How should the CapX TO’s approach the response to the MISO Request For Proposal for the MH TSR Facility Study?

What is the process that should be used to conduct the Facility Study?

Are their other viable 500 kV Options?
# MH TSR Facility Study – Milestones & Schedule

<table>
<thead>
<tr>
<th>Year</th>
<th>Date</th>
<th>Event Description</th>
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</thead>
<tbody>
<tr>
<td>2008</td>
<td>Oct 6 -</td>
<td>MH Transmission Service Request (TSR) Study Kickoff</td>
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<td></td>
<td>July 8 -</td>
<td>MISO Completes MH TSR, Discusses Facility Study</td>
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<td>Sept 23 -</td>
<td>CapX Vision Team discusses MH TSR</td>
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<td></td>
<td>Oct 2 -</td>
<td>CapX/Xcel Meet with MISO, Propose new Option</td>
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<td></td>
<td>Oct 6 -</td>
<td>MISO Sends out Draft RFP</td>
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<td></td>
<td>Nov 2 -</td>
<td>MISO/CapX TO’s Meet with Customers (MH WPS MP GRE WPPI(WEC), NSP)</td>
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<td>Nov 13 -</td>
<td>TO’s to Respond with Facility Study Proposal</td>
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<td></td>
<td>Nov/Dec -</td>
<td>MISO issues Study Services Agreement and Purchase Order</td>
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<td><strong>2010</strong></td>
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<tr>
<td></td>
<td>Monthly -</td>
<td>Customer Update(s) and Meetings</td>
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<td></td>
<td>Apr/May -</td>
<td>Facility Study Complete (150 Day Timeline)</td>
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<td></td>
<td>Then -</td>
<td>Multi-Party Facility Construction Agreement (FCA)</td>
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</table>
MH TSR – 500 kV line Options

- 1100 MW Hydro Generation for export to US
- 1100 MW Generation for export to Manitoba

Two Options were selected out of an original six options

Option 1 (Central)  Option 3 (East)

- 1100 MW Hydro Generation for export to US
- 1100 MW Generation for export to Manitoba

Two Options were selected out of an original six options

Option 1 (Central)  Option 3 (East)
Considerations

Collectively, the Facility Study needs to identify a common 500 kV line design, as well as the 500 kV components, sizing & specifications (transformers, breakers, reactors, capacitors, line compensation) and placement locations.

The Facility Study must identify the transmission facilities and their associated costs with +/- 20%. From these costs and other criteria, the customer will make a decision on the selection of options.

The TO’s have the desire to publish a facility study report that is a culmination of practical, realistic and reliable analyses. This study report may eventually result in a Facility Construction Agreement and the TO’s need to ensure that the routes, designs and cost estimate are valid and applicable for actual permitting and construction.
CapX TO Approach

MH Transmission
MISO
Customers

CapX

Xcel
Subcontractors

Study Review
Collaboration
Monies

GRE
MP
OTP

Study Input
Facility Info
Routing Info
CapX TO Approach – (continued)

CapX will provide:
- Proposal Coordination
- Facilitate the Collaboration in this Group Effort
- Provide communications with ATC, MH Transmission, WAPA/IS, Others
- Facility Study Report Write-up

The TO’s will provide input for the subcontractor
- Substation Information & One-Lines
- Recommend Routes
- ROW Unit Cost Estimates
- Regulatory Process steps and timelines
- Study Review

Subcontractors will provide:
- Recommended Routes
- Overall Line Design
- Substation Facility/Equipment Requirements and Design
- Operability Requirements
- Rolled up Line, Substation & ROW Costs
CapX TO Approach – Separation of Roles

Xcel, GRE, MP & OTP parse out the line segments and substations for analysis and cost estimation. (MH will be responsible for all facilities north of border)

**TO Facility Responsibility**

**Option 1 - Central**
- Dorsey Substation – MH Transmission
- Dorsey-Canada/U.S. Border Line Segment – MH Transmission
- Canada/U.S. Border-Bison Line Segment – Xcel, OTP
- Bison Substation (Fargo) – Xcel, OTP
- Bison-Helena Line Segment - GRE
- Helena Substation – GRE
Separation of Roles - Continued

Option 3 - East
- Dorsey Substation – MH Transmission
- Dorsey-Canada/U.S. Border Line Segment – MH Transmission
- Canada/U.S. Border-Arrowhead Latitude Line Segment - MP
- Arrowhead Substation (option) – MP
- Arrowhead Latitude-King (or new east substation) Line Segment - MP
- A.S. King (or new east) Substation – Xcel
CapX TO Option

[Map showing the CapX TO Option path through Manitoba, North Dakota, Minnesota, South Dakota, and Iowa.]
CapX TO Option

- Coordinates with Recent “MN RES” Study
- Leverages CapX Group I Projects + Double Circuiting
- Also potentially uses Corridor Project
- Ties western endpoints together & Providing contingency backup
- Utilizes Existing ROWs

We propose that CapX TO Option be studied
Alternatives Paths - Study of TO Option

A
Facility Study for Option 1 & 3
AND
System Impact Study for TO Option

B
Facility Study for Option 1
AND
System Impact Study for TO Option

C
Hold off on Facility Study
AND
System Impact Study for TO Option

D
Facility Study for Option 1 & 3
AND
Ignore TO Option

Select Best 2 of 3 for Facility Study

Select Best 1 of 2 remaining for Facility Study

Select Best 2 of 3 for Facility Study
CapX TO Option - Separation of Roles

CapX TO Option - West
- Dorsey Substation – MH Transmission
- Dorsey-Canada/U.S. Border Line Segment – MH Trans
- Canada/U.S. Border-Bison Line Segment – Xcel, OTP
- Bison Substation (Fargo) – Xcel, OTP
- Bison-Brookings Line Segment – Xcel
- Brookings Substation – Xcel
On-going Efforts

1. Need for Mid-point connection (Forbes, Arrowhead?) in Option 3
2. Effects of SPS – MISO to finish the study
3. Treatment of CapX TO option