



Engineering Ltd.

Project Update

MACKENZIE COUNTY

RURAL POTABLE WATER INFRASTRUCTURE

Date: January 29, 2016

Project: 5223-082

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The following information provides updates on the schedule and budget tracking for this project.

SCHEDULE

The schedule on the following page has been updated to account for work completed as of January 29, 2016. Important notes are as follows:

- ▶ The 30% design and the Pre-Design Report have been completed.
- ▶ A tender package for clearing and grubbing has been prepared.
- ▶ Meetings will be held with Alberta Environment and Public Lands and Alberta Transportation to ensure the approach to approval applications is acceptable.
- ▶ The 60% waterline design is approximately 25% complete and the truckfill design is approximately 15% complete.

Tasks for February 2106

- ◆ Meet with Alberta Transportation and Alberta Environment and Parks in February 2.
- ◆ Complete the TIA required for the Buffalo Head Prairie Truckfill.
- ◆ Submit information required by Alberta Environment.
- ◆ Undertake geotechnical investigation and survey.
- ◆ Continue with detail design.
- ◆ Up-date cost estimates for the project.

BUDGET

The budget has been updated to January 31, 2016, along with projections to the completion of design and tendering. The spreadsheet on Page 3 provides the budget information and note that:

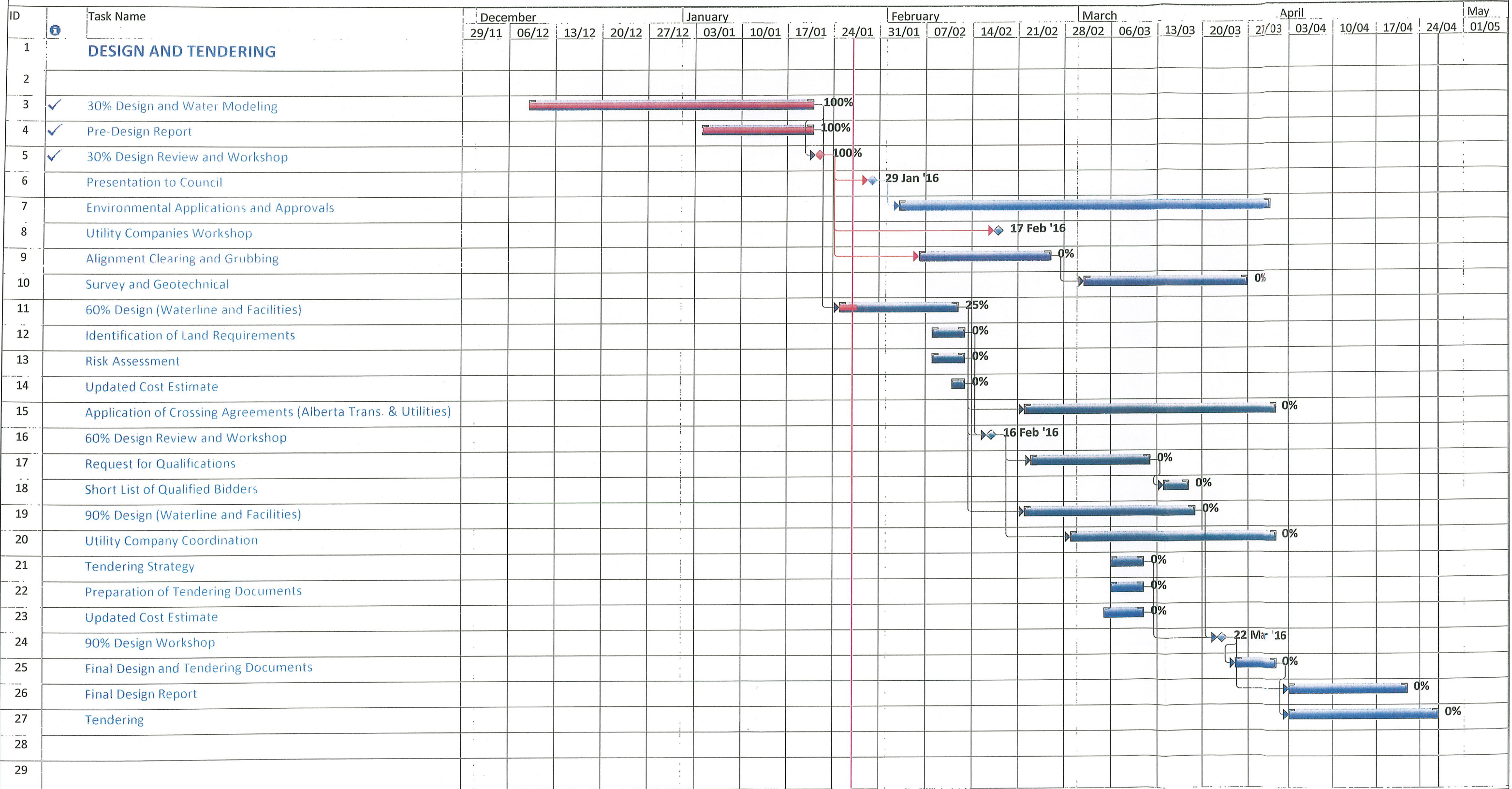
1. The engineering fees and disbursements are being projected to under budget.
2. The construction cost estimate is currently over budget and this will be re-assessed as the design proceed and cost saving strategies developed.

MINUTES OF MEETINGS

For ease of reference the minutes of meetings conducted in January 2016 are contained in Appendix A.

MAKENZIE COUNTY

WATERLINE - LA CRETE TO BUFFALO HEAD PRAIRIE - DESIGN AND TENDERING SCHEDULE - JANUARY 29, 2016



The next project update will be provided during the week of February 15, 2016.

If there are any questions or more information is required please feel free to contact the undersigned.

Thank you.



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APPENDIX A

Minutes of Meetings



Minutes of Meeting Project Update Meeting (Conference Call)

Client: Mackenzie County
Project: Rural Potable Water Infrastructure
Date: January 7, 2016
Time: 9:00 am

File: N:\5223\082\04

Attendance: Fred Wiebe Mackenzie County
Trent McLaughlin Mackenzie County
Brian Locher MPE Engineering

Location: Conference Call

Purpose: Meeting #4– Project Update

Distribution: Those Present
Joulia Whittleton Mackenzie County
Len Racher Mackenzie County
Byron Peters Mackenzie County
Alexandra Codispodi Mackenzie County
Mirek Grzeszczuk MPE Engineering
Ted Duffy MPE Engineering
Thomas Cowan MPE Engineering
Mike Andrews MPE Engineering
Ivan Kagoro MPE Engineering

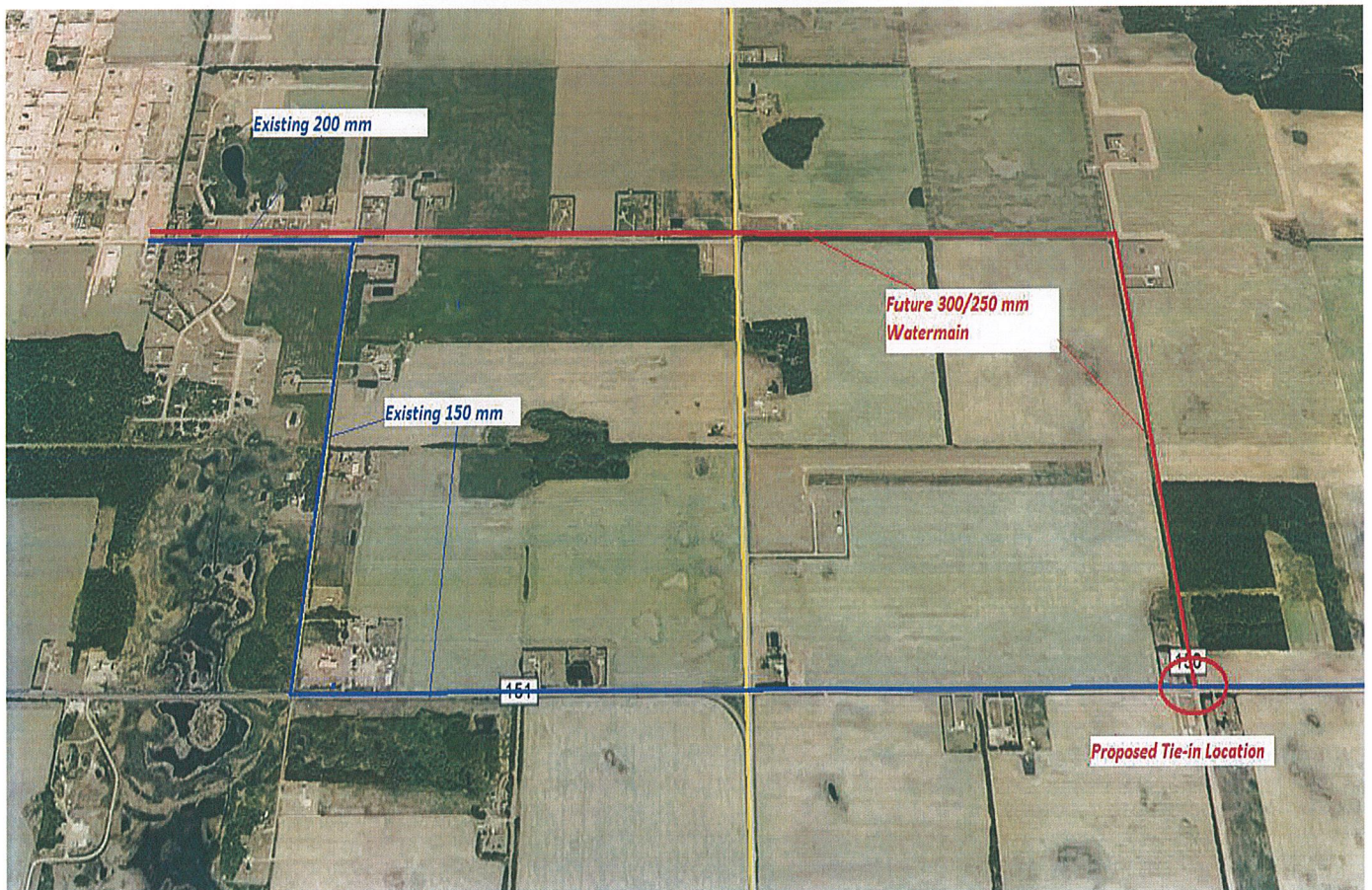
**Action
Req'd By:**

1.0 Project Update

- Currently working on the design of the waterline and it is now approximately 30% complete.
- A utilities search has been performed and companies have provided their information, with the exception of power pole locations and these will need to be identified during topographic survey.
- The gas co-op does have a high pressure gasline in close proximity to the proposed waterline (in the Buffalo Head Prairie area) and conflicts will need to be tracked during the design stage.
- Working on the preparation of a tender for clearing and grubbing so this may be issued after the presentation to Council, if they approve it.
- Water modeling has been performed again and will be run at different stages of the project.

2.0 Water Modeling

- Considered a critical element in the project, as it is necessary to perform this properly to ensure that the pipe sizing will satisfy future demands.
- A more detailed water modelling has been performed using the 30% design and more detailed current water consumption.
- It has been found that the existing 150 mm waterline will only have the capacity to satisfy the demands in the Buffalo Head Prairie and Blue Hill areas for approximately 10 years.
- After 10 years the existing waterlines from the La Crete Water Treatment Plant to the tie-in location for the Buffalo Head Prairie waterline will need to be upsized or additional waterlines installed.
- One option would be to install additional waterlines as shown in red below.



2.0 Water Modeling (cont'd)

- The installation of this line coincides with the industrial/commercial developments contained in the recent Area Structure Plans and could be largely paid for by developers or from offsite levies.
- In addition, the La Crete water treatment plant may require upgrading to service future development and the installation of these lines could be made part of that project.
- Future water modelling will consider the potential for laterals from the new waterline and a larger population increase.

3.0 Truckfills (Card Locks)

- The preliminary design for the truckfills has been started and will be included in the Pre-Design Report.
- The intent is to standardize the design of the truckfills and a meeting will be held with operations and maintenance personnel to discuss the selection of building type, equipment, SCADA, etc.
- The reservoir sizing has not been completed but will be finalized during the design process.

4.0 Other Items

- The legal locations of each of the two creek crossings is required. *[Has been supplied]*
- A notification will be provided to Alberta Environment and Parks with regard to the clearing and grubbing to determine if they have any restrictions.
- The schedule has been updated and a copy is attached.
- Clearing cannot be tendered until Council approves the alignment (after the January 29th meeting) but a package is being prepared for tendering.
- Depending upon construction method employed (open-cut or directional drilling) may need to consider the pile and burn method of disposal as opposed to mulching.
- Clearing should be able to be done in February and March.

County

The next conference call meeting will be held on January 14, 2016 at 9:00 a.m.

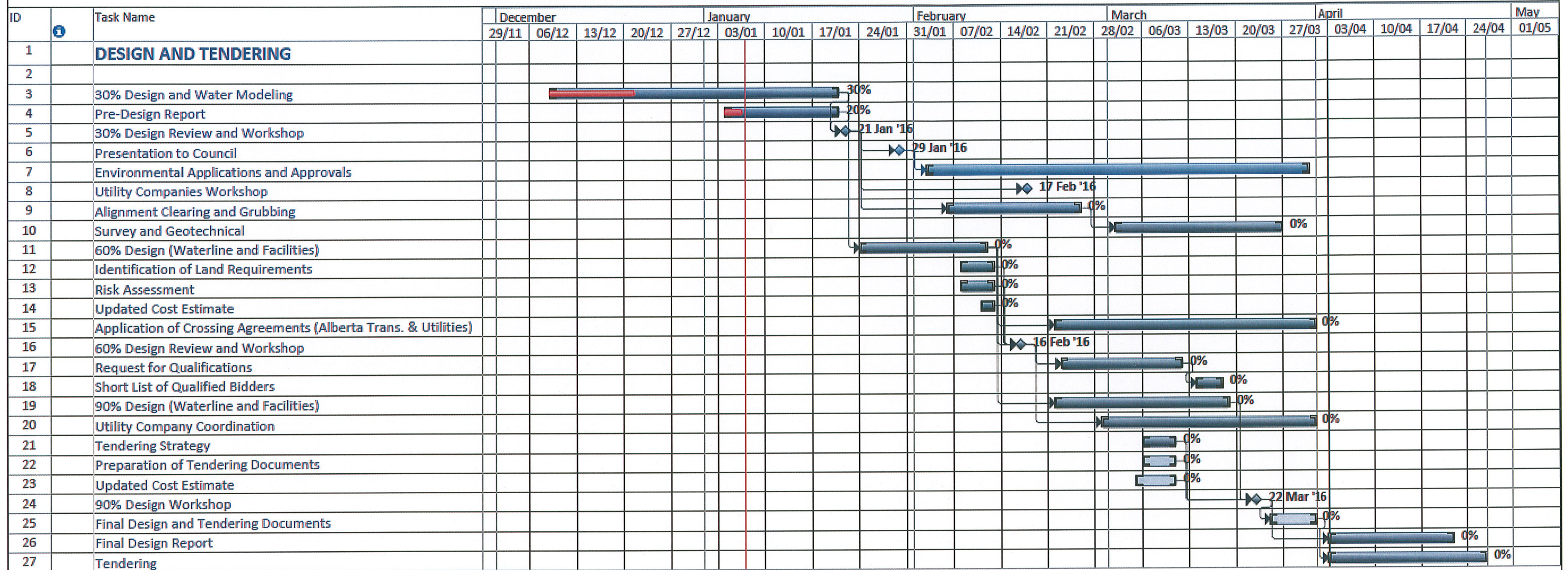
Meeting was adjourned at 9:30 a.m.

Recorded by: Brian Locher, P.Eng., LL.B.

If there are any errors, omissions or discrepancies, please contact the MPE office at 780-486-2000.

MAKCENZIE COUNTY

WATERLINE - LA CRETE TO BUFFALO HEAD PRAIRIE - DESIGN AND TENDERING SCHEDULE - JANUARY 7, 2016





Minutes of Meeting Project Update Meeting (Conference Call)

Client: Mackenzie County
Project: Rural Potable Water Infrastructure
Date: January 14, 2016
Time: 9:00 am

File: N:\5223\082\04

Attendance: Fred Wiebe Mackenzie County
Brian Locher MPE Engineering

Location: Conference Call

Purpose: Meeting #5-- Project Update

Distribution: Those Present

Joulia Whittleton	Mackenzie County
Len Racher	Mackenzie County
Byron Peters	Mackenzie County
Trent McLaughlin	Mackenzie County
Alexandra Codispodi	Mackenzie County
Mirek Grzeszczuk	MPE Engineering
Ted Duffy	MPE Engineering
Thomas Cowan	MPE Engineering
Mike Andrews	MPE Engineering
Ivan Kagoro	MPE Engineering

**Action
Req'd By:**

1.0 Project Update

- 30% design and the Pre-Design Report are approximately 90% complete and will be forwarded on January 18.
- The 'draft' version of the tender for clearing and grubbing has been completed and will be reviewed and forward to the County for review.
- Preparing the presentation to Council, which will be on January 29.
- Will keep moving forward with the design and applications to Alberta Environment and Alberta Transportation.

2.0 Water Modeling

- Water modeling has been performed again, with addition demand growth and it now shows that the existing 150 mm waterline will only have the capacity to supply the new waterline for between 5 and 10 years.
- To-date the water model has used a 200 mm waterline, which shows that the maximum water that could be delivered to the Buffalo Head Prairie would be approximately 1,750 cubic metres per day (the projected demand for 2090 is 1,250 cubic metres per day).
- The model will be run again using a 250 mm waterline to determine the maximum volume that could be delivered to Buffalo Head Prairie.
- The growth in water demand has been assumed to be 2% annually between 2016 and 2025 and 0.5% between 2026 and 2090.

3.0 Truckfills (Card Locks)

- The design for the truckfills is continuing.
- A meeting needs to be held with operations and maintenance personnel to discuss the standardization of the design pertaining to building type, equipment, SCADA, etc.
- The reservoir sizing has not been completed but will be finalized during the design process.

4.0 Other Items

- A notification will be provided to Alberta Environment and Parks with regard to the clearing and grubbing to determine if they have any restrictions.
- The schedule has been updated and a copy is attached.
- A meeting will be scheduled with both Alberta Environment and Alberta Transportation to discuss the project to ensure the application process can be expedited.

MPE

The next conference call meeting will be held on January 14, 2016 at 9:00 a.m.

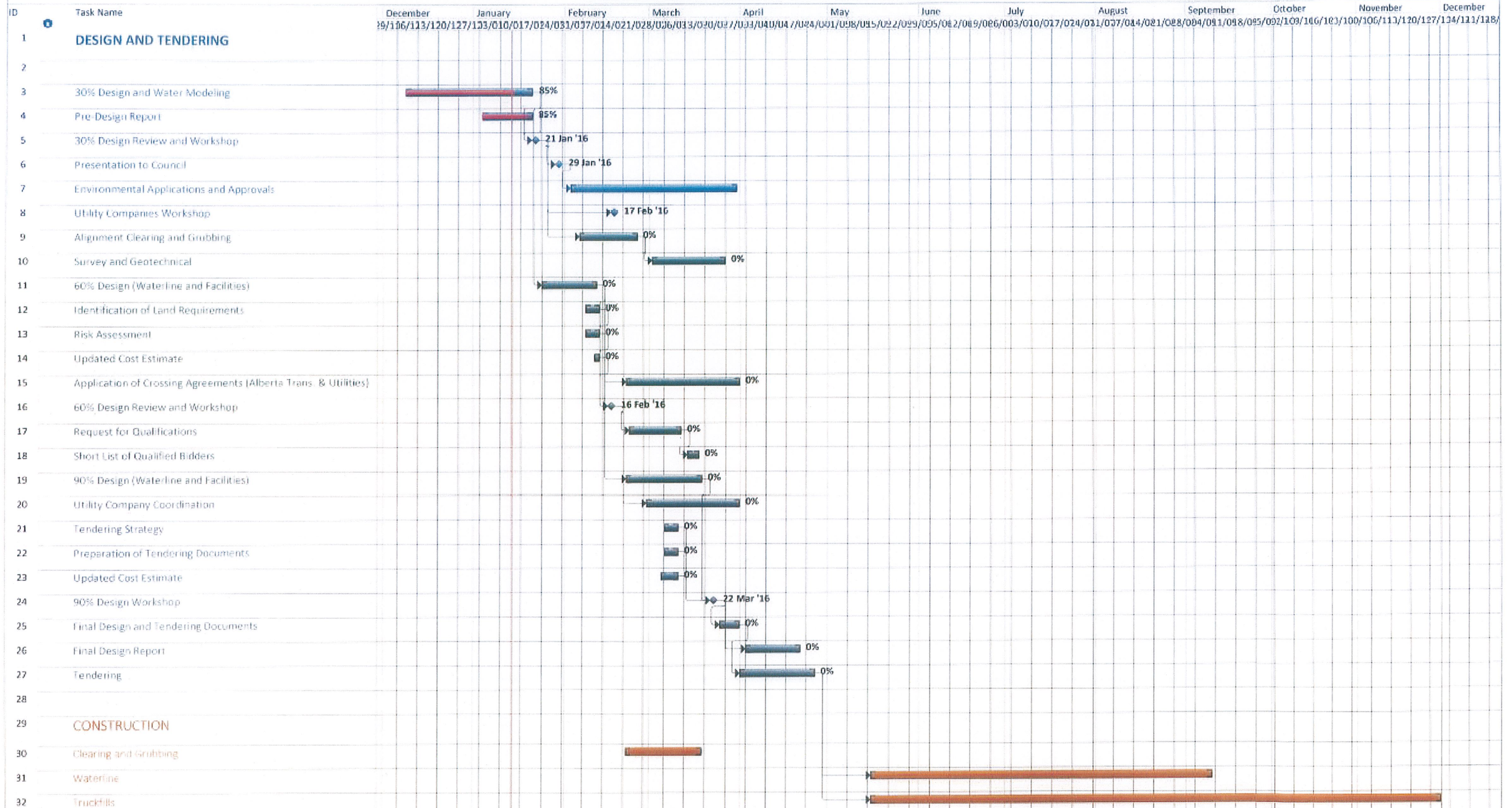
Meeting was adjourned at 9:30 a.m.

Recorded by: Brian Locher, P.Eng., LL.B.

If there are any errors, omissions or discrepancies, please contact the MPE office at 780-486-2000.

MAKENZIE COUNTY

PRELIMINARY PROJECT SCHEDULE - JANUARY 14, 2016





Minutes of Meeting Project Update Meeting

Client: Mackenzie County
Project: Rural Potable Water Infrastructure
Date: January 21, 2016
Time: 8:30 am

File: N:\5223\082\06

Attendance: Fred Wiebe Mackenzie County
Trent McLaughlin Mackenzie County (by telephone)
Brian Locher MPE Engineering

Location: Mackenzie County Fort Vermilion Office

Purpose: Meeting #6– Project Update

Distribution: Those Present
Joulia Whittleton Mackenzie County
Len Racher Mackenzie County
Byron Peters Mackenzie County
Alexandra Codispodi Mackenzie County
Mirek Grzeszczuk MPE Engineering
Ted Duffy MPE Engineering
Thomas Cowan MPE Engineering
Mike Andrews MPE Engineering
Ivan Kagoro MPE Engineering

**Action
Req'd By:**

1 Pre-Design

- .1 • The pre-design report, 30% design and the tendering documents for clearing/grubbing have been forwarded for review and comment.
- .2 • These documents are fairly lengthy, so it is requested that comments be provided by Wednesday, January 27 so the final version can be prepared and the presentation to Council finalized.
- .3 • The Executive Summary was reviewed and the following comments were discussed.

2 Funding Conditions

- .1 • The condition with the most potential impact to the County would be limitations placed upon the amounts of annual funding provided by the provincial and federal funding, which would require the County to “front-end” some costs.
- .2 • Some communities have received letters from the provincial government outlining changes to the annual funding levels and a check will be made to see if the County has received a letter. *[Letter received]*
- .3 • The signs required by the Funding Agreement have been made and will be installed prior to construction.

County

3 Alignment Selection

- .1 • The current design shows the waterline installed 3 metres east of the west right-of-way boundary of Range Road 150, with the exception of the east/west section at the south end of the project, from Range Road 150 to the proposed Buffalo Head Prairie truckfill.
- .2 • The east\west section may require relocation pending negotiations with land owners.

4 Environment

- .1 • The waterline will cross two creeks along the alignment which are rated as Class “C” by Alberta Environment, which require notification under the Code of Practice
- .2 • A meeting will be held with Alberta Environment in Peace River on January 26 to review the project and ensure all requirements are understood.

5 Water Modeling

- .1 • Water modeling has been performed several times with the latest versions using volumes (for the waterline and Buffalo Head Prairie truckfill) ranging from 960 cubic metres per day in 2016 to 1,530 cubic metres per day in 2090.
- .2 • The 200 mm waterline is capable of delivering approximately 1,750 cubic metres per day.
- .3 • The projected volumes appear to be large as other communities with regional waterlines and several truckfills report a maximum daily demand of 450 cubic metres.
- .4 • The 200 mm waterline will be sufficient for the 75-year design life.
- .5 • One booster station is required and its location is flexible pending negotiations on property acquisition (require between 0.25 and 0.50 acre).

Action
Req'd By:

6 Design Considerations

- .1 • Recommending the use of HDPE pipe, as the fused joints reduce the chance of leakage and this pipe is easier to install by directional drilling.
- .2 • Standardization of the truckfill is still a goal and the proposed floor plan and the Equipment Selection List was circulated.
- .3 • A meeting will be held with operation/maintenance personnel during the first week of February to discuss the design of the truckfills.
- .4 • Heated truckfill pads will be installed but the remainder of the access areas will be gravel surfaced.
- .5 • Land acquisition should be started sooner than later to ensure the design can be completed and the project can proceed.
- .6 • The main limitation of the operation of the waterline will be capacity of the 150 mm waterline being tied into at the north end of the project (will be able to supply water for 5 to 10 years depending upon demand growth).

7 Tendering Strategies

- .1 • Currently recommending that clearing and grubbing be tendered separately (advertised in local papers) to permit survey and geotechnical testing to be completed.
- .2 • The waterline and truckfills should be tendered separately due to the different nature of construction.
- .3 • These tenders can be public or be done through the Request for Qualification/Short List/Bidding process.
- .4 • The public tender process can result in the greatest competition but can result in non-local contractors submitting the lowest bid (could have no local knowledge or experience), which could result in difficulties on the project.
- .5 • The Request for Qualification/Short List/Bidding process can also generate significant competition and it allows the County the opportunity to rate the qualifications of the contractors bidding.
- .6 • Council will need to make a final decision on the type of tendering process.

**Action
Req'd By:**

8 Schedule

- .1 • The current schedule shows the tendering occurring in April 2016 and construction completed in November 2016.

9 Cost

- .1 • The current estimate exceeds the project budget and cost saving measures need to be explored.
.2 • The bid results for the waterline between La Crete and Fort Vermilion will be forwarded to be used for comparison purposes.

MPE

County

10 Other Items

- .1 • A meeting will be held with Alberta Transportation in Peace River on January 26 to discuss the requirements for the Traffic Impact Assessment for the Buffalo Head Prairie truckfill.
.2 • The County will forward the truckfill volumes from the La Crete truckfill (peak summer and winter volumes) to be used for estimating the traffic volumes at Buffalo Head Prairie.

The presentation to Council will be held on January 29, 2016.

Meeting was adjourned at 10:30 a.m.

Recorded by: Brian Locher, P.Eng., LL.B.

If there are any errors, omissions or discrepancies, please contact the MPE office at 780-486-2000