| | 3 Sessions | T | \$247.00 |
| | 5 Sessions | T | \$375.00 |
| | 10 Sessions | T | \$675.00 |
| | 20 Sessions | T | \$1200.00 |
| | | | |
| 18. | Pool Rental | | |
| i. | Leisure or Lane Pool Rental up to 35 People and 1 Lifeguard | T | \$65.00/ hour |
| ii. | Leisure and Lane Pool Rental up to 70 People and 2 Lifeguards | T | \$120.00/ hour |
| iii. | Hot Tub Rental for 35 People and 1 Lifeguard | T | \$35.00/ hour |
| iv. | Wibit Rental (with additional \$200.00 Damage Deposit) | T | \$35.00/ hour |
| v. | Hourly Charges for Groups | | |
| | 105-140 | T | \$155.00 |
| | 140-175 | T | \$190.00 |
| | 175-210 | T | \$225.00 |
| | 210-245 | T | \$260.00 |
| | 245-280 | T | \$295.00 |



Schedules of Fees Bylaw 20-854

| | | | |
|------------|--|----------|----------------------|
| 19. | Party Room (3 Hour rental Minimum with a \$200.00 Damage Deposit) | T | \$30.00/ hour |
| 20. | Field House (1/3 of Gym) | | |
| i. | Daily | T | \$240.00 |
| ii. | Weekday Hourly | T | \$30.00 |
| iii. | Weekend Hourly | T | \$50.00 |
| iv. | Special Youth Rate Hourly | T | \$20.00 |
| 21. | Field House (2/3 of Gym) | | |
| i. | Daily | T | \$480.00 |
| ii. | Weekday Hourly | T | \$60.00 |
| iii. | Weekend Hourly | T | \$100.00 |
| iv. | Special Youth Rate Hourly | T | \$40.00 |
| 22. | Field House (Full Gym) | | |
| i. | Daily (Weekday) | T | 600.00 |
| ii. | Weekend Social Function (Daily) | T | \$1600.00 |
| iii. | Weekend Non-Social Function (Daily) | T | \$720.00 |
| iv. | Special Event Youth Rate (Hourly) | T | \$60.00 |
| 23. | Dance Studio (A or B) | | |
| i. | Daily | T | \$100.00 |
| ii. | Hourly | T | \$30.00 |
| iii. | Weekend | T | \$150.00 |
| 24. | Dance Studio (A and B) | | |
| i. | Daily | T | \$175.00 |
| ii. | Hourly | T | \$50.00 |
| iii. | Weekend | T | \$200.00 |
| 25. | Kitchen and Bar Rental | | |
| i. | Weekday (Daily) | T | \$200.00 |



Schedules of Fees Bylaw 20-854

| | | | |
|------------|---|---|----------|
| ii. | Weekend (Daily) | T | \$300.00 |
| | | | |
| 26. | Child Mind | | |
| i. | Per Hour Per Child | T | \$5.00 |
| ii. | 10 Punch Pass | T | \$40.00 |
| iii. | 20 Punch Pass | T | \$70.00 |
| | | | |
| 27. | Board Room (A or B) | | |
| i. | Daily | T | \$150.00 |
| ii. | Hourly | T | \$30.00 |
| | | | |
| 28. | Board Room (A and B) | | |
| i. | Daily | T | \$250.00 |
| ii. | Hourly | T | \$50.00 |
| | | | |
| 29. | Stage Rental (with 500.00 Deposit) | T | \$500.00 |
| | | | |
| 30. | Dance Floor (with 500.00 Deposit) | T | \$500.00 |
| | | | |

Schedule 'D' Hamlet of Grande Cache Animal Control

| Hamlet of Grande Cache Animal Control | | | |
|---------------------------------------|--|---|---------|
| 1. | Licensing Fees for Dogs | | |
| i. | Female (Unaltered) Before February 1 | E | \$30.00 |
| ii. | Male (Unaltered) Before February 1 | E | \$30.00 |
| iii. | Altered Dog (Spayed or Neutered) Before February 1 | E | \$20.00 |
| iv. | License after February 1 (In addition to the relevant fee above) | E | \$10.00 |
| v. | Replacement Tag | E | \$5.00 |
| | | | |



Schedules of Fees Bylaw 20-854

| | | | |
|-----------|---|---|--|
| 2. | Dog Team/Kennel License | | |
| i. | Kennel (Requires a Development Permit and Business License for Commercial Kennel) | E | Cost of Development Permit/business license where applicable |
| ii. | Per Dog Fee as listed above | E | As per Section 1 |
| 3. | Licensed Dog Impoundment | | |
| i. | First Impoundment | E | \$50.00 |
| ii. | Second Impoundment | E | \$100.00 |
| iii. | Third Impoundment | E | \$150.00 |
| iv. | All Subsequent Impoundments | E | \$200.00 |
| 4. | Unlicensed Dog Impoundment | | |
| i. | First Impoundment | E | \$100.00 |
| ii. | Second Impoundment | E | \$165.00 |
| iii. | Third Impoundment | E | \$215.00 |
| iv. | All Subsequent Impoundments | E | \$290.00 |
| 5. | Viscous Dog Impoundment | | |
| i. | First Impoundment | E | \$200.00 |
| ii. | Second Impoundment | E | \$500.00 |
| iii. | Third and All Subsequent Impoundments | E | \$1,000.00 |
| 6. | Other Domestic Animals Impoundment | | |
| i. | First Impoundment | E | \$35.00 |
| ii. | Second Impoundment | E | \$50.00 |
| iii. | Third and All Subsequent Impoundments | E | \$75.00 |
| 7. | Livestock Impoundment | | |
| i. | First Impoundment | E | \$150.00 |
| ii. | Second Impoundment | E | \$250.00 |
| iii. | Third and All Subsequent Impoundments | E | \$750.00 |
| 8. | Custodial Fees | | |



Schedules of Fees Bylaw 20-854

| | | | |
|------------------------------|---|---|--|
| i. | Dog per Day (Plus Actual Cost to Board) | E | \$9.50 |
| ii. | Other Domestic Animal per Day (Plus Actual Cost to Board) | E | \$2.00 |
| iii. | Livestock (Plus \$10.00, Care and Sustenance per day and Veterinary Services) | E | \$25.00 |
| iv. | Disposal Charge for Pathological Waste | E | \$0.30 per Pound, minimum of \$7.00 per disposal |
| v. | Euthanasia (In Addition to the Above Charges) | E | \$35.00 |
| 9. Animal Attractants | | | |
| i. | Improper Storage of Animal Attractant | E | \$500.00 |
| ii. | Attempt/Feed Wild Life Purposely | E | \$500.00 |
| iii. | Disposal of Animal Attractant | E | \$1,000.00 |

Schedule 'E' Finance and Administration

| | Description | GST Status | Fee in \$ |
|-------------------------------------|--|------------|--------------------|
| Finance & Administration | | | |
| 1. | Photocopying | | |
| i. | Tax, Utilities, Minutes or Bylaws, and Other Documents | T | \$1.00 per page |
| 2. | Documents | | |
| i. | Planning or Otherwise, Any Size | T | \$10.00 per search |
| ii. | Faxed Copies (Incoming/Outgoing) | T | \$1.00 per page |
| iii. | Access to Information (FOIP), Research | T | \$25.00 per hour |



Schedules of Fees Bylaw 20-854

| | | | |
|-----------|---|----------|-------------------------|
| 3. | Taxes | | |
| i. | Tax Certificate to Registered Landowner | E | No charge |
| ii. | Tax Certificate to Others | E | \$50.00 per roll number |
| iii. | Tax Search to Others | E | \$50.00 per roll number |
| iv. | Online Tax Certificate to Others | E | \$25.00 |
| v. | Online Tax Search | E | \$15.00 |
| vi. | Tax Notification Charges | E | \$75.00 |
| 4. | Assessment | | |
| i. | Assessment Record to Landowner | E | \$5.00 per roll number |
| ii. | Assessment Record to Others | E | \$10.00 per roll number |
| 5. | NSF Fee | E | \$50.00 |

Schedule 'F'

Infrastructure and Planning General

| | Description | GST Status | Fee in \$ |
|-------------------------------|---|------------|------------------------|
| Infrastructure General | | | |
| 1. | Road Closure | | |
| i. | Application Fee | E | \$1,500.00 |
| ii. | Sale of Road Allowance for the Purpose of Road Closure. As Determined by Accurate Assessment. | E | Fair Market Value |
| 2. | Approaches | | |
| i. | Approach Application Request Fee (Non-Refundable) | E | \$175.00 per approach |
| ii. | Construction: Gravel Approach | E | \$2000.00 per approach |
| iii. | Upgrade/Relocation: Gravel Approach | E | \$2500.00 per approach |
| iv. | Construction: Asphalt Approach | E | \$5000.00 per approach |



Schedules of Fees Bylaw 20-854

| | Description | GST Status | Fee in \$ |
|---|--|------------|---------------------------|
| v. | Upgrade/Relocation: Asphalt Paved Approach | E | \$5500.00 per approach |
| 3. Road Allowance License | | | |
| i. | Application Fee | E | \$100.00 |
| ii. | Road Allowance License Sign (One-Time Free Only) | E | Free |
| iii. | Road Allowance Sign Replacement | E | \$30.00 |
| 4. Inspections | | | |
| i. | Seismic Pre-Inspections | E | \$100.00 per occurrence |
| ii. | Seismic Post-Inspections | E | \$100.00 per occurrence |
| iii. | Seismic Non-Compliance | E | \$100.00 per inspection |
| 5. Land Acquisition (Right-of-Way and Road Widening) | | | |
| i. | Properties up to 40 Acres | T | See Schedule "I" |
| ii. | Properties Over 40 Acres | T | \$2400.00 per acre |
| iii. | Properties Minimum Payment | T | \$150.00 per occurrence |
| iv. | On parcels more than 40 Acres, Where an Existing Residence is on the Property, for up to 50 Meters Each Side of the Residential Driveway | T | \$3,000 per acre |
| v. | Borrow Pit Acquisition and Access and Damages | T | \$1.00 per m ³ |
| vi. | Shelterbelt Loss, per 5m Width, Tree Height Under 10 feet | T | \$1.50 per m |
| vii. | Shelterbelt Loss, per 5m Width, Tree Height Over 10 feet | T | \$2.50 per m |
| 6. Fencing | | | |
| i. | Removal of Old Fence by Landowner | T | \$1.25 per m |
| ii. | Removal of Old Fence and Installation of New Fence by Landowner with Greenview Supplying Material | T | \$3.75 per m |



Schedules of Fees Bylaw 20-854

| | Description | GST Status | Fee in \$ |
|------|--|------------|-----------------|
| iii. | Removal of Old Fence and Installation of New Fence by Landowner Including Labour and Materials | T | \$6.25 per m |
| iv. | Removal of Old Fence and Installation of New Fence by Greenview | T | No Compensation |

Schedule 'G' Environmental Services

| Environmental Services | | | |
|------------------------|---|--|--|
| | | | |
| | <i>Accounts for metered services and bulk accounts if not paid within 30 days of the billing date will incur a 1.5% penalty monthly.</i> | | |
| | <i>Where work is done at cost, the cost will include the amount expended by Greenview for all expenditures incurred doing the work, including administration. All invoices will be paid within 30 days of billing. If not paid within 30 of billing, are subject to interest.</i> | <i>1.5% penalty/month</i> | |
| | <i>Water Meter/Replacement (Owner Responsibility)</i> | <i>Based on actual replacement costs</i> | |
| | | | |
| 1. | Requested Services | | |
| i. | Regular Hours | T | \$50.00 per hour per member of staff (1 hour min.) |
| ii. | After Hours | T | 50.00 per hour per member of staff (1 hour min.) |
| | | | |
| 2. | Hamlet Water Distribution Systems (Grovedale, Landry Heights, and Little Smoky) | | |
| i. | Residential Rate (0 - 30 m ³ /Month) | E | \$3.50 per m ³ |
| ii. | Residential Rate (Over 30 m ³ /Month) | E | \$4.00 per m ³ |



Schedules of Fees Bylaw 20-854

| | Description | GST Status | Fee in \$ |
|--|--|------------|---|
| iii. | Non Residential Rate | E | \$4.00 per m ³ |
| iv. | Installation Fee (To install from Main Line to Property Line) | E | \$8,000.00 deposit (based on actual invoice) |
| v. | Connection Fee (Rights to Connect) | E | \$12,500.00 per service |
| vi. | Utilities Account Deposit | E | \$100.00 |
| 3. Hamlet Water Distribution Systems (Grande Cache, DeBolt and Ridgevalley) | | | |
| i. | Residential Rate (0 - 30 m ³ /Month) | E | \$3.50 per m ³ |
| ii. | Residential Rate (Over 30 m ³ /Month) | E | \$4.00 per m ³ |
| iii. | Non Residential Rate | E | \$4.00 per m ³ |
| iv. | Installation Fee (To install from Main Line to Property Line) | E | \$8,000.00 deposit (based on actual invoice) |
| v. | Connection Fee (Rights to Connect) | E | \$500.00 per service |
| vi. | Utilities Account Deposit | E | \$100.00 |
| 4. Rural Water Distribution System (Valleyview Rural) | | | |
| i. | Residential Rate (0-30m ³ /Month) | E | \$3.50 per m ³ |
| ii. | Residential Rate (Over 30 m ³ /Month) | E | \$10.00 per m ³ |
| iii. | Non Residential Rate | E | \$10.00 per m ³ |
| iv. | Connection Fee | E | \$12,500.00 per service |
| v. | Utilities Account Deposit | E | \$100.00 |
| 5. Rural Water Distribution System (Crooked Creek and Ridgevalley) | | | |
| i. | Residential Rate (0-30 m ³ /Month) | E | \$3.50 per m ³ |
| ii. | Residential Rate (Over 30 m ³ /Month) | E | \$10.00 per m ³ |
| iii. | Non Residential Rate | E | \$10.00 per m ³ |
| iv. | Connection Fee | E | \$12,500.00 |
| v. | Utilities Account Deposit | E | \$100.00 |
| 6. Water Point Facilities | | | |
| i. | Potable Water Points Residential/Agriculture | E | \$3.50 per m ³ |
| ii. | Potable Water Points Commercial | E | \$8.50 per m ³ |



Schedules of Fees Bylaw 20-854

| | Description | GST Status | Fee in \$ |
|---|--|------------|--|
| iii. | Non-Potable Water Points | E | \$2.00 per m ³ |
| 7. Gravity Wastewater Collection System (DeBolt, Grande Cache & Ridgevalley) | | | |
| i. | Sanitary Service Installation Fee | E | \$8,000.00 deposit (based on actual invoice) |
| ii. | Connection Fee | E | \$500.00 per service |
| 8. Gravity Wastewater Collection System (Grovedale) | | | |
| i. | Sanitary Service Installation Fee | E | \$8,000.00 deposit (based on actual invoice) |
| ii. | Connection Fee | E | \$12,500.00 per service |
| 9. Low Pressure Wastewater Collection System (Little Smoky, Grovedale & Ridgevalley) | | | |
| i. | Sanitary Service Installation Fee | E | \$8,000.00 deposit (based on actual invoice) |
| ii. | Connection Fee | E | \$500.00 per service |
| 10. Septage Classification | | | |
| i. | Residential – Single Family Dwelling | E | \$1.00 per m ³ (minimum \$24.00) |
| ii. | Residential – Duplex (per dwelling unit) | E | \$1.00 per m ³ (minimum \$24.00) |
| iii. | Residential – Multi Family Dwelling (per Self-Contained Dwelling Unit) | E | \$1.00 per m ³ (minimum \$24.00) |
| iv. | Commercial – General Store | E | \$1.00 per m ³ (minimum \$36.00) |
| v. | Commercial – Laundromat | E | \$1.00 per m ³ (minimum \$56.00) |



Schedules of Fees Bylaw 20-854

| | Description | GST Status | Fee in \$ |
|--------------------------------------|---|------------|--|
| vi. | Commercial – Hotels (Rooms & Beer Parlor) | E | \$1.00 per m ³ (minimum \$80.00) |
| vii. | Commercial – Cafes | E | \$1.00 per m ³ (minimum \$48.00) |
| viii. | Commercial – Garages | E | \$1.00 per m ³ (minimum \$48.00) |
| ix. | Commercial – Office | E | \$1.00 per m ³ (minimum \$36.00) |
| x. | Commercial – Not Elsewhere Classified | E | \$1.00 per m ³ (minimum \$36.00) |
| xi. | Community Halls & Other Recreation Facilities | E | \$1.00 per m ³ (minimum \$48.00) |
| xii. | Churches | E | \$1.00 per m ³ (minimum \$24.00) |
| xiii. | Schools (per Classroom) | E | \$1.00 per m ³ (minimum \$24.00) |
| xiv. | Royal Canadian Legion Hall | E | \$1.00 per m ³ (minimum \$24.00) |
| xv. | Senior Citizen's Drop-In Centre | E | \$1.00 per m ³ (minimum \$24.00) |
| 11. Wastewater Lagoon | | | |
| i. | Commercial/Industrial Tipping Rate | E | \$10.00 per m ³ |
| 12. Lagoon Keys | | | |
| i. | Key Fob (Initial/Replacement) | T | \$100.00 |
| 13. Grande Cache Sewer Rental | | | |
| i. | Electric Sewer Snake | | |
| | 4 Hour Minimum Charge | T | \$70.00 |
| | Daily Rate | T | \$90.00 |
| | Weekly Rate (5 Day Rental) | T | \$400.00 |



Schedules of Fees Bylaw 20-854

| | Description | GST Status | Fee in \$ |
|------------|---|------------|--|
| ii. | Electric Sewer Camera | | |
| | Refundable Deposit | E | \$500.00 |
| | 4 hour Minimum Charge | T | \$137.00 |
| | Daily Rate | T | \$195.00 |
| | Weekly Rate (5 Day Rental) | T | \$780.00 |
| | | | |
| | | | |
| 14. | Waste Collection and Disposal | | |
| i. | Residential Rates | | |
| | Residential Waste Collection Fee | T | \$10.00 per month |
| | Recycle Fee | T | \$10.00 per month |
| i. | Commercial Rates | | |
| | Commercial Waste Collection | T | \$50.00 per month |
| | Recycle Fee | T | \$10.00 per month |
| | Dumping Fee, Standard Service, per Bin | T | \$80.00 per month |
| | | | |
| 15. | Penalties and Fines | | |
| i. | General Penalties | | |
| | Setting out Prohibited Materials for Collection | E | \$200.00 |
| | Placing Hazardous Waste or Dangerous Goods out for Collection | E | \$200.00 |
| | Failure to use Appropriate Containers | E | \$200.00 |
| | Waste or Recycling Deposit Without Consent | E | \$200.00 |
| | Collection Interference | E | \$200.00 |
| | Dumping Outside the Landfill | E | \$1000.00 |
| | Failure to Store Containers Properly | E | \$200.00 |
| | Accumulation of Building Waste | E | \$200.00 |
| | Failure to Contain Construction Waste | E | \$200.00 |
| | Unsecured Load | E | double cost of materials as per schedule of fees |



Schedules of Fees Bylaw 20-854

| | Description | GST Status | Fee in \$ |
|------------|---|------------|---------------------------|
| 16. | Grande Cache Landfill Fees | | |
| i. | Greenview Residents | | No Fees |
| | Mixed Load Disposal Fee (Residents and Commercial) | E | \$210.00 per tonne |
| ii. | Commercial Waste | E | \$105.00 per tonne |
| | Clean Mulch/Woodchips | E | \$55.00 per tonne |
| | Class II Acceptable Soils | E | \$55.00 per tonne |
| | Burnable Wood (Excludes Creosote, Treated Wood and Similar Materials) | E | \$55.00 per tonne |
| | Metal | E | \$55.00 per tonne |
| | Cement/Concrete | E | \$55.00 per tonne |
| | Sump | E | \$10.00/tonne |
| | Freon | E | \$50.00/ unit for removal |

Schedule 'H' Operations

| Operations | | | |
|---|--------------------------------------|---|--|
| <i>Greenview's Equipment Rates will be the same as the EOIP rates</i> | | | |
| 1. | Snowplowing Signs | | |
| i. | Any Driveway up to 400 Meters | E | \$50.00 |
| ii. | Any Driveway Greater than 400 Meters | E | \$50.00 + \$100.00 per hour for time over the first ½ hour |
| iii. | Lost or Replacement Signs | T | \$30.00 each |
| 2. | Culverts – Used or Salvaged | | |
| i. | 500 mm or Less | T | \$13.00 per m |
| ii. | 600 mm | T | \$15.00 per m |



Schedules of Fees Bylaw 20-854

| | Description | GST Status | Fee in \$ |
|-----------|--|------------|------------------------------------|
| iii. | 700 mm | T | \$16.00 per m |
| iv. | 800 mm | T | \$25.00 per m |
| v. | 900 mm | T | \$28.00 per m |
| vi. | 1000 mm | T | \$29.00 per m |
| vii. | 1200 mm or Greater | T | \$30.00 per m |
| | | | |
| 3. | Grade Blades | | |
| i. | Used | T | \$5.00 per each blade |
| | | | |
| 4. | Dust Control | | |
| i. | Application of Calcium Product for Residents and Landowners (up to April 15 th Each Year) | E | \$150.00 per 200 m |
| ii. | Plus: for sections over 200 meters | E | \$5.35 per m |
| iii. | Application of Calcium Product for Multi-Parcel Subdivisions | E | \$100.00 per 100 m |
| iv. | Application of Calcium Product for Industrial and Road Use Agreement Holders (up to April 15 th Each Year) <i>If in front of a residence, the industrial user will be charged the residential rate for a maximum distance of 200 meters</i> | E | \$1605.00 per 300 m |
| v. | Plus: for sections over 300 meters | E | \$5.35 per m |
| | | | |
| 5. | Road Bond | | |
| i. | Overload Road Bond Fees (Non-Refundable Payment) | T | \$1,125.00 per km |
| ii. | Plus: Security Deposit (Refundable Subject to Final Inspections) | | \$6,375.00 per km |
| iii. | Fixed Fee for the TRAVIS MJ Permitting System | E | \$15.00 per permit |
| | | | |
| 6. | Community Aggregate | | |
| i. | Community Aggregate Payment Levy | E | \$0.30 per tonne |
| | | | |
| 7. | Equipment Rental | | |
| i. | All Equipment Rentals will be paid out of the previous year's ARHCA Book. | T | 100% of previous year's ARHCA rate |
| | | | |



Schedules of Fees Bylaw 20-854

| | Description | GST Status | Fee in \$ |
|--|-------------|------------|-----------|
|--|-------------|------------|-----------|

Schedule 'I' Planning and Development

| Planning and Development | | | |
|--------------------------|---|---|---|
| 1. | Planning Bylaw (New or Amended) | | |
| ii. | Land Use Bylaw Amendment Application (Re-zoning) | E | \$1,500.00 |
| iii. | New Developer's Area Structure Plan | E | \$2,500.00 |
| iv. | Amendments to any ASP and MDP or Minor ASP | E | \$1,500.00 |
| 2. | Development Permits, General | | |
| i. | Residential - Single Detached Dwellings, Duplexes, Manufactured/ Modular/RTM/Suites) | E | \$150.00 |
| ii. | Residential - Multiple Dwellings (Triplex/Fourplex/Row Housing/Apartments, etc.) | E | \$75.00 per unit |
| iii. | All other Non-Residential/Mixed-Use/New Construction / Accessory Uses (Home Occupation / Accessory Buildings (Garages, Decks, Hot tubs, Pools, Wheelchair Ramps), Additions and All Other Uses) | E | \$50.00 fee per \$100,000.00 of completed project cost (up to a maximum of a \$10,000.00 fee) |
| iv. | Signage – Permanent / Temporary / Renewal | T | \$50.00 per sign |
| v. | Variance Request | E | \$150.00 |
| vi. | Time Extension Request by Developer per Application | E | \$150.00 |
| 3. | Subdivisions (including Bare Land Condominium Plans) | | |
| i. | Subdivision and Condominium Plan Applications, Single Lot or Consolidation | E | \$450.00 |
| | Plus: each additional lot/unit created | E | \$150.00 |



Schedules of Fees Bylaw 20-854

| | Description | GST Status | Fee in \$ |
|--|--|------------|----------------------------|
| ii. | Plan of Subdivision Endorsement Fees | E | \$150.00 per title created |
| iii. | Condominium Plan Endorsement Fees | E | \$40.00 per unit |
| iv. | Time Extension Request by Developer per Application | E | \$500.00 |
| 4. Subdivision and Development Appeal Board | | | |
| i. | Development Appeal Fee (Refundable if Applicant is Successful in their Appeal) | E | \$500.00 |
| ii. | Subdivision Appeal Fee (Refundable if Applicant is Successful in their Appeal) | E | \$500.00 |
| 5. Development Agreement Review | | | |
| i. | Residential: up to 4 Lot Subdivision | E | \$1,500.00 |
| ii. | Residential: Greater than 4 Lot Subdivision | E | \$3,000.00 |
| iii. | All Other Recreational, Commercial and Industrial Subdivisions | E | \$3,000.00 |
| 6. Annual Business Licensing | | | |
| i. | Business License Fee - New application (January 1) | E | \$100.00 |
| ii. | Business License- New Application (After July 1) or Annual Renewal | E | \$50.00 |
| 7. Business License Temporary/Special Event | | | |
| i. | Resident | E | \$30.00 |
| ii. | Non-Resident | E | \$50.00 |
| 8. Hawkers or Peddlers | | | |
| i. | Resident Annual | E | \$45.00 |
| ii. | Resident per Day | E | \$35.00 |
| iii. | Non-Resident Annual | E | \$130.00 |
| iv. | Non-Resident per Day | E | \$50.00 |
| 9. Rural Addressing Signage | | | |
| i. | Signage Permanent/ Replacement | T | \$50.00 per sign |
| 10. Signage for Subdivisions | | | |



Schedules of Fees Bylaw 20-854

| | Description | GST Status | Fee in \$ |
|--|---|------------|---------------------|
| i. | Individual Lot Sign | T | \$50.00 per sign |
| ii. | Large Address Sign with Address Tab for Subdivisions of 4 Lots or Greater | T | \$1,000.00 per sign |
| 11. Orthographic Printing | | | |
| | <i>Based on size and quality of paper, image and graphics</i> | | |
| i. | Colour 8 ½" x 11" Orthographic (Aerial) Photo | T | \$10.00 |
| ii. | Colour 11" x 17" Orthographic (Aerial) Photo | T | \$20.00 |
| 12. Landowner Map Pricing | | | |
| i. | Hardcopy – Landowner Map (sheets 1-5). Valleyview, DeBolt, Grovedale, Grande Cache and Greenview Overview Elevation | T | \$25.00 per sheet |
| 13. Certificate of Compliance | | | |
| | | E | \$200.00 |
| 14. Letter of Concurrence for Communication Tower | | | |
| | | E | \$100.00 |
| 15. Environmental Site Assessment Inquiries | | | |
| | | E | \$200.00 per parcel |

*Note: GST Status- 'E' refers to tax exempt or GST included in the listed rate or fee.
'T' refers to taxable, or GST not included in the listed rate or fee.



Schedules of Fees Bylaw 20-854

Schedule 'J' Land Acquisition by Greenview for Right of Way and Road Widening

Valleyview Area

| Titled Parcel Size in Acres | RIGHT OF WAY FOR PROPERTIES UP TO 40 ACRES | | | | |
|--------------------------------|--|-----------|-----------|-----------|-----------|
| | Phase 1 | Phase 2 | Phase 3 | Phase 4 | Phase 5 |
| 0-1 | \$ 30,000 | \$ 22,600 | \$ 16,600 | \$ 13,600 | \$ 12,600 |
| 1-3 | \$ 12,600 | \$ 12,000 | \$ 8,750 | \$ 7,350 | \$ 7,275 |
| 3-5 | \$ 8,900 | \$ 8,600 | \$ 6,300 | \$ 5,300 | \$ 5,250 |
| 5-10 | \$ 6,100 | \$ 5,850 | \$ 4,350 | \$ 3,700 | \$ 3,650 |
| 10-20 | \$ 3,900 | \$ 3,900 | \$ 2,850 | \$ 2,700 | \$ 2,600 |
| 20-30 | \$ 2,800 | \$ 2,750 | \$ 2,700 | \$ 2,600 | \$ 2,550 |
| 30-40 | \$ 2,500 | \$ 2,500 | \$ 2,500 | \$ 2,500 | \$ 2,500 |
| 40+ | \$ 2,400 | \$ 2,400 | \$ 2,400 | \$ 2,400 | \$ 2,400 |

DeBolt Area

| Titled Parcel Size in Acres | RIGHT OF WAY FOR PROPERTIES UP TO 40 ACRES | | | | | |
|--------------------------------|--|-----------|-----------|-----------|-----------|-----------|
| | Phase 1 | Phase 2 | Phase 3 | Phase 4 | Phase 5 | Phase 6 |
| 0-1 | \$ 40,600 | \$ 36,600 | \$ 32,600 | \$ 24,600 | \$ 16,600 | \$ 40,600 |
| 1-3 | \$ 20,600 | \$ 8,600 | \$ 16,400 | \$ 12,600 | \$ 8,600 | \$ 20,600 |
| 3-5 | \$ 14,750 | \$ 13,250 | \$ 11,600 | \$ 9,050 | \$ 6,200 | \$ 14,750 |
| 5-10 | \$ 9,900 | \$ 8,900 | \$ 7,850 | \$ 6,150 | \$ 4,250 | \$ 9,900 |
| 10-20 | \$ 6,250 | \$ 5,650 | \$ 5,000 | \$ 3,950 | \$ 2,850 | \$ 6,250 |
| 20-30 | \$ 3,810 | \$ 3,950 | \$ 3,550 | \$ 2,850 | \$ 2,700 | \$ 3,810 |
| 30-40 | \$ 3,450 | \$ 3,150 | \$ 2,800 | \$ 2,500 | \$ 2,500 | \$ 3,450 |
| 40+ | \$ 2,400 | \$ 2,400 | \$ 2,400 | \$ 2,400 | \$ 2,400 | \$ 2,400 |

Grovedale Area

| Titled Parcel Size in Acres | Landry Heights Price/Acre | Grovedale Price/Acre | Aspen Grove Price/Acre | RIGHT OF WAY FOR PROPERTIES UP TO 40 ACRES | | | | | |
|--------------------------------------|------------------------------|-------------------------|---------------------------|--|-----------|-----------|-----------|-----------|-----------|
| | | | | Phase 1 | Phase 2 | Phase 3 | Phase 4 | Phase 5 | Phase 6 |
| 0-1 | \$ 55,600 | \$ 43,600 | \$ 23,600 | \$ 49,000 | \$ 47,600 | \$ 30,600 | \$ 29,100 | \$ 26,600 | \$ 25,600 |
| 1-3 | \$ 27,900 | \$ 22,200 | \$ 12,400 | \$ 25,100 | \$ 2,410 | \$ 15,400 | \$ 14,900 | \$ 13,700 | \$ 13,250 |
| 3-5 | \$ 19,750 | \$ 15,750 | \$ 8,900 | \$ 17,750 | \$ 17,100 | \$ 10,950 | \$ 10,600 | \$ 9,800 | \$ 9,450 |
| 5-10 | \$ 13,150 | \$ 10,550 | \$ 6,050 | \$ 11,850 | \$ 11,450 | \$ 7,400 | \$ 7,200 | \$ 6,650 | \$ 6,450 |
| 10-20 | \$ 8,250 | \$ 6,650 | \$ 3,900 | \$ 7,450 | \$ 7,200 | \$ 4,750 | \$ 4,600 | \$ 4,250 | \$ 4,150 |
| 20-30 | \$ 5,700 | \$ 4,600 | \$ 2,800 | \$ 5,200 | \$ 5,000 | \$ 3,400 | \$ 3,300 | \$ 3,050 | \$ 2,950 |
| 30-40 | \$ 4,600 | \$ 3,600 | \$ 2,500 | \$ 4,050 | \$ 3,900 | \$ 2,700 | \$ 2,600 | \$ 2,500 | \$ 2,500 |
| 40+ | \$ 2,400 | \$ 2,400 | \$ 2,400 | \$ 2,400 | \$ 2,400 | \$ 2,400 | \$ 2,400 | \$ 2,400 | \$ 2,400 |



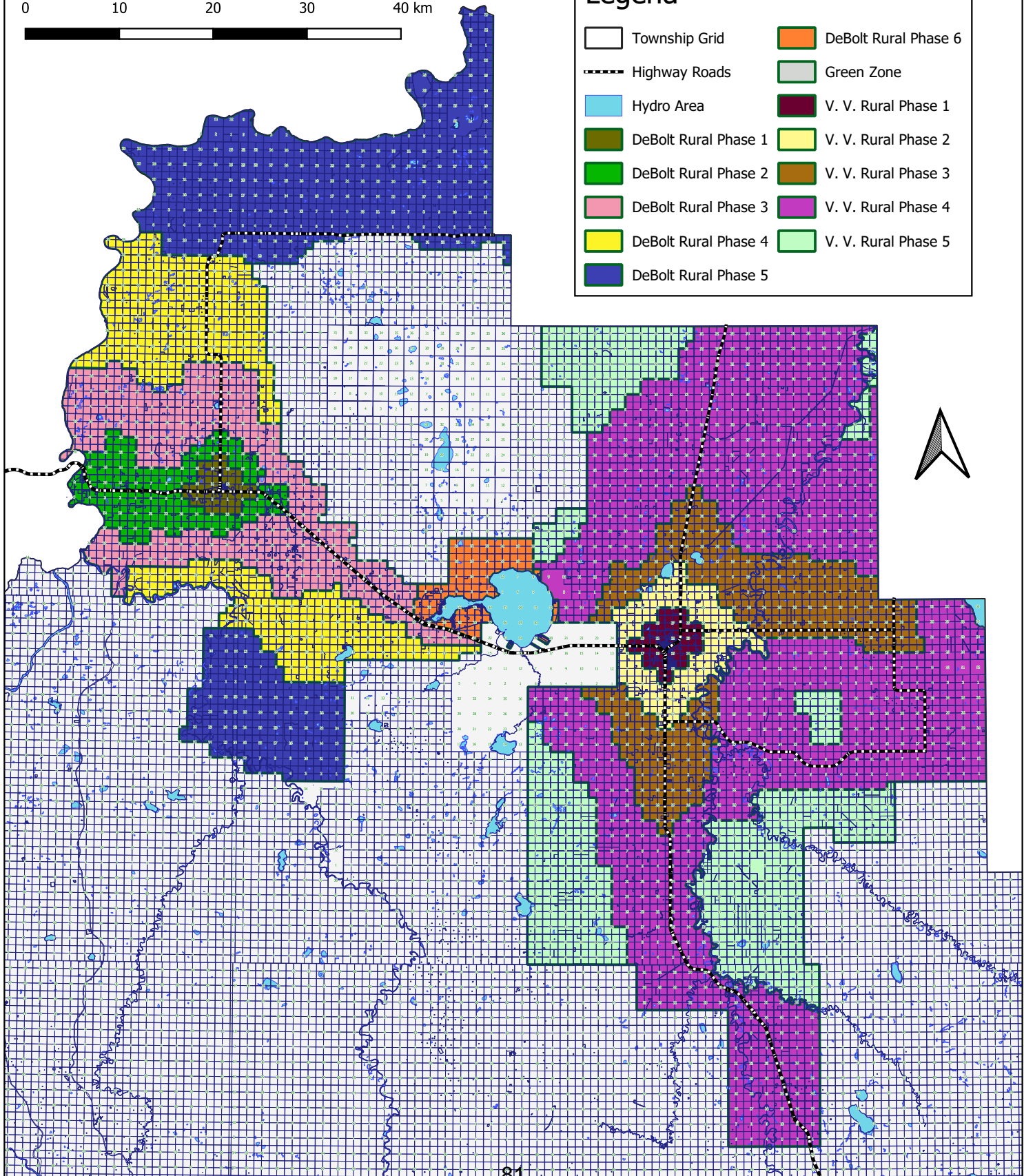
Schedules of Fees Bylaw 20-854

0 10 20 30 40 km



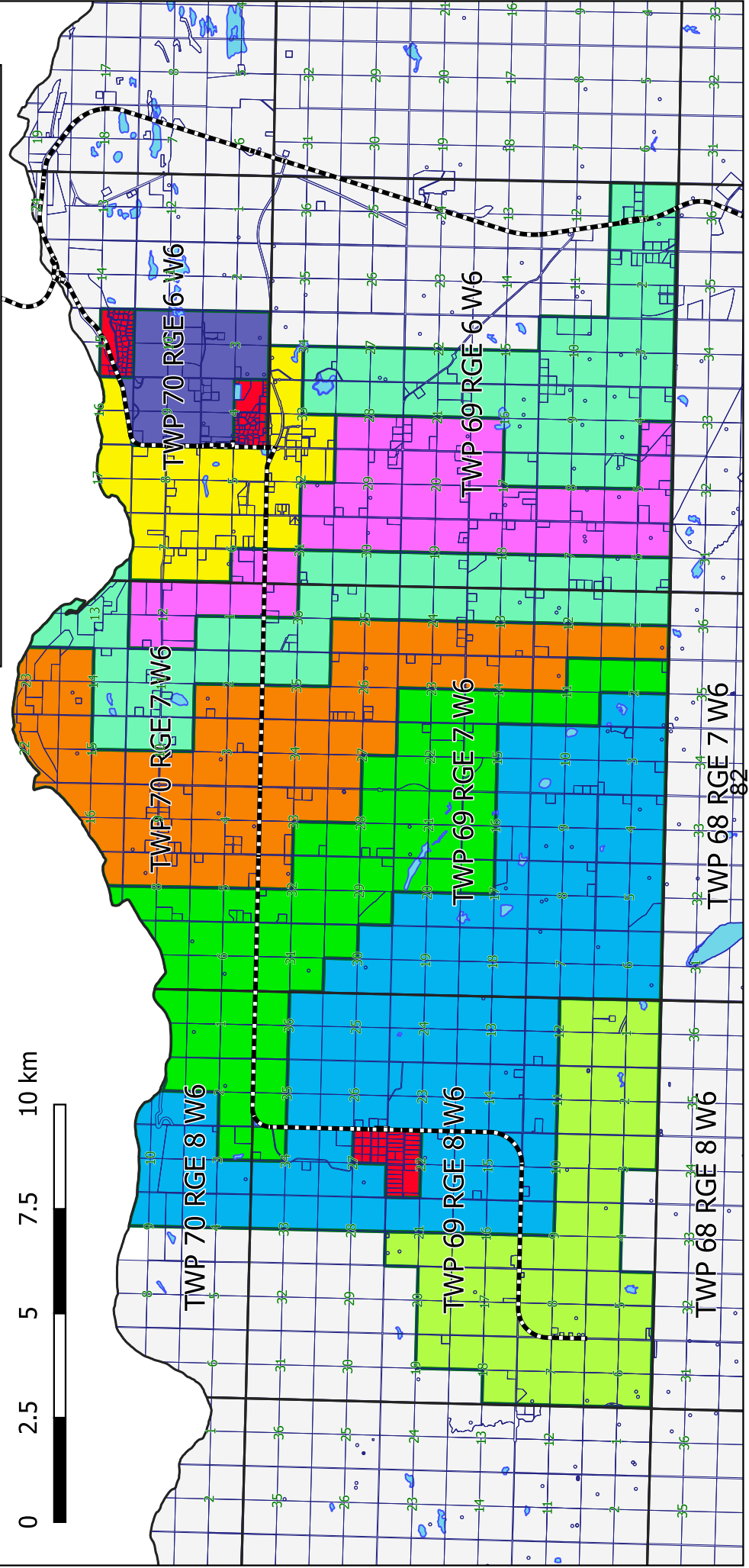
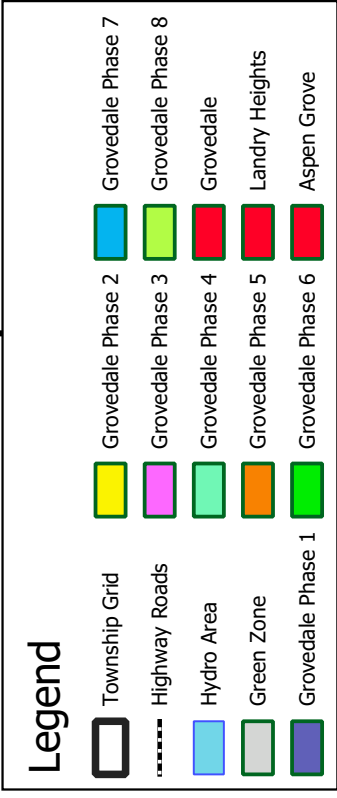
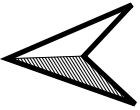
Legend

| | |
|----------------------|----------------------|
| Township Grid | DeBolt Rural Phase 6 |
| Highway Roads | Green Zone |
| Hydro Area | V. V. Rural Phase 1 |
| DeBolt Rural Phase 1 | V. V. Rural Phase 2 |
| DeBolt Rural Phase 2 | V. V. Rural Phase 3 |
| DeBolt Rural Phase 3 | V. V. Rural Phase 4 |
| DeBolt Rural Phase 4 | V. V. Rural Phase 5 |
| DeBolt Rural Phase 5 | |





Schedules of Fees Bylaw 20-854





REQUEST FOR DECISION

SUBJECT: **Bylaw 20-855 Advertising**
SUBMISSION TO: REGULAR COUNCIL MEETING
MEETING DATE: September 14, 2020
DEPARTMENT: CAO SERVICES
STRATEGIC PLAN: Level of Service

REVIEWED AND APPROVED FOR SUBMISSION
CAO: DT
GM:
MANAGER:
PRESENTER: DL

RELEVANT LEGISLATION:

Provincial (cite) – *Municipal Government Act*, R.S.A. 2000, Chapter M-26, Section 606.1

Council Bylaw/Policy (cite) –N/A

RECOMMENDED ACTION:

MOTION: That Council give third reading to Bylaw 20-855 “Advertising”.

BACKGROUND/PROPOSAL:

Under Section 606, municipalities were required to advertise in the newspaper for notices, public hearings, bylaws, etc. Section 606.1 allows municipalities to create a bylaw to advertise items in Section 606 in other forms of media such as websites.

There is only one paper that circulates in the Greenview area: the Daily Herald Tribune. It has a limited reach for ratepayers and is becoming increasingly expensive. One run of advertising for a public hearing can cost upwards of \$1500.00.

In order to better reach ratepayers, Administration is proposing an advertising bylaw in accordance with Section 606.1 allowing for advertisements to primarily occur on Greenview’s website with the option to advertise on social media and print news, or any other form prescribed by Council policy or bylaw..

This bylaw does not apply to anything in the Act besides section 606. For example, public auction for tax forfeitures are addressed in Section 421 of the act and are not covered under the provisions of this bylaw. This bylaw also does not exempt Greenview from sending mail out circulations as provided in the Act or other bylaws or policies.

BENEFITS OF THE RECOMMENDED ACTION:

1. Greenview will have an alternative platform of advertising that will be able to reach a wider range of ratepayers.

DISADVANTAGES OF THE RECOMMENDED ACTION:

1. Individuals that do not have web access will not be able to see these advertisements, however, they must have access to the DHT to receive notice now.

ALTERNATIVES CONSIDERED:

Alternative #1: Council may choose to add additional options for advertising.

FINANCIAL IMPLICATION:

There could be savings on print advertising when moving to a web based platform.

STAFFING IMPLICATION:

There are no staffing implications to the recommended motion.

PUBLIC ENGAGEMENT LEVEL:

Greenview has adopted the IAP2 Framework for public consultation.

INCREASING LEVEL OF PUBLIC IMPACT

Inform

PUBLIC PARTICIPATION GOAL

Inform - To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.

PROMISE TO THE PUBLIC

Inform - We will keep you informed.

FOLLOW UP ACTIONS:

Administration will update the bylaw register and place the bylaw on the website.

ATTACHMENT(S):

- Bylaw 20-855



BYLAW NO. 20- 855 **of the Municipal District of Greenview No. 16**

A Bylaw of the Municipal District of Greenview No. 16, in the Province of Alberta, to establish alternate methods of advertising statutory notices.

WHEREAS, the M.D. of Greenview No. 16 is required to advertise certain bylaws, resolutions, meetings, notices, public hearings, and other things in accordance with Section 606 of the Municipal Government Act;

AND WHEREAS, Section 606.1 of the Municipal Government Act allows Council to pass a bylaw to provide for one or more alternate methods to advertise certain bylaws, resolutions, meetings, notices, public hearings, and other things required under Section 606;

AND WHEREAS, Council is satisfied that the advertising methods set out in this Bylaw are likely to bring the matter to the attention of substantially all residents in the relevant areas;

NOW THEREFORE, the Council of the M.D. of Greenview No. 16, duly assembled, enacts as follows:

1. Title

- 1.1 This bylaw may be cited as the “Advertising Bylaw”.

2. Definitions

- 2.1 **Council** means the Council of the M.D. of Greenview No. 16, duly assembled.
- 2.2 **Detailed Notice** means a notice containing all of the information required under Section 606 of the Municipal Government Act.
- 2.3 **Greenview** means the Municipal District of Greenview No. 16.
- 2.4 **Municipal Government Act** means the Municipal Government Act, R.S.A. 2000, Chapter M-26 as amended.
- 2.5 **Social Media** means any electronic online form of communication through which a group of users share information and content.

3. Application

- 3.1 This bylaw applies specifically to those items identified in Section 606 of the Municipal Government Act.
- 3.2 This bylaw does not apply to those items addressed in other Sections of the Act that require alternative advertising requirements such as advertising of public auctions as identified in Section 421 of the Act.



BYLAW NO. 20- 855

of the Municipal District of Greenview No. 16

4. Methods of Advertising

4.1 Greenview will advertise bylaws, resolutions, meetings, notices, public hearings, and other things as required under the Municipal Government Act by publishing detailed notices on the Greenview website.

4.2 Greenview may also choose one or more of the following methods to advertise or to advertise detailed notices or summaries of website notices:

- a) Newspaper(s)
- b) Official Greenview social media sites
- c) Greenview Administration will also make public notices available for viewing at any M.D. of Greenview Administration Building.
- d) Any other method as directed by Council policy.

4.3 Greenview will make detailed notices available at Greenview Administration Buildings.

5. Severability

5.1 If any provision of this Bylaw is declared invalid for any reason by a court of competent jurisdiction, all other provisions of this Bylaw shall remain valid and enforceable.

This Bylaw shall come into force and effect upon the day of final passing and signing.

Read a first time this 27th day of July, 2020.

Read a second time this 27th day of July, 2020.

Read a third time and passed this ____ day of ____, 2020.

REEVE

CHIEF ADMINISTRATIVE OFFICER



REQUEST FOR DECISION

SUBJECT: **Bylaw 20-857 “Electronic Transmission of Documents”**
SUBMISSION TO: REGULAR COUNCIL MEETING REVIEWED AND APPROVED FOR SUBMISSION
MEETING DATE: September 14, 2020 CAO: DT MANAGER:
DEPARTMENT: CORPORATE SERVICES GM: PRESENTER: DL
STRATEGIC PLAN: Level of Service

RELEVANT LEGISLATION:

Provincial (cite) – Municipal Government Act, R.S.A 2000, Chapter M-26, Section 608.1

Council Bylaw/Policy (cite) –N/A

RECOMMENDED ACTION:

MOTION: That Council give second reading to bylaw 20-857 “Electronic Transmission of Documents”.

MOTION: That Council give third reading to bylaw 20-857 “Electronic Transmission of Documents

BACKGROUND/PROPOSAL:

The MGA allows for municipalities to pass a bylaw to allow for the transmission of documents under section 608.1, such as tax notices, by electronic means. Documents may only be sent in this way if the individual opts into the program, and otherwise must be delivered as required under the Act, generally through the mail.

In essence, this bylaw will allow Greenview to collect the emails of ratepayers who wish to receive their tax notices, assessment notices and other documents over email rather in standard mail. There is no obligation for ratepayers to sign up for this program.

This bylaw has been advertised in accordance with the Act.

BENEFITS OF THE RECOMMENDED ACTION:

1. Greenview will have a program in place to allow for the alternative delivery of tax notices through electronic means.
-

DISADVANTAGES OF THE RECOMMENDED ACTION:

There are no perceived disadvantages to the recommended motion.

ALTERNATIVES CONSIDERED:

Alternative #1: Greenview Council may choose not to establish this program and continue delivering tax and assessment notices through the mail.

FINANCIAL IMPLICATION:

There may be some savings in postage costs for sending tax notices, as well as personnel time in stuffing envelopes with tax notices.

STAFFING IMPLICATION:

There are no staffing implications to the recommended motion.

PUBLIC ENGAGEMENT LEVEL:

Greenview has adopted the IAP2 Framework for public consultation.

INCREASING LEVEL OF PUBLIC IMPACT

Inform

PUBLIC PARTICIPATION GOAL

Inform - To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.

PROMISE TO THE PUBLIC

Inform - We will keep you informed.

FOLLOW UP ACTIONS:

Administration will advertise the bylaw in accordance with the act and bring it back for second and third reading.

ATTACHMENT(S):

- Bylaw 20-857



BYLAW NO. 20-857 **of the Municipal District of Greenview No. 16**

A Bylaw of the Municipal District of Greenview No. 16, in the Province of Alberta, for the purpose of establishing a process for sending notices, documents or information by electronic means.

Whereas, Section 608(1) of the Municipal Government Act, R.S.A. 2000, Chapter M-26 provides that where the Act or regulation or bylaw made under this section requires a document to be sent to a person, the document may be sent by electronic means if

- a) the recipient has consented to receive the documents from the sender by those electronic means and has provided an email address, website or other electronic address to the sender for that purpose, or
- b) it is possible to make a copy of the document from the electronic transmission.

Whereas, the Municipal District of Greenview wishes to have the option available to forward any information referred to in Part 9 Assessment of Property, Part 10 Taxation and Part 11 Assessment Review Boards, of the Municipal Government Act, and any information referred to in the respective regulations for these Parts, by electronic means; and

Whereas, Section 608.1(6) provides that the sending by electronic means of any notice, document or information referred to in Subsection (1) or (2) is valid only if the person to whom it is sent has opted under the bylaw to receive it by those means; and

Whereas, The Municipal District of Greenview wishes to have the option to forward any forms of notice included in Section 149(2) and (3) of the Education Act R.S.A. 2000, Chapter E-0.3 by electronic means; and

Whereas, the Municipal Government Act mandates that a municipality is required to adopt a bylaw to establish a process for the transmission of this information by electronic means;

Therefore, the Council of the Municipal District of Greenview No. 16, duly assembled, enacts as follows:

1. Title

1.1 This Bylaw may be cited as the “Electronic Transmission of Documents” Bylaw.

2. Definitions

2.1 **Act** means the Municipal Government Act, R.S.A. 2000, Chapter M-26, as amended.

2.2 **Assessed Person** means a person who is named on an assessment roll in accordance with the Act, and also includes a person who has been delegated authority to act on behalf of the assessed person.

2.3 **Assessment Notice** includes all assessment notices referred to in Part 9 of the Act

2.4 **Council** means the Council of the M.D. of Greenview No. 16, duly assembled.

- 2.5 **CAO** means the Chief Administrative Officer of the M.D. of Greenview No. 16.
- 2.6 **Electronic** means electronic mail (e-mail).
- 2.7 **Electronic document** means a tax notice; an assessment notice; any other document referred to in Part 9, Part 10 or Part 11 of the Act; and any notice referred to in Section 149(2) and (3) of the Education Act
- 2.8 **Greenview** means the Municipal District of Greenview No. 16.
- 2.9 **Signature** at the discretion of Greenview, may include an electronic signature.

3. Application

- 3.1 Upon request by an assessed person, Greenview may send an electronic document through electronic means.

4. Process

- 4.1 An assessed person may apply to receive an electronic document by electronic means.
- 4.2 The assessed person must complete and sign the application form established by Greenview, which will require the following information:
- a) Roll number of each property;
 - b) Name and address of the assessed person;
 - c) Phone number of the assessed person;
 - d) E-mail address to be used for the transmission of electronic documents; and
 - e) Date and signature of the assessed person.
- 4.3 Once authorization has been provided to transmit an electronic document by electronic means, printed paper copies will not be forwarded via regular mail.
- 4.4 Cancellation of electronic documents being transmitted by electronic means can be accomplished by:
- a) The assessed person providing written notice to that effect to Greenview; or
 - b) Upon transfer of title of the property to a new owner (sale of property).

5. This Bylaw shall come into force and effect upon the day of final passing.

Read a first time this 24th day of August, 2020.

Read a second time this _____ day of _____, 2020.

Read a third time and passed this _____ day of _____, 2020.

REEVE

CHIEF ADMINISTRATIVE OFFICER



REQUEST FOR DECISION

SUBJECT: **DeBolt Lift Station Force Main Upgrade**
SUBMISSION TO: REGULAR COUNCIL MEETING REVIEWED AND APPROVED FOR SUBMISSION
MEETING DATE: September 14, 2020 CAO: DT MANAGER: GC
DEPARTMENT: ENVIRONMENTAL SERVICES GM: RA PRESENTER: GC
STRATEGIC PLAN: Infrastructure

RELEVANT LEGISLATION:

Provincial (cite) – N/A

Council Bylaw/Policy (cite) – N/A

RECOMMENDED ACTION:

MOTION: That Council approve Administration to award MPE Engineering Ltd. for the Design and Construction Supervision of the new DeBolt Lift Station Force Main Upgrade for \$62,050.00, with money to come from the Environmental Services 2020 Capital Budget.

BACKGROUND/PROPOSAL:

The Hamlet of DeBolt has incurred several sewer issues over the past years due to increased waterflow during rainstorms and spring run-off. A recent review of the pumping capacities and sewer flows in DeBolt has determined that the existing force main is not adequate to accommodate the required needs during these peak times. Administration has proposed to construct a second sewer force main to alleviate the pumping capacity problem.

As stated, high volumes of wastewater are entering DeBolt's sewer collection system during the spring run-off and extreme rainfall events. This increased volume in the sewer is primarily due to infiltration from basements, flooding septic holding tanks, and exposed manholes. Efforts are made on a continual basis to minimize this infiltration. Staff have raised and sealed manholes, monitored private sewer systems, and installed sewer service line backflow preventers when applicable. We are working with Operations to establish more efficient surface water drainage in identified problem areas.

Associated Engineering was retained in 2019 to review DeBolt's two lift station's pumping capabilities and the existing force main's capacity. It was discovered that the two lift stations, DeBolt Main and Creeks Crossing are not able to pump simultaneously. The Creeks Crossing lift station is unable to pump wastewater into the force main when DeBolt's main lift station is pumping. This becomes an issue in high flow events as the Main lift station runs almost continuously resulting in the inability of Creek Crossing Lift Station pumps to operate when required.

Due to the complexity of this project Administration reached out to three proficient engineering firms to submit proposals for design and construction of a second sewer force main for DeBolt.

The proposals submitted are as follows: MPE -\$62,050.00
M2 -\$85,748.00
AE -\$125,000.00

With all the proposals submitted being equal in quality, Administration recommends awarding the design and construction supervision of the new DeBolt Lift Station Force Main Upgrade to MPE, the firm with the lowest priced proposal in the amount of \$62,050.00.

BENEFITS OF THE RECOMMENDED ACTION:

1. The benefit of Council accepting the recommended motion is that Administration can move forward on detailed design and tender for the construction of a new force main for DeBolt's sewer system to ensure a higher level of reliability.

DISADVANTAGES OF THE RECOMMENDED ACTION:

1. There are no perceived disadvantages to the recommended motion.

ALTERNATIVES CONSIDERED:

Alternative #1: Council has the alternative to take no action at this time. This is not recommended as the issue pertaining to DeBolt's sewer system is not expected to improve but rather worsen over time if not addressed.

Alternative #2: Council has the alternative to request new proposals for a solution to the capacity issue with the DeBolt Sewer Force Main, but this is not recommended as new proposals could come in at a higher cost.

FINANCIAL IMPLICATION:

Direct Costs: \$62,050.00

Ongoing / Future Costs: Minimal additional maintenance costs to be included in future operational budgets

STAFFING IMPLICATION:

There are no staffing implications to the recommended motion.

PUBLIC ENGAGEMENT LEVEL:

INCREASING LEVEL OF PUBLIC IMPACT

Inform

PUBLIC PARTICIPATION GOAL

Inform - To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.

PROMISE TO THE PUBLIC

Inform - We will keep you informed.

FOLLOW UP ACTIONS:

If approved, Administration would notify all parties involved of the results and proceed to design.

ATTACHMENT(S):

- M2 Proposal
- MPE Proposal
- AE Proposal

August 17, 2020

Municipal District of Greenview No. 16
3605-46 Street
Box 1079
Valleyview, Alberta
T0H 3N0

Attention: Gary Couch
Manager, Environmental Services

Dear Mr. Couch:

**Re: Hamlet of DeBolt – DeBolt Sewer Forcemain
Engineering Services Proposal**

MPE Engineering Ltd. (MPE) is pleased to submit the above-referenced proposal to provide design, tender, and construction services to the Municipal District of Greenview No. 16 (the M.D.) for the DeBolt Sewer Forcemain project.

This project will involve:

- ✦ Installation of approximately 1.3 km of sanitary sewer forcemain using horizontal directional drilling methods from the Creeks Crossing Lift Station to the DeBolt Sewage Lagoon.
- ✦ The forcemain alignment will include a crossing of Highway 43.
- ✦ Tie-in to the existing forcemain outside of the Creeks Crossing Lift Station.
- ✦ Isolation and air release/vacuum valves.
- ✦ Review of pumping capacity at the DeBolt and Creeks Crossing Lift Stations.
- ✦ Tie-in to the existing manhole at the DeBolt Sewage Lagoon.

Provided below are details on MPE's proposed scope of work, project schedule, and proposed budget.

1.0 PROPOSED SCOPE OF WORK

The proposed scope of work will include project management, design, and tender services required to twin the existing forcemain. Details are presented below.

In preparing this scope of work, MPE has made the following assumptions:

- ✦ SCADA and other programming review for the DeBolt and Creeks Crossing Lift Stations is not required.
- ✦ The tie-in to the existing forcemain will take place south of DeBolt Creek, and no notification to Alberta Environment and Parks is required to cross the creek.
- ✦ No Environmental Consultant work is required for work in proximity to DeBolt Creek or other areas along the alignment of the proposed forcemain.



- ✦ The only approval required by Alberta Transportation is for the crossing of Highway 43.
- ✦ The existing forcemain is located within a right-of-way north of Highway 43, and there is enough room for the proposed forcemain within this right-of-way.
- ✦ The proposed forcemain is located within the Range Road 11 right-of-way south of Highway 43, and there is enough room for the proposed forcemain within this right-of-way.
- ✦ No land services are required to purchase additional right-of-way or temporary workspace for the construction of the proposed forcemain.

1.1 Project Management

Project Management Services will include internal and external team coordination, financial control, and scheduling. MPE will provide the M.D. with monthly project status reports.

1.2 Design Services

Design services will involve the necessary steps to complete the drawings and specifications for the project. MPE will work with M.D. staff to develop the design of the proposed forcemain and tie-ins to the existing forcemain and manhole at the sewage lagoon.

1.2.1 Project Kick-Off Meeting

MPE will schedule a project kick-off meeting with the M.D. This meeting will confirm the project scope, identify communication procedures, introduce project staff and stakeholders, and identify and obtain available background data. MPE will also perform a site visit at this time. We will provide meeting minutes to the M.D.

1.2.2 Data Collection and Review

MPE will collect and review all relevant data pertaining to the project. This will include information on the pumping capacities for the DeBolt and Creeks Crossing Lift Stations. This will also include M.D. utility record information, franchise utility information, land ownership, M.D. Design Standards, GIS LiDAR, and other utility master plans for DeBolt.

1.2.3 Detailed Engineering Survey

MPE will perform a detailed field survey to confirm existing information and identify all surface features. This survey will confirm relevant information pertaining to the project including road widths, existing drainage features, and driveway approaches to industrial lots.

1.2.4 Agreements and Utility Coordination

MPE will initiate, coordinate, and apply for all agreements, permits, etc. as required for the project. This includes coordination with Alberta Transportation, as the proposed forcemain will cross Highway 43. It will also include EPEA notification with Alberta Environment and Parks for extension of the sanitary sewer system.

Utility coordination will include coordinating locates for various lines, and ensuring impacted stakeholders are involved in the design process.



1.2.5 Geotechnical Investigation

MPE will first refer to all current studies, reports, site plans, design drawings, aerial photography, geological maps, and GIS LiDAR to gain an overall view of the work area and identify otherwise hidden potential areas of concern. To facilitate detailed design, MPE is proposing to drill and sample a total of seven (7) boreholes to a 6.6 m depth along the forcemain alignment. MPE will record visual soil classification for all boreholes. All boreholes will have disturbed bulk sampling at regular intervals. MPE will preserve all samples and conduct laboratory testing to classify their engineering properties. MPE will conduct Standard Penetration Tests (SPT) first at 1.5 m depth intervals in all boreholes to assess soil consistency. Experienced geotechnical personnel will supervise the geotechnical fieldwork, and are responsible for logging the boreholes, carefully noting, and describing the changes in soil strata, and the occurrence of water-bearing zones. MPE will install standard standpipe piezometers in all boreholes, with groundwater level readings taken 14 days after drilling. MPE will survey boreholes as part of the surveying scope of work. It is understood that the forcemain will cross underneath Highway 43 using trenchless boring or jacking methods. MPE will provide recommendations in the report for trenchless methods and if soils encountered pose any risk to trenchless methods. MPE will position two boreholes on both sides of the highway at proposed jacking pit locations.

MPE will complete a laboratory testing program to assist in classifying the engineering properties of the soils in MPE's soil laboratory. Proposed testing for each borehole may include:

- ✦ Moisture content
- ✦ UNIFIED soil classification
- ✦ Atterberg Limits
- ✦ Grain size distribution
- ✦ Other testing as required based on encountered soil conditions

Geotechnical recommendations for design and construction provided in the reports will include, but not be limited to:

- ✦ Trenchless methods
- ✦ Earthworks and fill material suitability
- ✦ Trenching and backfill
- ✦ Erodibility and mitigation measures
- ✦ Provisions for control of groundwater
- ✦ Frost susceptibility and protection requirements
- ✦ Identification of any encountered conditions that may impact infrastructure design

In addition to the geotechnical recommendations, deliverables included in the report will consist of:

- ✦ Borehole Logs summarizing soil conditions and laboratory testing
- ✦ Borehole Location Plan
- ✦ Laboratory Testing Reports



1.2.6 Detailed Design

Using the information collected above, MPE will develop a detailed design to install the forcemain from the Creeks Crossing Lift Station to the DeBolt Sewage Lagoon. This will include sizing the proposed forcemain, tie-in details, pipeline grades, isolation and air release/vacuum valve locations, and highway crossing details.

The design will also include a review of the pump capacity at the DeBolt and Creeks Crossing Lift Stations, and a hydraulic analysis of the proposed forcemain. This review and analysis will aid in sizing the proposed forcemain, location of air release/vacuum valves, and determining any required pump upgrades resulting from twinning the forcemain.

1.2.7 Design Drawings and Specifications

MPE will prepare detailed design drawings for the project. MPE will provide these drawings to the M.D. for review at 90% completion for review and comment. MPE will also include a project cost estimate with the progress submission. MPE will meet with M.D. staff after the progress submission to review the design and collect comments.

MPE will also prepare specifications for the project.

1.3 Tender Services

1.3.1 Tender Period

MPE will assist the M.D. in preparing tender documentation and advertising the project. We will work with the local paper to advertise the project. We will use our online tendering system on Bids and Tenders to tender and advertise this project. MPE will provide support during the tender process by answering contractor questions on the M.D.'s behalf. We will also prepare any technical addendums, if required.

1.3.2 Tender Evaluation

MPE will provide assistance to the M.D. by evaluating the received tenders and checking for completeness and accuracy. We will prepare a letter of recommendation that will include a complete project budget based on actual tender value, and provide it to the M.D.

1.4 Construction Services

1.4.1 General Engineering Services During Construction

MPE will provide general engineering services during construction. This will include:

- ✦ Clarifying any contractor questions on the contract document interpretation
- ✦ Review of shop drawings
- ✦ Review of Change Orders and providing to the M.D.
- ✦ Coordination of on-site meetings and provision of meeting minutes
- ✦ Recommendations for project acceptance at construction completion and final inspection
- ✦ Provision of construction completion and final inspection certificates



1.4.2 Resident Inspection

MPE will provide resident engineering services during construction to ensure the construction activities are in accordance with the tender documents. This includes:

- ✦ Preparation of monthly progress payment certificates with payment recommendations
- ✦ Coordination of materials testing services
- ✦ Monitoring of site safety
- ✦ Preparation of daily inspection reports
- ✦ Compiling construction photographs

For budgeting purposes, MPE has assumed providing part-time inspection during the construction period. Inspectors will visit the site during key points in the construction progress such as the forcemain and lagoon tie-ins and the Highway 43 crossing. Part time inspection assumes three visits to DeBolt during the construction period. MPE has assumed a four-week construction period. Should the length of construction or the amount of inspection required change, MPE will discuss modified fees with the M.D.

1.5 Post-Construction Services

MPE will update construction drawings with record information. MPE will provide hard copies and digital copies of the record drawings to the M.D. MPE will also organize inspection of the completed works for CCC and FAC requirements. MPE will issue the CCC and FAC certificates accordingly.

2.0 PROJECT SCHEDULE

Based on the scope of work above, a tentative schedule is provided below. It is assumed that notification to proceed from the M.D. will take place before the end of September 2020. We also assume that the M.D. will tender and construct the work in 2021.

- | | |
|-------------------------|----------------------------|
| ✦ Design Services | September to December 2020 |
| ✦ Tender Services | January to February 2021 |
| ✦ Construction Services | May to July 2021 |

3.0 PROPOSED BUDGET

Based on the scope of work presented above, MPE proposes a budget of \$62,050.00, excluding GST, to complete the tasks. A breakdown of our budget is provided below.

- | | |
|--|--------------------|
| ✦ Design Services including geotechnical investigation | \$36,590.00 |
| ✦ Tender Services | \$ 3,580.00 |
| ✦ Construction Services | \$16,460.00 |
| ✦ <u>Post-Construction Services</u> | <u>\$ 5,420.00</u> |
| TOTAL | \$62,050.00 |

A *Detailed Fee Breakdown* and *MPE's 2020 Hourly Rate Schedule* is attached to this proposal.

MPE has made the following assumptions in developing the cost estimate above:

- ✦ MPE will have personnel in the area for groundwater readings as part of the surveying scope of work.



- ✦ Limited lab testing is assumed including moisture content, grain size analysis, and Atterberg Limits.
- ✦ Drilling contractor is based out of Grande Prairie.
- ✦ Optional fees for private locators are included in the estimate.

Thank you for your consideration of our submission. Should you have any questions or require clarification regarding this submission, please contact the undersigned at 780-509-4304 or mgrzeszczuk@mpe.ca.

Yours truly,
MPE ENGINEERING LTD.

Mirek Grzeszczuk, P.Tech.(Eng.)
Edmonton Region Manager

Encl.



Municipal Services



Water Resources



Building Services



Municipal District of Greenview No. 16

Hamlet of DeBolt - DeBolt Sewer Forcemain

Fees and Disbursements

| MPE ENGINEERING LTD. | | | | | | | | | | | |
|------------------------------|---|--|---|---|---|---|--|------------|-------|---------------|----------------|
| STAFF MEMBER | | Mirek Grzeszczuk P.Tech.(Eng) Corporate Representative | Scott Kusalik P. Eng. Project Manager | Trevor Curtis P.Eng. Geotechnical Manager | Reid Huculak P.Eng. Geotechnical Engineer | Shaan Ghoman E.I.T. Junior Engineer | Adrian Entz T.T. Drafting/Survey | Support | Hours | Disbursements | Total MPE Fees |
| Task | Work Component | \$197 T7 | \$162 E3 | \$182 E4 | \$141 E2 | \$128 E1 | \$120 T3 | \$79 S1 | | | |
| 1 DESIGN SERVICES | | | | | | | | | | | |
| | Project Kick-Off Meeting | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 12 | \$500 | \$2,444 |
| | Data Collection and Review | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | \$0 | \$256 |
| | Detailed Engineering Survey | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 16 | \$500 | \$2,420 |
| | Agreements and Utility Coordination | 0 | 4 | 0 | 0 | 8 | 8 | 1 | 21 | \$0 | \$2,711 |
| | Geotechnical Investigation | 0 | 0 | 3 | 61 | 0 | 4 | 0 | 68 | \$6,200 | \$15,827 |
| | Detailed Design | 2 | 4 | 0 | 0 | 16 | 20 | 0 | 42 | \$0 | \$5,490 |
| | Design Drawings and Specifications | 2 | 4 | 0 | 0 | 10 | 40 | 4 | 60 | \$0 | \$7,438 |
| | Sub-Total Hours | 4 | 24 | 3 | 61 | 36 | 88 | 5 | 221 | | |
| | DESIGN SERVICES | \$788 | \$3,888 | \$546 | \$8,601 | \$4,608 | \$10,560 | \$395 | | \$7,200 | \$36,586 |
| 2 TENDER SERVICES | | | | | | | | | | | |
| | Tender Period Services | 0 | 4 | 0 | 0 | 8 | 4 | 4 | 20 | \$0 | \$2,468 |
| | Tender Review and Recommendation of Award | 1 | 2 | 0 | 0 | 4 | 0 | 1 | 8 | \$0 | \$1,112 |
| | Sub-total Hours | 1 | 6 | 0 | 0 | 12 | 4 | 5 | 28 | | |
| | TENDER SERVICES | \$197 | \$972 | \$0 | \$0 | \$1,536 | \$480 | \$395 | | \$0 | \$3,580 |
| 3 CONSTRUCTION SERVICES | | | | | | | | | | | |
| | General Engineering | 2 | 18 | 0 | 0 | 12 | 0 | 1 | 33 | \$1,000 | \$5,925 |
| | Resident Engineering | 0 | 2 | 0 | 0 | 4 | 60 | 0 | 66 | \$2,500 | \$10,536 |
| | Sub-Total Hours | 2 | 20 | 0 | 0 | 16 | 60 | 1 | 99 | | |
| | CONSTRUCTION SERVICES | \$394 | \$3,240 | \$0 | \$0 | \$2,048 | \$7,200 | \$79 | | \$3,500 | \$16,461 |
| 4 POST-CONSTRUCTION SERVICES | | | | | | | | | | | |
| | Record Drawings | 0 | 1 | 0 | 0 | 2 | 8 | 0 | 11 | \$0 | \$1,378 |
| | CCC Inspection | 0 | 2 | 0 | 0 | 10 | 0 | 1 | 13 | \$500 | \$2,183 |
| | FAC Inspection | 0 | 0 | 0 | 0 | 10 | 0 | 1 | 11 | \$500 | \$1,859 |
| | Sub-Total Hours | 0 | 3 | 0 | 0 | 22 | 8 | 2 | 35 | | |
| | POST-CONSTRUCTION SERVICES | \$0 | \$486 | \$0 | \$0 | \$2,816 | \$960 | \$158 | | \$1,000 | \$5,420 |
| Total Fees | | \$1,379 | \$8,586 | \$546 | \$8,601 | \$11,008 | \$19,200 | \$1,027 | 383 | \$11,700 | \$62,047 |





EDMONTON FEE SCHEDULE 2020 RATES

HOURLY RATES

ENGINEER PROFESSIONALS

| | |
|-------------------------------|-------------------|
| E1 Junior Engineer | \$128.00 per hour |
| E2 Design Engineer | \$141.00 per hour |
| E3 Project Engineer | \$162.00 per hour |
| E4 Project Manager | \$182.00 per hour |
| E5 Senior Project Manager | \$198.00 per hour |
| E6 Engineering Manager | \$228.00 per hour |
| E7 Senior Engineering Manager | \$248.00 per hour |

TECHNICIAN AND TECHNOLOGIST PROFESSIONALS

| | |
|------------------------------|-------------------|
| T1 Junior Technologist | \$ 99.00 per hour |
| T2 Design Technologist | \$109.00 per hour |
| T3 Intermediate Technologist | \$120.00 per hour |
| T4 Project Technologist | \$136.00 per hour |
| T5 Senior Technologist | \$161.00 per hour |
| T6 Project Manager | \$178.00 per hour |
| T7 Senior Project Manager | \$197.00 per hour |

COMPUTER AND CONTROLS PROGRAMMERS

| | |
|----------------------------|-------------------|
| P1 Junior Programmer | \$ 98.00 per hour |
| P2 Programmer | \$120.00 per hour |
| P3 Intermediate Programmer | \$126.00 per hour |
| P4 Senior Programmer | \$154.00 per hour |
| P5 Project Manager | \$174.00 per hour |
| P6 Senior Project Manager | \$184.00 per hour |

ADMINISTRATION

| | |
|-----------------------------|-------------------|
| S1 Receptionist / Secretary | \$ 79.00 per hour |
| S2 Administrative Assistant | \$ 88.00 per hour |

EQUIPMENT RATES AND EXPENSES

MATERIALS TESTING EQUIPMENT

| | |
|--------------------|-------------------|
| Mobile Testing Lab | \$750.00 per day |
| Nuclear Gauge | \$100.00 per day |
| Concrete Testing | \$ 50.00 per day |
| Coring Unit | \$ 100.00 per day |

SURVEY AND PHOTO EQUIPMENT

| | |
|--------------------------------------|------------------|
| Global Positioning System (GPS) Unit | \$400.00 per day |
| Total Station | \$400.00 per day |
| Survey Drone and GPS Unit | \$800.00 per day |
| Phantom Aerial Photography | \$150.00 per day |

TRANSPORTATION EQUIPMENT

| | |
|---------------------|------------------|
| Data Collection Van | \$800.00 per day |
| Traffic Counter | \$ 50.00 per day |

EXPENSES

| | |
|---------------|-----------------------|
| Mileage | \$ 0.65 per kilometre |
| Per Diem | \$ 65.00 per day |
| Disbursements | AT COST, NO MARKUP |

August 26, 2020
File: PRP-20-014

VIA E-MAIL: Gary.Couch@MDGreenview.ab.ca

Gary Couch
Manager, Environmental Services
Municipal District of Greenview No. 16
Box 1079
Valleyview, AB T0H 3N0

RE: ENGINEERING SERVICES PROPOSAL
MUNICIPAL DISTRICT OF GREENVIEW - DEBOLT FORCEMAIN

Dear Mr. Couch:

Further to your request, M2 Engineering is pleased to submit our engineering services proposal in relation to design and construction of a new forcemain in the Hamlet of DeBolt. Thank you for providing us with the opportunity to submit our proposal for this work. We trust this work plan outlines everything you need for this project.

1 Introduction

The Hamlet of DeBolt is located in Northern Alberta, approximately 58 km east of the City of Grande Prairie. The 2016 census reported the population for the Hamlet to be 121 people.

The Hamlet currently has a wastewater collection system that includes gravity sewer collection as well as two lift stations and a forcemain to the existing lagoon. Currently, both lift stations pump into the same forcemain. The objective of this project is to twin the existing forcemain. Information provided by the Municipal District of Greenview indicates that the new forcemain should follow the same or similar alignment as the current forcemain.

2 Scope of Services

Based on the information provided to us to date, we understand that our scope of services would include:

- Approximately 1.3 km of forcemain, installed via HDD
- 1 x Highway 43 crossing
- Tie-in/connection into the existing forcemain
- New valving
- Pump review for hydraulic capacity analysis
- Tie-in at the existing lagoon manhole

We have identified a breakdown of five (5) major tasks to complete our scope of services for this project:

| | |
|---------------------------------------|--|
| PHASE 1: PLANNING & DESIGN | |
| Task 1 | Design Criteria Development & Hydraulic Review |
| Task 2 | Detailed Design |
| PHASE 2: CONSTRUCTION | |
| Task 3 | Bidding Services |
| Task 4 | Construction Services |
| Task 5 | Post Construction Services |

PHASE 1: PLANNING & DESIGN

Task 1 – Design Criteria Development & Hydraulic Review

Purpose: The purpose of this task is to review background information, establish design flows, and complete hydraulic review of new forcemain based on current pumps.

Scope of Services:

- Coordinate a project kick-off meeting via conference call
- Collect and review background information:
 - Record drawings:
 - 2 x existing lift stations
 - Forcemain
 - Lagoon
 - Current pump model information, including pump curves
 - Lift station operating data such as run times and flow rates (if available)
 - Population data
 - Growth/development plans for the community
- Summarize design criteria for new forcemain:
 - Design horizon (assume 25-years)
 - Population growth projections
 - 10-year flow projections
 - 25-year flow projections
 - Peaking factors
 - Wet weather event assumptions
- Review pump capacity
- Review forcemain alignment with MD of Greenview
- Review hydraulic capacity of existing forcemain
- Review hydraulic requirements for new forcemain
- Coordinate surveyor for topographical survey (Pals Geomatics)
 - Note: Pals Geomatics has been carried as an allowance to provide survey for this project
 - M2 Engineering will coordinate with Pals
- Coordinate with Parkland Geo for geotechnical investigations
 - Note: Parkland Geo has been carried as an allowance to complete a geotechnical investigation for this project
 - M2 Engineering will coordinate with Parkland Geo
- Coordinate with environmental consultant
 - Note: We have carried an allowance to have a subconsultant complete an environmental review for this project
- Prepare a letter to AEP informing them of the modifications to the wastewater collection system

Assumption:

- M2 Engineering has assumed the MD of Greenview has a pre-existing utility right-of-way for the existing forcemain. If a utility right-of-way is not established, M2 can revise scope as necessary to secure right-of-way access for the MD.

Client Assistance:

- Provide requested record information
- Confirm MD of Greenview has a pre-existing utility right-of-way for the current forcemain

Task 2 – Detailed Design

Scope of Services:

- Prepare Highway 43 crossing plan and details
- Coordinate with Alberta Transportation for Highway 43 crossing requirements
- Submit application for Highway 43 crossing on behalf of MD of Greenview
- Prepare plan profile drawings for new forcemain
- Prepare tie-in details for forcemain connection
- Review flush out locations
- Review valving locations
- Prepare technical specifications for new forcemain
- Prepare Division 00 and 01 specifications
- Review 60% design package with MD of Greenview
- Collect 60% review meeting comments
- Review 90% design package with MD of Greenview
- Collect 90% review comments and finalize design

Client Assistance:

- Review draft design packages and provide input

Deliverables:

- 60% design package
- 90% design package
- FINAL, Issued for Bid and Construction package

PHASE 2: CONSTRUCTION

Task 3 – Bidding Services

Purpose: The purpose of this task is to receive competitive pricing from qualified contractors.

Scope of Services:

- Post Issued for Bid and Construction package on Bids & Tenders
- Respond to questions from contractors and issue addenda as required
- Evaluate bids submitted to Bids & Tenders
- Prepare evaluation letter of the bids received
- Review bids with MD of Greenview

Deliverables:

- Bid evaluation letter

Task 4 – Construction Services

Scope of Services:

- Coordinate construction kick-off meeting with the contractor to review project objectives, schedule, milestones, permits, submittals, etc.
- Coordinate monthly construction progress meetings
- Provide technical guidance to the MD of Greenview and assist the contractors and suppliers in interpretation of the contract documents, drawings, and specifications
- Act on behalf of the MD of Greenview to administrate the construction contract
- Provide general construction engineering services based on assumed duration of construction, including:
 - Shop drawing submittals
 - Requests for information (RFI) review
 - Progress Payment Certificates (1/month)
 - Monthly meetings with contractor
 - Monthly progress reports
 - Shop drawing submittals
- Provide overall project management services:
- Assist with the review of RFIs and change orders
- Review monthly progress as part of PPCs
- Resident engineering services
 - We have allowed for 2 weeks of full-time onsite construction inspection for 5-days a week 8-hours a day. This time will be used at our discretion to:
 - Witness critical portions of construction
 - Monitor construction activities
 - Daily site reports will be completed to record construction activities, record progress and quantities, observe safety practices, and confirm proper record management is taking place

Task 5 – Post Construction Services

Scope of Services:

- Assist with warranty issues
 - M2 Engineering has allowed for 12 hours of warranty assistance

The foregoing Scope of Services and Deliverables are collectively referred to hereinafter as the “Services”.

3 Project Team

The table below summarizes the roles, education, and professional designations of the core project team members.

| Role | Name & Professional Designation | Education |
|--|---------------------------------|------------------------------|
| Project Manager & Lead Design Engineer | Jackie Mykytiuk, P.Eng. | B.Sc. Civil-Env. Engineering |
| Engineer-In-Training | Liz Ng, E.I.T. | B.Sc. Civil-Env. Engineering |

Jackie Mykytiuk, P.Eng. | Project Manager & Lead Design Engineer

Jackie is a project manager, designer, and director at M2 Engineering with experience in multiple consulting engineering disciplines. Her past experience includes infrastructure engineering with environmental site assessments and air quality monitoring as well as water and wastewater projects. Jackie has an energetic personality that motivates her success and hard work ethic. Jackie will use her water process engineering background to design and execute the DeBolt forcemain project.

Liz Ng, E.I.T. | Engineer-In-Training

Liz graduated from the Civil-Environmental Engineering Co-op Program with Distinction at the University of Alberta in 2019. Through her Co-op terms, Liz gained diverse experience in municipal projects in both the construction and water/wastewater industries. She currently assists in process mechanical design, troubleshooting, equipment specifications, shop drawing reviews, site inspection reports, general project coordination, in-house lab testing and the preparation of various studies. Liz will support Jackie in the design and construction of the forcemain.

4 Schedule

Based on the information provided to us to date, we have prepared the following schedule of milestone events for this project. Please note that the dates shown are only estimates. They are subject to new information and criteria being provided by you and will need to be confirmed by the contractor performing the work.

| Task / Milestone | Start Date | End Date |
|---|---------------|--------------|
| Authorization to Proceed | Sept 30, 2020 | |
| PHASE 1: PLANNING & DESIGN | | |
| Task 1 – Design Criteria Development & Hydraulic Review | Oct 1, 2020 | Nov 13, 2020 |
| Task 2 – Detailed Design | Nov 13, 2020 | Jan 15, 2020 |
| PHASE 2: CONSTRUCTION | | |
| Task 3 – Bidding Services | Jan 15, 2020 | Feb 19, 2020 |
| Task 4 – Construction Services | May 2020 | July 2020 |
| Task 5 – Post Construction Services | July 2020 | July 2022 |

5 Budget

We propose to undertake Phase 1 (Task 1 - 2) as a lump sum fee and Phase 2 (Task 3 - 5) as time and materials. The table below shows a per task breakdown of our fees.

| Task Description | Engineering Fee |
|---|-----------------|
| PHASE 1: PLANNING & DESIGN | |
| Task 1 – Design Criteria Development & Hydraulic Review | \$4,749 |
| Task 2 – Detailed Design | \$24,546 |
| PHASE 2: CONSTRUCTION | |
| Task 3 – Bidding Services | \$4,143 |
| Task 4 – Construction Services | \$25,628 |
| Task 5 – Post Construction Services | \$1,449 |
| M2 ENGINEERING SUBTOTAL | \$60,515 |
| ALLOWANCES | |
| Survey – Pals Geomatics | \$6,750 |
| Geotechnical Investigation – Parkland Geo | \$9,400 |
| Environmental | \$5,000 |
| ALLOWANCES SUBTOTAL | \$21,150 |
| TOTAL (excl. G.S.T.) | \$81,665 |
| TOTAL (incl. G.S.T.) | \$85,748 |

Gary Couch
August 26, 2020

6 Closing

Thank you for the opportunity to offer our services. We trust the scope of services in our proposal meets your needs for this project. Should you have any questions, please do not hesitate to contact us.

Sincere Regards,
M2eng Alberta Ltd.



Jackie Mykytiuk, P.Eng.
Project Manager, Director

Enclosure(s): Schedule A – Terms of Engagement

Proposal Acceptance

By signing below, the Client accepts the Proposal and agrees to engage the Consultant on the terms and conditions set out herein, including the attached Schedule A - Terms of Engagement, and undertakes to carry out its duties in accordance with this proposal, including payment of the Consultant's fees, expenses and disbursements.

Please note acceptance of our proposal is to be in accordance with the enclosed Terms of Engagement in Schedule A; with the "Consultant" being "M2 Engineering (M2eng Alberta Ltd.)", the "Client" being "[INSERT CLIENT NAME]", and the "Project" being "[INSERT PROJECT NAME]".

Date: _____, 2020
 (month) (day)

Acceptance: _____
Per: Gary Couch
 Municipal District of Greenview

CONFIDENTIALITY STATEMENT

This document, including its contents, schedules, and attachments, are proprietary and confidential, and these proposal materials may not be used or disclosed in any manner without the prior written consent of M2ENG ALBERTA LTD. except in connection with the evaluation of the proposal by the recipient. Disclosure or use of these proposal materials is prohibited, these proposal materials cannot be used for bid/price shopping, and the proposal materials may not be used for any unauthorized purpose. The recipient agrees indemnify M2ENG ALBERTA LTD. from all losses, costs, and damages, arising from or in connection with the unauthorized use or disclosure of any of these proposal materials.

Schedule A – Terms of Engagement

General

M2 Engineering (the “Consultant”) shall render the Services, as specified in the Engineering Services Proposal (the “Proposal”) provided to the Client for this Project, as defined in the Proposal, in accordance with the following terms of engagement.

Compensation

Charges for the Services rendered will be made in accordance with the Proposal in effect from time to time as the Services are rendered, and such charges shall not exceed the value identified in the Proposal unless prior written approval is obtained from the Client. All charges will be payable in Canadian Dollars. Invoices will be due and payable by the Client within thirty (30) days of the date of the invoice without holdback or right to withhold or setoff amounts owed for any reason. Interest on any overdue amount will be charged at the rate of 1.5% per month (18% per annum), compounded monthly.

Termination

Either party may terminate this the Consultant’s engagement without cause upon thirty (30) days’ notice in writing. On termination by either party without cause, the Client shall forthwith pay to the Consultant its charges for the Services performed to the date of termination in accordance with the Compensation section of these Terms of Engagement.

If either party breaches this engagement, the non-defaulting party may terminate the Consultant’s engagement after giving seven (7) days’ notice to the defaulting party to remedy the default. On termination by the Consultant under this paragraph, the Client shall forthwith pay to the Consultant its charges for the Services performed to the date of termination in accordance with the Compensation section of these Terms of Engagement

Change of Services

All requests for changes or amendments to the Services must be made in writing to the Consultant. The Consultant will advise the Client within ten (10) days of any effect the proposed changes or amendments will have on the Consultant’s fees or schedule.

Site Visits

If site visits are included in the Services, the number of site visits will be limited to the amount stated. If additional site visits are required, they will be considered a change to the Services entitling the Consultant to additional fees.

Unless agreed otherwise, site visits will occur between Monday to Friday - 9:00 AM – 5:00 PM MST\MDT. Requests for the Consultant to attend site visits or inspections must be made 48 hours prior to the site visit or inspection.

Environmental

The Consultant’s field investigation, laboratory testing and engineering recommendations will not address or evaluate pollution of soil or pollution of groundwater. Where applicable, the Consultant will co-operate with the Client’s environmental consultant during the field work phase of the investigation (if applicable).

Professional Responsibility

The Consultant is bound by the legislation governing the engineering profession. Nothing in the Proposal requires the Consultant to derogate from obligations prescribed by law that are binding upon the Consultant or the member of the Consultant’s project team. The Consultant shall provide Services in accordance with the Proposal and with the degree of care, skill, and diligence normally provided by engineers in the performance of comparable services in respect of projects of a similar nature to that contemplated by the Proposal. The Consultant will provide qualified and, where required, suitably licensed personnel to perform the Services. The Consultant will maintain all required licenses in good standing at all times. The Consultant will comply with applicable safety policies and requirements applicable to the Project.

The Consultant is entitled to rely upon the accuracy and completeness of information and data furnished by the Client, including information and data originating from another consultant of the Client, whether such other consultant is engaged at the request of the Consultant, the Client, or otherwise.

Schedule A – Terms of Engagement

Construction Cost and Contract Time Estimates

The Client acknowledges that any estimate of probable construction cost and an estimate of construction contract time provided by the Consultant are subject to change and are contingent upon factors, including market forces, over which the Consultant has no control. The Consultant does not guarantee the accuracy of such estimates nor does the Consultant represent that bids, negotiated prices or the time for performance will not vary from such estimates.

Limitation of Liability

The Consultant is not be responsible, or liable to the Client, for:

1. the failure of a contractor, retained by the Client, to perform the work required for the Project in accordance with the applicable contract documents;
2. the construction methods, means, techniques, sequences or procedures of any contractor, subcontractor, supplier, or any other third party;
3. the design of or defects in equipment supplied or provided by the Client or its agents for incorporation into the Project;
4. the advice of any independent expert engaged either by the Client or on the Client's behalf, whether or not recommended by the Consultant;
5. any damage to subsurface structures and utilities which were identified and located by the Client;
6. any Project decisions made by the Client;
7. any losses or damages arising from forms or contracts provided to the Client for it to use with a contractor, supplier or other consultant; or
8. the unauthorized distribution of any confidential document or report prepared by or on behalf of the Consultant for the exclusive use of the Client.

Insurance and Liability

The Consultant will carry professional liability insurance of \$250,000 per claim and \$500,000 in the aggregate within any policy year. Coverage will be maintained continuously from the commencement of the Services until completion or termination of the Services. If the Consultant carries professional liability insurance for amounts greater than that specified above, such insurance will be available under this Project only up to the amount specified and agreed to in writing between the Client and the Consultant.

The liability of each party with respect to a claim against each other is limited to direct damages only and neither party will have any liability whatsoever for consequential or indirect loss, injury or damage (such as loss of profit, revenue, production, business, contracts or opportunity and increased cost of capital, financing or overhead) incurred by the other party.

The maximum aggregate liability of the Consultant, its officers, directors, shareholders, employees, and agents, under this Proposal for all losses, damages, expenses, or injuries, whether under contract, tort (including without limitation, negligence, and strict liability), by statute, other legal theory, or otherwise, howsoever arising, will not exceed the fees actually paid by the Client hereunder, regardless of a breach of any fundamental term or a finding that the remedies provided herein failed with respect to their essential purpose.

The Client acknowledges and agrees that it will indemnify and hold the Consultant harmless from any costs, including all solicitor and own client costs, fees, expenses, actions, claims or causes of actions arising from steps taken by the Consultant to collect any fees owing under this engagement or from claims made by any contractor, any other consultant of the Client or any third party relating to the means, methods, techniques, sequences, procedures and use of equipment for the Project, whether or not reviewed by the Consultant, which are employed by a contractor or by another consultant of the Client in executing, designing or administering the Project.

Documents

All of the documents prepared by the Consultant or on behalf of the Consultant in connection with the Project are instruments of service for the execution of the Project. The Consultant retains ownership of all patents, trademarks, copyrights, industrial or other intellectual property rights resulting from the Services or from concepts, products, or processes which are developed or first reduced to practice by the Consultant in performing the Services, whether the Project is executed or not. The Client will not use, infringe or appropriate such proprietary rights without the prior written consent, which may be unreasonably withheld, and compensation of the Consultant.

Field Services

Where applicable, field services recommended for the Project are the minimum necessary, in the sole discretion of the Consultant, to observe whether the work of a contractor retained by the Client is being carried out in general conformity with the intent of the Services. Any reduction from the level of services recommended will result in the Consultant providing qualified certifications for the work.

Dispute Resolution

A claim is a demand or assertion seeking any remedy under, or enforcement of, or adjustment or interpretation of, the Proposal, or seeking any money, time, or other relief in any way to the Proposal, the Project, or the Consultant's work on the Project (a "Claim"). If required in writing by either the Client or the Consultant, the Client and the Consultant shall attempt to resolve any Claim between them by entering into structured non-binding negotiations with the assistance of a mediator on a without prejudice basis. The mediator shall be appointed by agreement of the parties. If a mediator cannot be agreed to between the parties within ten (10) calendar days or if the Claim cannot be settled within a period of thirty (30) calendar days with the mediator, the Consultant shall have the sole option to refer the dispute to binding arbitration in accordance with the Alberta Arbitration Act.

Independent Contractor

The parties agree that the Consultant is an independent contractor, and will, at its own cost and expense, comply with all laws, rules, ordinances and regulations of all governing bodies having jurisdiction over the Services. Neither the Consultant nor anyone employed by the Consultant will be deemed for any purpose to be the agent, employee, servant or representative of the Client.

Enforcement and Time

In the event any portion of the Proposal, including any portion of this Schedule A – Terms of Engagement, be declared by a court of competent jurisdiction to be invalid, illegal, or unenforceable, such portion will be deemed severed from the Proposal, and the remaining parts will remain in full force and effect.

Time will be of the essence in the Proposal.

Venue and Governing Law

In the event that any lawsuit or other proceeding initiated related directly or indirectly to the Proposal, then the sole venue will be a court of competent jurisdiction located within the City of Edmonton, Alberta. Except as otherwise stated in this Schedule A, the Proposal will be governed by the laws of the Province of Alberta and the laws of Canada applicable therein.

Notice

All notices, demands, requests, and other matters required or permitted by the Proposal or by law to be served on, given to or delivered to the Client or the Consultant, will be in writing to the parties addresses first set forth in the Proposal and will be personally delivered, or sent by email. Notices will be deemed to be received on the date of delivery if delivered during normal business hours, or on the next business day if received after business hours. Either party may change their address for purposes of this section by giving written notice of such change to the other party.



Associated
Engineering

GLOBAL PERSPECTIVE.
LOCAL FOCUS.

Associated Engineering Alberta Ltd.
500, 9888 Jasper Avenue
Edmonton, Alberta, Canada, T5J 5C6

TEL: 780.451.7666
FAX: 780.454.7698
www.ae.ca

July 23, 2020

File:

Mr. Gary Couch,
Manager, Environmental Services
M.D. of Greenview No. 16
4806 - 36 Avenue, Box 1079 Valleyview, Alberta T0H 3N0

Re: DEBOLT FORCEMAIN UPGRADE

Dear Sir:

We are pleased to submit our engineering services work plan and fee proposal to the M.D. of Greenview for the DeBolt Forcemain Upgrade. It is our understanding that this project is to include the following:

- Installation of approximately 1.3 km of forcemain via HDD as per the attached sketch (includes crossing Hwy 43)
- Tie-in to the existing forcemain outside of the DeBolt and Creek Crossing Lift Stations.
- Valves.
- Pump review (SCADA or other programming not included).
- Tie-in to the existing manhole at the sewage lagoon.

WORK PLAN

The work plan to execute the scope of work is presented below.

PROJECT MANAGEMENT

- Project Implementation Plan and Management Plan
- Project Initiation and Kick-off Meeting
- Financial Control/Monthly Reporting
- Coordinate and Perform Internal and External Quality Assurance Reviews



DESIGN SERVICES

Design Services will define the scope, locations, sizing, regulatory approvals, and to complete detailed design drawings, and specifications to enable the M.D. to obtain quotes for the work. This will include:

- Data Collection and Review
- Confirm Design Criteria
- Prepare Base Plan (Helix)
- Topographic Survey (Helix)
- Alignment Analysis
- Trenchless Crossing Design
- Hwy 43 Crossing Applications
- Utility Crossing/Proximity Agreement Applications and Approvals
- Regulatory Permit Applications and Approvals
- Environmental Overview (Desktop)
- Geotechnical Investigation¹ (Parkland Geo)
- Hydraulic Analysis
- Pipeline Design, Drawings and Specifications
- Quote Package
- Pre-Quote Cost Estimates
- Legal Survey of FM ROW²

Notes:

1. A budget allowance is provided to complete a geotechnical investigation for the pipeline installation. (Lift Station to Lagoon).
2. Optional item if ROW for proposed FM is required.
3. It is assumed the M.D. will acquire lands for this project if required.

PROCUREMENT PHASE SERVICES

Procurement Phase Services includes those tasks required to obtain pricing for the project and secure a contractor. This will include:

- Distributing electronic quote packages to M.D. selected contractors.
- Provide clarifications during pricing period and issue addenda as required.
- Quote evaluation and recommendation of award to M.D. of Greenview.
- Coordination of contract document execution.



CONSTRUCTION PHASE SERVICES

Construction Phase Services include tasks related to construction and commissioning of the project. Tasks will include:

General Engineering and Contract Administration:

- Pre-construction meeting x 1 (Valleyview)
- Construction progress meeting x 2 (On Site)
- Shop-drawing review
- Design clarifications and response to requests for information (RFIs)
- Monitor contractor's progress and schedule
- Bi-Weekly status report
- Review contractor submissions
 - Work procedures, TAS, RFIs, etc.
- Progress payment, issuance of change notices, and change orders

Resident Inspection

- Confirm construction is in general conformance to design drawings and specifications
- Quantity checks for payment
- Construction inspection (60 hrs/week for 4 weeks)
- Commissioning of the forcemain

Not Included (Contractor Supplied Services)

- Construction survey layout
- Materials testing for backfill compaction

POST-CONSTRUCTION PHASE SERVICES

- Preparation of record drawings
- Construction Completion Certification (CCC) and Final Acceptance Certification (FAC)

FEE BUDGET

We propose to undertake this project on a fixed fee and time and materials basis. Fixed fee will be used for items with clear definition of scope and duration. This will provide a level of cost certainty to the owner. Project Management, Design Phase Services and Tender Phase Services will be fixed fee. Tasks which are construction related and the duration is outside of our control will be done on a time and materials basis. We propose to complete Construction Phase Services on a time and materials basis.





Time and materials work will be billed based upon the AE 2019 preferred rate schedule.

The table below presents our proposed fee budget.

| Task | Fee (\$) |
|-------------------------------|-------------------------|
| AE Engineering Services | |
| Project Management | \$7,890 |
| Design Services | \$30,250 |
| Procurement Phase Services | \$4,490 |
| Construction Services | \$57,570 |
| Post Construction Services | \$5,380 |
| Sub-total = | \$105,580 |
| Sub-consultant Services | |
| Geotechnical Investigation* | \$11,540 |
| Legal Survey* | \$7,880 |
| Sub-total = | \$19,420 |
| <u>Estimated Total</u> | <u>\$125,000</u> |

*Budget allowance. To be confirmed when requirements are defined.

In preparation of our fee budget we have made the following assumptions:

- M.D. will acquire right-of-way or land if required.



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Engineering

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SCHEDULE

The schedule is dependent on geotechnical investigation and crossing approvals.

| Milestones | From | To |
|-------------------|-------------------|-------------------|
| Kick-off Meeting | July 27, 2020 | July 27, 2020 |
| Design | July 29, 2020 | October 8, 2020 |
| Tender (Quotes) | October 9, 2020 | October 27, 2020 |
| Construction | November 4, 2020 | December 21, 2020 |
| Post Construction | December 22, 2020 | February 1, 2021 |

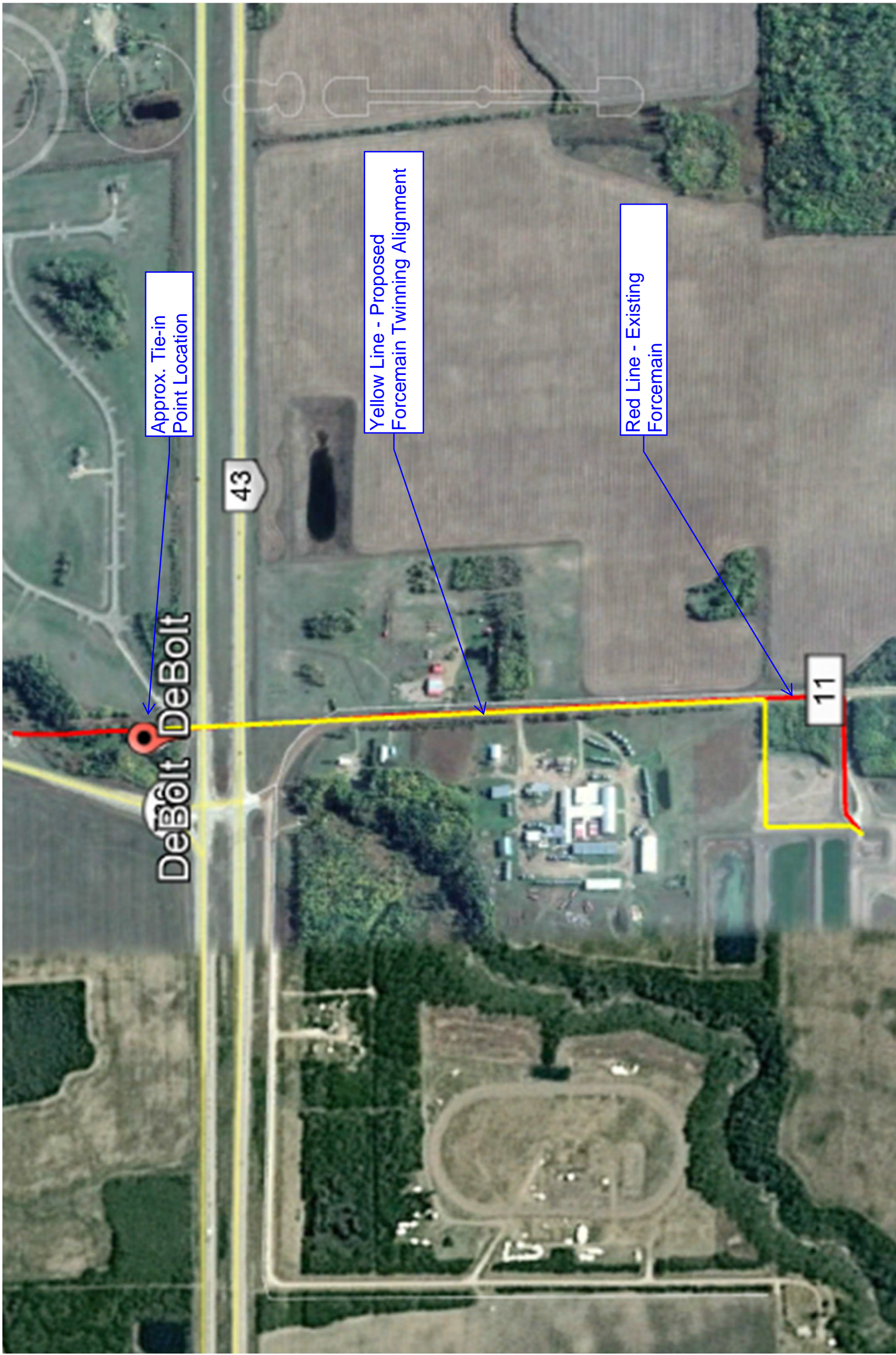
Please contact Jordin LeBlanc once you have examined the proposal. We will be pleased to review the proposal with you at your convenience.

Yours truly,

Jordin LeBlanc, P.Eng.
Project Manager
JL


Chad Maki, P.Eng.
Division Manager Municipal Infrastructure







Municipal District of Greenview
Project Task Resource Estimate
DeBolt Forcemain

|  | | | | | | | | | | Project Phase | |
|---|--|--|--|--|--|--|--|--|--|---------------|--|
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REQUEST FOR DECISION

| | | | |
|-----------------|--|--------------------------------------|---------------|
| SUBJECT: | Grande Cache Wastewater Treatment Plant Upgrade Engineering Proposals | | |
| SUBMISSION TO: | REGULAR COUNCIL MEETING | REVIEWED AND APPROVED FOR SUBMISSION | |
| MEETING DATE: | September 14, 2020 | CAO: DT | MANAGER: GC |
| DEPARTMENT: | ENVIRONMENTAL SERVICES | GM: RA | PRESENTER: GC |
| STRATEGIC PLAN: | Infrastructure | | |

RELEVANT LEGISLATION:

Provincial (cite) – N/A

Council Bylaw/Policy (cite) – N/A

RECOMMENDED ACTION:

MOTION: That Council approve Administration to proceed with M2 Engineering on the Grande Cache Wastewater Treatment Plant Upgrade detailed design and construction for \$1,043,155.00, with money to come from Environmental Services 2020 Capital Budget.

BACKGROUND/PROPOSAL:

The Grande Cache Sewage Treatment plant is currently in need of an upgrade as the 1981 infrastructure has deteriorated significantly over the past 39 years.

Prior to the dissolution, The Town of Grande Cache had retained Associated Engineering to perform preliminary review and design. Associated Engineering has just recently completed the Design Brief Memorandum and the project's next step is to go into detailed design. It should be noted that Administration used the Design Brief Memo to apply to Alberta Transportation under AMWWP for grant funding and has recently been approved for 53% of this capital project. (See attached letter)

Administration selected and approached three very reputable consulting firms to submit proposals for engineering, specifically detailed design, and construction, for the upgrades required for the Grande Cache Wastewater Treatment Plant. Proposals have been submitted by Associated Engineering, MPE, and M2 Engineering. Please find attached credentials and proposals from each firm for the detailed design and construction of the new Grande Cache WWTP.

Having 3 proposals submitted to Council meets the Canadian Free Trade Agreement requirements. As it is a water project it meets the New West Partnership Trade Agreement requirements.

The prices submitted in ascending order are: M2 - \$1,043,155.00
MPE - \$1,046,498.00
AE - \$2,190,000.00

M2's proposal is a mere \$3,343.00 lower in cost than MPE's and both are fixed fee proposals for the design and construction of the proposed Grande Cache WWTP. AE's proposal was submitted as a percentage of the project's total cost and came in significantly higher.

With the quality of all proposals being very comparable, Administration recommends awarding the design and construction supervision of the Grande Cache WWTP Upgrade to M2 Engineering the lowest submitted proposal.

BENEFITS OF THE RECOMMENDED ACTION:

1. Greenview will benefit by the acquisition of an engineering consulting firm to design a new, state of the art, Wastewater Treatment Plant that will exceed Albert Environment Standards to replace the aging and failing existing infrastructure.

DISADVANTAGES OF THE RECOMMENDED ACTION:

1. There are no perceived disadvantages to the recommended motion.

ALTERNATIVES CONSIDERED:

Alternative #1: Council may choose not to award the project, but the upgrade is required and not awarding could jeopardize Administrations ability to have the upgrades performed as per Alberta Environment's Approval to Operate.

Alternative #2: Council may consider resubmitting the project for RFPs, but the prices submitted are considered reasonable and new submissions could come in higher than the originals.

FINANCIAL IMPLICATION:

Funding for The Grande Cache Wastewater Treatment Plant engineering to come from Environmental Services 2020 Capital Budget.

Direct Costs: \$1,043,155.00

Ongoing / Future Costs: Approximately \$19 million for proposed GC WWTP capital project construction.

STAFFING IMPLICATION:

There are no staffing implications to the recommended motion.

PUBLIC ENGAGEMENT LEVEL:

INCREASING LEVEL OF PUBLIC IMPACT

Inform

PUBLIC PARTICIPATION GOAL

Inform - To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.

PROMISE TO THE PUBLIC

Inform - We will keep you informed.

FOLLOW UP ACTIONS:

Once approved, Administration will notify the engineering company selected as well as the companies not selected and inform them of the results.

ATTACHMENT(S):

- Associated Engineering Proposal
- MPE Proposal
- M2 Proposal
- Alberta Transportation Funding letter



ALBERTA
TRANSPORTATION

*Office of the Minister
Deputy Government House Leader
MLA, Calgary-Hays*

June 29, 2020

AR 80933

Mr. Dale R. Smith
Reeve
Municipal District of Greenview No. 16
PO Box 1079
Valleyview, AB T0H 3N0

Dear Reeve Smith:

I am pleased to advise your council that two of your water related projects will be funded under the Alberta Municipal Water/Wastewater Partnership (AMWWP) for a total of \$10,357,260. Additional grant funding is being provided under this program to help stimulate economic recovery and support job creation.

Based on your submissions/applications, the Municipal District of Greenview will receive a grant based on the estimated eligible project costs for the following projects:

- Raw Waterline Upgrade – (53 per cent) up to a maximum of \$1,325,000
Hamlet of Grande Cache
- Wastewater Treatment Plant Upgrade (53 per cent) up to a maximum of \$9,032,260
Hamlet of Grande Cache

The final grant amount will be based on the actual eligible costs at the time of the project completion. With this funding, the municipality/commission will be solely responsible for all costs to operate, maintain, repair and replace the completed works.

Alberta Transportation is pleased to be able to provide this funding as we recognize that supporting water and wastewater infrastructure is critical to the quality of life, economic growth and residency of Alberta's communities.

Alberta Transportation staff will be in contact with your administration to formalize the funding agreements to undertake these works.

Sincerely,

Ric McIver
Minister

cc: Mr. Martin Long, MLA, West Yellowhead
Mr. Ryan Konowalyk, Regional Director, Peace Region



M.D. OF
GREENVIEW
NO. 16

Engineering Services Proposal

Hamlet of Grande Cache Wastewater Treatment Facility Engineering Design and Construction Services



Corporate Address
M2 Engineering
#210, 10216 - 124 St NW
Edmonton, Alberta
T5N 4A3

M2 Corporate Sponsor
Jackie Mykytiuk, P.Eng.
e. mykytiukj@M2eng.ca
o. 587.410.0460
c. 587.987.0927

Date: Jan 29, 2020

January 29, 2020
File: Proposal 19-038

COURIER DELIVERY

Gary Couch
Manager of Environmental Services
Municipal District of Greenview No. 16
4806-36 Ave, Box 1079
Valleyview, AB T0H 3N0

RE: LETTER OF TRANSMITTAL – ENGINEERING SERVICES PROPOSAL
MUNICIPAL DISTRICT OF GREENVIEW NO. 16 – HAMLET OF GRANDE CACHE WWTF UPGRADE

Dear Gary:

Please find enclosed with this letter of transmittal our proposal to assist the Municipal District of Greenview No. 16 with engineering design and construction services for the Hamlet of Grande Cache wastewater treatment facility upgrades.

M2 Engineering is a smaller consulting engineering firm that takes pride in delivering a high level of service to our clients. Being a small firm is advantageous to our clients as it allows us to:

- Adapt quickly / be flexible
- Work with a strong team of experts
- Develop robust working relationships
- Explore custom solutions that meet the specific needs of our clients
- Truly comprehend and cater to the ways our clients' administration and operations team operate
- Listen closely to develop full understanding of the clients systems, as well as challenges and issues

We feel these attributes of our firm would be a true value add, as they allow us to work collaboratively and develop successful projects together.

We would like to thank you for the opportunity to offer our engineering services. We trust the information in our proposal meets your needs, and we look forward to establishing a successful working relationship with you. Should you have any questions, please do not hesitate to contact me personally via email or by phone at 1.587.987.0927.

Sincere Regards,
M2eng Alberta Ltd.

A handwritten signature in blue ink, appearing to read 'Mykytiuk', is positioned above the printed name and title.

Jackie Mykytiuk, P.Eng.
Director, Corporate Sponsor
mykytiukj@M2eng.ca

Enclosure(s): M2 Engineering Engineering Services Proposal – Hamlet of Grande Cache
Wastewater Treatment Facility Upgrade

Proposal Authorization

This proposal has been developed and reviewed by the directors of M2eng Alberta Ltd. We are committed to providing excellent customer service and satisfaction to our clients.

Thank you for the opportunity to offer engineering services for the Hamlet of Grande Cache Wastewater Treatment Facility Upgrades Project. We trust the information provided in this proposal meets the needs of the Municipal District of Greenview No. 16 to successfully complete this project.

Should you have any questions, please do not hesitate to contact either of the undersigned via email or by phone. Thank you for considering our submission.

Respectfully Submitted,
M2eng Alberta Ltd.



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CORPORATE SEAL
M2ENG ALBERTA LTD.



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1 Introduction

M2 Engineering would like to thank Municipal District of Greenview No. 16 for the opportunity to submit our Proposal to provide Engineering Services for the Hamlet of Grande Cache Wastewater Treatment Facility Upgrade. We trust the information included in our proposal meets your needs to successfully complete the Project.

1.1 Project Background

The Hamlet of Grande Cache (Grande Cache) is located within the Municipal District of Greenview No. 16 (MD Greenview). Grande Cache is on the western border of Alberta, within the Rocky Mountains, approximately 435 km west of Edmonton. The current reported population for Grande Cache is 3,571, according to the 2016 census by Statistics Canada.

The Hamlet of Grande Cache wastewater system currently consists of a wastewater collection system and wastewater treatment facility (WWTF). The collection system in the older areas of the Hamlet consists mostly of clay pipe. The new developments in the Hamlet have PVC pipe collection systems. The collection systems tie into a 600 mm diameter gravity trunk sewer which conveys all wastewater to the WWTF. Connected to the 600 mm gravity trunk, near the WWTF, is a sewer pipe from the Grande Cache Correctional Facility. Figure 1-1: Project Location provides an overview of the WWTF and the location of the influent trunk line.

The Grande Cache WWTF was originally constructed in 1981 and is owned and operated by the MD Greenview. The existing WWTF consists of the following:

- One Controls Building with two distinct sides:
 - The north side consists of a blower room, mechanical room, electrical room, washroom, lab, and office/control room
 - The south side consists of headworks
- The Headworks consists of two channels:
 - One with a manual bar screen and comminutor (primary channel)
 - One with a manual bar screen (bypass channel)
 - Grit removal channels follow the screens in each channel
- A single circular package extended aeration basin complete with a secondary clarifier

- Outfall structure with continuous discharge to the Smoky River
- Two sludge ponds/lagoons

The WWTF has undergone little to no upgrades over the last 38 years. The wastewater treatment equipment is at the end of its life and is in need of major upgrades. Current issues noted are summarized in Figure 1-2: Existing WWTF Issue Identification. Some of the critical issues with the current system include:

- Deteriorating infrastructure:
 - Failing concrete in the clarifier
 - Deteriorating mechanical equipment
- Insufficient capacity
- Lack of redundancy for operation & maintenance
- Non-compliant with the most recent health and safety standards
- Lack of treatment flexibility to adjust with changing environmental regulations
- Poor primary treatment, screening
 - Existing vertical screen allows solids to pass and grinders allow solids to accumulate through the process
- Insufficient solids management
 - Current system accumulates biosolids in the sludge ponds and when they are full, sludge is removed and land applied or dried by either centrifuge or geo-tubes for disposal at the landfill. This has historically been an expensive capital project that can be better managed through routine biosolids dewatering.

The Grande Cache WWTF has had minimal upgrades in 28-years and is at the end of its life.

The WWTF is a critical piece of infrastructure for the Hamlet of Grande Cache as it plays a major part in protecting public health and the environment. Upgrades to this facility are necessary to ensure the facility does not experience a major failure in the coming years and to allow for future growth of the community.

1.2 Project Objective

The overall objective of this project is to protect the public and environment by providing a WWTF that is sustainable and reliable for the community. To achieve this overall objective, the Grande Cache WWTF must be upgraded to the most recent codes and standards and provide flexibility for future growth, expansion, and treatment needs.

The overall objective of this project is to protect the public and environment by providing a WWTF that is sustainable and reliable for the community

1.3 Project Understanding

M2 Engineering understands the MD Greenview would like to upgrade the Grande Cache WWTF to not only meet the current codes and standards but also to optimize treatment and allow flexibility for future expansion and technology upgrades. Based on this, we have established the following basis for the facility upgrades:

- Upgrade current headworks facility
 - Retrofit the existing channels to include two mechanical screens (one in each channel)
 - Retrofit/upgrade the existing channels (condition, level instruments, Parshall flume structure)
 - Install alum chemical dosing system for phosphorous removal
- Install two new extended aeration trains in outdoor concrete tanks
- Install two new secondary clarifiers in outdoor concrete tanks
- Install four new blowers
- Install biosolids dewatering equipment
- Retrofit existing controls building to include:
 - Blower room
 - Electrical room

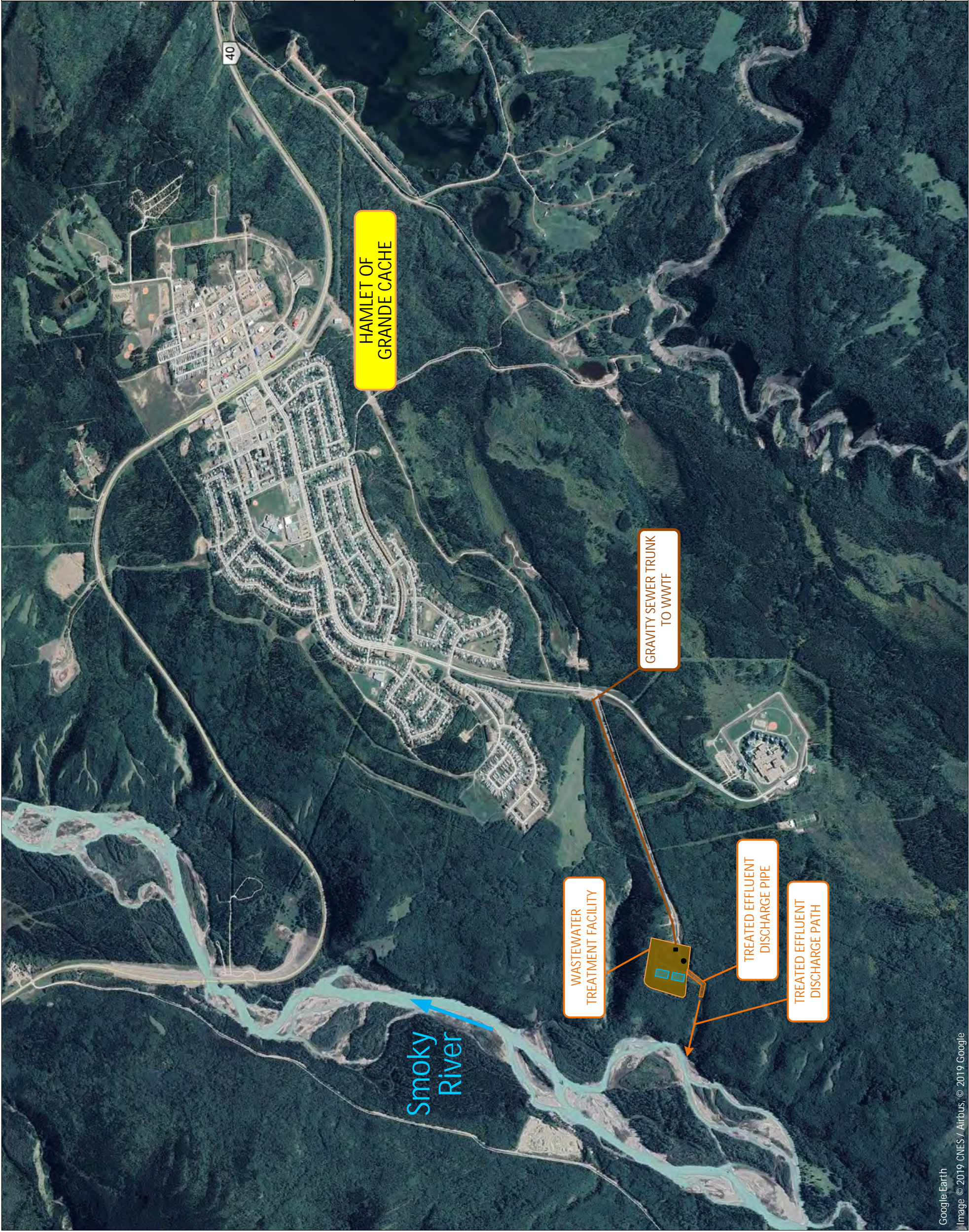
- Mechanical room
 - Storage room/workshop
- Add expansion to the north side of the building to include:
 - Control room
 - Laboratory
 - Washroom/shower/locker room
- Add expansion to the south side of the building to include:
 - Headworks expansion
 - Biosolids management equipment
- Replace all electrical and control equipment
- Upgrade HVAC & plumbing throughout the existing building:
 - Hot water tank
 - Overall heating and ventilation system
 - Janitor sink
 - Proper ventilation, monitoring, and alarming for headworks and biosolids management areas
- Road upgrades to accommodate truck access to haul dewatered solids and screenings
- Decommissioning of current package extended aeration and clarifier equipment

The following figures illustrate the proposed site layout, building layout, and process flow for the upgraded WWTF:



Figure 1-3: Proposed Building Expansion & New Treatment System

Figure 1-4: Proposed Building Expansion

Figure 1-5: Simplified Process Flow Schematic



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| <div><div><div>M2ENGINEERING</div><div><div>M.D. OF GREENVIEW NO. 16</div><div></div></div></div></div> | FIGURE 1-1 | HAMLET OF GRANDE CACHE WASTEWATER TREATMENT FACILITY | PROJECT LOCATION | | NOTES | <div><div>PRELIMINARY & FOR DISCUSSION PURPOSES ONLY; NOT FOR CONSTRUCTION</div><div>PRIVATE & CONFIDENTIAL This document is proprietary and confidential and may not be used or disclosed in any manner without the prior written consent of M2ENG ALBERTA LTD.</div></div> | SKETCHED BY: Nathan Miller, P.Eng. | SCALE NOT TO SCALE | PROJECT NO. PRP-19-038 | DATE 2020 – JAN – 29 | REVISION NO. 0 |
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|  |  | FIGURE 1-2 | HAMLET OF GRANDE CACHE WASTEWATER TREATMENT FACILITY | EXISTING WWTF ISSUE IDENTIFICATION | | NOTES | <div>PRELIMINARY & FOR DISCUSSION PURPOSES ONLY; NOT FOR CONSTRUCTION</div> <div>PRIVATE & CONFIDENTIAL This document is proprietary and confidential and may not be used or disclosed in any manner without the prior written consent of M2ENG ALBERTA LTD.</div> | SKETCHED BY: Nathan Miller, P.Eng. | SCALE NOT TO SCALE | PROJECT NO. PRP-19-038 | DATE 2020 – JAN – 29 | REVISION NO. 0 |
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BLOWER ROOM

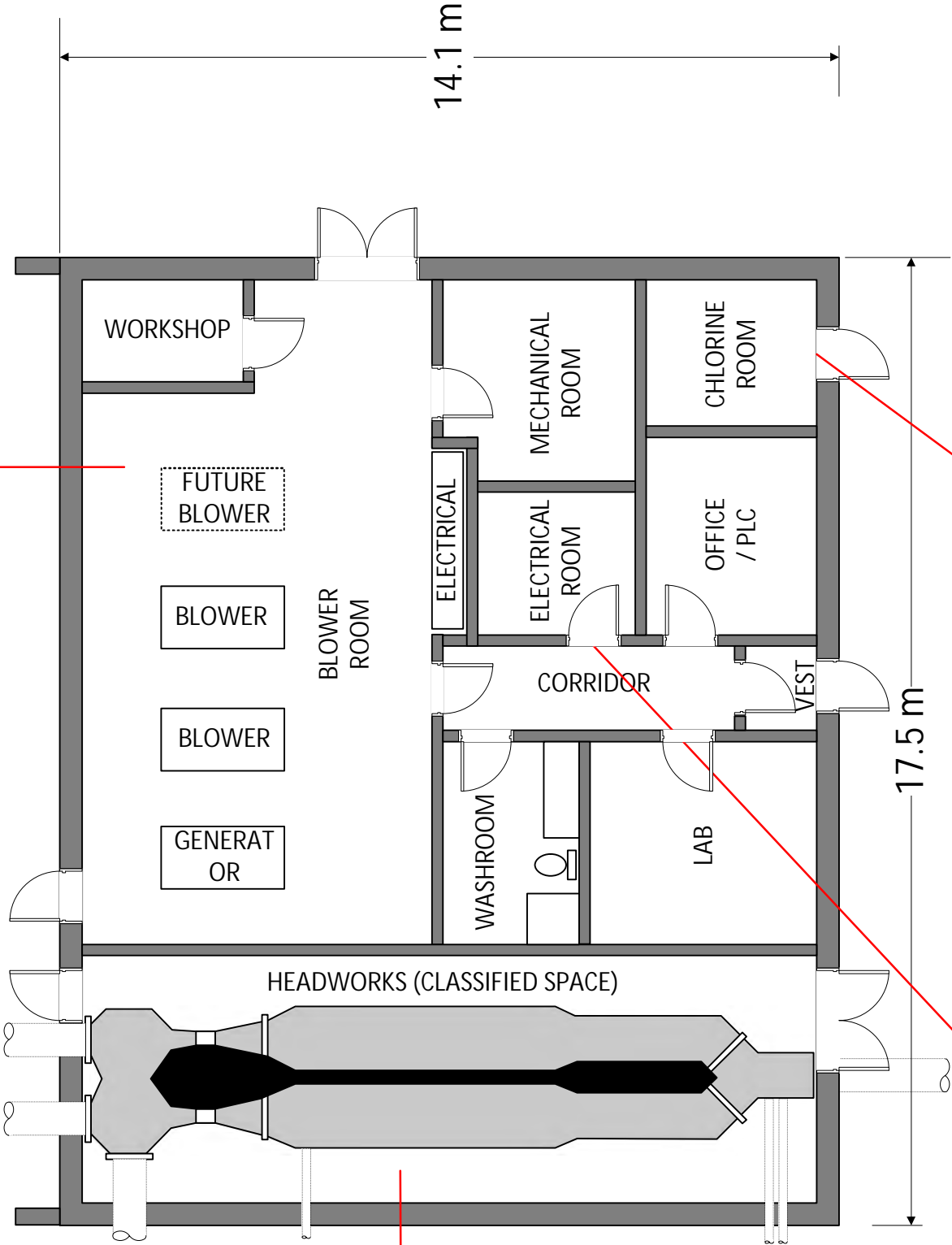
- BLOWERS AT END OF LIFE AND IN NEED OF REPLACEMENT
- GENERATOR AT END OF LIFE AND IN NEED OF REPLACEMENT
- ADDITIONAL SPACE REQUIRED FOR MORE BLOWERS
- ELECTRICAL EQUIPMENT IN NEED OF REPLACEMENT

SLUDGE HOLDING PONDS

- INEFFICIENT MANAGEMENT OF SOLIDS
- COSTLY REMOVAL OF SOLIDS
- INEFFICIENT LAND USE

EXTENDED AERATION EQUIPMENT

- CONCRETE DETERIORATION
- EQUIPMENT AT END OF LIFE AND IN NEED OF REPLACEMENT
- ADDITIONAL CAPACITY REQUIRED FOR FUTURE FLOWS



CHLORINE ROOM

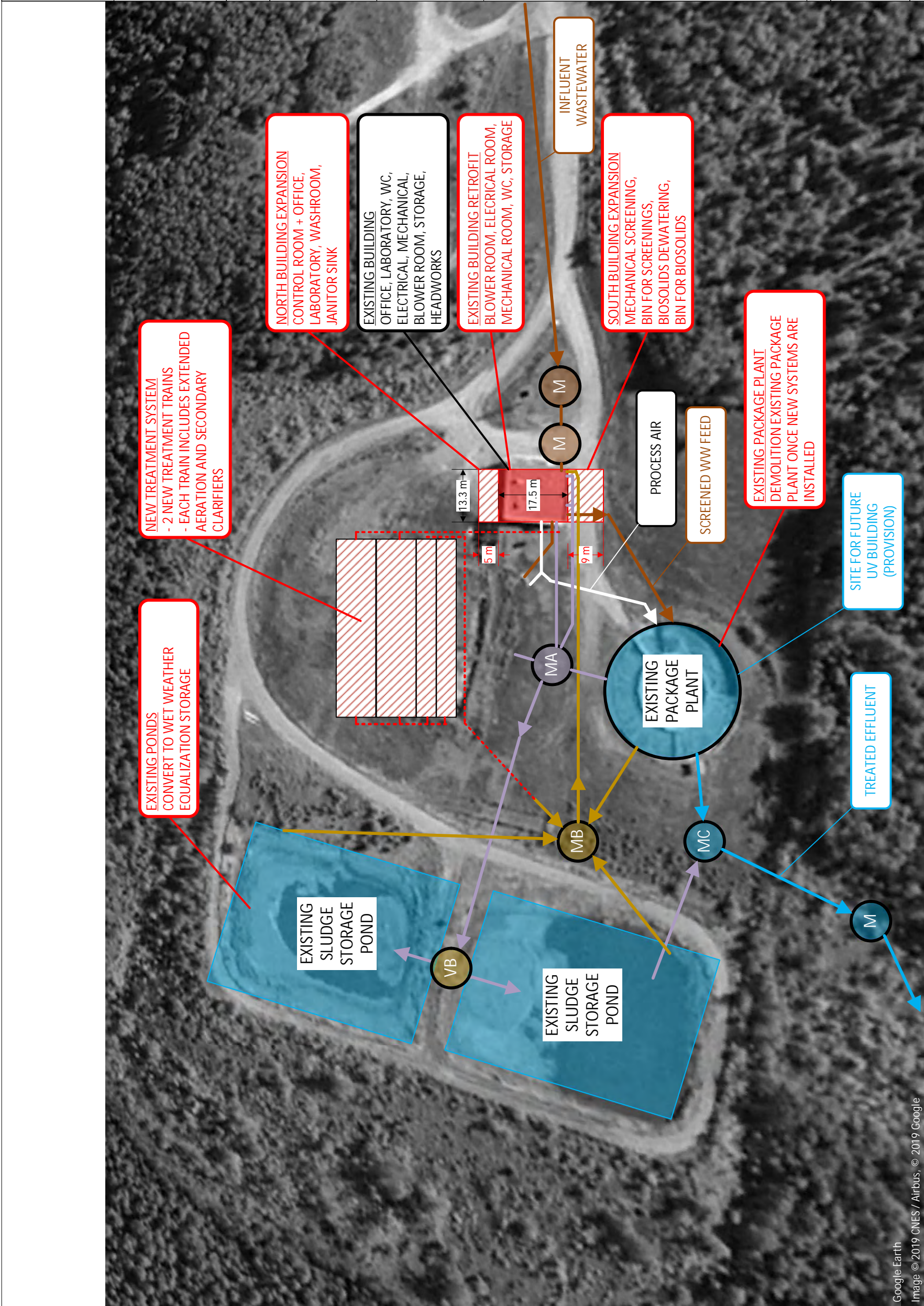
- NO LONGER REQUIRED



ELECTRICAL ROOM



- ELECTRICAL EQUIPMENT AT END OF LIFE AND IN NEED OF REPLACEMENT
- ELECTRICAL ROOM IS TOO SMALL TO HOUSE NEW ELECTRICAL EQUIPMENT

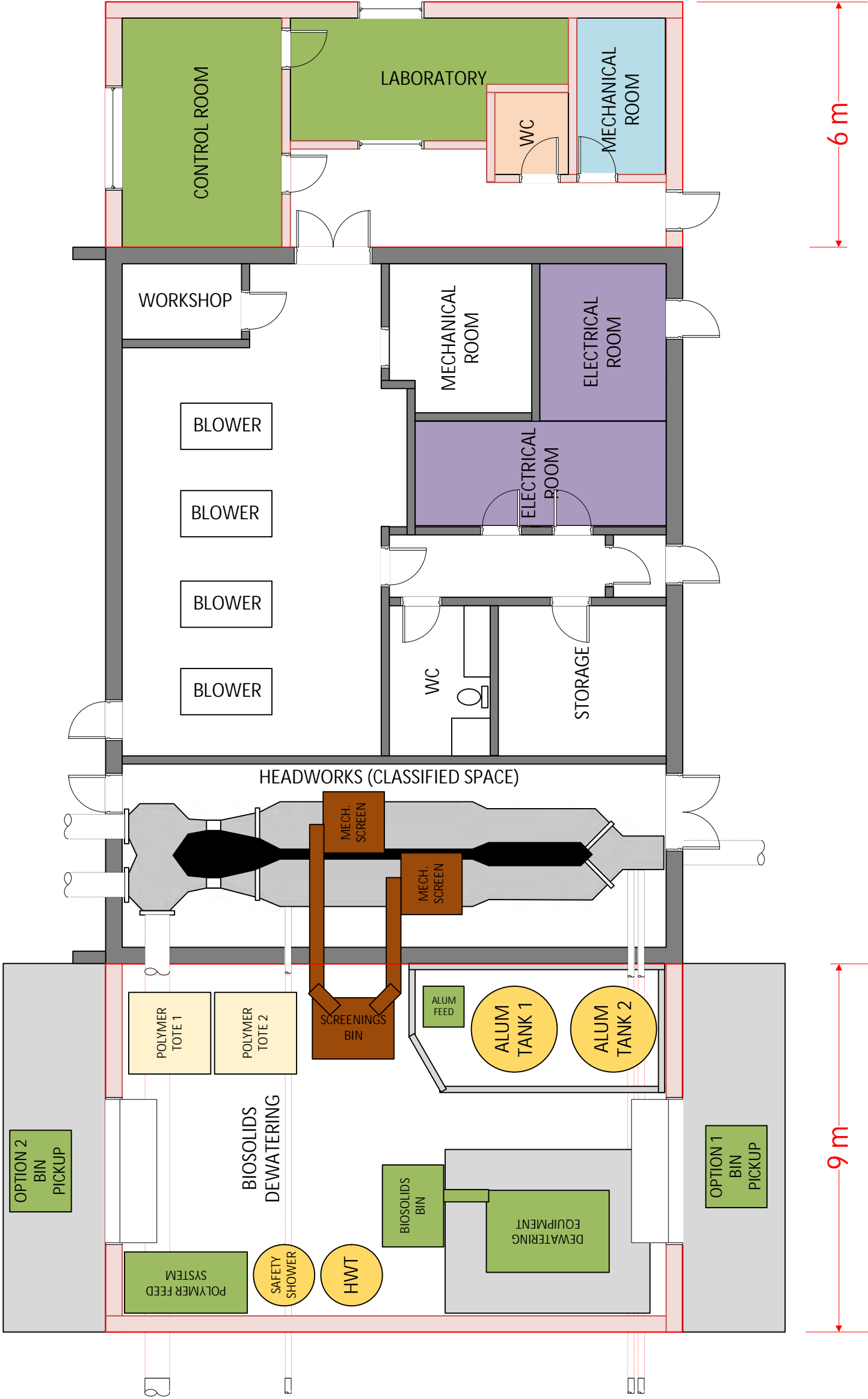
HEADWORKS

- EQUIPMENT AT END OF LIFE AND IN NEED OF REPLACEMENT
- MANUAL BAR SCREENS ARE VERTICAL AND INEFFICIENT
- SOLIDS PASSED THROUGH SCREENS ARE GRINDING ALLOWING FOR INCREASED SOLIDS ACCUMULATION IN THE TREATMENT SYSTEM
- ROOM NOT CLASS 1: ZONE 1/2 FOR MANAGEMENT OF HAZARDOUS GASES

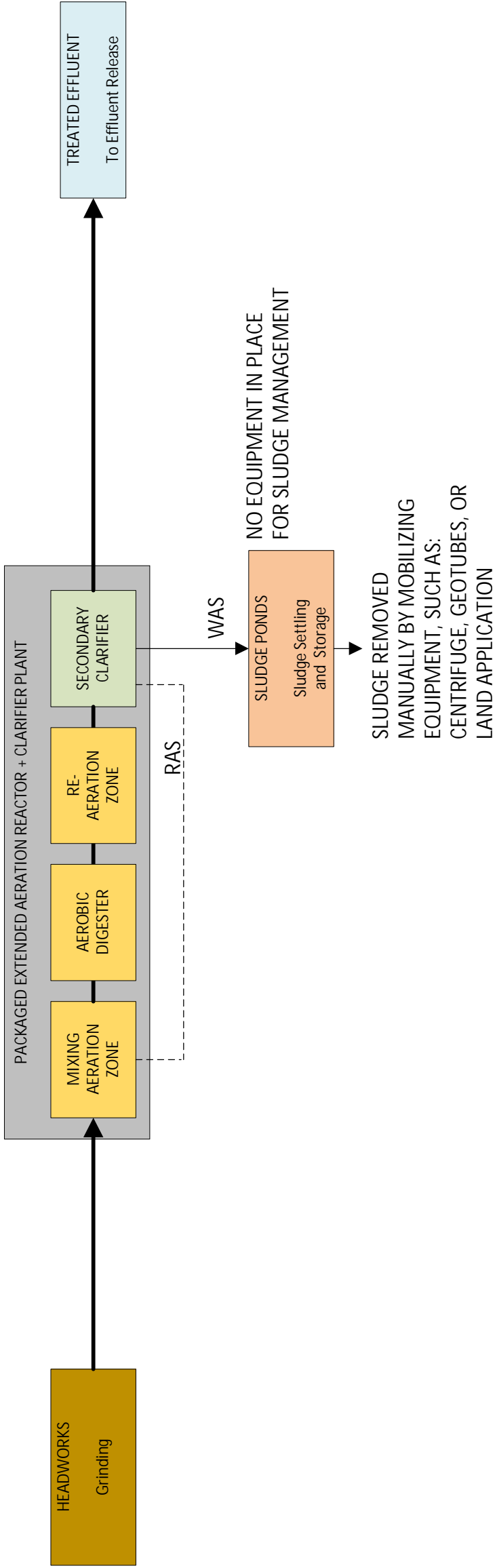


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|--|---|------------|--|--|---|-------|--|------------------------------------|--------------------|------------------------|----------------------|----------------|
|  | M.D. OF GREENVIEW NO. 16  | FIGURE 1-3 | HAMLET OF GRANDE CACHE WASTEWATER TREATMENT FACILITY | PROPOSED BUILDING EXPANSION & NEW TREATMENT SYSTEM | FIGURE IS FOR EFFORT PLANNING PURPOSES ONLY. ALL CONCEPTS TO BE FURTHER REFINED AND DEVELOPED DURING DESIGN IN CONSULTATION WITH MD REPRESENTATIVES | NOTES | <div>PRELIMINARY & FOR DISCUSSION PURPOSES ONLY; NOT FOR CONSTRUCTION</div> <div>PRIVATE & CONFIDENTIAL This document is proprietary and confidential and may not be used or disclosed in any manner without the prior written consent of M2ENG ALBERTA LTD.</div> | SKETCHED BY: Nathan Miller, P.Eng. | SCALE NOT TO SCALE | PROJECT NO. PRP-19-038 | DATE 2020 – JAN – 29 | REVISION NO. 0 |
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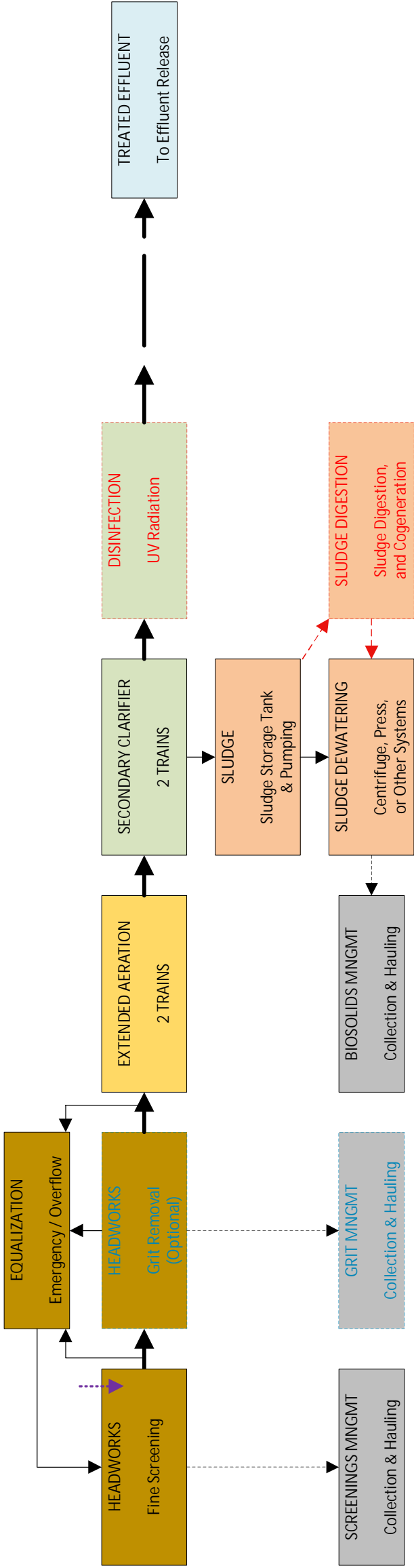
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|  |  <div>M.D. OF GREENVIEW NO. 16</div> | FIGURE 1-4 | HAMLET OF GRANDE CACHE WASTEWATER TREATMENT FACILITY | PROPOSED BUILDING EXPANSION | | NOTES | <div>PRELIMINARY & FOR DISCUSSION PURPOSES ONLY; NOT FOR CONSTRUCTION</div> <div>PRIVATE & CONFIDENTIAL This document is proprietary and confidential and may not be used or disclosed in any manner without the prior written consent of M2ENG ALBERTA LTD.</div> | SKETCHED BY: Nathan Miller, P.Eng. | SCALE NOT TO SCALE | PROJECT NO. PRP-19-038 | DATE 2020 – JAN – 29 | REVISION NO. 0 |
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WW TREATMENT - EXISTING



WW TREATMENT - PROPOSED



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|--|--------------------------|------------|--|--|--|--|
| | M.D. OF GREENVIEW NO. 16 | FIGURE 1-5 | HAMLET OF GRANDE CACHE WASTEWATER TREATMENT FACILITY | SIMPLIFIED PROCESS FLOW SCHEMATIC COMPARISON | LEGEND <div><div>FUTURE PROVISION</div><div>OPTIONAL</div></div> | NOTES <div><div>PRELIMINARY & FOR DISCUSSION PURPOSES ONLY; NOT FOR CONSTRUCTION</div><div>PRIVATE & CONFIDENTIAL This document is proprietary and confidential and may not be used or disclosed in any manner without the prior written consent of M2ENG ALBERTA LTD.</div></div> <div>SKETCHED BY: Nathan Miller, P.Eng.</div> <div>SCALE: NOT TO SCALE</div> <div>PROJECT NO. PRP-19-038</div> <div>DATE: 2020 – JAN – 29</div> <div>REVISION NO. 0</div> |
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2 Our Work Plan

2.1 Our Project Approach

We will work with the MD Greenview to not only ensure that the project deliverables meet the technical standards but also that the project meets your needs. Every project has a wide range of solutions depending on the key project drivers, such as reliability, sustainability, budget, or other criteria that match your values. We will work together to ensure that your priorities are incorporated into the project solutions.

There are various key project objectives and challenges that we believe are critical for the success of this project. Our approach will be to develop a full understanding of the current issues and the long-term goals, then use our expertise in wastewater systems to develop options for the MD Greenview. It is important for the MD to be involved in the decision-making process to ensure you are comfortable and confident with the infrastructure and process implemented. We have included collaboration throughout the work plan and design process to allow for your involvement.

2.2 Project Challenges & Restraints

M2 Engineering had an opportunity to visit the existing Grande Cache WWTF and discuss the current issues and challenges the MD Greenview is experiencing before developing our proposal. We also had the chance to review some background information to further development our knowledge of the current system. With this background knowledge and our experience in wastewater system design, M2 Engineering has identified five key project challenges and restraints associated with the Grande Cache WWTF Upgrade Project. Each of these challenges and restraints require thorough thought and consideration to ensure long-term project success. The key challenges and restraints identified include:

1. Influent Screening
2. Reuse and Expansion of Existing Operations Building
3. Future Treatment System Planning
4. Biosolids Dewatering
5. Continuous Operating of the Existing WWTF During Construction

Project Challenges & Restraints

2.2.1 Influent Screening

Influent screening is critical for mechanical wastewater systems to improve treatment capacity and protect treatment equipment downstream by removing inert solids from the influent stream. The existing Grande Cache WWTF has a manual, vertical bar screen followed by a comminutor. The existing vertical bar screen is insufficient and allows rags and other large solids to pass through. The comminutor then grinds the solids passed through the vertical screen. Although the grinder protects the downstream treatment equipment from tangling, it does not prevent the accumulation of inert material in the sludge which impacts the treatment capacity of the system.



Influent Channel Screen Retrofit
High River, AB

While visiting the Grande Cache WWTF, M2 Engineering looked at the existing influent channels in the headworks room and noted that the existing vertical bar screen and comminutor system could be removed and retrofitted to accommodate a mechanical screen. A mechanical screen could be installed in one or both of the existing concrete channels. With a mechanical screening process, screenings are continuously removed, washed, compacted, and stored in a garbage bin for easy disposal once the bin is full. The washer allows the biologically active solids to be returned into the influent stream while reducing odours associated with the

screenings. M2 Engineering completed a similar retrofit for the Town of High River to reduce solids accumulation in their lagoon.

Assessment of screen equipment options is critical to minimize operational and maintenance efforts and extend the life of the new treatment equipment as long as possible. With this, M2 Engineering proposes to retrofit the existing headworks system in Grande Cache with a mechanical screen for easier day-to-day maintenance and improved treatment efficiency at the WWTF.

2.2.2 Biosolids Management

Currently, Grande Cache stores all biosolids in two ponds on the north side of the WWTF site. The biosolids accumulate in the ponds over several years and are dewatered and removed as the ponds fill. Historically, the dewatering and removal of the biosolids from these ponds has been costly and resulted in a major capital project for the community. M2 Engineering proposes to manage biosolids with a continuous dewatering system to allow the ponds to be repurposed and to prevent a large capital project when the ponds need to be cleaned from biosolids accumulation.



M2 Engineering proposes to repurpose the sludge ponds to events, and to install a continuous dewatering system such as a technology. M2 Engineering recently completed a biosolids dewatering retrofit with a disc filter for the Town of Peace River. This will allow biosolids to be dewatered and stored in a bin or truck for daily disposal which feeds into the operations and maintenance budget rather than capital budget. Repurposing the existing sludge ponds for equalization is advantageous as it allows treatment equipment to be sized for dry weather flows as opposed to wet weather flows. This optimizes the existing systems for improved treatment and operability.

Biosolids Dewatering Retrofit
equalization storage for high flow
Peace River, AB

2.2.3 Reuse & Expansion of Existing Operations Building

The existing headworks and operations building at the Grande Cache WWTF is constructed of masonry block and appears to be in good condition. M2 Engineering proposes to reuse and repurpose the existing building, as shown in Figure 1-3. With the addition of the new equipment, the existing building will not have sufficient space. We propose an expansion on both the north and south sides of the building to keep the classified space separated from the non-classified space and use the existing site configuration as efficiently as possible.

While reusing the existing infrastructure, the engineering team must be mindful that there may be hazardous materials present. M2 Engineering has included an allowance to bring in a hazardous material specialist to collect samples for the presence of hazardous materials. This will allow for more accurate construction pricing and planning, if any hazardous materials present.

2.2.4 Future Treatment System Planning

It is important to recognize that environmental regulations are becoming more and more stringent. This was evidenced by the Federal Wastewater System Effluent Regulations release in 2012 and is seen regularly when we meet with Alberta Environment and Parks to discuss receiving stream limits. With this said, it is critical for the WWTF to plan for more stringent effluent guidelines and provide flexibility in the treatment process to accommodate future treatment needs.

In this proposal, M2 Engineering has planned for an alum dosing system to address phosphorous reduction. Additional considerations will be made in design for future inclusion of ultraviolet disinfection, filtration, and

digesters. Another future provision to think about is the incorporation of a reuse water system. Although these systems are not critical to incorporate at this time, it may be foreseen to be something of importance in the future.

2.2.5 Continuous Operation During Construction

It is critical to plan how the existing WWTF will operate while the facility is being upgraded. This will need careful thought and consideration by both the design team and the operations team. This includes considerations to:

- Maintain one influent channel while mechanical screens are being installed
 - M2 Engineering has planned to install the first screen in the overflow channel and have it fully commissioned. Once it is fully operational, that channel will temporarily be the primary influent channel while the second screen is installed.
- Maintain existing power and controls systems operational while new equipment is installed
 - M2 Engineering has planned for this by retrofitting the control and chlorine rooms into a new electrical room which allows new electrical equipment to be installed while the existing equipment remains operational.
- Maintain yard piping for existing package WWTF while completing tie-ins for new system connections
 - M2 Engineering will plan for minimal shut down time in the construction contract to ensure tie-ins are not disrupting the current treatment flow.

2.3 Our Project Methodology

2.3.1 Project Set-Up / Organization

At the inception of a project, planning is necessary to determine the project requirements and the steps involved in achieving the requirements. The project scope will be first defined in the project management plan, based on the information available at project award. The project manager will review the available information and carefully plan out the steps required to achieve the project objectives.

Project Management Plan

Prior to the project kick-off meeting, our Project Manager, Nathan, will provide a project management plan (PMP) that outlines the following for the project team's reference:

- Key project contacts
- Project communication plan
- Project objectives
- Project methodology
- Services provided and project stages (assessment, preliminary, design, construction)
- Cost planning and control processes
- Project schedule
- Meeting dates and milestones
- Deliverables

Our first project task is Design Basis Memo review and update. Through this task, the final upgrades will be decided upon and the overall project direction will be finalized. The PMP will be updated to reflect any changes and the design team will be apprised of the project execution plan.

2.3.2 Design Methodology

Our overall methodology for successful execution of the design for the Grande Cache WWTF Upgrade Project focuses on the following to develop the overall project work plan:

- Assembling an experienced team
- Team collaboration between the MD Greenview and the engineering team
- Using wastewater system knowledge to determine options for the community
- Drawing on our experience in wastewater system projects within Alberta
- Developing a clear task layout and project structure
- Creating a detailed project management plan

Our Team

Our approach to ensuring the successful delivery of this project, from beginning to end, starts with developing an experienced and knowledgeable project team. We have selected team members that strive for excellence, are self-motivated to produce quality work, and have a strong rapport.

Team Collaboration

Team collaboration is one of our core values at M2 Engineering. This includes collaboration with all levels of our work, from our internal colleagues to industry organizations and our clients. Teamwork is key to our project and corporate success.

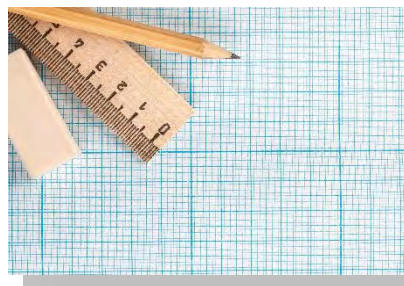
Our team strongly believes that the success of a project is related to collaboration and open lines of communication. Our team is focused on working with the MD Greenview to deliver solutions that are tailored to the needs of the community. This approach allows for an integrated design that asks the MD Greenview for input throughout the project.

M2 Engineering knows that routine progress meetings are important and contribute to the success of a project as they introduce an environment for open discussion and problem solving. At project meetings, the project status and issues will be discussed.

Knowledge and Experience

Water and wastewater systems are the two primary areas of practice for M2 Engineering. We work with various clients, both small and large, throughout Alberta and British Columbia to help develop feasible water treatment, water supply, wastewater collection, and wastewater treatment solutions within their communities.

Our knowledge of water and wastewater systems is critical to ensure project objectives are satisfied.



Project Organization

There are several complexities affiliated with planning wastewater facilities. To address the complexities, we have developed a clear and cohesive work plan for this project. As part of our work plan, we have laid out various tasks associated with the project. Developing the work plan is the process of analyzing the requirements of the project and defining steps to achieve the desired outcomes. The work plan results in a logical methodology for design, starting with information gathering to building design criteria through preliminary and detailed design solutions.

Project Management Plan

Our team has developed a logical project methodology for the Grande Cache WWTF Upgrade Project. Our task layout is clear and concise to ensure all stages of the project are organized. Our project manager, Nathan Miller, will ensure the critical tasks developed in our work plan are carried out with diligence and structure to enable these tasks to be delivered on time and on budget. We execute our projects with a PMP to ensure there is clear communication to all team members on the schedule, budget, and critical tasks. We have had a lot of success with this approach over the past few years and continue to use and maintain our system, including making continuous improvements.

2.3.3 Construction Stage Services

Three key practices for management of construction stage services are communication, project management and document control.

Communication

We stay in close communication with the contractor to ensure that our team knows what work is being performed and when. This ensures that the contractor is held accountable to follow the contract documents and environmental protection requirements.

Communication with the MD Greenview personnel is also critical, especially while work is being completed within the active WWTF. Communication and planning with the whole team will be required to ensure continued wastewater treatment during the upgrades.

Project Management

Elizabeth DeVries will be our Project Manager for the construction stage. In this role, she will be the main point of contact for the contractor, the MD Greenview, and the consulting team. Elizabeth will be in regular contact with the contractor to monitor progress and coordinate site visits for the engineering team and our resident inspector. Elizabeth will compile and prepare the monthly progress and budget reports, as well as the monthly inspection summaries.

Document Control

Anita Navarro, our document control specialist, will play another important role in managing the project during construction. Anita will track all of the documentation that is sent back and forth between the contractor and M2 Engineering, including RFI's, shop drawings, and field instructions. Anita will be the filter point where documents are received from the contractor and sent to the appropriate discipline for review and response, then she receives the documents back and ensures that they are ready to return to the contractor. Anita monitors timelines on the documents and ensures timely response.

2.3.4 Cost Planning and Control

At the project initiation stage, M2 Engineering creates the Earned Value Estimate. This process takes the fees presented in the proposal and distributes the cost for each task according to the project schedule. Our experience with similar projects gives us the ability to forecast the cost required for each engineering task.

The earned value report is a tool to track both project costs and project progress. If costs are below the earned value estimate, it is indicative that progress is not being made in accordance with the schedule.



M2 Engineering will monitor project costs throughout the course of the project. The total Project Cost will be summarized at the project progress meeting as well as on the monthly reports as part of a budget review and earned value analysis.

If there are unforeseen costs related to a change in scope of work at any point during the project, our project manager will immediately notify the MD Greenview and provide necessary details. At no time will the project costs (including construction, project management, and design fees) exceed the budget proposed in this proposal without written authorization from the MD Greenview, unless in the case of an emergency.

2.3.5 Scheduling and Time Control

The overall project schedule is presented in Section 6.0. The schedule, including deliverable milestones will be placed in the Project Management Plan for the easy access of all team members. Our Project Manager supplements the paper schedule with electronic reminders for deliverable deadlines, ensuring each team member is well aware of their timeline obligations.

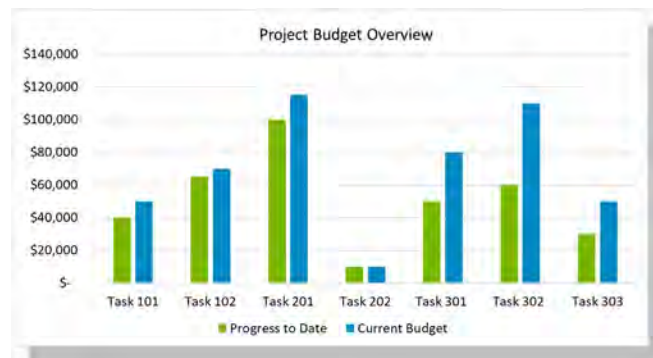
During design, time control and schedule will be discussed at internal progress meetings. This discussion aids team members in determining whether extra effort will have to be put in to keep on pace with the goals of the project. Internal update meetings are also important for time control, in that they provide opportunity to hold each other accountable to deadlines. Often one discipline is waiting for information from another discipline and the open discussion at progress meetings highlights the importance of expediency in information transfer.

During construction, the contractor will be responsible for updating their schedule, and presenting it at monthly progress meetings. If it is noted that the work is behind schedule, our Project Manager will request a plan from the contractor to regain schedule. This might be done by increasing the number of workers on site or increasing the hours of work. Provided that the schedule lapse is attributable to the contractor, any effort to regain schedule would be at no extra cost to the contract.

Monthly Updates

M2 Engineering will provide monthly updates to the MD Greenview summarizing the budget and schedule to date, as well as a forecast of the budget and schedule for the remaining portion of the project. The monthly budget report will include a detailed report of the project, summarizing the following for each task:

- Budget
- Percent complete to date, per task
- Percent remaining to complete each task
- Percent complete to date, overall project
- Summary of invoices to date



The monthly budget and schedule reports will be prepared for both the work of M2 Engineering, and the construction contract. The reports will be discussed at project progress meetings.

3 Detailed Scope of Services

M2 Engineering has developed a total of 17 tasks to successfully complete the Grande Cache Wastewater Treatment Facility Upgrade Project. The following table outlines the proposed tasks.

| Task | Description |
|----------------|---|
| PHASE 1 | PLANNING & PRELIMINARY DESIGN |
| Task 1: | Review & Update Design Basis Memorandum |
| Task 2: | Review Geotechnical Report |
| Task 3: | Topographical Survey |
| Task 4: | Major Equipment Supply |
| PHASE 2 | DETAILED DESIGN |
| Task 5: | Project Management |
| Task 6: | Headworks Facility |
| Task 7: | Grit Removal (optional) |
| Task 8: | Extended Aeration Package WWTF |
| Task 9: | Sludge / Biosolids Management |
| Task 10: | Wet Weather Flow Management |
| Task 11: | Operations Building Modifications & Expansion |
| Task 12: | Demolition & Reclamation |
| PHASE 3 | CONSTRUCTION SERVICES |
| Task 13: | Bid Administration Services |
| Task 13: | Contract Administration Services |
| Task 15: | Field Engineering Services |
| Task 16: | Post-Construction Services |
| Task 17: | Warranty Services |

A detailed description of the scope of services included in each of these tasks is provided throughout this section. For an overview of our scope of services please refer to the following figures located at the end of this section:

Figure 3-1: Phase 1 Work Plan and Deliverables

Figure 3-2: Phase 2 Work Plan and Deliverables

Figure 3-3: Phase 3 Work Plan and Deliverables

In addition, a sample drawing list has been prepared and is shown in Appendix A. The sample drawing list

3.1 PHASE 1: PLANNING & PRELIMINARY DESIGN

Task 1: Review & Update Design Basis Memorandum

Purpose: The purpose of Task 1 is to prepare a memorandum that documents the basis for detailed design of the wastewater treatment facility upgrades. This will serve as the team's guidance document for design criteria, layouts, equipment sizing, and specifications.

Scope of Services:

- Prepare a project management plan that outlines project team, communication plan, overall scope of work, project schedule, and proposed meeting dates.
- Coordinate a project kick-off meeting with the MD Greenview and M2 Engineering
 - Onsite inspection will include a visual inspection of the outfall headwall, to document current state of the rip-rap and headwall structure and to document any visual degradation (if it exists).
 - Onsite inspection will include a visual inspection of the two Parshall flume structures, to document state of concrete and to document any visual degradation (if it exists).

- Collect and review historical records for the current wastewater system, including:
 - Facility record drawings
 - Outfall record drawings
 - Influent quality data
 - Effluent quality data
 - Previous Preliminary Design Basis Memorandum
 - Site Geotechnical Report
 - Water Quality Based Effluent Study
- Complete a site inspection with multi-discipline team of the existing wastewater facilities
- Complete facility functionality review
 - Assess the hydraulic capacity of the existing channels and Parshall flumes
 - Consider redundant screening
 - Consider washing and compacting options for screen
 - Consider including grit removal system
 - Discuss phosphorus reduction planning or needs
 - Consider the addition of biosolids management system
 - Review the functional needs of the facility
 - Washroom, shower room, and locker room location
 - Laboratory
 - Control room
 - Main entry location
 - Consider support functions for maintenance, such as spare parts storage, bulk chemical storage, workshop and maintenance area
 - Consider functions related to best management practices: dedicated electrical room, bulk chemical handling and storage, and day-to-day chemical handling and transfer
- Prepare site layout options (Technical Memo)
- Prepare an updated Design Basis Memorandum
 - The Design Basis Memorandum will summarize the findings of this task, including a detailed explanation of the basis for the selection, the design philosophy, preferred equipment, and basis for detailed design of the facility.
 - Preliminary drawings will be included in the Design Basis Memo, including:
 - Preliminary Architectural Renderings
 - Overall Location Plan
 - Preliminary Process and Instrumentation Diagrams
 - WWTF Overall Site Plan
 - Building Layout
 - Prepare a DRAFT Design Basis Memo Update for review by the MD Greenview
 - Prepare a FINAL Design Basis Memo Update
- Prepare an itemized Class C (+/-25%) cost estimate for the upgraded WWTF
- Send the DRAFT Design Basis Memo Update to the MD Greenview for review and comment
- Meet with the MD Greenview to present and discuss the DRAFT Design Basis Memo Update
- Incorporate the MD Greenview comments and prepare the FINAL Design Basis Memo Update

MD Greenview Assistance:

- Provide background data requested by M2 Engineering
- Participate in discussions about facility functionality and preferred layouts
- Assistance to wash-down influent channels and Parshall flumes during our onsite conditions assessment, to allow for visual observation of structure

Project Management:

- Meeting #1: Project Kick-Off & Site Assessment
- Meeting #2: DRAFT Design Brief Memo Update
- Meeting #3: Review Updated Design Basis Memo with AEP

Deliverables:

- Meeting Records (Meetings #1, #2, and #3)

Task 2: Review Geotechnical Investigation Report

Purpose: The purpose of this task is to review the previously completed geotechnical report to establish foundation and pipeline design basis. We have assumed that the existing geotechnical report contains all the design recommendation that we require for detailed design.

Scope of Services:

- Review the geotechnical investigation report to determine design basis for lift stations, pipelines, buildings, and concrete tanks throughout the WWTF.
- Evaluate limitations of construction, options for construction, and evaluate design alternatives
- Document design basis in the Updated Design Basis Memo

MD Greenview Assistance:

- Provide M2 Engineering with the Geotechnical Investigation Report

Task 3: Topographical Survey

Purpose: The purpose of this task is to complete a topographical survey of the site to assist with site layout planning as well as establish site grading.

Scope of Services:

- Purchase air photo (Pals Geomatics)
- Coordinate with subconsultant (Pals Geomatics) to complete topographical survey for:
 - Wastewater Treatment Facility Site: existing building, sludge ponds, package WWTF, lift station and access road
 - Complete topographical survey for remaining portions the site
 - Note: survey has not been included for a new outfall structure. It has been assumed that the existing outfall can be reused.
 - Note: Site topographical survey will also establish locations the of geotechnical boreholes, property boundaries, site utilities, and landmarks of interest.
- Incorporate survey data points into CAD

MD Greenview Assistance:

- Maintain geotechnical stakes so the borehole locations can be surveyed
- Assist with utility locates

Deliverables:

- Air photo of site
- Detailed topographical survey

Task 4: Major Equipment Supply

Purpose: The purpose of the major equipment supply task is to go out to various vendors for proposals for major equipment, including screens (complete with washer/compactor), package extended aeration equipment, and biosolids dewatering equipment. This allows final dimensions, configurations, electrical loads, and controls to be established before the completion of detailed design. This allows for a more accurate and complete design package for the contractor which minimizes change orders associated with integration.

Note: We have not included a major equipment supply contract for the Grit Removal equipment as this is optional. If it is desired during the preliminary design review, M2 Engineering will provide details for including a Grit Removal system.

Scope of Services:

- Prepare major equipment supply RFP for screening equipment (complete with washer/compactor):
 - Prepare technical specifications for screening equipment
 - Outline factory testing requirements
 - Prepare request for proposal documents for screening equipment
 - Prepare an equipment supply contract for the preferred screen technology
 - Send screening equipment RFP to three preferred vendors
 - Manage screening equipment RFP from M2 Engineering Office
 - Collect and review screening equipment proposals received from various suppliers and provide a summary of proposals to the MD Greenview
 - Provide a recommendation for preferred screening equipment supplier
 - Incorporate major equipment supply contract into the WWTF Construction Contract using a Novation Agreement Standard Form
- Prepare major equipment supply RFP for Extended Aeration Package WWTF:
 - Prepare technical specifications for Extended Aeration Package WWTF
 - Outline factory testing requirements
 - Prepare request for proposal documents for Extended Aeration Package WWTF
 - Prepare an equipment supply contract
 - Send Extended Aeration Package WWTF RFP to preferred vendors
 - Manage RFP from M2 Engineering Office
 - Collect and review Extended Aeration Package WWTF proposals and provide a summary of proposals to the MD Greenview
 - Provide a recommendation for Extended Aeration Package WWTF
 - Incorporate major equipment supply contract into the WWTF Construction Contract using a Novation Agreement Standard Form
- Prepare major equipment supply RFP for biosolids (WAS) management equipment:
 - Prepare technical specifications for preferred biosolids management technology equipment
 - Outline factory testing requirements
 - Prepare request for proposal documents for biosolids management equipment
 - Prepare an equipment supply contract
 - Send biosolids management equipment RFP to three preferred vendors
 - Manage RFP from M2 Engineering Office
 - Collect and review solids management proposals and provide a summary of proposals to the MD Greenview
 - Provide a recommendation for biosolids management equipment vendor
 - Incorporate major equipment supply contract into the WWTF Construction Contract using a Novation Agreement Standard Form

MD Greenview Assistance:

- Screening Equipment
 - Review M2 Engineering's screening proposal summary and recommendation
 - Meet to discuss screening equipment proposals and decide on preferred vendor
- Extended Aeration Treatment Equipment
 - Review M2 Engineering's Extended Aeration Package WWTF proposal summary and recommendation
 - Meet to discuss Extended Aeration Package WWTF proposals and decide on preferred vendor
- Biosolids Management Equipment
 - Review M2 Engineering's biosolids management proposal summary and recommendation
 - Meet to discuss biosolids management proposals and decide on preferred vendor

Project Management:

- Meeting #4: Review of Major Equipment Supply RFPs Received

Deliverables:

- Screening Equipment RFP
- Screening Equipment RFP Evaluation Letter
- Extended Aeration Package WWTF RFP
- Extended Aeration Package WWTF RFP Evaluation Letter
- Biosolids Management Equipment RFP
- Biosolids Management Equipment RFP Evaluation Letter
- Meeting Record (Meetings #4)

3.2 PHASE 2: DETAILED DESIGN

Task 5: Project Management

Purpose: Project Management monitors the budget and schedule and communicates with the team to keep the project on track.

Scope of Services:

- Schedule regular internal design meetings with the multi-discipline team
- Design coordination between the multi-discipline engineering team throughout design
- Coordinate review meetings with the MD Greenview and other stakeholders such as AEP
 - Design Meeting #1: 10% Detailed Design Update Meeting
 - Design Meeting #2: 30% Design Review
 - Design Meeting #3: 60% Design Review
 - Design Meeting #4: Review 60% Detailed Design with AEP
 - Design Meeting #5: 90% Design Review
 - Design Meeting #6: Bid Period Planning and Preparation
- Prepare and distribute meeting records for all project meetings
- Complete front-end contract using M2 Engineering's documents (Division 00 & 01)
- Construction cost estimates
 - Prepare an itemized Class B cost estimate (+/- 15%) at 90% design
- Operation and maintenance cost estimate
 - Prepare operational plans and costs for the new WWTF to assist the MD Greenview with budgeting
- Construction schedule
 - Update project schedule showing the bid period, construction award date, construction period, and estimated construction completion date
- Coordinate and prepare application forms for approvals agencies to obtain approvals and permits including:
 - AEP – Approval to Operate
- Coordination with utilities to protect, relocate or upgrade existing lines, including gas and power

- Prepare monthly progress reports showing budget and earned value analysis
- Prepare cash flow projections throughout the project
- Manage internal QA/QC Program

MD Greenview Assistance:

- Review and provide comments on engineering deliverables (within 1-2 weeks):
 - 30% Drawing Set
 - 60% Drawing Set
 - 90% Drawing Set, Technical Specifications and Front-End Contract Documents (Div 00, Div 01)
 - IFBC Drawing Set, Technical Specifications and Front-End Contract Documents

Deliverables:

- Agendas and meeting documentation
- Construction cost estimates
- Operations and maintenance cost estimate
- Construction schedule
- Front-end construction contract (Division 00 & 01)

Task 6: Headworks Facility

Purpose: The purpose of this task is to develop detailed design drawings and specifications for the upgrades to the headworks room.

Scope of Services:

- Complete detailed design for the headworks facility
 - Size and specify site service connections and upgrades: gas, power, & potable water
 - Review shop drawings from preferred screening vendor
 - Integrate screening equipment
 - Review washer/compactor layout
 - Review screenings bin configuration for ease of removal
 - Size and specify modifications to the existing influent channels to accommodate two new mechanical screens
 - Size and specify modifications and/or upgrades to the existing influent channels and Parshall flumes (if required)
 - Size and specify replacements level instruments for the Parshall flumes
 - Review hydraulics from headworks to exterior extended aeration basins
 - Design foul air management system
 - Size and specify headworks room expansion superstructure
 - For structural and architectural scope basis, we have assumed a block wall building
 - Complete structural and architectural design for connection to existing building
 - Specify materials, finishes, and furnishings
 - Size and specify equipment for process piping and valves
 - Size and specify equipment for heating and ventilation (HVAC) systems
 - Size and specify equipment for plumbing systems
 - Size and specify equipment for electrical and control systems
 - Complete operating philosophy
 - Complete SCADA system design
- Complete the detailed design for the phosphorus removal, chemical feed system
 - Review chemical dosage requirements for phosphorus removal
 - Size chemical day tanks, pumps, injection equipment
 - Size bulk chemical storage area
 - Determine chemical feed system layout

- Size and specify equipment for process piping, and valves
 - Size and specify equipment for electrical and control systems
 - Complete operating philosophy
 - Complete SCADA system design and control philosophy
- Specifications
 - Prepare technical specifications

MD Greenview Assistance:

- Provide details on preferred products (valves, instruments, etc.)

Deliverables:

- 30% Design Review Drawings
- 60% Design Review Drawings
- 90% Design Review Drawings
- Issued for Bid & Construction Drawings
- Technical Specifications
- Operating Philosophy and Control Narratives

Task 7: Grit Removal (Optional)

Purpose: This task will be scoped and detailed if grit removal is preferred by the MD Greenview after the Updated Design Basis Memorandum.

Task 8: Extended Aeration Package WWTF

Purpose: The purpose of this task is to design the outdoor extended aeration tanks and supporting equipment, piping and valves. This includes the design of blowers, aerators, mixers, instrumentation, etc., all required for the extended aeration equipment to operate as intended.

Scope of Services:

- Complete the detailed design for the extended aeration package WWTF (extended aeration and clarifier tanks)
 - Size and specify access roads & walkways
 - Size and specify service connections: power
 - Design piping tie-ins from headworks building
 - Complete site grading plan
 - Complete landscape plan
 - Review shop drawings from extended aeration package WWTF vendor
 - Integrate extended aeration package WWTF equipment: mixers, aerators, RAS pumps, etc.
 - Size and specify foundation and below grade concrete tanks
 - Locate, size, and specify catwalk access around tanks
 - Size and specify equipment for piping and valves
 - Size and specify equipment for electrical and control systems
 - Complete operating philosophy
 - Complete SCADA system design and control philosophy
- Specifications
 - Prepare technical specifications

MD Greenview Assistance:

- Provide details on preferred products (valves, instruments, pumps, etc.)

Deliverables:

- 30% Design Review Drawings
- 60% Design Review Drawings
- 90% Design Review Drawings
- Issued for Bid & Construction Drawings
- Technical Specifications
- Operating Philosophy and Control Narratives

Task 9: Biosolids Management

Purpose: The purpose of this task is to integrate the preferred biosolids management equipment and design the building extension required to house the new equipment.

Scope of Services:

- Complete the detailed design for the biosolids management system
 - Note: M2 Engineering is planning on designing a building expansion on the south side of site to accommodate the new biosolids management equipment. This space will be directly connected to the headworks room.
 - Size and specify access road, walkway, chemical delivery area, and bin pick-up area
 - Review shop drawings from solids management equipment vendor
 - Determine solids management system layout
 - Design foul air management system
 - Size and specify foundation
 - For structural scope basis, we have assumed a strip footing similar to the existing building
 - Size and specify headworks room expansion superstructure
 - For structural and architectural scope basis, we have assumed a block wall building
 - Complete architectural design for connection to existing building
 - Size and specify equipment for process conveyors, piping, and valves
 - Size and specify equipment for plumbing systems
 - Size and specify equipment for electrical and control systems
 - Complete operating philosophy
 - Complete SCADA system design and control philosophy
- Specifications
 - Complete technical specifications

MD Greenview Assistance:

- Provide details on preferred products (valves, instruments, pumps, etc.)

Deliverables:

- 30% Design Review Drawings
- 60% Design Review Drawings
- 90% Design Review Drawings
- Issued for Bid & Construction Drawings
- Technical Specifications
- Operating Philosophy and Control Narratives

Task 10: Wet Weather Flow Management

Purpose: The purpose of this task is to design modifications to the piping and pumping system to convert the existing sludge holding ponds into equalization storage for wet weather storm events.

Scope of Services:

- Review existing piping configuration to determine how to isolate the existing ponds from the WAS system and tie into the influent wastewater pipe
- Review hydraulics associated with bringing influent wastewater from influent pipe to ponds
- Assess and design flow control structures to allow high flow rates to run to the equalization ponds
- Design a package lift station from the discharge of the equalization ponds to bring stored wastewater back to the influent channel after the peak flow event
- Note: we have assumed that the existing sludge pond liners and monitoring wells are in good condition with no signs of failure and do not require repair or replacement.
- Size and specify equipment for piping and valves
- Size and specify equipment for electrical and control systems
- Complete operating philosophy
- Complete SCADA system design and control philosophy
- Complete technical specifications

MD Greenview Assistance:

- Provide details on preferred products (valves, instruments, pumps, etc.)

Deliverables:

- 30% Design Review Drawings
- 60% Design Review Drawings
- 90% Design Review Drawings
- Issued for Bid & Construction Drawings
- Technical Specifications
- Operating Philosophy and Control Narratives

Task 11: Operations Building Modifications & Expansion

Purpose: The purpose of this task is to provide design drawings and specifications for the operations building modifications and expansion.

Scope of Services:

- Complete the detailed design for the operations building modifications and expansion
 - Size and specify access roads, walkways, and parking areas
 - Size and specify site service connections: gas, power, and potable water
 - Complete site grading plan
 - Determine operations building layout and rooms. For the purpose of the proposal, M2 Engineering has assumed the following:
 - Existing operations building modifications:
 - Larger electrical room
 - Upgrade all electrical equipment
 - Remove existing indoor generator and replace with an outdoor enclosure generator
 - Replace all blowers and maintain existing blower room
 - Upgrade existing washroom and shower room
 - Remove control room
 - Convert existing laboratory to storage room

- Operations building expansion:
 - Laboratory
 - Control room
 - Washroom (toilet and sink only)
 - Mechanical room
- Specify materials, finishes, and furnishings for interior rooms
- Size and specify operations building expansion superstructure
 - We have assumed a block building with wood frame interior walls
- Size and specify operations building foundation
 - We have assumed shallow strip footings
- Complete architectural design for operations building
- Complete architectural design for connection to existing building
- Size and specify equipment for heating and ventilation (HVAC) systems
- Size and specify equipment for plumbing systems
- Size and specify equipment for electrical and control systems
- Specifications
 - Complete technical specifications

MD Greenview Assistance:

- Provide details on preferred products and finishes

Deliverables:

- 30% Design Review Drawings
- 60% Design Review Drawings
- 90% Design Review Drawings
- Issued for Bid & Construction Drawings
- Technical Specifications
- Operating Philosophy

Task 12: Demolition & Reclamation

Purpose: The purpose of this task is to plan for the decommissioning, demolition, and reclamation of the old infrastructure at the existing WWTF. This includes removing existing electrical and controls systems, demolition of walls in the existing building to allow for reconfiguration, and removal of existing package WWTF. This all needs careful thought and planning to ensure the existing system is operational while the WWTF upgrades are constructed.

Scope of Services:

- Develop scope of work for demolition required in the existing operations building
- Coordinate with a hazardous materials specialist to assess existing buildings to be demolished
- Develop scope of work for demolition and reclamation of the existing extended aeration package WWTF
- Develop scope of work and technical specifications for contractor to complete decommissioning and demolition work

MD Greenview Assistance:

- Review and discuss plans with M2 Engineering
- Coordinate with hazardous materials specialist for access to buildings to be demolished

Deliverables:

- Demolition Drawings
- Decommissioning Drawings / Details
- Technical Specifications

3.3 PHASE 3: CONSTRUCTION SERVICES

Task 13: Bid Administration Services

Purpose: The purpose of this task is to support the MD Greenview in finding a contractor to construct the work. Scope within this task includes: pre-qualifying bidders, preparing final bid documents, facilitating the bid process, and providing recommendations for award of the construction contract. Pre-qualification of contractors enables us to ensure that contractors bidding on the work have the appropriate skills and experience.

Scope of Services:

- Contractor Pre-Qualification
 - Develop a request for qualifications (RFQ) package for the WWTF construction project
 - Send request for qualification packages to APC for public online posting/advertisement
 - Manage request for qualifications from M2 Engineering office
 - Receive request for qualification packages at the office of M2 Engineering at the specified closing date and time
 - Review request for qualification packages for compliance with the qualifications
 - Provide recommendations for short-list of pre-qualified contractors to receive tender package
 - Review request for qualification submissions and recommendations with the MD Greenview during one of the design review meetings
- Prepare final bid documents
 - Prepare PDF copies of Contract Documents (Drawings and Specifications)
 - Prepare five (5) printed copies of Contract Documents (Drawings and Specifications)
- Send bid packages to pre-qualified contractors from the RFQ process for each contract
- Facilitate the bid process during the bid period:
 - Allow for bid document pickup from our M2 Engineering office
 - Send electronic bid documents to pre-qualified bidders
 - Coordinate a mandatory Pre-Bid Meeting in Grande Cache
 - Prepare an agenda and meetings notes for the mandatory pre-bid meeting
 - Distribute pre-bid meeting notes in written addendum to all contractors
 - Provide technical advice and respond to contractor's questions and clarifications during bid period
 - Issue written addendum as required
 - Attend bid closing at the office of M2 Engineering at the specified closing date and time
- Review bid packages for general compliance with the instructions to bidders for each contract
- Provide summary letter of the bid analysis and recommendations for award of the contract to the MD Greenview

MD Greenview Assistance:

- Participation in review of RFQ
- Participation in mandatory site meeting

Project Management:

- Meeting #1: Request for Qualifications Review Meeting (concurrent with 90% Design Meeting)
- Meeting #2: Mandatory Pre-Bid Meeting (Grande Cache, AB)
- Meeting #3: Bid Review Meeting (Valleyview, AB)

Deliverables:

- Request for Qualification Package
- Request for Qualifications Review and Evaluation Letter
- Mandatory Pre-Bid Meeting Agenda & Meeting Notes
- Bid Addendum (as required)
- Bid Review and Evaluation Letter
- Meeting Notes

Task 14: Contract Administration Services

Purpose: Contract Administration Services includes the office-based tasks during construction. This includes project management tasks and regular communication with the contractor and the MD Greenview, as well as review of submittals and questions.

Scope of Services:

- Provide Issued for Construction drawing sets to the selected contractors
- Coordinate construction kick-off meeting with the contractor to review project objectives, schedule, milestones, permits, submittals, etc.
- Review contractor's ECO Plan
- Coordinate monthly construction progress meetings
 - Assuming 15 months' construction for the WWTF project.
- Review construction progress during construction meetings:
 - Work completed to date
 - Anticipated work
 - Schedule update
 - Construction issues
 - Budget review (engineering, construction, and administration fees)
- Provide technical guidance to the MD Greenview and assist the contractors and suppliers in interpretation of the contract documents, drawings, and specifications
- Act on behalf of the MD Greenview to administrate the construction contract
- Provide general construction engineering services based on assumed duration of construction, including:

| Administrative Item | Assumption |
|---|------------|
| – Shop drawing submittals | Max. 220 |
| – Requests for information (RFI) review | Max. 100 |
| – Progress Payment Certificates (1/month) | Max. 15 |
| – Monthly meetings with contractor | Max. 15 |
| – Monthly progress reports | Max. 15 |
| – Shop drawing submittals | Max. 220 |

- Provide overall project management services:
 - Obtain baseline construction schedule and confirm it is sufficiently detailed
 - Monitor progress of the Contractor's work per baseline schedule
 - Monitor work generally complies with the drawings and specifications
 - Monitor schedule and record reasons for delays
 - Record and review shop drawings and return within specified turn-around in the contract
 - Record, review, and issue detailed drawings, clarifications in response to RFIs
 - Review the value of work progressed and make letter of recommendation for contractor payment (PPC)
 - Inclusive of WCB clearance, Statutory declaration, invoice, price breakdown, and updated construction schedule
 - Assist with the release of holdback
 - Record and manage contract changes during construction:
 - Issue contemplated change orders (CCRs)
 - Review change order requests (CORs)
 - Issue contract change orders (CCOs)
 - Review of material testing reports, data of inspection/testing agencies, traffic plans, project plans, and construction of prototypes provided by the contractor. Third party materials testing and survey during construction will be specified as the responsibility of the selected contractor.
- Assist with the review RFIs and change orders
- Review monthly progress as part of PPCs including

- Work completed to date and quantity reports to document the contractor's progress for payment
 - If the contractor is tracking design deviations by red-line marking the design drawings and specifications
- Develop a commissioning plan with the contractor and submit it to the MD Greenview for review
- Note: M2 Engineering will specify a 30-day commissioning period. The Commissioning Plan will outline how the operators will play a part in this as they will be required to operate the WWTF during this time.

MD Greenview Assistance:

- Execution of Construction Contract
- Attend Monthly Construction Meetings
- Process PPCs
- Process CCOs
- Review various project information submitted by engineer

Project Management:

- Monthly Construction Meetings
- Monthly Project Update Reports, Schedule, and Budget

Deliverables:

- Issued for Construction Packages
- Executed Contract Document Set
- Monthly Project Update Reports, Schedule, and Budget
- Monthly Construction Progress Meetings
- Construction Meetings Notes
- Shop Drawing Reviews
- Shop Drawing Tracking Sheet
- RFI Responses
- RFI Tracking Sheet
- Progress Payment Certificates
- Contemplated Change Requests (CCRs)
- Contract Change Orders (CCOs)
- CCR, COR, & CCO Tracking Sheet
- Commissioning Plan (made in conjunction with contractor)

Task 15: Field Engineering Services

Purpose: Field Engineering Services refers to the onsite engineering inspections of the contractor's work to review if the work generally conforms to the requirements of the design drawings and specifications. Diligent site inspections will help ensure the end product meets the project objectives.

Scope of Services:

- Resident engineering services
 - We have allowed for 8 weeks of full-time onsite construction inspection for 5-days a week 10-hours a day. This time will be used at our discretion to:
 - Witness critical portions of construction
 - Monitor construction activities
 - Daily site reports will be completed to record construction activities, record progress and quantities, observe safety practices, and confirm proper record management is taking place
 - Maintain photo journal of construction progress
 - Coordinate inspections, including CCC and FAC

- Multi-discipline engineering inspections (12 hour day)
 - Construction inspections are for reviewing if the contractors work generally conforms to the drawings and specifications. Inspections by our engineering team will be timed based on the contractor's progress on the various civil, architectural, structural, process, mechanical, electrical, and control components of work. The number of inspections identified assumes the contractors and sub-contractors have a proven track record at completing at least five similar projects.

| | Headworks | Extended Aeration WWTF | Biosolids Mgmt | Wet Weather Equalization Pond | Operations Bldg |
|-----------------------|-----------|---------------------------|-------------------|----------------------------------|--------------------|
| Civil | 1 | 2 | 1 | 1 | 2 |
| Structural | 5 | 11 | - | - | 5 |
| Concrete Pour | 2 | 10 | 1 | - | 2 |
| Architectural | - | - | - | - | 1 |
| Process mechanical | 2 | 1 | 1 | 1 | 2 |
| Building mechanical | 1 | - | 1 | - | 2 |
| Electrical & controls | 1 | 1 | 1 | 1 | 1 |

* Note: Process Engineer is the Project Engineer, who will complete additional process inspections during monthly construction meetings

- Prepare site inspection report for every site inspection completed to summarize work completed on site
- Prepare and maintain a photographic history of the work in electronic format complete with titles, dates, and descriptions on each photo
- Field Testing & Start-up activities
 - Attend initial testing, pre-start-up and start-up activities for each of the major facilities / components
 - The following days on site have been budgeted for:

| | Headworks | Extended Aeration WWTF | Biosolids Mgmt | Wet Weather Equalization Pond | Operations |
|-----------------------|-----------|---------------------------|-------------------|----------------------------------|------------|
| Process mechanical | 0 | 2 | 1 | 0 | 0 |
| Electrical & controls | 1 | 1 | 1 | - | - |

- Performance Verification & Commissioning Verification
 - Participate in initial commissioning activities for each of the major facilities / components
 - The following days on site have been budgeted for commissioning:
 - Process Mechanical: 2 trips, 3 days on site for each trip
 - Electrical: 1 trip, 1 day on site
- Final inspection
 - Attend initial testing, pre-start-up and start-up activities for each of the major facilities / components
 - The following individuals will attend the final site inspection:
 - Project Manager
 - Civil
 - Architectural
 - Structural
 - Process mechanical
 - Building mechanical
 - Electrical & controls
- Facilitate comprehensive operator training
 - M2 Engineering will provide an updated version of the existing operating control philosophy, based on detailed contractor redlines
 - M2 will prepare a PowerPoint presentation for classroom training (4 hours) of the operating control philosophy
 - Additional training requirements will be specified in the Contract Document, and M2 Engineering will review the contractors training plans to confirm they meet the specification requirements

- The following days on site have been budgeted for training activities:

| | General Overview | Headworks | Extended Aeration WWTF | Biosolids Mgmt | Wet Weather Equalization Pond | Operations |
|--------------------|------------------|-----------|------------------------|----------------|-------------------------------|------------|
| Process mechanical | 0.5 | 0.5 | 1 | 0.5 | - | 0.5 |

MD Greenview Assistance:

- Participation in operator training
- Participation in facility commissioning

Deliverables:

- Agendas and meeting documentation
- Daily inspection reports
- Weekly inspection reports
- Multi-Discipline Engineering Site Inspection Reports
- Photo Journal
- Operator training material

Task 16: Post-Construction Services

Purpose: The purpose of this task is to develop project close-out deliverables for routine operations of the upgraded WWTF including standard operating procedures (SOPs), emergency response plan (ERP), and record drawings.

Scope of Services:

- Provide Operation and Maintenance (O&M) Manuals
 - 2 printed copies and electronic copies of the O&M Manuals will be provided
 - The O&M Manuals will consist of a compilation of the project shop drawings and the equipment specific manuals/instructions available from the relevant manufacturers.
 - The O&M Manuals will include of a copy of the SCADA/HMI program and developers license
- Provide Standard Operating Procedures (SOPs) & Emergency Response Plan (ERP) Manuals
 - 2 printed copies and electronic copies of the SOP & ERP Manuals will be provided
- Provide Record Drawings to the MD Greenview based on detailed contractor redlines
 - 2 printed and electronic sets of the Record Drawings will be provided in 11x17 format
 - electronic file versions of the Record Drawings will be provided in 22x34 format

MD Greenview Assistance:

- Review SOP / ERP developed for the new WWTF and provide feedback

Deliverables:

- Operation & Maintenance Manuals
- SOP / ERP Manuals
- Record Drawings

Task 17: Warranty Services

Purpose: Warranty Services predominately includes deficiency tracking and resolution during a 2-year construction warranty period. The intent of this task is to provide continual support to the MD Greenview for 2-years after construction to assist with operational challenges as well as any deficiencies that may arise to help get them remedied in a timely manner.

Scope of Services:

- Deficiency Resolution Assistance
 - Track deficiencies noted by the engineering inspection team and the MD Greenview operations team. To assist in tracking we will develop a standard form for use by the operations team to accurately document perceived deficiencies (time, date, and issue description).
 - Maintain deficiency tracking sheet complete with estimated costs and resolution dates
- Prepare a warranty management plan
- 12-Month Warranty Inspection
 - M2 Engineering will specify a 2-year warranty period that commences from the date of construction completion, or substantial performance. The general contractor or equipment supplier will be responsible for replacing equipment and/or components for the duration of the warranty period that fail under the warranty conditions.
 - Our services include a warranty inspection (~12 months after commissioning) by the project team for the purpose of identifying potential deficiencies prior to close-out of the warranty period.
- Two-Year Construction Warranty inspection
 - M2 Engineering will complete a final 2-year warranty inspection with the MD Greenview to review deficiency resolution
- Prepare a Final Acceptance Certificate (FAC)

MD Greenview Assistance:

- Attend 12-month warranty inspection
- Attend 2-year warranty inspection

Deliverables:

- Deficiency reporting form
- Deficiency tracking sheet
- 12-month warranty inspection report
- 2-year warranty inspection report
- Final Acceptance Certificate

FIGURE 3-1
PHASE 1 WORK PLAN AND DELIVERABLES



PHASE 1: PLANNING & PRELIMINARY DESIGN

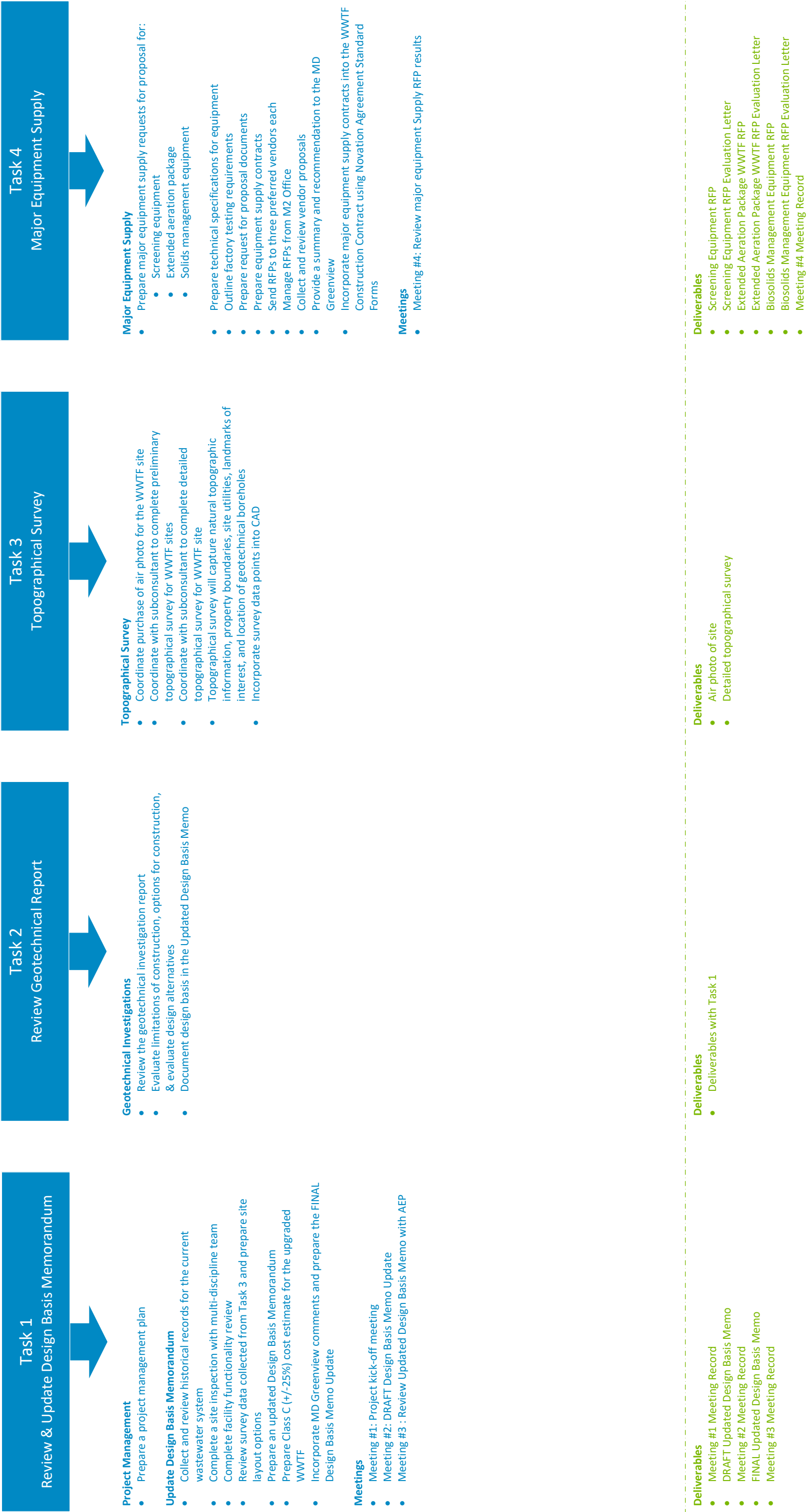


FIGURE 3-2

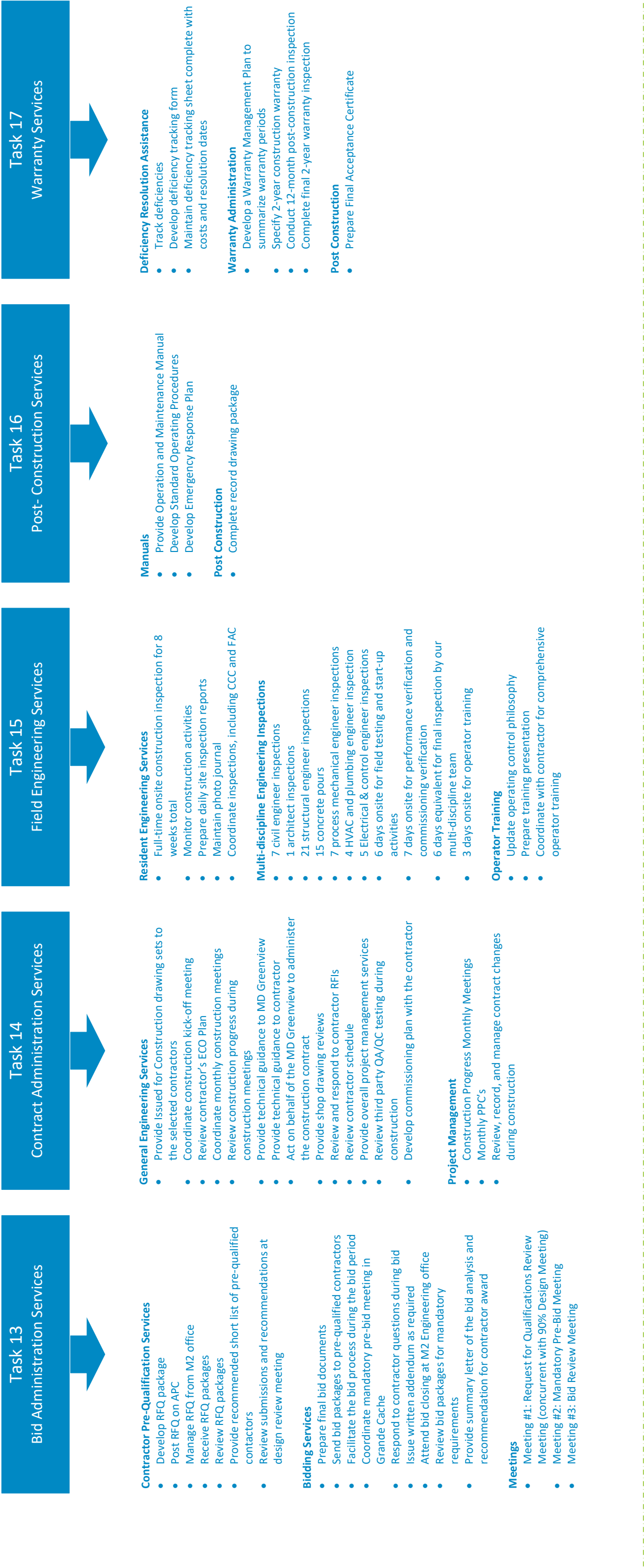
PHASE 2 WORK PLAN AND DELIVERABLES

| PHASE 2: DETAILED DESIGN | | | | | | |
|--|--|---|--|---|--|--|
| Task 5 Project Management and Meetings | Task 6 Headworks Facility | Task 8 Extended Aeration Package WWTF | Task 9 Biosolids Management | Task 10 Wet Weather Flow Management | Task 11 Operations Building Modifications & Expansion | Task 12 Demolition & Reclamation |
| Project Management <ul style="list-style-type: none">Regular internal design meetings - 4 internal multi-discipline meetingsCoordinate multi-discipline designPrepare front-end contractUpdate project schedule including construction timelinesCoordinate and prepare approval and permit applicationsCoordinate with utilitiesPrepare monthly progress reportsPrepare cash flow projectionsManage M2 QA/QC program Design Meetings <ul style="list-style-type: none">Meeting #1: 10% DesignMeeting #2: 30% DesignMeeting #3: 60% DesignMeeting #4: Review 60% Design with AEPMeeting #5: 90% Design ReviewMeeting #6: Bid Period Planning and Preparation Cost Estimating <ul style="list-style-type: none">Prepare a Class B cost estimate (+/- 15%) at 90% designPrepare an O&M cost estimate | Headworks Facility Complete design for headworks facility including: <ul style="list-style-type: none">Site service connections and upgradesIntegration of screening equipmentIntegration of washer/compactorIntegration of screenings bin for ease of removalModifications to the existing influent channels to accommodate new screensModifications to the existing influent channels to accommodate parshall flumes (if required)Overall system hydraulicsFoul air management systemHeadworks room expansionConnection to existing buildingProcess piping and valvesHeating and ventilation systemsPlumbing systemsElectrical and control systemsOperating philosophySCADA system designTechnical specifications Phosphorous Removal System <ul style="list-style-type: none">Chemical dosage requirementsChemical day tanks, pumps, injection equipmentBulk chemical storageChemical feed system layoutProcess piping and valvesElectrical and control systemsOperating philosophySCADA system designTechnical specifications | Extended Aeration WWTF Complete design for extended aeration package WWTF including: <ul style="list-style-type: none">Access roads, walkways, and utility connectionsPiping tie-insGrading and landscaping plansIntegration of vendor equipmentConcrete foundation and below grade concrete tanksCatwalk accessProcess piping and valvesElectrical and controls systemsOperating philosophySCADA system designTechnical specifications | Solids Management Complete design for biosolids management system including: <ul style="list-style-type: none">Access roads, walkways, chemical delivery area, and bin pick-up areaIntegration of solids management equipmentConcrete foundationExpansion superstructure (coordinated with Task 6)Process conveyors, piping, and valvesPlumbing systemsElectrical and controls systemsOperating philosophySCADA system designTechnical specifications | Detailed Design <ul style="list-style-type: none">Modifications to existing piping to isolate the existing ponds from the WAS system and tie into the influent wastewater pipeHydraulics reviewFlow control structures to allow high flow rates to run to the equalization pondsPackage lift station to bring stored wastewater back to the influent channelPiping and valvesElectrical and control systemsOperating philosophySCADA system designTechnical specifications | Operations Building Complete design for the operations building modifications and expansion including: <ul style="list-style-type: none">Access roads, walkways, and parking areaUtility connectionsSite grading planOperations building layout and room configuration for:<ul style="list-style-type: none">Larger electrical roomBlower roomWashroom and shower roomStorage roomMechanical roomControl roomLaboratoryNew washroomConcrete foundationBuilding expansion superstructureArchitectural design for connection to existing buildingMaterials, finishes, and furnishingsBlower replacementGenerator replacement with outdoor enclosure generatorHeating and ventilation systemsPlumbing systemsElectrical and control systemsTechnical specifications | Decommissioning Plans <ul style="list-style-type: none">Develop scope of work for demolition in existing operations buildingCoordinate hazardous materials testingDevelop scope of work for demolition and reclamation of the existing extended aeration package WWTFDevelop scope of work and technical specifications for contractor to complete decommissioning and demolition work |
| Deliverables <ul style="list-style-type: none">Agendas and meeting documentationConstruction cost estimatesOperations and maintenance cost estimateConstruction scheduleFront-end construction contract | Deliverables <ul style="list-style-type: none">30% Design Review Drawings60% Design Review Drawings90% Design Review DrawingsIssued for Bid & Construction DrawingsTechnical SpecificationsOperating Philosophy and Control Narratives | Deliverables <ul style="list-style-type: none">30% Design Review Drawings60% Design Review Drawings90% Design Review DrawingsIssued for Bid & Construction DrawingsTechnical SpecificationsOperating Philosophy and Control Narratives | Deliverables <ul style="list-style-type: none">30% Design Review Drawings60% Design Review Drawings90% Design Review DrawingsIssued for Bid & Construction DrawingsTechnical SpecificationsOperating Philosophy and Control Narratives | Deliverables <ul style="list-style-type: none">30% Design Review Drawings60% Design Review Drawings90% Design Review DrawingsIssued for Bid & Construction DrawingsTechnical SpecificationsOperating Philosophy | Deliverables <ul style="list-style-type: none">Hazardous materials report (by others)Demolition DrawingsDecommissioning Drawings / DetailsTechnical Specifications | |

FIGURE 3-3
PHASE 3 WORK PLAN AND DELIVERABLES



PHASE 3: CONSTRUCTION SERVICES



- Deliverables
- Request for Qualification Package
 - Request for Qualifications review and evaluation letter
 - Mandatory bid meeting agenda and notes
 - Bid addenda (as required)
 - Bid review and evaluation letter
 - Meeting notes

- Deliverables
- Issued for Construction packages
 - Executed Contract Document set
 - Monthly update reports, schedule, and budget
 - Monthly construction progress meetings
 - Construction meeting notes
 - Shop drawings review and tracking
 - RFI response and tracking
 - Progress Payment Certificates
 - Contract Change Requests (CCR)
 - Contract Change Orders (CCO)
 - CCR, COR, & CCO Tracking sheet
 - Commissioning Plan

- Deliverables
- Agendas and meeting documentation
 - Daily site inspection reports
 - Weekly inspection reports
 - Multi-Discipline Engineering Site Inspection Reports
 - Photo journal
 - Operator training material

- Deliverables
- O&M Manual
 - SOPs (Standard Operating Procedures)
 - ERP (Emergency Response Plan)
 - Record Drawings

- Deliverables
- Deficiency reporting form
 - Deficiency tracking sheet
 - Warranty Management Plan
 - 12-month warranty inspection report
 - 2-year warranty inspection report
 - Final Acceptance Certificate

4 Our Project Team

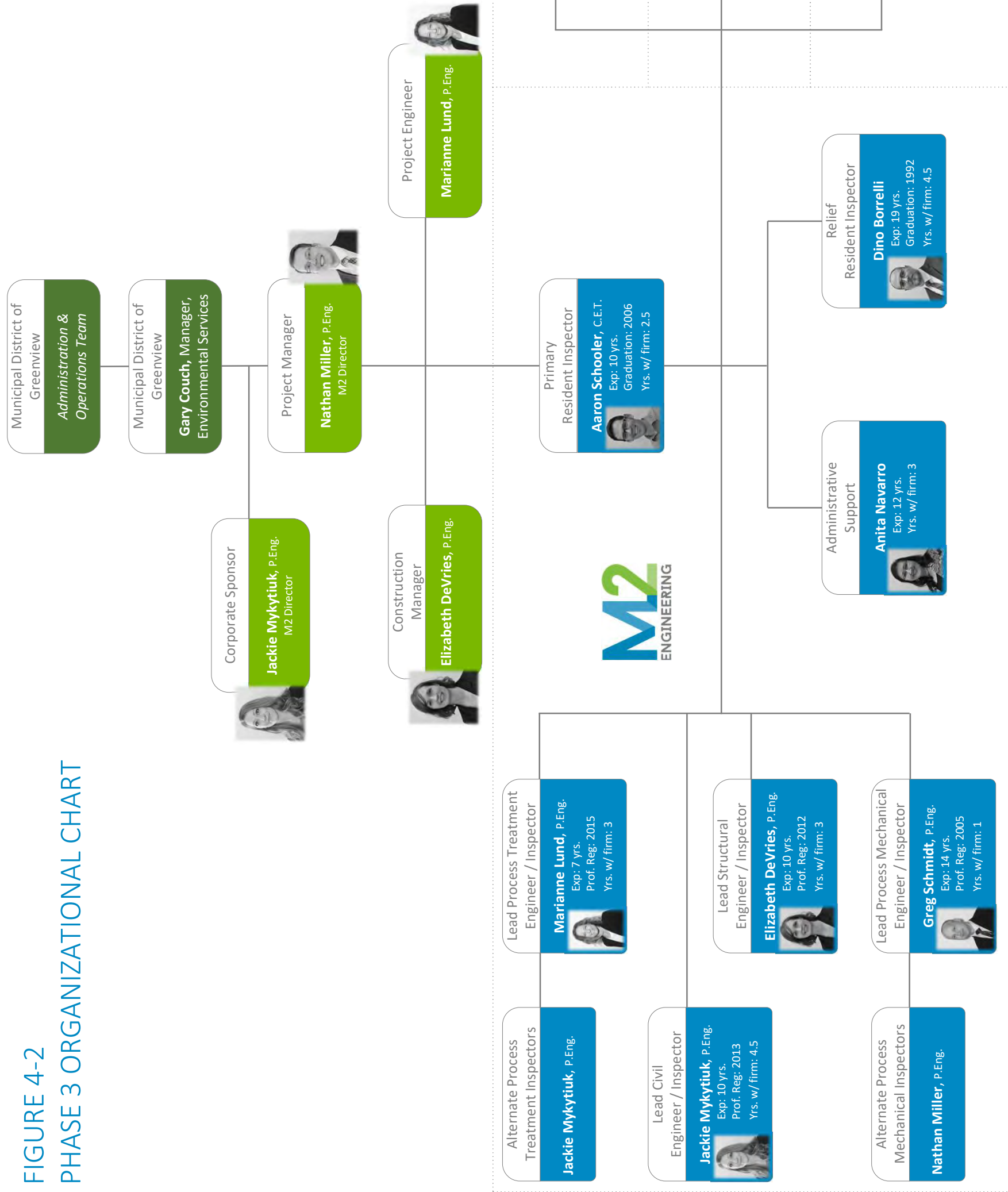
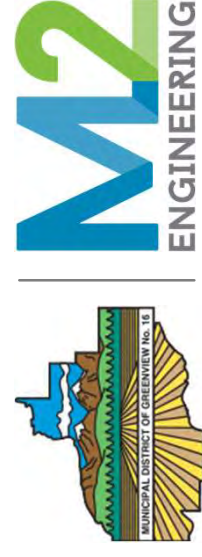
Our core team works closely with Owners and Clients, for clear lines of communication between each of the project team members. We have developed organizational charts to summarize the roles of our core project team members as well as the lines of communication for the project team.

Figure 4-1: Phase 1 & Phase 2 Organizational Chart provides an overview of the team members involved in the design stages.

Figure 4-2: Phase 3 Organizational Chart provides an overview of the team members involved in the construction stage.

A description of our team members and their qualifications can be found in our statement of qualifications.

FIGURE 4-2
PHASE 3 ORGANIZATIONAL CHART



PHASE 3: CONSTRUCTION SERVICES KEY PROJECT PERSONNEL

5 Innovation and Value-Added Services

5.1 Better Management of Screenings and Biosolids

Currently, the Grande Cache WWTF does not have mechanical fine screening or built in systems for biosolids management. Adding these systems would have a positive benefit for operations and maintenance of the facility.

The existing headworks screens are coarse and do not effectively remove hair, rags, and other debris from the system. The existing grinder decreases the size of the debris but allows it to pass through the headworks and into the treatment system. Once in the treatment system, this type of debris can cause operational issues for mechanical equipment, such as pumps, pipes, aeration laterals, and raking systems. This is a problem which decreases treatment efficacy and increases maintenance when equipment gets clogged or damaged by the debris. The debris eventually needs to be removed from the process wherever it finally settles (either the clarifier or sludge ponds). Allowing the debris to pass through the headworks, where it could easily be removed, is a missed opportunity.

For biosolids accumulating in the sludge pond, expensive, one-off contracts need to be setup for removal and disposal of biosolids, which has been costly for the Hamlet over the years. The frequency of biosolids dredging, dewatering and removal has been increasing over the years, likely due to two main factors: increased influent flows; and pressure to maintain effluent quality.

The Grande Cache WWTF is large enough that built-in infrastructure for influent mechanical screening and biosolids dewatering/removal is recommended to provide a more affordable solution when considering the long-term operation and maintenance costs of the facility. Therefore, our innovative work plan includes the following components for the proposed upgrade:

- Mechanical screening for influent wastewater
- Biosolids dewatering and hauling equipment

As an additional benefit, moving biosolids management away from the sludge ponds allows the ponds to be repurposed for management of wet weather flows.

5.2 Considering the Future

We are in an era of ever-changing environmental regulations. Effluent limits are steadily becoming more stringent and onerous to meet. To further complicate matters, provincial and federal regulatory bodies have been implementing wastewater standards / limit changes independently over the last decade.

Our work plan will consider the possibility of future regulatory changes, by planning future provisions and/or future space for additional components that could, in the long-run, further extend the life of the facility. Our design approach will include the following considerations:

- Addition of a phosphorous removal process
- Provision for future filtration
- Provision for future UV disinfection

6 Schedule

Our proposed project schedule, including key project tasks and milestones, has been prepared and is presented in GANTT format in Figure 6-1: Proposed Project Schedule. The schedule reflects our understanding of the project and our scope of services offered. Figure 6-2: Phase 1 Milestone Summary and Figure 6-3: Phase 2 Milestone Summary highlight the critical dates for meeting and deliverables.

Below is a summary of the key start and finish dates for the main project tasks:

| Project Tasks | Start | End |
|---|---------------------|---------------------|
| Consultant Selection and Project Award | | |
| PHASE 1: PLANNING & PRELIMINARY DESIGN | Mar 9, 2020 | Jul 30, 2020 |
| Task 1: Review & Update Design Basis Memorandum | Mar 18, 2020 | Jun 26, 2020 |
| Task 2: Review Geotechnical Investigation Report | Mar 25, 2020 | Apr 22, 2020 |
| Task 3: Topographical Survey | Mar 11, 2020 | May 13, 2020 |
| Task 4: Major Equipment Supply | Apr 24, 2020 | Jul 30, 2020 |
| PHASE 2: DETAILED DESIGN | Jul 1, 2020 | Jan 13, 2021 |
| Task 5: Project Management | Jul 30, 2020 | Jan 13, 2021 |
| Task 6: Headworks Facility | Jul 2, 2020 | Dec 10, 2020 |
| Task 7: Grit Removal (Optional) | Jul 2, 2020 | Dec 16, 2020 |
| Task 8: Extended Aeration Package WWTF | Jul 2, 2020 | Dec 10, 2020 |
| Task 9: Sludge / Biosolids Management System | Jul 2, 2020 | Dec 10, 2020 |
| Task 10: Wet Weather Flow Management | Jul 2, 2020 | Dec 9, 2020 |
| Task 11: Building Expansion | Jul 31, 2020 | Dec 10, 2020 |
| Task 12: Demolition & Reclamation | Jul 2, 2020 | Aug 20, 2020 |
| PHASE 3: CONSTRUCTION SERVICES | Sep 25, 2020 | May 17, 2024 |
| Task 13: Bid Administration Services | Sep 25, 2020 | Mar 22, 2021 |
| Task 14: Contract Administration Services | Mar 23, 2021 | Jun 9, 2022 |
| Task 15: Field Engineering Services | Apr 16, 2021 | May 25, 2022 |
| Task 16: Post-Construction Services | Nov 12, 2021 | Jun 22, 2022 |
| Task 17: Warranty Services | Apr 28, 2022 | May 17, 2024 |

6.1.1 Meeting Summary

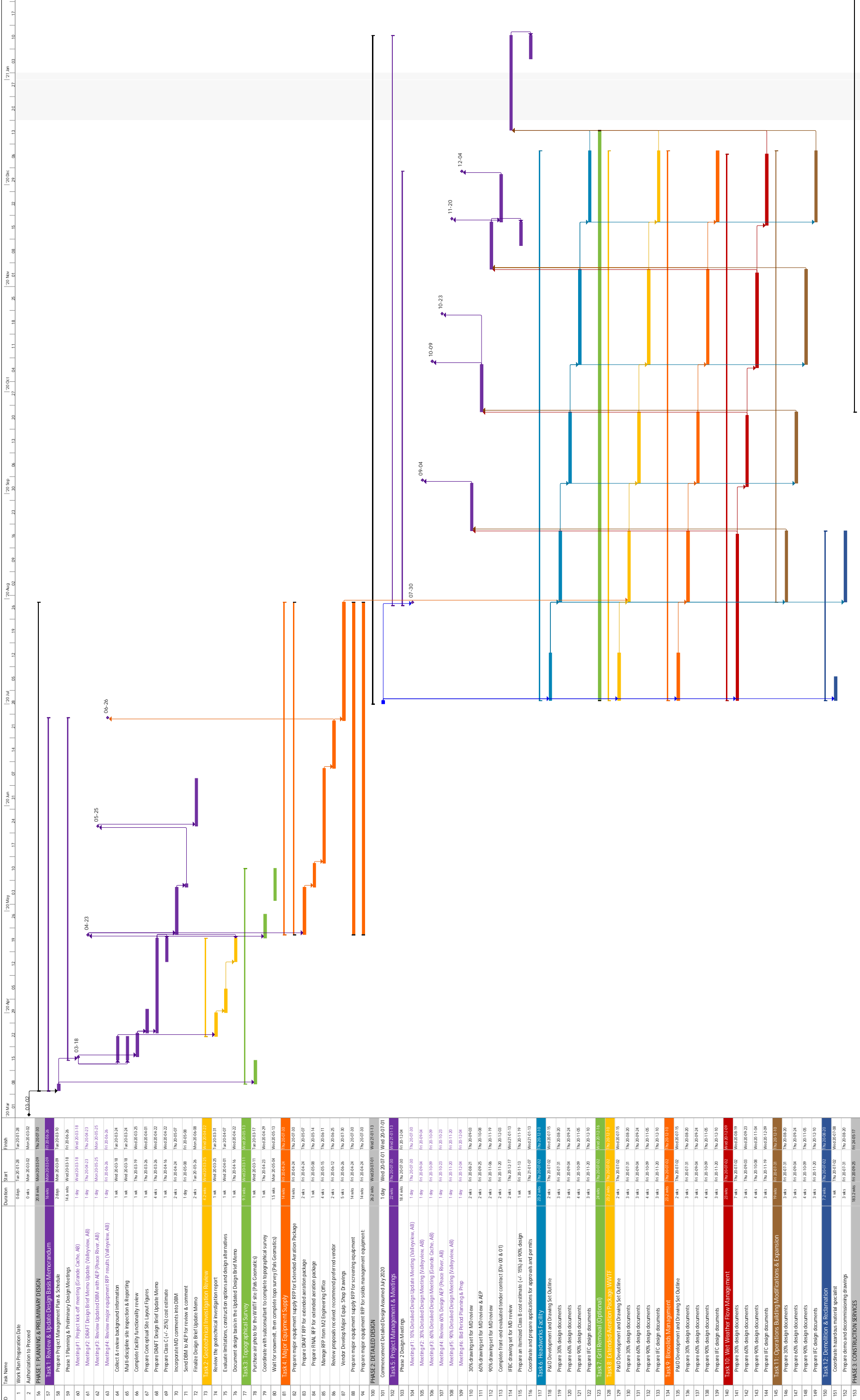
The following table presents our proposed schedule of meetings throughout the design and construction phases of the project.

| Phase 1 Meeting Summary | | Date | Location |
|-------------------------|---|------|------------------|
| Meeting #1: | Project Kick-Off & Site Assessment | | Grande Cache, AB |
| Meeting #2: | DRAFT Design Brief Memo Update | | Valleyview, AB |
| Meeting #3: | Review Updated Design Basis Memo with AEP | | Peace River, AB |
| Meeting #4: | Review major equipment supply RFP results | | Valleyview, AB |

| Phase 2 Meeting Summary | | Date | Location |
|-------------------------|-------------------------------------|------|------------------|
| Meeting #1: | 10% Detailed Design Update Meeting | | Valleyview, AB |
| Meeting #2: | 30% Detailed Design Meeting | | Valleyview, AB |
| Meeting #3: | 60% Detailed Design Meeting | | Grande Cache, AB |
| Meeting #4: | Review 60% Detailed Design with AEP | | Peace River, AB |
| Meeting #5: | 90% Detailed Design Meeting | | Valleyview, AB |
| Meeting #6 | Bid Period Planning and Preparation | | Valleyview, AB |

6.1.2 Project Milestones

A milestone summary illustrating our overall methodology, proposed deliverables, and meetings has been prepared to guide a successful project delivery, the milestone summary is presented in Figure 6-2: Phase 1 Milestone Summary and Figure 6-3: Phase 2 Milestone Summary.



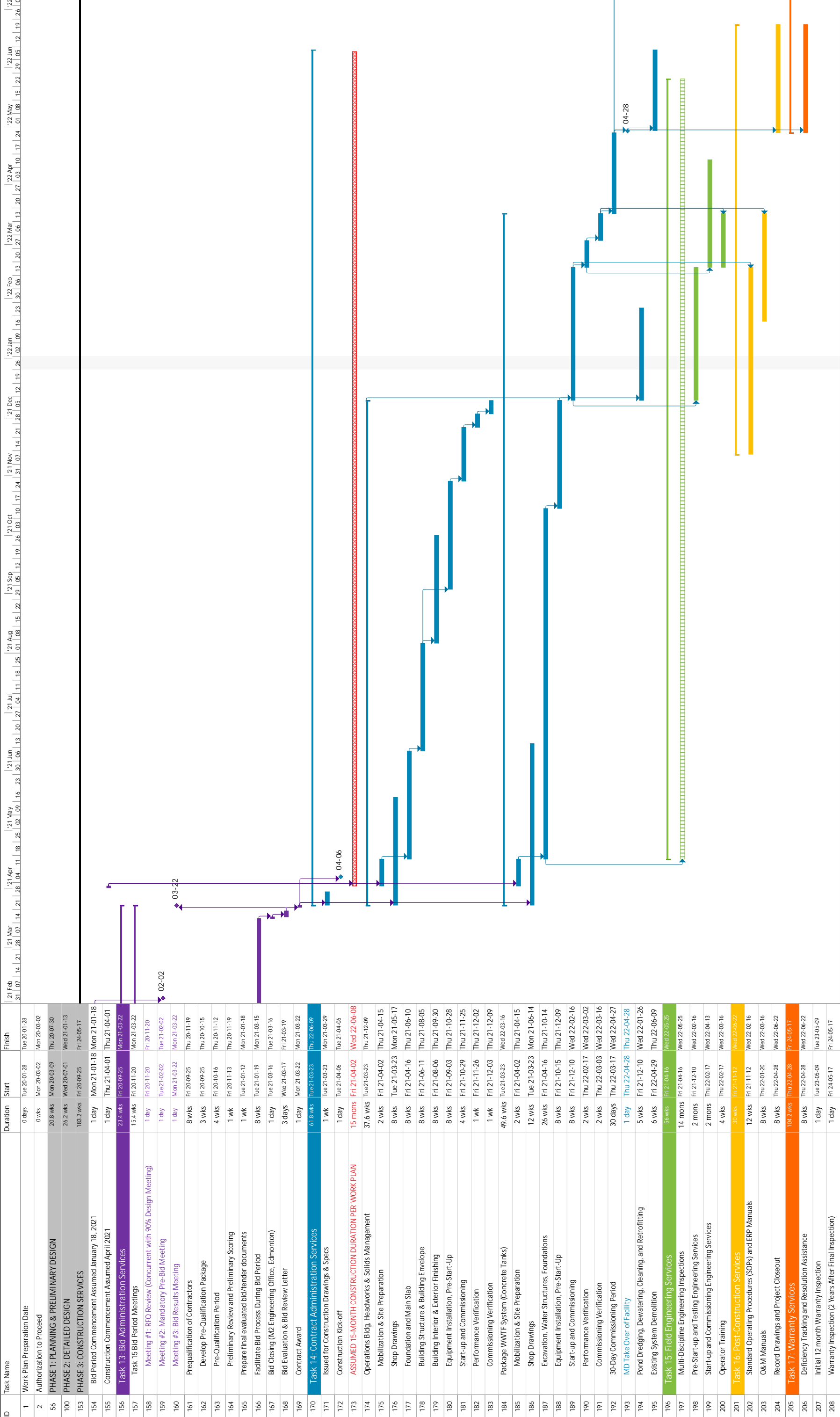
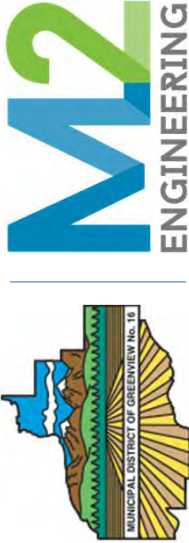


FIGURE 6-2
PHASE 1 MILESTONE SUMMARY



PHASE 1: PLANNING & PRELIMINARY DESIGN

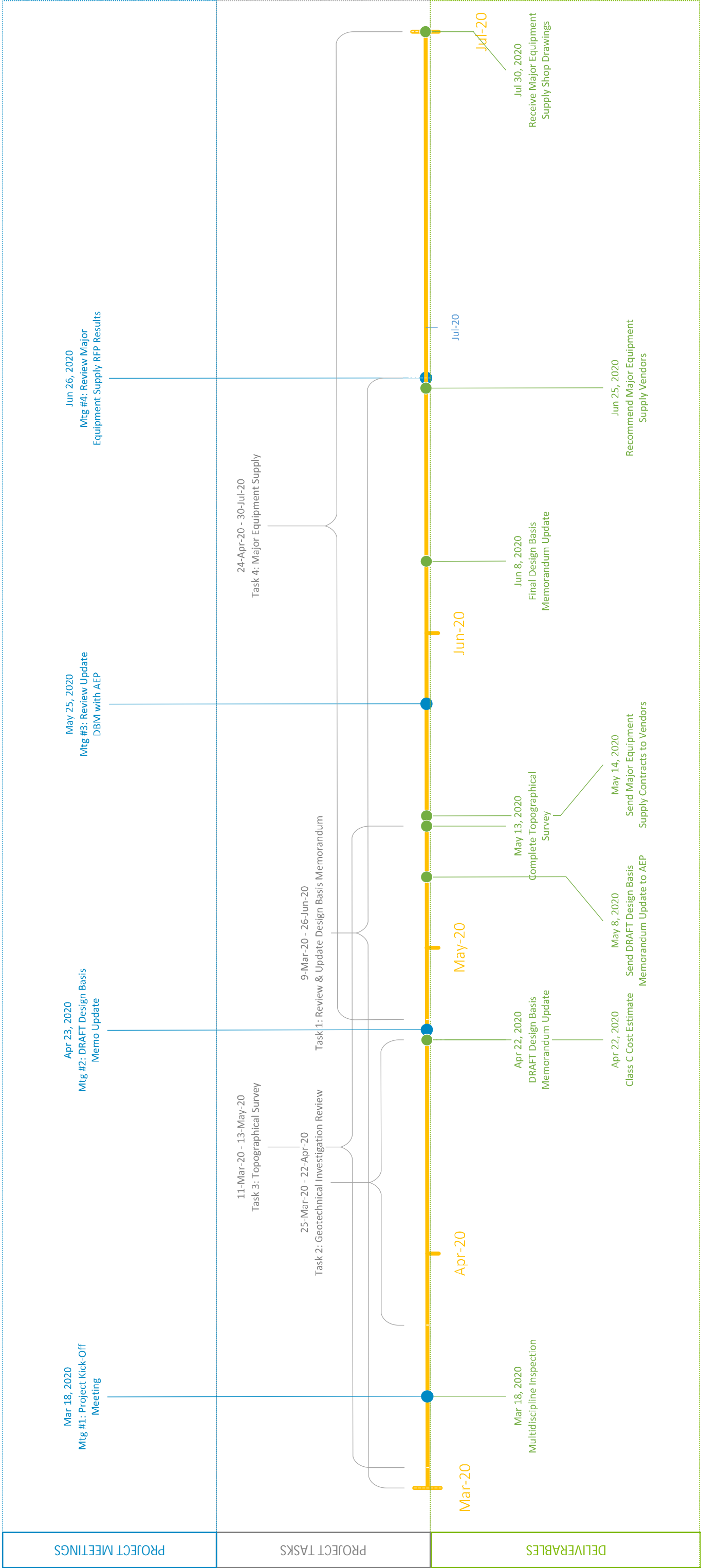
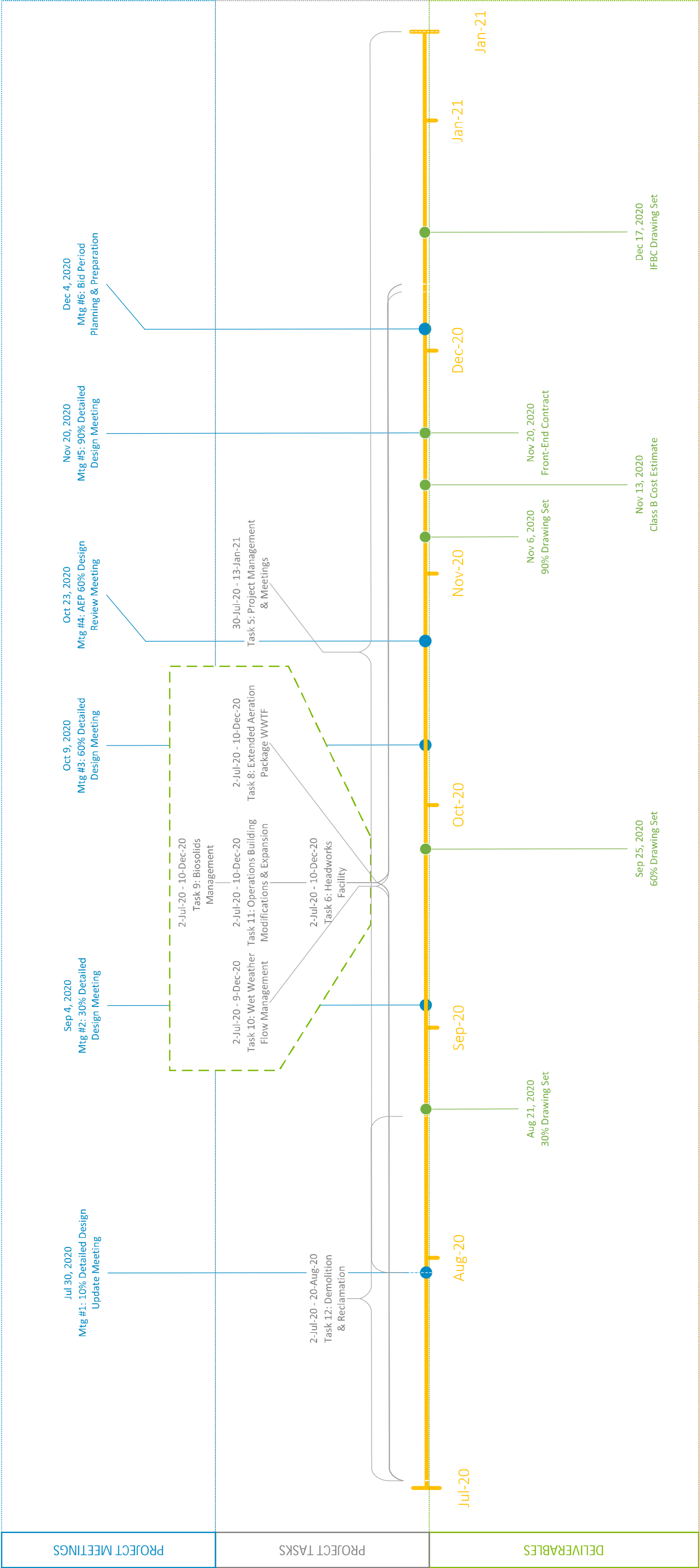


FIGURE 6-3
PHASE 2 MILESTONE SUMMARY



PHASE 2: DETAILED DESIGN



7 Engineering Fees

We propose to complete this project on a time and materials basis. The below table presents a summary of the engineering fees proposed for the project. Refer to Appendix B for our detailed hourly breakdown spreadsheet.

| Project Task | Engineering Fees |
|---|---------------------|
| PHASE 1: PLANNING & PRELIMINARY DESIGN | |
| Task 1: Review & Update Design Basis Memorandum | \$ 71,673 |
| Task 2: Review Geotechnical Investigation Report | \$ 7,000 |
| Task 3: Topographical Survey | \$ 19,930 |
| Task 4: Major Equipment Supply | \$ 46,868 |
| SUBTOTAL - PHASE I | \$ 145,471 |
| PHASE 2: DETAILED DESIGN | |
| Task 5: Project Management | \$ 65,813 |
| Task 6: Headworks Facility | \$ 34,765 |
| Task 7: Grit Removal (Optional) | \$ - |
| Task 8: Extended Aeration Package WWTF | \$ 97,945 |
| Task 9: Sludge / Biosolids Management System | \$ 18,705 |
| Task 10: Wet Weather Flow Management | \$ 15,155 |
| Task 11: Building Expansion | \$ 133,380 |
| Task 12: Demolition & Reclamation | \$ 35,895 |
| SUBTOTAL - PHASE I | \$ 401,658 |
| PHASE 3: CONSTRUCTION SERVICES | |
| Task 13: Bid Administration Services | \$ 28,899 |
| Task 14: Contract Administration Services | \$ 239,829 |
| Task 15: Field Engineering Services | \$ 195,646 |
| Task 16: Post-Construction Services | \$ 15,685 |
| Task 17: Warranty Services | \$ 15,967 |
| SUBTOTAL - PHASE I | \$ 496,026 |
| Total Engineering Fee | \$ 1,043,155 |

Table Notes: (1) Fees presented do not include G.S.T.

(2) Fees are based on M2 Engineering's Preferred Rates, with omission of our 5% Disbursements on Labour Fees

7.1 Terms of Payment

Invoices will be prepared monthly and will be due within 30 days. Late invoices are subject to interest at 12% per annum. Please note, all sub-consultant invoices will be forwarded at cost (i.e. 0% mark-up applied). Please note, our preferred rates typically include 5% disbursements on labour, which we have omitted from our engineering fees.

7.2 Engineering Services Agreement

Prior to conducting an engineering assignment with the Municipal District of Greenview we request the MD agree to an Engineer-Client services agreement. Our proposal is based on using ACEC (Association of Consulting Engineering Companies of Canada) Standard Engineering Services Agreement Document No. 31.

8 Assumptions and Clarifications

8.1 Insurance

We wish to clarify the insurance we will carry for this assignment.

Commercial General Liability Insurance

M2 Engineering holds Commercial General Liability Insurance in the amount of \$5,000,000.

Employer's Liability Insurance

M2 Engineering holds WCB insurance coverage and we can provide a WCB clearance letter on request.

Professional Liability E&O Insurance

M2 Engineering holds \$5,000,000 of errors & omissions insurance. However, for this specific assignment we will allocate \$2,000,000 errors & omissions insurance. We will require all major sub-consultants listed in this work plan to also hold \$2,000,000 errors & omissions insurance (survey, architectural, HVAC-Plumbing, and, electrical and controls).

Option for Additional Professional Liability E&O Insurance

If the MD desires more than the offered \$2,000,000 errors & omissions insurance for this project we are willing to negotiate additional coverage as part of our agreement for work directly performed by M2 Engineering (civil, structure, process treatment, process mechanical) or for our major sub-consultants (survey, architectural, HVAC-Plumbing, and electrical and controls).

Professional Liability E&O Insurance Exceptions (for non-major sub-consultants):

Insurance requirements for non-major sub-consultants may vary and be less than the \$2,000,000 listed. We propose errors and omissions insurance as it relates to non-major sub-consultants (such as the hazardous materials specialist) be proportional to their fees/services on this project.

8.2 Fire Protection

We have assumed the building footprint size is small enough to not require a fire protection sprinkler system. We assume that fire separation walls are an adequate approach for this topic. If during design it is identified that a fire sprinkler system is required, then we would have a minor additional effort to incorporate the sprinkler heads and sprinkler piping system.

8.3 Hazardous Materials Testing

We anticipate the existing wastewater facility control building was constructed in an era that likely used asbestos in the construction materials. Our scope includes engaging a hazardous material testing specialist during the preliminary design stage, so that a hazardous materials report can be provided to the contractor during the bid period. Testing is an option to mitigate risks and costs associated with hazardous materials. This will allow for more accurate pricing on the effort to manage any potential hazardous materials, compared to contractors carrying either a high price in their bid as risk or by dealing with a contract change order during construction.

Please note, the fee we have carried for this item is an assumption and listed as an "allowance" in our detailed engineering fee breakdown spreadsheet. The actual cost will be determined at a later time by requesting quotations from testing agencies, and our overall fee may need adjustment (extra or credit).

8.4 Preliminary Design Technical Memorandum Scope

We have focused our efforts to offer a comprehensive preliminary design scope that not only plans the initial infrastructure to be built, but also plans the future conceivable infrastructure expansions that the facility may undergo throughout its entire lifetime. However, we recognize that not everything is practical to design and build at this time.

Our design basis memo scope will discuss the following infrastructure, so that design provisions can be made for future expansion, however, please note detailed design of these components is not included in our scope:

- Sludge Digester
- UV Disinfection & Filtration

Appendices

Appendix A – Preliminary Drawing List

Appendix B – Hourly Rate and Engineering Fee Breakdown

Appendix A – Preliminary Drawing List



M.D. OF
GREENVIEW
NO. 16

HAMLET OF GRANDE CACHE WASTEWATER TREATMENT FACILITY

M.D. GREENVIEW NO. 16

M2 PROJECT #: PRP-19-038

DATE: JANUARY 29, 2020

APPENDIX A - SAMPLE DRAWING LIST
FOR EFFORT PLANNING PURPOSES ONLY.
TO BE FURTHER REFINED AND DEVELOPED DURING DESIGN
IN CONSULTATION WITH M.D. GREENVIEW.

REVISION NO: REV-A
REVISION TYPE: ISSUED AS CONCEPT FOR PROPOSAL



PROJECT LOCATION

PRELIMINARY &
FOR DISCUSSION
PURPOSES ONLY; NOT
FOR CONSTRUCTION

PRIVATE & CONFIDENTIAL
This document is proprietary and
confidential and may not be used
or disclosed in any manner
without the prior written consent
of M2ENG ALBERTA LTD.

| GENERAL DRAWINGS | |
|------------------|---|
| Dwg No. | Drawing Title |
| G 1 001 | Cover Sheet and Project Location |
| G 1 002 | Drawing List Sheet 1 |
| G 1 003 | Drawing List Sheet 2 |
| G 1 101 | Headworks Room Decommissioning & Demolition Plan |
| G 1 102 | Blower Room Decommissioning & Demolition Plan |
| G 1 103 | Laboratory Room Decommissioning & Demolition Plan |
| G 1 104 | Mechanical Room Decommissioning & Demolition Plan |
| G 1 105 | Electrical Room Decommissioning & Demolition Plan |
| G 1 106 | Office / PLC Room Decommissioning & Demolition Plan |
| G 1 107 | Annular Reactor Decommissioning & Demolition Plan |
| G 1 108 | Sludge Storage Pond Decommissioning & Demolition Plan |

| CIVIL DRAWINGS | |
|----------------|--|
| Dwg No. | Drawing Title |
| C 1 001 | Location Plan |
| C 1 003 | Existing Contour Plan |
| C 1 004 | Overall Site Grading Plan |
| C 1 005 | Overall Site Utility Plan |
| C 1 006 | Yard Grading Plan |
| C 1 007 | Building Utility Plan |
| C 1 008 | Yard Grading Plan |
| C 1 009 | Road Access Plan & Profile |
| C 1 301 | Equalization Pond Plan |
| C 1 302 | Existing Ponds Repairs and Modifications |
| C 1 303 | Existing Manhole Repairs and Modifications |
| C 1 304 | Existing Yard-Piping Tie-in Details |
| C 1 801 | Civil Standard Details |
| C 1 802 | Civil Standard Details |
| C 1 803 | Civil Standard Details |
| C 1 804 | Civil Standard Details |

| ARCHITECTURAL DRAWINGS | |
|------------------------|--|
| Dwg No. | Drawing Title |
| A 1 001 | General Architectural Notes |
| A 1 101 | Existing Building - Architectural Retrofit Plan |
| A 1 201 | Building Expansion - Code Analysis |
| A 1 202 | Building Expansion - Assemblies & Notes |
| A 1 203 | Building Expansion - Door & Window Schedule |
| A 1 204 | Building Expansion - Main Floor Plan |
| A 1 205 | Building Expansion - Canopy Plan, Sections & Details |
| A 1 206 | Building Expansion - Main Floor Finishes Plan |
| A 1 207 | Building Expansion - Exterior Elevations |
| A 1 208 | Building Expansion - Building Sections |
| A 1 209 | Building Expansion - Wall Sections |
| A 1 210 | Building Expansion - Section Details |
| A 1 211 | Building Expansion - Plan Details |
| A 1 212 | Building Expansion - Section Details |
| A 1 213 | Building Expansion - Interior Sections & Details |
| A 1 214 | Building Expansion - Millwork Elevations & Sections |
| A 1 301 | Existing Building Plan |
| A 1 302 | Existing Building Section Details |
| A 1 303 | Existing Building Roof and Canopy Tie-Ins |

| STRUCTURAL DRAWINGS | |
|---------------------|--|
| Dwg No. | Drawing Title |
| S 1 001 | General Structural Notes |
| S 1 101 | Existing Building - Structural Retrofit Plan |
| S 1 201 | Building Expansion - Foundation Plan I |
| S 1 202 | Building Expansion - Foundation Plan II |
| S 1 203 | Building Expansion - Main Slab Plan I |
| S 1 204 | Building Expansion - Main Slab Plan II |
| S 1 205 | Building Expansion - Roof Plan I |
| S 1 206 | Building Expansion - Roof Plan II |
| S 1 207 | Building Expansion - Sections I |
| S 1 208 | Building Expansion - Sections II |
| S 1 209 | Building Expansion - Foundation Details |
| S 1 210 | Building Expansion - Wall details |
| S 1 301 | Treatment - Foundation Plan I |
| S 1 302 | Treatment - Foundation Plan II |
| S 1 302 | Treatment - Catwalks Plan |
| S 1 303 | Treatment - Sections and Details |
| S 1 304 | Treatment - Sections and Details |
| S 1 305 | Treatment - Wall Details |
| S 1 306 | Treatment - Beam Details |
| S 1 307 | Treatment - Catwalk Details |
| S 1 401 | Generator Slab Plan and Details |
| S 1 402 | Lift Station Base Plan and Details |
| S 1 801 | Concrete Details |
| S 1 802 | Masonry Details |
| S 1 803 | Structural Steel Details |
| S 1 804 | Misc. Metals Details |
| S 1 805 | Misc. Structural Details |



M.D. OF
GREENVIEW
NO. 16



AUTHENTICATION

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REVISIONS

| REV | BY | D | M | Y | ISSUE / REVISION DESCRIPTION |
|-----|------|----|----|------|--------------------------------|
| A | N.M. | 29 | 01 | 2020 | ISSUED AS CONCEPT FOR PROPOSAL |
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SCALE NOT TO SCALE

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| DESIGNED BY: LUND, MARIANNE | DRAWN BY: BORRELLI, DINO |
| ENGINEER: MILLER, NATHAN | REVIEWED BY: MYKYTIUK, JACKIE |

Project:

HAMLET OF GRANDE CACHE
WASTEWATER TREATMENT FACILITY

Title:

DRAWING LIST
GENERAL, CIVIL, STRUCTURAL,
ARCHITECTURAL, PROCESS,
HVAC & PLUMBING,
ELECTRICAL, AND INSTRUMENTATION

PROJECT NO: 2020-10XX-00-D

FILE NO: 2020-10XX-00-D

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| DWG NO: | G002 | SHEET: | 1 / 1 |
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INSTRUMENTATION AND CONTROL DRAWINGS

| Dwg No. | Drawing Title |
|---------|---|
| I 1 001 | Notes, Legends, Symbols |
| I 1 002 | Overall Site Plan |
| I 1 003 | Overall SCADA Network Diagram |
| I 1 004 | WWTF Process Network Block Diagram |
| I 1 005 | WWTF HVAC / Fire Network Block Diagram |
| I 1 101 | Existing Building - Instrumentation Retrofit Plan |
| I 1 201 | Instrumentation Layout |
| I 1 202 | PLC System Layout and Bill of Materials |
| I 1 203 | PLC Power Wiring Schematics |
| I 1 204 | PLC Input / Output Drawings |
| I 1 205 | HVAC Control Schematics |
| I 1 801 | Instrumentation Details |
| I 1 802 | Instrumentation Details |

ELECTRICAL DRAWINGS

| Dwg No. | Drawing Title |
|---------|--|
| E 1 001 | Notes, Legends, Symbols |
| E 1 002 | Overall Site Plan |
| E 1 003 | Exterior Lighting Plan |
| E 1 004 | WWTF Utility Power, Generator and ATS Plan |
| E 1 101 | Existing Building - Electrical Retrofit Plan |
| E 1 201 | Site Plan and Layout |
| E 1 202 | Single Line Diagram |
| E 1 203 | Hazardous Area Drawing / Elevations |
| E 1 204 | Power and Lighting Layout |
| E 1 205 | MCC / Panel Schedules |
| E 1 206 | Equipment and Lighting Schedules |
| E 1 801 | Electrical Details |
| E 1 802 | Electrical Details |

HVAC & PLUMBING DRAWINGS

| Dwg No. | Drawing Title |
|---------|---|
| M 1 001 | Mechanical Legend and Project Areas Site Plan |
| M 1 002 | Site Plan - Plumbing and Gas |
| M 1 003 | HVAC & Plumbing Schematic |
| M 1 004 | HVAC Control Block Diagram |
| M 1 101 | Existing Building - HVAC & Plumbing Retrofit Plan |
| M 1 201 | HVAC Plan |
| M 1 202 | HVAC Elevations & Sections |
| M 1 203 | Plumbing Foundation Plan |
| M 1 204 | Plumbing Plan |
| M 1 205 | Fire Protection Plan |
| M 1 206 | Plumbing Elevations & Sections |
| M 1 207 | Odour Control |
| M 1 801 | Mechanical Standard Details |
| M 1 802 | HVAC Schedules |
| M 1 803 | Plumbing Schedules |

PROCESS MECHANICAL DRAWINGS

| Dwg No. | Drawing Title |
|---------|---|
| P 1 001 | P&ID Legend 1 |
| P 1 002 | P&ID Legend 2 |
| P 1 003 | P&ID Legend 3 |
| P 1 004 | Simplified Process Schematic |
| P 1 005 | Hydraulic Profile Schematic |
| P 1 101 | P&ID - Headworks Influent Channel and Fine Screening |
| P 1 102 | P&ID - Screenings Washing, Compacting and Disposal |
| P 1 103 | P&ID - Headworks Grit Removal (OPTIONAL) |
| P 1 104 | P&ID - Emergency Influent Equalization & Overflow |
| P 1 105 | P&ID - Recirculation Pump Station |
| P 1 106 | P&ID - Extended Aeration Basin 1 & 2 |
| P 1 107 | P&ID - Clarifier 1 & 2 |
| P 1 108 | P&ID - Phosphorus Chemical Feed |
| P 1 109 | P&ID - RAS / WAS Pumping Systems |
| P 1 110 | P&ID - Sludge Digester (FUTURE) |
| P 1 111 | P&ID - Biosolids Dewatering & Disposal |
| P 1 112 | P&ID - Biosolids Dewatering Chemical Feed |
| P 1 113 | P&ID - Aeration Equipment & Air Distribution |
| P 1 114 | P&ID - UV Disinfection & Filtration (FUTURE) |
| P 1 115 | P&ID - Plant Service Water Systems |
| P 1 116 | P&ID - Sump Pump Systems |
| P 1 117 | P&ID - Safety Shower Systems / Eye Wash Systems |
| P 1 201 | Building Expansion - Headworks and Solids Management Sections |
| P 1 202 | Building Expansion - Headworks and Solids Management Sections |
| P 1 203 | Blower Room - Plan |
| P 1 204 | Blower Room - Sections |
| P 1 401 | Recirculation Lift Station - Plan |
| P 1 402 | Recirculation Lift Station - Elevations & Sections |
| P 1 403 | RAW / WAS Pump Station - Plan |
| P 1 404 | Recirculation Lift Station - Elevations & Sections |
| P 1 501 | Treatment - Overview Plan |
| P 1 502 | Treatment - Extended Aeration 1 & 2 |
| P 1 503 | Treatment - Clarifier 1 & 2 |
| P 1 504 | Treatment - Elevations & Sections |
| P 1 801 | Process Mechanical Standard Details |
| P 1 802 | Process Mechanical Standard Details |
| P 1 803 | Process Mechanical Standard Details |
| P 1 804 | Process Mechanical Standard Details |
| P 1 805 | Process Mechanical Standard Details |

| LEGEND | | |
|--------|-------------------------------------|----------------------------------|
| BLACK | DRAWING ANTICIPATED FOR NEW WWTF | (INCLUDED IN SCOPE) |
| BLUE | OPTIONAL PRICED DRAWINGS | (SUBJECTS TO PREDESIGN FINDINGS) |
| RED | FUTURE PROVISION / FUTURE EXPANSION | (NOT INCLUDED IN FEES) |
| PURPLE | POTENTIAL SCOPE | (EXCLUDED FROM SCOPE) |

Appendix B – Hourly Rate and Engineering Fee Breakdown

| Task Description | | M2 Engineering | | | | | | | | | | Wave Engineering | | J. Davis Engineering | | Space Studio | | Pais Geomatics | | Labour Fees Summary | | | | | | Expenses & Disbursements Summary | | | | | | Subtotals | | | | TOTAL FEE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 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| | | Project Engineer | | | | | Structural Engineer | | | | | Junior Process Engineer-In-Training | | | | | Junior Civil Engineer-In-Training | | | | | CAD Technologist & Construction Coordinator | | | | | CAD Technologist | | | | | Blair Birch, P.Eng | | | | | QA/QC & Senior Advisory | | | | | Administrative Support | | | | | Vehicle Expenses | | | | | Meal Allowance | | | | | Lead Electrical Engineer | | | | | Trans Jensen, P.Eng. | | | | | Evan Wilson, P.Eng. | | | | | Project Manager | | | | | Matt Wallock, C.E.T., R.S.E. | | | | | Drafting | | | | | Mechanical Engineering-In-Training | | | | | Marc Moreau, E.I.T. | | | | | Drafting | | | | | Other Expenses | | | | | Architect | | | | | Jason Hood, A.A., LEED AP (BD+C) | | | | | Project Manager | | | | | Nathalia Pichon-Miner, LEED AP (BD+C), NCIDQ | | | | | Architectural Technologist | | | | | Other Expenses | | | | | Air Travel & Return | | | | | Labour / Expenses | | | | | Subcontractant | | | | | M2 Engineering | | | | | WAVE ENGINEERING | | | | | LDAVIS ENGINEERING | | | | | SPACE STUDIO | | | | | PAIS GEOMATICS | | | | | Labour Fees | | | | | Subtotal | | | | | Expenses & Disbursements | | | | | M2 Engineering | | | | | LDAVIS ENGINEERING | | | | | SPACE STUDIO | | | | | Expenses & Disbursements | | | | | PAIS GEOMATICS | | | | | Subtotal | | | | | Expenses & Disbursements | | | | | M2 Engineering | | | | | WAVE ENGINEERING | | | | | LDAVIS ENGINEERING | | | | | SPACE STUDIO | | | | | PAIS GEOMATICS | | | | | Labour Fees | | | | | Subtotal | | | | | Expenses & Disbursements | | | | | M2 Engineering | | | | | WAVE ENGINEERING | | | | | LDAVIS ENGINEERING | | | | | SPACE STUDIO | | | | | PAIS GEOMATICS | | | | | Labour Fees | | | | | Subtotal | | | | | Expenses & Disbursements | | | | | M2 Engineering | | | | | WAVE ENGINEERING | | | | | LDAVIS ENGINEERING | | | | | SPACE STUDIO | | | | | PAIS GEOMATICS | | | | | Labour Fees | | | | | Subtotal | | | | | Expenses & Disbursements | | | | | M2 Engineering | | | | | WAVE ENGINEERING | | | | | LDAVIS ENGINEERING | | | | | SPACE STUDIO | | | | | PAIS GEOMATICS | | | | | Labour Fees | | | | | Subtotal | | | | | Expenses & Disbursements | | | | | M2 Engineering | | | | | WAVE ENGINEERING | | | | | LDAVIS ENGINEERING | | | | | SPACE STUDIO | | | | | PAIS GEOMATICS | | | | | Labour Fees | | | | | Subtotal | | | | | Expenses & Disbursements | | | | | M2 Engineering | | | | | WAVE ENGINEERING | | | | | LDAVIS ENGINEERING | | | | | SPACE STUDIO | | | | | PAIS GEOMATICS | | | | | Labour Fees | | | | | Subtotal | | | | | Expenses & Disbursements | | | | | M2 Engineering | | | | | WAVE ENGINEERING | | | | | LDAVIS ENGINEERING | | | | | SPACE STUDIO | | | | | PAIS GEOMATICS | | | | | Labour Fees | | | | | Subtotal | | | | | Expenses & Disbursements | | | | | M2 Engineering | | | | | WAVE ENGINEERING | | | | | LDAVIS ENGINEERING | | | | | SPACE STUDIO | | | | | PAIS GEOMATICS | | | | | Labour Fees | | | | | Subtotal | | | | | Expenses & Disbursements | | | | | M2 Engineering | | | | | WAVE ENGINEERING | | | | | LDAVIS ENGINEERING | | | | | SPACE STUDIO | | | | | PAIS GEOMATICS | | | | | Labour Fees | | | | | Subtotal | | | | | Expenses & Disbursements | | | | | M2 Engineering | | | | | WAVE ENGINEERING | | | | | LDAVIS ENGINEERING | | | | | SPACE STUDIO | | | | | PAIS GEOMATICS | | | | | Labour Fees | | | | | Subtotal | | | | | Expenses & Disbursements | | | | | M2 Engineering | | | | | WAVE ENGINEERING | | | | | LDAVIS ENGINEERING | | | | | SPACE STUDIO | | | | | PAIS GEOMATICS | | | | | Labour Fees | | | | | Subtotal | | | | | Expenses & Disbursements | | | | | M2 Engineering | | | | | WAVE ENGINEERING | | | | | LDAVIS ENGINEERING | | | | | SPACE STUDIO | | | | | PAIS GEOMATICS | | | | | Labour Fees | | | | | Subtotal | | | | | Expenses & Disbursements | | | | | M2 Engineering | | | | | WAVE ENGINEERING | | | | | LDAVIS ENGINEERING | | | | | SPACE STUDIO | | | | | PAIS GEOMATICS | | | | | Labour Fees | | | | | Subtotal | | | | | 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Engineering Fee Notes:

- 1) Fees presented do not include G.S.T. Fees include 0% disbursements on labour fees.
- 2) All fees presented are based on 2020 Rates, and 2020 rates will be held for 2021 & 2022. M2 Engineering reserves the right to adjust rates for work beyond 2022.
- 3) Project will be executed as time & materials

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- 2) All fees presented are based on 2020 Rates, and 2020 rates will be held for 2021 & 2022. M2 Engineering reserves the right to adjust rates for work beyond 2022.
- 3) Project will be executed as time & materials



Proposal Submission for:

MUNICIPAL DISTRICT OF GREENVIEW NO. 16

GRANDE CACHE WWTP

Submitted to: Gary Couch, Manager of Environmental Services

Submission Date: April 27, 2020

MPE Engineering Ltd.
101, 10630—172 Street
Edmonton, AB T5S 1H8

Proposal Contact:

Mirek Grzeszczuk. P.Tech.(Eng.)
Project Manager
mgrzeszczuk@mpe.ca

April 27, 2020

Municipal District of Greenview No. 16
4806 - 36 Ave
PO Box 1079
Valleyview, AB T0H 3N0

Attention: Gary Couch, Manager of Environmental Services

Re: Request for Proposals
Grande Cache WWTP

Dear Sir,

MPE Engineering Ltd. is pleased to submit our proposal for the above noted project.

From our review of the documentation provided, our team is uniquely suited to deliver a successful project to the Municipal District of Greenview (the MD). MPE has completed similar projects and is familiar with the overall requirements, including regulatory requirements for this project. MPE feels that we are well positioned to ensure the project is completed in the shortest time possible.

MPE has a fully capable in-house team allocated to completing this project. Our proposed team has the knowledge, experience and expertise in the area of wastewater treatment system design and excellent working knowledge of the extended aeration treatment process, among other activated sludge technologies. We trust that our strong technical and competitive fee proposal contained in this submittal will deliver the best possible project for the MD.

Thank you for your consideration of our submission. Should you have any questions or require clarification regarding this submission, please contact the undersigned.

Yours truly,

MPE ENGINEERING LTD.



Mirek Grzeszczuk. P.Tech.(Eng.)

Project Manager

mgrzeszczuk@mpe.ca

Encl.

Firm History

MPE Engineering Ltd. is a medium sized multi-disciplined engineering firm established in 1983 in Lethbridge, AB. Since that time, MPE has grown to include seven offices in Alberta, Saskatchewan, Manitoba, and BC with an overall staff compliment of over 200 engineers, technologists and support staff. MPE is a full service engineering firm, specializing in assisting municipal clients with all of their engineering needs.

Relevant Experience

The proposed Project Team brings forth years of experience in delivery of successful projects to our clients, including the following relevant projects:

Town of Vermilion, WWTF

Town of St. Paul, WWTP Upgrade

Town of Rocky Mountain House, WWTP Feasibility Study and Technology Review

Town of Fort MacLeod, WWTP

Town of Taber, Industrial Aerated Lagoon Upgrade

City of Medicine Hat, WWTP CEPT

City of Saskatoon, Lift Station Assessments 2017

City of Winnipeg, Lift Station Condition Assessment Phase II

Key Personnel

Project Manager: Mirek Grzeszczuk
P.Tech.(Eng.)

Design Manager: Jason Stusick P.Eng.

Process/Project Engineer: Ivan Kagoro, P.Eng.

Senior Structural Engineer: Dan Chronik, P.Eng.

Structural Engineer: Wendy Sung, P.Eng.

Civil Design: Drew Fellers, P.Tech. (Eng.)

Resident Engineer: Brayden Heffernan, E.I.T.

Mechanical (HVAC) Engineer: Ryan Ursu, P.Eng.

Senior Electrical Engineer: Peter Goertzen, P.Eng.

Electrical Engineer: Richard Ofsite, P.Eng.

Commissioning Lead: Dave Meindertsma, C.E.T

Conflicts of Interest

There exists no such conflict of interest where it be actual, apparent, direct, or indirect with respect to the MPE Engineering Ltd., its management, its employees nor any other person relative to the services provided as outlined in this proposal.





GRANDE CACHE WWTP

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1.1 INTRODUCTION

The Municipal District of Greeview (the MD) is soliciting proposals from consulting engineering firms with specific experience in design of wastewater treatment facilities, project management, and construction supervision and administration. Upon review of the provided documentation, we understand the scope of the proposed project and confirm that the proposed Project Team has the necessary skills, experience and resources to meet these requirements.

MPE will lead the project team, complete detailed design, provide tendering assistance and construction management services including resident engineering and commissioning assistance.

1.2 PROJECT BACKGROUND

The MD owns and operates the existing Grande Cache WWTP, under the Alberta Environmental Protection and Enhancement Act's (EPEA) Approval No. 718-02-00, expiring in 2021. The WWTP is located approximately 1.5 km southwest of the Hamlet of Grande Cache.

The WWTP has an extended aeration process that includes bar screens, grit removal units, an extended aeration (EA) basin, and a secondary clarifier. The treated effluent is continuously discharged into the Smoky River. The sludge management process includes aerobic digestion and storage, which is in holding cells for subsequent disposal, as approved by Alberta Environment and Parks (AEP).

The WWTP currently has several regulatory and operational issues:

- ◆ The WWTP has not experienced any major upgrades since its 1981 commissioning. As such, the reliability and maintainability of the WWTP operation is a major concern, as most of the equipment is near or past its expected service life.
- ◆ The WWTP is struggling to meet the EPEA and WSER approval effluent limits during peak flow periods.
- ◆ The current facility does not have operational provisions to either bypass or treat high volume wet weather flows.
- ◆ There is limited to no redundancy measures for the major treatment processes to perform maintenance and/or rehabilitation.

In 2019, Associated Engineering (AE) completed the Concept Design Report: Municipal District of Greenview No. 16, Hamlet of Grande Cache Wastewater Treatment Plant Upgrade. The report recommended that the MD proceed with one of two options, which include:

- ◆ Option 2: Rectangular Extended Aeration.
- ◆ Option 3: Membrane Bioreactor.

The basis of this proposal assumes the process technology to be utilized will be extended aeration or other similar activated sludge processes.

1.3 UNIQUE ADVANTAGES, INNOVATION AND VALUE ADDED ENGINEERING

MPE and the proposed project team are able to offer the following as value added engineering:

- ◆ MPE has significant project experience in the pre-purchase of major equipment to ensure project schedules are met including preparation of RFP's, coordination of major equipment suppliers, and Novation Contracts with General Contractors.
- ◆ MPE has developed long standing relationships with government agencies such Alberta Environment & Parks and Alberta Transportation.
- ◆ MPE can provide in-house programming services and has an extensive team of programmers throughout western Canada. This allows design engineers and programmers to work together efficiently to ensure process control is optimized.

General Services Provided:

Project Management

Detailed Design

- ◇ Review Design Criteria
- ◇ Process Design
- ◇ Process Equipment Selection
- ◇ Major Equipment Procurement
- ◇ Detailed Design:
 - * Process
 - * Process Mechanical
 - * Civil
 - * Architectural / Structural
 - * Mechanical HVAC
 - * Electrical & Controls
- ◇ Review of:
 - * Construction Cost Estimates
 - * Operation & Maintenance Costs
 - * Permitting requirements
 - * Construction sequencing
- ◇ Procure Major Equipment

Tender Services

- ◇ Pre-Qualification of General Contractors
- ◇ Preparation of Contract Tender Documents
- ◇ Tender Period Support

Construction Administration

- ◇ Resident Engineering and Construction Administration
- ◇ Provision of record drawings for completed work
- ◇ Commissioning

Post Construction Activities

- ◇ O&M Manuals
- ◇ Record Drawings
- ◇ Post-Construction Services

- ◆ MPE has a proven track record of assisting Municipalities with obtaining Provincial and Federal grant funds. In this tough economic times, it is even more important to secure grant funding in order to alleviate the financial burden for Municipalities and allow projects to move forward. MPE' team will work with the MD, the Province and the Federal Government in order to secure funding for this important project.

MPE has designed wastewater treatment plants for similar sized municipalities with similar influent flows and loading rates. When designing these systems, MPE prefers to take the approach of proposing processes that will be easy for a smaller municipality to operate and sustain. For the municipalities the size of Grand Cache, MPE typically design treatment systems with single cast in place concrete structures that makes use of common wall concrete and walls which allows for reduced footprint and reduced capital costs.

In this particular case, the MD may want to consider the use of Sequencing Batch Reactor (SBR) for its activated sludge process instead of extended aeration. The facility footprint for SBR can be significantly reduced by reducing the size of the bioreactor and eliminating the need for secondary clarifiers. SBR will still provide for the same function of the process proposed in the Design Basis Memorandum. In addition, the MD may want to consider thickening waste activated sludge to reduce the size of aerobic digester and therefore reducing power requirements as well as incorporating a sludge dewatering system to eliminate the need for the sludge drying beds.

1.4 ASSUMPTIONS

The following assumptions have been made that may affect the scope of work and therefore price:

- ◆ This proposal includes the completion and submission of a Historical Resources Application. As the project will occur within a previously disturbed area, it is expected this application will result in project approval. If the application results in a recommendation from Alberta Culture and Tourism for the completion of a Historic Resources Impact Assessment, this assessment will require the expertise of an archaeologist and will require a scope change.
- ◆ All projects that receive funding through the Federal Government must comply with the Canadian Environmental Assessment Act (CEAA) 2012. As part of CEAA, any projects that are on federal land or that are on CEAA's list of designated projects must undergo environmental screening to determine if an environmental assessment is required. Because the proposed project is neither on federal lands nor is on CEAA's list of designated projects, it is not expected that CEAA environmental screening or assessment will be required. However, for projects that are not designated, there is the possibility that the Minister of the Environment may choose to designate the project for the purpose of requiring an environmental assessment. If this occurs, this will require a change of scope.
- ◆ All projects that receive funding through the Federal Government may require a Duty to Consult. As the Terms of the Contribution Agreement are not known to the Proponent, it has been assumed that one is not necessary at this time. However, if a Duty to Consult is triggered, then a change of scope is required.
- ◆ This proposal has been prepared assuming the recommended end-of-pipe limits is accepted by Alberta Environment and Parks (AEP) as proposed by the Grande Cache Water Quality Based Effluent Limit Study as prepared by Associated Engineering Ltd. January 2020.



2.1 GENERAL

This proposal is submitted by MPE Engineering Ltd. in response to the invitation from the Municipal District of Greenview for the provision of consulting engineering services for the design and implementation of the Grande Cache WWTP.

On the basis of the provided information, our extensive experience with similar projects, and our background and direct experience with the completion of the several relevant projects, we believe we have a firm understanding of the project requirements.

2.2 PROJECT UNDERSTANDING

The implementation of this project will require several key objectives to be addressed. They are as follows:

- ◆ Provide a design for a treatment system that can meet treated effluent requirements for AEP, WSER, and CCME as a minimum.
- ◆ Provide a design that meets the requirements of AEP Standards & Guidelines.
- ◆ Provide a design that will provide treatment capacity to meet the next 40-year design horizon.
- ◆ Provide a design that will meet the requirements of regulatory agencies such as AEP, DFO, Navigable Waters, and other applicable agencies.
- ◆ Provide a design that will be conducive to future expansion.

The proposed wastewater treatment plant must meet the following design criteria as a minimum:

| Parameter | Design Criteria |
|----------------------------------|---------------------------|
| Project Population (2050) | 4,453 |
| Design Flow (Average Day Flow) | 3,092 m ³ /day |
| Projected Peak Wet Weather Flow | 150 L/sec |
| CBOD | 25 mg/L |
| TSS | 25 mg/L |
| Ammonia—N (June to November) | < 5 mg/L |
| Ammonia—N (December to May) | < 10 mg/L |
| Total-P | < 1.0 mg/L |
| pH | 6.5 to 8.5 |
| Total Coliform | < 1000 CFU/100 mL |
| Fecal Coliform | < 200 CFU/100 mL |

In order to achieve the “end of pipe limits”, the detailed design will include the following core processes as a minimum:

- ◆ Primary Screening.
- ◆ Grit removal.
- ◆ Chemical Phosphorus Removal.
- ◆ Extended Aeration (including aeration system and associated pumping) or similar activated sludge processes.
- ◆ UV Disinfection (to be confirmed with AEP). If not required at this time, provisions will be made for UV to be added at a later date.
- ◆ Aerobic Digestion.
- ◆ Sludge Conditioning & Dewatering.

2.3 PROJECT SCOPE OF ENGINEERING

MPE will provide a full scope of consulting engineering services from design through to construction inspection, commissioning and final acceptance. The scope will include assistance with regulatory and environmental approvals as required and complete project management services.

DESIGN WASTEWATER TREATMENT PLANT UPGRADE

The following scope is understood to be completed by the proponent:

- ◆ Submit or coordinate the submission of all permit applications including development and building permit.
- ◆ Completion of all necessary site surveys.
- ◆ Completion of a slope stability investigation to ensure slope is stable at location of proposed WWTP site
- ◆ Coordinate utility services for proposed WWTP including power, gas, phone, etc.
- ◆ Ensure building design meets the requirements of AEP, ABC, and CEC.
- ◆ Preparation of cost estimates of project as the project progresses through detailed design to tender.
- ◆ Project management services of the entire project including predation of bid documents, selection of equipment suppliers, evaluation of Contractor bids, and construction inspection services.

2.4 PROJECT RISKS & CHALLENGES

MPE has acquired knowledge from projects previously undertaken and is aware that each project presents its own unique set of challenges. Lessons learned allows us to anticipate challenges and ensure smooth delivery of future projects. Table 2.1 identifies potential risks & challenges that can be encountered on this project and indicates techniques that will be applied to mitigate these challenges.

The **COVID-19 pandemic has negatively impacted supply chains and project schedules throughout Canada and the United States**. Should this be the case for this project, MPE has developed several strategies to manage the schedule effects of **COVID-19 and work towards a timely completion of the wastewater treatment plant upgrade project**. COVID-19 project risks and challenges are identified in Table 2.1.

TABLE 2.1: ANTICIPATED RISKS & CHALLENGES

| CHALLENGE DESCRIPTION | POTENTIAL CONSEQUENCE | SOLUTION |
|--|---|--|
| Challenge 1: Design <ul style="list-style-type: none">Obtaining AED and other approvals in a timely manner. (If required) | <ul style="list-style-type: none">Change orders.Delays during construction. | <ul style="list-style-type: none">Identify the approval requirements early in the design stage.Review project with AED and other approval authorities early in the design stage to gain a mutual understanding of what is required.Use our in-house experience and expertise to navigate through the process. |
| Challenge 2: Procurement <ul style="list-style-type: none">With the COVID-19 Pandemic as a known concern, Contractors can no longer use it as a reason to enforce a force majeure. This could add to increase cost of the project due to the inherent risk and unknowns of the timeline. | <ul style="list-style-type: none">Procurement delays. | <ul style="list-style-type: none">Identify possible COVID-19 impacts that could affect project procurement/schedule.Work with discipline leads to develop procurement and schedule solutions to COVID-19 impacts.Review procurement solutions with the MD to develop understanding and buy-in for best solutions.Incorporate COVID-19 solutions into the procurement documents to make them known risks for the equipment vendors. |
| Challenge 3: Design <ul style="list-style-type: none">Multi-discipline projects can be challenging with respect to coordination and meeting timelines. | <ul style="list-style-type: none">Design delays. | <ul style="list-style-type: none">Advise the discipline leads of the project and anticipated schedule early in the design stage.Appoint a team member to coordinate with the discipline leads. This is typically the role of the Project Manager.During design, identify the “right” time to engage each discipline. Similar to the sub-trades on a construction project, multi-discipline design requires sequencing to complete the project efficiently and on time. |
| Challenge 4: Construction <ul style="list-style-type: none">Shutdown of existing facility and installation of new equipment. | <ul style="list-style-type: none">Delays during construction.Contractor frustration. | <ul style="list-style-type: none">MPE will provide a list of anticipated shop drawings to the Contractor at the pre-construction meeting. The list will identify long lead time items. This list is reviewed at each construction meeting.High priority on reviewing shop drawings to ensure they are turned around quickly.Shop drawing tracking form is used to keep track of which shop drawings have been received, their status, and which ones have yet to be received.Frequent communication with Contractor to ensure submittals are completed on a timely schedule. |
| Challenge 5: Construction <ul style="list-style-type: none">Long delivery times of equipment. | <ul style="list-style-type: none">Delays during construction. | <ul style="list-style-type: none">During preliminary design we will identify equipment with a long lead time. Pre-selection and pre-purchase methods will be employed.Long delivery items will be brought to the Contractor’s attention at the pre-construction meeting in order to initiate the shop drawing and procurement process as soon as possible. |
| Challenge 6: Construction <ul style="list-style-type: none">Critical Shutdowns of existing wastewater processes. | <ul style="list-style-type: none">Unforeseen challenges.Delays during construction.Change Orders. | <ul style="list-style-type: none">During design the changeover sequence will be developed and reviewed with MD staff.Consultation with the MD’s operations staff will be an important part of developing the changeover sequence.Requirement of Contract Document from the Contractor that details how they plan to complete the shutdown, bypass, and commissioning. This will ensure the Contractor takes ownership of the critical work. |
| Challenge 7: Construction <ul style="list-style-type: none">Contractor not meeting obligations or expectations for startup and commissioning of equipment and the system as a whole. | <ul style="list-style-type: none">Disputes with the Contractor.Delays during construction. | <ul style="list-style-type: none">Clearly communicate the expectations for startup and commissioning in the specifications and reinforce this by communicating it to the Contractor early in the project.Inclusion of commissioning check lists in Contract Document to ensure requirements are covered off.MPE will provide Commissioning Management services to facilitate a smooth commissioning process and ensure coordination of equipment representatives, Contractor, and MD Staff. |
| Challenge 8: Construction <ul style="list-style-type: none">Difficulty with Contractor responding to instructions from the Engineer. | <ul style="list-style-type: none">Disputes with Contractor.Client expectations not met.Delays. | <ul style="list-style-type: none">Identify the problem early on, provide support to the project’s Resident Engineer, and escalate the issue if necessary. |
| Challenge 9: Construction <ul style="list-style-type: none">Difficulty getting up to date schedules from the Contractor. | <ul style="list-style-type: none">Disputes with the Contractor.Work progressing without MD or MPE knowledge.Delays during construction. | <ul style="list-style-type: none">Communicate to the Contractor that they are expected to keep their schedule up to date.Consider using financial incentives such as withholding progress claims until an updated schedule is received.Stay in constant contact with the Contractor to stay informed of their daily activities. |
| Challenge 10: Construction <ul style="list-style-type: none">Contractors not meeting Contract deadlines. | <ul style="list-style-type: none">Additional cost to the MD to accommodate extended contract administration and construction inspection. | <ul style="list-style-type: none">Include provisions for a Liquidated Damages Clause in Contract Document.Consider a form of incentives and penalties within the Contract.Include milestone deadlines within Contract Documents with provision for penalties. |
| Challenge 11: Construction <ul style="list-style-type: none">Damage to property as a result of construction.Damage to existing public property outside of the approved working limits as a result of Construction. | <ul style="list-style-type: none">Claims against the Contractor.Disputes with the Contractor. | <ul style="list-style-type: none">MPE encourages that existing properties be documented with detailed photos and video prior to construction.MPE will collect a significant photo and video library on the exterior of adjacent properties that could be impacted.Specifications will include provisions that the Contractor will also be responsible for preconstruction records of existing properties.Monitor construction methods during compaction efforts. Expectations will be outlined in the specifications.Create detailed record of the existing surface features prior to construction.Specifications must clearly define working limits that are practical. Typically, Contract Documents include provision that Contractor is responsible to restore any area outside of the working limits at no cost to the Owner.Review potential lay down areas prior to tendering, include areas in site drawings, and complete a detailed record of their condition prior to construction. |
| Challenge 12: Construction <ul style="list-style-type: none">Contractors not meeting MPE and client expectations and deadlines. | <ul style="list-style-type: none">Unresolved issues.Delays.Disputes with the Contractor. | <ul style="list-style-type: none">Properly communicate and document all expectations and deadlines discussed with the Contractor.If expectations and/or deadlines are not being met diligently follow up with well documented communication with the Contractor.Performing, proper documentation is invaluable to resolve potential conflicts. |
| Challenge 13: Construction <ul style="list-style-type: none">Environmental issues onsite such as fuel spills, etc. | <ul style="list-style-type: none">Potential regulation issues.Delays. | <ul style="list-style-type: none">Complete environmental review of worksite, work methodology, and prepare mitigative measures to reduce impact and risk of occurrence. |



2.5 DETAILED METHODOLOGY

The following section provides a general overview of the activities required to complete the project::

- ◆ **Project Management:** Overall project coordination on behalf of the MD to ensure all stakeholders have adequate input on project direction. This will include regular meetings, monitoring project scheduling and cost, and public consultation to ensure the design and construction are addressed in a comprehensive and coordinated effort.
- ◆ **Detailed Design Phase I:** This task establishes the framework for the project. It will confirm the design criteria for the system, selection of process vendors, confirm the site location, completion of all field work, including topographical surveys (as required), confirmation of the construction methods and sequencing, confirm regulatory requirements; confirm environmental approvals required, confirm project schedule and project costs.
- ◆ **Detailed Design Phase II:** This task involves completion of engineering design, and project specifications for tendering and construction of the project. Also included within this phase is acquiring all regulatory approvals. Review periods have been allotted key milestones during the detailed design for stakeholder review and comments.
- ◆ **Tendering:** This task includes preparing tender documents, tender notice, site tour, addendums, review of submitted tenders and recommendation of award.
- ◆ **Construction & Post Construction Services:** This task includes general administration of the contract to ensure that all work is completed in accordance with project particulars. It will include responding to and providing direction to the Contractor, quantity verification, processing progress payments, liaison with the contractor(s) and MD, monitoring construction progress and schedule and coordination of system connections. This phase also includes commissioning of the works, preparation of record drawings, correction of deficiencies, issuance of final progress payments and certificates, and support over the maintenance period.

TASK I: PROJECT MANAGEMENT

Project management activities for this project will include but are not limited to the following:

- ◆ Develop a project specific Project Management Plan.
- ◆ Prepare, arrange, and chair a Project Start up Meeting.
- ◆ Prepare project schedule and cost tracking documents to identify project expenditures and progress.
- ◆ Monitor project schedule and resources.
- ◆ Coordinate all project personnel throughout the project.
- ◆ Submit all correspondence to the MD Project Manager.
- ◆ Submit monthly invoices indicating personnel, hours, and charge out rates, showing the Upset Fee, amount billed previously, amount billed to-date, the balance remaining, and the project expenses to completion of the Project.
- ◆ Submit a monthly progress report identifying work done in the month, work proposed in the next month, and budget status.
- ◆ Identify potential scope changes, value added opportunities, issues of concern and schedule milestones in the Monthly Progress Reports.
- ◆ Ensure all reports are developed free from bias and influence as well as ensure a conflict is not created during the project.
- ◆ Provide direction to the Design Team as required to ensure project vision and concept is adhered to.
- ◆ In-person meetings are proposed during key milestone dates (every 6-8 weeks during the design phase). The critical meeting dates have been outlined in the project schedule. All in-person meetings will be held at a MD venue.
- ◆ Provide regular communication (monthly project reports) with the MD. Monthly progress reports will identify potential scope changes, value added opportunities, and schedule updates at a minimum.
- ◆ Prepare and submit a detailed work program within 5 days of the notice of award.

Deliverables to the MD shall include, at a minimum, weekly electronic project updates, monthly invoices, monthly project reports, monthly project cash flow documents, and project status meetings and minutes.

PROJECT MANAGEMENT PLAN

At the outset of the project, MPE will prepare a Project Management Plan specific to this project that will be used as a "road-map" to guide the project team. The document will be provided to the MD during the project start-up meeting as a means of outlining MPE's project management approach, demonstrating the understanding of the project, the MD's objectives and the scope of work, schedule, and budget. The intent is that this document be a "living" document, that will be updated monthly to include



changes to project schedule, updates to project budget and to have monthly project reports appended. The document will include the following core sections:

- ◆ Overview of project—Project Objectives.
- ◆ Project RACI (Responsibility, Accountability, Consulted, and Informed) Chart.
- ◆ General Project Management Approach.
- ◆ Project Work Scope.
- ◆ Project Risk Identification and Management.
- ◆ Project Schedule.
- ◆ Project Budget.
- ◆ Project Scope Adjustments.
- ◆ Monthly Project Reviews.

PROJECT START-UP MEETING

We propose that the Start-up Meeting be held at a MD venue. Attending this meeting will be our Project Manager, Mirek Grzeszczuk, Design Manager, Jason Stusick, and Process/Project Engineer, Ivan Kagoro. Mirek would act as facilitator of the meeting. We strongly encourage that key stakeholders, including representation from the MD, be in attendance.

The main purpose of this meeting is to:

- ◆ Introduce the main members of our project team.
- ◆ Confirm the scope of work and outline the proposed methodology for completing the project.
- ◆ Identify any additional or special requirements that may have developed subsequent to the call for proposals.
- ◆ Clarify the expectations to be satisfied by the project.
- ◆ Review the project schedule.
- ◆ Discussion relative to project budgets and funding availability.
- ◆ MPE will prepare minutes of meeting and arrange for distribution.

PROJECT MANAGEMENT SYSTEMS (SCOPE, TIME, COST, QUANTITY, STAKEHOLDER MANAGEMENT)

Project management applies to both the project specific activities that MPE will undertake and to the internal workings of MPE in managing resources and carrying out work. We believe that MPE has effective approaches to both facets of project management.

MANAGEMENT OF PROJECT ACTIVITIES

MPE applies a team approach to project management. As the Engineer, we can offer technical expertise, Contract administration, and field services. To ensure the most efficient project execution possible, *we strive for continuity in our staff assignments*, from start to finish of the project. This provides the MD with consistency in terms of the working relationship with MPE and avoids mishaps that can occur in handing off assignments to others. In summary, the project management process adopted by MPE has proven to be effective in addressing the needs of the Client while ensuring a credible and functional end product as the final outcome.

MPE promotes constant and open communication with our clients, both formally and informally. Formal communication would occur through monthly progress reports and formal design/construction meetings. Informal communication would occur through email, phone conversation, and in-person meetings. Open lines of communication are a critical aspect of a successful project. It is proven that communication through a “one-window” approach best serves the project. It is best that all communication, for the most part, filter through the Project Manager. This enables persons who have a broad understanding of the project disseminate information to other Project Team members as required.

MANAGEMENT OF MPE FUNCTIONS

Internally, MPE has developed a comprehensive approach to work management. Key factors in our internal management include:

- ◆ State-of-the-industry technology: as it applies to computers and software, surveying equipment, and training of staff.
- ◆ **Time and cost management software:** Team members log their time on a daily basis. This allows the Project Manager to monitor the manpower being expended in relation to the tasks at hand. The same system is also used for accumulating project expenses and a summary of costs can be generated at any time. This will allow the Project Manager to view monies spent daily, weekly or monthly. Based on a comparison of expenditures to actual production, an “Earned Value Calculation” is made to quickly determine if the project is under budget or over budget.



- ◆ Internal work review process and work standards: MPE will follow MD standards for drawings and specifications to ensure that the MD can expect a consistent and high quality product. Further, we have a design review process that provides for review of all work prior to it being issued.
- ◆ Flexible staff: Many of our staff have extensive experience in a number of areas and can be called upon to provide their input on a variety of topics as they relate to the project. We take advantage of this ability to help balance resources.

MANAGEMENT OF PROJECT SCHEDULE

Critical to the success of any project is establishing a detailed and achievable project schedule and working to maintain this schedule throughout all phases of the project. MPE incorporates a number of proven methods to maintain project schedule. During the design phase of the project, the Project Manager is responsible for ensuring targeted dates for specific task completion are established and maintained. Regular internal design team meetings are held and minutes prepared with action items for each of the design team members to have prepared for the following team meeting. These meetings provide a forum for the Project Manager to be kept up to date on the progress of the design and should it be found that targets are not being met, the Project Manager has the capability to make additional resources available to bring the design back on track. MPE utilizes Microsoft Project to create Gantt charts for all phases of the project. These schedules are updated monthly so that it is easy to analyze whether the project is on schedule.

Schedules are typically separated into 3 schedule phases - Detailed Design Phase I, Detailed Design Phase II, and Construction.

Detailed Design Phase I Schedule:

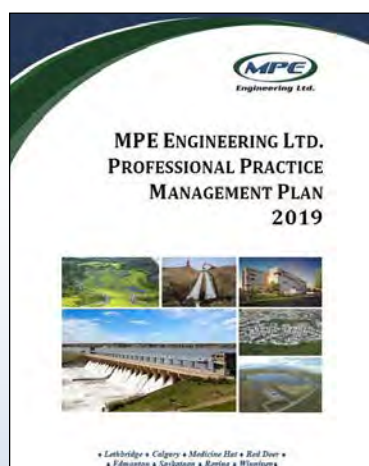
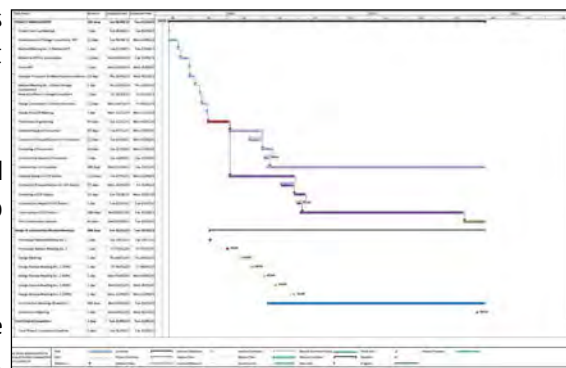
This schedule would include all Detailed Design Phase I tasks proposed by the successful engineering design consultant. It is expected that this phase would also include the beginning of the major equipment procurement.

Detailed Design Phase II Schedule:

This schedule would include all Detailed Design Phase II tasks proposed by the successful engineering design consultant. This phase would also include major equipment procurement and tendering services.

Construction Schedule:

This schedule would include all construction tasks proposed by the successful engineering design consultant and the successful Contractor. This phase would include the programming and commissioning portion of the project, as well as post construction activities.



MANAGEMENT OF QUALITY CONTROL

MPE is highly committed to quality control and we endeavour to provide conditions conducive to professional practice and maintaining appropriate quality standards and has a Professional Practice Management Plan (PPMP) in place as required by APEGA. As stated in the PPMP, design reports, contract drawings, and contract specifications are required to be reviewed prior to being issued to the client or public. We believe that by following the standards that are in place, we will continue to provide a high quality product to our clients. As the prime proponent for this project, MPE will adhere to the standards for quality that are presented in our PPMP.

Quality Control and Quality Assurance during design is essential to maximizing contract document quality, which is critical to minimizing construction issues and change orders. Technical issues must be identified and resolved as early as possible in the project delivery process.

MANAGEMENT OF PROJECT COSTS

In general terms, one of the largest issues facing this project will be providing accurate cost estimation information to provide surety of the overall capital cost. Accurate cost estimates are critical as poor estimating will result in poor decisions.

Developing accurate cost estimates has proven to be more difficult due to significant changes in the province's construction industry resulting in both over and under estimation of construction costs. MPE's approach to most of our recent projects has been to develop these estimates in consultation with the construction industry to ensure that the estimated costs are accurate and can be used with confidence for planning purposes. **Project cashflow projections and earned value analysis** will be submitted monthly so the MD is aware of cash flow requirements as the project moves forward.

Project Cashflow

MPE will create a Project Cashflow, which is a cost tracking spreadsheet that indicates monthly project burn rates and reviews budget for each phase of the project. This assists in identifying cost overruns and allows for anticipated cashflow requirements of the project.

Earned Value Analysis

MPE will create Earned Value Analysis Reports for the project which will be updated monthly throughout the duration of the project. The Earned Value Analysis tracks the dollars spent vs the work completed to ensure that the project is performing as per how it was planned and bid.



RISK IDENTIFICATION AND MANAGEMENT

MPE has a risk register and will apply a risk matrix approach, with planned preventative actions based on the identified risk. The risk register for this project is intended to be a living document through out the completion of the project. As new risks and preventative actions are identified, they will be added as needed. A standard risk matrix approach of assigning Frequencies (chances) and Consequences on a scale of 1 to 5. With 1 being a low chance or minimal consequence and 5 being extremely likely or life threatening.

| ID | Risk | Classification (F x C) | Mitigation Plan |
|----|------|------------------------|-----------------|
| 1 | | 2 x 1 = 2 | |
| 2 | | 3 x 3 = 9 | |
| 3 | | 3 x 3 = 9 | |
| 4 | | 2 x 3 = 6 | |
| 5 | | 2 x 3 = 6 | |

MONTHLY PROJECT REPORTS

MPE will complete monthly Project Reports showing the progress of the project. The report will provide a description of work completed over the month, difficulties encountered, mitigative measures in place, project cashflow, and schedule. Once Construction begins, this report will also include several site photos, a change order tracking list, the project cashflow, and the Design Consultant's and Contractor's updated schedule.

Wastewater Treatment Plant Monthly Project Report

Month: May 21
Current Project Phase: Detailed Design
Budget Spent / Remaining (to end of previous month):
Work Completed This Month:

Requests for Information:

Outstanding Items:

Schedule Comments:

Highlights of Work to be Completed Next Month:

TASK II: DETAILED DESIGN PHASE I

The following activities will be undertaken during the Detailed Design Phase I:

DATA COLLECTION AND ANALYSIS

MPE has compiled and reviewed a significant amount of information with regards to the Grande Cache WWTP project. MPE will review any information that has since become available including concurrent designs in vicinity of proposed site, studies, reports, flow records, record drawings, and previous work contract documents. Where gaps in data are found, MPE will identify these gaps and propose solutions to assist in closing these gaps.

DESIGN STANDARDS & GUIDELINES

MPE will design, test, and commission to the following standards as a minimum:

- ◆ Standards and Guidelines for Municipal Waterworks, Wastewater, and Storm Drainage, Alberta Environment and Parks, 2013
- ◆ Wastewater Systems Standards for Performance and Design; Alberta Environment and Parks; 2013
- ◆ Department of Fisheries and Oceans, Fisheries Act, Wastewater Systems Effluent Regulations SOR/2012-139, 2012
- ◆ Canadian Council of Ministers of the Environment (CCME), Canadian Environmental Quality Guidelines, 2007
- ◆ Canadian Council of Ministers of the Environment (CCME), Guidance on the Site-Specific Application of Water Quality Guidelines in Canada, 2003
- ◆ Environmental Quality Guidelines for Alberta Surface Waters; Alberta Environment and Parks (AEP), 2014
- ◆ Water Quality Based Effluent Limits Procedures Manual, Alberta Environmental Protection, 1995
- ◆ ANSI – Applicable Standards
- ◆ ASTM – Applicable Standards
- ◆ AMSE – Applicable Standards
- ◆ AWWA – Applicable Standards
- ◆ Canadian Standards Association (CSA)
- ◆ National Sanitation Foundation (NSF)
- ◆ Canadian Electrical Code (CEC)
- ◆ Institute of Electrical and Electronic Engineers (IEEE)
- ◆ Electrical and Electronic Equipment Manufacturers Association of Canada (EEMAC)
- ◆ Alberta Building Code
- ◆ National Fire Code of Canada
- ◆ The Occupational Health and Safety Regulations

REGULATORY APPROVAL REQUIREMENTS

MPE will review all approvals and permits required to undertake the project. It is anticipated that permits will be required from AEP, development permits from the MD, as well as building electrical and plumbing permits. Additional permitting from DFO and Navigable Waters may be required if any work to the outfall is necessary. MPE will liaise with applicable regulatory agencies to ensure all approvals are in place. MPE will review applicable regulatory legislation and will compile a list of required approvals to be obtained during the course of this project.

SITE INSPECTION

Along with MD staff, MPE's Project Team would complete a detailed tour of the existing WWTP site. This inspection will allow for a thorough review and collection of information necessary to commence the detailed design. These site inspections are a critical first step in the completion of the project. The ability to tour the facility will provide our team of engineers with valuable first-hand information that simply cannot be obtained through review of drawings and/or previous assessments. These tours also enable our engineering team to meet and speak with operations staff. These tours provide an excellent forum for knowledge sharing between operations staff and our engineering team. MPE would propose to complete the site inspection on the same day as the Project Start-up Meeting.



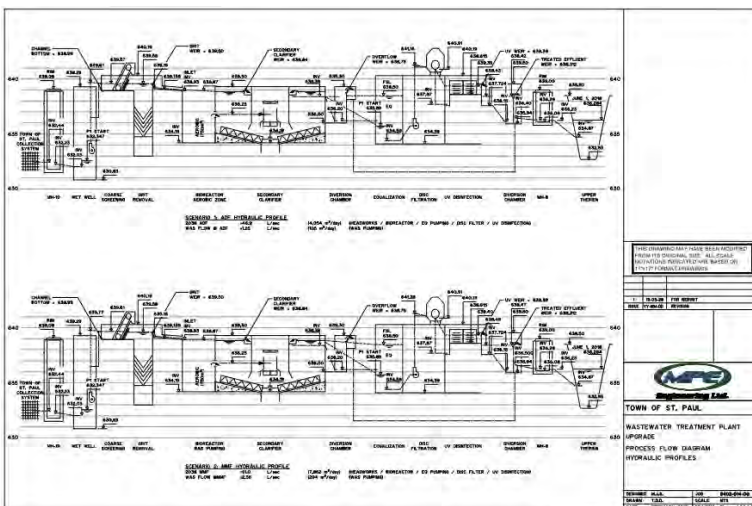
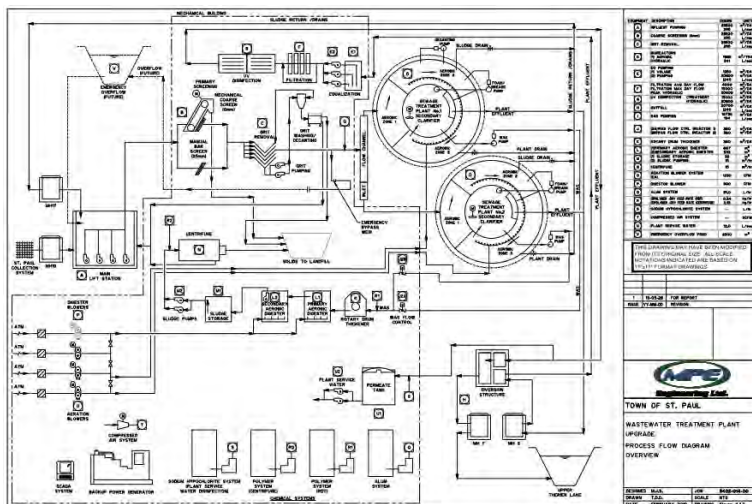
SITE SURVEY

MPE will review the survey information of the proposed area of the project and will complete additional survey, as required. Prior to completing the survey, MPE will coordinate locates of existing utilities on the proposed site. Depending upon the specific location selected for the proposed infrastructure, it may be prudent to complete hydrovac work to locate existing underground infrastructure. If this is determined, MPE will coordinate hydrovac work on behalf of the MD. Site drawings will be rendered in Autodesk Civil 3D.

PROCESS DESIGN

MPE will confirm and update design criteria since the Concept Design Report was completed by AE, including updating population projections, wastewater generation forecasts, wastewater treatment design flows, BOD, TSS, and nutrient loading, as well as sludge generation calculations. MPE will complete the following tasks:

- ◆ Review population projections and revise as required
- ◆ Review wastewater generation rates and revise as required.
- ◆ Review wastewater treatment system design criteria.
- ◆ Develop wastewater treatment process simulation modelling using BIOWIN software to to:
 - Select optimal treatment processes to incorporate in extended aeration design.
 - Determine oxygen requirements and model blower power requirements.
 - Model activated sludge throughout process
 - Model Chemical P removal.
 - Model ammonia removal.
- ◆ Completion of mass balance calculations to review both liquid and solid waste streams through the wastewater treatment process including sludge generation rates.
- ◆ Hydraulic assessment including the plotting of the hydraulic profile through the process, utilizing survey data and record information:
 - Hydraulic modeling through the treatment process will be completed using Visual Hydraulics.
 - Hydraulic modeling of pumping systems will be completed using MPE developed software based on Darcy-Weisbach and affinity laws which will allow for theoretical review of pump power requirements and will allow for recommendations on where VFDs should be used.
- ◆ Development of Process Flow Diagram.
- ◆ Review of available technologies for influent screening, screenings dewatering and bagging, grit removal, process equipment, aerobic digestion equipment, pumping equipment, chemical feed equipment, and solids dewatering.
- ◆ Development of design criteria including finalization of system flow rates, pump duty points, headworks equipment sizing, process sizing, sludge generation rates and dewatering equipment criteria.
- ◆ Development of proposed site layout, proposed building plan (equipment GA drawing), Process and Instrumentation Drawings (P&IDs).



PROCESS EQUIPMENT SELECTION AND METHODS OF MAJOR EQUIPMENT PROCUREMENT

It is anticipated the MD will procure major equipment with long lead times prior to tendering the General Contract in order to meet the project deadline. MPE will complete a review of available equipment suppliers for major treatment processes. As part of this process, MPE will organize tours to review major process equipment identified for the WWTP project at existing installations.

At this juncture, it is anticipated that pre-purchase of equipment will be required for:

- ◆ EA Equipment Supply (aeration equipment).
- ◆ Primary Screening Equipment Supply.
- ◆ Grit Removal System Equipment Supply.
- ◆ Centrifuge Equipment Supply.
- ◆ Tertiary Filtration Equipment (if necessary).
- ◆ UV Disinfection Equipment Supply.

MPE has extensive experience in the completion of similar-scoped wastewater treatment facilities. Through this experience, the benefits of the Owner pre-purchase model can be extensive. Engaging the supplier of the major equipment during the Detailed Design Phase can help to streamline detailed design, ultimately saving the Owner money. The design engineer knows the exact specifications of the equipment that will be included in the facility, allowing for an efficient design of the building that houses the equipment as well as any related ancillary equipment.

By utilizing the Owner pre-purchase model, the construction schedule can be reduced as items with long lead times can be purchased months ahead of the Tender phase. Coordinated properly, the pre-purchased equipment arrives when the Contractor is ready for installation of it. Finally, the Owner is also likely to save money by avoiding the Contractor mark-up on equipment, which can be a significant amount in a larger system such as this.

For the purposes of this proposal, it is assumed that the Owner pre-purchase model of major equipment procurement will be selected.

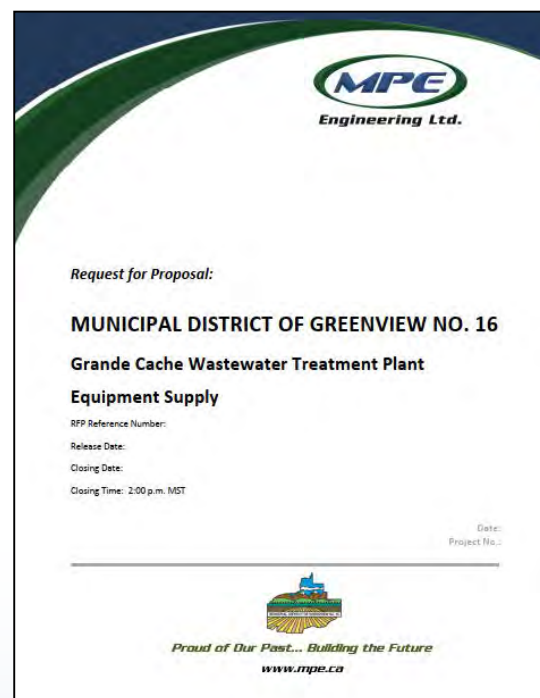
DEVELOPMENT FOR REQUEST FOR PROPOSALS FOR MAJOR EQUIPMENT

MPE will develop Request For Proposal (RFP) packages for supply of major, long lead-time equipment. The RFP documents will include standard “Front End” RFP specifications and will detail design components and equipment specifications. It is proposed the Request for Proposal (RFP) document would be distributed to prequalified Vendors OR posted on applicable public purchasing websites for an open call for proposals.

MPE has prepared numerous iterations of these RFPs, but common to all are the following core sections:

- ◆ Project Summary: To provide the prospective supplier with relevant project background information
- ◆ Application: To provide the prospective Vendor with detailed project information to ensure the Vendor is aware of project constraints.
- ◆ Scope of Supply: Outlines the entire expected scope of supply including: design criteria, quality assurance, controls, system installation, start-up, training and installation assistance, expected life span of equipment, warranty, shop drawings, etc.
- ◆ Warranty & Process Guarantee: To provide detail on standard equipment warranty desired as well as outline process guarantee requirements to ensure the technology provided can meet the design criteria of the particular treatment process.
- ◆ Contract Approach: Details on novating equipment supply contract to successful General Contractor.
- ◆ Proposal Response Format: Details the requirements of the proposal format to assist in streamlining the evaluation process
- ◆ Evaluation Criteria: Provided to notify the prospective supplier of the criteria to which their submission will be evaluated upon.

The RFP documents will outline project intent, background, bidding instructions, evaluation criteria, scope of services and technical specifications. MPE will request that a significant amount of technical information is included in the RFP to ensure that a thorough equipment comparison can be provided during the proposal review period. MPE will coordinate with the MD to layout an acceptable evaluation matrix that includes evaluation criteria and weighting percentage for each component.



In previous experience, MPE has found that primary evaluation criteria typically includes the following:

- ◆ Conformity to Specifications.
- ◆ Performance & Features.
- ◆ Project Schedule.
- ◆ Company History, Experience and References.
- ◆ Price.

Upon the submission of the supplier proposals, MPE will complete a detailed review and submit an Equipment Preselection Tender Evaluation Report to the MD which would include a recommendation to enter into an agreement with successful Vendors. **MPE would propose to complete the Equipment Preselection task during the Detailed Design Phase I in an effort to uphold project schedule.** It is felt that sufficient design development will have occurred to this point such that the task of identifying and selecting Major Equipment can be completed.

REVIEW MEETING NO. 1

MPE will coordinate a review meeting between the MPE project team, the MD, and representatives from other relevant stakeholders such as representatives from AEP and AT. This meeting will provide a forum to discuss the following:

- ◆ Review of Design Criteria.
- ◆ Review of Process Equipment Selection.
- ◆ Review of Major Equipment Procurement.
- ◆ Review of Process Design Drawings to date.

MAJOR EQUIPMENT TENDERING

The RFP documents will be posted on APC. MPE will also notify specific Vendors to ensure that a sufficient amount of bidders are in place. All discussions with Vendors will be documented. In the event that an addendum is required to clarify or add to the RFP documents, MPE will prepare and distribute the addendum to all Vendors.

REVIEW OF MAJOR EQUIPMENT PROPOSALS

MPE will complete a review of major equipment proposals. Vendor supplied equipment typically has varying levels of customization and it can be difficult to compare equipment from multiple manufacturers. To ensure an accurate “apples to apples” comparison of Vendor proposals, MPE will create a detailed comparison summary that will break out all components of each piece of equipment. The Vendor’s ability to conform to each individual specified component will be evaluated and instances where the Vendor’s equipment will over-perform specifications will be noted. MPE will then complete a Vendor evaluation matrix that will be incorporated in the Preselection Tender Evaluation Report.

MPE will submit the following to the MD upon review of Vendor proposals:

- ◆ Detailed comparison of equipment components.
- ◆ Completed evaluation matrix form.
- ◆ Equipment Preselection Tender Evaluation Report detailing the conclusions and recommendations of the tender evaluation.

REVIEW MEETING NO. 2

Upon submission of the Preselection Tender Evaluation Report, MPE is proposing a meeting with the MPE project team, the MD, and representatives from key project stakeholders to discuss engineering to date. It is proposed that the meeting be held at a MD venue.

This meeting will provide a forum to discuss the following:

- ◆ Review of equipment evaluation comparisons.
- ◆ Review of evaluation matrix.
- ◆ Review of Major Equipment Tendering results.
- ◆ Equipment Preselection Tender Evaluation Report.

AWARD MAJOR EQUIPMENT SUPPLY CONTRACTS

Upon review of the Equipment Preselection Tender Evaluation Report, and review of the completed cost estimates, it is anticipated that the MD will enter into a Contract with the successful Vendors. MPE will then request submittals including shop drawings from the successful Vendors.



MAJOR EQUIPMENT PROCUREMENT

The major equipment procurement process will begin immediately after engaging of successful Vendors and will continue throughout the detailed design and construction phases. The detailed design will be completed to conform to the requirements and dimensions of the preselected equipment. MPE will request that the major equipment suppliers submit general arrangement drawings in AutoDesk Revit and AutoCAD. Drawings of the major equipment will be inserted into the detailed design drawings to ensure that there are no conflicts. Any ancillary equipment required for the operation of the preselected equipment will be included in the detailed design. Vendor submittals and shop drawings must be reviewed thoroughly and reconciled to major equipment RFP documents. Any discrepancies in the submittals could result in extensive equipment delivery delays and expenses.

The following tasks would be completed during the Major Equipment Procurement Task:

- ◆ Review of major equipment submissions including shop drawings.
- ◆ Coordination of Factory Testing for major equipment (witnessed and non-witnessed testing).
- ◆ Coordination of scheduling for delivery of major equipment to site.
- ◆ Preparation of Novation documents.

MPE recommends that Contracts for major equipment be novated to the General Contractor during the Tendering & Construction Phases of the project. In the novation process, contractual rights and obligations between the MD and the Vendor will be transferred to the General Contractor. Novation would be beneficial to the MD as it will maintain continuity between pre-tender and post-tender equipment supply Contracts and will leave sole responsibility for both equipment supply and construction with the General Contractor during the Construction Phase.

PROCESS FLOW DIAGRAM, PROCESS & INSTRUMENTATION, AND HYDRAULIC PROFILE DRAWING

Based on the major equipment procurement, MPE will refine the process flow diagram, Process and Instrumentation Diagram (P&ID), and hydraulic profile for the wastewater treatment system. Schematic drawings will be developed in the latest version of AutoCAD.

DEVELOPMENT OF GENERAL ARRANGEMENT DRAWINGS

MPE will prepare conceptual plan and section general arrangement drawings for the proposed WWTP. General Arrangement Drawings will be prepared in Autodesk Revit and AutoCAD. Drawings will be generated with Autodesk Revit and will be provided to the MD in 3D format along with 2D drawings cut at specific sections. Drawings developed at the conceptual stage will include:

- ◆ Conceptual Process Flow Diagram and Hydraulic Profile.
- ◆ Conceptual Process & Instrumentation Drawing.
- ◆ Conceptual Process Mechanical General Arrangement Drawings in 2D and 3D view, Plan view and section views.

CIVIL DESIGN

MPE will complete civil design concepts for the proposed WWTP site. MPE will complete the following tasks in the Site/ Underground Design:

- ◆ Prepare a site plan.
- ◆ Review connection to shallow utilities such as power, gas, phone.
- ◆ Layout proposed site access and parking areas and review preference for finished surface (gravel, asphalt).
- ◆ Review site drainage and storm water management for the proposed site.
- ◆ Develop landscaping design.

MPE will prepare conceptual plan and profile drawings for the proposed underground work for the WWTP. Site drawings will be prepared in Autodesk Civil 3D and AutoCAD. Drawings developed at the conceptual stage will include:

- ◆ Site Plan.
- ◆ Plan / Profile Drawings of large diameter underground pipe.
- ◆ Outfall Drawing (if required).

REVIEW MEETING NO. 3

MPE will coordinate a review meeting between the MPE project team, the MD, and representatives from other relevant stakeholders. This meeting will provide a forum to discuss the following:

- ◆ Review of Civil Design Drawings to date.
- ◆ Review of Process Mechanical Drawings to date.



ARCHITECTURAL / STRUCTURAL DESIGN

MPE will utilize in house structural engineering resources to evaluate structural and architectural design concepts for the proposed WWTP. It is anticipated that the WWTP will be a single building of masonry construction with a metal roof. The initial evaluation will include, but not be limited to:

- ◆ Develop the building layout.
- ◆ Develop building elevation views.
- ◆ Complete a building code review of the proposed design to identify any special requirements for certain areas or rooms within facility and to ensure the design complies with all applicable codes.
- ◆ Determine the appropriate building envelope to ensure Owner objectives relative to energy efficiency are met, ensure the building is structurally sound, and ensure the design is cost effective and aesthetically pleasing.

MECHANICAL (HVAC) DESIGN

MPE will complete the following tasks in the Mechanical Design:

- ◆ Develop the building mechanical (HVAC) design including but not limited to:
 - ◊ Heating: natural gas or electric unit heaters, hydronic boiler system, etc.
 - ◊ Ventilation: including review of special ventilation requirements for areas of the WWTP
 - ◊ Air Conditioning: determine the requirement for air conditioning in areas of the WWTP, including the control room / office spaces, electrical / MCC room, etc.

ELECTRICAL & CONTROLS DESIGN

Based on engineering to date, the electrical loading of the facility will be determined. Single Line drawings will be produced to accurately reflect the WWTP electrical loads and preliminary discussions with the electrical utility will begin. MPE will complete the following tasks in the Electrical Design:

- ◆ Develop single line diagrams for the proposed WWTP.
- ◆ Determine the overall electrical service requirements and coordinate with utility to ensure the arrangements are in place for the required upgrades to an existing service or to begin arrangements for provision of a new service.
- ◆ Review the benefits of variable frequency drives (VFDs) on pump motors and coordinate with the electrical utility to determine what safeguards are required for the electrical distribution system (if applicable). In past projects, certain utilities required both line and load reactors to be included in electrical design.
- ◆ Review the provision of backup power and provide options for sizing of a standby power generator. Both natural gas and diesel powered generators will be reviewed and can be sized to provide backup power to the entire WWTP or only equipment that is absolutely necessary for the provision of ensuring proper treatment.
- ◆ Review of Controls and Instrumentation design including but not limited to:
 - ◊ Review of communication architecture with other related facilities.
 - ◊ Review of desired level of control and communication.
 - ◊ Review control strategies for the WWTP.
 - ◊ Review PLC requirements and preferred manufacturer.
- ◆ Review of preferred equipment manufacturers as it may be prudent to design controls and communication systems around equipment that is workable with other equipment the MD is comfortable operating and maintaining.

DEVELOPMENT OF COST ESTIMATE

Based on the process flow developed and the conceptual design of the proposed WWTP, MPE will update the cost estimate for the proposed project from the one provided in the Concept Design Report by AE. The estimate developed shall include a -10% to +20% accuracy and a 15% contingency. A review of expected operational and maintenance costs shall also be prepared, based on the conceptual design of the WWTP.

DEVELOPMENT OF CONTRACT APPROACH & CONSTRUCTION SEQUENCING PLAN

MPE will review the Contract Approach for this project during Detailed Design Phase I. In this particular case, there may be a benefit to both project schedule and cost to divide the work into several tenders. The underground work (deep utilities around the site) and the WWTP could be divided into separate Contracts. The Contract Approach should be decided in this engineering phase so the separate tender specifications and drawing packages can be developed in Detailed Design Phase II.



In addition, MPE will develop the schedule for construction sequencing for Contractor information. The construction sequence will be established so as to minimize the impact on Operations of the existing wastewater treatment system and the MD. MPE will develop the construction sequence with sufficient detail to ensure the intent of the designer is maintained, while still allowing for sufficient flexibility for Contractors to bring forth innovative construction techniques and approaches that may expedite the project and possibly reduce costs. The construction sequencing plan will be included in the Supplementary Conditions section of the Contract Specifications.

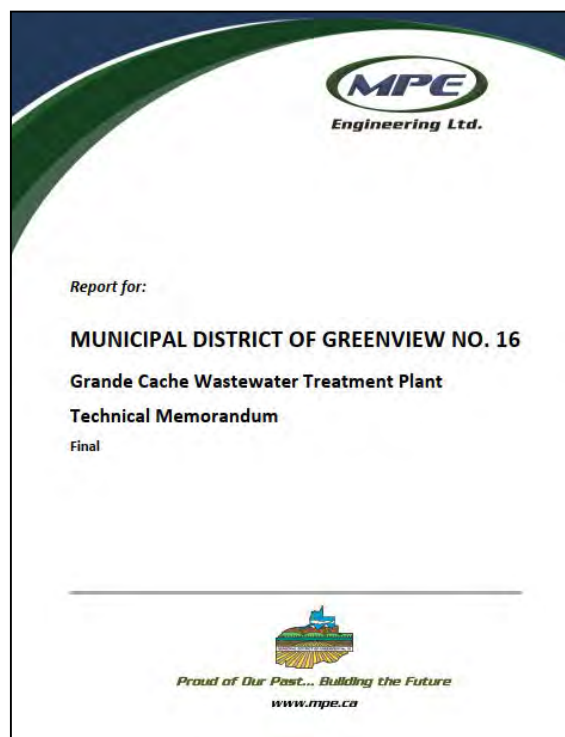
PREPARATION OF THE TECHNICAL MEMORANDUM—DETAILED DESIGN UPDATE

The deliverable from Phase I is the Technical Memorandum (TM). A key component will be the development of a Class C cost estimate for the project. Knowing budgetary limitations facing the MD, developing an accurate estimate will be critical to determine if any potential project scope changes are required prior to entering the next phase of Detailed Design.

The TM will be comprised of the following sections:

- ◆ Introduction and Project Background
- ◆ Review of Design Criteria
- ◆ Process Design
- ◆ Process Equipment Selection
- ◆ Process Mechanical Design
- ◆ Civil Design (including Outfall)
- ◆ Architectural / Structural Design
- ◆ Mechanical HVAC Design
- ◆ Electrical Design
- ◆ Control Strategies
- ◆ Contract Approach
- ◆ Regulatory Approval & Permit Requirements
- ◆ Project Cost Estimate
- ◆ Conclusions and Recommendations

The TM Report will be submitted to the MD for review and comment prior to the meeting. An electronic copy (PDF) and three (3) bound hard copies of the TM shall be submitted. The TM will be used as a supporting document when submitting for various Approval applications.



REVIEW MEETING NO. 4

MPE will coordinate a review meeting between the MPE project team, the MD, and representatives from other relevant stakeholders such as representatives from AEP and AT.

This meeting will provide a forum to discuss the following:

- ◆ Review of TM.
- ◆ Review of Regulatory Approval Requirements.
- ◆ Review of General Arrangement Drawings.
- ◆ Review of Process Mechanical Drawings to date.
- ◆ Review of Civil Drawings to date.
- ◆ Review of Architectural / Structural Drawings to date.
- ◆ Review of Mechanical HVAC Drawings to date.
- ◆ Review of Electrical Design and Drawings to date.
- ◆ Review of project cost estimates to date.

Comments on the TM Report will be discussed at this meeting and revisions to the Report will be made.

TASK III: DETAILED DESIGN PHASE II

Detailed Design Phase II will incorporate all engineering to date. With the level of engineering completed in the Detailed Design Phase I tasks, the work involved in this phase becomes more of a design finalization step. The major design decisions have been made by this point in the project including issue and review of equipment preselection packages. The detailed design approach includes opportunities for MD staff to review the technical drawings and provide feedback. Input from operational staff is important with respect to maintenance activities, controls aspects, and operational requirements that will impact demolition and construction sequencing. The detailed design will culminate with the delivery of final construction plans, specifications, and updated construction cost estimates.



General engineering services during Detailed Design Phase II will include the following:

- ◆ Complete the final design details, finalize plans and specifications, inclusive of site plans, mechanical, process and instrumentation, piping, electrical, controls and instrumentation, HVAC, & structural and architectural.
- ◆ Prepare a complete detailed set of drawings and specifications which logically lays out the work required by the Contractor. The rationale is that the greater the detail provided in the drawings minimizes Contractor risk which reduces the price of the bid at time of tender.
- ◆ Coordinate between all disciplines to avoid equipment and piping conflicts.
- ◆ Ensure there are sufficient in-person design review meetings (50%, 75%, 95%, and 100%) to incorporate all of the MD requirements into the final design.
- ◆ Distribute minutes for all project design meetings no later than seven days after the date of the meeting.

The following tasks will be undertaken during Detailed Design Phase II:

PROCESS DESIGN FINALIZATION

Prior to the other disciplines proceeding, the Process Design shall be finalized. This includes the primary focus of finalizing P&IDs, Process Flow Diagrams and plant layout drawings. Major equipment selections should also be finalized. To avoid re-work, it is imperative that the process design be finalized as the initial task of the Detailed Design Phase II.

PROCESS MECHANICAL DESIGN & DRAWINGS

Based on the major equipment selection and drawings developed as part of the TM, process mechanical drawings will be generated including Process Flow Diagram, Process and Instrumentation Diagrams (P&IDs), and General Arrangement (GA) drawings. MPE will complete the following activities in the Process Mechanical Design:

- ◆ Process Flow Diagram, WWTP Hydraulic Gradeline, and P&ID's drawings will be completed.
- ◆ Review of major equipment cutsheets and technical literature.
- ◆ Complete process mechanical plan and section views in AutoDesk Revit and AutoCAD using previous base drawing developed from Detailed Design Phase I.
- ◆ Review process mechanical drawing for potential conflict with electrical, HVAC mechanical, etc.

REVIEW MEETING NO. 5 (50%)

MPE will co-ordinate and facilitate a design meeting with the MPE project team, the MD, and representatives from key project stakeholders. It is proposed that the meeting be held at the MD office. This meeting will provide a forum to discuss the following:

- ◆ Review of Major Equipment Procurement Submittals.
- ◆ Review of Process Design.
- ◆ Review of Process Mechanical General Arrangement Drawings.

CIVIL DESIGN & DRAWINGS

MPE will complete the following activities for the Civil and Site Work Design:

- ◆ Complete plan / profile drawings for all underground piping.
- ◆ Complete detailed design of outfall (if required).
- ◆ Layout proposed site access, parking areas, and preference for finished surface (gravel, asphalt). Commercially available software will be utilized to ensure vehicular traffic within the site can be accommodated within the proposed design.



- ◆ Review zoning and facility set back requirements.
- ◆ Review site drainage and review of storm water management for the proposed site.
- ◆ Develop landscaping design.
- ◆ Prepare site layout drawings, underground infrastructure plan profile drawings, and applicable details based on Phase I designs.
- ◆ Drawings will be prepared with sufficient detail to ensure there are no conflicts present with existing underground utilities and that all civil design objectives set by the MD have been met.
- ◆ Drawings will be developed in Autodesk Civil 3D.



ARCHITECTURAL & STRUCTURAL DESIGN & DRAWINGS

MPE will utilize in house structural engineering resources to complete structural and architectural design. MPE will prepare all structural plans and details required for the major structural components, namely the building and substation foundation as well as any improvements required to meet code in existing facilities. All required structural details will also be finalized to include miscellaneous structural components such as handrails, walkways, concrete housekeeping pads, and concrete containment curbs.

The following activities in the Architectural / Structural Design will be completed:

- ◆ Review architectural concepts and sustainable design concepts.
- ◆ Development of Architectural details of the building envelop, roof, and elevations.
- ◆ Coordinate with disciplines and refine conceptual layout to include all equipment and desired rooms such as offices, storage, domestic mechanical, and washroom facility.
- ◆ Coordinate with disciplines with regards to equipment size, weight, and lifting requirements.
- ◆ Ensure there is a minimum amount of space around equipment for servicing. Minimum space requirements will be based on all applicable codes or manufacturers recommendations, whichever is greater.
- ◆ Design appropriate equipment pads and thrust supports based on equipment weights and lift requirements .
- ◆ Design or specify lifting devices for the removing of equipment including traveling bridge cranes, monorails, and hoisting equipment.
- ◆ Design groundwater control system and ensure new building foundation can withstand any potential uplift forces.
- ◆ Design foundation and building or bridge crane framing system based on design recommendations from the geotechnical site investigation.
- ◆ Identify all design loads on structural drawings.
- ◆ Determine dimensions of wall, beams, slabs, and column.
- ◆ Review zoning and facility set back requirements.
- ◆ Design improvements required to bring existing facilities up to latest ABC requirements.
- ◆ Prepare a code review drawing, life safety plan, building elevation drawings, applicable building schedules, and all required details to complete the Architectural drawing set.
- ◆ Prepare all design load, concrete, reinforcement, structural details, structural steel, hand rail, stairs, and grating, and miscellaneous details to complete the Structural drawing set.

MECHANICAL HVAC DESIGN & DRAWINGS

MPE will complete the following activities in the Detailed Mechanical HVAC Design:

- ◆ Complete heat and energy balance calculations for the generator / electrical building.
- ◆ Review mechanical and electrical design in areas to be repurposed or re-used to determine impacts, if any, of new design.
- ◆ Develop the building mechanical (HVAC) design including but not limited to:
 - Heating: natural gas or electric unit heaters, hydronic boiler system, etc.
 - Ventilation: including review of special ventilation requirements for the generators
 - Air Conditioning: determine the requirement for air conditioning in areas, including the control room / office spaces, electrical / MCC room, etc.
- ◆ Select and size HVAC equipment.
- ◆ Drawings will be developed in AutoDesk Revit and AutoCAD.
- ◆ An energy audit of the proposed WWTP building will be completed in accordance with the ABC.

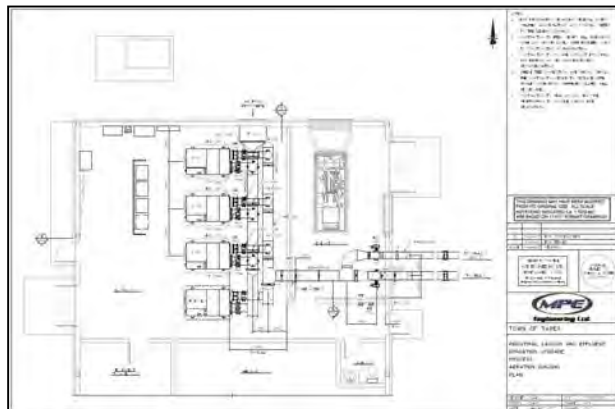
ELECTRICAL & CONTROLS DESIGN & DRAWINGS

Using the TM as a guide, and in conjunction with the existing equipment condition assessments, MPE



will complete the following activities for the Electrical & Controls Design:

- ◆ Complete final calculations for sizing of switchgear buses, MCC's buses, main disconnects, and cabling. Voltage drop calculations to be included.
- ◆ A detailed list of equipment will be developed for each segment of the work. The list will be used as the basis for cost estimating which will include costs for the equipment and cabling.
- ◆ Single line drawings will be completed based on major equipment selection.
- ◆ Complete construction impact mitigation plan to ensure the existing wastewater treatment system is not interrupted.
- ◆ Confirm overall electrical service requirements and coordinate with electrical utility to ensure the arrangements are in place to complete the required upgrades to an existing service or to begin arrangements for provision of a new service
- ◆ Confirm generator sizing from list of equipment to be placed on backup power.
- ◆ Review expected facility Total Harmonic Distortion (THD) from non-linear loads (VFDs) and analyze the cost benefits of adding harmonic filtration to the electrical service potentially reducing the required generator(s) capacity.
- ◆ Review of Controls and Instrumentation design including but not limited to:
 - Review of preferred equipment manufacturers as it may be prudent to design controls and communication systems around equipment that is workable with other equipment the MD is comfortable operating and maintaining.
 - Prepare design specifications of instrumentation specifications including but not limited to the flow indicating transmitter (i.e. magnetic flow meter), pump and blower temperature (i.e. RTD) transmitters and vibration monitoring instrumentation.
- ◆ Complete PLC, remote I/O and control cabinets design.
- ◆ Complete PLC and I/O drawings.
- ◆ Drawings will show detailed Single Line information, equipment layouts and specific wiring diagrams for every piece of equipment of the installation. A communication architecture will also be provided, showing the connection to the SCADA system. MPE will ensure adequate coordination is provided between design disciplines to ensure the locations of the cable runs are acceptable and do not interfere with other equipment or building structural components.



CONTROL PHILOSOPHY DEVELOPMENT

MPE will develop a process control narrative and control philosophy for the WWTP, in conjunction with the major equipment vendors and the MD. The philosophy will be presented in a narrative and permissive based tabular format. The philosophy will also be used by programmers to complete PLC and SCADA programming requirements. The control narrative and philosophy will be provided to the MD as part of the Operation and Maintenance Manual developed for this project. This O&M Manual will be provided by MPE and is in addition to the contractor-supplied O&M Manual.

REVIEW MEETING NO. 6 (75%)

MPE will co-ordinate and facilitate a design meeting with the MPE project team, the MD, and representatives from key project stakeholders. It is proposed that the meeting be held at the MD office. This meeting will provide a forum to discuss the following:

- ◆ Review of Process Design Drawings & Specifications.
- ◆ Review of Process Mechanical Drawings & Specifications.

- ◆ Review of Civil Drawings & Specifications.
- ◆ Review of Architectural/Structural Drawings & Specifications.
- ◆ Review of Mechanical HVAC Drawings & Specifications.
- ◆ Review of control philosophy & control strategies.

PREPARATION OF APPLICABLE PERMIT APPLICATIONS

MPE will prepare all required applications for any regulatory permits required prior to proceeding with construction of the facility. Drafts of each application will be sent to the MD for review prior to submittal to the appropriate agency on the behalf of the MD.

PREPARATION OF PRE-TENDER COST ESTIMATES

Using the finalized detailed design drawings, MPE will revise the previous cost estimate and prepare a Pre-Tender Class 1 Cost Estimate (-10% to +15%) for undertaking the project. The expected operational and maintenance costs will also be updated, based on the finalized design.

REVIEW MEETING NO. 7 (95%)

MPE will co-ordinate and facilitate a design meeting with the MPE project team, the MD, and representatives from key project stakeholders. This meeting will provide a forum to discuss the following:

- ◆ Review of Design Package.
- ◆ Review of Construction Sequencing Plan.
- ◆ Review of Pre-Tender Cost Estimates.

DESIGN FINALIZATION

Based upon comments from the MD and other stakeholders received at the 95% Detailed Design Review Meeting, MPE will make necessary adjustments and will finalize remaining design tasks. Contract specifications will also be finalized in accordance with the requirements of the MD. All equipment will be specified, and where applicable, equipment manufacturers and vendors approved by the MD will be included.

FINAL REGULATORY APPROVAL

MPE and team will liaise with applicable regulatory agencies to ensure all approvals are in place:

- ◆ Liaise with AEP, DFO, Navigable Waters, Alberta Culture and Tourism, etc.
- ◆ Prepare package for submission to the AEP Approval Engineer and other applicable engineers.
- ◆ Incorporate comments from the regulatory agency and finalize design.

DETAILED DESIGN REVIEW MEETING NO. 8 (100%)

This represents the final design review meeting. MPE will co-ordinate with all relevant stakeholders to organize a meeting at the MD Office to review the tender package and the pre-tender cost estimate as well as review regulatory requirements for the project as it pertains to the detailed design. At this meeting, there should be discussion on moving forward with the tender process.

TASK IV: TENDERING

Every avenue should be pursued to encourage competition amongst qualified and reputable Contractors. The following activities will be competed:

GENERAL CONTRACTOR PRE-QUALIFICATION

MPE proposes to develop and advertise a pre-qualification process for General Contractors that are qualified to complete this work. The RFP documents will outline project intent, background, bidding instructions, evaluation criteria, scope of services and technical specifications. MPE will request that a significant amount of technical information be included in the RFP to ensure that a thorough equipment comparison can be provided during the proposal review period. MPE will coordinate with the MD to layout an acceptable evaluation matrix that includes evaluation criteria and weighting percentage for each component.

In previous experience, MPE has found that primary evaluation criteria typically includes the following:

- ◆ Conformity to Specifications.
- ◆ Performance & Features.
- ◆ Project Schedule.
- ◆ Company History, Experience and Reference.

MPE will set up a committee comprised of several personnel from MPE and the MD to complete a review of Contractor Proposals.

PREPARATION OF TENDER DOCUMENTS

MPE will prepare a full tender package for bidding by pre-qualified General Contractors.

FORWARD TENDER DOCUMENTS TO PRE-QUALIFIED GENERAL CONTRACTORS

MPE will coordinate and post all tender documents to pre-qualified General Contractors.

CONTRACTOR SITE MEETING

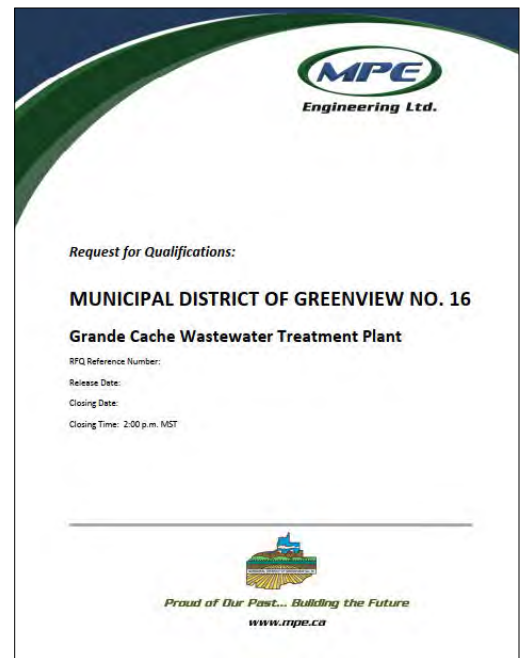
MPE will coordinate and lead a site meeting with perspective bidders. Minutes of the meeting will be prepared and issued as an Addendum to the contract documents.

RESPONDING TO CONTRACTOR QUESTIONS AND PREPARATION OF ADDENDA

MPE will prepare Addenda as required, based on Contractor questions and required clarifications.

TENDER REVIEW AND RECOMMENDATION OF AWARD

MPE will review all submitted tender packages for adherence to submission requirements and for arithmetic errors. A formal tender summary and recommendation letter will be prepared for the MD, based upon this review. Based on direction from the MD, MPE will prepare a Notice of Award letter for the successful Contractor.



TASK V: CONSTRUCTION SERVICES

It is understood that our services would involve Project Construction Management and Administration services on behalf of the MD. This service will involve monitoring and supervision of the Contractor to ensure that the following is provided as a minimum:

- ◆ The entire project is constructed as per the detailed plans and specification.
- ◆ All equipment is provided and installed as specified.
- ◆ Ensure that appropriate MPE staff is on site for all critical work phases to ensure the specified material is installed in a workmanlike manner.
- ◆ All equipment is commissioned in accordance with the design and the manufacturer's recommendations and to the satisfaction of MPE and the Owner.

CONSTRUCTION START-UP MEETING

This meeting will be scheduled within two weeks of the award of the contract. Attendance at this meeting will be by official project representatives from the Owner, MPE, Contractor and subcontractors, and other affected parties. For this meeting the Contractor will be requested to provide his detailed project construction schedule. Additionally, the following will be addressed at this meeting:

- ◆ Identify that the Contractor is the "Prime Contractor" and is therefore responsible for construction site safety and procedures as well as the safety of the Owner and engineering consultant.
- ◆ Contract administration items such as: progress claims, issuance of progress certificates, progress payments, procedures for payment of additional work, change notices, change orders.
- ◆ Define roles of MPE and the Owner to the Contractor.
- ◆ Local Permit requirements by the Contractor.
- ◆ Conduct a Preliminary Commissioning Meeting to review the roles and responsibilities of all parties with respect to the commissioning process and to begin development of a project commissioning plan. MPE's Commissioning Manager will develop the proposed Commissioning Plan and will review with all parties at the Commissioning Start-up Meeting.

CONSTRUCTION PROJECT MEETINGS

We anticipate consistent project meetings every two weeks. The frequency may be increased during critical periods. At these meetings various items will be addressed, such as:

- ◆ Ensure that the Contractor provides a rolling schedule of the construction work proposed for the period between each site meeting. Contractor will update rolling schedule as required.
- ◆ Review of the progress of the work versus the project schedule.
- ◆ Contractor to provide a cash flow projection for MD into the overall project cash flow.
- ◆ If the Contractor is falling behind schedule, question how the Contractor will ensure his forces will get back on schedule.
- ◆ Any safety issues which require rectification.
- ◆ Any safety incidents reported by Contractor, Owner or Consultant.
- ◆ Review Requests for Information (RFI's) from the Contractor and provide direction.
- ◆ Review status of shop drawing submissions by Contractor.
- ◆ Review list of shop drawings that have not been submitted by the Contractor.

ENGINEER SERVICES DURING CONSTRUCTION

MPE will provide full-time resident engineering services throughout construction. Pertinent tasks include the following:

- ◆ Advise Contractor on the Engineer's interpretation of the drawings and specifications, and issue supplementary details and instructions during the construction period as required.
- ◆ Review and comment on the procedures, methods and sequence of work proposed.
- ◆ Review shop drawings submitted for compliance with the design requirements.
- ◆ Maintain a log of all shop drawings received for review.
- ◆ Review and advise on alternative methods, equipment, and material proposed by the Contractor.
- ◆ Review changes for additions or deletions, and issue change orders as required for Owner approval.
- ◆ Review progress payment requests and issue Progress Certificates for payment.
- ◆ Complete materials testing (e.g.: compaction and concrete testing).
- ◆ Provide reference lines and elevations to the Contractor.
- ◆ Coordinate construction survey layout and provide survey control monuments, digital base



and coordinate plan of the site layout, grading, and utility tie in locations and elevations.

- ◆ Provide additional survey throughout construction.
- ◆ Coordinate site visits of key personnel during construction to review general conformity of work with plans and specifications.
- ◆ Prepare site review documents detailing the work inspected, comments, and specific field instructions.

COMMISSIONING

MPE proposes to use our Commissioning Manager to assist the Contractor in coordinating the start-up and commissioning of mechanical and electrical equipment. MPE will work diligently with the Contractor for all aspects of the commissioning, such as developing the commissioning sequence, coordination with suppliers and sub-contractors, etc. We have had significant success with MPE carrying out this role, which is due in part to the synergies with our in-house PLC and SCADA programming services.

Upon completion of the construction, the process of commissioning of equipment will commence. This will involve the following activities:

Pre-Commissioning

MPE will coordinate and facilitate a meeting with all relevant stakeholders prior to commissioning. Pre-Commissioning tasks will consist of the following:

- ◆ Establishment of a commissioning team led by MPE Commissioning Manager, Contractor staff, and Operations staff.
- ◆ Coordinate and facilitate a Commissioning Start-up Meeting or work shop for the commission phase of the project. At this meeting, the Preliminary Commissioning Plan will be reviewed. The Preliminary Commissioning Plan will contain the following:
 - A detailed task by task schedule outlining dates and times for all components of commissioning including equipment start-up, performance testing, manufacturer's representative inspections, system automatic operation, and Operator training.
 - Review impacts during the commissioning period on Operational Staff including scheduling, valve operation requirements and impacts on system operation due to flow variations from performance testing.

Commissioning

MPE will assist in Commissioning of the WWTP, as follows:

- ◆ Equipment must satisfy three (3) sets of tests prior to commissioning commencement, including running, performance, and operational tests.
- ◆ PLC program will be reviewed and detailed in a memorandum for the MD's review and approval prior to completing the final operational tests.
- ◆ When an item of equipment has passed these tests, controls are checked to determine their functionality, followed by a system operational test. In this test, the various components comprising the system are operated together to simulate actual conditions.
- ◆ Commissioning is deemed successful, from a contractual viewpoint, when the system has operated for a stipulated period generally ranging from 7 days to 30 days, depending upon complexity.
- ◆ MPE's Commissioning Manager will work closely with the MD, the Contractor, and other consultants and contractors involved in other concurrent contracts to fully commission the overall system.

Quality Assurance - Materials Testing

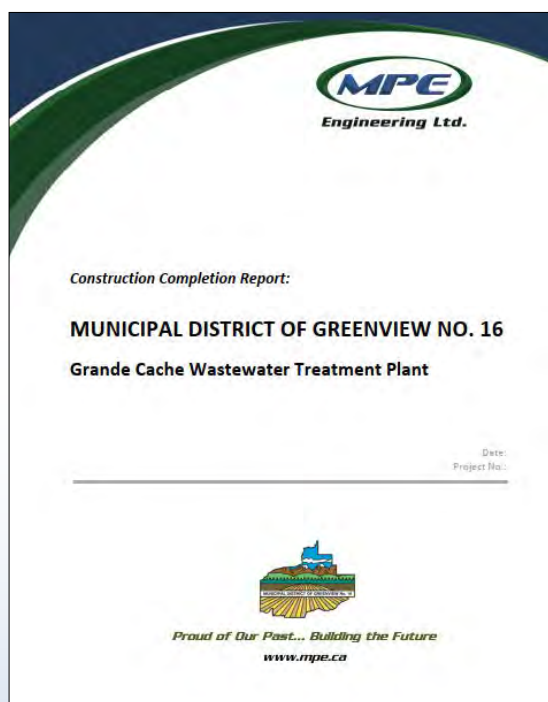
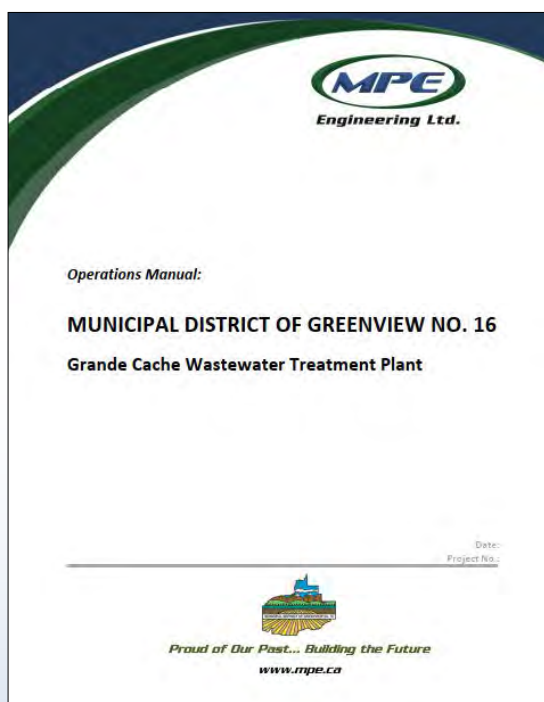
MPE will complete Quality Assurance (QA) testing for compaction testing required for the construction of the WWTP Upgrade. Concrete testing will be performed by MPE. All testing results will be documented and submitted to the MD in the project close out document for their records. The engineer fee estimate does not include costs for Materials Testing. Should MPE be selected as the successful Consultant for the project, costs for Materials Testing Quality Assurance can be submitted if the MD would like MPE to complete this function.



TASK VI: POST CONSTRUCTION ACTIVITIES

MPE will provide the following services during the Post Construction Phase of the project:

- ◆ Review final payment and holdbacks.
- ◆ Prepare Project Completion Certificates.
- ◆ Provide record (as-built) drawings of the construction to the MD in both AutoCAD and PDF format.
- ◆ A comprehensive Operations and Maintenance Manual for the WWTP Upgrade, laid out in a logical format will be provided in draft form two weeks prior to commissioning. Upon approval, MPE will submit five (5) final copies one week prior to commissioning.
- ◆ Comprehensive training program for the operation of all equipment to ensure Operators are fully familiar with new pump system control and will be organized and provided by the consultant in coordination and assistance of the General Contractor and his suppliers.
- ◆ MPE has a filing system on their server to track all Project correspondence, minutes, reports, vendor drawings, engineering drawings, material receiving reports, etc. All of these components will be included in the closeout document at the completion of the project. Also included in the document will be:
 - ◊ List of all Contractors involved and their role on the project.
 - ◊ List of all Suppliers used and detail their scope of supply.
 - ◊ Final summary of project costs, inclusive of Contract amounts, contemplated change notices, change orders, Owner supplied equipment costs, engineering costs, utility costs, certificates of payment, etc.
 - ◊ Final summary of major challenges faced throughout the project and detail of lessons learned for future projects
 - ◊ All required asset management data in approved spreadsheet format.
 - ◊ Photos.
 - ◊ Inspection Reports .
- ◆ Provide periodic site visits and operations assistance during the first year of operation.
- ◆ Provide services during the warranty period and undertake Year-End warranty inspection.



3.1 COMPANY PROFILE

MPE has proposed a very strong team to implement the Grande Cache WWTP project.

MPE Engineering Ltd. (MPE) is a medium-sized engineering consulting firm providing professional engineering services to varied clients in Alberta, Saskatchewan and British Columbia with a focus on urban and rural municipal clients. MPE was formed in Lethbridge, Alberta in 1983 and has offices located in Lethbridge, Edmonton, Calgary, Medicine Hat, Red Deer, Saskatoon and Regina. MPE has an overall staff complement of over 200 employees providing engineering services in the municipal, water resources, irrigation, structural, electrical, mechanical and computing fields. Our size allows for **personal attention** on all projects **from senior members** of the company. Our satisfied clients are proof of our success and our growth reflects our service.

TABLE 3.1: CORPORATE OVERVIEW

| Firm | Experience | Project Responsibilities |
|---|--|--|
|  | <ul style="list-style-type: none"> ♦ Extensive experience wastewater treatment process design ♦ Extensive experience in water resource engineering ♦ Extensive experience in lift station design ♦ Extensive experience on controls and instrumentation, all programming is completed in-house allowing for efficient start-up and commissioning services. ♦ Extensive construction management and construction inspective experience | <ul style="list-style-type: none"> ♦ Prime Consultant ♦ Project Management ♦ Project Coordination ♦ Data Collection ♦ Conceptual Options Review ♦ Detailed Design ♦ Process ♦ Process Mechanical ♦ Civil ♦ Mechanical (HVAC) ♦ Electrical ♦ Controls & Instrumentation ♦ Tender Documents ♦ Cost Estimating ♦ Reporting ♦ Contract Administration ♦ Construction Inspection ♦ Commissioning Management ♦ Record Documentation |

MPE has proven capabilities in all aspects of civil/municipal projects from the preparation of engineering studies to assessments, cost estimating, design, tendering, project management, contract administration, construction inspection, commissioning, controls system setup and programming, and record drawing preparation.

3.1.1 INSURANCE

Relative to insurance MPE has the following coverage. If additional coverage is required, it can be obtained through our provider at an additional fee:

Comprehensive General Liability Insurance – covering operations in connection with this Agreement (other than the operation of automobiles), including employer's liability, Engineer's contingent, liability with respect to the operations of subcontractors/sub consultants, and contractual liability as respects liability assumed by Engineer under this Agreement. The limits of such insurance shall be not less than: Bodily Injury and Property Damage – Five Million Dollars (\$5,000,000) for any one accident, or equivalent limits.

Automobile Liability Insurance – covering all vehicles used in connection with this Agreement. In respect of such vehicles not owned by Engineer, it shall maintain and keep in force non-owned automobile liability insurance protecting its liability, including that assumed under this Agreement. The limits of insurance under this provision shall not be less than: Bodily Injury (including passenger hazard) and Property Damage – Two Million Dollars (\$2,000,000) for any one accident, or equivalent limits.

Professional Errors and Omission Liability Insurance – in the amount of Five Million Dollars (\$5,000,000) per occurrence to an aggregate total of Five Million Dollars (\$5,000,000).

3.1.2 HEALTH AND SAFETY

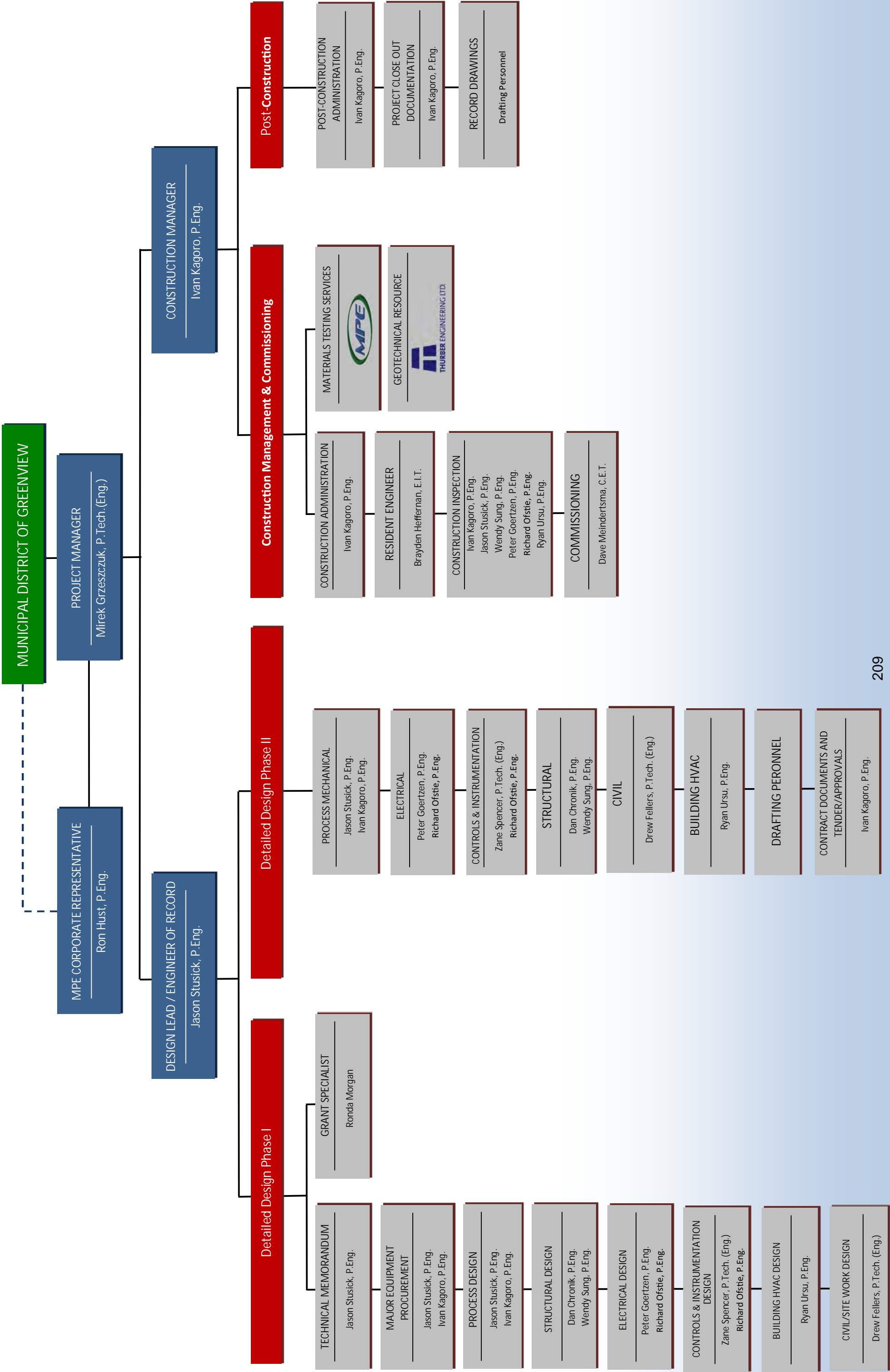
MPE places a high priority on health and safety. MPE has developed a health and safety framework to ensure health and safety policies are implemented by defining responsibilities, orienting and training all employees on safe work procedures and practices, conducting hazard assessments, and reporting and reviewing health and safety matters based on the context of the MPE policy. MPE places a priority on ensuring that all employees are adequately trained to fulfil the duties of their respective roles, with an emphasis on both personal safety and also the safety of those around them. MPE is COR certified with the ACSA.

3.2 PROJECT TEAM

MPE as a company has **extensive experience in the design and construction of wastewater treatment plants**. The Project Team members were selected based on applicable experience relevant to their respective roles. Members of this Project Team are experienced in all facets of these projects. From initial assessment; engineering; detailed design; construction management; and commissioning. This section provides a brief introduction to key members of the Project Team, as outlined in Figure 3.1. Additional detail for each of the key team members is provided in resumes included in Appendix B.



FIGURE 3.1: ORGANIZATIONAL CHART



3.2.1 PROJECT TEAM DETAILS

MPE CORPORATE REPRESENTATIVE - RON HUST, P.ENG.

As the Corporate Representative, Mr. Hust can be contacted at any time should the MD have any concerns with the performance of the Project Team. With 38 years experience, Ron has served as Project Manager on numerous water resource projects, including feasibility studies, design, tendering, and construction management, and inspection and supervision.



PROJECT MANAGER - MIREK GRZESZCZUK, P.TECH. (ENG.)



As the Project Manager, Mirek can be contacted at any time should the MD have any concerns with the performance of the Project Team. Mr. Grzeszczuk is the Edmonton Region Manager with 18 years of experience in municipal and civil engineering. His project experience includes conceptual and feasibility studies, pilot studies, detailed design and implementation of potable water supplies, water storage and distribution systems, water treatment facilities, wastewater treatment facilities, lift stations and infrastructure projects. As the Edmonton Region Manager, Mirek has the authority to act on behalf of MPE in support of this project and will have overall responsibility for the successful completion of the project to the satisfaction of the MD by ensuring good communication, high quality work, and that the project stays on schedule and on budget.

Relevant Experience: Mr. Grzeszczuk has been involved in numerous multi-discipline projects, including the following with particular relevance:

- ◆ Project Manager: Town of St. Paul WWTP Upgrade
- ◆ Project Manager: Big Lakes County Jossard Wastewater Collection & Treatment System Upgrading
- ◆ Corporate Representative: MD of Opportunity No. 17 Sandy Lake Sewage Lagoon & Servicing
- ◆ Project Manager: Town of Fox Creek Lift Station and Forcemain Upgrading
- ◆ Project Manager: Town of Elk Point Lift Station Assessment
- ◆ Project Manager: Town of High Prairie Lift Station 4 & 7 Upgrading
- ◆ Project Manager: Town of Whitecourt Athabasca Flats Lift Station

DESIGN MANAGER - JASON STUSICK, P.ENG.

Mr. Stusick joined MPE in 2001 and is currently the Corporate Water & Wastewater Treatment Sector Director, meaning Jason has oversight over major MPE Water/Wastewater projects. Jason brings more than 18 years of design experience, having been involved in nearly all major wastewater and water related projects for the company during his tenure. Jason will lend his vast experience in complex process design to oversee the design team and to provide general direction and leadership over the wastewater process design. Jason has undertaken the lead design role for mechanical wastewater systems for the Town of Vermilion, Town of St. Paul, Town of Fort Macleod, and other municipalities as well as for process upgrades at the City of Medicine Hat WWTP.



Relevant Experience: Mr. Stusick has fulfilled the role of Project Manager and Lead Designer on numerous, large-scale, multi-discipline projects. Primarily, he is involved with water and wastewater treatment projects, including the following:

Wastewater Treatment Experience

- ◆ Project Manager: Town of Rocky Mountain House WWTP Feasibility Study and Technology Review
- ◆ Project Manager: Town of Vermilion Wastewater Treatment Facility (MBR)
- ◆ Process Design: Town of St. Paul WWTP Upgrade (Extended Aeration)
- ◆ Project Manager: Town of Fort McLeod Wastewater Treatment Plant (SBR)
- ◆ Project Manager: Lac La Biche County, Water Treatment Plant Upgrade
- ◆ Project Manager: City of Medicine Hat CEPT System
- ◆ Senior Technical Resource: Town of Taber Industrial Aerated Lagoon Upgrade
- ◆ Project Manager: City of Saskatoon Lift Station Assessments 2017
- ◆ Project Manager: City of Winnipeg Lift Station Condition Assessment Phase II
- ◆ Process Design: Stoney Tribal Administration Morley Wastewater Treatment Plant
- ◆ Project Manager: Natural Northern Meats Beef Processing Plant Wastewater Treatment



System Upgrade

- ◆ Project Manager: SaskPower Boundary Dam Power Station Domestic Wastewater Treatment System Upgrade
- ◆ Project Manager: Town of Preeceville WWTF

PROJECT ENGINEER - IVAN KAGORO, P.ENG.

Mr. Kagoro has over 10 years of work experience in the consulting engineering field, specializing in mechanical, environmental, and process engineering. He has been involved in numerous municipal water and wastewater collection, pumping, and treatment projects. Under the guidance of Mr. Stusick, Ivan will complete the bulk of the design and will liaise with the appropriate regulatory agencies relative to the requirements for review and permitting of the proposed Wastewater Treatment Facility upgrades. Mr. Kagoro will also be charged with the detailed design pertaining to the plant hydraulics and process treatment systems which will also involve being the liaison between the project team and prospective treatment system suppliers. During construction, Ivan will be the Lead Construction Manager for MPE and will ensure the design engineer on record for critical parts of work are available for site inspections, answering questions, and reviewing documentation when needed.



Relevant Experience: Ivan has fulfilled the role of Project Engineer on many relevant projects, such as:

- ◆ Project Engineer: Town of Rocky Mountain House Feasibility Study and Technology Review
- ◆ Project Engineer: Town of Vermilion Wastewater Treatment Facility
- ◆ Project Engineer: Town of St. Paul WWTP Upgrade
- ◆ Project Engineer: Lac La Biche County Water Treatment Plant Upgrades
- ◆ Project Engineer: City of Cold Lake Lift Station #4 Upgrades
- ◆ Project Engineer: Town of High Prairie Lift Station #2, #4 and #7 Upgrades
- ◆ Design Engineer: County of Smokey River Hamlet of Blackfoot Wastewater Treatment Facility Upgrades



SENIOR ARCHITECTURAL / STRUCTURAL DESIGN - DAN CHRONIK, P.ENG.

Dan is a Senior Structural Engineer with MPE and will serve as the architectural and structural lead for the building and concrete tankage. Mr. Chronik offers over 35 years of experience in the construction and the consulting engineering business. He has extensive experience in assessment, design, construction, and contract administration of concrete structures and buildings. Dan will review all architectural and structural design aspects of this project and assist in developing design criteria.

Relevant Experience: Similar Projects that Dan has worked on include:

- ◆ Structural Engineer: Town of Fort MacLeod Wastewater Treatment Plant
- ◆ Structural Engineer: Town of Redcliff Microfiltration WTP
- ◆ Structural Engineer: NRSC (City of Brooks) Microfiltration WTP
- ◆ Structural Engineer: City of Airdrie Windsong Reservoir & Pump Station
- ◆ Senior Structural Review: Town of Vermilion WWTF
- ◆ Senior Structural Review: Town of St. Paul WWTP
- ◆ Structural Engineer: Rocky View County East Balzac Reservoir

ARCHITECTURAL / STRUCTURAL DESIGN - WENDY SUNG, P.ENG.

Ms. Sung has more than 10 years of experience in the design and construction of engineering works in the field of structural, building and municipal engineering and will work under the guidance of the Senior Structural Engineer on the detailed design of the structural components of the WWTP. Ms. Sung will complete the structural design requirements of this project.

Relevant Experience: Similar Projects that Wendy has worked on include:

- ◆ Structural Engineer: Lac La Biche County Water Treatment Plant Upgrades
- ◆ Structural Engineer: Town of Fox Creek Water Treatment Facilities Upgrade
- ◆ Structural Engineer: Town of Vermilion Wastewater Treatment Facility
- ◆ Structural Engineer: Town of St. Paul Water Treatment Plant Upgrade
- ◆ Structural Engineer: Town of St. Paul WWTP Upgrades
- ◆ Structural Engineer: Stoney Tribal Administration Morley WWTP

**CIVIL DESIGN - DREW FELLERS, P.TECH. (ENG.)**

Drew is a senior Technologist with 10 years of engineering experience. Over the years Drew has worked on numerous water and wastewater projects. Drew will oversee the civil design aspects of this project, including the site design and the integration of new buildings and/or building expansions, parking and driveway areas, as required. Drew will also complete the design of any underground infrastructure required for the project.

Relevant Experience: Some of Drew's similar project experience includes:

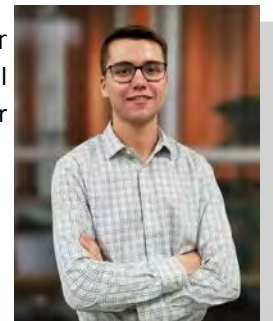
- ◆ Civil Design: Town of Barrhead Water Treatment Plant Upgrades
- ◆ Civil Design: Town of Barrhead Main Lift Station
- ◆ Civil Design: MD of Opportunity Trout Lake WTP
- ◆ Civil Design: MD of Opportunity Peerless Lake WTP
- ◆ Civil Design: 2008 Street Improvements, Town of Barrhead

**RESIDENT ENGINEER - BRAYDEN HEFFERNAN, E.I.T.**

Mr. Heffernan is a Civil Engineer-in-Training with Resident Engineer experience on water and wastewater treatment construction projects. Brayden will review work of the Contractor on a full time basis and will be responsible for coordination of project correspondences, site reviews, shop drawings, and other similar construction administrative duties.

Relevant Experience: Brayden's similar project experience includes:

- ◆ Resident Engineer: Town of Vermilion Wastewater Treatment Facility
- ◆ Resident Engineer: Town of St. Paul Wastewater Treatment Plant Upgrade
- ◆ Resident Engineer: North American Construction (1983) Ltd. Saskwater Melfort WTP Upgrade

**MECHANICAL (HVAC) DESIGN - RYAN URSU, P.ENG.**

Ryan has 10 years of experience with MPE, specializing in the design of mechanical HVAC systems for various industrial, commercial and institutional facilities, including water and wastewater treatment facilities. Ryan will complete the mechanical HVAC design aspects of this project.

Relevant Experience: Ryan has worked on many similar projects including:

- ◆ Mechanical (HVAC) Engineer: Town of Vermilion Wastewater Treatment Facility
- ◆ Mechanical (HVAC) Engineer: Town of St. Paul Wastewater Treatment Plant Upgrade
- ◆ Mechanical (HVAC) Engineer: City of Saskatoon Lift Station Condition Assessments 2017
- ◆ Mechanical (HVAC) Engineer: City of Winnipeg Lift Station Condition Assessment Phase II
- ◆ Mechanical (HVAC) Engineer: City of Saskatoon WTP HVAC Upgrades
- ◆ Mechanical (HVAC) Engineer: City of Brooks Eastbrook Lift Station Upgrade Design
- ◆ Mechanical (HVAC) Engineer: City of Regina North Pump Station Pump 5 Replacement
- ◆ Mechanical (HVAC) Engineer: Lac La Biche County Water Treatment Plant Upgrades

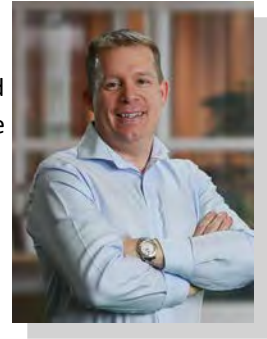


ELECTRICAL DESIGN - PETER GOERTZEN, P.ENG.

Peter has nearly 15 years of experience with MPE, completing electrical designs for numerous water and wastewater treatment facilities, pump stations, reservoirs and related infrastructure. Peter will complete the required electrical design for this project.

Relevant Experience: Similar Projects that Mr. Goertzen has worked on include:

- ◆ Electrical Engineer: Town of Vermilion Wastewater Treatment Facility
- ◆ Electrical Engineer: Town of St Paul Wastewater Treatment Plant Upgrade
- ◆ Electrical Engineer: City of Saskatoon Lift Station Condition Assessments 2017
- ◆ Electrical Engineer: City of Winnipeg Lift Station Assessment Phase II
- ◆ Electrical Engineer: Town of Fort MacLeod Wastewater Treatment Plant
- ◆ Electrical Engineer: City of Medicine Hat CEPT
- ◆ Electrical Engineer: Town of Taber Industrial Aerated Lagoon Upgrade
- ◆ Electrical Engineer: City of Regina North Pump Station Pump 5 Replacement

**ELECTRICAL & CONTROLS ENGINEER - RICHARD OFSTIE, P.ENG.**

Richard joined MPE in 2014 and since then has worked on a variety of municipal water and wastewater projects. Richard has experience in several different areas of practice, including water treatment and distribution, wastewater lift station and treatment facilities, and other industrial facilities. Mr. Ofstie will work with Mr. Goertzen and Mr. Spencer to complete the electrical and controls portions of the project.

Relevant Experience: A few projects that Mr. Ofstie has worked on of particular relevance include:

- ◆ Electrical Engineer: Town of Vermilion Wastewater Treatment Facility
- ◆ Electrical Engineer: Town of St. Paul Wastewater Treatment Facility
- ◆ Electrical & Controls Engineer: City of Winnipeg Lift Station Condition Assessment Phase II
- ◆ Electrical & Controls Engineer: City of Saskatoon Lift Station Condition Assessments 2017
- ◆ Electrical & Controls Engineer: Town of Rocky Mountain House Feasibility Study
- ◆ Electrical Engineer: City of Regina North Pumping Station—Pump 5 Replacement

**CONTROLS AND INSTRUMENTATION DESIGN ZANE SPENCER, P.TECH. (ENG.)**

Zane will provide all controls and instrumentation design, programming and SCADA integration design for this project. Zane is an industry specialist having completed SCADA system design and implementation projects for numerous clients throughout western Canada.

Relevant Experience: Projects that Zane has worked on that have a similar scope of work include:

- ◆ Controls & Instrumentation: Town of Fort MacLeod Wastewater Treatment Plant
- ◆ Controls & Instrumentation: City of Saskatoon Lift Station Condition Assessments 2017
- ◆ Controls & Instrumentation: City of Winnipeg Lift Station Assessment Phase II
- ◆ Controls & Instrumentation: City of Medicine Hat CEPT System
- ◆ Controls & Instrumentation: City of Medicine Hat UV Disinfection System
- ◆ Controls & Instrumentation: City of Medicine Hat WTP Controls Upgrade
- ◆ Controls & Instrumentation: City of Regina North Pumping Station Pump 5 Replacement



COMMISSIONING MANAGER - DAVE MEINDERTSMA, C.E.T.

Dave has more than 10 years of experience in automation design, specification, programming and commissioning. Mr. Meindertsma will oversee commissioning of the Grande Cache Wastewater Treatment system, working closely with the Contractor to ensure the design intent is maintained through proper system start-up and commissioning activities.

Relevant Experience: Some similar projects that Dave has completed include:

- ◆ Commissioning / Programmer: Town of Vermilion Wastewater Treatment Facility
- ◆ Commissioning / Programmer: Town of St. Paul Wastewater Treatment Plant Upgrade
- ◆ Commissioning / Programmer: Town of St. Paul Water Treatment Plant Upgrades
- ◆ Commissioning / Programmer: Fishing Lake Metis Settlement Water and Wastewater Treatment Upgrades
- ◆ Commissioning / Programmer: Town of Fox Creek Water Treatment Plant Upgrades
- ◆ Commissioning / Programmer: Town of Okotoks Water Treatment Plant Upgrades
- ◆ Commissioning / Programmer: Alberta Capital Regional Wastewater Services Commission Parkland Lift Station Upgrades
- ◆ Commissioning / Programmer: PTI (Civeo) Beaver River Wastewater Treatment Plant

**GRANT SPECIALIST - RONDA MORGAN**

Ronda is a Grant Specialist with more than 40 years of extensive experience with grant program design and delivery including policy development, operational planning, system requirements, and drafting of grant program guidelines and application forms. Ronda has exceptional stakeholder relation and interpersonal skills; excellent decision-making and negotiation skills; significant experience collaborating with government stakeholders and community organizations to strengthen program policy; strong research skills including investigation of historic scans and trends, legislation, and policies; superior written and verbal communication skills with a commitment to client service.

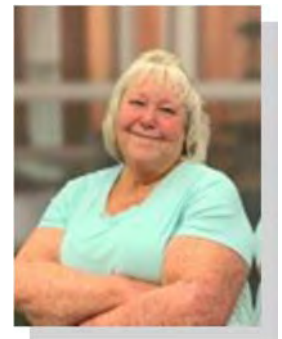


FIGURE 3.2: KEY TEAM MEMBER AVAILABILITY



With over 200 employees, MPE has the capability and the depth to source out alternate staff should a key staff member not be available to the project. MPE will not substitute any staff member from the Project Team Organization without the approval of MD. Each team member flagged is committed to completing this project to the satisfaction of the MD in the most cost effective manner possible, on time and on budget.

3.3 ACHEIVEMENTS OF PROPONENT

MPE has completed detailed design and construction management for numerous wastewater treatment projects. These types of projects make up a large component of our business. This section provides details on some recently completed projects of similar scope to this project proposed for the MD. Contact information has been provided and we encourage the MD to contact our references to gain a broader understanding of our quality of work and client satisfaction.

TABLE 3.2: SIMILAR RECENT WASTEWATER TREATMENT PROJECTS

| Project Name | Client | Treatment Capacity | Hydraulic Capacity | Main Process | Capital Cost | Year |
|-----------------------------------|------------------------------|-------------------------|--------------------|---------------------|--------------|--------------|
| Wastewater Treatment Facility | Town of Vermilion | 4,400 m ³ /d | 200 L/sec | MBR | \$19,500,000 | 2017-Present |
| Wastewater Treatment Facility | Town of St. Paul | 7,800 m ³ /d | 295 L/sec | Extended Aeration | \$16,000,000 | 2018-Present |
| Wastewater Treatment Plant | Town of Fort Macleod | 3,300 m ³ /d | 280 L/sec | SBR | \$9,500,000 | 2009-2013 |
| Wastewater Treatment Plant | Town of Rocky Mountain House | 3,959 m ³ /d | 293 L/sec | SBR (Proposed) | \$27,000,000 | 2018-2019 |
| Wastewater Treatment Plant | Town of Preeceville | 992 m ³ /d | 30L/sec | Aerated Lagoon/SAGR | \$4,500,000 | 2019-Present |
| Industrial Aerated Lagoon Upgrade | Town of Taber | - | - | Aerated Lagoon | \$6,300,000 | 2015-2018 |



TOWN OF ST. PAUL – WASTEWATER TREATMENT PLANT UPGRADE

| | | | |
|---------------|------------------|------------------|-----------------------------|
| Owner: | Town of St. Paul | Contact: | Bert Pruneau (780) 645-2210 |
| Start Date: | March 2018 | Completion Date: | Ongoing |
| Project Cost: | \$16,000,000 | MPE's Role: | Prime Consultant |

Description:

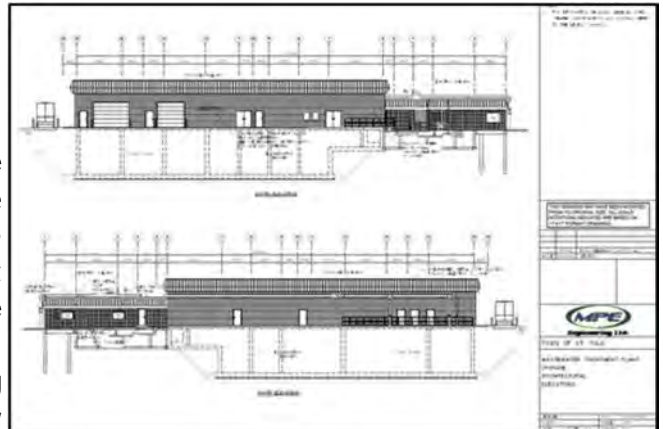
The St. Paul Pollution Control Center upgrade project is an expansion to an existing facility. The 7,800 m³/day treatment facility upgrade project consists of new headworks, including grit removal, phosphorus reduction by chemical precipitation, existing bioreactor & secondary clarifiers upgrades, tertiary filtration, UV disinfection, and sludge management. The influent and post equalization pumping systems consist of a triplex submersible and dry pit pump configuration with a firm capacity of 295 L/sec. The project is currently in construction.

Relevance:

In order to meet project deadlines of the CWWF grant, long lead process equipment was pre-selected and pre-purchased by the Owner. A total of six (6) process equipment supply RFP were issued and contracts awarded. The equipment was then novated to the successful General Contractor. General Contractors were pre-qualified through an RFQ process. A DBM was prepared.

Budget/Schedule Control and Management:

All decisions made during the course of design was documented in the Design Basis Memorandum. This document was utilized to update the regulatory agency on the design criteria and assumptions as well as the funding agency on how the design was progressing and latest project costs. At the onset of the project MPE developed a project schedule utilizing Microsoft Project Manager to control schedule and budget. Monthly cash flow reports are prepared that compiles engineering fees, sub consultants, general contract, and equipment supply contracts.



Key MPE Staff:

| | | | |
|------------------------|----------------------------------|----------------------|---------------------------|
| Project Manager: | Mirek Grzeszczuk, P.Tech. (Eng.) | Electrical Engineer: | Peter Goertzen, P.Eng. |
| Project Engineer: | Ivan Kagoro, P.Eng. | Electrical Engineer: | Richard Ofstie, P.Eng. |
| Process Engineer: | Jason Stusick, P.Eng. | Structural Engineer: | Wendy Sung, P.Eng. |
| Hydraulic Engineer: | Christopher Nameth, P.Eng. | Controls: | Dave Meindersma, C.E.T. |
| Mechanical Engineer: | Ryan Ursu, P.Eng. | Resident Engineer: | Brayden Heffernan, E.I.T. |
| Geotechnical Engineer: | Chris McRae, P.Eng. | Surveys/Civil 3D: | Chris Bec, A.Sc.T. |

TOWN OF VERMILION – WASTEWATER TREATMENT FACILITY

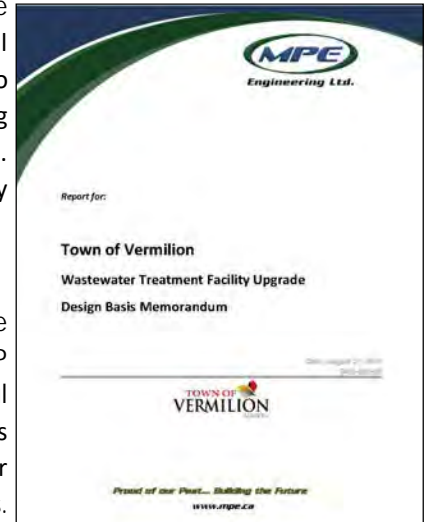
| | | | |
|---------------|-------------------|------------------|----------------------------|
| Owner: | Town of Vermilion | Contact: | Derek Young (780) 853-5358 |
| Start Date: | October 2017 | Completion Date: | Ongoing |
| Project Cost: | \$18,600,000 | MPE's Role: | Prime Consultant |

Description:

The Vermilion WWTF is a greenfield 4,400 m³/day MBR Wastewater Treatment Facility. The project consists of two stage screening, grit removal, phosphorus reduction by chemical precipitation, bioreactors, membranes, UV disinfection, and sludge management. Two stages of pumping are required at the facility. The influent and equalization pumping systems consist of a triplex dry pit pump configuration with a firm capacity of 200 L/sec. MPE completed the geotechnical site investigation for this project. The project is currently in construction.

Relevance:

In order to meet project deadlines of the CWWF grant, long lead process equipment was pre-selected and pre-purchased by the Owner. A total of six (6) process equipment supply RFP were issued and contracts awarded. The equipment was then novated to the successful General Contractor. MPE developed RFPs for process equipment, coordinated all submittals for information required for detailed design and prepared novation specification in for Contract specifications. General Contractors were pre-qualified through an RFQ process. This was to ensure only Contractors capable of undertaking the work could bid on it.

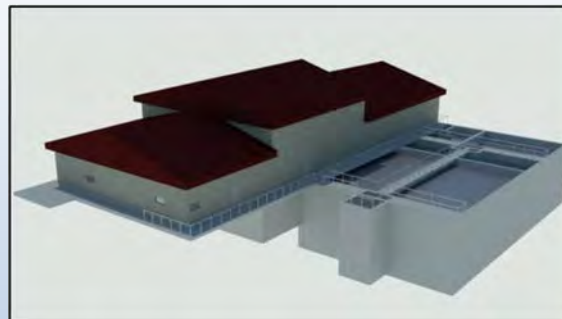
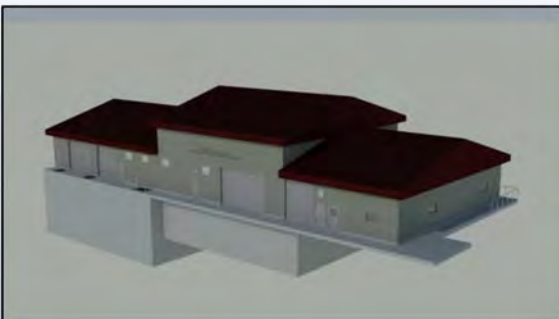


Budget/Schedule Control and Management:

All decisions made during the course of design was documented in the Design Basis Memorandum. This document was utilized to update the regulatory agency on the design criteria and assumptions as well as the funding agency on how the design was progressing and latest project costs. At the onset of the project MPE developed a project schedule utilizing Microsoft Project Manager to control schedule and budget. Monthly cash flow reports are prepared that compiles engineering fees, sub consultants, general contract, and equipment supply contracts.

Key MPE Staff:

| | | | |
|---------------------|----------------------------|---------------------------|---------------------------|
| Project Manager: | Jason Stusick, P.Eng. | Process Engineer: | Jason Stusick, P.Eng. |
| Project Engineer: | Ivan Kagoro, P.Eng. | Electrical Engineer: | Richard Ofstie, P.Eng. |
| Hydraulic Engineer: | Peter Stevens, P.Eng. | Structural Engineer: | Wendy Sung, P.Eng. |
| Hydraulic Engineer: | Christopher Nameth, P.Eng. | Mechanical/HVAC Engineer: | Ryan Ursu, P.Eng. |
| Controls: | Dave Meindertsma, C.E.T. | Electrical Engineer: | Peter Goertzen, P.Eng. |
| Surveys/Civil 3D: | Chris Bec, A.Sc.T. | Resident Engineer: | Brayden Heffernan, E.I.T. |



TOWN OF ROCKY MOUNTAIN HOUSE—FEASIBILITY STUDY

| | | | |
|---------------|------------------------------|-------------------------|-----------------------------|
| Owner: | Town of Rocky Mountain House | Contact: | Rob Shanks, (403) 548--9260 |
| Start Date: | November 2018 | Completion Date: | December 2018 |
| Project Cost: | \$35,000.00 | MPE's Role: | Prime Consultant |

Description:

A preliminary engineering study was prepared for the Town of Rocky Mountain House WWTF Upgrade. Work included an assessment of the existing aerated Lagoon System, a review of six (6) upgrade options including an upgrade and an expansion to the existing facility, and life cycle cost estimating. The Study reviewed and recommended installation of primary treatment including screens and grit removal. Tertiary treatment has also been recommended which consists of phosphorous removal disk filtration, and UV disinfection. The report recommended the end of pipe limits for the new facility, which were then adopted by AEP.

Relevance:

MPE completed instream flow analyses and completed mass balance calculations at the mixing zone. For primary, secondary and tertiary treatment, MPE reviewed several common treatment technologies utilized in western Canada. SBR was recommended as the main process for the Rocky Mountain House WWTF. The existing wastewater treatment system includes a septage receiving station. All flows and loading rates from it were accounted for in the process design and mass balance calculations.

Key Staff:

| | | | |
|-------------------------|------------------------|--|------------------------|
| Project Manager: | Chris George, P.Eng. | Controls & Instrumentation: | Zane Spencer |
| Process/Design Manager: | Jason Stusick, P.Eng. | Structural Design: | Dan Chronik, P.Eng. |
| Process Mechanical: | Zac Kostek, P.Eng. | Mechanical HVAC: | Peter Goertzen, P.Eng. |
| Electrical Design: | Peter Goertzen, P.Eng. | | |



TOWN OF ROCKY MOUNTAIN HOUSE—TECHNOLOGY REVIEW

| | | | |
|---------------|------------------------------|-------------------------|-----------------------------|
| Owner: | Town of Rocky Mountain House | Contact: | Rob Shanks, (403) 548--9260 |
| Start Date: | November 2018 | Completion Date: | December 2018 |
| Project Cost: | \$35,000.00 | MPE's Role: | Prime Consultant |

Description:

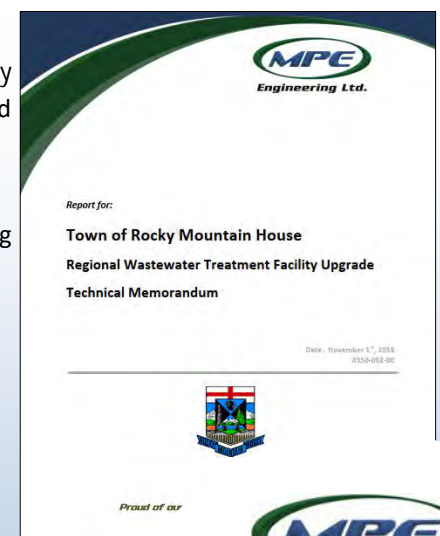
A Technical Memorandum was prepared for the regional wastewater treatment facility (RWWTf). MPE provide recommendations for upgrades that will meet the capacity and treated effluent requirements over the next 25 year design horizon.

Relevance:

The Technical Memorandum involved the review of system upgrade alternatives, including extended aeration.

Key Staff:

| | |
|-------------------|-----------------------|
| Project Manager: | Jason Stusick, P.Eng. |
| Project Engineer: | Ivan Kagaro, P.Eng. |



CITY OF MOOSE JAW—BLOWER UPGRADE

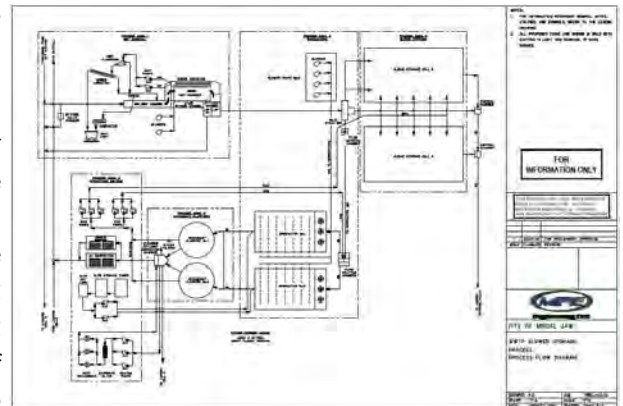
| | | | |
|---------------|-------------------|------------------|-----------------------------|
| Owner: | City of Moose Jaw | Contact: | Mark Carigal (306) 694-4557 |
| Start Date: | January 2020 | Completion Date: | March 2021 |
| Project Cost: | \$2,500,000 | MPE's Role: | Prime Consultant |

Description:

Project involved the design of a new blower system at the Wastewater Treatment Plant (WWTP). The project included a review of current and historical data, the development and assessment of design concept alternatives, and a design concept recommendation. MPE investigated three alternative blower configurations to identify the most cost effective and efficient design. These blower configurations included a Sulzer ABS Turbo Blower (two duty, one standby), Aerzen Delta Hybrid Blower (four duty, one standby), and Aerzen Turbo Blower (two duty, one standby). MPE prepared a Design Basis Memorandum reviewing each configuration. Considering that the Aerzen Turbo Blower alternative has the lowest 20-year lifecycle, does not require additional installation modifications, has considerably lower electrical costs than PD replacement blowers and the new blowers can be constructed and commissioned without interfering with the operation of the existing blowers, MPE recommended that the City replace their existing blowers with Aerzen Turbo Blowers.

**Relevance:**

The City of Moose Jaw's existing blower equipment at their wastewater treatment facility was nearing the end of its remaining service life. Additionally, the City wanted to replace their existing positive displacement blowers with more energy efficient Turbo Blowers to realize substantial electrical consumption cost savings. The replacement blowers included an RFP for major equipment supply. The equipment supply contracts will be novated to the General Contractor at the time of tendering for the installation contract. In addition to replacing the existing blowers, this project included a complete upgrade of the blower system electrical and controls systems.

**Budget/Schedule Control and Management:**

This project was delivered with a supply contract for the blower equipment and then the traditional design—bid – build method was utilized for the installation contract. MPE utilized Microsoft Project to layout schedule as well as critical milestones.

Key Staff:

| | | | |
|-----------------------|----------------------------|--|------------------------|
| Project Manager: | Kim Schurtz, P.Tech.(Eng.) | Controls & Instrumentation: | Richard Ofstie, P.Eng. |
| Sr. Technical Advisor | Jason Stusick, P.Eng. | Electrical Design: | Richard Ofstie, P.Eng. |
| Process Design: | Kim Schurtz, P.Tech.(Eng.) | Mechanical HVAC: | Ryan Ursu, P.Eng. |

TOWN OF FORT MACLEOD—WASTEWATER TREATMENT PLANT

| | | | |
|---------------|----------------------|-------------------------|----------------------------|
| Owner: | Town of Fort MacLeod | Contact: | Dan Segboer (403) 331-9319 |
| Start Date: | May 2009 | Completion Date: | June 2013 |
| Project Cost: | \$9,500,000 | MPE's Role: | Prime Consultant |

Description:

Completed in 2012, the Town of Fort McLeod Waste Water Treatment Facility consists of a 3,300 m³/day capacity Sequencing Batch Reactor (SBR) plant consisting of primary screening, vortex grit removal system, in-line disc filtration, UV disinfection, aerobic sludge digestion and centrifuge sludge dewatering. The plant also includes an alum feed system for phosphorus removal and a polymer feed system for sludge dewatering.

Relevance:

The Town of Fort Macleod previous wastewater treatment facility was a rotating biological contactor (RBC) mechanical plant that was at the end of its remaining service life. During preliminary engineering, SBR was selected as the primary treatment process. This project included several RFP's for major equipment supply. Equipment supply contracts were novated to the General Contractor at the time of tendering. This project was a greenfield project and included underground site work, rehabilitation to the existing outfall, site access, parking, and electrical service. MPE completed all phases of engineering for this project.

Delivery Method:

This project was delivered in the traditional design—bid – build method.

Key Staff:

| | | | |
|-------------------------|------------------------|--|------------------------|
| Project Manager: | Gordon Ayers, P.Eng. | Controls & Instrumentation: | Zane Spencer |
| Process/Design Manager: | Jason Stusick, P.Eng. | Structural Design: | Dan Chronik, P.Eng. |
| Process Mechanical: | Zac Kostek, P.Eng. | Mechanical HVAC: | Peter Goertzen, P.Eng. |
| Electrical Design: | Peter Goertzen, P.Eng. | | |



TOWN OF TABER—INDUSTRIAL AERATED LAGOON UPGRADE

| | | | |
|---------------|---------------|------------------|------------------------------|
| Owner: | Town of Taber | Contact: | Gary Scherer, (403) 223-6017 |
| Start Date: | April 2015 | Completion Date: | April 2018 |
| Project Cost: | \$5,670,000 | MPE's Role: | Prime Consultant |

Description:

A complete upgrade of the Town's Industrial Lagoon Treatment System, including blower replacement, air supply piping, aeration equipment - headers, laterals, aerators, diversion structure, and effluent irrigation pumping system. New back-up power generation and a new electrical service are also significant components of this project.

Relevance:

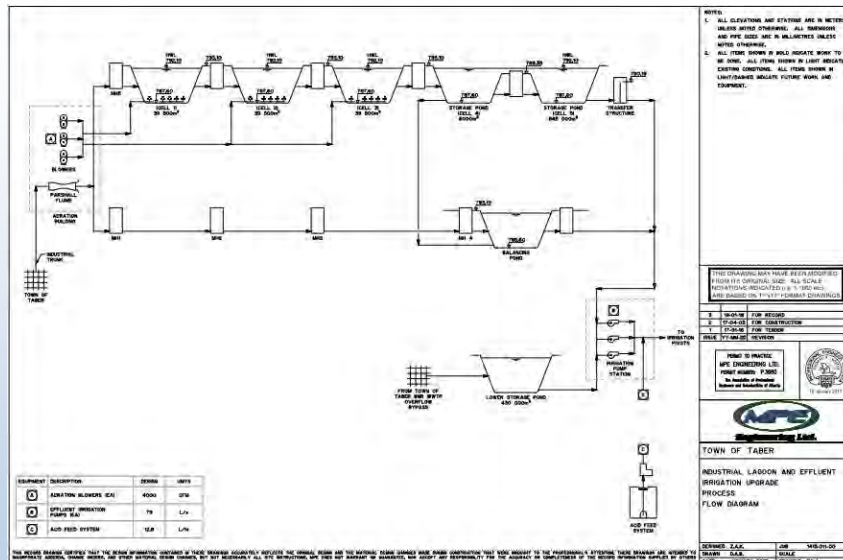
The blower system in this project utilized ABS turbocompressors for the aeration system. Turbocompressors are more efficient than positive displacement and centrifugal blowers. When coupled with VFD's, significant power savings are realized as only as much air that is required for the biological process is added. A site tour of an existing installation at the City of Lloydminster WWTP was organized and attended by Gary, Andrew, and Jason.

Budget/Schedule Control and Management:

All decisions made during the course of design was documented in the Design Basis Memorandum. This document was utilized to update the regulatory agency on the design criteria and assumptions as well as the funding agency on how the design was progressing and latest project costs. At the onset of the project MPE developed a project schedule utilizing Microsoft Project Manager to control schedule and budget. Monthly cash flow reports are prepared that compiles engineering fees, sub consultants, general contract, and equipment supply contracts.

Key Staff:

| | | | |
|----------------------------|---------------------------|-------------------|--------------------|
| Project Manager: | Andrew Kleisinger, P.Eng. | Process Design: | Zac Kostek, P.Eng. |
| Senior Technical Resource: | Jason Stusick, P.Eng. | Project Engineer: | Kyle Lohrenz |
| Electrical Design: | Dave Hofman | | |



CITY OF MEDICINE HAT—CHEMICALLY ENHANCED PRIMARY TREATMENT (CEPT)

| | | | |
|---------------|----------------------|------------------|--------------------------------------|
| Owner: | City of Medicine Hat | Contact: | Jon Michalopoulos, (403) 502-8097 |
| Start Date: | September 2012 | Completion Date: | May 2014 |
| Project Cost: | \$650,000 | MPE's Role: | Prime Consultant |

Description:

Completed in 2013, the implementation of new coagulant (Alum) and polymer feed systems to inject chemical into the primary influent stream. The addition of the coagulant and polymer increase the settling rates, allowing for operation of the primary clarifiers at higher loading rates. TSS removal rates in the primary clarifier were increased by 10 - 15% since the implementation of the CEPT process. Overall WWTP alum consumption has also decreased by an average of 800 L/day.

Relevance:

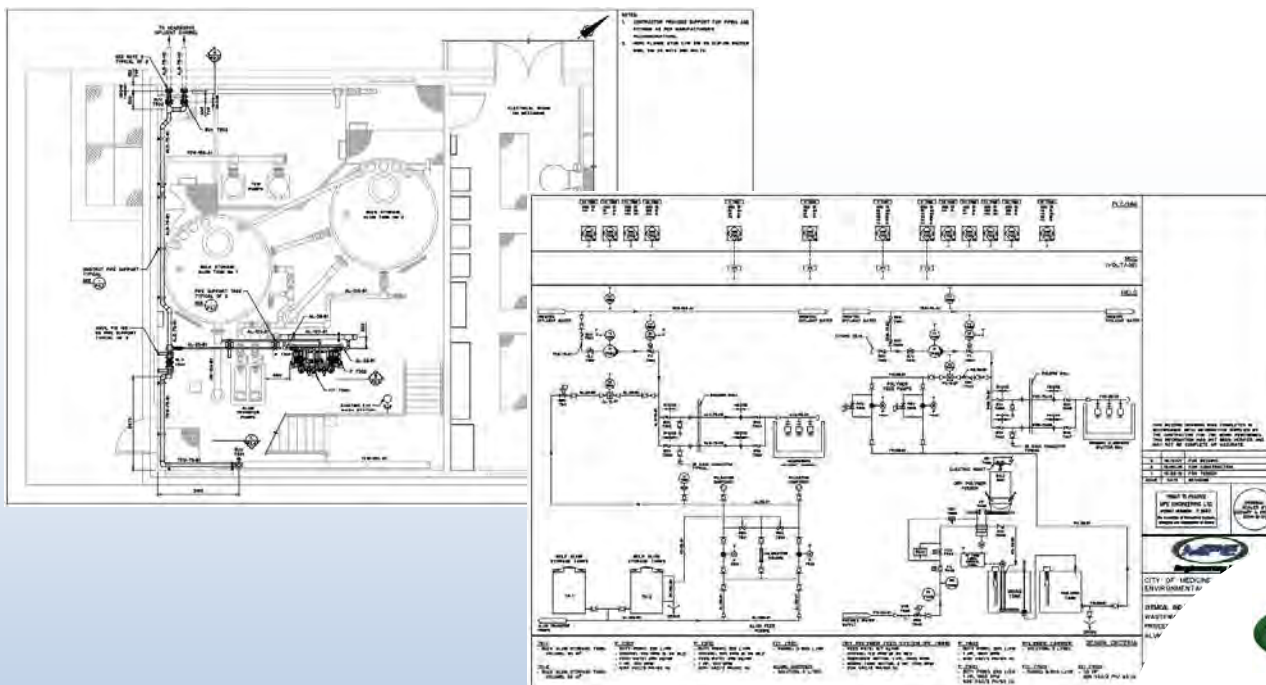
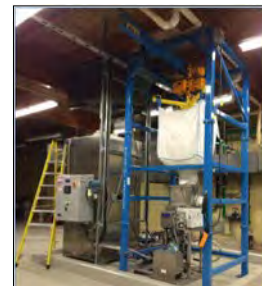
Preliminary engineering was completed to review the effectiveness of the CEPT process. The results of this review, established design criteria, conceptual drawings, and preliminary costs estimates were compiled into a preliminary design report (design basis memorandum). Upon acceptance of the preliminary design report, the City moved forward with detailed design.

Budget/Schedule Control and Management:

All decisions made during the course of design was documented in the Design Basis Memorandum. This document was utilized to update the regulatory agency on the design criteria and assumptions as well as the funding agency on how the design was progressing and latest project costs. At the onset of the project MPE developed a project schedule utilizing Microsoft Project Manager to control schedule and budget. Monthly cash flow reports are prepared that compiles engineering fees, sub consultants, general contract, and equipment supply contracts.

Key Staff:

| | | | |
|------------------|-----------------------|---------------------------|-----------------------------|
| Project Manager: | Jason Stusick, P.Eng. | Electrical Design: | Peter Goertzen, P.Eng. |
| Process Design: | Zac Kostek, P.Eng. | Instrumentation/Controls: | Zane Spencer, P.Tech. (Eng) |



CITY OF SASKATOON – 2017 LIFT STATION CONDITION ASSESSMENTS

| | | | |
|---------------|-------------------|-------------------------|--------------------------------|
| Owner: | City of Saskatoon | Contact: | Kelsea Lindenas (306) 986-0871 |
| Start Date: | July 2017 | Completion Date: | December 2018 |
| Project Cost: | \$395,200.00 | MPE's Role: | Prime Consultant |

Description:

MPE completed a condition assessment of the City of Saskatoon's thirty-one (31) sewage and storm lift stations. The assessments reviewed the hydraulic capacity, pumping, site, building envelope, HVAC mechanical, structural, electrical, controls and ventilation elements for each lift station and associated forcemain. The assessment provided the City with a detailed report of the condition of each asset within each individual lift station. Improvements to each lift station and cost estimates were provided. An executive summary compiled the findings of the project and put forth a list of projects prioritized, by action, component, and risk assessment to assist the City in planning, scheduling, and budgeting for infrastructure upgrades.

Relevance:

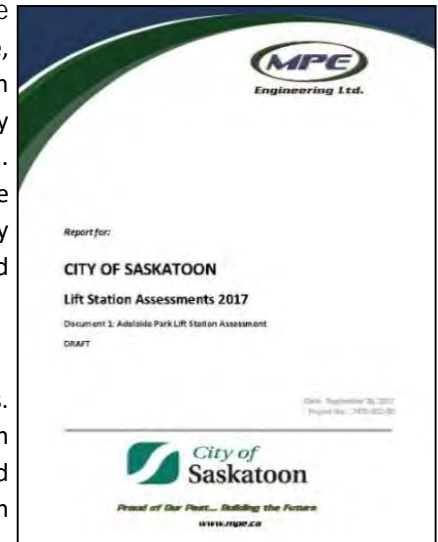
MPE assesses Civil, Mechanical, Structural and Electrical components of the lift stations. Flows will be developed for each lift station to ensure the original design of the lift station is still relevant decades after the lift station was installed. Hydraulic analysis was performed for both the pumping system and the forcemain. The City has various lift station configurations.

Budget/Schedule Control and Management:

MPE utilized Microsoft Project to layout schedule as well as critical milestones. Project Engineering cash flow and earned value analysis is prepared monthly for the City.

Key MPE Staff:

| | | | |
|---------------------------------|------------------------|----------------------|------------------------------------|
| Project Manager: | Jason Stusick, P.Eng. | Project Engineer: | Christopher Nameth, P.Eng. |
| Mechanical Engineer: | Ryan Ursu, P.Eng. | Structural Engineer: | Mark Baker, P.Eng. |
| Electrical & Controls Engineer: | Richard Ofstie, P.Eng. | Senior Controls: | Zane Spencer, Engineering Licensee |
| Senior Electrical Engineer: | Peter Goertzen, P.Eng. | | |



CITY OF WINNIPEG – LIFT STATION CONDITION ASSESSMENTS PHASE II

| | | | |
|---------------|------------------|------------------|----------------------------------|
| Owner: | City of Winnipeg | Contact: | Gregory Kulczycki (204) 805-2470 |
| Start Date: | January 2019 | Completion Date: | October 2019 |
| Project Cost: | \$217,000.00 | MPE's Role: | Prime Consultant |

Description:

MPE is currently completing detailed assessments of ten (10) lift stations for the City of Winnipeg Water and Waste Division. The assessments include a review of the theoretical hydraulic capacity for the City to evaluate against measured values. Assessments of the site conditions, building envelope, HVAC mechanical, structural, electrical, controls and ventilation elements were conducted for each lift station and associated forcemain. MPE developed standardized Assessment Forms that can be used in future years for the City Staff to continually update the condition assessment of the facility and components.

The contract included a second phase in which an Asset Management Repository tool was developed. This tool will be used by the City to evaluate where best to focus rehabilitation work. The tool provides a cost – benefit analysis that will assist the City in making the best use of available funding to rehabilitate and upgrade their infrastructure.

The assessment will provided the City with a detailed report of the condition of each asset within each individual lift station along with associated cost estimates for rehabilitation. A summary report will combine the critical information from each lift station, and provide overall recommendations.

Relevance:

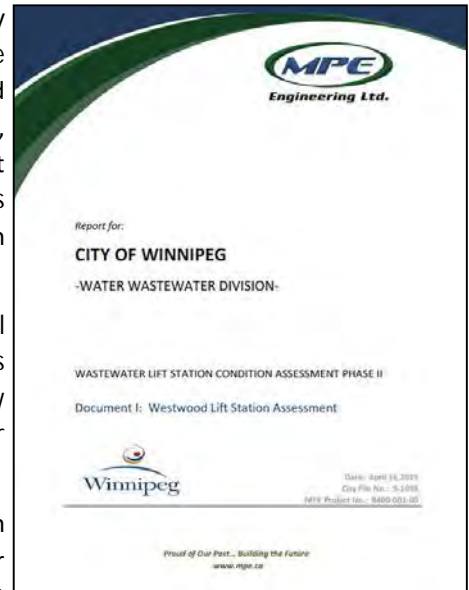
MPE assesses Civil, Mechanical, Structural and Electrical components of the lift stations. Flows will be developed for each lift station to ensure the original design of the lift station is still relevant decades after the lift station was installed. Hydraulic analysis was performed for both the pumping system and the forcemain. The City has various lift station configurations.

Budget/Schedule Control and Management:

MPE utilized Microsoft Project to layout schedule as well as critical milestones. Project Engineering cash flow and earned value analysis is prepared monthly for the City.

Key MPE Staff:

| | | | |
|---------------------------------|------------------------|----------------------|------------------------------------|
| Project Manager: | Jason Stusick, P.Eng. | Project Engineer: | Christopher Nameth, P.Eng. |
| Mechanical Engineer: | Ryan Ursu, P.Eng. | Structural Engineer: | Mark Baker, P.Eng. |
| Electrical & Controls Engineer: | Richard Ofstie, P.Eng. | Senior Controls: | Zane Spencer, Engineering Licensee |
| Senior Electrical Engineer: | Peter Goertzen, P.Eng. | Hydraulic Engineer: | Zac Kostek, P.Eng. |



TOWN OF PREECEVILLE—WASTEWATER TREATMENT FACILITY UPGRADE

| | | | |
|---------------|---------------------|------------------|-------------------------------|
| Owner: | Town of Preeceville | Contact: | Lorelei Karcha (306) 547-2810 |
| Start Date: | April 2019 | Completion Date: | Ongoing |
| Project Cost: | \$5,100,000 | MPE's Role: | Prime Consultant |

Description:

The Preeceville Wastewater Treatment System Upgrade project consists of a treatment process upgrade along with expanded treatment capacity. The 992 m³/day treatment facility upgrade project consists of construction of two (2) new partial mix aeration cells complete with a synthetic liner, SAGR nitrification cells, and phosphorus reduction by chemical precipitation. The project also includes construction of a 200 mm HDPE forcemain approximately 2,800 m in length. MPE also completed the geotechnical site investigation and Downstream Use & Impact Study (DUIS) for this project. The tender phase of the project has been completed and construction is anticipated to begin in the coming months.

Relevance:

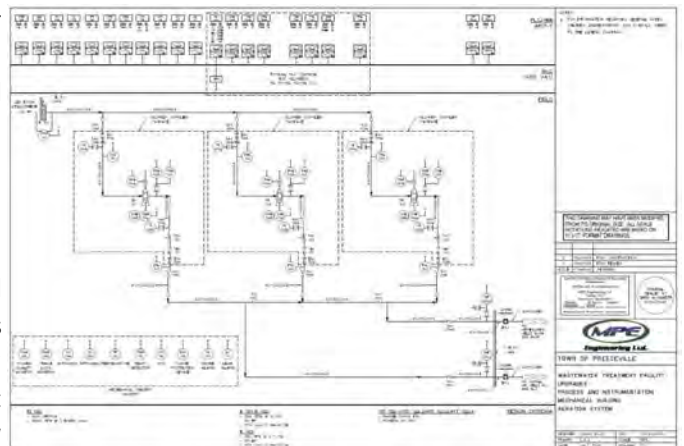
The Preeceville wastewater treatment facility was designed and is to be constructed within the footprint of the existing wastewater facility. As part of the project, an in-house DUIS, geotechnical investigation, and pre-design report were coordinated and completed by MPE as part of preliminary design.

Budget/Schedule Control and Management:

All decisions made during the course of design was documented in the Design Basis Memorandum. This document was utilized to update the regulatory agency on the design criteria and assumptions as well as the funding agency on how the design was progressing and latest project costs. At the onset of the project MPE developed a project schedule utilizing Microsoft Project Manager to control schedule and budget. Monthly cash flow reports are prepared that compiles engineering fees, sub consultants, general contract, and equipment supply contracts.

Key Staff:

| | | | |
|-----------------------------------|----------------------------------|----------------------|------------------------|
| Project Manager/Process Engineer: | Jason Stusick, P.Eng. | Electrical Engineer: | Richard Ofstie, P.Eng. |
| Project Engineer: | Christopher Nameth, P.Eng. | Electrical Design: | Peter Goertzen, P.Eng. |
| Geotechnical Engineer: | Christopher McRae, B.Sc., P.Eng. | Survey/Civil 3D: | Chris Bec, A.Sc.T. |



4.1 REFERENCES

MPE prides itself on our long-standing relationships with our client base. We encourage the MD to complete a detailed reference check of the names provided prior to making any consultant selection. We believe this is one of the most important aspects that prospective clients can complete in order to obtain a comfort level with the consulting firm they will be working closely with for the duration of this project.

| Reference | Client Contact (s) | Reference | Client Contact (s) |
|------------------------------|--|--------------------------|--|
| Town of St. Paul | Bert Pruneau Chief Plant Operator P.O. Box 1480 St. Paul, AB T0A 3A0 Phone: (780) 645-2210 Email: bpruneau@town.stpaul.ab.ca | Town of Vermilion | Derek Young Director of Transportation and Utilities 5021 - 49th Ave Vermilion, AB T9X 1X1 Phone: (780) 853-5358 Email: dyoung@vermilion.ca |
| Town of Fort MacLeod | Dan Segboer Plants Foreman P.O. Box 1420 Fort MacLeod, AB T0L 0Z0 Phone: (403) 331-9319 Email: plants@fortmacleod.com | City of Medicine Hat | John Michalopoulos Manager of Treatment Plants 2190 Brier Park Place NW Medicine Hat, AB T1C 1S6 Phone: (403) 502-8097 Email: johmic@medicinehat.ca |
| City of Regina | Neil Silva Senior Engineer, City of Regina - City operations - Waterworks 1430 McIntyre Street Regina, SK S4R 2N1 Phone: (306) 533-3106 Email: nsilva@regina.ca | Lac La Biche County | Jon Skjersven Water/Sewer Utility Foreman P.O. Box 1679 Lac La Biche, AB T0A 2C0 Phone: (780) 623-6786 Email: jon.skjersven@laclabichedcounty.com |
| Town of Rocky Mountain House | Rob Shanks Director of Engineering & Operations 5116—50th Avenue Rocky Mountain House, AB T4T 1B2 Phone: (403) 548-9260 Email: wtplant@redcliff.ca | City of North Battleford | Stewart Schafer Director of Operations & Maintenance 1291—101st Street, P.O. Box 460 North Battleford, SK S9A 2Y6 Phone: (306) 445-1735 Email: sschafer@citynb.ca |

5.1 COST OF ENGINEERING SERVICES

Please find our professional fees for the entire project in tabular format. Please review our detailed engineering fee schedule provided in Appendix A.

| ESTIMATED ENGINEERING FEES | TOTAL |
|---------------------------------------|----------------|
| Task I: Project Management | \$109,476 |
| Task II: Detailed Design Phase I | \$149,964 |
| Task III: Detailed Design Phase II | \$295,958 |
| Task IV: Tendering | \$30,512 |
| Task V: Construction Services | \$434,292 |
| Task VI: Post Construction Activities | \$26,296 |
| Subtotal (not including taxes) | \$1,046,498 |
| GST (5%) | \$52,324.90 |
| GRAND TOTAL | \$1,098,822.90 |

MPE charges only for hours required to complete the work. Should the work take less time than anticipated, the professional fees would be less. MPE will bill on an hourly basis to the upset fee indicated in the table above. All disbursements will be charged at cost, with no mark up. Engineering fees include all travel, photocopying, printing, telephone, fax charges, survey equipment, and relevant testing equipment.

The engineer fee estimate does not include costs for Materials Testing. Should MPE be selected as the successful Consultant for the project, costs for Materials Testing Quality Assurance can be submitted if the MD would like MPE to complete this function.

5.2 FEE SCHEDULE—KEY PROJECT STAFF

Included in this section is a table outlining the engineering fee schedule, for the term of this project, for each key team member expected to be involved in the preparation of this Project.

| Staff | Classification | 2020 Rate (\$/hour) |
|----------------------------------|----------------|---------------------|
| Mirek Grzeszczuk, P.Tech. (Eng.) | T7 | \$177 |
| Jason Stusick, P.Eng. | E4 | \$173 |
| Ivan Kagoro, P.Eng. | E3 | \$147 |
| Dan Chronik, P.Eng. | E5 | \$183 |
| Wendy Sung, P.Eng. | E3 | \$147 |
| Drew Fellers, P.Tech. (Eng.) | T5 | \$143 |
| Brayden Heffernan, E.I.T. | E1 | \$120 |
| Peter Goertzen, P.Eng. | E4 | \$173 |
| Richard Ofstie, P.Eng. | E2 | \$131 |
| Ryan Ursu, P.Eng. | E3 | \$147 |
| Zane Spencer, P.Tech. (Eng.) | T5 | \$143 |
| Dave Meindertsma, C.E.T. | T4 | \$126 |



6.1 PROJECT SCHEDULE

MPE has prepared the following timelines for this project contingent on being selected as the consultant for engineering services:

| | |
|--|--------------------------------------|
| RFP Closing Date | April 30, 2020 |
| ◆ Project Initiation | May 11, 2020 |
| ◆ Project Start-up Meeting | May 11, 2020 |
| Detailed Design Phase I | May 11 – September 4, 2020 |
| ◆ Major Equipment Selection | August 1 – 28, 2020 |
| Award Major Equipment Contracts | September 4, 2020 |
| Detailed Design Phase II | September 7, 2020 – January 29, 2021 |
| ◆ General Contractor Pre-Qualification | January 4 – 29, 2021 |
| ◆ Tendering | February 1, – March 9, 2021 |
| Notice of Award to General Contractor | March 26, 2021 |
| ◆ Construction | April 30 – June 30, 2022 |
| ◆ Commissioning | July 1, 2022 – August 29, 2022 |
| Total Project Completion | September 28, 2022 |

MPE has proposed the dates in the schedule above based upon our past experience with similar projects. To meet the timelines of the MD, MPE proposes that the MD pre-purchase major equipment. This equipment can be ordered at the beginning of the detailed design phase and can then be novated to the Contractor during the tendering phase. A project of this size will take a minimum of 12 months of construction to complete. Detailed schedules are presented in Appendix C.

Any and all schedule adjustments from the approximate timeline proposed in the RFP are subject to the approval of the MD. MPE will regularly review the schedules as the project progresses and will make every effort to shorten timelines. Monthly project cash flow and schedule reports will be submitted for the MD's ongoing correspondence with the funding agency.





GRANDE CACHE WWTP

APPENDIX A FEE SCHEDULE





GRANDE CACHE WWTP

APPENDIX B

PROJECT TEAM RESUMES



RON HUST, P.ENG.

ENGINEERING MANAGER

Mr. Hust has 38 years experience in municipal, irrigation and water resources engineering. He has served as Project Manager on numerous projects, including feasibility studies, preliminary and final design, tendering, and construction management, and inspection and supervision.



HIGHLIGHTS OF EXPERIENCE

- Mr. Hust has had a varied career since graduating in 1982. The majority of his career has focused on earthwork and water resource projects throughout Alberta and Saskatchewan.
- After stepping back from the CEO position, Mr. Hust returned to his engineering roots, taking up the Engineering Manager position where his technical background comes to play in ensuring the highest engineering standards are maintained corporately.
- The Project that has been the highlight of Mr. Hust's career is the IRRICAN Drops 4, 5 and 6 Hydro Electric Project. This 7.0 MW project constructed in 2003/2004 showed the potential for irrigation works to reduce green house gas emissions and reduce our dependence on fossil fuels.
- Mr. Hust has recently undertaken the project management duties and lead design duties for the new Emergency Spillway for Bassano Dam in the Eastern Irrigation District. This spillway will have the capability of passing 2,500 m³/s in an extreme storm event. This proposed structure, currently under construction, is a direct result of flooding that occurred in 2013 along the Bow River.

EDUCATION

B.Sc., Civil Engineering
University of Calgary, AB, 1982

Canadian International Drainage Course
McGill University, QC, 1984

PROFESSIONAL AFFILIATIONS

Professional Member
Association of Professional Engineers and Geoscientists of Alberta, Saskatchewan and British Columbia (APEGA, APEGS, APECBC)

Associate Member
Alberta Irrigation Projects Association
Canadian Society for Civil Engineering

PROFESSIONAL HISTORY

2018-Present, Engineering Manager
MPE Engineering Ltd., Lethbridge, AB

2013-2018, Chief Executive Officer & Engineering Manager
MPE Engineering Ltd., Lethbridge, AB

1999-2013, President and General Manager
MPE Engineering Ltd., Lethbridge, AB

1992-Present, Water Resources Department Head
MPE Engineering Ltd., Lethbridge, AB

1988-1992, Project Manager/Engineer
MPE Engineering Ltd., Lethbridge, AB

1984-1988, Assistant District Engineer
Bow River Irrigation District, Vauxhall, AB

1982-1984, Design Engineer/ Inspector
UMA Engineering Ltd., Lethbridge, AB





PROFESSIONAL EXPERIENCE

MUNICIPAL ENGINEERING

- Waste Water Treatment:
 - Project Manager for the Design and Construction of Wastewater Lagoons in the communities of Magrath, Champion, Monarch, Seven Persons.
 - Project Manager Town Of Magrath Lift Station Replacement.
 - Project Manager City of Brooks /Lake Newell Resort Regional Waste Water Pipeline and Lift Station.
 - Fort Macleod WWTP, Corporate representative on Contract Issues.
- Municipal Water Systems:
 - Project Manager for Village of Nobleford Water Reservoir and pumphouse upgrades.
 - Project Manager City of Lethbridge Raw Water Intake Upgrades.
 - Alberta Transportation, Waterton Dam Upgrades: Project Manager for upgrades to the existing Irrigation.
- Stormwater:
 - Project Manager Southern Regional Stormwater Master Plan.
 - Town of Magrath Stormwater System Upgrades.
 - Project Manager Town of Magrath Stormwater System Upgrades.
 - Project Manager Town of Coaldale Stormwater Upgrades.
 - Project Engineer City of Lethbridge West side Stormwater Study.
 - Project Manager City of Brooks Stormwater Reuse.
- Transportation:
 - Project Manager Highway 3:08 Asphalt Overlay.
 - Project Manager Highway 25:06 Asphalt Overlay.
 - Village of Champion Street Renewal Program.

WATER RESOURCES

- Waterton St. Mary Headworks System: Project Manager for the replacement, Alberta Transportation.
- Bullhorn Coulee Wasteway and Taylor Coulee Spillway.
- Little Bow River Project, Irrigation Structures and Pipelines: Project Manager for installation of two deep pump well turnouts on the Little Bow Reservoir. Responsible for overall project management, engineering design and construction administration, Alberta Transportation.
- Carseland Bow Headworks Reach 7: Project Manager for the rehabilitation of 7 km of canal including two major control structures, Alberta Transportation.
- Waterton Dam Upgrades: Project Manager for upgrades to the existing Irrigation Outlet, Spillway and Low Level Diversion. Responsible for overall project management, engineering design and automation and controls, Alberta Transportation.
- Drops 4, 5 and 6 Hydropower Development: Project Manager for the development of a 9 MW power plant on the SMRID Main Canal. Project includes the construction of a supply canal adjacent to the existing Main Canal, Irrigation Canal Power Cooperative Ltd.
- St. Mary River Irrigation District Main Canal Rehabilitation: Project Engineer for the rehabilitation of 40 km of canal between Sauder Reservoir and Murray Reservoir. The project included rebuilding and relocation of the main canal, seepage control measures and control structure replacement, Alberta Environment.



PROFESSIONAL EXPERIENCE

WATER RESOURCES (CONT'D)

- East Branch Canal Automation: Project Manager for upgrades to the existing automation system. Project includes replacing all gate position indicators with optical encoders and implementation of a SCADA system using Broad Spectrum radio links, Eastern Irrigation District.
- Lethbridge Northern Headworks Repair: Project Manager for repairs to the LNID Main Canal as a result of the 1995 flood in Southern Alberta. This project included involvement of Piikani Public Works in the implementation of the repairs, Alberta Transportation.

MIREK GRZESZCZUK, P.TECH.(ENG.) **EDMONTON REGION MANAGER**

Mr. Grzeszczuk is the Edmonton Region Manager with 18 years of experience. His duties include client liaison, infrastructure studies, project management, engineering design, tendering and construction of municipal projects.



HIGHLIGHTS OF EXPERIENCE

- As Edmonton Region Manager, Mr. Grzeszczuk is responsible for carrying out all office administration functions as well as overseeing all municipal and infrastructure projects.
- Mr. Grzeszczuk manages and directs a staff of 30 personnel to ensure standardization, quality checks, scheduling and business development in the provision of engineering services.
- Growth of the MPE Edmonton Region office.
- Project Management of various projects including water and wastewater treatment systems and municipal infrastructure.
- Participation in all phases of engineering projects from feasibility studies through to detailed design and construction administration of a project.
- Analysis and interpretation of statistical and accounting information in order to appraise operating results in terms of profitability, performance against budget and other matters bearing on fiscal soundness and operating effectiveness.
- Assistance with municipalities in applications for both funding assistance and regulatory approvals.

EDUCATION

Civil Engineering Technology
Northern Alberta Institute of Technology, 2002

PROFESSIONAL AFFILIATIONS

Member
Association of Science and Engineering
Technology Professionals of Alberta (ASET)

Member
American Water/Wastewater Association,
Western Canada Section

PROFESSIONAL HISTORY

2016-Present, Edmonton Region Manager
MPE Engineering Ltd., Edmonton, AB

2014-2016, Municipal Engineering Manager
MPE Engineering Ltd., Edmonton, AB

2011-2014, Director of Water and Wastewater
DCL Siemens Engineering Ltd., Edmonton, AB

2002-2011, Project Technologist
DCL Siemens Engineering Ltd., Edmonton, AB





PROFESSIONAL EXPERIENCE

WATER TREATMENT

- Water System Project, Sucker Creek First Nation.
- Water & Wastewater Upgrades, Paddle Prairie Metis Settlement.
- Water & Wastewater Upgrades, Peavine Metis Settlement.
- Water & Wastewater Upgrades, East Prairie Metis Settlement.
- Water Treatment Plant Upgrades, Town of St. Paul.
- Water Supply System Upgrading, Town of Fox Creek.
- Barrhead Regional Water Treatment Plant Upgrade, Barrhead Regional Water Commission.
- Sandy Lake Water Treatment Plant Upgrading, MD of Opportunity No. 17.
- Conklin Water Treatment Plant Upgrading, RM of Wood Buffalo.
- Water Supply System Upgrading, Town of Devon.
- Wabasca/Desmarais Water Treatment Plant Upgrading, MD of Opportunity No. 17.
- Peerless Lake Pumping & Water Treatment Facilities, MD of Opportunity No. 17.
- Trout Lake Pumping & Water Treatment Facilities, MD of Opportunity No. 17.
- North Tallcree Water Treatment Plant Upgrading, Tallcree First Nation.
- Pickardville & Vimy Water Treatment Plant Upgrades, Westlock County.

TREATED WATER STORAGE AND PUMPING

- Rural Potable Water Infrastructure, Mackenzie County.
- Zone 1 Treated Water Reservoir Upgrade Feasibility Study, City of Spruce Grove.
- Anzac Water Reservoir & Pumping Station, RM of Wood Buffalo.
- Industrial Heartland Water Reservoir & Pumping Station, Lamont County.
- Water Supply System Improvements, Town of Fox Creek.
- Pumping & Treated Water Storage Facilities—East and west of Lac La Biche.
- Water Reservoir Upgrades—Hamlet of Grouard, Big Lakes County.
- Water Reservoir Upgrades—Hamlet of Enilda, Big Lakes County.

WASTEWATER TREATMENT

- Lift Station Assessment, Town of Elk Point.
- Wastewater Treatment Plant Upgrade, Town of St. Paul.
- Lift Station No. 7 Upgrading, Town of High Prairie.
- Athabasca Flats Lift Station, Town of Whitecourt.
- Lift Station No. 4 Upgrading, Town of High Prairie.
- Jousard Wastewater Collection & Treatment System Upgrading, Big Lakes County.
- Lift Station & Force Main Upgrading, Town of Fox Creek.
- Sandy Lake Sewage Lagoon & Servicing, MD of Opportunity No. 17.



PROFESSIONAL EXPERIENCE

MUNICIPAL INFRASTRUCTURE

- Buffalo Head Prairie Drainage, Mackenzie County.
- Peerless Trout Health Centre Servicing, MD of Opportunity No. 17.
- Calling Lake Water Supply System Feasibility Study, MD of Opportunity No. 17.
- Infrastructure Assessment, Municipal Buildings, Town of Smoky Lake.
- 104 Avenue Local Street Improvements, Town of Westlock.
- Infrastructure Assessment & 10-Year Capital Plan—Sanitary, Storm, Water—Town of Westlock.
- Water Reservoir & Pumping Station Upgrading, Town of Westlock.
- Stormwater Management Facilities Upgrading, Town of Westlock.
- Infrastructure Assessment & 10-Year Capital Plan—Water & Sewer—Town of Manning.
- Base Work, Paving, Subdivision Servicing, Town of Barrhead.
- Base Work & Subdivision Servicing, Mesa Valley Holdings Ltd.
- 2003 Street Improvements, Town of Holden.
- Sturgeon Valley Water Supply Line, Sturgeon County.
- Villeneuve Water Supply System, Sturgeon County.
- La Crete Raw Water Supply Line, Mackenzie County.
- Infrastructure Assessment & 10-Year Capital Plan, Town of Smoky Lake.
- Regional GIS Project, Stage 1 & Stage 2, Town of Smoky Lake.
- Further Infrastructure Audit, Village of Dewberry.
- Calling Lake Fire Hall Expansion, MD of Opportunity No. 17.
- Infrastructure Assessment & 10-Year Capital Plan, Town of Manning.

JASON STUSICK, P.ENG. **PROJECT MANAGER/DESIGN ENGINEER**

Mr. Stusick joined MPE Engineering Ltd. in 2001. He has 20 years experience in Environmental, Municipal, Civil and Water Resources Engineering.



HIGHLIGHTS OF EXPERIENCE

- Project Management of various projects including water and wastewater treatment systems and municipal infrastructure. Projects managed varied in construction cost from \$50,000 to \$20,000,000 in total construction value. Lead design team, project meetings, overview of design drawings and specifications as well as carrying out the complete tender process and overall construction management.
- Design Lead in a wide variety of projects including water and wastewater treatment plants, pump stations, lift stations, distribution systems and sewage collection and treatment systems. Design work has includes preliminary design, project cost estimating, preparing construction drawings and tender specifications and co-coordinating full engineering discipline teams.
- Developing infrastructure Assessment Studies. Including carrying out assessments of the water, wastewater and storm water, infrastructure systems, providing recommendations for upgrades, refurbishment, or replacement, developing cost estimates and preparing reports.
- Design and Project Management of infrastructure improvements including water distribution, sanitary sewage collection, storm water collection, site grading, trenchless works and roads for residential, commercial, industrial and recreational developments.

EDUCATION

B.A.Sc., Environmental System Engineering
University of Regina, 2000

PROFESSIONAL AFFILIATIONS

Professional Member

Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS)

Professional Member

Association of Professional Engineers and Geoscientists of Alberta (APEGA)

Professional Member

Association of Professional Engineers and Geoscientists of Manitoba (APEGM)

Member

Western Canada Water and Wastewater Association

Member

American Water Works Association, Western Canada Section

Member

International Water Association

PROFESSIONAL HISTORY

2013-Present, Project Manager

MPE Engineering Ltd., Saskatoon, SK

2001-2013, Project Manager/Project Engineer

MPE Engineering Ltd., Lethbridge, AB

2000-2001, Municipal Approvals Engineer

Alberta Environment, Lethbridge, AB

2000, Resident Engineer

SAL Engineering Ltd., Saskatoon, SK





PROFESSIONAL EXPERIENCE

INFRASTRUCTURE

- North County Hamlet Regional Pipeline: Diamond City and Turin Reservoirs and Pump Stations, County of Lethbridge (2001).
- Sanitary Sewer Upgrade South West Industrial Trunk, Purmal Lift Station Force Main Project, Purmal Valve Chamber.
- Valve Chamber and Police Point Park Valve Chamber, City of Medicine Hat (2002).
- Water Supply Study, Town of Coalhurst; Project Engineer (2002).
- Lift Station No.2 Construction Supervision, Town of Bow Island; Project Engineer (2003).
- Lift Station No.3 Design and Construction Supervision, Town of Bow Island; Project Engineer (2005).
- Infrastructure Master Plan, Town of Milk River; Project Engineer (2007).
- Main Lift Station Design, Town of Coalhurst; Design; Project Manager (2010).
- Main Lift Station, Town of Fort Macleod; Project Manager (2008).
- Cottonwood and Ross Glen Lift Station Retrofit, City of Medicine Hat; Project Manager & Designer (2012).
- Eastbrook Lift Station Upgrade; City of Brooks; Design; Project Manager & Designer (2012).
- Lift Station No.1 and Force Main Upgrade Project; Town of Bow Island; Design; Project Manager (2012).
- Shaunavon Main Lift Station Electrical & Controls Upgrade Project; Town of Shaunavon; Project Manager (2012).
- Main Lift Station and Force Main Upgrade, Town of Claresholm; Project Manager (2013).
- Road Infrastructure Master Plan, District of Katepwa (2012).
- Above Ground Treated Water Reservoir, MD of Pincher Creek (2013).
- Sanitary Infrastructure System Assessment, Town of Leroy; Project Engineer (2013).
- Commercial / Light Industrial Subdivision Water Servicing Study, RM of Estevan; Project Engineer (2013).
- Single Span Bridge Replacement (Culvert Design), Stenen Bridge; RM of Clayton; Project Manager (2013).
- Single Span Bridge Replacement (Culvert Design), Barkman Bridge; RM of Clayton; Project Manager (2014).
- North Industrial Subdivision, Town of Assiniboia; Project Manager (2014).
- Infrastructure Master Plan, Town of Assiniboia; Project Manager (2016).
- North Pump Station, Pump 5 Replacement, City of Regina; Project Manager (2015).
- WSA 2015 & Water Infrastructure Condition Assessment, City of Regina; Project Manager (2016).
- Wakaw Humboldt Potable Water Supply System Water Storage Expansion, SaskWater; Lead Design & Project Manager (2016).
- Greenwater Provincial Park Wastewater System, Ministry of Parks, Culture, & Sport (2017).
- 1st Avenue Pump Station & Reservoir Maintenance, City of Weyburn (2018).
- Lift Station Assessments 2017, City of Saskatoon (2018).
- Farrell Pump Station Upgrade Feasibility Study, City of Regina (2018-Present).
- Wastewater Lift Station Condition Assessment 748-2018, City of Winnipeg (2018-Present).



PROFESSIONAL EXPERIENCE

WATER TREATMENT

- Wyndham Carseland Provincial Park Water System Evaluation, Alberta Community Development. (2002)
- Chain Lakes Provincial Park Water System Design, Alberta Community Development. (2006)
- Head-Smashed-In Buffalo Jump Chlorination System Upgrade Design, Alberta Community Development. (2005)
- WTP Assessment, BRID Camp. (2003)
- Water Treatment Plant Pilot Study, Village of Nobleford, Town of Bow Island, Town of Claresholm, Village of Barnwell, Newell Regional Services Corporation, Vauxhall & District Regional Water Services Commission.
- Water Treatment Plant Design and Construction Supervision, Village of Nobleford (2004).
- Water Treatment Plant Expansion for Regional System Design and Construction Supervision, Village of Nobleford (2008).
- Water Treatment Plant Design and Construction Supervision, Town of Bow Island (2004).
- Water Supply and Treatment Study, Town of Raymond/Village of Stirling (2006).
- Lucerne Canada Inc Food Process Chlorination System Upgrade, Lucerne Canada Inc. (2006).
- Water Treatment Plant Design and Construction Supervision, Village of Barnwell (2007).
- Hilda Water Treatment Plant Jar Test Study, Cypress County (2007).
- Hilda Water Treatment Plant Design Supervision, Cypress County (2008).
- Regional Water Treatment Plant: Project Management, Design Lead, Town of Claresholm (2008).
- Regional Water Treatment Plant: Project Management, Design Lead, City of Brooks/Newell Regional Services Corporation (2008).
- Nakoda Resort Water Treatment Plant Design, Stoney Tribal Administration (2009).
- Regional Water Treatment Plant Expansion: Project Management, Design Lead and Construction Supervision, Highway 3 Regional Water Services Commission (2009).
- Regional Water Treatment Plant: Project Management, Design Lead and Construction Supervision, Vauxhall & District Regional Water Services Commission (2009).
- Regional Water Treatment Plant Process Design Lead, Town of Magrath (2010).
- Water Treatment Plant: Project Management, Design Lead, Project Management, Village of Hillspring (2011).
- Hilda Regional Water Treatment Plant Expansion and Connections: Project Manager, Cypress County (2011).
- Water Treatment Plant: Project Manager, Process Lead Design, Town of Shaunavon (2011).
- Cowley Lundbreck Regional Water System; MD of Pincher Creek; Project Manager (2013).
- Water Treatment Plant; Village of Lomond; Lead Process Design; Project Manager (2013).
- Water Treatment Plant Upgrade, Lamb Weston a Division of ConAgra; Project Manager and Process Design (2013).
- Qu'Appelle Beef Reverse Osmosis System; Qu'Appelle Beef, Lead Process & Project Manager (2013).
- Water Treatment Plant; Town of Redcliff; Process Design & Project Manager (2014).
- Water Treatment Plant Upgrade, Lac La Biche County; Project Manager & Process Design (2016).
- Greenwater Lake Provincial Park Water Treatment Plant Upgrade, Ministry of Parks, Culture & Sport; Project Manager (2016).
- Water Treatment Plant Improvements Phase II, Lac La Biche County (2017-Present).
- Water Treatment Plant Upgrade, Town of Assiniboia (2017-Present).
- Water Treatment Plant Control System Upgrades, Town of Lashburn (2018).
- Duck Mountain Provincial Park Water Treatment System Upgrades (2018-Present).
- UV Reactor 1 & 2 Change Order, City of North Battleford (2018-Present).



PROFESSIONAL EXPERIENCE

WATER RESOURCES

- Regional Services Feasibility Study, County of Newell (2001).
- SHL Rural Pipeline Association, 2000 Rural Pipeline Projects, SHL Rural Pipeline Association (Saskatchewan) (2000).
- Highline Water Co-op, Project Engineer and Resident Engineer (2002).
- Well Development , Town of Shaunavon (2011).
- Raw Water Supply System, Town of Redcliff; Project Manager(2011).
- Well Development, Cypress County (2012).
- Elbow Non-Potable Water Supply System Intake, SaskWater; Project Manager(2014).
- Raw Water Supply System Upgrade, Town of Indian Head (2017-Present).
- North Battleford Well #11, 12, 17 Well Completion, Watermark Consulting Ltd. (2018).
- North Battleford Well #16 Well Completion, Watermark Consulting Ltd. (2018).
- The Battlements Provincial Park, Potable Water System Upgrade, Ministry of Parks, Culture & Sport (2018).
- Disinfection By-Product Reduction Study, Lac La Biche County (2019).
- NE Distribution System Study, Town of Moosomin (2018-Present).

WASTEWATER TREATMENT

- Morley Wastewater Treatment Plant Design Team Leader & Process Designer, Stoney Tribal Administration (2007).
- Wastewater Treatment Plant Design Team Leader & Process Design Lead, Town of Fort Macleod (2008).
- Lagoon Study: Project Manager, Process Lead and Supervision of Project Engineer, Town of Bassano (2010).
- Lagoon Study: Project Manager, Process Lead and Supervision of Project Engineer, Town of Nobleford (2010).
- Lagoon Study: Project Manager, Process Lead and Supervision of Project Engineer, Town of Picture Butte (2012).
- Regional Wastewater Pipeline Study: Project Manager, Process Lead and Supervision of Project Engineer, Town of Coaldale (2012).
- Chemical Enhanced Primary Treatment; City of Medicine Hat WWTP; Project Manager & Lead Process Design (2012).
- Lagoon Preliminary Design Report, Village of Macoun (2014).
- Wastewater Treatment & Disposal Study, Qu'Appelle Beef, Project Manager (2014).
- Aerated Lagoon Design, Qu'Appelle Beef, Project Manager, Designer (2014).
- Wastewater Lagoon Expansion Preliminary Design Report, Town of Indian Head (2014).
- Wastewater Lagoon Expansion Design, Town of Indian Head (2016).
- Boundary Dam Power Station Sewage Lagoon Expansion Design, SaskPower (2016).
- Wastewater Lagoon Upgrade, Village of Macoun (2017).
- Town of Vermilion Wastewater Treatment Facility, Project Manager/Design Lead, Town of Vermilion (2017-Present).
- Wastewater Treatment Plant Upgrade, Town of St. Paul (2018-Present).
- Lagoon Pump Assessment/Procurement, & Aerator Installation Assessment , City of Weyburn (2018-Present).
- Wastewater Upgrade Feasibility Study, Rocky Mountain House (2018-Present).
- Evergreen Leachate Treatment Review, Evergreen Regional Landfill, Town of St. Paul (2018).
- Aerated Lagoon Performance Study, Rocky Mountain House (2019).



PROFESSIONAL EXPERIENCE

PUBLICATIONS & PRESENTATIONS

- Design, Construction and Commissioning of the Newell Regional Services Corporation (NRSC) Regional Water Treatment Plant., Western Canada Water Conference and Exhibit (WCW), Saskatoon, SK (2011).
- pH Adjustment Using CO₂: A Viable Alternative for Use in the Enhanced Coagulation Process. Alberta Water and Wastewater Operators Association Seminar (AWWOA), Banff, AB (2012).
- Successful use of DAF for Algae Laden Small Rural Systems, International Water Association DAF Conference (IWA), New York City, NY (2012).
- Regional Distribution Systems: Disinfectant Changeover from Free Chlorine to Chloramine, Western Canada Water Conference and Exhibit (WCW), Edmonton, AB (2013).
- Treatment Methods for Algae Control, Water Week North, Grand Prairie, AB (2014).
- Town of Vermilion Wastewater Treatment Facility: Cold Climate Application of MBR in Western Canada, Western Canada Water Annual Conference, Edmonton, AB (2019).

IVAN KAGORO, P.ENG. PROJECT ENGINEER

Mr. Kagoro is a Project Engineer with 11 years of experience in municipal and environmental engineering.



HIGHLIGHTS OF EXPERIENCE

- Mr. Kagoro's experience includes management of various projects, data collection and analysis, conceptual design, modelling, preparation of reports, preliminary and detailed design and analysis, material selection, and preparation of tender documents and construction drawings, project management, and commissioning.
- Mr. Kagoro has worked on various water and wastewater projects including water treatment plants and distribution systems, wastewater collection and treatment facilities, and minor storm sewer systems.

EDUCATION

B.A.Sc., Civil Engineering

University of British Columbia, 2010

Civil Engineering Bridge Advanced Diploma

Camuson College, 2008

Civil Engineering Technology

Northern Alberta Institute of Technology, 2007

PROFESSIONAL AFFILIATIONS

Professional Member

Association of Professional Engineers and Geoscientists of Alberta (APEGA)

Member

American Water Works Association,
Western Canada Section (WCSAWWA)

Member

Water Environmental Federation (WEF)

PROFESSIONAL HISTORY

2014-Present, Project Engineer

MPE Engineering Ltd., Edmonton, AB

2010-2014, Junior Engineer

DCL Siemens Engineering Ltd., Edmonton, AB

2007, Technologist

DCL Siemens Engineering Ltd., Edmonton, AB

2006, Technician

J.R. Paine & Associates Ltd., Edmonton, AB





PROFESSIONAL EXPERIENCE

WASTEWATER COLLECTION & DISPOSAL

- Wastewater Treatment Facility—Preliminary Design, English River First Nation.
- Wastewater Treatment Plant Upgrade—Design, Construction, Town of St. Paul.
- Wastewater Treatment Plant Upgrade—Design, Construction, Town of Vermilion.
- Regional Wastewater Treatment Facility Aeration Upgrade—Design, Construction & Commissioning, Town of Rocky Mountain House.
- Regional Wastewater Treatment Facility—Feasibility/Conceptual Design, Town of Rocky Mountain House.
- Impact of Evergreen Landfill Leachate Treatment—Feasibility Study, Town of St. Paul.
- Lift Station No. 2 Upgrading—Design, Town of High Prairie.
- Lift Station No. 7 Upgrading—Design, Town of High Prairie.
- Pigeon Lake Regional Wastewater Collection System—Preliminary Design, Southside Wastewater Commission.
- Hamlet of Blackfoot Wastewater Treatment Facility Upgrading—Preliminary Design, County of Vermilion River.
- Lift Station No. 4 Upgrading—Commissioning, Town of High Prairie.
- Lift Station Building No. 4 Upgrades—Design & Commissioning, City of Cold Lake.
- North 43 Lagoon Expansion—Preliminary Design, North 43 Lagoon Commission.
- Gunn Regional Forcemain Project—Preliminary Design, North 43 Lagoon Commission.
- Lac La Nonne & Nakamun Lake Proposed Sanitary Sewer System—Feasibility Study, Lac Ste. Anne County.
- Sewage Lagoon Expansion—Design, Construction & Commissioning—Hamlet of Busby, Westlock County.
- Sewage Lagoon Rehabilitation, Hamlets of Busby, Pickardville, Vimy, Fawcett, Pibroch & Jarvie—Construction, Westlock County.

WATER TREATMENT & SUPPLY

- Water Reservoirs Lifecycle Renewal Phase 2—Preliminary Design, City of Fort Saskatchewan.
- Water Treatment Plant Improvements Phase 1—Construction & Commissioning, Lac La Biche County.
- Water Treatment Plant Improvements Phase 2—Construction & Commissioning, Lac La Biche County.
- Water Reservoir & Pumping Station Upgrading—Preliminary Design & Commissioning, Town of Westlock.
- Water Treatment Plant Upgrades—Construction & Commissioning, Town of St Paul.
- Water Treatment Plant Upgrades—Commissioning, Town of Fox Creek.
- Water Distribution Modeling—Preliminary Design, Town of Mayerthorpe.
- Non-Potable Water Supply Facility Replacement—Detailed Design & Tendering—Wetaskiwin, Alberta Infrastructure.
- Water Treatment Plant Upgrades—Feasibility/Conceptual Design—Hamlet of Calling Lake, MD of Opportunity No. 17.
- Water Treatment Plant Upgrades—Commissioning, Barrhead Regional Water Services Commission.
- Water Distribution Pumping Station Upgrades—Design, Construction & Commissioning—Hamlet of Vimy, Westlock County.
- Zone 1 Treated Water Reservoir Upgrade—Feasibility/Conceptual Design, City of Spruce Grove.
- Anzac Truckfill & Booster Station Reservoir Offsite Piping—Commissioning—Hamlet of Anzac, MD of Wood Buffalo.
- Water Treatment Plant Upgrades—Commissioning—Hamlet of Conklin, MD of Wood Buffalo.
- Well Pumping Station #3 Fire Damage Repairs—Commissioning—Hamlet of La Crete, Mackenzie County.

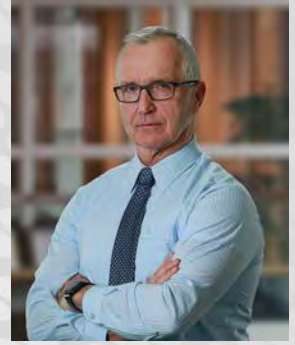
STORMWATER

- Storm Water Assessment & Master Plan—Conceptual Design, Town of Westlock.
- Stormwater Management Plan—Conceptual Design, North Parkway Drainage, Town of Vegreville.

DAN CHRONIK, P.ENG.

SENIOR STRUCTURAL ENGINEER

Mr. Chronik has over 40 years experience in a variety of projects including planning, design and construction of engineering works in the building envelope, architectural, structural, municipal, and water resources fields.



HIGHLIGHTS OF EXPERIENCE

ENGINEERING DESIGN

- Since 2009 Dan has managed the Structural Engineering Department within the Building Services Group, at the Corporate level. This includes work completed in the Lethbridge, Calgary, Red Deer, Medicine Hat, Saskatoon, Edmonton and Brooks offices. His responsibilities include the overall structural design of new and modernized water and wastewater treatment plants, concrete reservoirs, lift stations, commercial and institutional buildings. He also reviews all architectural and building envelope requirements for projects completed by MPE.
- Other experience in the structural field include design of commercial buildings, community centres, schools, daycare facilities, small bridges, modular building systems and structural analysis of existing buildings.

OTHER

- Extensive experience as a general contractor in the construction of schools, public and private sector facilities, including new construction additions and renovations, as well as residential subdivisions.

EDUCATION

Bachelor of Science, Civil Engineering

University of Alberta, 1977

Concentration: Structural Engineering

Masters Certificate in Project Management,

University of Lethbridge/ York University

PROFESSIONAL AFFILIATIONS

Professional Member

Association of Professional Engineers and Geoscientists of Alberta (APEGA)

Professional Member

Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS)

Professional Member

Northwest Territories Association of Professional Engineers and Geoscientists (NAPEG)

PROFESSIONAL HISTORY

2009-Present, Senior Structural Engineer

MPE Engineering Ltd., Lethbridge, AB

2006-2009, Project Manager

MPE Engineering Ltd., Lethbridge, AB

2004-2005, Project Manager

Hirano & Heaton Architects Ltd., Lethbridge, AB

1980-2004, General Contractor, Structural Engineer,

Chronik Construction Ltd, Picture Butte, AB

1977 – 1980, Design Engineer

ATCO International Ltd., Calgary, AB





PROFESSIONAL EXPERIENCE

PROJECT ENGINEER CONSTRUCTION PHASE

- Fire Training Tower, Remedial Work, City of Lethbridge
- Administration Parking Lot; Relocatables; Fleetwood Bawden School, Relocatables, Lethbridge School District No. 51
- St. Catherine's School Modernization; St. Mary's School Modernization, Holy Spirit Catholic School Division
- Hirano & Heaton Architects Ltd, Lethbridge, Architects Representative, Lethbridge School District #51 Administration Office.
- Health and Wellness Centre, University of Lethbridge
- Lomond Community Facility, Horizon School Division
- New Plant Construction, Precon
- Brooks Water Treatment Plant, County of Newell
- Claresholm Water Treatment Plant, Town of Claresholm

PROJECT ENGINEER DESIGN AND CONSTRUCTION PHASE

- New DAL facilities, Red Deer, Calgary phase 1 & 2, Covenant Health
- New \$9M Regional Water Treatment Plant, Vauxhall
- Bragg Creek and East Balzac Water Treatment Plants, and the Conrich WTP and Pump Station, Rocky View County
- Treated Water Reservoir and Pump House, Town of Crossfield
- Community Services Building, Town of Hanna
- Relocatable Day Care; Agnes Davidson School, Roof Replacements: Lakeview School, Fleetwood Bawden, LCI, Lethbridge School District No. 51
- Roof Replacements: Oldman Dam Control Building, Granum Library, Pincher Creek Provincial Building, LCC Chiller Replacement Project, Alberta Infrastructure
- Feed-mill access ladders and work platforms, Lethbridge Research Station
- Picture Butte High School—Addition and Modernization, Palliser Regional Schools
- Water Treatment Plant, Village of Hill Spring
- Water Treatment Plant Upgrade, Town of Magrath

PROJECT ENGINEER DESIGN

- New DAL facilities, Evanston Phase 3, Redstone, Covenant Health
- Structural design Sohio Oil, Endicott Camp, Prudue Bay, Atco Structures Calgary
- Structural design US Virgin Island Hospital—Porta-Kamp, Houston Texas
- Structural Design various Projects in the Middle East, Atco Structures Calgary
- Building Structure Condition Reviews: Numerous sites in Southern Alberta
- Fire Damage Structure Condition Reviews: Numerous sites in Southern Alberta

GENERAL CONTRACTING:

- Dorothy Dagliesh School Addition & Modernization, Structural Repairs Coalhurst Elementary, Palliser Regional Schools
- St Mary River Dam Control Building, Beauvais Lake Water Treatment Plant, Alberta Transportation
- Claresholm Court House, Starholm Unit - Claresholm Care Centre, Fort MacLeod Court House, Bow Island Provincial Building, Milk River travel Interpretive Centre, Alberta Public Works Supply & Services
- Water Treatment Plant, Village of Carmangay
- Design/Build North County Recreation Complex, Picture Butte Community Centre, Municipal subdivisions, Town of Picture Butte
- GS Lakie School Addition, Lethbridge School District No. 51

WENDY SUNG, P.ENG., LEED® A.P. **STRUCTURAL ENGINEER**

Ms. Sung has more than 14 years of experience in the design and construction of engineering works in the fields of structural, building, municipal and water resources.



HIGHLIGHTS OF EXPERIENCE

- Ms. Sung has extensive experience in the overall structural design of new and upgraded water and wastewater treatment plants, concrete reservoirs, lift stations, commercial and institutional buildings.
- Other structural experience includes the design and construction of commercial buildings, community centres, schools, senior daily assisted living housing, and structural review of existing buildings.
- Responsibilities also include project management, tender and contract administration for various projects.
- Ms. Sung also has extensive experience in building condition assessments for building sites, architectural and structural components, providing Clients with detailed reports on future building expenses for budgeting and planning purposes.
- Ms. Sung has also designed and managed more than 70 roof replacement and repair projects in the past seven years, including tar and gravel, 2-ply SBS, EPDM, TPO, metal and shingle roofs.

EDUCATION

B.Sc., Civil Engineering
University of Alberta, 2004

CERTIFICATION

S-Frame and S-Steel for Windows Advanced
Softtek Services Ltd., 2006

Building Condition Assessment
EPIC Educational Program Innovations Centre,
2007

PROFESSIONAL AFFILIATIONS

Professional Member
Association of Professional Engineers and
Geoscientists of Alberta (APEGA)

Professional Member
Association of Professional Engineers and
Geoscientists of Saskatchewan (APEGS)

LEED® Accredited Professional
Canada Green Building Council

PROFESSIONAL HISTORY

2014-Present, Structural Engineer
MPE Engineering Ltd., Edmonton, AB

2004-2014, Structural Engineer
MPE Engineering Ltd., Lethbridge, AB





PROFESSIONAL EXPERIENCE

STRUCTURAL DESIGN

- Wastewater Upgrade, Town of St. Paul.
- Calling Lake Fire Hall Addition, MD of Opportunity No. 17.
- Wastewater Upgrade, Town of Vermilion.
- Water Reservoir Expansion, Town of Westlock.
- Water Reservoir Expansion, Hamlet of Grouard and Hamlet of Enilda, Big Lakes County.
- Lystek Process Service Platform, City of North Battleford.
- RM of Clayton New Shop; Lloydminster Burger King. Alton Tangedal Architect Ltd.
- Water Supply System Upgrading Pumping & Water Treatment Facilities, Town of Fox Creek.
- St. Michael School Modernization Pincher Creek, Ferrari Westwood Babits Architects.
- Lift Station, Tsuu T'ina Nation.
- Dunlop Western Star Renovations Phase 2, RKH Architecture Ltd.
- Best Canadian Motor Inns, Blairmore Renovation & Addition, Ferrari Westwood Babits Architects.
- 85-Bed Daily Assisted Living, Ferrari Westwood Babits Architects.

ROOFING DESIGN

- Miscellaneous Roof System Replacements, Alberta Health Services.
- Miscellaneous Roof System Replacements, Alberta Infrastructure.
- Miscellaneous Roof System Replacements, Holy Spirit Catholic School Separate Regional Division No. 4.
- Miscellaneous Roof System Replacements, Palliser Regional Schools.
- Miscellaneous Roof System Replacements, Lethbridge School District No. 51.
- Miscellaneous Roof System Replacements, Prairie Rose School Division No. 8.
- Miscellaneous Roof System Replacements, City of Medicine Hat.
- Sturgeon Industrial Park Reservoir Roof Replacement, Sturgeon County.
- Asaskan Complex Roof Replacement, Town of Assiniboia.

BUILDING CONDITION REVIEW (ARCHITECTURAL AND STRUCTURAL COMPONENTS)

- Facilities Master Plan, Town of Vegreville.
- Infrastructure Assessment & Ten-Year Capital Plan, Town of Smoky Lake.
- Phase I Capital Replacement Plan, Multiple Sites, Covenant Health.
- Consort Pump Station Assessment, Village of Consort.
- Infrastructure Assessment & Ten-Year Capital Plan, Village of Willingdon.
- Village Office & Library Foundation Assessment, Village of Elnora.
- Water Tower & Booster Pump House Condition Review, Village of Empress.
- Hospital Condition Review, Village of Empress.
- Public Works Buildings Condition Review, Municipal District of Taber.
- Venier Center Condition Review, City of Medicine Hat.
- Old Claresholm Elementary School Condition Review, Town of Claresholm.
- Sportsplex Relocation Grading and Utilities.

DREW FELLERS, P.L.(ENG.)

PROJECT MANAGER

Mr. Fellers is a Project Manager with 14 years of engineering experience in the fields of municipal infrastructure, water and wastewater and project management specializing in construction management.



HIGHLIGHTS OF EXPERIENCE

CONSULTING ENGINEERING

- Experience in the fields of municipal infrastructure, water and wastewater, AutoCAD and land surveying. Proficient in the use of Civil 3D and AutoCAD. Part of the design and construction of projects throughout Alberta.
- Responsible for overall project management during the beginning stages of initiation, planning and design, execution monitoring and controlling, and construction project closeout for municipal infrastructure projects.
- Experienced in various types of municipal projects and utilizes the following project flow. Conceptual design; cost analysis; preparation of reports; preliminary and detailed design and analysis; material selection and preparation of tender documents and construction drawings; contract administration; project commissioning and closeout.
- Field Manager overseeing all activities that involve/require field personnel on site. Management of construction activities.
- Project Manager for projects in the Towns of Fox Creek, High Prairie, Barrhead, Mayerthorpe and others.

EDUCATION

Civil Engineering Technology

Northern Alberta Institute of Technology, 2006

PROFESSIONAL AFFILIATIONS

Member

The Association of Professional Engineers and Geoscientists Alberta (APEGA)

ACSA Auditor Training

Principles of Health and Safety

Leadership for Safety Excellence

PROFESSIONAL HISTORY

October 2014–Present

Project Manager

MPE Engineering Ltd., Edmonton, AB

2010–2014

Field Manager

DCL Siemens Engineering Ltd., Edmonton, AB

2006–2010

Resident Engineer

DCL Siemens Engineering Ltd., Edmonton, AB





PROFESSIONAL EXPERIENCE

MUNICIPAL INFRASTRUCTURE

- Water Treatment Plant Filter Rehabilitation, Town of High Prairie.
- Industrial Corridor Rejuvenation, Town of Westlock.
- 2019 Capital works, Town of Westlock.
- 104 Street Rehabilitation, Town of Westlock.
- Cast Watermain Lining, Town of Mayerthorpe.
- Sump Pump Retrofit Program, Strathcona County.
- Raw Water Production Wells, Town of Mayerthorpe.
- Raw Water Line & Wells, Town of Fox Creek.
- Raw Water Pump Station Mechanical Upgrades, Town of High Prairie.
- South Side Wastewater Commission Pigeon Lake Wastewater Collection System.
- Fraser Mill Sewer & Water Servicing, Town of High Prairie.
- Municipal Center Planning & Servicing, Village of Boyle.
- CIPP (Cured-In-Place Pipe Relining), Town of Mayerthorpe.
- Local Road Reconstruction – Dufferin & Dalhousie, City of St. Albert.
- 2009 Street Improvements, Town of Barrhead.
- Trout Lake Water Treatment Plant, MD of Opportunity.
- Peerless Lake Water Treatment Plant, MD of Opportunity.
- 2008 Street Improvements, Town of Barrhead.
- Ainsworth Water Supply Line, Mackenzie County.
- Water Transmission Line, West Inter Lake District Regional Water Services Commission.
- 2012 Street Improvements, Town of Barrhead.
- Water & Sewer Servicing – Sunset Acres Development, Brazeau County.
- Water Treatment Plant Upgrades, Town of Barrhead.
- Water Reservoir & Pump Station Upgrades, Westlock County.
- Municipal Centre Subdivision, Village of Boyle.
- Kinuso Lift Station, Forcemain & Sewage Lagoon, Big Lakes County.
- Annual Capital Projects, Town of Mayerthorpe.
- Sewer & Water Extensions for Fort Vermilion, La Crete & Zama, Mackenzie County.
- Main Lift Station, Town of Barrhead.
- Raw Water Pipeline, Town of Fox Creek.
- Sewage Lagoon Expansion – Hamlet of Pickardville, Westlock County.
- Sewage Lagoon Expansion – Hamlet of Busby, Westlock County.
- Subdivision Servicing – 150 Lots, Lac La Biche County.
- Raw Water Line Replacement, Town of Mayerthorpe.
- Asphalt Overlay Projects, Town of Fox Creek.
- Asphalt Overlay Projects, Town of Mayerthorpe.
- Asphalt Overlay Projects, Town of Barrhead.
- Asphalt Overlay Projects, Town of Whitecourt.
- Asphalt Overlay Projects, Town of Vegreville.

BRAYDEN HEFFERNAN, E.I.T. **PROJECT ENGINEER**

Mr. Heffernan is a Civil Engineer-in-Training with MPE's Saskatoon office. He is a recent graduate of the University of Saskatchewan, specialising in Water Resources as well as Water and Wastewater Engineering.



HIGHLIGHTS OF EXPERIENCE

- Resident Engineer for three major wastewater treatment projects
 - Town of Vermilion, WWTF
 - Town of St. Paul, WWTP Upgrades
 - North American Construction (1983) Ltd. Saskwater Melfort WTP Upgrade

EDUCATION

B.Sc., Civil Engineering
University of Saskatchewan, 2019

PROFESSIONAL AFFILIATIONS

Member

Association of Professional Engineers and
Geoscientists of Saskatchewan (APEGS)

PROFESSIONAL HISTORY

2019-Present, Project Engineer
MPE Engineering Ltd., Saskatoon, SK

May-August 2018, Summer Student
SaskPower, Nipawin, SK





PROFESSIONAL EXPERIENCE

ENGINEERING PROJECT MANAGEMENT (UNIVERSITY OF SASKATCHEWAN)

- Completed case studies focusing on project scope, time, cost, quality, and risk in an engineering context.
- Preparation of estimates and schedules with emphasis on earned value analysis.

WATER AND WASTEWATER ENGINEERING

- Design of biological wastewater treatment systems; and sludge and residual solids management.
- Laboratory testing of wastewater including total solids and suspended solids analysis.

WATER RESOURCES ENGINEERING

- Computer modelling of watersheds, analyzing the impacts of urbanization on watershed runoff.
- Determination of peak discharges for hydrological design.

MUNICIPAL ENGINEERING

- Design of municipal water distribution and wastewater collection systems.
- Design and analysis of storm water collection systems.

PETER GOERTZEN, P.ENG., LEED® A.P., LC MECHANICAL ENGINEER

Mr. Goertzen joined MPE in 2003 and has over 16 years in the planning, design and construction of mechanical and electrical designs in building services, municipal and irrigation fields.



HIGHLIGHTS OF EXPERIENCE

- With several years of field experience as an electrician, Mr. Goertzen is adept at design and construction of all mechanical and control systems found within commercial and industrial structures, including standard commercial package HVAC systems to larger custom units.
- Across various industries he has experience with ice plant systems, chilled water systems, steam heating plants, advanced laboratory and isolation ventilation systems
- Designed several municipal and irrigation facilities such as water treatment plants, and irrigation drop structures, using industrial control and communication systems.
- Developed skills integrating mechanical and electrical systems, focusing on Direct Digital Control (DDC) systems for HVAC building management systems.
- Knowledge base includes domestic plumbing systems, forced air heating and cooling, hydronic heating, chilled water and DX cooling systems, ventilation exhaust, heat recovery, mechanical acoustics and other general mechanical knowledge. He has excellent project design knowledge in environments which include: schools, commercial buildings, industrial buildings, institutions and water treatment plants.
- Experience with Architectural Lighting and many different aspects of commercial building construction. Including lighting retrofits and site lighting.

EDUCATION

B.Sc., Electrical Engineering
University of Alberta, 2000

Journeyman Electrician
Lethbridge Community College, 2003

Master Electrician
Lethbridge Community College, 2006

Practical Fundamentals of Heating and Ventilation and Air Conditioning (HVAC)
IDC Technologies, 2006

National Council on Qualifications for the Lighting Professions (NCQLP)
Lighting Certified (LC), 2012

PROFESSIONAL AFFILIATIONS

Professional Member
Association of Professional Engineers and Geoscientists of Alberta (APEGA)

Professional Member
Association of Professional Engineers and Geoscientists of British Columbia (APEGBC)

Professional Member
Association of Professional Engineers, Geoscientists of Manitoba (APEGM)

Professional Member
Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists (NAPEG)

LEED® Accredited Professional
Canada Green Building Council

PROFESSIONAL HISTORY

2003-Present, Electrical Engineer
MPE Engineering Ltd., Lethbridge, AB

2000-2003, Electrician Apprentice
Kenner Electric, Coaldale, AB





PROFESSIONAL EXPERIENCE

MECHANICAL ENGINEERING

- Saskatchewan Poly Tech., Air handling Unit Replacement, Ministry of Central Services, SK.
- CanNor Office Fix up, Yellow Knife, PWGSC, GUY Architects.
- PAPCC BMCS Upgrades, Ministry Central Services, Sask.
- Lethbridge Christian School Addition, Alvin Reinhart Fritz Architecture.
- Remington Carriage Centre Cooling System Upgrade, Alberta Infrastructure.
- Lethbridge Exhibition Park, HVAC Upgrades.
- K and S Legacy Camp Facility, BCT Structures.
- Garden View Lodge, Heating System Upgrade, Green Acres Foundation.
- Bosnak Welding Paint Booth Upgrades, Bosnak Welding.
- Kate Andrews High School, Boiler Replacement, Palliser Regional Schools.
- Trinity Church Boiler Replacement, Trinity Church.
- Chateh First Nation Courthouse, Bolt Modular Construction.
- Water Treatment Plant Design and Construction, Town of Magrath.
- Lethbridge Center Chiller Addition, Melcor Developments.
- CFIA 3rd Party Mechanical Commissioning, W&R Restoration.
- Ice Resurfacing Room Reviews, City of Lethbridge.
- W R Myers School Heat Pump Replacement, Horizon School District.
- Southgate Surgical Centre, Hasegawa Engineering/Sherwood Developments.
- Milk River Hospital Humidification Upgrades, Alberta Health Services.
- Rogers Sugar Taber, WWTP Biogas Boiler Replacement, Lantic Inc.
- Lethbridge Correctional Centre, Chiller Replacement, Alberta Infrastructure.
- Cardston Provincial Building, Cooling System Replacement, Alberta Infrastructure.
- Yellow Lake Pumphouse, St. Mary's River Irrigation District.
- Bassano Dam HVAC Audit, Eastern Irrigation District.
- Tobacco Plains Indian Band Community Centre, MDG Contracting.
- Teck Coal Mountain View Office HVAC Assessment, Teck Coal.

MECHANICAL/ELECTRICAL ENGINEERING

- Fort Vermilion Ice Plant Replacement, Mackenzie County.
- Taber Arena Upgrades, Town of Taber.
- Lethbridge Research Centre, Level 2 Lab Renovation, Alberta Infrastructure.
- Fort Macleod Pool Design Build, Town of Fort Macleod.
- Luck Lake Irrigation District Pump House Upgrades, Town of Coaldale.
- Barnwell School Modernization, Horizon School District.
- Opiod Crisis Center, Piikani Nation Child and Family Services.
- PWGSC, Agronomy Building Fire Repairs, Lethbridge Research Centre.



PROFESSIONAL EXPERIENCE

MECHANICAL/ELECTRICAL ENGINEERING (CONT'D)

- Norman Wells 120 person Camp, BCT Structures.
- CNRL Locker / Office Complex, BCT Structures.
- PWGSC Agronomy Building Fire Repairs, Lethbridge Research Centre.
- Carmangay Boiler Replacement, Palliser Regional Schools.
- Nordegg Fire Hall Design-Build Review, Clearwater County.
- Coaldale Arena Dressing Room Addition, and Ice Plant Replacement, Town of Coaldale.
- Fleetwood Bawden Elementary School, G.S. Lakie Middle School, Lakeview Elementary School, Agnes Davidson Elementary School, Gerald Probe Elementary School, Portable Additions, Lethbridge School District #51.
- Pike Lake Wheat Growth Chamber Facility, BASF (Saskatoon).
- Pleasant View Lodge Sprinkler System Upgrades, Forty Mile Foundation.
- Prince of Wales Water Supply System, Glacier National Park Inc.

RICHARD OFSTIE, P.ENG. **ELECTRICAL ENGINEER**

Mr. Ofstie is a graduate of the Electrical Engineering program at the University of Saskatchewan. He is involved in the design and construction of electrical and control systems.



HIGHLIGHTS OF EXPERIENCE

- Mr. Ofstie has worked on a variety of projects dealing with water and wastewater electrical and automation design.
- His knowledge base includes power distribution, electric motors, PLC control and instrumentation systems and electronics design.
- Mr. Ofstie is responsible for designing electrical building systems. His background in automation design and power distribution produces projects that meet the vision of the client.

EDUCATION

B.Sc., Electrical Engineering
University of Saskatchewan, 2014

PROFESSIONAL AFFILIATIONS

Professional Member
Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS)

Professional Member
Association of Professional Engineers and Geoscientists of Alberta (APEGA)

PROFESSIONAL HISTORY

September 2014-Present, Electrical Engineer
MPE Engineering Ltd., Saskatoon, SK

2013-2014, Engineering and Innovations Technician
Hines Industrial Site Services Group Ltd., Fort McMurray, AB

2011-2013, Project Controls
CIMS Ltd. (formerly Kamtech Services Ltd.), Saskatoon, SK





PROFESSIONAL EXPERIENCE

BUILDING SERVICES ELECTRICAL DESIGN

- Plamondon Agriplex Transfer Switch design, Lac La Biche County.
- County Building Fire Alarm System Design, Lac La Biche County.
- Campground Development (64 sites), Blackstrap Provincial Park.
- Electrical Service Upgrade (64 sites), Rolling Hills Campground.
- Electrical Service Upgrade, Red Deer Campground.
- M&N Resort Development, Waterhen Lake First Nation.
- Bold Center Generator Design, Lac La Biche County.
- Plamondon Festival Transfer Switch Design, Lac La Biche County.

WATER AND WASTEWATER ELECTRICAL & CONTROLS DESIGN

- Wastewater Treatment Plant Design, Town of Vermillion.
- Wastewater Treatment Plant Upgrade, Town of St. Paul.
- Raw Water Supply Upgrades, Town of Indian Head.
- Greenwater Lake Provincial Park Main Wastewater Lift Station Design, Ministry of Parks, Culture, & Sport.
- North Battleford Well 16 Completion, Watermark Consulting Ltd.
- North Battleford Well 11, 12, & 17 Completion, Watermark Consulting Ltd.
- FE Holiday Water Treatment Plant Filter 1 & 2 UV Upgrades, City of North Battleford.
- North Pumping Station Upgrade, City of Regina.
- Water Treatment Plant Control System Upgrades, Town of Lashburn.
- Water Treatment Plant Upgrades, Town of Assiniboia.
- Greenwater Lake Provincial Park Wastewater System Upgrades, Ministry of Parks, Culture & Sport.
- Water Treatment Plant Upgrade, Village of Weirdale.
- The Battlefords Provincial Park Potable Water System Upgrade, Ministry of Parks, Culture & Sport.
- Waste Water Treatment Systems Upgrade, Qu'Appelle Beef Ltd.
- Greenwater Lake Provincial Park Wastewater Lift Station, Ministry of Parks, Culture & Sport.
- Boundary Dam Power Station Lagoon Expansion, SaskPower.
- Potable Water Supply System PRV Vault, SaskWater.
- Elbow Non-Potable Water Supply System, SaskWater.
- Greenwater Lake Provincial Park WTP Upgrades, Ministry of Parks, Culture & Sport.
- Moose Mountain Provincial Park Wastewater Lift Station Upgrades, Ministry of Parks, Culture & Sport.
- Water Plant Upgrades II, Lac La Biche County.
- Pump Station & Onsite Power Upgrade, Village of Annaheim.
- Lake Irrigation Design Phase 1, Wascana Centre Authority.
- Design and Procurement of a Variable Speed Drive, City of Moose Jaw.



PROFESSIONAL EXPERIENCE

AUTOMATION AND CONSTRUCTION COMMISSIONING

- Well 24, City of North Battleford.
- PLC and SCADA Upgrade, Qu'Appelle Beef Ltd.
- WWTP Control Upgrade, City of North Battleford.
- WTP Control Upgrade, City of North Battleford.
- North Pump Station - Pump 5 Replacement, City of Regina.
- Distribution System Programming, City of North Battleford.
- Gas Monitor Addition, City of Weyburn.
- WTP2 Captor Pump Addition, City of North Battleford.
- Nickel Lake Building Security Upgrade, City of Weyburn.
- WTP Water Quality Monitoring Automation, City of Weyburn.
- WTP2 Pre Treatment Programming, City of North Battleford.
- WTP 1 Wells 25, 26, 27, 28 Control Panel Design & Programming, City of North Battleford.
- WTP 2017 Controls Upgrades, City of North Battleford.
- WWTP PLC Migration, City of North Battleford.
- WTP2 Chlorine System Automation Upgrade, City of North Battleford.
- WTP 2018 Controls Upgrades, City of North Battleford.
- Public Works Pressure Monitoring System, City of North Battleford.

STUDIES & ASSESSMENTS

- Lift Station Assessments, City of Winnipeg.
- WSA and Water Infrastructure Condition Assessment, City of Regina.
- Lift Station Assessments, City of Saskatoon.
- Water and Wastewater Control System Assessment, City of Moose Jaw.
- Distribution Control Study, City of North Battleford.

HVAC ELECTRICAL DESIGN AND COMMISSIONING

- Garnet Street Lift Station Ventilation System Upgrades, City of Regina.
- Prince Albert Provincial Correctional Centre HVAC Upgrade, Ministry of Central Services.
- Water Treatment Plant HVAC System Upgrades at Chemical Feed Facility, City of Saskatoon.

RYAN URSU, P.ENG. **PROJECT MANAGER/DESIGN ENGINEER**

Mr. Ursu joined MPE Engineering Ltd. in 2008. Ryan has been the Project Manager as well as the Lead Mechanical Designer for several studies, design projects and construction projects. These projects involved municipal/industrial infrastructure, water/wastewater treatment and water supply/distribution.



HIGHLIGHTS OF EXPERIENCE

- Project management, project co-ordination, process mechanical design and construction services on water and wastewater treatment plants, raw water supply systems, pump stations and distribution systems.
- Project Engineer for the City of Regina WSA & Water Infrastructure Condition Assessment, completing mechanical assessment of all water supply, storage and distribution infrastructure for the City's potable water system. The report provided a tool to assist in planning, scheduling, and budgeting for infrastructure upgrades
- Process Mechanical Designer for the Ministry of Central Services / Wascana Centre Authority - WCA Lake Irrigation Project, which included full pump station upgrades to supply irrigation water to Wascana Park located in the City of Regina.
- Project Manager and Mechanical Designer for the City of Moose Jaw Northeast Reservoir Pumping House - Pump 1 Drive Replacement Project, completing detailed design and overseeing construction and commissioning for the project.
- Project Engineer and Mechanical Designer for the City of Regina North Pumping Station - Pump No. 5 Replacement Project, completing detailed design, a construction sequencing plan and overseeing construction and commissioning for the project.

EDUCATION

B.Sc., Industrial Systems Engineering
University of Regina, 2006

PROFESSIONAL AFFILIATIONS

Professional Member

Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS)

Association of Professional Engineers and Geoscientists of Alberta (APEGA)

Engineers and Geoscientists Manitoba (APEGM)

Engineers and Geoscientists British Columbia (EGBC)

Member

Western Canada Water Association (WCW)

American Water Works Association (AWWA),
Western Canada Section

American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE)

PROFESSIONAL HISTORY

2015-Present, Project Manager
MPE Engineering Ltd., Regina, SK

2008-2015, Project Engineer
MPE Engineering Ltd., Lethbridge, AB

**2006-2007, Operations Management Trainee/
Project Engineer**
Canbra Foods Ltd./Richardson Oilseed,
Lethbridge, AB





PROFESSIONAL EXPERIENCE

PROJECT MANAGER/DESIGN ENGINEER

- Chlorine Booster Station, City of Regina
- Wastewater Treatment Plant Blower Upgrade, City of Moose Jaw
- 4th Avenue Reservoir Repair, City of Regina
- Water Treatment Plant HVAC System Upgrades at Chemical Feed Facility, City of Saskatoon
- Wascana Lake Irrigation Project, Ministry of Central Services / Wascana Centre Authority
- Northeast Reservoir Pump House Pump 1 Drive Replacement, City of Moose Jaw
- North Pumping Station Pump No. 5 Replacement, City of Regina
- Wakaw Humboldt Potable Water Supply System Upgrade, Elbow Water Supply System Intake and Pump Station, SaskWater
- Water Tower Rehabilitation, Town of Qu'Appelle
- Moose Mountain Provincial Park Wastewater Lift Station Upgrades, Ministry of Parks, Culture and Sport
- Water Treatment Plant Upgrade, Village of Weirdale
- Pump Station Upgrade, Village of Annaheim
- Boundary Dam Power Station - Sewage Lagoon Expansion, SaskPower
- Kinsmen Sportsplex Pool System, City of Moose Jaw
- Reverse Osmosis Water Treatment Plant, Process Wastewater System Upgrades, Qu'Appelle Beef Ltd.
- CEA Well Project Water Treatment Facility, Town of Shaunavon
- Membrane Filtration Water Treatment Plant, Lamb Weston
- Water Treatment Plant & Raw Water Pump Station Upgrade, Town of Redcliff
- Membrane Filtration Water Treatment Plant, Village of Lomond
- Water Treatment Plant Carbon Dioxide Injection System, Village of Barnwell
- Pressure Reducing Station Chlorine Upgrade & Distribution Piping Upgrade, Town of Coaldale
- Patricia, Scandia & Rolling Hills Distribution Pump Station Upgrades, County of Newell
- Vauxhall Regional WTP & Meter Vault, Enchant & Hays Pump Station Upgrades, Vauxhall & District Regional Water Services Commission
- Raymond Regional WTP Upgrades, New Dayton Meter Vault & Warner Pump Station Upgrades, County of Warner
- Bow Island Regional WTP, Burdett & Grassy Lake Pump Stations, Highway 3 Regional Water Services Commission
- Raw Water Supply Upgrade & WTP Raw Water Pipeline Re-Alignment, Piikani Nation Public Works
- Brooks Regional Water Treatment Plant, Newell Regional Services Corporation
- Galt Gardens Fountain, City of Lethbridge
- Regional Water Treatment Plant Expansion, Village of Nobleford
- Monarch Regional Booster Pump Station & Pump Station Upgrades, County of Lethbridge

ASSESSMENTS/STUDIES

- Lift Station Condition Assessments, South End Water Pollution Control Centre High Purity Oxygen Tank Assessment, City of Winnipeg
- Lift Station Condition Assessments, City of Dawson Creek
- Lift Station Assessments 2017, City of Saskatoon
- Water and Wastewater Control System Assessment, City of Moose Jaw
- Water Infrastructure Condition Assessment, 4th Avenue Reservoir Assessment, Tor Hill Reservoir Assessment, City of Regina
- Waterworks System Assessments: City of Regina, Bridlewood Estates, Lamb Weston, Village of Lomond, County of Forty Mile, Cardston County
- Pilot Studies, Town of Raymond Regional WTP, MD of Pincher Creek - Lundbreck Cowley WTP, Town of Redcliff WTP, Lamb Weston WTP, Village of Lomond WTP, MD of Taber - Vauxhall Regional WTP
- Water Treatment Plant Optimization, Village of Barnwell, Town of Claresholm, Town of Magrath

DAVE MEINDERTSMA, C.E.T. **ELECTRICAL/CONTROLS ENGINEERING TECHNOLOGIST**

Mr. Meindertsma is an Electrical/Controls Engineering Technologist with more than 15 years of experience in automation and electrical design, specification, programming and commissioning.



HIGHLIGHTS OF EXPERIENCE

- Dave is responsible for the electrical/instrumentation and microprocessor automation engineering including specifications, configurations, programming and commissioning, while recognizing advancing technology standards and common industry practices and trends. He possesses extensive experience within various PLC, HMI and SCADA environments, electrical engineering, switchgear, utility and backup service for industrial applications, as well as knowledge of configuration parameters for several common field instruments, drives and mechanical systems.
- Dave is also responsible for electrical system designs, specifications and project facilitation within municipal and building services projects as well as electrical systems assessments.
- Dave has designed custom control strategies for problematic processes, including programming, loop tuning/commissioning and training for situations of instrument capability restraints or process shortcomings.
- Dave also possesses years of field commissioning experience that has involved organization, coordination, and supervision of work personnel on a wide-range of project sizes, while being capable of quickly adapting to ever-changing field conditions.

EDUCATION

Instrumentation Engineering Technology
Northern Alberta Institute of Technology, 2005

PROFESSIONAL AFFILIATIONS

Member
Association of Science and Engineering
Technology Professionals of Alberta (ASET)

Member
International Society of Automation (ISA)

PROFESSIONAL HISTORY

2015-Present, Electrical/Controls Engineering
Technologist
MPE Engineering Ltd., Edmonton, AB

2014-2015, **Senior Automation Engineering
Technologist, Team Lead**
Dexcent Inc., Edmonton, AB

2013-2014, **Senior Automation Engineering
Technologist**
Nason Contracting Group, Edmonton, AB

2011-2013, **Senior Automation Engineering
Technologist**
CIMA+, Edmonton, AB

2007-2011 & 2014, **Automation Technologist**
Vector Electric & Controls, Edmonton, AB

2005-2007, Instrument Technician, Branch
Manager - Parts
Surepoint Group, Edmonton, AB

2005, **Application Engineer**
ESC Automation, Edmonton, AB





PROFESSIONAL EXPERIENCE

MUNICIPAL

- Strathcona Edmonton Public Library Upgrade Building Automation & HVAC, City of Edmonton.
- Distribution Pump House, Synergy Eagle River.
- Water Treatment Plant Upgrades, Village of Glendon.
- Lucas Heights Pump House Upgrades, Ponoka County.
- Niven Lake Booster Station, City of Yellowknife.
- North Point Stormwater Station, Town of Bonnyville.
- Nahanni Butte Water Treatment Plant, Government of the Northwest Territories.
- Pollution Control Centre, Town of St. Paul.
- Water Treatment Plant Upgrades, Town of St. Paul.
- Water & Wastewater Upgrades, Fishing Lake Metis Settlement.
- Water Treatment Plant Upgrades, Town of Fox Creek.
- LED Lighting Upgrades, Alberta Infrastructure.
- Distribution Reservoir Upgrades, Lamont County.
- Distribution Reservoir #5 Upgrades, City of Cold Lake.
- 137 Avenue Drainage Trunk Line System, City of Edmonton.
- Hardisty Control Gate, City of Edmonton.
- North Port Lift Station, City of Edmonton.
- Water Treatment Plant Upgrades, Town of Okotoks.
- Parkland Lift Station Upgrades, Alberta Capital Region Wastewater Services Commission.
- Lacombe County Fill Stations Upgrades, Highway 12/21 Regional Water Services Commission.
- Beaver River Wastewater Treatment Plant, PTI (Civeo).
- Villeneuve Distribution Pump House, Sturgeon County.
- Northern Lights Distribution Pump House, Sturgeon County.
- Firebag Wastewater Treatment Plant Upgrades, Suncor Energy.
- Water Distribution System Upgrades, RM of Wood Buffalo.
- Booster & Fill Station Upgrades, Alberta Capital Region Southwest Water Services Commission.
- Headworks Upgrade, Alberta Capital Region Wastewater Services Commission.
- Raw Water Production Wells, Town of Mayerthorpe.
- Reservoir & Pumping Station Upgrades, Town of Westlock.
- Hamlet of Blackfoot Water & Wastewater Upgrades, County of Vermilion River.
- Rural Potable Water Infrastructure, Mackenzie County.
- Regional SCADA System Installation, MD of Opportunity No. 17.
- Lift Station Upgrades, Town of Viking.
- Lift Station Upgrades, Town of High Prairie.
- Wastewater Upgrades, Village of Consort.
- Regional SCADA System Design.



PROFESSIONAL EXPERIENCE

MUNICIPAL

- Wastewater Treatment Plant, Town of Vermilion.
- Water Treatment Plant Upgrades, Town of Mayerthorpe.
- Pumping Station Upgrades, Town of Westlock.
- Savanna Water Treatment Plant, Saddle Hills County.

POWER DISTRIBUTION/SUBSTATION

- Central & Northern Alberta Substation Telecontrol System Upgrades, Atco Electric.
- Substation 162 Upgrades, Enmax.

OIL & GAS

- Natural Gas Well Head Installations & Upgrades, Clearwater County.
- Level Profiler & K40 Analyzer Upgrades, Suncor Energy.
- Hardisty Flow Computer Upgrades, Enbridge Pipelines.
- SCADA Services Integration Upgrades, Enbridge Pipelines.

MINING & SURFACE EXCAVATION

- AC Crusher Addition, Inland Aggregates.
- Cerro Negro Argentina Data Centralization Upgrades, GoldCorp Inc.

BUILDING SERVICES

- Provincial Building LED Upgrades, St. Albert, Alberta Infrastructure.
- Provincial Building LED Upgrades, Morinville, Alberta Infrastructure.
- Edmonton Young Offenders Centre External LED Upgrade, Alberta Infrastructure.
- Queen Elizabeth High School Electrical Service Upgrade, Edmonton Public Schools.
- McKee Elementary School Electrical Distribution Upgrade, Edmonton Public Schools.
- EPSB Exterior LED Upgrades for Various Schools, Edmonton Public Schools.
- Calling Lake Fire Hall Addition, MD of Opportunity No. 17.
- John E. Brownlee Security Server Upgrade for Cameras, Alberta Infrastructure.

RONDA MORGAN GRANT SPECIALIST

Ms. Morgan is a Grant Specialist with more than 40 years of extensive experience with grant program design and delivery including policy development, operational planning, system requirements, and drafting of grant program guidelines and application forms.



HIGHLIGHTS OF EXPERIENCE

- Strong stakeholder relation and interpersonal skills; excellent decision-making and negotiation skills.
- Significant experience collaborating with government stakeholders and community organizations to strengthen program policy.
- Financial accountability through audit compliance and fiscal reporting.
- Successful time management skills; ability to work in high pressure environment.
- Strong research skills including investigation of historic scans and trends, legislation, and policies.
- Superior written and verbal communication skills with a commitment to client service.

EDUCATION

Management Development Program
University of Alberta, 2012

Project Management Principles; Project
**Management; Resolving Conflict Collaboratively;
Effective Writing**
Government of Alberta, 2006-2010

Local Government Studies Program Certificate
University of Alberta, 2005

Accounting Certificate
Northern Alberta Institute of Technology, 2001

Records Management Certificate
Government of Alberta, 1998

PROFESSIONAL HISTORY

November 2019
MPE Engineering Ltd., Edmonton, AB

2003-2019, Grant Policy Advisor
Alberta Municipal Affairs

1999-2003, **Operational Support Supervisor**
Alberta Municipal Affairs

1984-1999, **Financial & Systems Operations**
Coordinator
Alberta Municipal Affairs

1982-1984, Policies and Procedures Assistant
Alberta Housing

1980-1982, Invoice Approval Supervisor
Alberta Housing





ALBERTA MUNICIPAL AFFAIRS

- Participate in the development and delivery of new or existing grant programs and initiatives, including the Alberta Community Partnership, Municipal Sustainability Initiative, Regional Collaboration Program, Regional Partnerships Initiative, and Municipal Sponsorship Program.
 - Coordinate municipal grant program delivery which involves design and updates to program guidelines, grant application forms, and grant funding formulas.
 - Development of grant roll-out process, communication plan, database requirements, and program announcement correspondence.
 - Coordination of the grant evaluation process, including assessment of staffing requirements, designing and conducting orientation sessions for application reviewers, and debriefing sessions to identify program efficiencies and areas for improvement.
 - Prepare grant recommendation briefings, memos and letters, and conditional grant agreements with detailed project descriptions and budgets.
- Prepare and conduct grant presentations to internal and external stakeholders.
- Support and liaise with ministry colleagues for grant administration, including feedback to other program areas and ministries regarding project eligibility and review of their respective program criteria.
- Conduct background research and analysis in the preparation of briefing notes, memos, and letters in response to Ministry Priorities and initiatives.
- Maintain awareness of legislative and regulatory requirements to ensure grant programs are relevant and responsive to stakeholder needs.
- Primary grant advisor to the Calgary Metropolitan Region Board and the Edmonton Metropolitan Region Board.
 - Representative on the Ministry Growth Management Board Secretariat to provide advice and guidance on financial matters.
- Conduct issue analysis and identify policy implications with recommended solutions on subjects like cross-ministry consultation, grant thresholds, changes to grant eligibility criteria, and funding eligibility for dissolved and amalgamated municipalities.
- Coordinated and development of a site visit proposal. This included identification of the purpose and objectives, stakeholders, project selection criteria, scheduling, performance measurements, and projected resources and budget impacts.
- Member of multi-disciplinary team to evaluate and develop a significant information technology grant tracking and reporting system request for proposal (RFP).
- Periodically attend municipal association (Alberta Urban Municipalities Association, Rural Municipalities of Alberta, Local Government Administrators Association, and Alberta Rural Municipal Administrators' Association) conventions and zone meeting as a ministry representative.
 - Meet with municipal officials and representatives to discuss grant program details and requirements, and alignment opportunities between municipal priorities and grant program parameters.
- Ensured administrative and operational processes, policies and practices of the Grants and Administration Unit were developed, implemented, and maintained.
- Supervised nine administrative support staff. Consulted with the Executive Director and Unit Directors as required.
- Participated on the Municipal Sponsorship Program grant application review panels.
- Responsible for contract management which involved contract preparation, financial tracking and compliance monitoring.
- Developed and maintained liaisons with Division and other areas of the Department to coordinate areas of shared responsibilities.
- Assisted the Executive Director and Director of Grants and Administration with the preparation of Branch business plan submissions.

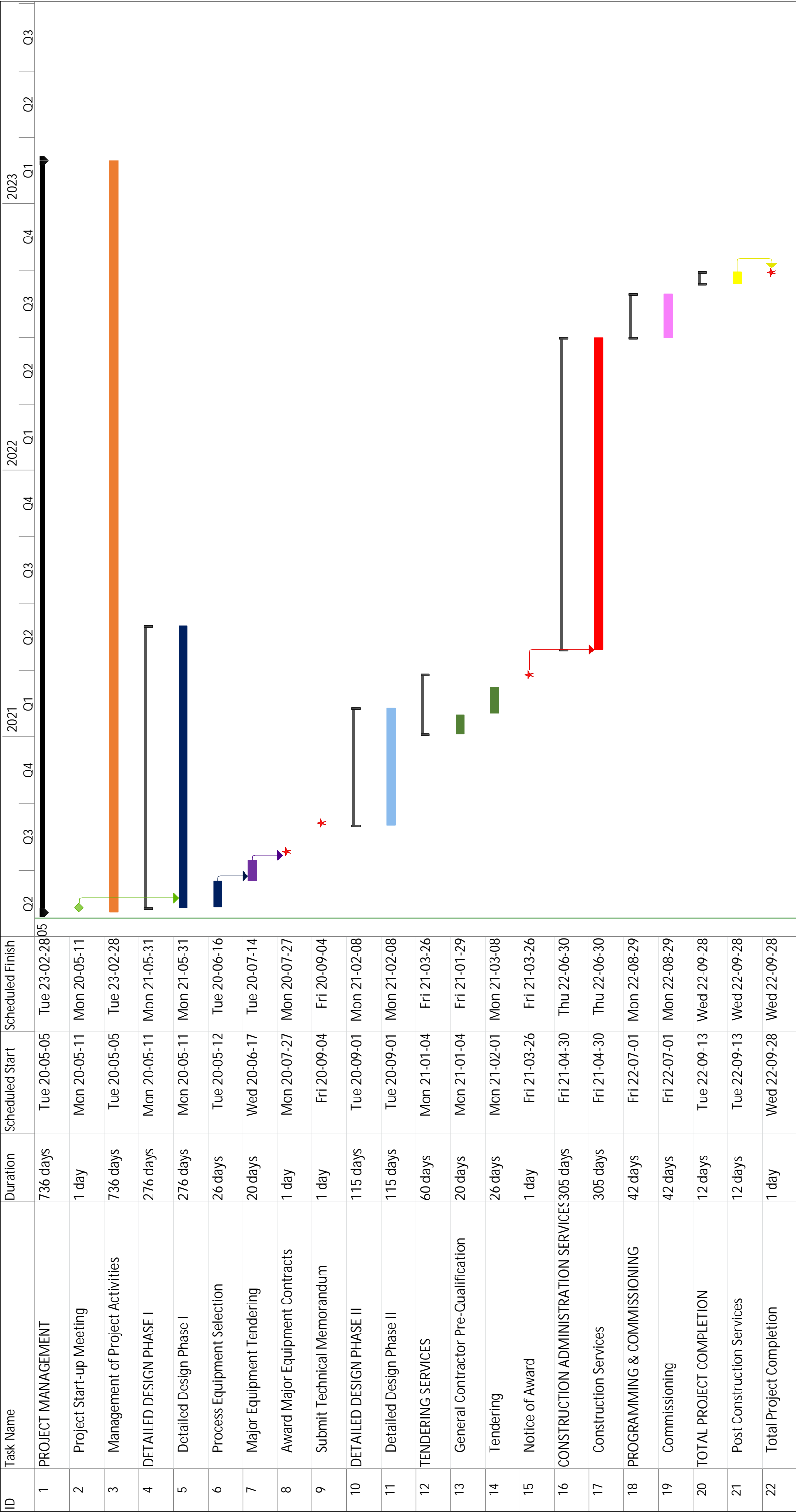


GRANDE CACHE WWTP

APPENDIX C

PROJECT SCHEDULE





Project: Grande Cache WWTP
Date: Mon 20-04-27

Task

Split

Milestone

Summary

Project Summary

External Tasks

External Milestone

Inactive Task

Manual Summary Rollup

Manual Summary

Start-only

Finish-only

Deadline

Progress

Manual Progress

| ID | Task Name | Duration | Scheduled Start | Scheduled Finish | M 2020, Half 2 J J A S | | | | |
|----|---|----------|-----------------|------------------|---------------------------------------|--|--|--|--|
| 1 | DETAILED DESIGN PHASE I | 276 days | Mon 20-05-11 | Mon 21-05-31 | | | | | |
| 2 | Project Start Up Meeting | 1 day | Mon 20-05-11 | Mon 20-05-11 | | | | | |
| 3 | Data Collection | 4 days | Tue 20-05-12 | Fri 20-05-15 | | | | | |
| 4 | Regulatory Approval Requirements | 10 days | Tue 20-05-12 | Mon 20-05-25 | | | | | |
| 5 | Site Inspection | 1 day | Tue 20-05-12 | Tue 20-05-12 | | | | | |
| 6 | Site Survey | 2 days | Tue 20-05-12 | Wed 20-05-13 | | | | | |
| 7 | Process Design | 50 days | Tue 20-05-12 | Mon 20-07-20 | | | | | |
| 8 | Process Equipment Selection | 26 days | Tue 20-05-12 | Tue 20-06-16 | | | | | |
| 9 | Development of RFPs for Major Equipment | 5 days | Wed 20-06-10 | Tue 20-06-16 | | | | | |
| 10 | Review Meeting No. 1 | 1 day | Wed 20-06-17 | Wed 20-06-17 | | | | | |
| 11 | Major Equipment Tendering | 20 days | Wed 20-06-17 | Tue 20-07-14 | | | | | |
| 12 | Review of Major Equipment Proposals | 7 days | Wed 20-07-15 | Thu 20-07-23 | | | | | |
| 13 | Review Meeting No. 2 | 1 day | Mon 20-07-27 | Mon 20-07-27 | | | | | |
| 14 | Award Major Equipment Supply Contracts | 1 day | Mon 20-07-27 | Mon 20-07-27 | | | | | |
| 15 | Major Equipment Procurement | 220 days | Tue 20-07-28 | Mon 21-05-31 | | | | | |
| 16 | PFD, P&ID, and Hydraulic Profile | 24 days | Wed 20-05-27 | Mon 20-06-29 | | | | | |
| 17 | Development of G/A Drawings | 30 days | Wed 20-05-27 | Tue 20-07-07 | | | | | |
| 18 | Civil Design | 50 days | Wed 20-05-27 | Tue 20-08-04 | | | | | |
| 19 | Review Meeting No. 3 | 1 day | Wed 20-08-05 | Wed 20-08-05 | | | | | |
| 20 | Architectural/Structural Design | 50 days | Mon 20-06-01 | Fri 20-08-07 | | | | | |
| 21 | Mechanical (HVAC) Design | 50 days | Mon 20-06-01 | Fri 20-08-07 | | | | | |
| 22 | Electrical & Controls Design | 50 days | Mon 20-06-01 | Fri 20-08-07 | | | | | |
| 23 | Development of Cost Estimate | 5 days | Mon 20-08-03 | Fri 20-08-07 | | | | | |
| 24 | Development of Contract Approach & Construction Sequencing Plan | 3 days | Mon 20-08-03 | Wed 20-08-05 | | | | | |
| 25 | Preparation of the Technical Memorandum | 5 days | Thu 20-08-06 | Wed 20-08-12 | | | | | |
| 26 | Submit Technical Memorandum | 1 day | Fri 20-09-04 | Fri 20-09-04 | | | | | |
| 27 | Review Meeting No. 4 | 1 day | Fri 20-09-04 | Fri 20-09-04 | | | | | |

| | | | | | |
|--|-----------|--------------------|--------------------|-----------------------|-----------------|
| Project: Grande Cache WWTP Date: Fri 20-04-24 | Task | Project Summary | Inactive Milestone | Manual Summary Rollup | Deadline |
| | Split | External Tasks | Inactive Summary | Manual Summary | Progress |
| | Milestone | External Milestone | Manual Task | Start-only | Manual Progress |
| | Summary | Inactive Task | Duration-only | Finish-only | |
| | | | | | |

| ID | Task Name | Duration | Scheduled Start | Scheduled Finish | Aug | Sep | 2020 Qtr 4 | 2021 Qtr 1 | 2021 Qtr 2 | 2021 Qtr 3 | |
|----------------------------|---|-----------|--------------------|--------------------|--------------------|--------------------|-----------------------|-----------------|------------|------------|--|
| 1 | Major Equipment Procurement | 220 days | Mon 20-09-21 | Fri 21-07-23 | <div>09-01</div> | | | | | | |
| 2 | DETAILED DESIGN | 115 days | Tue 20-09-01 | Mon 21-02-08 | | | | | | | |
| 3 | Process Design Finalization | 20 days | Tue 20-09-01 | Mon 20-09-28 | | | | | | | |
| 4 | Process Mechanical Design & Drawings | 20 days | Tue 20-09-29 | Mon 20-10-26 | | | | | | | |
| 5 | Review Meeting No. 5 (50%) | 1 day | Tue 20-10-27 | Tue 20-10-27 | | | | | | | |
| 6 | Civil Design & Drawings | 30 days | Tue 20-09-29 | Mon 20-11-09 | | | | | | | |
| 7 | Architectural & Structural Design & Drawings | 60 days | Tue 20-09-29 | Mon 20-12-21 | | | | | | | |
| 8 | Mechanical HVAC Design & Drawings | 40 days | Tue 20-09-29 | Mon 20-11-23 | | | | | | | |
| 9 | Electrical & Controls Design & Drawings | 60 days | Tue 20-09-29 | Mon 20-12-21 | | | | | | | |
| 10 | Control Philosophy Development | 10 days | Tue 20-12-22 | Mon 21-01-04 | | | | | | | |
| 11 | Review Meeting No. 6 (75%) | 1 day | Tue 20-11-24 | Tue 20-11-24 | | | | | | | |
| 12 | Preparation of Applicable Permit Application | 5 days | Wed 20-11-25 | Tue 20-12-01 | | | | | | | |
| 13 | Preparation of Pre-Tender Cost Estimates | 15 days | Tue 20-12-22 | Mon 21-01-11 | | | | | | | |
| 14 | Review Meeting No. 7 (95%) | 1 day | Tue 21-01-12 | Tue 21-01-12 | | | | | | | |
| 15 | Design Finalization | 8 days | Wed 21-01-13 | Fri 21-01-22 | | | | | | | |
| 16 | Final Regulatory Approval | 18 days | Wed 21-01-13 | Fri 21-02-05 | | | | | | | |
| 17 | Review Meeting No. 8 (100%) | 1 day | Mon 21-02-08 | Mon 21-02-08 | | | | | | | |
| 18 | TENDERING SERVICES | 60 days | Mon 21-01-04 | Fri 21-03-26 | | | | | | | |
| 19 | General Contractor Pre-Qualification | 20 days | Mon 21-01-04 | Fri 21-01-29 | | | | | | | |
| 20 | Finalization of Tender Documents | 19 days | Mon 21-01-04 | Thu 21-01-28 | | | | | | | |
| 21 | Forward Tender Documents to Pre-Qualified General Contractors | 1 day | Fri 21-01-29 | Fri 21-01-29 | | | | | | | |
| 22 | Tendering | 26 days | Mon 21-02-01 | Mon 21-03-08 | | | | | | | |
| 23 | Contractor Site Meeting | 1 day | Thu 21-02-11 | Thu 21-02-11 | | | | | | | |
| 24 | Responding to Contractor Questions & Preparation of Addenda | 5 days | Fri 21-02-12 | Thu 21-02-18 | | | | | | | |
| 25 | Tender Review & Recommendation of Award | 13 days | Tue 21-03-09 | Thu 21-03-25 | | | | | | | |
| 26 | Notice of Award | 1 day | Fri 21-03-26 | Fri 21-03-26 | | | | | | | |
| | | | | | | | | | | | |
| Project: Grande Cache WWTP | | Task | Project Summary | Project Summary | Inactive Milestone | Inactive Milestone | Manual Summary Rollup | Deadline | | | |
| Date: Thu 20-04-23 | | Split | External Tasks | External Tasks | Inactive Summary | Inactive Summary | Manual Summary | Progress | | | |
| | | Milestone | External Milestone | External Milestone | Manual Task | Manual Task | Start-only | Manual Progress | | | |
| | | Summary | Inactive Task | Inactive Task | Duration-only | Duration-only | Finish-only | | | | |
| Page 1 | | | | | | | | | | | |

| ID | Task Name | Duration | Scheduled Start | Scheduled Finish | S | N | 2021, Half 1 | M | M | 2021, Half 2 | S | N | 2022, Half 1 | M | M | 2022, Half 2 | S |
|----|---|----------|-----------------|------------------|---|---|--------------|---|---|--------------|---|---|--------------|---|---|--------------|---|
| 1 | MAJOR EQUIPMENT PROCUREMENT | 220 days | Mon 20-09-21 | Fri 21-07-23 | | | | | | | | | | | | | |
| 2 | Major Equipment Procurement | 220 days | Mon 20-09-21 | Fri 21-07-23 | | | | | | | | | | | | | |
| 3 | CONSTRUCTION ADMINISTRATION SERVICES | 305 days | Fri 21-04-30 | Thu 22-06-30 | | | | | | | | | | | | | |
| 4 | Construction Start-up Meeting | 1 day | Fri 21-04-30 | Fri 21-04-30 | | | | | | | | | | | | | |
| 5 | General Review During Construction | 304 days | Mon 21-05-03 | Thu 22-06-30 | | | | | | | | | | | | | |
| 6 | Engineer Review During Construction | 304 days | Mon 21-05-03 | Thu 22-06-30 | | | | | | | | | | | | | |
| 7 | PROGRAMMING AND COMMISSIONING | 52 days | Fri 22-07-01 | Mon 22-09-12 | | | | | | | | | | | | | |
| 8 | Pre-Commissioning | 21 days | Fri 22-07-01 | Fri 22-07-29 | | | | | | | | | | | | | |
| 9 | Commissioning | 21 days | Mon 22-08-01 | Mon 22-08-29 | | | | | | | | | | | | | |
| 10 | Quality Assurance (Performance Testing) | 10 days | Tue 22-08-30 | Mon 22-09-12 | | | | | | | | | | | | | |
| 11 | TOTAL PROJECT COMPLETION | 12 days | Tue 22-09-13 | Wed 22-09-28 | | | | | | | | | | | | | |
| 12 | Post construction Services | 12 days | Tue 22-09-13 | Wed 22-09-28 | | | | | | | | | | | | | |
| 13 | Total Project Completion | 1 day | Wed 22-09-28 | Wed 22-09-28 | | | | | | | | | | | | | |

Project: Grande Cache WWTP
Date: Mon 20-04-27

Task

Split

Milestone

Summary

Project Summary

External Tasks

External Milestone

Inactive Task

Manual Summary Rollup

Manual Summary

Start-only

Finish-only

Deadline

Progress

Manual Progress

Page 1

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GRANDE CACHE WWTP

APPENDIX D INSURANCE



CERTIFICATE OF INSURANCE

TO WHOM IT MAY CONCERN

NAMED INSURED:

MPE Engineering Ltd.
#300, 714 - 5th Avenue
Lethbridge, AB T1J 0V1

BROKER:

Lloyd Sadd Insurance Brokers Ltd.
Suite 700, 10240 - 124 Street
Edmonton, AB T5N 3W6 P: (780) 483-4544

This certificate is issued as a matter of information only and confers no rights upon the certificate holder. This certificate does not amend, extend or alter the coverage afforded by the policies below. The insurance afforded is subject to the terms, conditions and exclusions of the applicable policy.

COMPANIES AFFORDING COVERAGE:

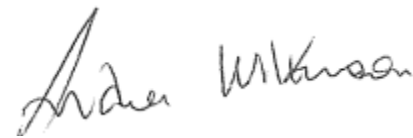
Company Letter "A" Travelers Insurance Company of Canada
Company Letter "B" Victor Insurance Managers Inc.

| CO LTR | TYPE OF INSURANCE | POLICY NUMBER | POLICY EFFECTIVE DATE | POLICY EXPIRY DATE | LIMIT | |
|------------------------------|---|---------------|-----------------------|--------------------|----------------------------|--|
| GENERAL LIABILITY | | | | | | |
| A | Commercial General Liability including: - Broad Form Property Damage - Personal & Advertising Injury - Cross Liability/Severability of Interest - Contingent Employers Liability - Incidental Malpractice Liability - Blanket Contractual | TRV0364145 | March 20, 2020 | March 20, 2021 | \$2,000,000 | Per Occurrence |
| | | | | | \$5,000,000 | General Aggregate |
| | | | | | \$2,000,000 | Aggregate Products & Completed Operations |
| A | Employers Liability | TRV0364145 | March 20, 2020 | March 20, 2021 | \$2,000,000 | Per Occurrence |
| A | Employee Benefits Liability | TRV0364145 | March 20, 2020 | March 20, 2021 | \$2,000,000 | Per Occurrence |
| A | Tenants Legal Liability | TRV0364145 | March 20, 2020 | March 20, 2021 | \$2,000,000 | Per Occurrence |
| A | Non-Owned Automobile | TRV0364145 | March 20, 2020 | March 20, 2021 | \$2,000,000 | Per Occurrence |
| A | SEF 94 - Legal Liability for Damage to Hired Automobiles | TRV0364145 | March 20, 2020 | March 20, 2021 | \$75,000 | Per Occurrence |
| A | Sudden and Accidental Pollution | TRV0364145 | March 20, 2020 | March 20, 2021 | \$2,000,000 | Per Occurrence |
| AUTOMOBILE LIABILITY | | | | | | |
| A | All Owned Automobiles | AUT0364144 | March 20, 2020 | March 20, 2021 | \$2,000,000 | Third Party Liability/ Combined Single Limit/Per Accident |
| UMBRELLA LIABILITY | | | | | | |
| A | Excess Limits of: • General Liability Policy No. TRV0364145 • Automobile Liability Policy No. AUT0364144 | TRV0364145 | March 20, 2020 | March 20, 2021 | \$3,000,000 \$3,000,000 | Per Occurrence Aggregate |
| ERRORS & OMISSIONS LIABILITY | | | | | | |
| B | E&O Design Professionals (A&E) | TEN534650 | August 6, 2019 | August 6, 2021 | \$5,000,000 | Inclusive Limits/Each Claim |

CANCELLATION

Should the Commercial General Liability policy be cancelled before the expiration date thereof, the issuing company will endeavor to mail *nil* days written notice to the certificate holder named above, but failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents or representative.

Lloyd Sadd Insurance Brokers Ltd.



per:

LloydSadd
INSURANCE BROKERS

 **NAVACORD**



GRANDE CACHE WWTP

APPENDIX E

WCB



9912 – 107 Street
PO Box 2415
Edmonton AB T5J 2S5

Email: ebusiness.support@wcb.ab.ca
Tel: (780) 498-3999 (1-866-922-9221)
Fax: (780) 498-7999
WCB website: www.wcb.ab.ca

April 24, 2020

Reference Number: 3339382

MUNICIPAL DISTRICT OF GREENVIEW #16
PO BOX 1079
VALLEYVIEW AB T0H 3N0

Dear Sir or Madam:

Re: MPE ENGINEERING LTD.
300-714 5 AVE S
LETHBRIDGE AB T1J 0V1

The above named subcontractor has an account with WCB-Alberta in the following industry(ies):

| account | trade names(s)/industry | effective date | coverage |
|---------|--------------------------|----------------|---|
| 2323266 | PROFESSIONAL ENGINEERING | Mar 08, 1983 | worker coverage personal coverage for: GERALD VELDMAN |

Thank you for checking into the status of this contractor or subcontractor. Under Section 126 of the Workers' Compensation Act, you are responsible for obtaining a clearance on your contractor or subcontractor, in order to release you from any liability for unpaid WCB premiums owed by them. Please ensure clearance has been issued in the correct name and that there is coverage in the industry(ies) for which work was performed.

Please accept this letter as a clearance for work completed between the effective date of the account and the date of this letter. For this account, you are cleared of any liability under Section 126 of the Workers' Compensation Act up to the date of this letter. Any holdback may be released for contracts completed, and/or for work completed to the date of this letter. For an account that shows closed under the effective date, the clearance is only valid for work completed up to the close date. If work has not started, obtain a clearance prior to releasing final payment.

Please note, if any directors of the corporation are injured at work, you are protected from lawsuit if they have personal coverage. If they do not have personal coverage, you may not be protected in the case of a workplace injury.

If your contractor or subcontractor is performing work outside Alberta, contact the WCB in that jurisdiction to determine your clearance and any other WCB requirements.

Any alteration of this document is strictly prohibited.

Yours truly,

eBusiness Support Team (11831735)



GRANDE CACHE WWTP

APPENDIX F

ALBERTA CONSTRUCTION SAFETY ASSOCIATION C.O.R.



Alberta Construction Safety Association

Associate Membership

MPE ENGINEERING LTD.

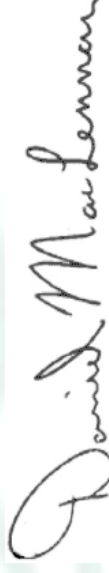
This certificate verifies that the above named company/organization is an associate member in good standing with the Alberta Construction Safety Association.

Membership entitles your company/organization and any of its employees to take advantage of the many products and services available through the Alberta Construction Safety Association.

1150

Registration Number

Executive Director



2020-02-02

Date

2021-02-02

Annual Renewal



GRANDE CACHE WWTP

APPENDIX G

APEGA PERMIT TO PRACTICE





The Association of Professional
Engineers and Geoscientists of Alberta

PERMIT TO PRACTICE

P03680

MPE Engineering Ltd

*Is Hereby Authorized to Engage in the Practice
of Engineering in the Province of Alberta*



Start Date: December 1, 2019
Expiry Date: November 30, 2020
Permit Holder Since: December 1982

Cooper

P.Eng.

President

F. Nagerman

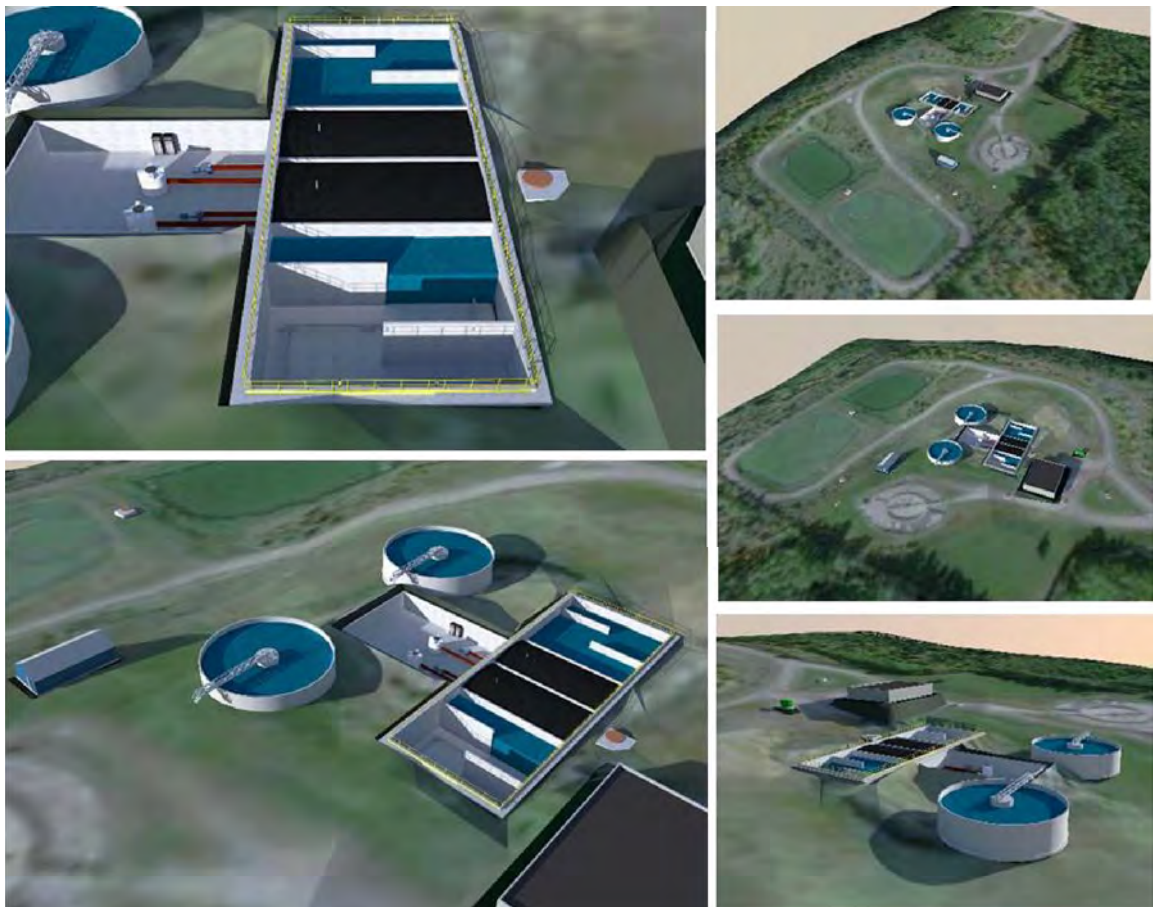
P.Eng.

Registrar & CEO

DESIGN BASIS MEMORANDUM

Municipal District of Greenview No. 16
Hamlet of Grande Cache

Grande Cache Wastewater Treatment Plant



JULY 2020

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Closure

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LIST OF ABBREVIATIONS

The following abbreviations are used within this report.

| Abbreviation | Description |
|--------------|------------------------------------|
| AAF | Average Annual Flow |
| ADWF | Average Dry Weather Flow |
| MMF | Maximum Month Flow |
| MWF | Maximum Week Flow |
| MDF | Maximum Day Flow |
| MML | Maximum Month Load |
| MWL | Maximum Week Load |
| MDL | Maximum Day Load |
| NMLR | Nitrified Mixed Liquor Return |
| MLSS | Mixed Liquor Suspended Solids |
| PHF | Peak Hourly Flow |
| RAS | Return Activated Sludge |
| WAS | Waste Activated Sludge |
| WQBEL | Water Quality Based Effluent Limit |
| WWTP | Wastewater Treatment Plant |

1 INTRODUCTION

1.1 Background

The Hamlet of Grande Cache (Hamlet) Wastewater Treatment Plant (WWTP) manages wastewater from the Hamlet and the Grande Cache Corrections Institute (Institute), and is owned, operated, and maintained by the Municipal District of Greenview No. 16. (MD) The WWTP was commissioned in 1981 and requires major upgrades to meet current regulatory requirements, and to address existing operational issues.

The MD previously engaged Associated Engineering (AE) to develop and evaluate concept options for the required upgrades, and more recently has retained AE to develop the recommended option from the Concept Report, a new WWTP with a conventional extend aeration process, into a Design Basis Memorandum (DMB).

1.2 Previous Report

AE has reviewed and consulted the following documents to develop an overarching design basis for the proposed upgrades to the existing WWTP:

- “Concept Design Report – Wastewater Treatment Plant Upgrade,” Associated Engineering, April 2019.
- “Sewage Treatment Plant – Hazardous Building Materials Assessment”, Associated Engineering, July 2018.
- “Hamlet of Grande Cache – Landfill Master Plan”, Associated Engineering, March 2016.
- “Design Brief Memorandum – Water Treatment Plant”, Associated Engineering, January 2015.
- “Wastewater Treatment Facility – Biosolids Removal Methods Evaluation”, Associated Engineering, July 2014.
- “Wastewater Collection System – Master Plan”, ISL Engineering and Land Services, October 2007.

1.3 Objective and Scope

The purpose of the DBM is to:

- Re-establish the design criteria: population projections, flows, and loads based on the criteria used in the conceptual study.
- Confirm wastewater treatment objectives for the proposed upgrades: effluent limits, biosolids management, and wet weather flow management.
- Design and document different process upgrades to meet the treatment objectives for the design horizon.
- Identify and collate the design basis for different discipline for the overall upgrades of the WWTP.
- Outline and evaluate the associated risks involved in this project.
- Develop project schedule summarizing the detailed design and construction phases of the project.
- Provide a “Class C” project cost estimate.

As part of the current project, AE coordinated a **Geotechnical Investigation** which was undertaken by Thurber Engineering Ltd. of the proposed locations for the concept option as identified in the Concept Design Report. The Geotechnical Investigation Report is provided in **Appendix A**. Additionally, AE completed a **Water Quality Based Effluent Limit Study (WQBEL)** of the receiving water body to establish and verify any regulatory obligations that might be mandated as part of the new Approval due to the proposed upgrades. The final report of the WQBEL study was submitted to the MD as a separate document on May 2020.

2 EXISTING WASTEWATER TREATMENT PLANT

The MD operates the existing WWTP under Environmental Protection and Enhancement Act (EPEA) Approval No. 718-02-00, which was issued January 31, 2011, and expires January 1, 2021. The current WWTP consists of coarse bar screens, aerated grit removal units, an extended aeration (EA) basin, and a secondary clarifier before the treated effluent is discharged to a creek via a 400 mm steel pipe to Smoky River. The WWTP's sludge treatment process consists of aerobic sludge digestion, and storage within solids storage pits prior to disposal. Currently, the sludge from the holding cells is disposed at the Grande Cache Landfill which is operated by the Hamlet under EPEA Registration No. 476573-01-00.

The existing WWTP was commissioned in 1981, and has multiple compliance issues and operational concerns:

- The WWTP has been operating for 38 years and in that time has not received any major upgrades. This has resulted in most of the equipment being operated past service and design life, with a further consequence being higher operations and maintenance (O&M) costs, and lower reliability of operation than the regular service life.
- The existing WWTP lacks the capability to bypass or treat high wet weather flowrates. This is essential to meet the effluent requirements enforced by the Environmental Protection and Enhancement Act (EPEA) and Federal Wastewater Systems Effluent Registration (WSER) during all weather conditions.
- The minimal redundancy measures that are included within the existing WWTP are responsible for difficulties during major equipment maintenance, upgrades, or rehabilitation.

3 DESIGN CRITERIA

This section summarizes the projected population, flow and loads for the design horizon to be used to design different treatment units.

3.1 Population

The current WWTP receives wastewater from the Hamlet, and the Grande Cache Institute. The Institute has a maximum capacity of 243 people. The Hamlet had a population of 3,571 in 2016 according to the Alberta Municipal Affairs Census. The MD does not anticipate any additional communities or areas being integrated into the current wastewater collection system. As a result, the projected population was determined by applying the annual growth rate, estimated from past rates and anticipated future scenario, to the Hamlet and assuming the Institute is at maximum capacity.

The average annual growth rate was determined to be 0.2% between 1996 and 2016 according to the Alberta Municipal Affairs Census data. To provide a conservative estimate for the population growth over 10, 20 and 40 years, a 0.5% annual growth rate was applied to the Hamlet. **Figure 3-1** shows the historical population data and the projected population based on the approach mentioned above.

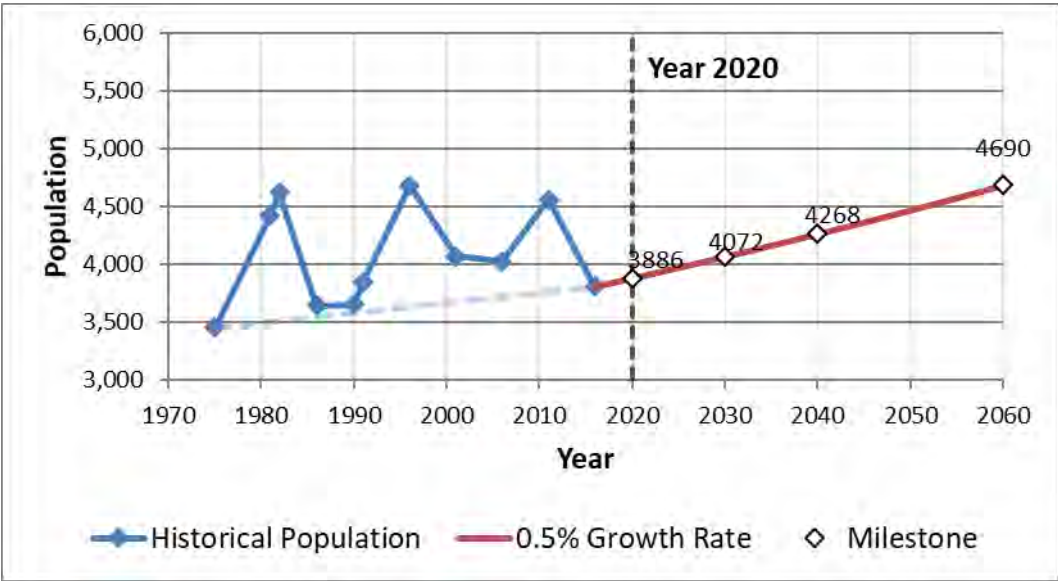


Figure 3-1
Historical and Projected Population

3.2 Raw Wastewater Flowrates and Loads

AE compiled and analyzed the flow and pollutant data from 2013-2017 to derive the design basis to develop the concept options. The design basis from the concept report was updated using the wastewater flow and pollutant data for the year 2018 and 2019. The objective was to evaluate the effect of a new water treatment plant (WTP), commissioned in May 2018, on the wastewater inflow to the WWTP. No significant difference in average annual flow (AAF) of wastewater was observed (660 L/c/d: 2013 – 2017 Vs 650 L/c/d: 2013 – 2019). However, high per capita AAF can be attributed to:

- Relatively higher reject water from the new WTP; and
- High Inflow & Infiltration (I&I) due to the Hamlet's aging collection system.

To date, no model for the Hamlet's collection system is available to determine the effects of the extreme wet weather events on the existing and future WWTP. As such, the effect of wet weather flow events was estimated by correlating historic extreme rainfall events recorded in the Hamlet to the recorded flow of the WWTP. A summary of such rainfall events is shown in **Table 3-1**. The total daily flow contribution for 1 in 100-years 24 hr precipitation (117.76 mm, based on Historic Intensity-Duration-Frequency (IDF) curve for the Grande Cache Region from IDF_CC Tool 4.0 [<https://www.idf-cc-uwo.ca/>]) was estimated using linear regression as summarized in **Table 3-2**. It should be noted that due to limited scope, the effect of climate change on future precipitation events and associated flow to the WWTP is not considered in this report. Nonetheless, AE highly recommends that a compression analysis be done during the detailed design phase to establish a solid design basis for wet weather flow including the effect of climate change. The design Peak Hourly Factor (PF_{ww}) for the wet weather event was estimated based on AE's experience with the communities of similar size in Western Canada.

Table 3-1
Summary of Historic Extreme Rainfall Events

| Date | Recorded 24 hr Rainfall (mm) | Recorded Flow to WWTP (m ³ /d) |
|-----------------|------------------------------|---|
| June 9, 2017 | 91.5 | 13,390 |
| July 2, 2018 | 48.9 | 11,882 |
| August 22, 2016 | 47.7 | 6,877 |
| July 3, 2018 | 33.3 | 6,844 |

Tables 3-2 summarizes the design basis for the proposed upgrades. AE recommends completing a comprehensive sampling program (flow and loads) during detailed design phase to verify the design assumptions stated in **Table 3-1** and to optimize the reactor size.

Table 3-2
Summary of Design Basis

| Component | | Design Value | | |
|---|-------------|--------------------------|------------|-----------|
| Design Horizon (Year) | | 2060 | | |
| Design Population | | 4,690 | | |
| Annual Average Wastewater Generation Rate | | 660 L/cap/d | | |
| Flow Rate Peaking Factors | | | | |
| ADWF/AAF | | 0.9 | | |
| MMF/AAF | | 1.5 | | |
| MWF/AAF | | 2.1 | | |
| (MDF/AAF) _{ww} | | 5.5 | | |
| PF _{ww} | | 1.5 | | |
| Flow Rates | | | | |
| AAF | | 3,100 m ³ /d | | |
| ADWF | | 2,780 m ³ /d | | |
| MMF | | 4,850 m ³ /d | | |
| MWF | | 6,820 m ³ /d | | |
| MDF | | 17,050 m ³ /d | | |
| Peak Hourly Flow (wet weather) | | 295 L/s | | |
| Average Pollutant Generation Rate | | | | |
| BOD ₅ | | 128 g/c/d ¹ | | |
| TSS | | 128 g/c/d ¹ | | |
| TKN | | 21.0 g/c/d ² | | |
| TP | | 3.5 g/c/d ² | | |
| Pollutant Loads | | | | |
| | BOD5 (kg/d) | TSS (kg/d) | TKN (kg/d) | TP (kg/d) |
| ADL | 600 | 600 | 100 | 16 |
| MML | 790 | 880 | 125 | 20 |
| MWL | 900 | 1,060 | 160 | 26 |
| MDL | 1,200 | 1,425 | 240 | 39 |

¹ Based on historical pollutant load analysis.

² Assumed based on BOD₅ and TSS load and typical municipal wastewater from Metcalf & Eddy (2014), Wastewater Engineering: Treatment and Resource Recovery, 5th Edition, McGraw-Hill Education, NY.

3.3 Treatment Objectives

3.3.1 Effluent Limits

Based on the results and recommendations from the WQBEL study and consultation with the AEP, a preliminary set of effluent limits was developed for the proposed upgrade. **Table 3-3** summarizes the would-be effluent limit and the design targets used to develop the design basis. The current approval is going to expire by January 1, 2021 and the MD must apply and obtain an interim approval before new approval comes into affect.

Table 3-3
Effluent Discharge Limit and Target

| Parameters | Effluent Limit | Design Target |
|---|------------------------|---------------|
| cBOD ₅ , mg/L | ≤ 25 ¹ | ≤ 15 |
| TSS, mg/L | ≤ 25 ¹ | ≤ 15 |
| Total Ammonia-N, mg/L (June 1 to November 30) | ≤ 5 ¹ | ≤ 3 |
| Total Ammonia-N, mg/L (December 1 to May 31) | ≤ 10 ¹ | ≤ 6 |
| pH | 6.5 – 8.5 ¹ | 6.5 – 8.5 |
| <i>Escherichia Coli</i> , per 100 mL | 200 ² | 150 |
| Acute lethality test | Pass | Pass |

¹ monthly arithmetic mean of daily samples

² monthly geometric mean of weekly samples

3.3.2 Biosolids Management

Biosolids Management Option will be designed so that stabilized final product can be dewatered and sent to the Grande Cache Landfill for final disposal.

3.3.3 Wet Weather Flow Management

The wet weather flow management system design will be done under the premise that any WWTP bypass or overflow will be designated as a prohibited release subjected to the associated notification/reporting requirements of the AEP Operating approval. Hence, inflow more than the rated capacity of the plant will be bypassed and stored in one of the existing solids storage pits and pump back to WWTP for further treatment once the hydraulic capacity is regained.

4 PROCESS DESIGN

4.1 Overview

Figure 4-1 illustrates overall liquid treatment schematic for the proposed upgrade. Due to poor structural conditions as described in the Concept Design report, existing treatment train will be abandoned, once new WWTP is being built. Details of each of the treatment process units are discussed in following sections. A preliminary site plan of the new WWTP within the project boundary and constraints is shown in Figure 4-2.

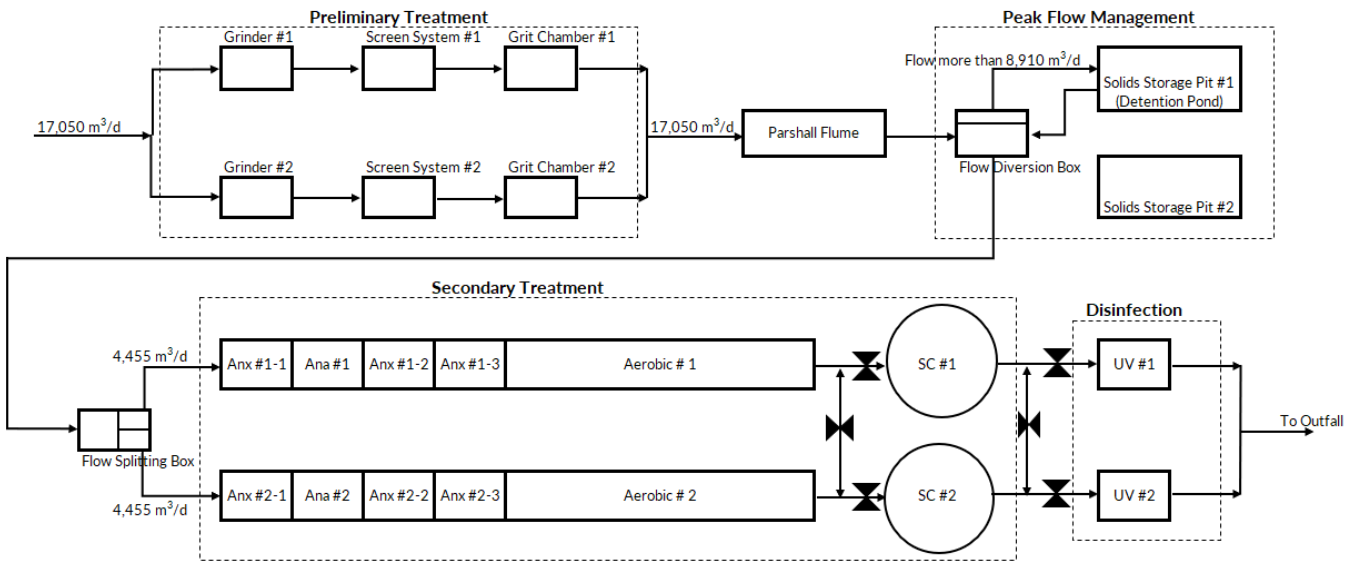


Figure 4-1
Liquid Treatment Schematic for the Proposed Upgrade

4.2 Hydraulics

The overall design of the WWTP, including the elevations of the process units, would be laid out such that incoming wastewater flows by gravity from the headworks, through the WWTP, to the outfall under the normal conditions. The existing Manhole 81-01 and 81-02 will be replaced with new manholes with existing dimensions. No major changes will be made to the conveyance system inside the headworks room. No hydraulic profile has been developed as part of the DBM and AE recommends it be done first thing as part of detailed design. The dimensions for the large conveyance systems within the WWTP are detailed in Table 4-1.

Table 4-1
Dimensions of Major Conveyance System within the WWTP

| Conveyance Description | Nominal Diameter (mm) |
|--|-----------------------|
| Pipe from MH81-02 and MH81-01 to headworks room | 600 |
| Pipe from flow diversion box to flow splitter box | 400 |
| Pipe from flow diversion box to solids storage pit | 400 |
| Pipe from splitter box to bioreactors | 300 |
| Pipe from bioreactors to secondary clarifiers | 300 |
| Pipe from aerobic digesters to solids storage pit | 150 |
| Pipe from secondary clarifiers to UV disinfection system | 300 |
| Pipe from UV disinfection system to the existing outfall | 400 |

4.3 Influent Screening and Grinding

The treatment of the liquid waste stream will begin in the headworks (control building), where the incoming wastewater pipeline discharges into the inlet chamber, which flows into two channels leading to coarse grinders with the specification shown in [Table 4-2](#). Given the type of debris seen in prison contexts, a coarse grinder upstream of the screening system is proposed to protect downstream processes. The isolation of the two channels will be accomplished via new slide gates.

Table 4-2
Design Criteria for the Grinder

| Parameter | Value |
|--------------------|---|
| Number of grinders | 2 |
| Grinder type | Open channel |
| Screen type | Perforated drums |
| Screen opening | 12 mm |
| Design flowrate | 130 m ³ /h (average) 1,060 m ³ /h (Peak) |
| TSS | 215 mg/L (average) 510 mg/L (maximum) |
| Channel width | 750 mm |

The existing screen system will be upgraded with 6 mm fine screen system and the channels will be operated in a duty-standby configuration. A common wash press with hygienic bag will be installed to collect screening in roll-off bin and final disposal to the landfill. The fine screen system would also significantly benefit downstream equipment and tanks – i.e. protection against fouling and debris accumulation. The characteristics of the screen are shown in [Table 4-3](#).

Table 4-3
Design Criteria for the Fine Screen System

| Parameter | Value |
|---|--------------------------------|
| Number of Screens | 2 |
| Screen type | Step Screen |
| Bar spacing | 6 mm |
| Screen cleaning type | Mechanically clean (automated) |
| Slope from vertical | 45 - 60° |
| Design flowrate per screen (peak hourly flow for design horizon) | 295 L/s |
| Screen width | 750 mm |

(The figure below appears on the next page)

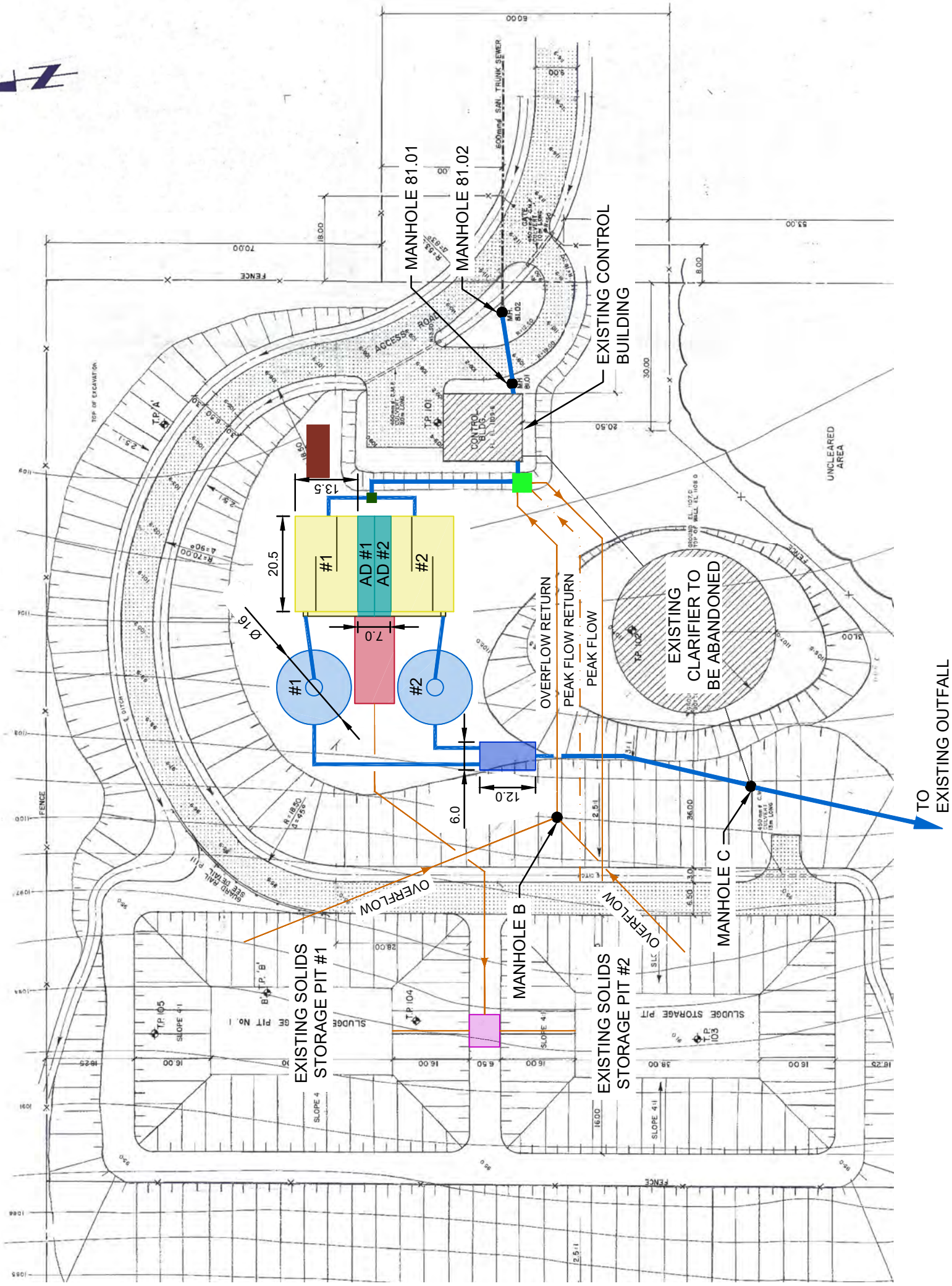
Figure 4-2
Proposed Site Plan Layout



KEY PLAN (ABOVE GROUND)

LEGEND:

- FLOW DIVERSION BOX
- FLOW SPLITTING BOX
- BIOREACTOR
 - ANOXIC #1(#2)-1
 - ANAEROBIC #1(#2)
 - ANOXIC #1(#2)-2
 - ANOXIC #1(#2)-3
 - AEROBIC #1(#2)
- AD (AEROBIC DIGESTER)
 - #1/#2
- SECONDARY CLARIFIER #1
- SECONDARY CLARIFIER #2
- UV BUILDING
- UNDERGROUND RETURN
- ACTIVATED SLUDGE SYSTEM
- GENERATOR
- VALVE CHAMBER
- EXISTING
- NEW MAJOR PIPE LINES
- NEW MINOR PIPE LINES
- NEW TEMPORARY PIPE LINES



4.4 Grit Removal

Downstream of the grinder, the screened wastewater will pass through the existing horizontal flow grit removal system to deposit heavier grit particulate at the bottom of the unit. A horizontal abrasion-resistant steel shaftless conveyor system will be installed into one of the grit chambers to remove deposited grit. This proposed conveyor sizing will fit into the existing channel without structural modification. A chain drive system for the conveyor having gear drive and motor above top-of-slab level would ensure unobstructed flow to the Parshall flume located immediately downstream. The chain drive approach would be supplied with a pillow block, sprockets, adjustment tensioning device, support over channel, and acetal chain. It should be noted that the site dimensions would need to be confirmed during detailed design phase in to ensure all elements are designed to match & install easily. The grit extraction conveyor runs intermittently to transport the accumulated grit to the downstream end of the grit channel where the grit pump draws the grit out of the tank and into the shaftless spiral grit classifier.

The proposed shaftless spiral grit classifier equipped with i) a sedimentation zone without hydrocyclone, ii) a special abrasion-resistant steel shaftless spiral that are welded to a stainless-steel sub-liner. The classifier will be equipped with a hygienic bagger into roll-off bin for odour sequestration for landfill disposal. The characteristics of the horizontal flow grit system are shown in [Table 4-4](#).

Table 4-4
Design Criteria for the Grit Removal System

| Parameter | Value |
|------------------------------------|---|
| Type | Horizontal flow chamber |
| Number | 2 |
| Design flowrate per train (hourly) | 130 m ³ /h (average) 1,060 m ³ /h (Peak) |
| Channel width | 915 mm |
| Grit removal | Horizontal shaftless spiral |
| Grit washing and dewatering | Shaftless spiral grit classifier with sedimentation zone with hygienic bagger |

4.5 Flow Measurement

Screened and degritted wastewater will be conveyed into an open channel leading to Parshall Flume system, which will provide accurate, reliable, and continuous flow measurement. The flow range that the WWTP is expected to receive during the design horizon is summarized in [Table 4-5](#) and existing Parshall Flume system will be upgraded to measure the entire flow range.

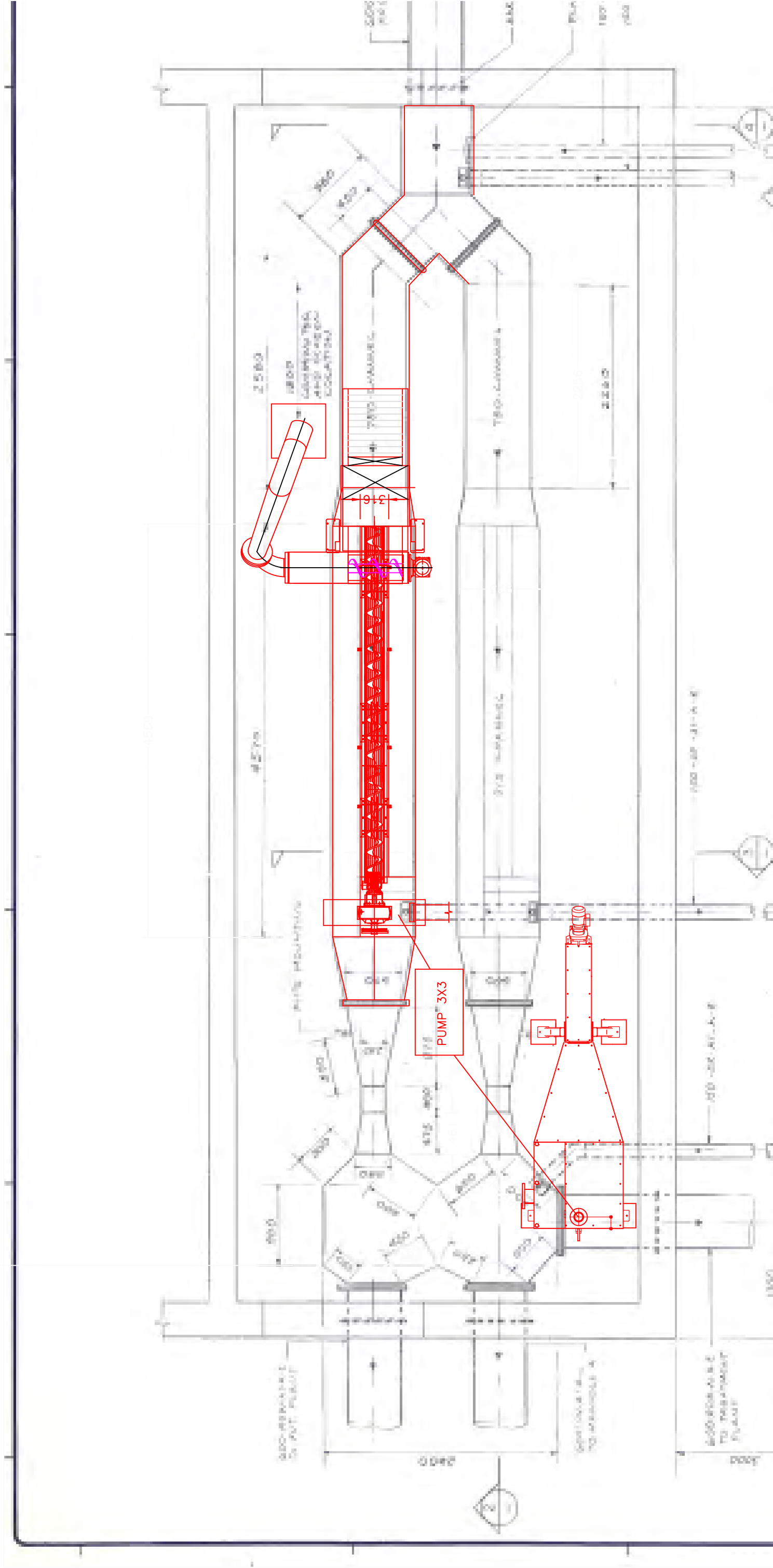
Table 4-5
Expected Flow Range at the WWTP

| Parameter | Value |
|--|--------------------------|
| Average dry weather flow | 2,780 m ³ /d |
| Expected minimum flow | 800 m ³ /d |
| Expected maximum flow (peak hour flow) | 25,500 m ³ /d |

A preliminary layout for the proposed upgrades in the Headworks room is illustrated in **Figure 4-3**.

(The figure below appears on the next page)

Figure 4-3
Proposed Layout for the Headworks Upgrades



4.6 Flow Diversion and Peak Flow Management

As part of peak flow management strategy based on the assumptions and flow estimation as in Section 3, any flow greater than 8,910 m³/d will be bypassed using an adjustable weir to the sludge storage pit. One of the existing sludge storage pits will be modified as a storage pond. Hence, inflow more than the rated capacity of the WWTP will be bypassed and stored in one of the existing solids storage pits and pumped back to WWTP for further treatment once the hydraulic capacity is regained.

4.7 Flow Distribution

After preliminary treatment, the screened and degritted wastewater will flow to the secondary treatment bioreactors through a splitter box. Wastewater will be split evenly between the two bioreactors by static weirs, having the same length and elevation. A slide gate on each of the outlet boxes will enable individual bioreactors to be taken off-line, as needed.

4.8 Secondary Biological Treatment

The secondary treatment process currently utilized in the WWTP is based on extended aeration process. In the bioreactor, influent wastewater will be combined with a bacterial “mixed liquor” that consumes the organic contaminants within the wastewater. After proceeding through the entire length of the bioreactor, the mixed liquor flows into a secondary clarifier where biomass settles to the bottom and treated effluent flows over the perimeter weir. The biomass that settles is called “recycle activated sludge (RAS)” and is returned to the front end of the bioreactor. The excess activated sludge will be wasted to the residuals management process and is therefore called “waste activated sludge (WAS)”.

Each bioreactor will have four unaerated zones and one aerated zone in the following sequence: (pre)anoxic#1, anaerobic, anoxic#2, anoxic#3(swing) and aerated. The aerated (oxic) zone is required for the growth of heterotrophic and autotrophic bacteria to oxidize organic contaminants and for nitrification, respectively, while the unaerated zones help improve sludge settle-ability by selecting non-filamentous organisms and provide nitrogen removal. The bioreactor will be configured and designed to operate in plug flow mode to improve overall sludge settleability. Baffle wall will be installed into the aerobic zone to allow reducing DO in the last zone.

To provide nitrification and denitrification Nitrified Mixed Liquor Return (NMLR) will be incorporated into the bioreactor design. A NMLR is an internal recycle that returns nitrified mixed liquor from the aerobic zone at the back end of the bioreactor to the front end the anoxic zone (anoxic #2). This enables the denitrifying bacteria to utilize readily biodegradable carbon compounds in the raw incoming wastewater to convert nitrates to nitrogen gas (denitrification). The NMLR flowrate will be set at approximately 4x AAF. Nitrification reactions have the effect of consuming alkalinity from the wastewater, resulting in a drop in treated effluent pH. A NMLR recycle would help to return a portion of the alkalinity consumed to the process. The anaerobic zone can be used to provide biological P removal, if needed in future. AE recommends installing dosing points in RAS system and upstream of clarifier to allow for chemical P or trim of P with Bio P which will require a room for alum polymer system. Details of chemical P removal will be discussed in detailed design phase. Sumps will be provided in the in bioreactor with sloped floors (1%) to allow emptying it with a submersible pump. AE recommends installing retractable ladder to provide access to bioreactor for maintenance. The preliminary design parameters of the bioreactors are shown in [Table 4-6](#) and [Table 4-7](#).

Table 4-6
Extended Aeration Tanks Design Criteria

| Parameter | Value |
|--|-------------------------|
| AAF, m ³ /d | 3,100 |
| Average BOD ₅ , kg/d | 600 |
| Average TKN, Kg/d | 100 |
| Maximum weekly temperature (°C) | 18 |
| Minimum weekly temperature (°C) | 5 |
| F/M ratio (kg BOD/kg MLVSS.d) | 0.06 |
| Solids Retention Time (SRT), days | 20 (Summer)/25 (Winter) |
| Hydraulic Retention Time (HRT), hours | 26 |
| Mixed Liquor Suspended Solids, (MLSS) (mg/L) | 3,500 – 6000 |

Table 4-7
Extended Aeration Tanks Specification

| Item | Value |
|---|-----------------------------------|
| Number of trains | 2 (Plug flow: common wall) |
| Volume, m ³ /train | 1,660 |
| Arrangement | 3 Channel |
| Side water depth, m | 6 |
| Bioreactor Cell Volumes | |
| Anoxic 1, m ³ | 30 |
| Anaerobic, m ³ | 60 |
| Anoxic 2, m ³ | 180 |
| Anoxic 3, m ³ | 180 |
| Aerobic, m ³ | 1,210 |
| Nitrified Mixed Liquor Recycle Pumps | |
| No. of Pumps per Bioreactor | 3 (Two duty – one common standby) |
| Type | Horizontal, Low-Head, Propeller |
| Pump capacity, L/s | 140 |
| Drive type | Variable Speed |
| WAS produced (kg/d) | 167 |
| WAS Pump (surface wasting recommended)¹ | |
| No. of Pumps | 3 (Two duty – one common standby) |
| Type | Chopper pump |
| Pump capacity, L/s | 0.25 - 0.75 |
| Drive type | Variable Speed |

¹ Provision will be provided for RAS wasting as well.

4.9 Secondary Clarification

Mixed liquor from the bioreactors will be clarified in circular, centre feed secondary clarifiers. The secondary clarifiers have been sized conservatively on the low end of the normal design range (average annual surface overflow rate of 12 m³/m²/d). The clarifiers will also be equipped with Energy Dissipation Inlet (EDIs) and Stamford baffles help to improve solids settle-ability, by reducing inlet flow velocity, improving passive flocculation, and minimizing density currents. Like bioreactors, each of the clarifiers will be equipped with retractable stairs as it deals with confined space entry and maintenance requirements. The spray nozzles will be provided in the centre well for foam management.

The clarifier tanks and effluent launders will be made of concrete and launder weir will be stainless steel, as will the drive mechanism, suction rake, and scum skimming system (skimmer arm, scum trough and scum baffles). Fiberglass launder covers will also be provided to reduce algae growth and for odor control. An underground pump gallery between the clarifier units will provide space for WAS and RAS pumps, and other mechanical equipment and piping. preliminary design parameters of the secondary clarifiers are shown in [Table 4-8](#) and [Table 4-9](#).

Table 4-8
Secondary Clarifier Design Criteria

| Parameter | Value |
|--|-----------------------------------|
| RAS flow rate. % of influent | 75 – 100 |
| MLSS, mg/L | 3,500 – 6,000 |
| Surface Overflow Rate | |
| Average, m ³ /m ² /d | 12 |
| Peak, m ³ /m ² /d | 28 |
| Solids Loading Rate | |
| Average, kg/m ² /d | 72 |
| Peak, kg/m ² /d | 154 |
| RAS Pumps | |
| No. of Pumps | 2 (Two duty – one common standby) |
| Type | Screw Centrifugal |
| Capacity (each), L/s | 25 -45 |
| Drive type | Variable Speed |

Table 4-9
Secondary Clarifier Design Specification

| Item | Value |
|----------------------|-------|
| No. of clarifiers | 2 |
| Diameter, m | 16.0 |
| Area, m ² | 201 |
| Side water depth (m) | 5 |

4.10 Aerobic Digestion

An aerobic digestion process will be used to further stabilize WAS and/or RAS. Degradable organic matter will be oxidized, and pathogens reduced through aerobic biological processes (i.e. endogenous decay and predation).

A gravity thickening tank with sump pump and supernatant transfer system will be designed to concentrate WAS before feeding to the aerobic digester. The aerobic digester system design criteria and specification is summarized in [Table 4-10](#) and [Table 4-11](#), respectively. The digester will incorporate a coarse aeration system with Single Drop type diffusers to minimize maintenance requirements for the diffuser system. The aeration system will be designed to meet the biological aeration requirements to achieve aerobic digestion and mixing energy requirements. In order to minimize the chemical requirements to maintain a neutral pH in the aerobic digester, the aeration system will be designed to cycle ON/OFF to encourage denitrification for the recovery of alkalinity.

Table 4-10
Aerobic Digester System Design Criteria

| Parameter | Value |
|--|-------|
| WAS (dry kg/d) | 327 |
| Total Solids Concentration, mg/L | 4,000 |
| Average WAS sludge flow (m ³ /d) | 79 |
| Solids Retention time (day) | 30 |
| Temperature (min) | 10 |
| Min. volatile solids reduction after digestion (%) | 25 |
| Reaction rate constant, k_d (d ⁻¹) | 0.06 |

Table 4-11
Aerobic Digester System Specification

| Parameter | Value |
|-------------------------------------|---------------|
| Number of digesters | 2 (In series) |
| Total Tank volume (m ³) | 1,430 |
| Tank length, each (m) | 20.5 |
| Tank width, each (m) | 6.0 |
| Tank side water depth (m) | 6.1 |

4.11 Aeration Requirements

A fine bubble aeration system consisting of membrane diffusers will be provided in the aerobic zone of each bioreactor and Single Drop type coarse bubble diffusers will be used to provides necessary oxygen demand for Aerobic Digestion. The existing blowers are original to the WWTP and will be replaced with new blowers with the design specification shown in **Table 4-12**.

Table 4-12
Process Air and Aerobic Digestion Air Flow Requirements

| Parameter | Value |
|--|--------------------------|
| Process Air Flow Requirements | |
| Average, m ³ /min | 17 |
| Peak, m ³ /min | 24 |
| Design Discharge Pressure, kPa | 60 |
| Blower | |
| No. of Blower | 2 (Lead-Lag) |
| Type | Positive Displacement |
| Driver Type | Variable Speed |
| Aerobic Digestion Air Flow Requirements | |
| Average, m ³ /min | 13 |
| Peak, m ³ /min | 16 |
| Design Discharge Pressure, kPa | 60 |
| Blower | |
| No. of Blower | 2 (Duty-Standby (Shelf)) |
| Type | Positive Displacement |
| Driver Type | Variable Speed |

4.12 UV Disinfection

To meet the effluent discharge limit, secondary effluent will be disinfected using ultraviolet (UV) light. Treated effluent will flow by gravity to two in-pipe UV units in parallel, configured as duty-standby with automated flow switch over. UV Transmittance sensors and flowrate will be included to control the UV dosage from the reactors. The disinfection target for the discharge will be 125/100 mL to meet the disinfection requirement of 200/100 mL all the time. A mag meter will be installed to measure total flow leaving the WWTP after disinfection.

Preliminary design parameters of the UV disinfection system are shown in **Table 4-13**.

Table 4-13
Disinfection System Design Criteria

| Parameter | Value |
|---|------------------------------|
| Average daily flow (m ³ /d) | 2,530 (Year: 2040) |
| Maximum month flow (m ³ /d) | 5,060 |
| Number of units | 2 (duty-standby) |
| Disinfection limit | |
| UV transmittance (%) (minimum) | 60 |
| TSS (Daily average, mg/L) | 20 |
| Reduction Equivalent Dose (RED) (mJ/cm ²) | >30 |
| Lamp type | Low pressure, high intensity |
| Lamp cleaning system | Mechanical and/or chemical |
| End of lamp life factor | 0.87 |
| Fouling factor | 0.95 |

4.13 Outfall

Final effluent from the UV disinfection reactors will flow by gravity and be discharged to the Smoky River through the creek as with the existing system.

4.14 Solids Storage and Disposal

Post digestion, the solids will be stored in the existing solids storage pit No # 2 to remove additional water before final dewatering (dewatering using a portable centrifuge or Geotube as needed) and disposal to the landfill. The overflow (removed liquid) from the storage pit will be pumped to the system headworks using manhole B for treatment in the secondary process.

5 CIVIL

5.1 Alignment

The WWTP Upgrade requires new buried wastewater pipe installations in new alignments to service proposed treatment processes. The alignments will be chosen to minimize conflicts with existing piping and surface works so that existing treatment processes will see little impact. Sections of the existing buried wastewater piping require replacement as they are still required for the proposed treatment processes but are no longer serviceable. Refer to the site plan layout ([Figure 4-2](#)) for details. There are two options for the existing buried wastewater pipe alignment: maintain the existing alignment or construct a new alignment adjacent to the existing one. Constructing a new alignment will require additional space on site. The space may not be available given the site constraints. In addition, elevation conflicts with pipe crossings are likely. Due to the number of pipe penetrations at different elevations into manholes, crossing options may be constrained. It is anticipated that a combination of new and existing pipe alignments will be used. The alignment decision will be used in combination with [Section 5.5 - Installation Methodology](#).

5.2 Environmental Consideration

Construction activity will be limited to the disturbed site within the existing site boundary. Where possible, existing materials on site will be reused. Materials such as excavated select fill material, granular material and native backfill will be used for trench backfill and site grading. Reusing materials where possible will reduce the project's carbon footprint and reduce its climate change impacts. Preventative measures such as noise control, dust control, site runoff and fuel spills are to be mitigated through the procedures identified in the Contractor's Environmental Construction Operations (ECO) Plan.

5.3 Geotechnical Consideration

The geotechnical investigation report from Thurber Engineering Ltd., January 2020 in [Appendix A](#) identifies various geotechnical conditions anticipated for the site. Of note are:

1. Very stiff clays;
2. Large cobbles and boulders;
3. Bedrock;
4. Peat; and
5. Varying groundwater elevations.

It appears from site air photos and historical use records that the Geotube laydown area was set up to be temporary, with clay and granular fill placed on top of existing peat. Prior to surface construction, the clay and granular fill will be removed so that the underlying peat can be removed. The site will then be brought back to grade with suitable fill and imported fill where necessary. Any other unsuitable materials encountered on site will need to be excavated, discarded, and replaced with competent fill as per the recommendations of the geotechnical report. Large cobbles and boulders will need to be removed and discarded when encountered during excavations.

Excavating through native material will be slower due to the stiff nature of the clays and encounters with obstacles such as boulders. The groundwater will need to be managed through typical construction methods such as sump and pump. It is not anticipated that a well point dewatering program be required.

5.4 Pipe Material and Size

5.4.1 Yard Piping

The existing yard site piping consists of vitrified clay tile gravity sewer and polyethylene pressure piping of various diameters. It is understood that this piping has reached the end of its useful life and requires upgrading. Piping material will be PVC bell and spigot rated for its application, i.e. gravity flow or forcemain. Bell and spigot is chosen to allow maneuverability around obstacles during installation.

Once the new treatment system is commissioned, existing piping and structures will be decommissioned through either excavation or abandonment in place.

5.4.2 Solids Storage Pit Subdrain

The existing solids storage pits are understood to be performing adequately and do not require reconstruction. The perforated polyethylene subdrain beneath the storage pits is also assumed to be performing adequately; however, it is recommended that the subdrain system be flushed to ensure its continued performance. Flushing can be conducted by accessing the manholes along the pipe alignment. It should be confirmed through water sampling prior to detailed design whether the water being drained is solely groundwater, or if it contains evidence of leaking from the sludge pits. If leaking from the storage pits is found, the downstream manhole will need to be plugged to prevent impacted groundwater from entering the outfall system. Surcharging impacted groundwater within the manhole will then need to be regularly pumped into the solids storage pits as an Operations and Maintenance task or be diverted to Manhole B.

5.4.3 Manholes

It is assumed that the following manhole structures will be replaced due to their condition and reconfiguration requirements:

- MH81-01
- MH81-02
- MH81-25
- Manhole B (lift station)
- Manhole C
- Valve Box
- Sludge Pit Overflow and Drain Structure (x2)

New box structures added to the site will include:

- Flow splitter
- Flow diversion

Manholes 81-27 to 81-30 will be reconditioned. These manholes service the subdrain system and are expected to be in serviceable condition with only the need for limited repairs.

5.5 Installation Methodology

The existing piping is in continuous operation and is required to remain in continuous operation throughout construction. Three options for pipe installation are available:

1. Remove and Replace Via Open Cut

This option requires removal of the existing pipe and installing new pipe in its place. Two advantages of this methodology are the existing disturbed trench zone can be excavated faster and conflicts from crossing pipes can be eliminated. However, temporary bypass pumping is required while sections of pipe are replaced. Each section of pipe is required to be tested prior to being placed into service.

2. Install New Piping Parallel to Existing Via Open Cut

This option involves constructing a new piping system adjacent to the existing system. The advantages of this option are that the existing system is less impacted by construction and the amount of bypass pumping can be reduced. More of the system can be tested prior to being placed into service. However, the potential for conflict when crossing existing piping is high given the complexity of the existing piping network. Also, excavating native material could be challenging due to the stiff clays and potential rock.

3. Refurbish the Existing Pipe

This option involves alternative technologies such as lining or pipe bursting. These technologies have their benefits; however, they still require removing the existing pipe from service and using bypass pumping while the upgrade is being completed. Testing of the pipe is also required to be done in sections.

It is anticipated that a combination of all three installation methodologies will be used. The installation methodology for each section of pipe being upgraded will be evaluated. It is anticipated that the preferred option will be the lowest risk one given the Contractor market.

5.6 Access Roads

Existing access roads will be maintained with only slight adjustments to re-establish crown where required. New access roads will be constructed as necessary to MD Standards where possible. It may be required to limit road widths to single lane traffic where available space is limited. Parking areas will be adjusted or provided where needed to ensure optimum space is provided to the WWTP operators and service vehicles. Road surfaces are to remain as a gravel surface.

5.7 Site Grading

Due to existing site constraints, adjustments to grades are anticipated to be limited. Elevations of new structures and features will be determined to ensure continued site drainage and hydraulic grade lines of gravity pipe. A detailed topographic survey is required prior to design to ensure all site constraints are known to ensure no inadvertent drainage conflicts are created. The survey will also record pipe inverts within manhole structures to limit pipe conflicts. Culverts will be installed where required to ensure site drainage where drainage paths cross roadways.

5.8 Site Fencing

Site fencing will be replaced and provisions for an automated entrance gate be included to match other MD facilities.

6 STRUCTURAL

6.1 Overview

The WWTP upgrade will include two new clarifiers, bioreactors, a UV disinfection building, generator pad, and interior upgrades to the existing control building. From the Headworks room in the existing control building, wastewater will flow into the new bioreactors and then to secondary clarifiers and UV disinfection process prior to exiting the WWTP. The bioreactors consist of two trains with common walls with aerobic digester tanks in the middle. All the process mechanical equipment for the RAS and WAS system will be installed in an underground process gallery. A generator pad will be to the east of the proposed bioreactor to support a new external generator. The following sections describe the scope of structural design required for the WWTP upgrades.

6.1.1 Existing Building

The existing building has an area of 252 m², consisting of a reinforced concrete raft foundation, masonry walls, and a steel roof system with gravel ballast built-up roofing.

According to the inspection carried out on December 13, 2018, the following upgrades are recommended:

- Replace lab furniture, flooring, suspended ceilings and washroom accessories in the administration area as they have reached end of life span. Based on the hazardous building materials assessment (HBMA) performed by Associated Environmental titled "*Sewage Treatment Plant Hazardous Building Assessment*" performed in July 2018, asbestos containing material (ACM) were found on the grey window frame putty in the office and the beige and brown and white vinyl tile with black mastic. All asbestos containing materials (ACMs) that are disturbed in the area will be remediated by means of removal, or encapsulation.
- Repaint deteriorated wall surfaces due to physical wear. According to the HBMA, Lead Based Paint (LBP) is in the hallway and foyer (red floor paint) and exterior yellow siding. Paint should be managed in accordance with applicable regulations to limit potential exposure during repairs. Painted floors will be encapsulated by new flooring finishes; paint or Vinyl Composite Tiles, depending on location.
- Exterior doors and hardware will be replaced with new.
- A roofing inspection shall be performed to determine its condition. Depending on recommendations it will be repaired or replaced, and new downspouts added to protect the brick fascia walls.
- Additional concrete equipment pads and supports will be included where required by mechanical and electrical disciplines.

6.1.2 Bioreactor and Aerobic Digester

The new bioreactor and aerobic digester system will provide an open air, water retaining, rectangular reinforced concrete structure with internal baffle and separation walls to provide multiple process cells. The rectangular structure will have a foot print of about 39.0 m by 20.5 m with a depth of 6.5 m. The foundation will be a cast-in-place (CIP) concrete raft slab as recommended by the geotechnical investigation and will include sumps within each cell. Walls will also be CIP concrete and support concrete walkways where required. The structure will be designed to withstand loading conditions for hydrostatic testing during construction, and multiple operating loading conditions.

6.1.3 Secondary Clarifiers

Two new open-air secondary clarifiers will comprise a sloped CIP raft slab foundation with thickenings to provide a support for the clarifier rake mechanism and external CIP walls. The base slab will also incorporate a sludge sump at

the low point; typically, near the centre of the slab. Each clarifier will have a diameter of about 16.0 m and a depth of 5.5 m, likely be buried to full depth. The clarifiers will be protected from prevailing winds by a barrier that will be constructed of either concrete or steel construction and supported on the clarifier walls. The structure will be designed to withstand loading conditions for hydrostatic testing during construction, and permanent loading conditions.

6.1.4 UV Building

The UV Building will measure approximately 12 m by 6 m in plan and will be located south of Clarifier 2. The choice of structural system will depend on the processes enclosed and functional layout of the building; however, it is expected that superstructure will be a pre-engineered building supported on a structural slab on strip footings to prevent movement as recommended by geotechnical report.

6.1.5 Pump Gallery

The pump gallery will be a concrete underground structure used to house process piping and pumps. The structure will be designed as a buried structure with a raft slab foundation, foundations walls, and roof slab. The design will utilize a sub-drainage system to mitigate ground water infiltration, as per geotechnical recommendation.

6.1.6 Generator Pad

A new external generator will be installed east of the proposed anaerobic cell 1. The generator will be supported on a reinforced concrete pad. The size and thickness of the generator pad will be dependent on the dimensions and weight provided by the generator supplier, as well as prevent excessive settlement that may affect the function of the generator.

6.2 Materials/Code/Standards

The structures will be designed as post disaster structures. The design will in conformance with the latest versions of the following standards:

- National Building Code 2019.
- Alberta Building Code 2014.
- National Energy Code 2019.
- CAN/CSA A23.1/A23.2, Concrete Materials and Methods of Concrete Construction.
- CAN/CSA A23.3, Design of Concrete Structures.
- CAN/CSA S-16, Design of Steel Structures.
- ACI 350, Requirements of Environmental Engineering Concrete Structures.

The major construction materials for the WWTP is described in the following sections:

6.2.1 Cast-In-Place Concrete

All concrete structures will be constructed of conventional reinforced cast-in-place concrete, with an exposure class of A-1 for waste water structures, as per CAN/CSA A23.1. Concrete admixtures such as Kryton's Hard-Cem or Krystol Internal Membrane (KIM) can be incorporated to extend the overall durability and water tightness of concrete. Hard-Cem is added to the concrete at the time of batching to increase the hardness of the concrete to increase concrete durability by reducing permeability, and susceptibility to turbidity deterioration. Krystol Internal Membrane is a hydrophilic crystalline admixture used to create permanently waterproof concrete. The admixture reacts with infiltrating water within the concrete sections to form crystals to mitigate leaks.

Construction joints will be provided on drawings to mitigate overall shrinkage cracking. All watertight joints construction joints will encompass artic grade PVC water stops to control water infiltration.

6.2.2 Reinforcing Steel

Reinforcing steel will be in accordance with CSA G30.18, Carbon Steel Bars for Concrete Reinforcement, Grade 400 standard. Concrete clear cover over reinforcement will be followed as per CAN/CSA A23.1 recommendation.

6.2.3 Structural and Miscellaneous Steel

The steel elements for the wastewater structures are often exposed to high levels of humidity and hydrogen sulfide (H₂S), or other aggressive chemicals or environment that can lead to corrosion.

Stainless steel is widely used for miscellaneous metal fabrications within tanks, type 316 in sewage treatment tanks. Stainless steel type 316 is the preferred material for handrails, ladders, and other miscellaneous steel in this environment. Other alternative materials such as Fibre Reinforced Products (FRP) or aluminum will be considered.

Main structural steel members of structures will be provided by carbon steel coated in protective coatings or galvanizing.

Steel structures will be in accordance with the latest editions of the following standards:

- Structural Steel Sections: to CSA-G40.21 Grade 350W.
- Steel Plate: to CSA-40.21 Grade 300W.
- Welding materials; to CSA-W59.
- Anchor Bolts: to ASTM-A307.
- Bolts: to ASTM-A325.

6.2.4 Demolition

Demolition of the existing clarifier will be required after the new treatment system is in operation. Concrete will be demolished to about 1 m below finished grade and removed from site to a certified waste management centre, and the area returned to open space with top soil and seeded grass. The existing concrete may contain hazardous H₂S gases that can be released during demolition. Procedures and work practices will need to be put in place by contractors for safe demolition.

Demolition will be in accordance with the latest editions of the following standards:

- CSA S350, Code of Practice for Safety in Demolition of Structures.
- ANSI A10.6, Safety and Health for Demolition Operations.
- NFPA 241, Standard for Safeguarding Construction, Alteration, and Demolition Operations.
- National Building Code of Canada, Latest edition
- Department of Justice Canada (Jus):
 - Canadian Environmental Assessment Act (CEAA).
 - Canadian Environmental Protection Act (CEPA).
 - Transportation of Dangerous Goods Act (TDGA).
 - Hazardous Substances Information Review Act.

6.3 Geotechnical Considerations

Overall the soil classification is D, with hard native clay only 2 m below grade, with expectations of gravel seams and boulders. The soils conditions are adequate for the foundations listed for each structure. Thurber recommends a 75 mm thick mud slab and insulation below the raft foundations to protect against excessive movements.

Excavation for structures is expected to be possible with machine excavators. Although, means of removal of large boulders will need to be provided in case they are encountered.

The water table is expected to be about 1 m below grade. Structural design check will be undertaken to resist potential uplift forces from buoyancy. Dewatering during construction can be expected and controlled using regular methods of sumps and pumps.

7 BUILDING MECHANICAL

7.1 Code/Standard

The building mechanical systems will be designed in conformance with the latest editions of the following standards:

- ACGIH (American Conference of Governmental Industrial Hygienists) - Industrial Ventilation: A Manual of Recommended Practice for Design
- Alberta Province - Occupational Health and Safety
- ANSI: American National Standard Institute
- ASHRAE (American Society for Heating, Refrigeration and Air Conditioning Engineers)
- ASHRAE 55 - Thermal Environmental Conditions for Human Occupancy
- ASHRAE 62 - Ventilation for Acceptable Indoor Air Quality
- ASHRAE 90 - Energy Standard for Buildings
- ASCA - Alberta Safety Code Act
- ASTM (American Society for Testing and Materials)
- CAN/CSA B149.1 – Natural Gas and Propane Installation Code, as amended by the Province of Alberta regulation
- CSA (Canadian Standards Association)
- NBC(AE) (National Building Code – Alberta Edition)
- NFC(AE) (National Fire Code – Alberta Edition)
- NECB (National Energy Code for Buildings)
- NFPA (National Fire Protection Association)
- NFPA 10 – Standards for Portable Fire Extinguishers
- NFPA 90A – Standard for the Installation of Air Conditioning and Ventilation Systems
- NFPA 90B – Standard for the Installation of Warm Air Heating and Air Conditioning Systems
- NPC (National Plumbing Code of Canada) as amended by the Alberta province regulation
- NRC (National Research Council of Canada)
- OHSA - Occupational health and Safety Act
- SMACNA (Sheet Metal and Air Conditioning Contractors National Association Inc.)

Table 7-1:
Design Climactic Data

| Location | Design Temperature Elevation (m) | January | | July 2.5% | | Degree-Days Below 18°C | 15 min. Rain (mm) | One Day Rain 1/50 mm | Annual Rain (mm) 2.5% °C |
|--------------|----------------------------------|---------|-------|-----------|--------|------------------------|-------------------|----------------------|--------------------------|
| | | 2.5% °C | 1% °C | Dry °C | Wet °C | | | | |
| Grande Cache | 1220 | -35 | -38 | 27 | 15 | 5670 | 14 | 70 | 365 |

7.2 Heating and Ventilation

7.2.1 General

There is no heating and ventilation system in the WWTP except existing Control Building, new UV Building, and new underground pump gallery.

7.2.2 Heating and Ventilation System in Existing Control Building

The existing heating and ventilation system consist of:

- Air handling unit AHU-101 (Fan, motorized damper DM-104, temperature control TC-104A/TC-104B, and ductwork);
- Air handling unit AHU-102 (Fan, motorized damper DM-105, temperature control TC-105A/TC-105B, and ductwork);
- Gravity relief hood RH-101A and RH-101B;
- Gravity relief hood RH-102;
- Unit heater UH-101;
- Fans F-101, F-102 and F-103;
- Make-up air unit MAU-101; and
- Furnace FU-101.

Following upgrades and/or modification will be made to the Heating and Ventilation system of the existing control building:

- Air handling unit AHU-101 will be replaced with new fan, ductwork and control devices to provide ventilation to Blower Room 101. Unit heater UH-101 will be replaced with new gas-fired unit heater.
- Existing generator in Blower Room 101 and associated system (fuel tank and piping, outdoor radiator, chilled fluid piping, and exhaust) will be removed. Air handling unit AHU-102 be replaced with new fan ductwork and control devices to provide ventilation to Blower Room 101.
- Gravity relief hood RH-101A and RH-101B will be cleaned and recommissioned.
- Fans F-101, F-102 and F-103 will be placed with new fans and control devices.
- Make-up air unit MAU-101 and ductwork will be cleaned and recommissioned.
- Headworks room in existing Control Building is an electrical classified area. Refer to electrical section for details. Supply air from MAU-101 provides heating and ventilation to the Headworks room. Air is released from gravity relief hood RH-102. In this ventilation method, the Headworks room is pressurised by supply air. In Headworks room, the wastewater channel is covered by open grating. The wastewater gas freely flows in the Headworks room and could migrate into adjacent spaces. Gravity relief hood RH-102 will be replaced by a new roof mounted exhaust fan. New exhaust fan will keep the Headworks room 9 negative. Supply air outlets and new exhaust fan will provide minimum 6 ACH (Air Change Per Hour) to Headworks room. The new exhaust fan shall meet electrical classification requirement in Headworks room.
- Furnace FU-101 and ductwork be cleaned and recommissioned.
- A heat trap will be added to combustion air intake in Mechanical Room 102.

7.2.3 Heating and Ventilation System in new UV Building

The new UV Building is an electrical un-classified area. Refer to electrical section for details. Natural-gas-fired unit heater(s) with local thermostat will heat the new UV Building at its setpoint to maintain minimum 15°C. An electrical unit heater as backup heating will be considered during detail design phase. A supply fan with removable filter will provide ventilation for the new UV Building. A local control panel will control the supply fan, air intake damper, recirculating/return air damper, and exhaust air damper to provide minimum outside air (set at 9% of supply air) to pressurize the room.

When room temperature is higher than the adjustable setpoint, or when relative humidity level is higher than the adjustable setpoint, the outdoor air damper and exhaust air damper will open and modulate to bring more the outdoor air into the space and cool down the room temperature under maximum design temperature (40°C). The exhaust air will be exhausted to the outdoors through a roof mounted hood or wall mounted louver with insulated motorized dampers.

7.2.4 Heating and Ventilation System in new Underground Pump Gallery

The new Underground Pump Gallery for RAS and WAS system is un-classified area. Refer to electrical section for details. A natural gas fired Make-up Air Unit (MAU) with energy recovery device will provide heating and ventilation for the new Underground Pump gallery. The MAU will maintain minimum 15°C. An electrical unit heater as backup heating will be considered during detail design phase.

When room temperature is higher than the adjustable setpoint, or when relative humidity level is higher than the adjustable setpoint, the outdoor air damper and exhaust air damper will open and modulate to bring more the outdoor air into the space and cool down the room temperature under maximum design temperature (35°C).

7.3 Plumbing

7.3.1 General

There is no plumbing system in the WWTP except existing Control Building, new UV Building, and new Underground Pump Gallery for the RAS and WAS systems.

7.3.2 Plumbing System in Existing Control Building

The domestic cold and hot water piping was installed in 1980s and currently the water is used as non-potable water. The piping has a service life of about 40 years which is close to the life expectancy of copper pipe. Mold on pipe insulation was observed in several places. Building non-potable cold and hot water piping in existing Control Building will be replaced with new pipe, insulation and jacket.

7.3.3 Plumbing System in New UV Building

Floor in the new UV Building will have slope to below grade UV Chamber. A sump will be located in the UV Chamber. During the maintenance period a portable sump pump will be used to discharge a small volume of water to outside of building. Permanent service water will not be installed in the new UV Building. If needed, non-potable water will be temperately connected from the existing Control Building by hose.

7.3.4 Plumbing System in New Underground Pump Gallery

Floor drain(s) with trap seal(s) will provide drainage in the new Underground Pump Chamber. Floor drain(s) will be connected to a sump. A sump pump will discharge water to one of the two Bioreactors. Permanent service water will not be installed in the new Underground Pump Gallery. If needed, non-potable water will be temperately connected from the existing Control Building by hose.

7.4 Natural Gas

7.4.1 General

The capacity of existing gas service shall be reviewed with the utility provider due to addition of new unit heater(s) in UV Building.

7.4.2 Natural Gas in Existing Control Building

The natural gas piping in the existing Control Building will be kept without change. Currently natural gas piping is not thoroughly painted. Piping shall be checked and painted.

7.4.3 Natural Gas in New UV Building

New natural gas piping to the new UV Building will be added after the existing gas meter which is beside the existing Control Building.

7.4.4 Natural Gas in New Underground Pump Chamber for RAS System

New natural gas piping to the new Underground Pump Gallery will be added after the existing gas meter which is beside the existing Control Building.

7.5 Safety and Fire Protection

7.5.1 General

There is no safety and fire protection system in the WWTP except in the existing Control Building.

7.5.2 Safety and Fire Protection in Existing Control Building

The existing Control Building is currently protected with a fire extinguisher, which will be kept without any change. One self-contained non-plumbing style emergency eyewash, which is similar to the existing unit in Blower Room 101, will be installed in Lab.

7.5.3 Safety and Fire Protection in new UV Building

Portable fire extinguisher(s) will be installed and maintained in accordance with the requirements of the NBC(AE), NFC(AE), and the National Fire Protection Agency NFPA 10 "Standard for Portable Fire Extinguishers." Portable fire extinguisher(s) will be mounted on bracket(s) affixed to the wall(s). The building is not expected to require a sprinkler system. One self-contained non-plumbing style emergency eyewash, which is similar to the existing unit in Blower Room 101, will be installed in new UV Building.

7.5.4 Safety and Fire Protection in New Underground Pump Chamber for RAS System

Portable fire extinguisher(s) will be installed and maintained in accordance with the requirements of the NBC(AE), NFC(AE), and the National Fire Protection Agency NFPA 10 "Standard for Portable Fire Extinguishers." Portable fire extinguisher(s) will be mounted on bracket(s) affixed to the wall(s). The building is not expected to require a sprinkler system.

8 ELECTRICAL, INSTRUMENTATION & CONTROL

8.1 Utility Upgrade

The existing WWTP is fed from a 500 Ampere 480V electrical service. 480V is not a typical voltage in Canada; however, it is common in the United States of America. The feeders are parallel 250 MCM which is suitable for the present Canadian Electrical code for 500 Amperes.

Because of the age of the equipment, modernization was recommended in the 2019 Concept Report. The existing MCC#1 would be replaced, so it would be appropriate at that time to replace the system with 600V. Each 480V piece of equipment would need to be replaced. This would include the generator, motors, and transformers. If the budget is not sufficient to replace the electrical system, it may be acceptable to the utility to feed the new area with a separate electrical service.

ATCO Electrical will be contacted to arrange for pricing to convert to 600V. Based on the pricing, AE will then provide a recommendation to the client. Once the decision has been provided, AE will either provide a new electrical service for the entire WWTP or add a 600V service to the new WWTP.

8.2 Area Lighting

The extension of the process equipment will be lit using exterior LED flood lights with control located at the Control Building. Light poles will only be used if the process areas cannot be lit adequately from the buildings.

8.3 Cold Temperature Design

Exposed process equipment runs the risk of freezing in the winter. Grease will need to be arctic rated so that gates and actuators will work.

Above grade exposed piping may freeze, requiring insulation, covering, and electrical heat tracing. This will be designed with self regulated heat trace with ground fault circuit interrupter protection.

8.4 Project Loading

Depending on the electrical service provided, the WWTP can be provided with a 480:600V transformer which may be fed from the main plant or 600V from a new service. The numbers are approximate, to provide an idea of the new service size and the requirement for back up power.

| New Loads | Estimated Power |
|--------------------------|---------------------|
| Grit Removal | 3 kVA |
| Flow Distribution- gates | 3 kVA |
| Aeration System | 100 kVA |
| Secondary Clarifier | 5 kVA |
| Ultraviolet Disinfection | 30 kVA |
| Solids Handling | 3 kVA |
| Approximate Load | 150 Amperes at 600V |

8.5 Backup Power

The existing 230 KW generator is 30 years old and at the end of life. It would be 277/480V matching the existing service entrance. The TS-101 transfer switch is in line with the MCC#1. The condition of TS-101 is unknown.

The proposed solution is to replace the generator with a 347/600V connected to the existing control building. The generator would be sized for normal operation with capacity for typical peak operation, but not for total connected load. The generator will have an automated load bank attached to prevent the generator from operating underloaded.

The final size of the generator will be determined after the process is complete. At this time a 300 kW diesel electric generator is recommended, complete with fuel tank, pump, and accessories.

8.6 SCADA

The MD has a Supervisory Control and Data Acquisition (SCADA) system for their sixteen facilities. This is based on ClearScada and Allen Bradley Compact Logix PLC systems. If the WWTP is to be connected to the MD, this would be the ideal method for them to supervise and remotely control the WWTP.

The WTP was designed with GE PLCs and it is believed that Wonderware was used for the human machine interface. The Hamlet may want to have the WWTP match the WTP for familiarity and operations. We recommend that the WWTP be designed for connecting to the MD in the future. At this time, the design will not include the tower or modems or programming the WWTP into the ClearScada.

The communication system utilizes the obsolete Gandalf LDS 309A, a limited distance modems operating on a 170Mhz frequency. Communications hardware at the WWTP will need to be upgraded in order to establish a radio connection back to the WTP. A new 900Mhz based radio system using a Motorola 9000SMCDD or equivalent Ethernet radio will be installed at the WWTP and will be connected back to the existing Ethernet bridge radio setup located at the WTP via the Grande Mountain repeater. The existing PLC located at the WWTP uses RS232 communication protocols, and as such, a suitable gateway will need to be installed between the Ethernet radio and the WWTP PLC in order to convert the Ethernet communication signals to/from RS232.

The current radio mast mounted to the top of the WWTP is approximately 9 meters tall, and the tower at Grande Mountain is approximately 30 meters tall. A preliminary radio path study has been conducted and indicates that these existing heights are suitable. The connection between the Grande Mountain repeater and the WTP is existing. We recommend that Morad Communications Ltd. to be hired to verify radio path functionality and install/configure all required radio equipment to create a suitable connection between the WWTP and WTP.

The design will include a Cisco RV-042G router at the existing WTP which will connect to an available Ethernet port on the internet service provider's router. The WWTPs local area network will be connected to Cisco RV-042G which will allow to create a secure PPTP connection suitable for VPN remote connectivity. Suitable remote viewing software will be installed on existing operator workstation (UltravVNC or equivalent) and computer located at the Public Works site. Remote viewing capabilities will be established between WTP and Public Works.

8.7 Control

The controls design will be based on a local Programmable Logic Controller (PLC) and Human Machine Interface (HMI) that directly control the existing WWTP functions, such as wastewater flow and treatment operations. The PLC will be

located at the existing WWTP and will integrate with the vendor packages, installed throughout the WWTP to coordinate system control. As mentioned in the SCADA section, the PLC will be a CompactLogix series PLC, using Ethernet/IP as a base communications protocol.

The input/output cards will be 24Vdc with interposing relays to interface with higher voltage control systems. HART protocol analog input cards will allow direct digital reads of flow meter totals.

The HMI will be determined during the detail design stage. Discussions with the Hamlet and MD will need to occur prior to final selection, which will consider HMI related decisions made. The HMI interface will reside on an industrial hardened computer, connected to a regular LCD monitor, keyboard, and mouse located in the Office. A slave runtime only copy of the screens will be installed on a touchscreen computer panel and mounted on the front of the PLC cabinet. The two screens will be linked, such that updates are mirrored on both screens; having two HMIs also provides a level of control redundancy.

8.8 SCADA – Remote Access

We recommend that a separate SCADA assessment be completed to determine the appropriate method of connectivity. At this time the SCADA design and connectivity are not part of the design.

If the WWTP is connected to the MD SCADA network, the primary remote access will be conducted from the master SCADA/HMI screens, located at the MD. This is further described in the SCADA section. Backup remote access will use a secure VPN connection directly into the sites cellular based router and utilize free VNC remote desktop viewing software for direct control of the local HMI screens. Simple Excel reporting will be included in the system design and operated from the WWTPs local HMI location. A SQL Historian database is not considered for this design, but it can be added at any point in the future. These methods of remote access and reporting will be open to discussion based on the final SCADA master plan report.

Primary alarm monitoring and dial-out functionality will be handled by the master SCADA/HMI software located at the MDs Administration Office. A Barnett Engineering alarm dialer will be included in the system design and will be configured to call-out on system alarms to the operator(s) in the event communications have failed between the WTP and Administration Office. The alarm dialler is anticipated to be cellular in nature, and as such, will also allow for text message alarms.

8.9 Instrumentation

Instrumentation will be base specified as Endress + Hauser instruments for pressure (PMC71), flow, and temperature. Turbidity, MLSS, pH and Dissolved Oxygen (DO) analysers will be Hach or Prominent, and levels will be Siemens/Milltronics (XPS-10 with MR200). UV Transmittance will be by the vendor.

The chart recorder, Fish+Porter flow indication panel and Telog Instruments R-33XX data recorder will be decommissioned and removed. Currently 2 open channel flow monitors which use Ultrasonic transducers are connected directly to the Telog Instruments data recorder. The transducer will be replaced with 2 new Siemens XPS-10 transducers, and the connections will be removed from the Telog recorder. The newly installed transducers will be connected to 2 new MultiRanger 200 transmitters mounted on the wall of the chamber room, the 4-20mA analog signal from the transmitters will then be wired directly to the analog input card of the PLC.

The new generator instrumentation will communicate directly with the PLC for instrumentation and control. The existing PLC cabinet will be utilized, and rails/terminals/fuses/breakers will be added as required to incorporate all required signals identified below:

1. DI - UPS Fail
2. DI - DC power supply fail (2)
3. DI - Blower 101 fault
4. DI - Blower 102 fault
5. DI - Clarifier fault High Torque Trip
6. DI - Clarifier fault High Torque Warning
7. DI - Manhole B P104 Trouble - high level (a new Flygt bulb will be required)
8. DI - Macerator fault (COR-101 Motor over temp, Grinder Jam or Motor OL)
9. DI - Building temperature fault (high or low)
10. DI - Utility power off
11. DI - Exterior lighting bypass.
12. AI - Open channel flow (2)

The PLC cabinet is to be retrofitted with new 1500VA Powerware backup UPS, a suitably sized redundant 24Vdc power supply, and a Sixnet 8-Port managed Ethernet switch.

8.10 Programming

There will be a need to program and configure a new set of WWTP HMI screens which represent the existing functionality of the alarm indication lights located on the front of the relay panel. The open channel flow values will also be displayed on the HMI and a separate screen will be created for historical and real time trending of the flow signals. Duplicate WWTP HMI screens on the master HMI node located at the admin building and program ability to remotely acknowledge and reset all alarms. DO meters and pH meters will installed in the aeration tank and aerobic digester. MLSS monitors will also be installed in the bioreactors to provide timely information on the process. The date from the meters will be also displayed in the HMI.

The intent is to have the ability to remotely acknowledge and reset alarms. All alarms are to have 30 second de-bounce timers. Add the 2 open channel flow monitoring signals to the PLC program such that they are available for monitoring, alarming and trending.

8.11 Area Classification

- The Canadian Electrical Code section 22 will be used to determine the hazardous classification. Typically, if wastewater gases are present, 6 fresh air exchanges are needed per hour for Zone 2. If the ventilation cannot be provided the area would be considered Zone 1.
- For process areas where wastewater gases are not expected to be present, it will be a Category 2 location for corrosion.
- For indoor locations where wastewater gases are not expected to be present, it will be a general purpose/ordinary location.

9 PROPOSED AEP APPROVAL LIMITS

Table 9-1 shows the proposed future approval limits as per the “Standard and Guideline for Water, Wastewater and Storm Drainage guideline”, and input from Alberta Environment and Parks (AEP).

Table 9-1
Proposed Future AEP Approval Limits

| Parameter | Limit |
|---|---|
| For Treated Effluent Discharge to the Smoky River | |
| cBOD | ≤ 25 mg/L monthly arithmetic mean of daily samples |
| TSS | ≤ 25 mg/L monthly arithmetic mean of daily samples |
| Ammonia-Nitrogen (June 1 to November 30) | ≤ 5 mg/L monthly arithmetic mean of daily samples |
| Ammonia-Nitrogen (December 1 to May 31) | ≤ 10 mg/L monthly arithmetic mean of daily samples |
| pH | 6.5 to 8.5 for monthly arithmetic mean of daily samples |
| Faecal Coliform | ≤ 200/100 mL for monthly geometric mean of weekly samples |
| Acute lethality test | Pass |

AE would like to highlight that MD will need to apply for a new approval to operate based on the limits in Table 9-1 in addition to applying for approval extension as the new WWTP is being built.

10 COST ESTIMATES

Table 10-1 summarizes the Class C capital cost estimate (2020 dollars) for the proposed upgrades:

**Table 10-1
Capital Cost Estimates**

| Description | Cost (CAD) |
|---|---------------------|
| General Requirements | \$1,327,000 |
| Civil | \$3,728,000 |
| Structural/Architectural | \$2,201,000 |
| Building Mechanical | \$543,000 |
| Process Mechanical | \$4,405,000 |
| El&C | \$871,000 |
| Utility Allowances | \$200,000 |
| Survey Allowance | \$15,000 |
| Hydrovac Allowance | \$100,000 |
| Location Premium (10%) | \$1,207,000 |
| Construction Subtotal | \$14,597,000 |
| Engineering & Construction Services (15%) | \$2,190,000 |
| Total Capital Cost | \$16,787,000 |
| Contingency (15%) | \$2,519,000 |
| Total Estimated Project Cost | \$19,306,000 |

11 RISK ASSESSMENT

Project's risk was compiled based on AE's previous experience with similar projects along with possible mitigation measures as shown in **Table 11-1**. Detailed risk assessment will be completed during detailed design.

Table 11-1
Risk Register and Assessment

| Risk | Description | Mitigation |
|---|---|---|
| Funding | Lack of funding will delay the detailed design and construction of the new WWTP. | Apply for funding early on and follow up. DBM was completed with the intent to help build a case for funding. Looking for funding options with provincial and federal entities. |
| Ground conditions/slope | Existing WWTP is located on a slope by the smoky river. | Complete Geotech investigation before detailed design has been initiated. Ground conditions and risks are known. Design considerations have been made. |
| Approval Expiry | AEP Approval for WWTP expires Jan 2021. | Help MD apply for interim and future approval limits in year 2020. This way while Construction is on-going, approval is already in place. |
| Operation of existing WWTP and construction of new WWTP | Existing WWTP will be in operation while the new WWTP is constructed. | A construction sequencing plan will be included in Tender documents |
| Environmental Impacts | No environmental impacts during the construction phase is realized as this stage. | Any unexpected environmental impact will be mitigated during detailed design and construction phase in consultation with MD |
| Commissioning | Commissioning of new equipment and operator training may pose a significant risk. | AE will develop a commissioning plan with the help from commissioning manager (under General Contractors). The commissioning plan will guide the operators during startup and commissioning phase. After successfully commissioning of the new WWTP, ATAP can provide additional operator support while operators get familiar with the system. |

12 SCHEDULE

Based on the discussions of this DBM, AE has developed an implementation plan, presented in **Table 12-1** below, to successfully complete this project. It is understood that the progression of the project from detailed design to the construction phase depends on funding approval; therefore, the timelines are subject to change.

Table 12-1
Project Schedule

| Action | Schedule |
|---|-----------------------------|
| Design Basis Memorandum | June 30, 2020 |
| WQEBL Report | February 28, 2020 |
| Geotechnical Investigation Report | January 28, 2020 |
| Detailed Design | July 2020 – November 2020 |
| Interim Approval and Approval Amendment | August 2020 – November 2020 |
| Construction | May 2021 – October 2022 |

CLOSURE

This report was prepared for the Municipal District of Greenview No. 16, Hamlet of Grande Cache to develop the recommended option from the Concept Report for a new Wastewater Treatment Plant, with a conventional, Extended Aeration process into a Design Basis Memorandum.

The services provided by Associated Engineering Alberta Ltd. in the preparation of this report were conducted in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practicing under similar conditions. No other warranty expressed or implied is made.

Respectfully submitted,
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APPENDIX A - GEOTECHNICAL INVESTIGATION REPORT

**GRANDE CACHE WASTEWATER TREATMENT PLANT
UPGRADES GEOTECHNICAL INVESTIGATION**



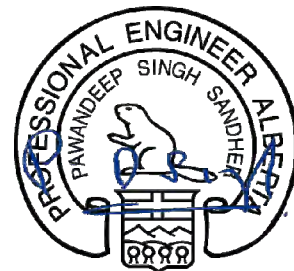
THURBER ENGINEERING LTD.

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GEOTECHNICAL INVESTIGATION**

Report

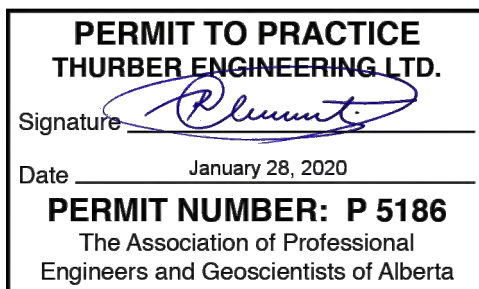
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Associated Engineering Alberta Ltd.

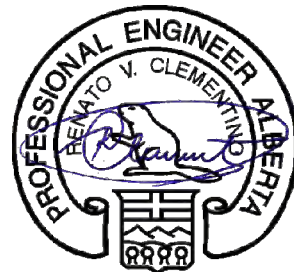


January 28, 2020

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Date: January 27, 2020
File: 25875



January 28, 2020

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STATEMENT OF LIMITATIONS AND CONDITIONS

APPENDIX A

- Drawing 25875-1 Site Plan Showing Approximate Test Hole Locations

APPENDIX B

- Symbols and Terms Used on Test Hole Logs
- Modified Unified Soils Classification
- Test Hole Logs

APPENDIX C

- Recommended Construction Procedures



1. INTRODUCTION

1.1 General

This report presents the results of a geotechnical investigation conducted by Thurber Engineering Ltd. (Thurber) for the proposed Grande Cache Wastewater Treatment Plant upgrade project at the Grande Cache in Alberta.

The geotechnical investigation was carried out in general accordance with our proposal submitted to Mr. Abu Waraich, P.Eng., of Associated Engineering Alberta Ltd. (AEAL) on April 8, 2019, and subsequent discussions and e-mail communications with Mr. Abu Waraich, P.Eng. regarding the scope of work for the geotechnical investigation. Authorization to proceed with the geotechnical investigation was provided by Mr. Abu Waraich on August 29, 2019.

This current investigation did not include an assessment of soil or groundwater for environmental purposes.

It is a condition of this report that Thurber's performance of its professional services is subject to the attached Statement of Limitations and Conditions.

1.2 Proposed Development and Scope of Work

We understand the proposed development will includes new rectangular type configuration for the aerobic reactor, digester and secondary clarifier concrete tanks, new pre-engineered UV building and replacement of existing underground piping and manholes as shown on proposed Upgrade Layout plan provided by AEAL attached in Appendix A. It understood that aerobic reactor, digester and secondary clarifier concrete tanks will be about 6 m deep. It is also understood that the new pipeline will be about 4 m to 8 m deep and open cut installation method will be used for the pipeline installation

Thurber's scope of work consisted of drilling test holes within the proposed aerobic reactor, digesters, secondary clarifier and UV building area and provide geotechnical recommendations for the foundation design for an aerobic reactor, digesters, secondary clarifier and UV building. Thurber scope of work also consisted of drilling test holes for new pipeline and provide geotechnical recommendations for the pipeline installation.

A site reconnaissance was not carried out by Thurber to assess the conditions of the existing slopes as the site was covered with snow. Thurber will carry out slope stability assessment once AEAL will provide site topography and survey data of existing slopes.



2. GEOTECHNICAL INVESTIGATION

2.1 Field Drilling Program

The field program was carried out under the supervision of Mr. Tim Craplewe, C.E.T., of Thurber. Prior to commencing drilling, Alberta One-Call was contacted, and the test hole locations were cleared of underground utilities.

Ten test holes (TH19-1 to TH19-10) were drilled within the project site at the locations shown on Drawing No. 25875-1. Three test holes (TH19-1, TH19-2 and TH19-3) were drilled within the aerobic reactor, digesters and secondary clarifier site area. Test hole TH19-4 was drilled within the UV building area. Test hole TH19-5 was drilled on the berm between existing sludge storage pits. Five test holes (TH19-6 to 10) were drilled along the new pipeline alignment and manholes.

The drilling was performed on October 29, 2019, using a track mounted auger drill rig operated by Frontier Enviro Drilling of Grande Prairie, Alberta. Test hole TH19-1, TH19-2, TH19-5, TH19-6 and TH19-9 were drilled on October 29, 2019. Early auger refusal was encountered in test holes TH19-1 and TH19-2 on gravel/cobble present within the very hard clay till at a depth of about 1.2 m to 2.0 m below the existing ground surface. In test hole TH19-6, auger refusal was encountered at a depth of about 3.2 m below the existing ground surface. Auger refusal was encountered in test hole TH19-5 in very hard clay shale at a depth of about 4.0 m below the existing ground surface. Test hole TH19-9 was drilled to a depth of about 5.8 m below the existing ground surface.

Due to the early refusal in several test holes, the drilling was performed again on November 4 to 6, 2019, using a track-mounted ODEX capable drill rig operated by All Service Drilling Inc. of Edmonton, Alberta, to be able to break through the gravel/cobble encountered in the clay till. Eight test holes (TH19-1 to TH19-4, TH19-6 to TH19-8, TH19-10) were drilled to the depths ranging from 6.6 m to 11.1 m below the existing ground surface using an ODEX drilling method. ODEX refusal was encountered in test hole TH19-2 in very hard gravelly/cobbly clay till at a depth of about 7.9 m below the existing ground surface.

Disturbed soil samples were obtained during drilling, and Standard Penetration Tests (SPT) were carried out at selected depths in all test holes. The undrained shear strength (C_{pen} value) of cohesive soil samples was estimated using a pocket penetrometer. On completion of drilling, all test holes were backfilled with drill cuttings, and bentonite chips were used at the top to provide a surface seal.



Water and slough levels were noted during and immediately after completion of the drilling program, before backfilling the test holes. 25 mm diameter standpipe piezometers were installed in test holes TH19-1, TH19-2, TH19-4, TH19-5, TH19-6, TH19-7, TH19-8 and TH19-10 to permit future groundwater level monitoring.

Groundwater levels in the standpipes were recorded upon completion of the drilling program on November 6, and again on November 19, 2019.

2.2 Laboratory Testing

Geotechnical laboratory testing included a visual classification and the determination of the natural water content of all soil samples. Atterberg limits, grain size analysis and sulphate tests were also carried out on selected representative soil samples. In addition, laboratory resistivity, pH and chlorides test were carried out on selected soil samples.

The results of the drilling and laboratory program are summarized on the test hole logs in Appendix B. An explanation of the symbols and terms used to describe observations in the test hole logs and the Modified Unified Soil Classification are also provided in Appendix B.

3. SITE DESCRIPTION

3.1 Surface Conditions

The proposed Wastewater Treatment Plant upgrade project site is located within West ½ of Sec.29-56-8 W6. At the time of field drilling, the site was covered with snow. Based on the contour drawing provided by AEAL, the existing ground elevation at the project site ranged from about 1097 m to 1109 m. At the site for the aerobic reactor, digester and secondary clarifier concrete tanks the ground elevation varied from 1105 to 1106 m.

3.2 Subsurface Soil Conditions – Reactor, Digester, Clarifier and UV Building Site (TH19-1 to TH19-4)

3.2.1 General

The general subsurface conditions encountered at the test hole locations drilled with the aerobic reactor, digester and secondary clarifier concrete tanks and UV building site consisted of very hard clay till matrix with gravel and cobbles to the termination depth of the test holes. In test hole, TH19-2 buried peat about 0.7 m thick was encountered below the clay fill at a depth of about



0.9 m. Gravel layer about 2.2 m thick was encountered within the clay till at a depth of about 4.3 m below the existing ground surface in test hole TH19-2

The following are the generalized descriptions of the soils encountered during the field drilling program. Detailed descriptions of the subsurface conditions observed during the drilling is presented on the test hole logs in Appendix B.

3.2.2 Clay

Clay fill was encountered at the surface in test hole TH19-2 and extended to a depth of about 0.9 m below the existing ground surface. The clay fill was dark brown, silty, sandy and contained trace gravel. The natural water content of the clay ranged from about 16 percent to 30 percent.

3.2.3 Peat

Peat was encountered in test hole TH19-2 below the clay fill at a depth of about 0.9 m. The thickness of the peat was about 800 mm. The natural water content of the peat ranged between 49 percent and 220 percent.

It should be noted that the peat may be thicker or thinner between test holes, and additional shallow test pits or probe holes may be required if volume quantities for stripping are required. If the peat thicknesses presented on the attached logs are used for a volume estimate, there is a high risk of large variation between the estimated and actual volume removed.

3.2.4 Clay Till

Clay till was encountered at the surface in test holes TH19-1, TH19-3, TH19-4 and below peat in test hole TH19-2 and extended to the termination depths of the test holes. The clay till was a brown, dark brown, silty, sandy, matrix with gravel and cobbles and contained possible boulders. The natural water content of the clay till typically ranged between 3 and 8 percent. SPT 'N' values within the clay till typically ranged between 44 blows and more than 100 blows per 300 mm penetration, indicating a very hard consistency.

Atterberg limits test results on selected soil samples of the clay till indicated that clay till is low plastic with plastic limit ranging between 12 and 13 percent, and liquid limit of 18 percent.

Hydrometer analyses was undertaken on a selected sample of the clay till indicate 10.5 percent gravel, 50 percent sand, 30.5 percent silt and 9 percent clay.



It should be noted that gravel, cobbles and boulders were encountered in the clay till that may significantly impact excavations, pipeline installation and foundation construction.

3.2.5 Gravel

In test hole TH19-2, gravel was encountered within the clay till at a depth of about 4.2 m and extended to a depth of about 6.6 m below the existing ground surface. The gravel was dark brown, silty, sandy, matrix with clay. Natural water content in the gravel ranged between about 5 and 10 percent. SPT 'N' value in the gravel ranged between 85 blows and more than 100 blows per 300 mm penetration, indicating a very dense state.

Grain size analyses undertaken on a selected gravel sample indicate about 29.6 percent gravel, 47.6 percent of sand and 22.8 percent silt and clay.

3.3 Subsurface Soil Conditions – Pipeline (TH19-6 to TH19-10)

The general subsurface conditions encountered at the four test holes drilled along the pipeline consisted of very hard clay till matrix with gravel and cobbles to the termination depth of the test holes. Topsoil, about 100 mm to 600 mm thick, was encountered at the surface in TH19-8 and TH19-9.

The following are the generalized descriptions of the soils encountered at the test hole TH19-6 to TH19-10 location during the field drilling program. Detailed descriptions of the subsurface conditions observed during the drilling is presented on the test hole logs in Appendix B.

3.3.1 Topsoil

Topsoil was encountered at the surface in test holes TH19-8 and TH19-9. The thickness of the topsoil was about 100 mm to 600 mm.

It should be noted that the topsoil may be thicker or thinner between test holes, and additional shallow test pits or probe holes may be required if volume quantities for stripping are required. If the topsoil thicknesses presented on the attached logs are used for a volume estimate, there is a high risk of large variation between the estimated and actual volume removed.



3.3.2 Clay Till

Clay till was encountered at the surface or below topsoil in all five test holes (TH19-6 to TH19-10) and extended to the termination depths of the test holes. The clay till was a brown, dark brown, silty, sandy, matrix with gravel and cobbles. The natural water content of the clay till typically ranged between 5 and 14 percent. SPT 'N' values within the clay till ranged between 19 blows and more than 100 blows per 300 mm penetration, indicating a very stiff to very hard consistency.

It should be noted that gravel, cobbles and boulders were encountered in the clay till that may significantly impact excavations, pipeline installation and foundation construction.

3.4 Subsurface Soil Conditions – Berm between existing sludge storage pits (TH19-5)

The subsurface conditions encountered at the test hole TH19-5 consisted of clay fill to a depth of about 1 m overlying clay till to a depth of about 1.5 m overlying clay shale. Auger refusal was encountered in very hard clay shale at a depth of about 4.0 m below the existing ground surface.

The clay shale was generally dark grey, silty and moderately weathered. SPT "N" values of the clay shale were over 100 blows per 300 mm penetration, indicating that the clay shale was very hard. The natural water content of the clay shale ranged from about 5 to 9 percent.

3.5 Groundwater Conditions

Water and slough levels were measured in the open test holes during drilling and are noted on the test hole logs in Appendix B. The groundwater levels were measured in the standpipe piezometer upon completion of the drilling program and again on November 19, 2019. The groundwater level measurements are summarized in Table 3.1 below.

**TABLE 3.1
SUMMARY OF SHORT-TERM GROUNDWATER LEVEL MEASUREMENTS**

| TEST HOLE | STANDPIPE INSTALLATION DEPTH B.G.S. (m) | WATER LEVEL B.G.S. (m) | |
|-----------|--|------------------------------|-------------------|
| | | Upon Completion | November 19, 2019 |
| TH19-1 | 12.5 | 10.0 | 1.0 |
| TH19-2 | 7.9 | 7.1 | 2.9 |
| TH19-4 | 11.0 | Dry | 9.3 |
| TH19-5 | 4.0 | Dry | Dry |
| TH19-6 | 3.0 | Dry | 2.0 |
| TH19-7 | 6.6 | Dry | 4.1 |
| TH19-8 | 11.0 | Dry | 0.4 |
| TH19-10 | 6.6 | Dry | 2.5 |

Note: B.G.S = Below Ground Surface

It should be noted that groundwater levels can vary in response to seasonal factors and precipitation; hence the actual groundwater conditions at the time of construction could vary from those recorded during this investigation. It is important to note that seepage was encountered at various depths during drilling.

3.6 Frost Effects

The near surface low to medium plastic clay till soil encountered at the site is expected to have moderate to high frost susceptibility. The expected depth of frost penetration has been estimated for averaged soil properties of the in-situ materials encountered in the test holes for both the mean annual Air Freezing Index (AFI) of 1550°C-days and the 50-year return period Air Freezing Index of 2600°C-days.

The mean annual depth of frost penetration for the clay till soil at this site is estimated to be about 1.7 m, and the penetration for a 50-year return period is about 2.7 m. The 50-year return period depth is typically used for design. The estimated depth of frost penetration is for a uniform soil type with no snow cover. The depth of frost penetration will be reduced if turf or snow cover is present. The 50-year return frost penetration depth is typically used for design, whereas the mean annual depth can be used for construction with some risk.



4. GEOTECHNICAL EVALUATION AND RECOMMENDATIONS

4.1 Site Preparation and Grading

No information on site grading was provided at the time of report preparation. However, it is expected that the site grading may involve shallow cuts and fills to establish relatively level grades and to promote site drainage at the new structure sites.

Prior to site construction, topsoil/peat, any deleterious materials and poor-quality fill material should be removed from beneath the proposed development area. The subgrade should be inspected by qualified geotechnical personnel to confirm that the subgrade is suitable for new structures construction.

Any fill required for site raising should consist of granular fill or inorganic low to medium plastic clay/clay till or imported granular fill as required. The following general guidelines for fill placement and compaction are recommended:

- All site grading fill placed under new structures and equipment should be placed in 150 mm maximum lifts compacted thickness and compacted to at least 98 percent Standard Proctor Maximum Dry Density (SPMDD) within plus or minus 2 percent of Optimum Moisture Content (OMC).
- The upper 300 mm of the subgrade under access road should be compacted to at least 100 percent of SPMDD, within plus or minus 2 percent of OMC.
- Backfilling of sub-excavations and trenches in the project area should also be compacted in 150 mm lifts to 98 percent of SPMDD, within ± 2 percent of OMC.
- Granular bedding material for pipes should also be compacted to a minimum of 98 percent of SPMDD.

Frozen fill, snow, ice or other deleterious material should not be included in fill soils.

It is recommended that the finished subgrade be sloped at a minimum gradient of 1 percent toward catch basins or ditches to drain any subsurface water away from the structures. This will reduce the likelihood of ponding of water, which could result in swelling, softening and/or possible frost heaving of the clay subgrade.



Geotechnical site inspection is recommended during subgrade preparation to confirm the subgrade consistency. In addition, the density of compacted fills should be confirmed by field density test measurements during construction.

4.2 Foundation Types

4.2.1 General

The following foundation types may be considered for support of new structures at the project site:

- Raft Foundation
- Spread Footings.

It should be noted that very hard clay till containing gravel, cobbles and boulders were encountered in all test holes drilled within the project site. Hence, cast-in-place concrete piles will not be feasible foundation type at this site due to difficulties in drilling through the very hard clay till material containing gravel, cobbles and boulders

Geotechnical recommendations for the design of raft foundation and spread footings are provided in the following sections.

Additional general construction procedures are presented in Appendix C.

4.2.2 Raft Foundations

The square raft foundation founded on the native very hard clay till or dense gravel at minimum depth of about 2 m below the existing ground surface may be designed using a factored ULS bearing resistance of 500 kPa, which is based on an ultimate bearing resistance of 1000 kPa and a geotechnical resistance factor (ϕ) of 0.5.

For assessment of structural requirements, a modulus of subgrade reaction, ks_1 , of 40 MN/m³ may be used for a 1 m square raft footing. The modulus needs to be corrected for the size of the foundation bearing area based on the following formula:

$$k_b = ks_1/B \times 1 \text{ (MN/m}^3\text{)}$$



Where:

k_b = Modulus of subgrade reaction for raft footing width (MN/m³)

k_{s1} = Modulus of subgrade reaction for 1 m square plate (MN/m³)

B = effective footing width (m)

The spring constant K (MN/m) for a raft of width B and length L is calculated as follows:

$$K = k_b \times B \times L \text{ (MN/m)} = k_{s1} \times L \text{ (MN/m)}$$

The subgrade should be carefully excavated to the underside of the raft. All loosened or disturbed material or any poor quality fill containing organics should be subexcavated and removed from under the raft foundation. Care should be taken not to disturb the underlying soil, and the soil should be protected against drying and desiccation that could lead to future movement.

It should be recognized that the structural analyses using the recommended modulus of subgrade reaction will not necessarily predict the actual amounts of settlement for the structure. However, past experience indicates that it provides a reasonable estimate of structural requirements for raft design.

It is recommended that a 75 mm thick mud slab be poured on the base of the excavation to protect the clay till against disturbance and softening due to the ingress of seepage and construction equipment.

Raft foundations in non-heated areas will be subjected to frost action. If raft foundations in non-heated areas are movement sensitive, insulation will be required below the raft foundation. Further recommendations for raft foundation insulation can be provided upon request.

Based on the latest set of short term groundwater level measurements, the groundwater table is expected to be at a depth of about 1 m to 3 m below the existing ground surface at the aerobic reactor, digester and secondary clarifier concrete tanks site. Hence, seepage may be encountered during the raft footing excavation and will need to be controlled using temporary dewatering measures such as sumps, pumps and trenches around the perimeter of the excavation.



It should be noted that in test hole TH19-2, the gravel layer about 2.4 m thick was encountered at a depth of about 4.2 m below the existing ground surface. Greater seepage flows may be encountered from the gravel layers during the excavation and may require constant pumping or other systems, such as temporary well points or vertical perforated culverts backfilled with free draining gravel, to handle groundwater entering the excavation.

Hydrogeological assessment and pump test to assess the groundwater flow was not in Thurber's current scope of work; therefore, we cannot provide an assessment of the expected groundwater flow during excavation. However, we recommend to discuss the groundwater issue with an experienced dewatering contractor who should be able to provide valuable information regarding dewatering options using the information provided in our test hole logs.

4.2.3 Spread Footings

Spread footings are considered a feasible foundation type at this site. However, it should be noted that spread footings are more prone to movements due to seasonal effects than pile foundations. In addition, the groundwater table is relatively high in some areas of the site and may cause some difficulties for the excavation and construction of spread footings. Temporary drainage control may be required to control groundwater seepage into footing excavations during construction.

Spread footings should be designed and constructed in accordance to the following recommendations.

- a) Exterior footings supporting heated structure may be founded at a minimum depth of 1.5 m below finished grade to provide adequate protection against frost. Interior footings supporting a heated structure may be founded at a minimum depth of 1 m below the finished grade.
- b) Footings supporting unheated structures should be founded at a minimum depth of 2.7 m below finished ground surface or alternatively should be insulated.
- c) All footings should be founded on the undisturbed inorganic native clay till. Footings should not be placed on poor quality fill or organic soils.
- d) Where local soft silt or clay till zones are encountered in the footing trenches, it may be necessary to increase the size of the footings or to remove the soft material and replace with better quality fill. Disturbed soil should not be allowed to remain in the footing trenches.

- c) Strip and square footings founded on the native hard clay till may be designed using a factored ULS bearing resistance of 350 kPa and 420 kPa, respectively, based on ultimate bearing capacities of 700 kPa and 840 kPa, respectively, and a geotechnical resistance factor (Φ) of 0.5.
- d) It should be noted that footings founded on medium to high plastic clay/clay till may be subjected to the vertical movement (heave or settlement) due to volumetric changes in the clay /clay till resulting from changes in moisture content in the clay. Care should be taken to prevent excessive drying or wetting during construction and soils in the footing trenches that become dried or wetted should be sub-excavated and replaced with lean concrete.
- e) A drainage system consisting of a weeping tile surrounded by at least 300 mm of clean drainage gravel should be installed at around the perimeter of the foundations and should be located at or slightly below the footing base elevation. The drainage system should be designed to ensure positive drainage.
- f) The excavated base of the foundation level should be protected from water access, weathering and frost action to prevent swelling or the deterioration of the soil at the footing level. Footings should not be placed on frozen soils.
- g) The footing excavations should be inspected by qualified geotechnical personnel to ensure that the footings are located in suitable clay till soils.
- h) The concrete materials and methods of concrete construction should be as per CSA A23.1-19/A23.2-19.

4.2.4 Frost Design Heated and Unheated Buildings

Exterior footings for heated structures may be insulated to reduce frost effects. Insulation requirements for shallow footings supporting heated structures are shown in Figure 4.1. The recommended minimum depth for footings is 0.75 m, subject to suitable foundation conditions. Note, however, that spread footings should not be founded in fills unless an evaluation of potential fill settlement is made and is acceptable to foundation performance.

For buildings heated to a minimum of 18°C, a recommended thickness of rigid insulation of 50 mm should be applied to the outside of the footing walls to the top of the footing, and should extend horizontally outwards a minimum distance of 1.8 m. For buildings heated to a minimum of 7°C the corresponding recommended thickness of rigid insulation is 100 mm, extending horizontally outwards a minimum distance of 2.4 m.

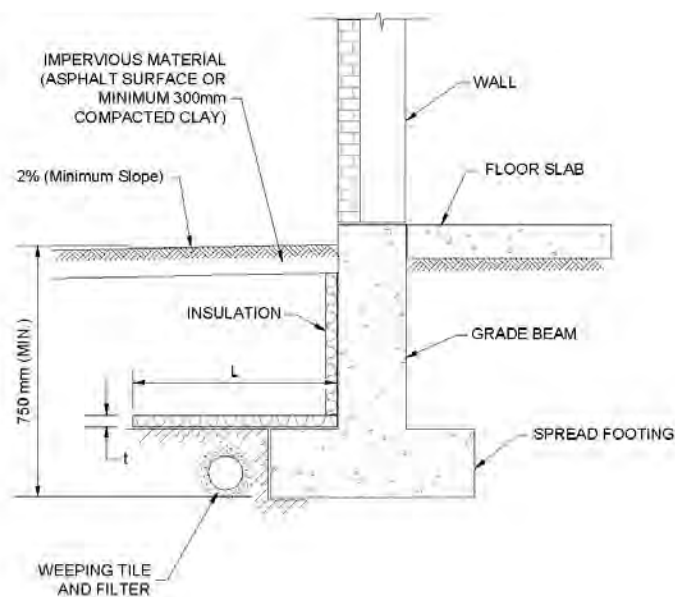


Alternatively, cellular concrete (Cematrix CMI-475 or equivalent) may be used for insulation around buildings. The design of Cematrix is generally provided by the supplier based on the expected soil and operating conditions.

Foundations and slabs in non-heated areas (i.e. exterior slabs or unheated buildings) will be subjected to frost action. In many cases this is acceptable for non-sensitive slabs. All fill placed below the exterior slab areas for site raising should consist of medium plastic clay/clay till fill or clean granular fill. Silt, silty sand or other highly frost susceptible soils should not be used or placed within the fill.

Where slabs on grade in unheated areas are movement sensitive, insulation will be required below the slab. Typical details for insulation under unheated slabs on grade are shown in Figure 4.2. The minimum recommended distance (L) from the wall is 2.4 m. A minimum thickness of 200 mm of rigid insulation is recommended, underlain by 300 mm or more of compacted frost stable fill (imported or native sand having not more than 7 percent passing an 80-micron sieve, or well graded gravel not having more than 10 percent passing an 80-micron sieve). The minimum depth for insulation placement is 0.50 m below finished grade, subject to suitable foundation conditions. The insulation should be checked to confirm that it is resistant to hydrocarbon spills. Alternatively, the slab could be supported on piles with suitable void form.

The insulation should be designed in accordance with the expected loading conditions during and after construction. Where insulation is required to withstand high bearing pressures, high strength closed cell insulation (Styrofoam HI or equivalent) with appropriate design compressive strength may be used.

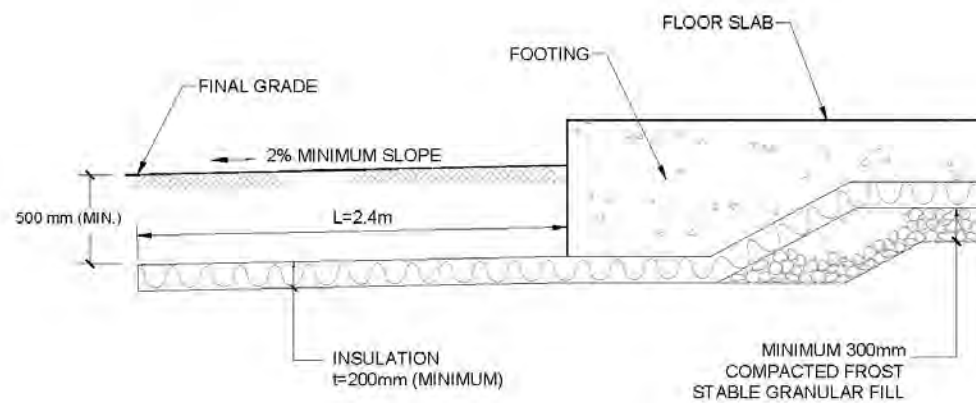


| MINIMUM BUILDING TEMPERATURE | RECOMMENDED | |
|------------------------------|--------------------------------|---------------------------------|
| | RIGID INSULATION THICKNESS (t) | OUTWARD HORIZONTAL DISTANCE (L) |
| 18°C (64°F) | 50 mm | 1.8 m |
| 7°C (45°F) | 100 mm | 2.4 m |

**TYPICAL INSULATED FOUNDATION
FOR HEATED BUILDING**

FIGURE 4.1

THURBER PROJECT #25875



**TYPICAL INSULATED SLAB ON GRADE
FOUNDATION FOR UNHEATED BUILDING
(SENSITIVE TO MOVEMENT)**

FIGURE 4.2

THURBER PROJECT #25875



4.3 Concrete Floor Slabs

A concrete slabs-on-grade is considered feasible at this site. Slabs sensitive to movement should be designed as a structural floor slab with a void form underneath to accommodate potential soil movements. Site preparation prior to concrete slab construction should be undertaken in accordance with the recommendations provided in Section 4.1 of this report.

Concrete floor slabs should be designed and constructed in accordance with the recommendations below:

- a) All topsoil/peat and deleterious materials including poor quality fill, loose/soft or wet soils should be removed from below the building floor slabs areas. The excavation should be inspected by geotechnical personnel to confirm that all unsuitable soil has been removed from beneath the concrete slab.
- b) The replacement soil below the building footprint should preferably consist of low to medium plastic clay fill or imported pit run sand or gravel fill.
- c) All fill should be compacted in lifts not exceeding 150 mm and compacted to at least 98 percent of SPMDD within plus or minus 2 percent of OMC.
- d) The near surface medium plastic clay/clay till soils are prone to swelling and shrinkage in response to variations in moisture conditions. It is important to prevent drying, desiccation or freezing of the exposed subgrade during construction as this can lead to future swelling and heave of floor slabs. Any clay/clay till soils that become over dried or wetted should be removed and replaced as noted above, or alternatively scarified moisture conditions to between zero plus or minus 2 percent of OMC, and recompacted.
- e) Floor slabs should not be placed on or against frozen soil.
- f) Where provisions for handling radon extraction are required, as outlined in the National Building Code Article 6.2.1.1, these should generally follow the requirements of EPA 625/R-92/016. This specifies a minimum of 100 mm of coarse aggregate meeting Size #5 specification (i.e. 100 percent passing 37.5 mm, not more than 5 percent passing a 9.5 mm sieve) as defined in ASTM C-33-90 be provided directly below the floor slab. The coarse aggregate should be enveloped by a non-woven geotextile layer above and below and a poly barrier (or equivalent) directly below the concrete slab. Note that our preference is to specify a minimum thickness of 150 mm of coarse aggregate for ease of placement and compaction.

- g) Where provision of handling radon extraction is not required, a granular leveling course at least 150 mm compacted thickness should be placed and compacted to a uniform dry density of about 98 percent of SPMDD. A recommended typical gradation is provided in Table 4.1.

**TABLE 4.1
TYPICAL GRADATIONS UNDER SLAB-ON-GRADE**

| SIEVE | % PASSING |
|-------------------|------------------|
| 1 ½ (38 000 µm) | 100 |
| 3/8 (10 000 µm) | 65 - 100 |
| No. 4 (5 000 µm) | 50 - 90 |
| No. 10 (2 000 µm) | 35 - 75 |
| No. 40 (400 µm) | 10 - 45 |
| No. 100 (150 µm) | 0 - 20 |
| No. 200 (75 µm) | 0 - 5 |

- h) The floor slabs should be separate from the building structure and should be designed to tolerate some movements due to potential future swelling and shrinkage of the high to medium plastic clay/clay till.
- i) Non-load bearing partition walls supported on the slab-on-grade should have a gap of at least 30 mm between the top plate and ceiling to accommodate potential heave movements, and should, therefore, be separated from the building structure.
- j) If slab movement cannot be tolerated, a structural floor slab should be utilized. Other methods of reducing swelling, including partial removal of medium to high plastic clay/clay till below the building floor slab and replacement with non-swelling soils (i.e. granular fill or low plastic clays) may also be considered.
- k) Concrete slabs in non-heated areas (i.e. exterior slabs or unheated buildings) will be subject to frost heave. Where movement due to frost action is not acceptable, the slab should either have insulation protection below and around the slabs to prevent frost from penetrating below the slabs, or alternatively, they should be supported on piles with void form to reduce frost heave forces acting on the underside of the slab.
- l) All heated utilities located beneath the slab should be insulated to reduce the potential for drying and shrinkage of the clay till subgrade.
- m) Surface grading and landscaping should be designed to shed water away from the building and slab-on-grade area to reduce the ingress of water and swelling.

- n) It is important that water and sewer lines be designed and installed to accommodate differential movements so as not to develop leaks and introduce moisture to near surface soils.
- o) Deciduous trees (broadleaf trees) should be planted at least two times their mature height away from the structure. This is to minimize the effect of roots drying the subsurface soil, which will result in shrinkage and consequently settlement of the slab.

4.4 Lateral Earth Pressures Recommendation

A triangular earth pressure distribution may be utilized for the design of retaining walls and structures resisting earth pressures. The horizontal earth pressure P_h at depth h may be calculated as follows:

$$p_a = k \times [(W \times h) + q] \text{ (kPa)}$$

Where:

k = the coefficient of earth pressure (Table 4.2)

W = the bulk unit weight, (kPa)

h = the depth below backfill surface, m

q = surcharge load (kPa)

**TABLE 4.2
LONG-TERM EARTH PRESSURE COEFFICIENTS FOR
VERTICAL RETAINING WALLS ASSUMING STIFF WALL
GOOD SURFACE DRAINAGE AND HORIZONTAL BACKSLOPE**

| SOIL DESCRIPTION | BULK UNIT WEIGHT kN/m ³ | COEFFICIENTS OF PRESSURE | | |
|--|---------------------------------------|--------------------------|------------------|------------------|
| | | k_a Active | k_o At-rest | k_p Passive |
| Clay / clay till Backfill (compacted to 95% of Standard Proctor Density) | 21 | 0.42 | 0.59 | 2.4 |
| Pit Run Gravel backfill (compacted to 95% Standard Proctor) | 22 | 0.27 | 0.43 | 3.7 |

Active earth pressure may be used for the design of retaining walls that can be allowed to move laterally at the top a distance of 0.01 times the height of the wall. The passive pressure will be



mobilized when the top of the wall has moved into the backfill a distance of 0.02 times the height of the wall. For permanent rigid retaining walls, the at-rest earth pressure should be used.

Appropriate load factors should be applied to the lateral earth pressures on retaining walls. A geotechnical resistance factor of 0.5 should be applied to the passive pressure.

Where traffic or other live loads may travel or operate near the retaining wall, the horizontal pressures due to the live load should be superimposed on the static earth pressures.

The earth pressures are governed by the soil type within a zone of mobilized soil behind the wall. The minimum zone of granular backfill required to mobilize the recommended coefficients of earth pressure for gravel is shown in Figure 4.3.

Where retaining structures will extend below the water table, either sub drainage should be provided to maintain the groundwater level below the base of the wall or alternatively the earth pressures should be calculated as follows, which assumes full hydrostatic pressures:

$$P_h = k \times W \times h_1 + [k(W - 9.8) + 9.8]h_2 \text{ (kPa)}$$

Where:

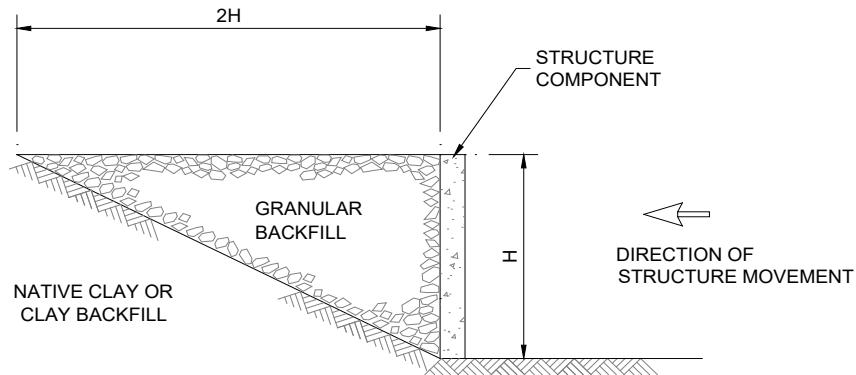
$$h_1 = \text{depth to the water table, (m)}$$

$$h_2 = \text{height of the water table, (m)}$$

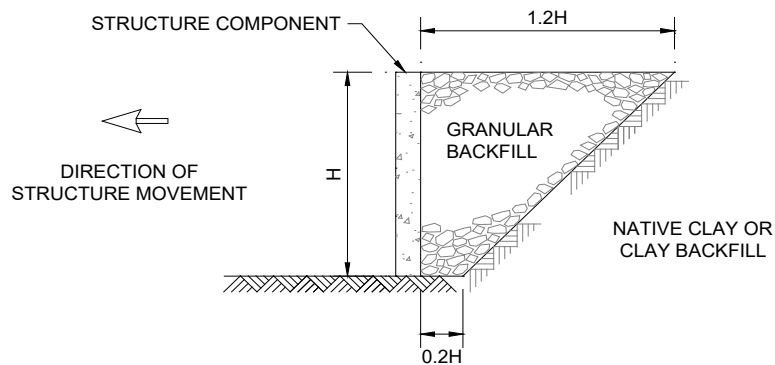
The perimeter drains should be surrounded by at least 300 mm of clean drainage gravel and enveloped with a non-woven geotextile. The perimeter drains should be connected to a permanent sump pump system to ensure positive drainage. Drainage behind the retaining walls may either consist of continuous geocomposite drainage strips affixed to the retaining walls and connected to the subdrains at foundation level. Alternatively, a drainage gravel layer at least 1 m wide should be provided between the basement wall and the clay/clay backfill to allow drainage behind the basement walls.

A recommended typical gradation for free draining granular material, for use behind the retaining structures is provided in Table 4.1, above.

Other materials, which fall outside the above-recommended gradation limits may be suitable. Alternate materials should, however, be evaluated by a geotechnical engineer prior to use.



(a) MINIMUM THICKNESS OF GRANULAR BACKFILL TO MOBILIZE PASSIVE EARTH PRESSURES



(b) MINIMUM THICKNESS OF GRANULAR BACKFILL TO MOBILIZE ACTIVE EARTH PRESSURES

**MINIMUM THICKNESS OF GRANULAR BACKFILL
REQUIRED TO MOBILIZE RECOMMENDED
COEFFICIENTS OF EARTH PRESSURES FOR GRAVEL**

FIGURE 4.3



4.5 Pipeline Installation

4.5.1 General

It is understood that the pipeline will be installed at depths varying from 4 m to 8 m below the existing ground surface. It is further understood that the majority of the pipeline will be installed using a conventional open cut excavation method.

Details of the pipeline alignment and cross-sections for the pipeline were not available at the time of this report, but in general open excavation methods are feasible along the proposed pipeline route. Based on the results of the test holes drilled, the encountered very hard clay till material is expected to be excavatable at the proposed depth of the pipeline installation with an excavator. However, cobbles and boulders were encountered in clay till in all test holes drilled along the pipeline alignment, which may cause some construction challenging during excavation and pipeline installation. Contractor will need to be aware of the presence of cobbles and boulders and plan accordingly to be able to remove cobbles and boulders encountered during excavation.

4.5.2 Open Temporary Excavation

Temporary trench excavations up to 8 m deep in the very stiff to hard clay till are expected to remain stable at slope angles of about 1H:1V or flatter over the short term. Flatter slopes may be required in trenches in areas where peat or large pockets of sand/gravel or zones of significant seepage are encountered.

Alternatively, portable trench shields or other shoring methods may be used where steeper slopes are required. Dewatering should be undertaken for excavations near or below the water table.

The above slope excavations are provided for design purposes and are not to be considered as clearance for Occupational Health and Safety requirements. The Alberta Occupational Health and Safety Regulation and Code must be followed all the time by the prime contractor.

It is recommended that the trenching be carried out in short lengths, and all trenches be backfilled at the end of each day. The excavated soil and construction materials should be stockpiled at least 1.5 m or the depth of excavation (whichever is greater) back from the crest of trench slopes. Site grading away from all excavations should be maintained during construction to minimize potential runoff into the excavation.



Based on the latest set of short-term groundwater level measurements in the standpipe piezometers installed for the pipeline, the groundwater table is expected to be at a depth of about 0.4 m to 4 m below the existing ground surface along the pipeline alignment. Hence, seepage may be encountered during the pipeline excavation. The seepage is expected to be of a magnitude that can be handled by normal trench grading practices and the use of pumps and sumps where necessary. This may require more than one sump and pumps to be placed ahead of the excavation during construction. The pumping should be continuous and should not stop once dewatering has been initiated. However, greater seepage flows may be encountered where thick water bearing sand/gravel layers are encountered during excavation or during the extended wet season and may require constant pumping or other systems, such as temporary well points or vertical perforated culverts backfilled with free draining gravel, to handle groundwater entering the trenches.

4.5.3 Pipe Bedding

All soft, loosened, and disturbed material should be removed from the trench base before the placement of bedding. For general pipe bedding requirements, it is recommended that a minimum thickness of 150 mm of granular bedding be placed below the pipe. The bedding material should also extend to about 150 mm above the crown of the pipe. The bedding material should be placed around the pipe in 150 mm lifts and compacted at least 95 percent of Standard Proctor Maximum Dry Density (SPMDD).

The granular bedding should consist of fine to medium grained sand, and should be free from angular rocks, organics and frozen materials. The bedding should not contain sizes greater than 20 mm in size. If the bedding is required to provide side support to the pipe, then the fines content should be limited to a maximum of 10 percent passing the No. 200 sieve.

In the event that the trench base is situated in areas of soft or saturated soils, where the pipe support conditions may be poor, special bedding procedures may be required to improve pipe support conditions and reduce future settlement of the pipes. Such special bedding requirements may consist of subexcavation and placement of free draining gravel pad (i.e. 25 mm drain rock or 25 mm crushed gravel with less than 5 percent fines) of about 300 mm minimum thickness wrapped in non-woven geotextile fabric in the base of the trench for support of the pipe bedding. This technique has been found to provide a better working surface in the trench base and also facilitates trench drainage during pipe installation. Alternatively, proper dewatering should be undertaken prior to excavation.



4.5.4 Backfilling

The excavated inorganic soils free of debris/ organics be used for backfilling trenches. The relevant municipal specifications should be followed for backfilling excavation.

For general backfill requirements, it is recommended that backfill of trenches in areas where no future development is proposed be compacted to at least 95 percent of Standard Proctor Maximum Dry Density (SPMDD) to limit future ground settlements. For trenches under roadways, backfill should be placed in lifts not exceeding 150 mm in compacted thickness and compacted to at least 98 percent of SPMDD with moisture content within plus to minus 2 percent of optimum moisture content. The upper 300 mm should be compacted to 100 percent of SPMDD. Depending on the time of construction, moisture conditioning may be required to achieve moisture content and compaction requirements.

It should be noted that even when compacted to the above standards, settlement of the trench backfill may occur in the first one to two years, and this should be considered in the design. Maintenance such as pavement patching and overlaying may be required for trenches under roadways.

All backfill material should be placed and compacted in a thawed state and be free of rocks, cobbles, boulders, large or frozen lumps, organic or other unsuitable materials. The density of compacted fills should be confirmed by field density test measurements during construction. Heavy compaction equipment should not be allowed to operate above the placed pipe until 1 m of backfill has been placed and compacted above the pipe.

4.5.5 Manholes

Manholes may be founded directly on the native undisturbed inorganic soils. In areas of soft base conditions, consideration should also be given to the use of a gravel pad wrapped in geotextile or alternatively a lean concrete base, below the base of the excavation.

The buoyancy of the manholes due to hydrostatic uplift pressures on the base should be checked by referring to the nearest available test hole information to determine the potential groundwater levels. If required, one method of providing the necessary uplift resistance is to widen the base of the manholes beyond the vertical manhole walls.

The backfill should be placed uniformly around the manhole in 150 mm lifts and compacted to at least 95 percent of Standard Proctor Maximum dry density to provide uniform and adequate support to the manholes.



Pipe connections at manholes should be flexible to accommodate differential settlement of the manhole and pipes.

4.6 Cement Type

Four sulphate content tests were conducted to determine the water-soluble sulphate ion (SO_4) content of soil samples recovered from the test holes. The test results show zero to 0.02 percent of water-soluble sulphate content in the soil samples. The test results indicate that there is negligible potential for sulphate attack on the subsurface concrete. As a result, CSA Type GU (General Use hydraulic cement) may be used in the subsurface concrete at this project site.

The recommendations stated above for the subsurface concrete at this site may require further additives and / or modifications due to structural, durability, service life or other considerations which are beyond the geotechnical scope.

In addition, if imported material is required to be used at the site and will be in contact with concrete, it is recommended the fill soil be tested for sulphate content so that the above stated recommendations remain valid.

4.7 Laboratory Resistivity, pH and Chlorides Tests

The results of laboratory resistivity, pH tests and chloride tests are summarized in Table 4.3. It should be recognized that the laboratory values provide specific data at the test locations and may not be representative of the overall site conditions.

TABLE 4.3
SUMMARY OF pH, CHLORIDE, LABORATORY RESISTIVITY TEST

| TEST HOLE | SOIL TYPE | DEPTH (m) | pH | CHLORIDE (meq/L) | RESISTIVITY (ohm-m) |
|-----------|-----------|-----------|-----|------------------|---------------------|
| TH19-2 | Clay Till | 3.8 | 8 | 1.28 | 286 |
| TH19-3 | Clay Till | 2.3 | 7.9 | 0.62 | 279 |

4.8 Seismicity

Based on the available geotechnical information we have in the project site area; the site is classified as Site Class D in accordance with the site classification as per Table 4.1.8.4A of the National Building Code (NBCC 2010).



4.9 Slope Stability

At the time of preparation of this draft report, survey of the area was not available to obtain cross-sections to perform a slope stability assessment of the current conditions of the site sloping ground. Once the site survey has been completed will carry out an assessment of the stability of the site slope.

5. CONSTRUCTION INSPECTIONS

The performance of the various site facilities and structures will depend upon the quality of workmanship during construction. This is particularly important in regard to foundation and pipeline installations and other earthworks where variations in soil conditions could occur. Therefore, it is recommended that inspection be provided by qualified geotechnical personnel during foundation installation to confirm that the foundations are installed in competent bearing material and that the stratigraphy is similar to those that have been assumed for the design. Compaction testing for backfill will also be required. Geotechnical site inspection is also recommended during subgrade preparation to confirm the subgrade consistency. In addition, the density of compacted fills should be confirmed by field density test measurements during construction.

6. LIMITATION AND USE OF THIS REPORT

There is a possibility that this report may form part of the design and construction documents for information purposes. This report was issued before any final design or construction details have been prepared or issued. Therefore, differences may exist between the report recommendations and the final design, in the contract documents, or during construction. In such instances, Thurber Engineering Ltd. should be contacted immediately to address these differences.

Designers and contractors undertaking or bidding the work should examine the factual results of the investigation, satisfy themselves on to the adequacy of the information for design and construction, and make their own interpretation of the data as it may affect their proposed scope of work, cost, schedules, and safety and equipment capabilities. If deemed necessary by the designer or contractor, an additional geotechnical investigation should be undertaken for the site.

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This Report has been prepared in accordance with generally accepted engineering or environmental consulting practices in the applicable jurisdiction. No other warranty, expressed or implied, is intended or made.

2. COMPLETE REPORT

All documents, records, data and files, whether electronic or otherwise, generated as part of this assignment are a part of the Report, which is of a summary nature and is not intended to stand alone without reference to the instructions given to Thurber by the Client, communications between Thurber and the Client, and any other reports, proposals or documents prepared by Thurber for the Client relative to the specific site described herein, all of which together constitute the Report.

IN ORDER TO PROPERLY UNDERSTAND THE SUGGESTIONS, RECOMMENDATIONS AND OPINIONS EXPRESSED HEREIN, REFERENCE MUST BE MADE TO THE WHOLE OF THE REPORT. THURBER IS NOT RESPONSIBLE FOR USE BY ANY PARTY OF PORTIONS OF THE REPORT WITHOUT REFERENCE TO THE WHOLE REPORT.

3. BASIS OF REPORT

The Report has been prepared for the specific site, development, design objectives and purposes that were described to Thurber by the Client. The applicability and reliability of any of the findings, recommendations, suggestions, or opinions expressed in the Report, subject to the limitations provided herein, are only valid to the extent that the Report expressly addresses proposed development, design objectives and purposes, and then only to the extent that there has been no material alteration to or variation from any of the said descriptions provided to Thurber, unless Thurber is specifically requested by the Client to review and revise the Report in light of such alteration or variation.

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5. INTERPRETATION OF THE REPORT

- a) Nature and Exactness of Soil and Contaminant Description: Classification and identification of soils, rocks, geological units, contaminant materials and quantities have been based on investigations performed in accordance with the standards set out in Paragraph 1. Classification and identification of these factors are judgmental in nature. Comprehensive sampling and testing programs implemented with the appropriate equipment by experienced personnel may fail to locate some conditions. All investigations utilizing the standards of Paragraph 1 will involve an inherent risk that some conditions will not be detected and all documents or records summarizing such investigations will be based on assumptions of what exists between the actual points sampled. Actual conditions may vary significantly between the points investigated and the Client and all other persons making use of such documents or records with our express written consent should be aware of this risk and the Report is delivered subject to the express condition that such risk is accepted by the Client and such other persons. Some conditions are subject to change over time and those making use of the Report should be aware of this possibility and understand that the Report only presents the conditions at the sampled points at the time of sampling. If special concerns exist, or the Client has special considerations or requirements, the Client should disclose them so that additional or special investigations may be undertaken which would not otherwise be within the scope of investigations made for the purposes of the Report.
- b) Reliance on Provided Information: The evaluation and conclusions contained in the Report have been prepared on the basis of conditions in evidence at the time of site inspections and on the basis of information provided to Thurber. Thurber has relied in good faith upon representations, information and instructions provided by the Client and others concerning the site. Accordingly, Thurber does not accept responsibility for any deficiency, misstatement or inaccuracy contained in the Report as a result of misstatements, omissions, misrepresentations, or fraudulent acts of the Client or other persons providing information relied on by Thurber. Thurber is entitled to rely on such representations, information and instructions and is not required to carry out investigations to determine the truth or accuracy of such representations, information and instructions.
- c) Design Services: The Report may form part of design and construction documents for information purposes even though it may have been issued prior to final design being completed. Thurber should be retained to review final design, project plans and related documents prior to construction to confirm that they are consistent with the intent of the Report. Any differences that may exist between the Report's recommendations and the final design detailed in the contract documents should be reported to Thurber immediately so that Thurber can address potential conflicts.
- d) Construction Services: During construction Thurber should be retained to provide field reviews. Field reviews consist of performing sufficient and timely observations of encountered conditions in order to confirm and document that the site conditions do not materially differ from those interpreted conditions considered in the preparation of the report. Adequate field reviews are necessary for Thurber to provide letters of assurance, in accordance with the requirements of many regulatory authorities.

6. RELEASE OF POLLUTANTS OR HAZARDOUS SUBSTANCES

Geotechnical engineering and environmental consulting projects often have the potential to encounter pollutants or hazardous substances and the potential to cause the escape, release or dispersal of those substances. Thurber shall have no liability to the Client under any circumstances, for the escape, release or dispersal of pollutants or hazardous substances, unless such pollutants or hazardous substances have been specifically and accurately identified to Thurber by the Client prior to the commencement of Thurber's professional services.

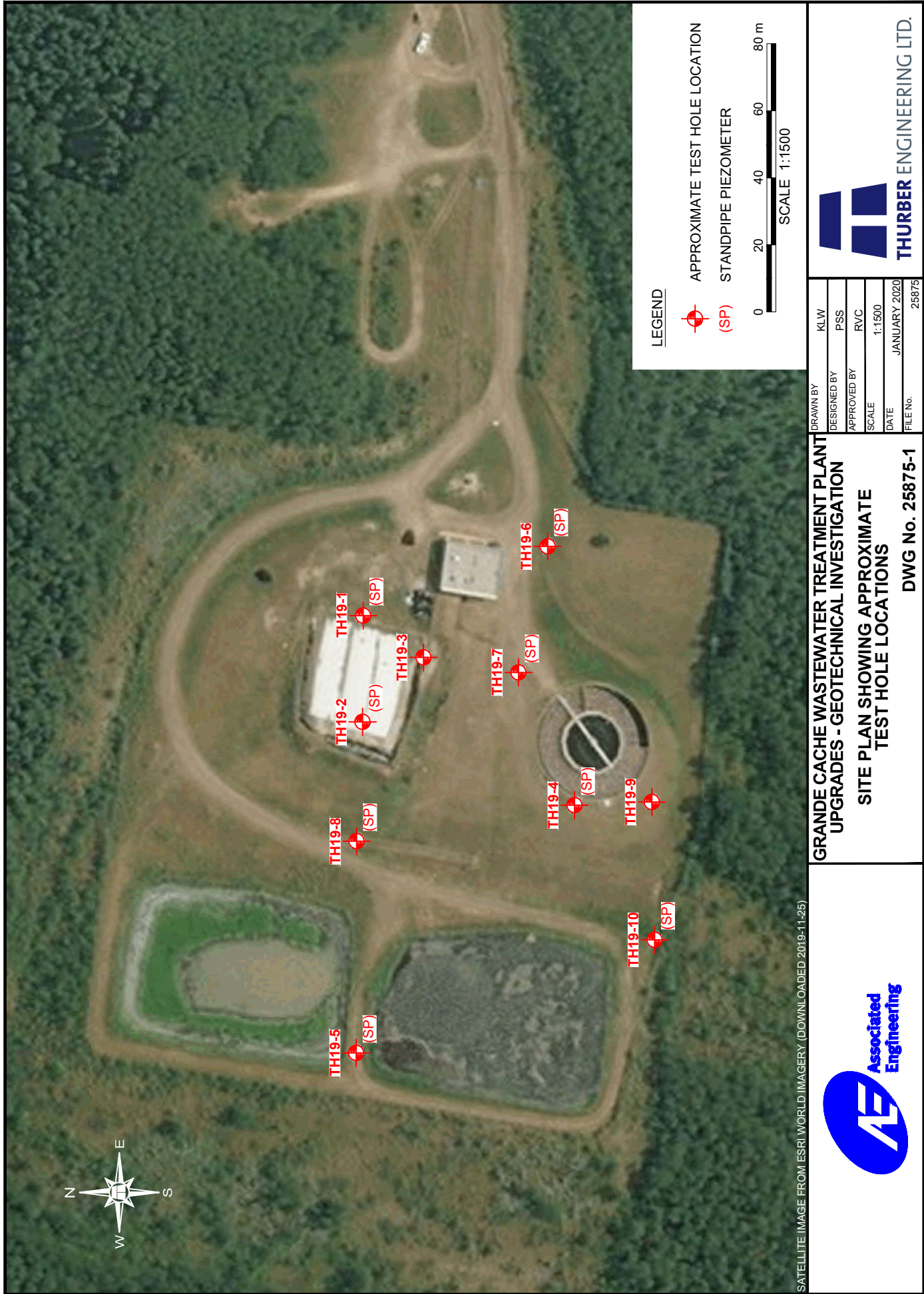
7. INDEPENDENT JUDGEMENTS OF CLIENT

The information, interpretations and conclusions in the Report are based on Thurber's interpretation of conditions revealed through limited investigation conducted within a defined scope of services. Thurber does not accept responsibility for independent conclusions, interpretations, interpolations and/or decisions of the Client, or others who may come into possession of the Report, or any part thereof, which may be based on information contained in the Report. This restriction of liability includes but is not limited to decisions made to develop, purchase or sell land.



APPENDIX A

Drawing 25875-1 Site Plan Showing Approximate Test Hole Locations





APPENDIX B

Symbols and Terms Used on Test Hole Logs
Modified Unified Soils Classification
Test Hole Logs

SYMBOLS AND TERMS USED ON TEST HOLE LOGS

1. VISUAL TEXTURAL CLASSIFICATION OF MINERAL SOILS

| CLASSIFICATION | APPARENT PARTICLE SIZE | VISUAL IDENTIFICATION |
|----------------|------------------------|---|
| Boulders | Greater than 200 mm | Greater than 200 mm |
| Cobbles | 75 mm to 200 mm | 75 mm to 200 mm |
| Gravel | 4.75 mm to 75 mm | 5 mm to 75 mm |
| Sand | 0.075 mm to 4.75 mm | Visible particles to 5 mm |
| Silt | 0.002 mm to 0.075 mm | Non-Plastic particles, not visible to the naked eye |
| Clay | Less than 0.002 mm | Plastic particles, not visible to the naked eye |

2. TERMS DESCRIBING CONSISTENCY (COHESIVE SOILS ONLY)

| DESCRIPTIVE TERM | APPROXIMATE UNDRAINED SHEAR STRENGTH | APPROXIMATE SPT * 'N' VALUE |
|------------------|--------------------------------------|-----------------------------|
| Very Soft | Less than 10 kPa | Less than 2 |
| Soft | 10 - 25 kPa | 2 to 4 |
| Firm | 25 - 50 kPa | 4 to 8 |
| Stiff | 50 - 100 kPa | 8 to 15 |
| Very Stiff | 100 - 200 kPa | 15 to 30 |
| Hard | 200 - 300 kPa | Greater than 30 |
| Very Hard | Greater than 300 kPa | |

Modified from
National Building
Code

* SPT 'N' Value Standard Penetration Test 'N' Value - refers to the number of blows from a 63.5 kg hammer free falling a height of 0.76m to advance a standard 50mm outside diameter split spoon sampler for 0.3m depth into the undrilled portion of the test hole.

3. TERMS DESCRIBING DENSITY (COHESIONLESS SOILS ONLY)

| DESCRIPTIVE TERM | STANDARD PENETRATION TEST (SPT) (Number of Blows per 300 mm) |
|------------------|---|
| Very Loose | 0 - 4 |
| Loose | 4 - 10 |
| Compact | 10 - 30 |
| Dense | 30 - 50 |
| Very Dense | Over 50 |

Modified from
National Building
Code

4. LEGEND FOR TEST HOLE LOGS

SYMBOL FOR SAMPLE TYPE

| | | | | | |
|---|---|---|--|--|--|
|  Shelby Tube |  SPT |  No Recovery |  A-Casing |  Grab |  Core |
|---|---|---|--|--|--|

SYMBOLS USED FOR TEST HOLE LOGS

| | |
|-------------------|--|
| ● | WC - Water Content (% by weight) of soil sample |
| ▼ | Water Level |
| ■ | SPT Standard Penetration Test 'N' Value (Blows/300mm) |
| ▲ | CPen Shear Strength determined by pocket penetrometer |
| CVane | Shear Strength determined by pocket vane |
| Cu | Undrained Shear Strength determined by unconfined compression test |
| SO ₄ % | Percent (%) of water soluble sulphate ions |

TERMS DESCRIBING QUANTITIES

| | |
|-----------|---|
| 'and' | 35% to 50% of each size group |
| 'sandy' | 20% to 35% |
| 'some' | 10% to 20% |
| 'trace' | Less than 10% |
| 'mixture' | Soils containing three or more size groups within 20% of each other and each group greater than 10% |

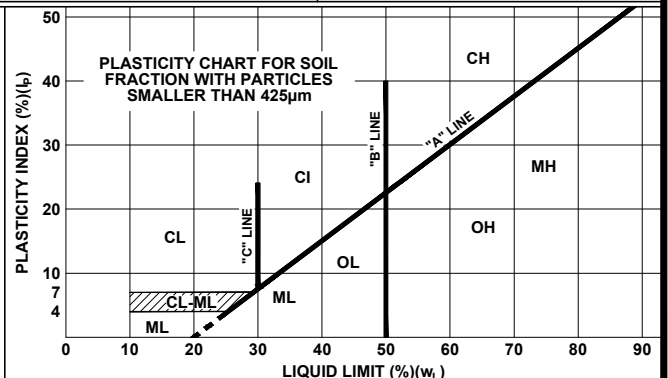
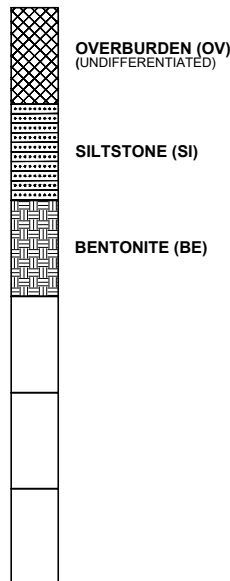
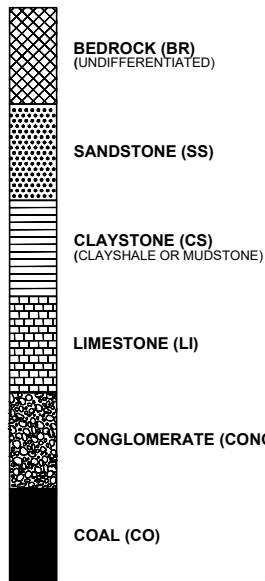


THURBER ENGINEERING LTD.

MODIFIED UNIFIED CLASSIFICATION SYSTEM FOR SOILS

(MODIFIED BY PFRA, 1985)

| MAJOR DIVISION | | | GROUP SYMBOL | THURBER LOG SYMBOL | TYPICAL DESCRIPTION | LABORATORY CLASSIFICATION CRITERIA | | | |
|---|--|---|--------------|--------------------|--|--|---|--|--|
| COARSE-GRAINED SOILS (MORE THAN HALF BY WEIGHT LARGER THAN 75µm) | GRAVELS MORE THAN HALF COARSE GRAINS LARGER THAN 4.75mm | CLEAN GRAVELS (LITTLE OR NO FINES) | GW | | WELL GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES | Determine percentages of gravel and sand from grain size curve. Depending on percentages of fines (fraction smaller than 75µm), coarse grained soils are classified as follows: Less than 5% GW, GP, SW, SP More than 5% GM, GC, SM, SC Borderline cases requiring use of dual symbols: 5% to 12% | $C_u = \frac{D_{60}}{D_{10}} > 4$; $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}} = 1 \text{ to } 3$ | | |
| | | | GP | | POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES | | NOT MEETING ALL GRADATION REQUIREMENTS FOR GW | | |
| | | GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES) | GM | | SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES | | ATTERBERG LIMITS BELOW "A" LINE I_p LESS THAN 4 | Above "A" line with I_p between 4 and 7 are borderline cases requiring use of dual symbols | |
| | | | GC | | CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES | | ATTERBERG LIMITS ABOVE "A" LINE I_p MORE THAN 7 | | |
| | SANDS MORE THAN HALF COARSE GRAINS SMALLER THAN 4.75mm | CLEAN SANDS (LITTLE OR NO FINES) | SW | | WELL GRADED SANDS, GRAVELLY-SANDS, LITTLE OR NO FINES | | $C_u = \frac{D_{60}}{D_{10}} > 6$; $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}} = 1 \text{ to } 3$ | | |
| | | | SP | | POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES | | NOT MEETING ALL GRADATION REQUIREMENTS FOR SW | | |
| | | SAND WITH FINES (APPRECIABLE AMOUNT OF FINES) | SM | | SILTY SANDS, SAND-SILT MIXTURES | | ATTERBERG LIMITS BELOW "A" LINE I_p LESS THAN 4 | Above "A" line with I_p between 4 and 7 are borderline cases requiring use of dual symbols | |
| | | | SC | | CLAYEY SANDS, SAND-CLAY MIXTURES | | ATTERBERG LIMITS ABOVE "A" LINE I_p MORE THAN 7 | | |
| | | | | | | | | | |
| | | | | | | | | | |
| FINE-GRAINED SOILS (MORE THAN HALF BY WEIGHT SMALLER THAN 75µm) | SILTS BELOW "A" LINE NEGLECTIBLE ORGANIC CONTENT | $w_L < 50\%$ | ML | | INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY | CLASSIFICATION IS BASED UPON PLASTICITY CHART (see below) | | | |
| | | $w_L > 50\%$ | MH | | INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS, FINE SANDY OR SILTY SOILS | | | | |
| | CLAYS ABOVE "A" LINE NEGLECTIBLE ORGANIC CONTENT | $w_L < 30\%$ | CL | | INORGANIC CLAYS OF LOW PLASTICITY, GRAVELLY, SANDY, OR SILTY CLAYS, LEAN CLAYS | | | | |
| | | $30\% < w_L < 50\%$ | CI | | INORGANIC CLAYS OF MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS | | | | |
| | | $w_L > 50\%$ | CH | | INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS | | | | |
| | ORGANIC SILTS & CLAYS BELOW "A" LINE | $w_L < 50\%$ | OL | | ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW AND MEDIUM PLASTICITY | | | | |
| | | $w_L > 50\%$ | OH | | ORGANIC CLAYS OF HIGH PLASTICITY, ORGANIC SILTS | | | | |
| | HIGHLY ORGANIC SOILS | | Pt | | PEAT AND OTHER HIGHLY ORGANIC SOILS | | STRONG COLOR OR ODOR, AND OFTEN FIBROUS TEXTURE | | |



MODIFIED UNIFIED CLASSIFICATION SYSTEM FOR SOILS
(MODIFIED BY PFRA, 1985)

| | | | | | |
|--|--|---|--|---------------------|--|
| CLIENT: Associated Engineering Alberta Ltd. | | PROJECT: Grande Cache Wastewater Treatment Plant Upgrades | | BOREHOLE NO: TH19-1 | |
| DRILLING COMPANY: ALL SERVICE DRILLING INC | | DATE DRILLED: October 29 & November 4, 2019 | | PROJECT NO: 25875 | |
| DRILL/METHOD: Acker Soil Max JR / Odex Drilling | | LOCATION: N5970998.878, E358065.813 | | ELEVATION: | |
| SAMPLE TYPE <input type="checkbox"/> GRAB SAMPLE <input checked="" type="checkbox"/> SPT | | | | | |
| BACKFILL TYPE <input checked="" type="checkbox"/> BENTONITE <input checked="" type="checkbox"/> DRILL CUTTINGS | | | | | |

| DEPTH (m) | SAMPLE TYPE | SPT (N) | REMARKS | USC | SOIL SYMBOL | SOIL DESCRIPTION | DEPTH (m) |
|-----------|-------------|---------|----------------------|-----|-------------|--|-----------|
| 0 | | | | | | CLAY (TILL) dark brown, silty, sandy, some rounded - sub rounded gravel and cobbles | 0 |
| 1 | | | | | CI | | 1 |
| 2 | | | | | CL-ML | | 2 |
| 3 | | 50/50 | >>■ | | CI | -very hard -gravel and sand lenses at 2.4 - 2.6m | 3 |
| 4 | | 50/150 | >>■ Switched to Odex | | CI | | 4 |
| 5 | | | | | CI | | 5 |
| 6 | | | | | CI | | 6 |
| 7 | | 50/125 | >>■ | | CI | -large cobbles or boulder at 3.7 - 3.8m | 7 |
| 8 | | 50/75 | >>■ | | CI | -gravelly | 8 |
| 9 | | | | | CI | | 9 |
| 10 | | 44 | >>■ | | CI | -hard, some gravel | 10 |

| | | | |
|-------------------------------------|--|--|--|
| THURBER ENGINEERING LTD. | | FIELD LOGGED BY: TDC PREPARED BY: PSS REVIEWED BY: RVC | COMPLETION DEPTH: 12.5 m COMPLETION DATE: 11/4/19 |
|-------------------------------------|--|--|--|

BOREHOLE LOG 25875.GPJ THRB-AB.GDT 1/27/20- LIBRARY-NEW LOGO-N.E.G.L.B

| | | | | | | | | |
|--|--|--|---|--|--|---------------------|--|--|
| CLIENT: Associated Engineering Alberta Ltd. | | | PROJECT: Grande Cache Wastewater Treatment Plant Upgrades | | | BOREHOLE NO: TH19-1 | | |
| DRILLING COMPANY: ALL SERVICE DRILLING INC | | | DATE DRILLED: October 29 & November 4, 2019 | | | PROJECT NO: 25875 | | |
| DRILL/METHOD: Acker Soil Max JR / Odex Drilling | | | LOCATION: N5970998.878, E358065.813 | | | ELEVATION: | | |
| SAMPLE TYPE <input type="checkbox"/> GRAB SAMPLE <input checked="" type="checkbox"/> SPT | | | | | | | | |
| BACKFILL TYPE <input checked="" type="checkbox"/> BENTONITE <input checked="" type="checkbox"/> DRILL CUTTINGS | | | | | | | | |

| DEPTH (m) | SAMPLE TYPE | SPT (N) | REMARKS | SLOTTED PIEZOMETER | USC | SOIL SYMBOL | SOIL DESCRIPTION | DEPTH (m) |
|-----------|-------------|---------|---------|--------------------|-----|-------------|---|-----------|
| 10 | | | | | | | CLAY (TILL) - CONTINUED | 10 |
| 11 | | 49 | | | | | | 11 |
| 12 | | 50/125 | | | | | -very hard | 12 |
| 13 | | | | | | | END OF TEST HOLE AT 12.5m UPON COMPLETION: -No slough Standpipe piezometer installed WATER LEVEL BELOW GROUND SURFACE: -November 4, 2019 = Dry -November 6, 2019 = 10.0m -November 19, 2019 = 1.0m | 13 |
| 14 | | | | | | | | 14 |
| 15 | | | | | | | | 15 |
| 16 | | | | | | | | 16 |
| 17 | | | | | | | | 17 |
| 18 | | | | | | | | 18 |
| 19 | | | | | | | | 19 |
| 20 | | | | | | | | 20 |

| | | |
|-------------------------------------|----------------------|--------------------------|
| THURBER ENGINEERING LTD. | FIELD LOGGED BY: TDC | COMPLETION DEPTH: 12.5 m |
| | PREPARED BY: PSS | COMPLETION DATE: 11/4/19 |
| | REVIEWED BY: RVC | |

BOREHOLE LOG 25875.GPJ THRB-AB.GDT 1/27/20- LIBRARY-NEW LOGO-N.E.GLB

| | | | | | |
|--|--|---|--|---------------------|--|
| CLIENT: Associated Engineering Alberta Ltd. | | PROJECT: Grande Cache Wastewater Treatment Plant Upgrades | | BOREHOLE NO: TH19-2 | |
| DRILLING COMPANY: ALL SERVICE DRILLING INC | | DATE DRILLED: October 29 & November 6, 2019 | | PROJECT NO: 25875 | |
| DRILL/METHOD: Acker Soil Max JR / Odex Drilling | | LOCATION: N5970999.033, E358034.117 | | ELEVATION: | |
| SAMPLE TYPE <input type="checkbox"/> GRAB SAMPLE <input checked="" type="checkbox"/> SPT | | | | | |
| BACKFILL TYPE <input checked="" type="checkbox"/> BENTONITE <input checked="" type="checkbox"/> DRILL CUTTINGS | | | | | |

| DEPTH (m) | SAMPLE TYPE | SPT (N) | REMARKS | USC | SOIL SYMBOL | SOIL DESCRIPTION | DEPTH (m) |
|-----------|-------------|---------|--|-----|-------------|---|-----------|
| 0 | | | | | | CLAY (FILL) dark brown, silty, sandy, trace gravel | 0 |
| 1 | | | | | | PEAT (FILL), black, organic, fine fibrous CLAY (FILL), dark grey, silty, trace gravel and black peat | 1 |
| 2 | | 29 | | | | PEAT, black, organic, fibrous CLAY (TILL) very stiff, brown, silty, sandy, some gravel | 2 |
| 3 | | | -Trace seepage | | | -dark brown, gravel, cobbles, and possible boulders | 3 |
| 4 | | | -Chloride = 1.28meq/L pH = 8.0 | | | -very hard | 4 |
| 5 | | 85 | | | | GRAVEL very dense, dark brown - brown, fine silty, sandy, clay matrix | 5 |
| 6 | | | -Gravel = 29.6% Sand = 47.6% Fines = 22.8% | | | | 6 |
| 7 | | 50/150 | | | | CLAY (TILL) dark brown, silty, sandy, matrix with gravel and cobbles | 7 |
| 8 | | | | | | TEST HOLE REFUSAL AT 7.9m UPON COMPLETION: Standpipe piezometer installed WATER LEVEL BELOW GROUND SURFACE: -November 6, 2019 = 7.1m -November 19, 2019 = 2.9m | 8 |
| 9 | | | | | | | 9 |
| 10 | | | | | | | 10 |

| | | |
|-------------------------------------|----------------------|--------------------------|
| THURBER ENGINEERING LTD. | FIELD LOGGED BY: TDC | COMPLETION DEPTH: 7.9 m |
| | PREPARED BY: PSS | COMPLETION DATE: 11/6/19 |
| | REVIEWED BY: RVC | |

BOREHOLE LOG 25875.GPJ THRB AB GDT 1/27/20- LIBRARY-NEW LOGO-N E.G.L.B

| | | | | | |
|--|--|---|--|----------------------------|--|
| CLIENT: Associated Engineering Alberta Ltd. | | PROJECT: Grande Cache Wastewater Treatment Plant Upgrades | | BOREHOLE NO: TH19-3 | |
| DRILLING COMPANY: ALL SERVICE DRILLING INC | | DATE DRILLED: November 4, 2019 | | PROJECT NO: 25875 | |
| DRILL/METHOD: Acker Soil Max JR / Odex Drilling | | LOCATION: N5970980.894, E358053.348 | | ELEVATION: | |
| SAMPLE TYPE <input type="checkbox"/> GRAB SAMPLE <input checked="" type="checkbox"/> SPT | | | | | |

| DEPTH (m) | SAMPLE TYPE | SPT (N) | REMARKS | USC | SOIL SYMBOL | SOIL DESCRIPTION | DEPTH (m) |
|-----------|-------------|---------|--|-------|-------------|---|-----------|
| 0 | | | | | | CLAY (TILL) very hard, dark brown, silty, sandy, matrix with some rounded - sub rounded gravel and cobbles | 0 |
| 1 | | | | CI | | | 1 |
| 2 | | 52 | <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <div style="display: flex; justify-content: space-between; font-size: 8px;"> 10 20 30 40 </div> <div style="display: flex; justify-content: space-between; font-size: 8px;"> PLASTIC W.C. LIQUID </div> </div> <div style="margin-left: 10px;"> <div style="display: flex; justify-content: space-between; font-size: 8px;"> 10 20 30 40 </div> </div> </div> | CL-ML | | | 2 |
| 3 | | | -Chloride = 0.62meq/L pH = 7.9 -SO ₄ = 0% | CI | | | 3 |
| 4 | | 92 | -Gravel = 10.5% Sand = 50.0% Silt = 30.5% Clay = 9.0% | CI | | -some gravel | 4 |
| 5 | | 76 | | CI | | | 5 |
| 6 | | | | CI | | | 6 |
| 7 | | 74 | | CI | | | 7 |
| 8 | | 76/230 | | CI | | | 8 |
| 9 | | | | CI | | | 9 |
| 10 | | 79 | UPON COMPLETION: Backfilled with drill cuttings and bentonite chips at surface | CI | | | 10 |
| | | | | | | END OF TEST HOLE AT 9.8m | |

| | | |
|-------------------------------------|----------------------|--------------------------|
| THURBER ENGINEERING LTD. | FIELD LOGGED BY: TDC | COMPLETION DEPTH: 9.8 m |
| | PREPARED BY: PSS | COMPLETION DATE: 11/4/19 |
| | REVIEWED BY: RVC | |

Page 1 of 1


| | | | | | |
|--|--|---|--|---------------------|--|
| CLIENT: Associated Engineering Alberta Ltd. | | PROJECT: Grande Cache Wastewater Treatment Plant Upgrades | | BOREHOLE NO: TH19-4 | |
| DRILLING COMPANY: ALL SERVICE DRILLING INC | | DATE DRILLED: November 5, 2019 | | PROJECT NO: 25875 | |
| DRILL/METHOD: Acker Soil Max JR / Odex Drilling | | LOCATION: N5970935.878, E358009.302 | | ELEVATION: | |
| SAMPLE TYPE <input type="checkbox"/> GRAB SAMPLE <input checked="" type="checkbox"/> SPT | | | | | |
| BACKFILL TYPE <input checked="" type="checkbox"/> BENTONITE <input checked="" type="checkbox"/> DRILL CUTTINGS | | | | | |

| DEPTH (m) | SAMPLE TYPE | SPT (N) | REMARKS | USC | SOIL SYMBOL | SOIL DESCRIPTION | DEPTH (m) |
|-----------|-------------|---------|-----------------------|-----|-------------|---|-----------|
| 0 | | | | | | CLAY (TILL) very hard, dark brown, silty, sandy, matrix with some rounded - sub rounded gravel and cobbles | 0 |
| 1 | | | | | CI-CL | | 1 |
| 2 | | 50/125 | >>> | | CI-CL | | 2 |
| 3 | | | -SO ₄ = 0% | | CI | | 3 |
| 4 | | 43 | | | CI | -hard | 4 |
| 5 | | 57 | >>> | | CI | -very hard | 5 |
| 6 | | | | | CI | | 6 |
| 7 | | 62 | >>> | | CI | | 7 |
| 8 | | 81 | >>> | | CI | | 8 |
| 9 | | | | | CI | | 9 |
| 10 | | 45 | | | CI | -hard | 10 |

| | | | | | |
|-------------------------------------|--|----------------------|--|--------------------------|--|
| THURBER ENGINEERING LTD. | | FIELD LOGGED BY: TDC | | COMPLETION DEPTH: 11.1 m | |
| | | PREPARED BY: PSS | | COMPLETION DATE: 11/5/19 | |
| | | REVIEWED BY: RVC | | | |

BOREHOLE LOG 25875.GPJ THRB-AB.GDT 1/27/20- LIBRARY-NEW LOGO-N.E.GLB

| CLIENT: Associated Engineering Alberta Ltd. | | | PROJECT: Grande Cache Wastewater Treatment Plant Upgrades | | | BOREHOLE NO: TH19-4 | | |
|--|-------------|---------|---|--------------------|-----|---------------------|--|-----------|
| DRILLING COMPANY: ALL SERVICE DRILLING INC | | | DATE DRILLED: November 5, 2019 | | | PROJECT NO: 25875 | | |
| DRILL/METHOD: Acker Soil Max JR / Odex Drilling | | | LOCATION: N5970935.878, E358009.302 | | | ELEVATION: | | |
| SAMPLE TYPE <input type="checkbox"/> GRAB SAMPLE <input checked="" type="checkbox"/> SPT | | | | | | | | |
| BACKFILL TYPE <input checked="" type="checkbox"/> BENTONITE <input checked="" type="checkbox"/> DRILL CUTTINGS | | | | | | | | |
| DEPTH (m) | SAMPLE TYPE | SPT (N) | REMARKS | SLOTTED PIEZOMETER | USC | SOIL SYMBOL | SOIL DESCRIPTION | DEPTH (m) |
| 10 | | | | | | | CLAY (TILL) - CONTINUED | 10 |
| 11 | | 81 | | | | | -very hard | 11 |
| 12 | | | | | | | END OF TEST HOLE AT 11.1m UPON COMPLETION: -No slough -No water Standpipe piezometer installed WATER LEVEL BELOW GROUND SURFACE: -November 5, 2019 = Dry -November 6, 2019 = Dry -November 19, 2019 = 9.3m | 12 |
| 13 | | | | | | | | 13 |
| 14 | | | | | | | | 14 |
| 15 | | | | | | | | 15 |
| 16 | | | | | | | | 16 |
| 17 | | | | | | | | 17 |
| 18 | | | | | | | | 18 |
| 19 | | | | | | | | 19 |
| 20 | | | | | | | | 20 |



THURBER ENGINEERING LTD.

| | |
|----------------------|--------------------------|
| FIELD LOGGED BY: TDC | COMPLETION DEPTH: 11.1 m |
| PREPARED BY: PSS | COMPLETION DATE: 11/5/19 |
| REVIEWED BY: RVC | |

Page 2 of 2

BOREHOLE LOG 25875.GPJ THRB-AB.GDT 1/27/20- LIBRARY-NEW LOGO-N.E.GLB

| | | | | | |
|--|--|---|--|---------------------|--|
| CLIENT: Associated Engineering Alberta Ltd. | | PROJECT: Grande Cache Wastewater Treatment Plant Upgrades | | BOREHOLE NO: TH19-5 | |
| DRILLING COMPANY: Frontier Enviro Drilling | | DATE DRILLED: October 29, 2019 | | PROJECT NO: 25875 | |
| DRILL/METHOD: CME55 / Solid Stem Augers | | LOCATION: N5970998.805, E357937.111 | | ELEVATION: | |
| SAMPLE TYPE <input type="checkbox"/> GRAB SAMPLE <input checked="" type="checkbox"/> SPT | | | | | |
| BACKFILL TYPE <input checked="" type="checkbox"/> BENTONITE <input checked="" type="checkbox"/> DRILL CUTTINGS <input type="checkbox"/> SLOUGH | | | | | |

| DEPTH (m) | SAMPLE TYPE | SPT (N) | REMARKS | USC | SOIL SYMBOL | SOIL DESCRIPTION | DEPTH (m) |
|-----------|-------------|---------|---------|-----|-------------|---|-----------|
| 0 | | | | | | CLAY (FILL) dark brown, silty, sandy, some gravel | 0 |
| 1 | | | | | | CLAY (TILL) dark brown, silty, sandy, matrix with some rounded gravel and possible cobbles | 1 |
| 2 | | | | | | CLAY SHALE very hard, dark grey, silty, moderately weathered, high to medium plastic | 2 |
| 3 | | | | | | | 3 |
| 4 | | | | | | -siltstone pieces | 4 |
| 5 | | | | | | AUGER REFUSAL AT 4.0m UPON COMPLETION: (Below ground surface) -Slough at 3.7m -No water Standpipe piezometer installed WATER LEVEL BELOW GROUND SURFACE: -October 29, 2019 = Dry -November 6, 2019 = Dry -November 19, 2019 = Dry | 5 |
| 6 | | | | | | | 6 |
| 7 | | | | | | | 7 |
| 8 | | | | | | | 8 |
| 9 | | | | | | | 9 |
| 10 | | | | | | | 10 |

| | | |
|-------------------------------------|----------------------|---------------------------|
| THURBER ENGINEERING LTD. | FIELD LOGGED BY: TDC | COMPLETION DEPTH: 4.0 m |
| | PREPARED BY: PSS | COMPLETION DATE: 10/29/19 |
| | REVIEWED BY: RVC | |

BOREHOLE LOG 25875.GPJ THRB-AB.GDT 1/27/20- LIBRARY-NEW LOGO-N.E.GLB


| | | | | | |
|--|--|---|--|---------------------|--|
| CLIENT: Associated Engineering Alberta Ltd. | | PROJECT: Grande Cache Wastewater Treatment Plant Upgrades | | BOREHOLE NO: TH19-6 | |
| DRILLING COMPANY: ALL SERVICE DRILLING INC | | DATE DRILLED: October 29 & November 6, 2019 | | PROJECT NO: 25875 | |
| DRILL/METHOD: Acker Soil Max JR / Odex Drilling | | LOCATION: N5970943.885, E358086.43 | | ELEVATION: | |
| SAMPLE TYPE <input type="checkbox"/> GRAB SAMPLE <input checked="" type="checkbox"/> SPT | | | | | |
| BACKFILL TYPE <input checked="" type="checkbox"/> BENTONITE <input checked="" type="checkbox"/> DRILL CUTTINGS | | | | | |

| DEPTH (m) | SAMPLE TYPE | SPT (N) | REMARKS | USC | SOIL SYMBOL | SOIL DESCRIPTION | DEPTH (m) |
|-----------|-------------|---------|--|-----|-------------|--|-----------|
| 0 | | | | | | CLAY (TILL) stiff, dark brown, silty, sandy, some fine gravel | 0 |
| 1 | | 8 | | | CL | | 1 |
| 2 | | | | | CL-CI | | 2 |
| 3 | | 42 | -Moved hole location 1m west and continued drilling due to auger refusal | | CL-CI | -hard, matrix with gravel and cobbles | 3 |
| 4 | | | | | CI | -sandy | 4 |
| 5 | | 43 | | | CL-CI | | 5 |
| 6 | | 59 | >> | | CL-CI | -very hard | 6 |
| 7 | | | | | CL-CI | | 7 |
| 8 | | | | | CL-CI | | 8 |
| 9 | | | | | CL-CI | | 9 |
| 10 | | | | | CL-CI | | 10 |

| | | | |
|-------------------------------------|--|----------------------|--------------------------|
| THURBER ENGINEERING LTD. | | FIELD LOGGED BY: TDC | COMPLETION DEPTH: 10.7 m |
| | | PREPARED BY: PSS | COMPLETION DATE: 11/6/19 |
| | | REVIEWED BY: RVC | Page 1 of 2 |

| | | | | | | | | |
|---|--|--|--|--|--|---------------------|--|--|
| CLIENT: Associated Engineering Alberta Ltd. | | | PROJECT: Grande Cache Wastewater Treatment Plant Upgrades | | | BOREHOLE NO: TH19-6 | | |
| DRILLING COMPANY: ALL SERVICE DRILLING INC | | | DATE DRILLED: October 29 & November 6, 2019 | | | PROJECT NO: 25875 | | |
| DRILL/METHOD: Acker Soil Max JR / Odex Drilling | | | LOCATION: N5970943.885, E358086.43 | | | ELEVATION: | | |
| SAMPLE TYPE | | | <input type="checkbox"/> GRAB SAMPLE <input checked="" type="checkbox"/> SPT | | | | | |
| BACKFILL TYPE | | | <input checked="" type="checkbox"/> BENTONITE <input checked="" type="checkbox"/> DRILL CUTTINGS | | | | | |

| DEPTH (m) | SAMPLE TYPE | SPT (N) | REMARKS | SLOTTED PIEZOMETER | USC | SOIL SYMBOL | SOIL DESCRIPTION | DEPTH (m) |
|-----------|-------------|---------|---------|-----------------------|-----|-------------|---|-----------|
| 10 | | | | | | CL-CI | CLAY (TILL) - CONTINUED | 10 |
| 11 | | | | | | CL-CI | END OF TEST HOLE AT 10.7m UPON COMPLETION: -No slough -No water Backfilled with drill cuttings and bentonite chips at surface Standpipe piezometer installed in original hole WATER LEVEL BELOW GROUND SURFACE: -October 29, 2019 = Dry -November 6, 2019 = 2.5m -November 19, 2019 = 2.0m | 11 |
| 12 | | | | | | | | 12 |
| 13 | | | | | | | | 13 |
| 14 | | | | | | | | 14 |
| 15 | | | | | | | | 15 |
| 16 | | | | | | | | 16 |
| 17 | | | | | | | | 17 |
| 18 | | | | | | | | 18 |
| 19 | | | | | | | | 19 |
| 20 | | | | | | | | 20 |



THURBER ENGINEERING LTD.

FIELD LOGGED BY: TDC
 PREPARED BY: PSS
 REVIEWED BY: RVC

COMPLETION DEPTH: 10.7 m
 COMPLETION DATE: 11/6/19

BOREHOLE LOG 25875.GPJ THRB-AB.GDT 1/27/20- LIBRARY-NEW LOGO-N.E.GLB

| | | | | | |
|--|--|---|--|---------------------|--|
| CLIENT: Associated Engineering Alberta Ltd. | | PROJECT: Grande Cache Wastewater Treatment Plant Upgrades | | BOREHOLE NO: TH19-7 | |
| DRILLING COMPANY: ALL SERVICE DRILLING INC | | DATE DRILLED: November 5, 2019 | | PROJECT NO: 25875 | |
| DRILL/METHOD: Acker Soil Max JR / Odex Drilling | | LOCATION: N5970952.563, E358048.871 | | ELEVATION: | |
| SAMPLE TYPE <input type="checkbox"/> GRAB SAMPLE <input checked="" type="checkbox"/> SPT | | | | | |
| BACKFILL TYPE <input checked="" type="checkbox"/> BENTONITE <input checked="" type="checkbox"/> DRILL CUTTINGS | | | | | |

| DEPTH (m) | SAMPLE TYPE | SPT (N) | REMARKS | USC | SOIL SYMBOL | SOIL DESCRIPTION | DEPTH (m) |
|-----------|-------------|---------|---------|-----|-------------|--|-----------|
| 0 | | | | | | CLAY (TILL) very hard, dark brown, silty, sandy, matrix with some rounded - sub rounded gravel and cobbles | 0 |
| 1 | | | | | | | 1 |
| 2 | | 50/15 | >>■ | | CI | | 2 |
| 3 | | | | | | | 3 |
| 4 | | 55 | >>■ | | CI | | 4 |
| 5 | | 38 | | | CI | -hard | 5 |
| 6 | | 50 | | | CI | -very hard | 6 |
| 7 | | | | | | END OF TEST HOLE AT 6.6m UPON COMPLETION: -No slough -No water Standpipe piezometer installed WATER LEVEL BELOW GROUND SURFACE: -November 5, 2019 = Dry -November 6, 2019 = 6.1m -November 19, 2019 = 4.1m | 7 |
| 8 | | | | | | | 8 |
| 9 | | | | | | | 9 |
| 10 | | | | | | | 10 |

| | | |
|-------------------------------------|----------------------|--------------------------|
| THURBER ENGINEERING LTD. | FIELD LOGGED BY: TDC | COMPLETION DEPTH: 6.6 m |
| | PREPARED BY: PSS | COMPLETION DATE: 11/5/19 |
| | REVIEWED BY: RVC | |

BOREHOLE LOG 25875.GPJ THRB-AB.GDT 1/27/20- LIBRARY-NEW LOGO-N.E.G.L.B


| | | | | | |
|--|--|---|--|---------------------|--|
| CLIENT: Associated Engineering Alberta Ltd. | | PROJECT: Grande Cache Wastewater Treatment Plant Upgrades | | BOREHOLE NO: TH19-8 | |
| DRILLING COMPANY: ALL SERVICE DRILLING INC | | DATE DRILLED: November 5 & 6, 2019 | | PROJECT NO: 25875 | |
| DRILL/METHOD: Acker Soil Max JR / Odex Drilling | | LOCATION: N5971000.223, E358001.472 | | ELEVATION: | |
| SAMPLE TYPE <input type="checkbox"/> GRAB SAMPLE <input checked="" type="checkbox"/> SPT | | | | | |
| BACKFILL TYPE <input checked="" type="checkbox"/> BENTONITE <input checked="" type="checkbox"/> DRILL CUTTINGS | | | | | |

| DEPTH (m) | SAMPLE TYPE | SPT (N) | REMARKS | USC | SOIL SYMBOL | SOIL DESCRIPTION | DEPTH (m) |
|-----------|-------------|---------|---------|-----|-------------|---|-----------|
| 0 | | | | | | TOPSOIL black, organic, silty | 0 |
| 1 | | | | | CI | CLAY (TILL) very hard, dark brown, silty, sandy, matrix with some rounded - sub rounded gravel and cobbles | 1 |
| 2 | | 50/150 | >>■ | | CL-CI | -very sandy | 2 |
| 3 | | 50/150 | >>■ | | CI | | 3 |
| 4 | | | | | CI | | 4 |
| 5 | | 97/180 | >>■ | | CI | | 5 |
| 6 | | 50/150 | >>■ | | CI | | 6 |
| 7 | | | | | CI | -gravelly | 7 |
| 8 | | 38 | | | CI | -hard | 8 |
| 9 | | | | | CI | | 9 |
| 10 | | 62 | >>■ | | CI | -very hard | 10 |

| | | | |
|-------------------------------------|--|--|--|
| THURBER ENGINEERING LTD. | | FIELD LOGGED BY: TDC PREPARED BY: PSS REVIEWED BY: RVC | COMPLETION DEPTH: 11.0 m COMPLETION DATE: 11/6/19 |
|-------------------------------------|--|--|--|

BOREHOLE LOG 25875.GPJ THRB-AB.GDT 1/27/20- LIBRARY-NEW LOGO-N.E.GLB

| CLIENT: Associated Engineering Alberta Ltd. | | | PROJECT: Grande Cache Wastewater Treatment Plant Upgrades | | | BOREHOLE NO: TH19-8 | | |
|--|-------------|---------|---|-----------------------|-----|---------------------|---|-----------|
| DRILLING COMPANY: ALL SERVICE DRILLING INC | | | DATE DRILLED: November 5 & 6, 2019 | | | PROJECT NO: 25875 | | |
| DRILL/METHOD: Acker Soil Max JR / Odex Drilling | | | LOCATION: N5971000.223, E358001.472 | | | ELEVATION: | | |
| SAMPLE TYPE <input type="checkbox"/> GRAB SAMPLE <input checked="" type="checkbox"/> SPT | | | | | | | | |
| BACKFILL TYPE <input checked="" type="checkbox"/> BENTONITE <input checked="" type="checkbox"/> DRILL CUTTINGS | | | | | | | | |
| DEPTH (m) | SAMPLE TYPE | SPT (N) | REMARKS | SLOTTED PIEZOMETER | USC | SOIL SYMBOL | SOIL DESCRIPTION | DEPTH (m) |
| 10 | | | | | | | CLAY (TILL) - CONTINUED | 10 |
| 11 | | 50/150 | | | | | END OF TEST HOLE AT 11.0m UPON COMPLETION: -No slough -No water Standpipe piezometer installed WATER LEVEL BELOW GROUND SURFACE: -November 6, 2019 = Dry -November 19, 2019 = 0.4m | 11 |
| 12 | | | | | | | | 12 |
| 13 | | | | | | | | 13 |
| 14 | | | | | | | | 14 |
| 15 | | | | | | | | 15 |
| 16 | | | | | | | | 16 |
| 17 | | | | | | | | 17 |
| 18 | | | | | | | | 18 |
| 19 | | | | | | | | 19 |
| 20 | | | | | | | | 20 |



THURBER ENGINEERING LTD.

FIELD LOGGED BY: TDC
PREPARED BY: PSS
REVIEWED BY: RVC

COMPLETION DEPTH: 11.0 m
COMPLETION DATE: 11/6/19

BOREHOLE LOG 25875.GPJ THRB-AB.GDT 1/27/20- LIBRARY-NEW LOGO-N.E.GLB

| | | | | | |
|--|--|---|--|----------------------------|--|
| CLIENT: Associated Engineering Alberta Ltd. | | PROJECT: Grande Cache Wastewater Treatment Plant Upgrades | | BOREHOLE NO: TH19-9 | |
| DRILLING COMPANY: Frontier Enviro Drilling | | DATE DRILLED: October 29, 2019 | | PROJECT NO: 25875 | |
| DRILL/METHOD: CME55 / Solid Stem Augers | | LOCATION: N5970912.831, E358010.242 | | ELEVATION: | |
| SAMPLE TYPE <input type="checkbox"/> GRAB SAMPLE <input checked="" type="checkbox"/> SPT | | | | | |

| DEPTH (m) | SAMPLE TYPE | SPT (N) | REMARKS | USC | SOIL SYMBOL | SOIL DESCRIPTION | DEPTH (m) |
|-----------|-------------|---------|---------------------|-----|-------------|---|-----------|
| 0 | | | | | | TOPSOIL, dark brown - black, silty | 0 |
| | | | | | | CLAY (TILL) | |
| | | | | | | very stiff, brown, silty, sandy, some fine gravel | |
| 1 | | 19 | | | CI | | 1 |
| | | | | | | | |
| 2 | | | | | CI | | 2 |
| | | | | | | | |
| 3 | | 26 | >>> ▲ Cpen > 215kPa | | CI | | 3 |
| | | | | | | | |
| 4 | | 31 | >>> ▲ Cpen > 215kPa | | CI | -hard | 4 |
| | | | | | | | |
| 5 | | | | | CI | | 5 |
| | | | | | | | |
| 6 | | 55 | >>> ■ Cpen > 215kPa | | CI | -very hard | 6 |
| | | | | | | END OF TEST HOLE AT 5.8m | |
| | | | | | | UPON COMPLETION: (Below ground surface) | |
| | | | | | | -Slough at 5.5m | |
| | | | | | | -No water | |
| | | | | | | Backfilled with drill cuttings and bentonite chips at surface | |
| 7 | | | | | | | 7 |
| | | | | | | | |
| 8 | | | | | | | 8 |
| | | | | | | | |
| 9 | | | | | | | 9 |
| | | | | | | | |
| 10 | | | | | | | 10 |

| | | |
|-------------------------------------|----------------------|---------------------------|
| THURBER ENGINEERING LTD. | FIELD LOGGED BY: TDC | COMPLETION DEPTH: 5.8 m |
| | PREPARED BY: PSS | COMPLETION DATE: 10/29/19 |
| | REVIEWED BY: RVC | |

Page 1 of 1

BOREHOLE LOG 25875.GPJ THRB-AB.GDT 1/27/20- LIBRARY-NEW LOGO-N.E.GLB

| | | | | | |
|--|--|---|--|----------------------|--|
| CLIENT: Associated Engineering Alberta Ltd. | | PROJECT: Grande Cache Wastewater Treatment Plant Upgrades | | BOREHOLE NO: TH19-10 | |
| DRILLING COMPANY: ALL SERVICE DRILLING INC | | DATE DRILLED: November 5, 2019 | | PROJECT NO: 25875 | |
| DRILL/METHOD: Acker Soil Max JR / Odex Drilling | | LOCATION: N5970912.013, E357969.151 | | ELEVATION: | |
| SAMPLE TYPE <input type="checkbox"/> GRAB SAMPLE <input checked="" type="checkbox"/> SPT | | | | | |
| BACKFILL TYPE <input checked="" type="checkbox"/> BENTONITE <input checked="" type="checkbox"/> DRILL CUTTINGS | | | | | |

| DEPTH (m) | SAMPLE TYPE | SPT (N) | REMARKS | USC | SOIL SYMBOL | SOIL DESCRIPTION | DEPTH (m) |
|-----------|-------------|---------|--------------------------|-----|-------------|--|-----------|
| 0 | | | | | | CLAY (TILL) hard, dark brown, silty, sandy, matrix with some rounded - sub rounded gravel and cobbles | 0 |
| 1 | | | | | CI | | 1 |
| 2 | | 38 | | | CI | | 2 |
| 3 | | 50/75 | | | CI | | 3 |
| 4 | | | -SO ₄ = 0.02% | | CI | | 4 |
| 5 | | 38 | | | CI | | 5 |
| 6 | | 54 | -Seepage | | CI | -very hard | 6 |
| 7 | | | | | | END OF TEST HOLE AT 6.6m UPON COMPLETION: -No slough -Trace of water Standpipe piezometer installed WATER LEVEL BELOW GROUND SURFACE: -November 5, 2019 = Dry -November 6, 2019 = 5.4m -November 19, 2019 = 2.5m | 7 |
| 8 | | | | | | | 8 |
| 9 | | | | | | | 9 |
| 10 | | | | | | | 10 |

| | | |
|-------------------------------------|----------------------|--------------------------|
| THURBER ENGINEERING LTD. | FIELD LOGGED BY: TDC | COMPLETION DEPTH: 6.6 m |
| | PREPARED BY: PSS | COMPLETION DATE: 11/5/19 |
| | REVIEWED BY: RVC | |

BOREHOLE LOG 25875.GPJ THRB-AB.GDT 1/27/20- LIBRARY-NEW LOGO-N.E.GLB



APPENDIX C

Recommended Construction Procedures



RECOMMENDED CONSTRUCTION PROCEDURES

The following construction procedures are considered to represent good practice and are to be read in conjunction with the text of this report.

EXCAVATED FOUNDATIONS

- Excavation close to foundation level should be done carefully to avoid disturbance of the soil. It is essential to prevent the soil at foundation level from deterioration due to excessive drying or becoming wet from surface or seepage water. Good drainage both during and after construction is essential.
- Sumps, if required, should be located well away from the foundation area. Softened or over dried soil must be removed and replaced by lean mix concrete or by extending the foundations.
- The foundation must be kept from freezing both during and after construction. Foundation concrete should not be placed on or against frozen soil.

BACKFILLING

- Backfill around foundations should be placed in such a manner so as to prevent settlement and to be relatively impervious near the surface so that water does not pond against foundations nor be allowed to seep into the soil.
- Backfill should not be placed until the structure has sufficient strength to withstand the earth pressures resulting from placement and compaction.
- All backfill around grade beams, foundation walls, etc. must be carefully and uniformly compacted. The backfill should be placed in even layers and no frozen nor organic material should be incorporated into the fill. All lumps of material must be broken down or squeezed together during placing and compaction.
- The final grade (allowing for some settlement of the backfill) should shed water away from the structure.
- During construction, precautions should be taken to prevent water ponding in grade beam excavations thereby acting as a source of water to soften the soil under the floor slab area or providing a source of water for frost action if the building is not heated during freezing weather.



PROOF ROLLING

- Proof rolling is a method of detecting soft areas in a subgrade for fill, pavement, floors or foundations. The intent is to detect softened areas not revealed by the test holes or visual examination of the Site surface, and is used where normal scarification and compacting procedures would not be successful in detecting and eliminating soft areas. It is usually accomplished with the use of heavy 130 to 220 kN (15-25 ton) compaction equipment with high contact wheel pressures on independent axles, although heavily loaded single axle trucks will provide the equivalent result.
- The procedure requires two complete passes with the heavy equipment in one direction and then a second series of two passes made at right angles to the first series.
- While the passes are being made, any softened, rutted or displaced areas detected should be examined and either recompact with additional fill or the existing material removed and replaced with better quality material.



REQUEST FOR DECISION

SUBJECT: **Grande Cache Track Loader**
SUBMISSION TO: REGULAR COUNCIL MEETING
MEETING DATE: September 14, 2020
DEPARTMENT: ENVIRONMENTAL SERVICES
STRATEGIC PLAN: Level of Service

REVIEWED AND APPROVED FOR SUBMISSION
CAO: DT
GM: RA
MANAGER: GC
PRESENTER: GC

RELEVANT LEGISLATION:

Provincial – N/A

Council Bylaw/Policy -N/A

RECOMMENDED ACTION:

MOTION: That Council approve the purchase and repair of the 2006 Caterpillar Track Loader, to replace the crawler loader at the Grande Cache Landfill, for a total cost of \$32,000.00 with funds to come from the Solid Waste Capital Reserve if required.

BACKGROUND/PROPOSAL

Greenview has the opportunity to purchase a 2006 Caterpillar Track Loader, with 10,930 operating hours, from the Greenview Regional Waste Management Commission (GRWMC) for the price of \$5000.00. Motor replacement is required which will cost approximately \$27,000.00, bringing the total cost of purchase and repair to \$32,000.00.

Currently the equipment in operation at the Grande Cache Landfill is a 1996 Volvo Rubber Tired loader with 16,699 operating hours. Machine age and the lack of performance capability is impacting operating efficiency at the landfill pit. Administration would keep the 1996 Volvo loader as back up equipment and use it for other tasks as it has several different attachments that are of use.

If the future direction of Council is to develop the Grande Cache Landfill into a transfer station, a track loader will not be required, however purchasing the Caterpillar Loader will ensure that Administration has the correct equipment onsite for pit maintenance until the Transfer Station is operational.

If Council chooses to continue to operate a landfill cell on site, acquiring the Caterpillar loader could postpone the purchase of a new crawler loader for 4 more years.

BENEFITS OF THE RECOMMENDED ACTION:

1. The benefit of Council accepting the recommended motion is that the financial cost of replacing the Grande Cache loader will be significantly less than the purchase of new equipment set for the 2022 Capital Budget (\$306,227). By acquiring the Caterpillar Loader Greenview could defer the purchasing of a new crawler loader for approximately 4 years.

2. The benefit of Council accepting the recommended motion is the purchasing of a Loader in the quickest and most economical way to get the appropriate machine working at the landfill.

DISADVANTAGES OF THE RECOMMENDED ACTION:

There are no perceived disadvantages to the recommended motion.

ALTERNATIVES CONSIDERED:

Alternative #1: Council has the alternative to not accept the recommended motion and continue to operate the GC landfill with the Volvo Loader, however Administration does not recommend this action because this piece of equipment is impacting the overall efficiency of the site.

Alternative #2: Council has the alternative to not accept the recommended motion and to purchase a new Track Loader in 2022, however Administration does not recommend this action because the financial costs are significantly more than buying and rebuilding the 2006 Caterpillar loader which is capable of meeting the site demands.

FINANCIAL IMPLICATION:

This purchase is not included in the 2020 capital plan, however, could be funded from a reserve account.

Direct Costs: Purchase and repair \$32,000.00

Ongoing / Future Costs: Maintenance of the equipment will be included in the operational budget.

STAFFING IMPLICATION:

There are no staffing implications to the recommended motion.

PUBLIC ENGAGEMENT LEVEL:

INCREASING LEVEL OF PUBLIC IMPACT

Inform

PUBLIC PARTICIPATION GOAL

Inform - To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.

PROMISE TO THE PUBLIC

Inform - We will keep you informed.

FOLLOW UP ACTIONS:

Purchase agreement for the Caterpillar loader

ATTACHMENT(S):

- On Track Equipment and Supplies Estimate.

ON-TRACK

SUPPLIES & EQUIPMENT LTD.

722014 RR53
GRANDE PRAIRIE, AB
T8X 4J5
PH 780-532-9464
FAX 780-532-9499

DATE (M-D-YYYY): 2020-05-04
INVOICE NO: ASSIGN
GST NO: 889943965
Page 1

Estimate

SOLD TO:
M.D.OF GREENVIEW #16
BOX 1079
4707-50 STREET
VALLEYVIEW AB T0H 3N0

SHIP TO:

MAKE: CAT
MODEL: 953C
S/N: BX02718
ORDERED BY: LANE

P.O. #:
UNIT#:
Eng.Arr.#
Eng.S/N:

| Part Number | Description | Weight | Location | Ordered | Shipped | Price | Total |
|---|---------------------------|--------|-----------|---------|---------|-----------|-----------|
| 171-7613 LB | LONG BLOCK GROUP (3126B) | | | 1.0 | 1.0 | 11,950.00 | 11,950.00 |
| 171-7613 LB! | | | | 1.0 | 1.0 | 3,500.00 | 3,500.00 |
| Core Charge | | | | | | | |
| THIS WILL BE THE CHARGE FOR THE DAMAGED BLOCK & CRANKSHAFT. | | | | | | | |
| LABOUR | REMOVE & INSTALL ENGINE | | | 30.0 | 30.0 | 150.00 | 4,500.00 |
| LABOUR | SWAP PARTS TO LONG BLOCK | | | 32.0 | 32.0 | 150.00 | 4,800.00 |
| SHOP SUPP | SHOP SUPPLIES | | | 1.0 | 1.0 | 250.00 | 250.00 |
| 209528 | 5W40 RUBIA TIR 7900 - 19L | | RE01 | 1.0 | 1.0 | 122.70 | 122.70 |
| B7700 | FILTER | 2.32 | 07A | 1.0 | 1.0 | 13.82 | 13.82 |
| BF1399-SP | FUEL FILTER | | 06 | 1.0 | 1.0 | 26.66 | 26.66 |
| 4Y9652 | GASKET | | | 3.0 | 3.0 | 7.37 | 22.11 |
| 261-3816 | GASKET- OIL PAN | | 07B-DWR-B | 1.0 | 1.0 | 39.93 | 39.93 |
| 4K1388 | SEAL-O-RING(ORB#14) | 0.01 | CABA15 | 1.0 | 1.0 | 1.54 | 1.54 |
| 7W5340 | GASKET | | | 1.0 | 1.0 | 1.58 | 1.58 |
| 3P1156 | SEAL-O-RING | 0.01 | CABA16 | 2.0 | 2.0 | 4.21 | 8.42 |
| 5P5678 | SEAL | 0.01 | 07B DWR-E | 4.0 | 4.0 | 17.04 | 68.16 |
| 197-8419 | GASKET | | FILA03 | 1.0 | 1.0 | 3.52 | 3.52 |
| 114-2687 | SEAL-O-RING | | | 1.0 | 1.0 | 3.86 | 3.86 |
| 6V8397 | SEAL O-RING(#6 ORS) | | CABA17 | 1.0 | 1.0 | 0.92 | 0.92 |
| 222-3909 | SEAL GP | | | 1.0 | 1.0 | 36.48 | 36.48 |
| 245-7339 | SEAL GP-CRANKSHAFT | 0.26 | 03E06 | 1.0 | 1.0 | 22.18 | 22.18 |
| 4R9999 | EXCLUDER | | 03B04 | 1.0 | 1.0 | 14.56 | 14.56 |
| 136-0812 | GASKET | | FILA03 | 1.0 | 1.0 | 2.80 | 2.80 |
| 126-5466 | GASKET | | FILA03 | 1.0 | 1.0 | 1.98 | 1.98 |
| 3P1156 | SEAL-O-RING | 0.01 | CABA16 | 2.0 | 2.0 | 4.09 | 8.18 |
| 233-7655 | GASKET | | | 1.0 | 1.0 | 7.94 | 7.94 |

WAY BILL:
SHIP DATE:

SHIP VIA:
SHIP INST:
NOTE:

Terms: ESTIMATE SIGNATURE
Salesman: RICHARD VANDERZEE

SUB-TOTAL \$25,407.34
FILTER LG \$1.00
OIL & FILTER SM ENVIRO \$2.40
TOTAL WEIGHT 2.67
TOTAL GST \$1,270.37
TOTAL \$26,681.11

ORIGINAL



REQUEST FOR DECISION

SUBJECT: **Council Compensation**
SUBMISSION TO: REGULAR COUNCIL MEETING
MEETING DATE: September 14, 2020
DEPARTMENT: CAO SERVICES
STRATEGIC PLAN: Level of Service

REVIEWED AND APPROVED FOR SUBMISSION
CAO: DT
GM:
MANAGER:
PRESENTER: DL

RELEVANT LEGISLATION:

Provincial (cite) –N/A

Council Bylaw/Policy (cite) –Policy 1008

RECOMMENDED ACTION:

MOTION: That Council review Motion 20.04.238 “Interim Supplementary Salary” and provide Administration direction on how to proceed.

BACKGROUND/PROPOSAL:

On April 14, 2020 Council made the following Motion:

MOTION: 20.04.238. Moved by: COUNCILLOR WINSTON DELORME

That Council approve the 2019 per diem average of \$3,717.00 per month along with the regular monthly honorarium of each Councillor and the Reeve, retroactive to March 1, 2020 and continuing until restrictions are lifted on public meetings due to the Coronavirus Pandemic.

This alternative method of compensation was implemented to allow for predictable compensation for Councillors during the pandemic as many meetings we cancelled in the initial months. At the time, it was intended as a temporary measure.

Administration is requesting Council review the interim supplementary salary and determine whether the program should continue, and for how long, or if Council would like to go back to the compensation method outlined in Policy 1008 at this time.

BENEFITS OF THE RECOMMENDED ACTION:

1. Council will return to the compensation method outlined in Policy 1008.

DISADVANTAGES OF THE RECOMMENDED ACTION:

1. The pandemic is still an ongoing issue. Councillors may not have as predictable of incomes in the upcoming months if they return to the compensation method outlined in Policy 1008.
-

ALTERNATIVES CONSIDERED:

Alternative #1: Council may wish to continue the interim supplementary salary for the time being or indefinitely. Council may make an alternative motion to continue to a specific date or leave it open. Council may also choose to make the salary permanent and should make a motion reflecting that, as well as a motion to amend Policy 1008.

ALT MOTION 1: That Council continue the interim supplementary salary through December 2020 and review the method of compensation in January 2021.

ALT MOTION 2: That Council continue the interim supplementary salary indefinitely until restrictions are lifted on public meetings due to the Coronavirus pandemic.

ALT MOTION 3: That Council move to a salary based compensation and review Policy 1008 to reflect this change.

FINANCIAL IMPLICATION:

There are no financial implications to the recommended motion.

STAFFING IMPLICATION:

There are no staffing implications to the recommended motion.

PUBLIC ENGAGEMENT LEVEL:

Greenview has adopted the IAP2 Framework for public consultation.

INCREASING LEVEL OF PUBLIC IMPACT

Inform

PUBLIC PARTICIPATION GOAL

Inform - To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.

PROMISE TO THE PUBLIC

Inform - We will keep you informed.

FOLLOW UP ACTIONS:

There are no follow up actions to the recommended motion.

ATTACHMENT(S):

- NONE



REQUEST FOR DECISION

SUBJECT: **Grande Spirit – DeBolt Seniors Development**
SUBMISSION TO: REGULAR COUNCIL MEETING REVIEWED AND APPROVED FOR SUBMISSION
MEETING DATE: September 21, 2020 CAO: DT MANAGER: SR
DEPARTMENT: PLANNING & DEVELOPMENT GM: RA PRESENTER: LD
STRATEGIC PLAN: Development

RELEVANT LEGISLATION:

Provincial (cite) – N/A

Council Bylaw/Policy (cite) – Greenview's Development Guidelines & Municipal Servicing Standards

RECOMMENDED ACTION:

MOTION: That Council waive the requirement for a security deposit required for road and utility construction and installation for the Grande Spirit Foundation senior housing project located on a portion of NW-12-72-01-W6 (2.28 acre ±) owned by the Municipal District of Greenview No. 16.

BACKGROUND/PROPOSAL:

Greenview's Development Guidelines & Municipal Servicing Standards (MSS) require that the developer must provide a security deposit based on 50% of the estimated construction, materials and engineering costs of a project for all improvements occurring on municipal lands and tying into municipal infrastructure that would subsequently be owned and maintained by Greenview (i.e. access road, utility lines and connections, etc.).

As the Grande Spirit Foundation senior housing project is occurring on lands owned by the Municipal District of Greenview (Greenview), and monies for the project have been funded by Greenview through the grant process, charging security would be redundant. The process is that pending satisfactory inspections at different levels of completion, the security would be refunded to the developer in accordance with the MSS.

BENEFITS OF THE RECOMMENDED ACTION:

1. The benefit of Council accepting the recommended motion is that Grande Spirit Foundation would not have to request additional monies from Greenview to complete the project.
-

DISADVANTAGES OF THE RECOMMENDED ACTION:

1. The disadvantage to the recommended motion is that in the event Grande Spirit Foundation does not complete the project satisfactorily, Greenview would be responsible to do so at their expense.

ALTERNATIVES CONSIDERED:

Alternative #1:

1. Council has the alternative to provide additional monies to Grande Spirit Foundation to pay the security deposit, which amount would be 50% of the estimated construction, materials and engineering costs.

FINANCIAL IMPLICATION:

Direct Costs: Estimated on a \$100,000 project cost, the security would be \$50,000.00, etc.

Ongoing / Future Costs: regular ongoing maintenance.

STAFFING IMPLICATION:

There are no staffing implications to the recommended motion.

PUBLIC ENGAGEMENT LEVEL:

Greenview has adopted the IAP2 Framework for public consultation.

INCREASING LEVEL OF PUBLIC IMPACT

Inform

PUBLIC PARTICIPATION GOAL

Inform - To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.

PROMISE TO THE PUBLIC

Inform - We will keep you informed.

FOLLOW UP ACTIONS:

A letter would be sent to Grande Spirit Foundation advising of motion.

ATTACHMENT(S):

N/A



REQUEST FOR DECISION

SUBJECT: **W.D. Stevenson Demolition**
SUBMISSION TO: REGULAR COUNCIL MEETING
MEETING DATE: September 8, 2020
DEPARTMENT: COMMUNITY SERVICES
STRATEGIC PLAN: Level of Service

REVIEWED AND APPROVED FOR SUBMISSION
CAO: DT
GM: MANAGER:
PRESENTER: DM

RELEVANT LEGISLATION:

Provincial (cite) – N/A

Council Bylaw/Policy (cite) – N/A

RECOMMENDED ACTION:

MOTION: That Council authorize the demolition of the W.D. Stevenson Medical Clinic to an upset limit of \$227,000.00 with the Town of Valleyview and Greenview each contributing fifty percent (50%), equal to an upset limit of \$113,500.00, with Greenview funds to come from Contingency Reserve if required.

BACKGROUND/PROPOSAL:

The W.D. Stevenson Medical Clinic was built in 1979 and modifications were made prior to January 1980 to accommodate the first tenant, dentist Darryl Smith. The Clinic is jointly owned by the Town of Valleyview and Greenview and is situated on leased Alberta Health Service land. The Clinic was leased during its tenure by the doctors, dentists and for a period of time the optometrist.

Due to various foundation and structural issues with the WD Stevenson Medical Clinic a new clinic was built in 2009-2010.

In 2016, it was determined by the Town of Valleyview and Greenview that the best course of action for the vacant W.D. Stevenson building would be demolition with the Town of Valleyview taking a lead on the demolition process. Upon discussions with Alberta Health Services it was determined that their demolition requirements involved a lot of complexities related to the demolition process.

An agreement was adopted by both local jurisdictions indicating a 50/50 cost share with an estimated demolition cost of \$101,140.00. In 2017, Greenview had budgeted \$50,000.00 which represents 50% of the cost of the demolition of the facility. In 2018 the Town of Valleyview had requested that Greenview be the lead agency in acquiring all of the applicable approvals.

Administration has determined that Greenview's 50% of the project cost was not transferred into a project reserve leaving an unbudgeted cost for the demolition.

Greenview Administration has since provided an estimate of \$227,000.00 for the demolition of the facility with Greenview paying 50%, \$113,500.00. Administration would like to proceed with the demolition in the fall of 2020 and will be contacting the Town of Valleyview to confirm their financial commitment.

BENEFITS OF THE RECOMMENDED ACTION:

1. The benefit of the recommended motion is that the W.D. Stevenson Medical Clinic demolition will be authorized to proceed.

DISADVANTAGES OF THE RECOMMENDED ACTION:

1. There are no perceived disadvantages to the recommended motion.

ALTERNATIVES CONSIDERED:

Alternative #1: Council has the alternative to deny the recommended motion and direct Administration to proceed with an alternative course of action.

FINANCIAL IMPLICATION:

Direct Costs: \$113,500.00

STAFFING IMPLICATION:

There are no staffing implications to the recommended motion.

PUBLIC ENGAGEMENT LEVEL:

Greenview has adopted the IAP2 Framework for public consultation.

INCREASING LEVEL OF PUBLIC IMPACT

Inform

PUBLIC PARTICIPATION GOAL

Inform - To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.

PROMISE TO THE PUBLIC

Inform - We will keep you informed.

FOLLOW UP ACTIONS:

Administration will proceed in accordance with the direction provided by Council with regards to the demise or existence of the W.D. Stevenson building.

ATTACHMENT(S):

- Estimate Cost of the Demolition of the W.D. Stevenson Facility

Teresa Marin

Subject: FW: Demolition of W.D.

From: Roger Autio <Roger.Autio@MDGreenview.ab.ca>
Sent: September 3, 2020 8:51 AM
To: Teresa Marin <Teresa.Marin@MDGreenview.ab.ca>
Cc: Stacey Wabick <Stacey.Wabick@MDGreenview.ab.ca>
Subject: RE: Demolition of W.D.

Afternoon Teresa

Below is my estimate

Labours 5 for 10 – 10hr days \$41/hr = 21K
Day Labour Supervisor 10 days @ \$1000.00 / day = 10K
Excavator 10 – 10hr days @ \$140.00/hr = 14K
Excavator 2 – 10hr days @ \$140.00/hr = 3k
Skid steer 10 – 10hr days @ \$100.00/hr = 10K
Borrow ~ 700Cubic Yards Plus restoration = 12K
Metal Bin Rentals 4 bins @ \$400each plus disposal, estimated Guess = 25k
Trucking 5 – 10hr days for 10 days @ \$165/hr = 82.5K
Self-loading Picker truck 1 day @ \$250/hr = 2.5K

| | |
|-----------------------------|--------------------|
| | \$180,000.00 |
| + 15% | <u>\$36,000.00</u> |
| | \$216,000.00 |
| Plus taxes | \$10,800.00 |
| Rounded Estimated Total | \$227,000.00 |

Thanks
Roger



REQUEST FOR DECISION

SUBJECT: **Letter to Minister – Gun Ban**
SUBMISSION TO: REGULAR COUNCIL MEETING
MEETING DATE: September 14, 2020
DEPARTMENT: CAO SERVICES
STRATEGIC PLAN: Level of Service

REVIEWED AND APPROVED FOR SUBMISSION
CAO: DT
GM:
MANAGER:
PRESENTER: DT

RELEVANT LEGISLATION:

Provincial (cite) – N/A

Council Bylaw/Policy (cite) – N/A

RECOMMENDED ACTION:

MOTION: That Council direct Administration to send the attached letter to the Minister of Public Safety & Emergency Preparedness regarding concerns over the federal gun ban, and to cc: Prime Minister of Canada, Attorney General, Leader of the Official Opposition, Premier of Alberta, Solicitor General, MLA Grande-Prairie-Wapiti, MLA Central Peace-Notley, MLA West Yellowhead, Federation of Canadian Municipalities, Rural Municipalities of Alberta and Alberta Urban Municipalities Association.

BACKGROUND/PROPOSAL:

Councillor Gervais requested that Administration bring forward a letter similarly to that of the Town of Fox Creek to express dissatisfaction with the recent decision of the Federal Government's changes to Firearms Legislation.

As of May 1, 2020, the Government of Canada has prohibited over 1,500 models of assault-style firearms and certain components of some newly prohibited firearms (the upper receivers of M16, AR-10, AR-15, and M4 patterns of firearms). New maximum thresholds for muzzle energy (greater than 10,000 Joules) and bore diameter (20 mm bore or greater) are also in place. Any firearm that exceeds them is now prohibited. A *Criminal Code* amnesty period is currently in effect to April 30, 2022. The amnesty is designed to protect individuals or businesses who, at the time the prohibition came into force, were in lawful possession of a newly prohibited firearm from criminal liability while they take steps to comply with the law.

BENEFITS OF THE RECOMMENDED ACTION:

1. To voice concern over the new legislation.

DISADVANTAGES OF THE RECOMMENDED ACTION:

Council may be perceived to be establishing a position on a regulation that is not representative of individuals.

ALTERNATIVES CONSIDERED:

Alternative #1: To refrain from forming a position on this matter by defeating this motion.

FINANCIAL IMPLICATION:

Direct Costs: none

There are no financial implications to the recommended motion.

STAFFING IMPLICATION:

There are no staffing implications.

PUBLIC ENGAGEMENT LEVEL:

INCREASING LEVEL OF PUBLIC IMPACT

Inform

PUBLIC PARTICIPATION GOAL

Inform - To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.

PROMISE TO THE PUBLIC

Inform - We will keep you informed.

FOLLOW UP ACTIONS:

Administration will send the attached draft letter.

ATTACHMENT(S):

- Letter



MUNICIPAL DISTRICT OF GREENVIEW No. 16

September 14, 2020

Minister of Public Safety & Emergency Preparedness
House of Commons
Ottawa, ON, Canada, K1A 0A6

Attention: Honourable Bill Blair

RE: Concern Over Federal Gun Ban

On May 1, 2020 the federal government announced its ban of 1,500 “assault-style” firearms in Canada. This includes the use, sale, import and transportation of any of the banned firearms.

In response to this action, during their Regular Council Meeting held on September 14, 2020, the MD of Greenview Council voted to express their opposition to the federal government’s ban on firearms as well as the planned buy-back program.

That Council send a letter to the Federal Minister of Public Safety and Emergency Preparedness to express our dissatisfaction with the decision of his office regarding the ban of 1,500 “assault-style” firearms in Canada.

Though the MD of Greenview is supportive of crime reduction initiatives, it strongly feels that the federal government’s intentions with the ban are misguided and will result in little to no improvement to the current crime rates. Instead of spending hundreds of millions of tax payer dollars to buy back restricted firearms from law abiding citizens who have received their training, background checks, and licensing, Greenview encourages the federal government allocate those funds to other crime reduction strategies, social services, health care and programs that aim to reach those at risk earlier on.

As a municipality with many affected residents, the MD of Greenview urges the federal government to rescind the amendment to the criminal code under an “Order in Council” that occurred on May 1, 2020.

Similarly to other municipalities, it is our aim that by voicing our concerns over this ban that other municipalities and organizations will follow suit and result in the overturning of this federal ordinance.

Respectfully,

Dale Smith
Reeve, MD of Greenview

DS/lk

cc: MD of Greenview Council
Right Honourable Justin Trudeau, Prime Minister of Canada
The Honourable David Lametti, Attorney General
The Honourable Andrew Sheer, Leader of the Official Opposition
The Honourable Jason Kenney, Premier of Alberta
The Honourable Dog Schweitzer, Solicitor General
The Honourable Travis Toews, MLA Grande Prairie - Wapiti
Todd Loewen, MLA Central Peace – Notley
Martin Long, MLA West Yellowhead
Federation of Canadian Municipalities (FCM)
Rural Municipalities Association of Alberta (RMA)
Alberta Urban Municipalities Association (AUMA)



MUNICIPAL DISTRICT OF GREENVIEW No. 16

Manager's Report

Function: CAO Services

Submitted by: Denise Thompson CAO, Stacey Wabick, ACAO

Date: 9/14/2020

Chief and Assistant Chief Administration Officer, Denise Thompson, Stacey Wabick

Since the last managers' report the Chief Administrative Officer (CAO) and Assistant Chief Administrative Officer (ACAO) have been busy with a variety of administrative functions. Some of the more prevalent tasks has been as result of the resignation of the previous General Manager, Community Services which translated into both the CAO and ACAO being more engaged in Agriculture Services, Family Community Support Services, Recreation and Economic Development. CAO Thompson has now brought back former General Manager Dennis Mueller on an interim basis to assist with the corporate guidance of these departments. This will also allow the Senior Leadership Team (SLT) the luxury of time when it comes to filling that position permanently.

At the onset of COVID-19, Greenview developed a COVID-19 Business Continuity Plan to help ensure clarity of organizational expectations during the pandemic. With fall upon us, school back in session, the potential of a second wave and how these have a domino effect on Greenview staff, the plan is in the process of receiving an update. One difficulty Administration is having is that guidelines and regulations have been a bit of a moving target and staying on top of them while still ensuring the document remains as relevant as possible has been a challenge.

CAO Thompson had discussions with neighboring municipalities regarding a number of items. A meeting with the Fox Creek CAO was very insightful and provided an update on the status of the partnered recreation facility, fire station, and a number of other topics including finances and staffing. A meeting with the new CAO of Birch Hills also took place. This meeting served as an important introduction and first step in advancing the relationship between the two municipalities. CAO Thompson has also been in contact with the CAO from Smoky River to review the Old High Prairie Bridge Project and once more information is reviewed an update will be available.

CAO Wabick has been working on a number of projects including advancing the DeBolt seniors housing. It is anticipated that land development will be well on its way before freeze up with the housing units to follow in 2021. Another project includes gathering an administration team to review opportunities for internet connectivity throughout Greenview. The purpose of the team is to assemble what options are currently available to ratepayers, and what may be coming in the near future. A team including Human Resources and Information Technology was tasked with reviewing more efficient ways to onboard staff and request services like new IT equipment. Through the use of a Smartsheet program this team developed a wonderful tool that will service the organization well. CAO Wabick has also begun reaching out to other municipalities in an effort to assist Regional Fire Chief Brown with the updating of mutual aid agreements and re-establish those relationships.

Health and Safety is building capacity and working to ensure that the safety program continues to improve. COVID-19 has created additional challenges that this department continues to adapt to, as well as they have worked extremely hard to provide the SLT with up to date, accurate incident reporting.

The SLT is preparing to participate in offsite leadership meetings where the primary topics will include capacity building within Greenview, succession planning and an internal organizational review. This is also anticipated to greatly assist with ongoing work in preparing an upcoming Council Strategic Plan update.

Some other notable items that have kept CAO Services busy includes preparing for a Tax Sale, recruitment for a TMIP Project Manager, working with Alberta Transportation on the highway 40 twinning, the demolition of the WD Stevenson Building, lengthy HR investigations and even meeting with a Greenview ratepayer who wanted to pass on their appreciation for the work they received this year and how wonderful it was to work with Greenview field staff.

Regional Fire Chief, Wayne Brown

Administration

Alberta Health Services (AHS) will allow a return to full Medical First Response (MFR) program by the middle of September for all fire stations.

AFFRCS radio system update – mobile radios have been installed in all three fire stations and the two contracted fire departments. Prior to going live, a meeting was held with AFFRCS reps, the Grande Prairie Fire Chief (AFFRCS Governance Committee member), and Critical Communications to discuss allowing the continued use of the legacy (existing) system for the alerting of the volunteer firefighters. At present there is no alerting/paging system that is consistent enough to move away from the legacy system completely. Greenview will be participating in a pilot using an AFFRCS compatible alerting system. AFFRCS reps were receptive and it is expected Greenview will be permitted to use the legacy system for an additional two years.

Work with Communications Stacey Sevilla and team continues for the re-branding of Fire and Rescue Services. Decals are now installed on most fire apparatus and all firefighter uniforms are crested.

Mutual Aid documents currently being reviewed and prepared:

- Grande Prairie County and Greenview - document has been amended sent to GP County for review.
- Sturgeon Lake Cree Nation and Greenview - document is currently being drafted.

- Agriculture/Forestry and Greenview - document has been prepared and is in final review.
- Valleyview and Greenview - agreement is being reviewed and will be discussed with Valleyview Fire Chief.
- Fox Creek and Greenview - a meeting is to be scheduled to discuss current agreement with Fox Creek CAO
- Greenview Fire Services Bylaw and Level of Service are in Draft format and are to be reviewed.

As these documents are completed by Administration, they will be brought to Council for final endorsement.

Training

Thirty Firefighters from eight Fire Stations successfully completed grain entrapment firefighter course. The course in conjunction with the drive-in movie (SILO) saw over 300 community members attend the weekend activities.

Six Station #31 members were successful in passing the Air Brake course. Six members from Station #32 are enrolled to take the course on September 12th.

An Emergency Livestock Rescue course is being held in Rycroft Oct 31st – Nov 1st. The final number of Greenview Fire Rescue Services members attending will be determined once class size is finalized by instructor.

1001 and 1021 training is moving along nicely, all members are doing well and passing. This training is designed to give members the skills and knowledge needed to become a certified firefighter and an integral part of the department. Skills such as fire suppression, vehicle extraction, environment and property protection, fire prevention and safety codes are learnt.

Apparatus Cost Savings

The old Peace Officer vehicle has been repurposed for Fire Rescue Services. The unit has been re-decaled and an AFRRCS radio has been installed. This vehicle will become DFC Meek's command/response vehicle (COMMAND 3101)

Unit A165 has been repurposed for Fire Rescue Services. The unit has been re-decaled and AFRRCS radio has been installed. This will become DFC Parson's command/response vehicle (COMMAND 3201)

With the pending deployment of the new Wet Rescue at #33 Fire Station Rescue (allotted in the 2020 budget), Unit F62 is to be re-deployed to #32 Fire Station. The Unit is heavier, carries more water and is much better suited for highway rescue service. Rescue 3230 will be re-assigned as Bush Fire Response Unit.

F11 Tender has been removed from the surplus list and will be stationed at #32 Fire Station. This unit will serve as a second Fire Water Tender for #32 Fire Station, ideal for the provision of additional firefighting water at a large fire. When not in use by the fire station the water tender can be used by Operations as required. This dual use of an existing water tender by two departments is a true cost savings and may be a model we may want to emulate at our other fire stations going forward.

Sergeant, George Ferraby
Administration

Enforcement Services is growing as planned. An interview panel recently completed interviews for the Grovedale and Valleyview Community Peace Officer (CPO) positions. Two candidates were selected and are in the process of being offered the role.

All CPO vehicles are now outfitted. Two are awaiting the new officers employed to Enforcement Services.

CPO Schultz and Sgt. Ferraby fielded 57 calls for service during the month of July and August. There are a few occurrences that have not yet been entered on the reporting system, so the numbers would be slightly elevated. 55 enforcement patrols were conducted in the MD campgrounds monitoring the users and their actions.

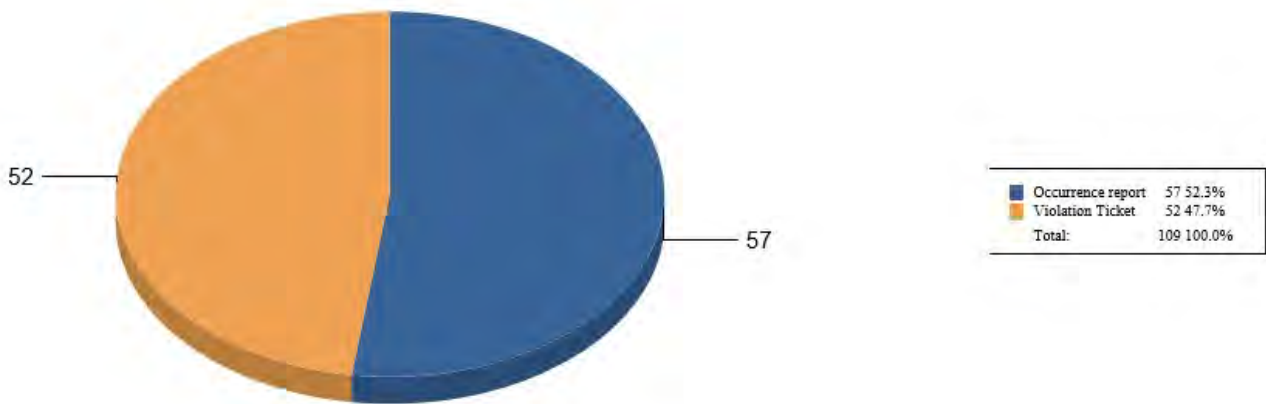
CPO Schultz and Sgt. Ferraby wrote a combined total of 80 Provincial Violation tickets for this period throughout the MD.

School zone enforcement patrols are being conducted in all the schools within the MD of Greenview starting September 1st, 2020.

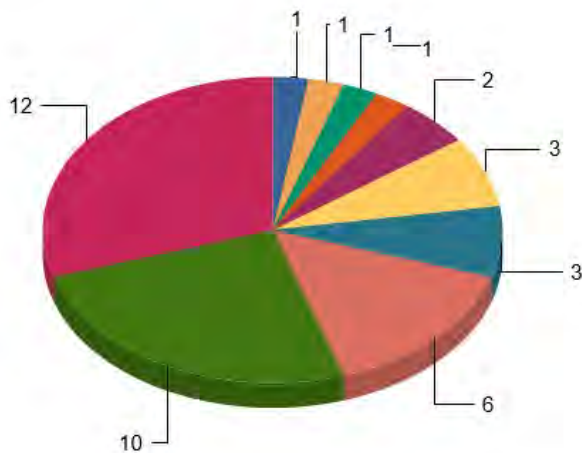
There has been a lot of positive feedback from the ratepayers regarding the Enforcement Services program. Several people have made comments saying that it is great to have visibility in the rural areas within the MD where there has not been a presence previously.

July and August Stats

Count of Reports Completed

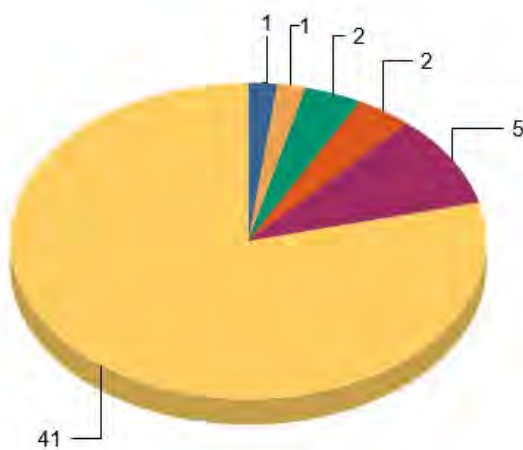


Count of Incident Types



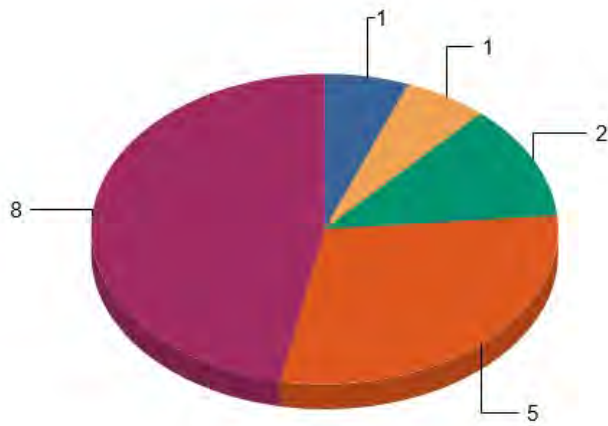
| | | |
|---|----|--------|
| CRIMINAL CODE: MISCHIEF | 1 | 2.5% |
| MUNICIPAL BYLAW | 1 | 2.5% |
| MUNICIPAL BYLAW: LAND USE BYLAW | 1 | 2.5% |
| MUNICIPAL BYLAW: LITTERING | 1 | 2.5% |
| CRIMINAL CODE: THEFT UNDER \$5000 | 2 | 5.0% |
| ASSIST OTHER GREENVIEW DEPARTMENT | 3 | 7.5% |
| CRIMINAL CODE | 3 | 7.5% |
| MUNICIPAL BYLAW: ANIMAL CONTROL | 6 | 15.0% |
| MUNICIPAL BYLAW: ANIMAL CONTROL: IMPOUNDED ANIMAL | 10 | 25.0% |
| MUNICIPAL BYLAW: COMMUNITY STANDARDS | 12 | 30.0% |
| Total: | 40 | 100.0% |

Count of Incident Types



| | | |
|--|----|--------|
| FAILURE TO PROVIDE PO W/ FIN RESP CARD 167(1)(C) | 1 | 1.9% |
| FAILURE TO PROVIDE PO W/ OPERATORS LICENCE 167(1)(A) | 1 | 1.9% |
| OPERATE MV W/O LIC IN POSSESSION 51(P) | 2 | 3.8% |
| SPEEDING CONSTRUCTION 15(2)(P.1) | 2 | 3.8% |
| SPEEDING CONSTRUCTION PERSONS PRESENT 115(2)(P.2) | 5 | 9.6% |
| SPEEDING 115(2)(P) | 41 | 78.8% |
| Total: | 52 | 100.0% |

Count of Incident Types



| | | |
|---------------------------------|----|--------|
| PROVINCIAL - PETTY TRESPASS ACT | 1 | 5.9% |
| TRAFFIC | 1 | 5.9% |
| TRAFFIC - ASSIST FIRE | 2 | 11.8% |
| MUNICIPAL BYLAW - PARKING | 5 | 29.4% |
| PROVINCIAL - TRAFFIC SAFETY ACT | 8 | 47.1% |
| Total: | 17 | 100.0% |



Manager's Report

Department: Infrastructure & Planning

Submitted by: Roger Autio, General Manager Infrastructure & Planning

Date: 9/4/2020

General Manager, Infrastructure & Planning, Roger Autio

- Operations is moving equipment into the new shop.
- Battle with beavers is still ongoing.
- Fending many complaints from landowners about beavers on their land; blowing and removal of dams has helped, when time allows.

Assistant Manager, Construction & Engineering, Leah Thompson

- Range Road 201 is in progress and gravel HAS been spread; job is on schedule. Final inspection was scheduled for August 28, 2020. No issues coming from landowners. Knelsen worked well with the highway paving crew to ensure the approach met Highway 669 without any issues.



- Goodwin Road is going well; some issues with a landowner where bylaw had to be involved. Work is progressing, on schedule and continuing to move forward.
- Approach installations are being completed as per schedule and applications being submitted.

- Farmland access off Range Road 242 has not been started due to landowner getting crop off the section of road. Day labour foreman is meeting with the survey tech to ensure all surveying stakes are installed. Waiting on testing to ensure we meet compaction to lay gravel.

Facing east from the intersection



Facing south from the intersection



- Range Road 230 is in progress; oilfield companies were at location to ensure the crossings are in place and to ensure they had no concerns. Township Road 700 and north is on the final stages before spreading gravel. Compaction was tested and approved with 100% on five tests per one-kilometre top lift and bottom lift. Three kilometres ready for gravel once testing is completed. Day labour supervisor is on site and all is on schedule.
- Township Roads 701 and 702 drainage is in progress; finishing up with a day labour supervisor, along with upgraded approaches for landowners in the area that are affected by the upgraded drainage.
- DeBolt drainage request has been posted to APC and expect to be received by September 4, 2020.
- Administration attended Leadership for Safety Excellence for two days in August; the course provided a lot of information.
- Adjusting projects accordingly with the changes to administration within our department.
- Range Road 224 farmland access (Wirth) is still in progress; waiting on wetland approvals to determine the cost Greenview will be responsible for paying. Once this is paid and approved, the construction can start. This portion of the preliminary has been a time-taking action that has slowed the project down immensely. Confident that the project will be completed in the fall.
- Little Smoky drainage concerns are in progress; waiting on some legalities to be taken care of by the landowner to purchase some of the right-of-way required and to enter onto property. Hopeful to have this returned to administration by the first week of September.

- Pre-construction meeting was held for Forestry Trunk Road paving project for ten kilometres of asphalt. Contractor is on site and subgrade is being prepared, rock is being removed and pullouts are being constructed.



- Victor Lake road construction has started with road grade fill and cutting, starting from the south of the project. Moisture level was below optimum and was required to be brought up in embankment prior to packing. Overall progress is moving along well. Quality assurance is being completed by use of proof roll on each section and results from density testing.
- Bridge file maintenance contract was awarded to Ardy's Rigging, Valleyview, for the completion of three bridge files maintenance that include BF74754 (SW-24-69-22 W5) on Township Road 693A south of Valleyview, BF78612 (SE-30-68-08 W6) on Two Lakes Road near Grovedale and BF80934 (SE-13-69-09-W6) west of Township Road 692 near Grovedale.
- Sunset House drainage has been posted on APC. Mandatory site meeting is scheduled; the tender opening date is scheduled for September 23. This tender only focuses on the portion located on SE-29-70-20 W5 channel that moves east to west.
- Administration was able to purchase land from the landowner on the east quarter to access the drainage for maintenance purposes and is in progress.
- Trying to receive three quotes for asphalt for the Alberta Health Services building in Grande Cache, Grande Cache Tourism Centre and Grande Cache Water Treatment Plant; have finally received one and trying to have them completed prior to the end of the season.

Manager, Environmental Services, Gary Couch

Utilities

- Cement work has been completed at the Grande Cache Water Treatment Plant for the storage building and the septage receiving station.
- The three large capital projects in Grovedale and Landry Heights are going full steam ahead with the better weather and have been making great progress in past couple months. Fielding numerous calls daily from local residents about future connection to the systems. The end is now in sight.

Wastewater

- Grande Cache Sewage Treatment Plant – Lambourne has completed the de-watering of the lagoon cells. A plan to repair manhole B is in place.
- Grovedale lagoon – repairs have been completed to liner and the site is operational.
- DeBolt force-main – quotes have been obtained from three engineering firms for the construction of a second force-main in DeBolt.
- Ridgevalley – ongoing work regarding the replacement of the pumps.
- Operational issues with the electric gates at the lagoon sites. Working with Facilities and Maintenance to resolve this.
- Grande Cache Sewage Treatment Plant – three engineering firms have submitted proposals for detailed design and construction of the proposed wastewater treatment plant upgrade.
- Ongoing work to get DeBolt RV dump finalized and sent out for requotes for construction. We are working with the Agricultural Society as well as their arena contractor.

Water

- Little Smoky – operators repaired a leak in the system and then determined that the main issue is at the underground reservoir. A temporary reservoir has been constructed to supply the hamlet with water. Operators are now in the process of troubleshooting and isolating the underground issues. Currently the truck fill is not operational as the temporary tank is only able to accommodate the community.
- Sunset House – water supply well became compromised and a driller was needed to make repairs to the well screen. The galvanized piping was changed to poly as well at the same time.
- Grande Cache – two repairs to two CCs were completed.
- Grande Cache – removal of one hydrant and the repair of two hydrants (advised fire department).
- Grande Cache – continuing replacing non-functioning water meters throughout the community (as much as \$40,000 estimated) and working with Corporate Services on reconciliation of water and sewer usage.
- Valleyview rural water line expansion is ongoing with acquisition of easements, crossing agreements and the development of a yard by the Valleyview airport for storage for all the water pipes and materials needed.
- Raw water line upgrade in Grande Cache is being redesigned as the road upgrade had already been awarded.

Solid waste

- Grande Cache Landfill – break-in at landfill occurred. No damage to equipment or buildings. Incident was reported to RCMP.
- Continuing issue with intruders helping themselves to items and vandalizing property at the transfer stations after hours.
- 2020 litter clean ups have been completed; three transfer stations and two landfills.
- Greenview is taking in more Town of Valleyview solid waste and recycle than ever due to water issues requiring the town landfill to be closed. Greenview will NOT turn residents away.
- Many commercial users are again attempting to use the residential transfer stations. This is not permitted use.
- GRWMC – slowly getting started on developing a new landfill cell for the regional landfill. Adjustments had to be made to the truck scale to minimize surface water issues.

- Grande Cache – the compactor is back in Grande Prairie as the transmission is not working again. Hopefully, warranty will cover the damages.

Manager, Facility Maintenance, Wayne Perry

Valleyview

- I&P building – focused resources to get the building ready to move into, including replacing the compressed air system, building and installing all office furniture, installing appliances, installing hoist and getting the gates functioning.
- Administration building – sanded and repainted the front railings.
- Determined a better communication system for reception and ordered.
- Started planning for millwork renovation in council chambers.
- Crossed off another eight items from the task list.
- Old Operations building – began a major renovation which should wrap up in September.
- From a staffing level perspective, we saw the resignation of the groundskeeping supervisor and saw the term end for two of our summer employees.

DeBolt

- Public Service Building – built and installed the furniture in the regional deputy fire chief's office.
- Prior to the grain extraction seminar, our team cleaned parking lot areas and set up tables.

Grovedale

- Shop A – moved the car hoist to bay #1 so it is more accessible to the shop doors and modified the exhaust ventilation system to make it easier for use by the mechanic.
- Changed air piping in the shop at the mechanics' request and mounted some shelving to the walls.
- Public Service Building – installed desks in the fire chief's and training officer's offices; worked on the elevator to get the problem identified (will be fixed in September).
- Repaired leaks in the hot water system and worked with the regional fire chief on modifications to the building's lounge.
- Safety follow-up – working through several safety follow-up items in all buildings in Grovedale. Over 90 items have been identified in the past month; we have already corrected over 20 and will have most of the rest wrapped up in September.

Grande Cache

- Public Service Building – working with RPC on getting the outstanding punch list completed in a timely manner.
- Water Treatment Plant – designed and began assembly of a cover for the gas meter.
- Operations – installed the locking door in the shop for tool lock up, reviewed the security system to ensure it is all functional
- Tourist Information Centre – finished the internal renovation, priced out and ordered new door, which will be installed in September

MD-wide

- Began a review of the security system in all buildings. The review will include current building access, current alarms for security and fire as well as security cameras for all facilities. We are planning to have the review completed by the end of September to utilize for budget planning.

Manager, Operation, Josh Friesen

Operations East

- New culvert installs and culvert repairing in progress.
- Slide repaired on Township Road 683 east of Highway 43 south of Valleyview.
- Ditch washout/erosion repair on Range Road 215 north of Highway 669 east of Valleyview.
- Road re-gravelling program is underway in Ridgevalley/Crooked Creek area. The program will move to the Sunset House/Sweathouse area once Ridgevalley is complete.
- Main portion of planned ditching and culvert replacements completed in the Narrows. Bringing in topsoil, reseeding and final landscaping/finishing work remains once conditions allow.
- Roadside ditch mowing program in Puskwaskau, DeBolt, Crooked Creek, Sunset House areas. Presently mowing at Grovedale and Sweathouse areas.
- Mowing completed at Little Smoky Recreation Area.
- Asphalt pothole patching repairs underway.
- Line painting completed in area.
- Hauling winter sand from Adams Ranch pit to Valleyview yard.

Operations Central

- Dust control program completed on north end of Forestry Trunk Road.
- Barriers placed along creek bank for public safety in DeBolt.
- Forestry Trunk Road gravel program completed on north end.
- Culvert installations and ditching ongoing in Puskwaskau area and north of DeBolt.
- Ditch cleaning completed in right-of-way west of Gunby Ranch Golf Course.
- Line painting completed in area.
- Road re-gravelling program underway north of DeBolt.

Operations West

- Repaired Nose Creek Settlement road due to flood damage and soft spot.
- Patching potholes on Township Road 700, Bald Mountain Tower Road and Two Lakes Road.
- Line painting completed in area.
- Culvert installations on Range Road 83 south of Highway 666 and partial ditch clean. Will return when area dries more to complete ditch cleaning.
- Prep work at Range Road 64A north of Highway 666 for culvert replacement; waiting on utility locates to proceed.
- Dewater Rail Rock pit, begin stockpiling program from Rail Rock pit to Kilometre 70 on Forestry Trunk Road.
- Hauling winter sand from Adams Ranch pit to Grovedale yard.
- Began rescreening gravel at Westview pit. Percentage of reject material was too high (approximately 50%) and project was shut down.

Operations South

- Stockpile gravel in Operations yard for use around Grande Cache.
- Roadwork around municipal campground repairing potholes, spreading gravel in campsites.
- Assisted Environmental Services with digs in the Hamlet of Grande Cache and hauling cover material to landfill.
- Re-gravelled road to sewage treatment plant.
- Ditching and slide repair ongoing at Wanyandie East Road.
- Ditching at Kilometre 141 of Forestry Trunk Road.
- Road re-gravelling and dust control programs complete on south end of Forestry Trunk Road.
- Ditching at Kamisak development.

Manager, Planning & Development, Sally Rosson

- In accordance with provincial guidelines due to COVID 19, the Sturgeon Lake Area Structure (SLASP) Open House is being conducted by appointment only for the public to provide input into the draft plan. It is scheduled to be held on September 15, 2020, commencing at 7:00 p.m. at Sturgeon Heights Community Hall. Due to the small number of public responses for the open house attendance and to the online survey, Communications has been asked to provide additional news feed/twitter and radio advertising prior to the event.
- Preliminary work and research are taking place to compare with other municipalities before a draft Road Allowance policy is finalized.
- Reviewing the provisions of MGA legislation (s. 618) with planning staff to ensure that regulations are followed for oil and gas activities exemptions and to ensure necessary development permits are obtained for certain types of equipment such as: compressor installations.
- In Ward 2, an adjacent landowner complaint was received on possible feedlot operation and associated winter-feeding grounds and potential drainage issues. In follow-up, planning staff contacted NRCB (Morinville) office to determine there was no confined feeding operation (CFO) application. Winter feeding grounds and pasturing of cattle do not fall under the guidelines of a CFO operation. Staff discussed the current CFO requirements and provided this information to the concerned individual. The NRCB call centre number (1-866-383-6722) was also provided.
- Working on DeBolt senior housing plans with Grande Spirit Foundation and also awaiting referral comments from internal departments.
- Road Closure Bylaw 20-839 on SE-25-70-25-W5 (Sturgeon Heights Community Club) has been sent to Alberta Transportation (Grande Prairie) for consideration and ministerial approval.
- On September 8, 2020, staff commencement for two GIS technicians will be taking place.
- Alberta Transportation has prepared their initial review and determined locations for highway directional signage for the Grande Cache Cooperatives/Enterprise. Once we have the confirmation and necessary permitting, then destination signage will be ordered (white lettering with blue background). Signage installer will be Ledcor – Grande Cache.

The following information provides a breakdown of the new applications received in the various development categories:

| Monthly Summary of Activity in July and August 2020 | |
|---|------------------------|
| Type of Planning & Development Activity | Number of Applications |
| BUSINESS LICENSES: | 6 |
| DEVELOPMENT PERMIT APPLICATIONS: | 35 |
| LEASE REFERRALS: | 5 |
| LAND USE AMENDMENTS (RE-DESIGNATION): | 1 |
| SUBDIVISION APPLICATIONS: | 4 |
| APPROACH APPLICATIONS: | 9 Gravel/Asphalt |
| ROAD CLOSURE APPLICATIONS: | 1 |

Breakdown of the applications are outlined as follows:

Business Licenses: 6

B20-350 / NE-19-71-22-W5 / BJN MECHANICAL / WARD 5
 B20-357 / SW-27-69-22-W5, PLAN 1523531, BLOCK 1, LOT 2 / CK VETERINARY SERVICES / WARD 3
 B20-363 / NW-34-56-08-W6, PLAN 0425096, BLOCK 38, LOT 11 / ROCKY MTN ROASTERS NORTH / DIV 9
 B20-371 / NE-33-56-08-W6, PLAN 1620244, BLOCK 1, LOT 18 / VORTEX ENERGY SERVICES LTD. / DIV 9
 B20-374 / NE-33-56-08-W6, PLAN 5117RS, BLOCK 31, LOTS 14 & 15 / BHATT BROTHERS LTD. / DIV 9
 B20-375 / NW-08-71-22-W5 / 2012022 ALBERTA LTD. / WARD 5

Development Permits: 35

D20-318 / PLAN 0426473, BLOCK 34, LOT 15 / DECK - \$4000.00 / FINDLAY, ALVIN / DIV 9
 D20-337 / NW-32-70-19-W5 / DUGOUT; VARIANCE - \$1000.00 / HUGGARD-MCINNIS, DEVIN / WARD 4
 D20-338 / SE-08-65-04-W6 / BORROW PIT - \$50,000.00 / SEVEN GENERATIONS ENERGY / WARD 8
 D20-339 / NW-02-60-18-W5 / GRAVEL PIT - \$200,000.00 / RROX AGGREGATES LTD. / WARD 2
 D20-340 / PLAN 1523901, LOT 1 / DWELL. UNIT MODU. - \$500,000.00 / LIND, DARCY / WARD 4
 D20-344 / PLAN 9523315, LOT 4 / ACCESS. BLDG - \$3000.00 / LAGRECA, JOHNATHAN / WARD 8
 D20-345 / SW-06-70-06-W6 / ADDITION & GARAGE - \$100,000.00 / COURNEYEA, ANDREW / WARD 8
 D20-346 / NE-10-59-23-W5 / STOCKPILE & CONTR. YD - \$600,000.00 / NOVA GAS TRANS. / WARD 2
 D20-347 / PLAN 9421397, LOT C / SUPP. LIV. ACCOM. - \$600,000.00 / RV SENIORS ASSIST. SOC. / WARD 7
 D20-348 / NW-12-71-23-W5 / ACCESS. BLDG, QUONSET - \$6000.00 / MARCOTTE, KENNETH / WARD 5
 D20-349 / SW-17-70-21-W5 / DWELL. SNGL DET. & ATT. GRG - \$495,000.00 / EWASKI, DAMIEN / WARD 3
 D20-351 / SW-15-69-08-W6 / DWELL. UNIT MANUF. - \$60,000.00 / CRICHTON, HOLLY / WARD 8
 D20-352 / NE-29-66-22-W5 / DWELL. UNIT MANUF. 2ND RES. - \$70,000.00 / LEPAGE CORINE / WARD 2
 D20-353 / NW-06-70-06-W6 / SUITE DETACHED - \$200,000.00 / HEAD, MIKE & SHAUNA / WARD 8
 D20-354 / SW-17-70-22-W5 / SUITE DETACHED - \$140,000.00 / CLOUGH, DANIEL & VIVIANE / WARD 3
 D20-355 / SE-11-72-02-W6 / DWELL. UNIT SNGL DET. & GARAGE - \$600,000.00 / MOODY JIM / WARD 6
 D20-356 / NE-07-63-05-W6 / STORE. OUTDR - \$100,000.00 / ORLENS UPSTREAM CANADA / WARD 8
 D20-358 / PLAN 4355RS, BLOCK 24, LOT 11 / GARAGE – DETACHED - \$35,000.00 / DEZAN, ALLEN / DIV 9
 D20-359 / PLAN 8522102, LOT P7 / ACCESS. BLDG. ARPLNE HGR - \$48,000.00 / CLARKE, JUSTIN / WARD 3
 D20-360 / PLAN 0425096, BLOCK 38, LOT 11 / OFFICE - \$0.00 / FRIZZELL, DONNIE / DIV 9
 D20-361 / PLAN 9825735, BLOCK 2, LOT 9 / BASEMENT & ADDIT. - \$50,000.00 / LYPKIE, MISTY / WARD 8
 D20-362 / PLAN 9825700, LOT 1 / ADDIT - \$19,000.00 / REIMER, JOSPEH & WATERS, JENNIFER / WARD 7
 D20-364 / PLAN 8921873, LOT 3 / DWELL. MODU. GRG & DECK - \$328,000.00 / SCHECK, MATT / WARD 7
 D20-365 / NW-29-70-24-W5 / 30 PRSN WK CAMP - \$1,050,000.00 / SEVEN GENS ENERGY / WARD 8
 D20-366 / PLAN 0740598, LOT 18 / ACC. BLDG. POLE SHED - \$12,000.00 / 1352136 AB LTD. / WARD 7

D20-367 / PLAN 0740598, LOT 15 / ACC. BLDG. GARDEN SHED - \$5000.00 / KEDDIE, GLENN, WARD 7
 D20-368 / PLAN 0740598, LOT 16 / ACCESS. BLDG. SHOP - \$70,000.00 / KEDDIE, LLOYD / WARD 7
 D20-369 / PLAN 0740598, LOT 16 / ACCESS. BLDG. WOODSHED - \$4500.00 / KEDDIE, LLOYD / WARD 7
 D20-370 / SW-06-71-24-W5 / DUGOUT - \$2500.00 / SHAVER, COLIN / WARD 7
 D20-372 / SE-05-67-23-W5 / DWELL. MODU. DECK & SHOP - \$500,000.00 / LEWIS, SAM / WARD 2
 D20-373 / SE-17-59-19-W5 / SAND & GRVL EXTRACT. - \$100,000.00 / BRENDAL CONTR. LTD. / WARD 2
 D20-378 / PLAN 7722953, BLOCK 29, LOT 61 / GRG DBL DETACH. - \$45,000.00 / NIMMO, BRIAN / DIV 9
 D20-379 / 01-21-63-02-W6 / 2 X 203 HP COMPR. - \$1,600,000.00 / SEVEN GENS ENERGY / WARD 7
 D20-380 / PLAN 2769RS, BLOCK 19, LOT 26 / HOME OCC. MINOR - \$5000.00 / KUHNE, JODI LEE / DIV 9
 D20-381 / SE-17-69-06-W6 / SUITE DETACHED - \$50,000.00 / LEVESQUE, ELKA & MIGUEL / WARD 8

Lease Referrals: 5

L20-341 / NE-09-62-08-W6 / EVOLVE SURFACE STRATEGIES / ACCESS RD CLASS I / WARD 8
 L20-342 / SE-15-68-05-W6 / BRITT LAND SERVICES / FACILITY SITE & RAIL YRD TRANSP. FAC. / WARD 8
 L20-343 / SE-15-68-05-W6 / NAUTICOL ENERGY LTD. / ACCESS RAILWAY SPUR LINE / WARD 8
 L20-376 / NE-33-63-12-W6 / GRIZZLY RESOURCES LTD. / WORK CAMP INDUSTRIAL / WARD 8
 L20-377 / NE-33-63-12-W6 / GRIZZLY RESOURCES LTD. ACCESS RD CLASS II / WARD 8

Land Use Amendments: Total 1

A20-006 / SW-05-70-06-W6, PLAN 1024120, BLOCK 1, LOT 1 / A-2 TO M-1 / R.B. CURRY AUTO / WARD 8

Subdivisions: Total 4

S20-010 / SW-30-70-21-W5 / FIRST PARCEL OUT / WIRTH / WARD 3
 S20-011 / NW-17-66-21-W5 / FIRST PARCEL OUT / HALL / WARD 2
 S20-012 / SW-36-70-25-W5 / FIRST PARCEL OUT / MCARTHUR / WARD 7
 S20-013 / NW-31-72-26-W5, PLAN 1026175, BLOCK 1, LOT 1 / BARKS AND SNYDMILLER / WARD 6

Gravel Approaches: Total 9

20_022 G / NE-24-73-21-W5 / FARMLAND UPGRADE / ALLCO ENTERPRISES / WARD 5
 20_023 G / SW-05-72-21-W5 / FARMLAND UPGRADE / 759408 ALBERTA LTD. / WARD 5
 20_024 G / NE-01-73-21-W5 / FARMLAND UPGRADE / 759408 ALBERTA LTD. / WARD 5
 20_025 G / NE-12-72-22-W5 / FARMLAND UPGRADE / 762760 ALBERTA LTD. / WARD 5
 20_026 G / NE-12-73-21-W5 / FARMLAND UPGRADE / 762760 ALBERTA LTD. / WARD 5
 20_027 G / NW-23-72-22-W5 / FARMLAND UPGRADE / 762760 ALBERTA LTD. / WARD 5
 20_028 G REFUSED / NW-31-73-26-W5 / FARMLAND UPGRADE / DOYLE / WARD 6
 20_029 G / SW-18-74-26-W5 / FIRST APPROACH TO QUARTER / SCAMMELL / WARD 6
 20_030 G / NE-07-69-22-W5 / FARMLAND NEW / LONGMORE / WARD 3
 20_031 G / SE-17-71-26-W5 / FARMLAND NEW / RIEGER / WARD 7

Road Closures: Total 1

R20-002 / NE-24-72-21-W5 / POZNIAK / ROAD ALLOWANCE / WARD 5



MUNICIPAL DISTRICT OF GREENVIEW No. 16

Manager's Report

Department: Community Services

Submitted by: Dennis Mueller, General Manager Community Services

Date: 9/14/2020

Community Services, Community Grant Signage Contact Plan

Administration prepared a contact listing of the annual community grant recipients. The recipients will be contacted to schedule a meeting to review existing Greenview recognition signage or to plan a location for installing new signage. Administration set a target contact deadline of September 30th, 2020 for meeting with the list of community organizations.

While at the locations, administration plans to capture photos of the sites and with the organization's permission, post gallery photos and contact information for the public's accessibility on Greenview's website.

Philip J. Currie Dinosaur Museum

The Philip J. Currie Dinosaur Museum was sent their second (2nd) annual payment of the five (5) year annual grant funding commitment. The grant agreement in effect between Greenview and the Philip J. Currie Dinosaur Museum includes specifications that the Museum will assist Greenview with creating a "World Class" interpretive and interactive experience at the Grande Cache Tourism and Interpretive Centre. The project is well on its way and the Greenview Economic Development and Tourism department will be in contact with the Museum to communicate the expectations from the Museum for meeting the project objectives. The Communication department in conjunction with the Economic Development and Tourism department will be following up on the Greenview grant recognition component.

Scholarships

All scholarship applicants have been contacted to inform them of the status of their application. The successful recipients were notified that they are required to submit their tuition payment proof to confirm enrollment into the study specified in their scholarship application to permit the release of the grant funding.

Six (6) of the fifteen (15) awarded scholarship recipients selected have submitted the required documentation and have received their scholarship grant.

Agricultural Services Manager, Quentin Bochar

Administration

The Agriculture Service department created some interest with 10 beavers being turned in to-date for the Beaver Harvest Program.

Staff

Some of the seasonal staff have left for the season, we would like to thank the Vegetation Management Technicians and the Weed inspectors that have already left for their dedicated service.

Rental Program

The rental program volume has gone from consistently busy to moderately busy, as the summer season ends, and the fall season begins. Staff are working to keep the rental equipment clean, in good operable condition, and available for rental. To-date there have been 352.5 rental day equivalents, Administration will provide a detailed report on the individual rental equipment rentals at a later date.

Pest Control Program

To-date, there have been a total of 73 wolves turned in for the 2020 Wolf Harvest Incentive program with budget funding available for an additional 10 wolves.

Vegetation Management

The Roadside Spray program has accomplished spray completion of 92% of the area to be sprayed. Areas to be covered this year are Wards 1, 2, 6, and 7, as well as whatever was missed last year due to uncooperative weather.

Grande Cache Beautification

The Greenview Beautification team has received positive interactions from both residents and visitors, however, there have also been some complaints received in regard to the hanging flower baskets within the Hamlet. Administration has realized that Grande Cache provides some interesting growing challenges due to its higher elevation, prevalence of winds and the microclimate in the area is colder than at other locations. Administration will continue to look for best practice methods in providing quality products for the future.

Agricultural Service Board (ASB)

The next ASB meeting is scheduled for September 30th, 2020.

Economic Development Manager, Kevin Keller

Community Services Coordinator:

Administration has received correspondence from the Town of Fox Creek stating that they have decided to not move forward with the purchase of the Emergency Backup Generator for the Fox Creek Multiplex.

Administration is updating its community grant application forms which hopefully will be available on Greenview's website in early September.

Administration continues to work with the Grovedale Community Agricultural Society and with Greenview Senior Leadership for a potential daycare within Grovedale.

Collaborating with the Province of Alberta to facilitate a virtual grant-writing workshop for Greenview not-for-profit organizations in the fall of 2020.

Supported the Louis Delorme Memorial Committee with assistance to complete a grant application for the Government of Canada's Emergency Community Support Fund and Community Foundations of Canada for the Food for Elders Program project. The Committee's application was successful, and a \$5,000.00 grant was obtained.

Created an Agreement between Greenview and the Louis Delorme Memorial Committee for the temporary maintenance of the Grande Cache Cooperatives & Enterprises' cemeteries.

Met with the General Manager of Nitehawk Ski Hill to discuss the method in which Greenview can administratively support a funding opportunity for Nitehawk through the Community Foundations of Canada.

Economic Development Coordinator:

Greenview is a founding member of the Northwest Alberta Electric Vehicle Project Advisory Committee, other founding members include Town of Edson, City of Grande Prairie, Town of Whitecourt, Town of Drayton Valley, Town of Hinton and the Town of Rocky Mountain House. The project is being managed by Community Energy Association (CEA).

Attended the Northwest EV (Electric Vehicle) Charging infrastructure kickoff meeting. This gave Canada's Electric Highway (CEA) an opportunity to explain the project and for the advisory committee to chat about the Memorandum of Understanding (MOU). The CEA and the advisory committee worked together to change some of the wording and aspects of this project. CEA provided inputs from their prior two major projects: Accelerate Kootenays and Peaks to Prairies, with respect on methods for achieving successful grant applications.

Met with owners and Managers of Greenview Golf courses to capture photos for the Greenview Masters Golf Campaign. The campaign was conducted to encourage people to visit Greenview sites.

The Growing the North Committee has made a decision to host a virtual Growing the North Conference for February 2021. This conference will be conducted over three (3) half days. A combination of focused keynote speakers and optional breakout sessions will be planned. The topics will include focusing on the

future, leadership, and innovation/entrepreneurship. The cost for this event has not been determined at this time.

Met with Community Futures West Yellowhead in Grande Cache to discuss the topic of planning the Grande Cache Business Support Network. Administration is currently searching for appropriate speakers and creating advertisement posters. Community Futures would like Greenview's help with a Business Walk, an opportunity for Grande Cache Councillors, the Economic Development team and Community Futures to meet and build relationships with some of the businesses within Grande Cache. This project will be duplicated in each Ward.

Attended the Electric Vehicle Charging Infrastructure Advisory Committee meeting. At this time the committee has decided with a 20-25 community choice, for Greenview this looks great as potentially Greenview would have six different charging stations. It was determined that a letter from each Mayor/Reeve would be sent to their respective MLA's explaining the project and seeking their support would be required prior to sending letters to the responsible Ministers. Further, a letter will be developed to be signed by each of the Reeve/Mayors to be forwarded to the various Ministers affected by this project. Rocky Mountain House's MLA is the Minister of Environment, Greenview's MLA is the Minister of Finance and the City of Grande Prairie's is the Minister of Municipal Affairs.

Grande Cache Tourism & Interpretive Centre (TIC)

Facilities

Adams Creek and Moberly Lookouts were both broken into on Aug 7, 2020. Once the new exterior doors are on the TIC, the existing doors will replace the broken ones at the Lookouts. New exterior doors are scheduled for installation September 1, 2020. The TIC parking lot has had new lines painted. Total August Visitors (August 1-22): 2395 and YTD 2020 Visitors: 5649.

Councillor Winston Delorme has donated a beaded leather jacket to display at the TIC.

Programming

New postings highlighting scenic landmarks and Grande Cache information are included on the Grande Cache Tourism & Interpretive Centre Facebook page. So far, the posts are gaining momentum and reaching more individuals. The last post has reached 13,000 people and counting!

The Passport to the Peaks Program has been gaining popularity this year. The Facebook page for the program has doubled its membership in the last seven (7) weeks.

Don Vigue has donated a geological rock formation from a period dated back approximately 3 million years to the Tourism Information Centre.

The Virtual Reality (VR) project is well underway. The team is still working on the renditions of individual objects for the activities that the user will be able to complete. Dan Spinak, from the Royal Tyrell Museum is planning on going to the Dinosaur Track site in September. Administration will be in attendance for the visit, as data collection at the site will be utilized for the VR project.

Green View Family and Community Support Services (FCSS) Manager, Lisa Hannaford

Administration

The Green View FCSS department continues to serve the public and assist residents with various needs. The number of people accessing services averages approximately 125 inquires per week. Many people are accessing income support and the Canadian Emergency Response Benefit, as well as the job board and other employment services.

Currently the Grande Cache office location, housed in the Provincial Building, has restricted public access. The exterior doors of the building remained locked, with access provided when a client calls upon arrival at the building. There is no confirmed date from Alberta Infrastructure for walk-in access. Social media and signage on the exterior of the building have been utilized to inform ratepayers that the Grande Cache office location is open.

Earlier this year the Home Support program expanded service to residents within the Hamlet. Prior to the expansion, service provision was available only to residents of the Cooperatives or Enterprises. In-hamlet service provision has been welcomed by the community, clients have doubled, for a total of 25 current clients and 4 clients on a waiting list for service provision. Mindful of budget, we are in the recruitment process for additional Home Support Workers.

We continue to collaborate with agencies and organizations as we answer the needs of ratepayers. We have not seen a significant increase in needs because of the COVID-19 pandemic, however we anticipate this to change when Canadian Emergency Response Benefits end.

In the Valleyview office, front line staff have noticed a marked improvement of client centered customer focus and safety enhancements due to the change in office hours. While the public can access the Community Resource Center anytime from 8:00-12:00, the afternoons are by appointment only. Feedback from frontline staff has been very positive, and the ability to manage the public in times of Covid-19 has been greatly improved. There have been no complaints or concerns from residents regarding this modification.

Management has reached out to school principals to determine if youth programming will be an option this fall, thus far, no responses have been received. Teachers and principals may need more time to implement protocols and may be limiting visitors, so it is too early to comment on if Youth Coordinators will be facilitating youth programs in schools. Out of school options are being considered as social and emotional skill development will be required more than ever. Babysitting courses and Home Alone courses were completed in Valleyview, DeBolt and Grande Cache during July and August.

The 211 Provincial information system is now operational in Alberta. Any Albertan requiring social services information or resources can dial this number and talk to operators who can direct them to appropriate services in any area of the province. There is no charge to the municipalities for this provincial service, as it is early in inception and not all geographical areas have been entered into the database, however, the organization is working diligently with FCSS and other agencies throughout the province to ensure accurate information is available.

The Green View FCSS Board meeting is scheduled for September 16. During this meeting delegates from the new Family Resource Network Hub will provide an overview of service delivery in Valleyview and area.

Recreation Services Manager, Kevin Gramm

Grande Cache Recreation Services

Recreation Services in Grande Cache and area continues to move along at a steady pace of activity vs. maintenance. The recent nice weather brought out numerous recreation seekers not only in the Hamlet but on the Grande Cache / Victor Lake as well. For several days, the beach in Grande Cache was close to capacity, which resulted in staff conducting daily cleaning and maintenance tasks just to keep up with the cleanliness of the area. Nice weather increases the stress on staff to conduct sufficient maintenance at the sites to accommodate the higher frequencies of visits.

Internally, our Recreation Centre in Grande Cache continues to operate under the COVID guidelines as set out and developed by the Province. There is a significant amount of time spent trying to create operational procedures and guidelines as the Province, in most cases, only provides recommendations, not hard facts and data. Our Aquatics facility has not seen the return to normal use prior to the COVID closures, however, the data shows a progressive upward trend towards capacities previously established.

We are now moving towards finalizing our procedures for return to the use of the arenas. Final maintenance and preparation of the pads is underway, and we will begin a progressive cooling process to ensure we do not have any unexpected delays. We have met with all user groups and established that return to ice will not occur until October for the top three (3) user groups. We expect to have ice use commence October 5th, 2020. At this time, we have no plans to install curling ice until such time that the curling club determines when they want to start.

The Grande Cache Recreation Fitness Centre is complete. Equipment has been installed and the community has shown a strong interest in the gym. We were able to increase the capacity usage to 15 members at a time and continue to have time slots available for patrons to book. The new facility has been well received.

Currently we are preparing information for Council on the tender process wrap up for the Recreation Centre Changeroom Revitalization Project. A public opening of bids was conducted at 2:15PM Tuesday, September 1st, 2020. Potential next steps will be presented to Council for their review and consideration.

The Grande Cache Programs team has wrapped up an excellent summer with a very well-rounded approach, attendance has been near capacity and at capacity during every opportunity. Currently, planning the method for moving forward for the duration of the year.

Valleyview Recreation Services

The operation of Greenview outdoor recreation sites continues at regular capacity. Physical distancing guidelines are posted and mass gathering restrictions are in place for all sites.

Shuttler Flats Provincial Recreation Area (PRA) was the last site to be available to the public, as Administration did not allow bookings prior to the Province opening their group sites. The site is booked for the September long weekend and it is not anticipated to be busy for the remainder of the year. Administration did not establish a cleaning contract for the site this season, as operations were restricted throughout the majority of the camping season.

Moody's Crossing

Moody's Crossing re-opened to the public just prior to the August long weekend. As a whole, the park held up very well to the flooding with the bulk of cleanup being the removal of logs. Some sand is still on site (in berms) and will be removed once occupancy of the site naturally reduces moving into fall.

Johnson Park

The tree planting in Johnson Park went smoothly and the park has been operating normally since it was completed. The camping loop has been utilized steadily and has been very well received by the public.

Recreation Leases

The lease for Smoky Sunset Landing has been approved as of July. This lease will expire in 2024 and it is anticipated that an as-built survey will be required for renewal.

No feedback has been provided from the Province regarding the lease renewal applications for Fireman's Pit, Grande Cache Lake, the Grande Cache Golf Course, or Power Pond. Update requests have been sent but these are at a standstill at this time.

Greenview Regional Multiplex (GRM)

Greenview Regional Multiplex opened to the public on June 25th.

The staff returned to work on June 22nd. Completion of COVID training was required before the facility could safely open. With the size of the facility, it was necessary to implement several other measures for staff to follow in regard to sanitization.

Youth programming started July 6th. Programs have been offered for ages 5 -12 throughout the week. Day camps resumed in August. Some of the programs had good attendance, others struggled with uncertainty and concern. Our staff did a wonderful job with ensuring the protocols were followed, and procedures were met.

Fitness classes started on July 14th. Childmind is currently being offered during the fitness classes only, and utilizes a section of the field house to participate in. At this time, drop off childcare is still not being permitted by the Province. However, we do have permission to use the space in the childmind area for small groups, however, the climbing and activity area must remain closed.

GRM experienced significant staff loss when the call-backs were sent out. The hiring to fill these positions is still in progress. This has effected the ability to open longer hours or on the weekends, however, with the recent custodial service process we have had some freedom to return some staff back to their positions without pulling them to do COVID shifts as well. On August 12th, 2020, the Assistant Manager resigned from the Greenview Regional Multiplex, active recruiting is underway to fill the vacant position, with interviews planned to start soon.

All aquatic work was completed June 21st and the Aquatics Centre opened July 14th. At this time, the Province still restricts the use of steam rooms, hot tubs and saunas. Booking time slots in the aquatics facilities is still necessary to ensure capacity limits are maintained to be within the established controlled amount permitted.

All COVID procedures are in place to ensure staff and public safety. These procedures include reduced capacities in all areas. Measures are put into place to promote barriers between staff and patrons, directional signage, and enhanced airflow are included throughout the building.

The East Smoky Recreation Board had a supervised and controlled activity day in the pool for the kids youth program and an arrangement for entrance and an exit for the Gymnastics Club has been established.



MUNICIPAL DISTRICT OF GREENVIEW No. 16

Manager's Report

Function: CAO Services

Submitted by: Stacey Sevilla, Manager Communications & Marketing

Date: 8/27/2020

General Communications

The communications department continues to produce regular external communications for ratepayers, stakeholders and the general public. Throughout the month, digital communications efforts continue to be dominated by putting out timely and accurate information for ratepayers and stakeholders on the Greenview re-opening plans, road closures/updates, etc. The website renovation project process continues with layout approved. Site content is now being copied and recreated in the new website structure in preparation for proofing by Department Managers. In addition, the Mobile application is in its final stages of development and being bench-tested by Department Managers.

Communications continue to follow best practices for social media engagement, advertising design and website posting. Scheduling through social channels and website posting has continued at a slightly slower pace through July/Aug as seen in June, but we noted an average social post reach of 112,000 people. Please note that the slight increase in post reach statistics is due to two months of statistics. Positive effects are still being seen, and all audiences continue to benefit from receiving timely, regular, and accurate information from administration and Council. Regular posts are also in rotation to generate activity and visibility for various MD initiatives, including Agriculture Webinars, recreation announcements, upcoming Council meetings, cancellation announcements for events, and more.

The 2019 Greenview Annual Report has printed and received. Annual reports are currently available at all Public Service and Administration Buildings. The report will also be available via the corporate website as a downloadable PDF.

Projects completed or underway:

- TelemetryTV digital sign and screens software deployment with IT to the Valleyview Administration building, Tourist Information Centre Grande Cache, Grande Cache Recreation Centre, and the Greenview Regional Multiplex is still in progress
- Greenview 2020 ClayShoot Stakeholder Event planning and marketing underway
- Greenview Annual Photo Contest 2020 still in progress – print, web, social, and external website advertising campaign has been stepped up and will continue for the rest of August.
- Greenview Golf Master 2020 Campaign – branding, posters, and dedicated social campaign ongoing for summer

- Comms Mgr attending all ASB meetings
- Updated forms for multiple departments (ongoing)
- COVID-19 communications re-opening activity: notices, posters, signage, social and web graphics, copy, etc.
- SMB Apps Mobile App. final changes are being completed and bench-testing with administration underway.
- Regular review and proofing of Monthly Safety Bulletins and all documentation for Health and Safety (ongoing)
- Printed Greenview Catalog – to be finalized after Annual Report project has been sent to printers
- Regular updates to Grovedale electronic sign and VV administration building screens
- Greenview Stakeholder Clayshoot 2020 event planning and registrations are in process
- Grain Entrapment Rescue and Canadian Premiere screening of “Silo” event completed with great success (working on post-event media release with Fire-Rescue Services.)
- August Long Weekend – Signage, website, and social posts created for office closures, and hours running for Rec Centres
- September Long weekend and Back to School Radio PSAs booked, signage and social posts to be scheduled

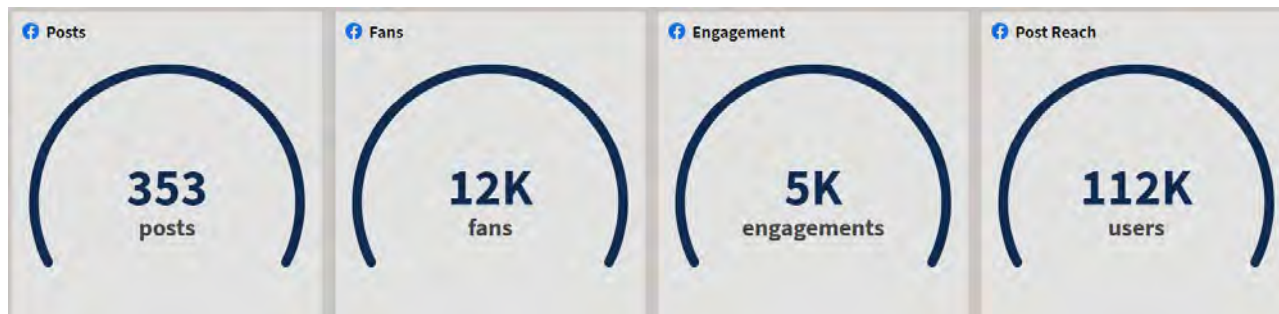
Digital presence statistics

Website (July 1-August 28)

Greenview’s website has seen 41,818 pageviews on the website for July and August to date. We estimate a slight decrease to be in correlation with the summer months when many families and individuals are trying to spend less screen time on devices. Despite this slight decrease, the Greenview website has gained 10,124 new website viewers. Website access from mobile devices remains at approximately 61% of users.



Facebook (July 1 – August 28) **Metric now combines all Greenview Facebook Pages communications has access to at time of report*



Work continues to build our Twitter and Instagram presence. Twitter followers as of August 28, 2020 = 1,770 staying the same. Instagram followers as of August 28, 2020 = 461 also staying the same.



MUNICIPAL DISTRICT OF GREENVIEW No. 16

COUNCIL MEMBERS BUSINESS REPORT

| Ward 4 Councillor Shawn Acton | | |
|-------------------------------|--|-------------------------------------|
| DATE | BOARD/COMMITTEE | RELEVANT INFORMATION |
| 08/24/2020 | Regular Council Meeting | |
| 09/08/2020 | Valleyview & District Recreation Board | |
| 09/09/2020 | Other | Council Road Tour – Valleyview Area |
| 09/10/2020 | Other | Clay Shoot |
| 09/11/2020 | South Peace Regional Archives | |



Employee # : _____
Department: Council

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| | Claimant | Date | Approved |
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shawn acton

Employee #:

ADDRESS:

Department: Council[illegible]

Claimant

Date _____

Approved

Date _____



MUNICIPAL DISTRICT OF GREENVIEW No. 16

COUNCIL MEMBERS BUSINESS REPORT

| Ward 6 Councillor Tom Burton | | |
|------------------------------|---|---|
| DATE | BOARD/COMMITTEE | RELEVANT INFORMATION |
| 8/24/2020 | Minister Travis Toews Outdoor Town Hall | Attended an event where Minister Toews provided updates from the Government of Alberta, then took questions. I provided concerns about the Assessment Model Review, which is being done by Municipal Affairs. I explained the impacts of the scenarios to the group and there were questions asked by the attendees. The people in attendance appreciated the update. |
| 9/2/2020 | Grande Yellowhead Public School Division "Kick-Off" Event | I attended an event, virtually and had dialogue with the Superintendent and School Board on what their approach will be for allowing the Grande Cache Library to re-open to the public, instead of curbside delivery. In addition, we talked about what is happening within the MD and on the provincial front. |
| 9/8/2020 | Community Planning Association of Alberta | We had a meeting to discuss the impacts of COVID-19 to CPAA and the way future presentations/conferences will happen. Also talked about the October 16, 2020 AGM, method of voting for directors, proposed bylaw changes. Renew the secretary's contract for another year. |
| 9/9/2020 | Valleyview Road Tour | Looked at projects either completed or proposed. |
| 9/12/2020 | MD of Greenview Library Board | Discussed the past months' operations of the Libraries, the Memorandum of Understanding with the Towns of Fox Creek, Valleyview and the City of Grande Prairie Libraries. |



Council

Date _____



Council

Date _____



Employee # : _____
Department: Council

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| Claimant | _____ | _____ | _____ |
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| Date | _____ | _____ | _____ |



MUNICIPAL DISTRICT OF GREENVIEW No. 16

COUNCIL MEMBERS BUSINESS REPORT

| Division 9 Councillor Duane Didow | | |
|-----------------------------------|-------------------------|---------------------------------|
| DATE | BOARD/COMMITTEE | RELEVANT INFORMATION |
| 8/24/2020 | Regular Council Meeting | Highlights on website |
| 9/10/2020 | FCSS | FCSSAA Executive Meeting - Zoom |
| 9/11/2020 | FCSS | FCSSAA Board meeting - Zoom |

Department: CouncilDate _____