Lake Marion to Hampton Advisory Task Force

Third Meeting – Wednesday, April 29, 2009

DRAFT MEETING NOTES

Welcome and Introductions

The facilitator for the task force, Charlie Petersen, State of Minnesota, Management Analysis & Development, welcomed task force members and all present. Task force members were asked to introduce themselves and share their designation (representing a particular constituency or serving as an individual citizen member of the advisory task force). Task force members signed an attendance sheet to indicate their attendance. Observers were reminded that time was set aside, at the end of the meeting, for them to speak to task force members and asked to "sign in" if they intended to speak.

Agenda Review

Charlie reviewed the task force charge and emphasized that the work of this day, the third meeting, was to discuss in greater detail the alternative routes proposed at the second meeting, add any additional routes or route segments, and discuss the process for developing the report of the task force. Charlie reviewed the meeting's ground rules. Mr. Kaufenberg expressed interest in adding a discussion of mitigation strategies for route alternatives to the agenda. After some discussion, this topic was not added to the agenda, but was addressed by Mr. Kaufenberg in the public comment period.

Review and Approval of Meeting Notes

Task force members were asked if there were revisions or additions to the notes from the second task force meeting. Mr. Kaufenberg asked that the citizen from the second meeting who submitted a written comment be identified on the map, i.e., so we know where her health issues are located. Mr. Kaufenberg noted that he believed the citizen lived in Eureka Estates (Eureka Township). Charlie said he would follow-up with the citizen to ensure she agreed to this information being added.

Update on Certificate of Need for the Project

Scott Ek, Office of Energy Security, said that the Public Utilities Commission, on April 16, 2009, approved a certificate of need for the CapX 2020 projects, including the proposed Brookings County – Hampton transmission line. Additionally, approval for the Brookings line is contingent on the line carrying a certain percentage of renewable energy. The Commission has not yet issued its formal order for the Certificate of Need, thus detail about the approved need and its components are not yet available.

Review of Alternatives

Maps (slightly revised to correct errors in the mailed versions) and impact tables were distributed to task force members and reviewed (Appendix A). Dan Schmidt of HDR Consulting was introduced. He is assisting the Office of Energy Security with mapping capabilities for the task force's work. Questions about the maps and impacts were discussed. Several task force members expressed the difficulty of discussing alternatives with incomplete information. A projector was used to project maps and data layers on a white board.

The task force discussed and identified pros and cons for each of the alternatives as follows:

NE Alternative 2 (NE_Alt 2, dark green)

Pros

- Avoids the City of Lonsdale
- Impacts less households

Cons

- Does not use existing right-of-way
- Route likely still impacts Lonsdale planning; it need to connect to the applicant's alternate route further east.
- Line crosses two gas line venting stations
- Because of topography, line would be at eye level for a number of homes in Lonsdale area.

The task force discussed options to improve the route. Suggestions included:

- Explore using existing 69kV line north of NE_Alt2 route
- If following the 69kV line, it could tie into the existing substation and drop south to catch the applicant's alternate route.
- Another option, follow 69kV line and go further east of substation and then connect with applicant's alternate route
- With these options – approximately 20 homes would be impacted in the Lonsdale area.

The task forced discussed whether it would be appropriate, after discussing pros and cons, to vote on whether an alternative route was "in" or 'out" of further consideration. The task force voted on this alternative (NE_Alt2) and the results were split (10-6) – a majority wanted to remove the alternative, but there was not a consensus. The task force ultimately decided to keep all alternatives on the table, and to neither recommend nor remove alternatives (see "Identification of Preferred Alternatives" below).

NE Alternative 3 (NE_Alt 3, gold) and NW Alternative 1C (NW_Alt 1C, purple dashed)

Two groups suggested a similar route. Task force members corrected the map to note that there are two variations within the route: (1) the "right angle shaped" route shown on the map, and (2)

a “diagonal route” which would follow County Rd. 47 and Lewiston Blvd. to the Hampton substation area (moving to Emery Ave. at 240th St.).

Pros

- Protects commercial land in the City of Hampton
- Avoids homes in the City of Hampton
- Fewer homes in general impacted

Cons

- Goes through a new area and townships that are not involved in this task force. It could impact homeowners and land owners who are not here.
- Karst topography in this area.

The task force discussed why the applicant’s alternate route didn’t stay on County Rd. 86 the whole way east of I-35. Could this be an option? Task force members suggested that there are homes and center pivot irrigation systems in this area.

NW Alternative 1A (NW_Alt 1A, red)

Pros

- Impacts fewer homes
- Impacts fewer prime farmland acres
- Moves the line further south and closer to favorable wind generation sites (see Appendix B)

Cons

- Does not connect with Lake Marion substation
- Goes three miles out of right-of-way
- Crosses swamp area – Dutch Marsh
- Crosses farms and natural areas in Dakota County with conservation easements

The task force discussed options to improve the alternative. One option could be to run along the rail line prior to where the route currently turns north and follow that line up to the applicant’s alternate route. Another option would be to drop the Lake Marion substation south such that it connects with this alternative.

NW Alternative 1B (NW_Alt 1B, light green; also known as “Modified South Route”)

This alternative moves the Lake Marion substation south, i.e., instead of expanding the existing Lake Marion station, building a new station further south. This new substation and the Lake Marion substation would be connected by a transmission line of appropriate voltage. The new substation would be approached from the west by the applicant’s alternate route or some task force alternative/variation. The new substation would connect to the Hampton substation by any of several task force alternatives/variations, including portions of the applicant’s alternate route.

Pros

- Uses existing right-of-way with no removal of trees
- Impacts less homes than applicant's alternate route
- Follows I-35 noise corridor
- Provides redundancy
- Utilizes a substation plan that was identified as an option in an early draft of the applicant's proposal
- Reduces the impact of the applicant's alternate route at the intersection of County Road 2 and I-35.

Cons

- Likely does not meet the need of connecting to the Lake Marion substation unless an alternate substation is built south of Hwy 86 (57th St. and I-35 area)
- Impacts / limits future development of 57th St and I-35 interchange
- Conflicts with development on I-35

NW Alternative 2 (NW_Alt 2, purple)

Pros

- Uses a corridor in an area zoned industrial and commercial
- Favored by Eureka Township
- Follows a principal arterial that has an existing line along it
- Impacts less farmland
- Goes through more metropolitan area where electrical energy will be used

Cons

- Close to Airlake airport
- Crosses Vermillion River (all routes will cross the Vermillion River somewhere?)
- Impacts commercial area and additional homes
- Crosses school area – Lakeville School and the surrounding ball fields
- Adds additional miles to the route

NW Alternative 3 (NW_Alt 3, maroon)

It was noted by a task force member that the route follows more of 245th St. than is identified on the map.

Pros

- Avoids impacts on land owned by a widow. The applicant's preferred route jogs north along Highway 9; this jog impacts much of this person's land
- Avoids farmland that is farmed using GPS systems.
- Avoids a metal fabrication business
- House at 245th St and Dodd does not have to be relocated
- Is a shorter route and uses existing right-of-way
- Eliminates impact on nine people

Cons

- None identified

SW Alternative 2 (SW_Alt 2, salmon)

Pros

- Shares right-of-way with Highway 13 and County Road 8

Cons

- Impacts a number of homes; homes not identified on the map
- Additional miles to the route
- Impacts on property values
- Crosses 13 public waters

SE Alternative 2 (SE_Alt2, yellow) and SE Alternative 3 (SE_Alt 3, green dashed)

These alternatives assume that the Hampton substation is moved south of the location proposed by applicant. Additionally, they assume that the eastern terminus (I-35) is reached by the I-90 to I-35 alternative.

Pros

- Avoids Randolph using an area currently zoned commercial
- Uses an area zoned commercial and recently annexed by Northfield
- Impacts less cropland, less wetlands, and crosses fewer public waters.
- Follows existing rail corridor

Cons

- Alternative does not connect to a substation in Lake Marion area
- May not meet the need identified for the transmission line
- Impacts Cannon River viewshed
- Comes close to Stanton Airfield where there are a number of gliders
- Lot of cross country; does not follow an existing right-of-way
- Follows a state trail (Milltown Trail)
- Goes through an area with a number of center pivot irrigation systems (comment was made by task force member that the line was drawn to go around these system)

I-90 to I-35 Alternative

Pros

- Little impact on homes
- Uses existing right-of-way
- Easy to build poles
- Less noise impact
- Space to add more lines
- Goes through area with high wind generation potential
- Can easily head to LaCrosse

Cons

- Doesn't connect to any of the identified substations and therefore may not meet the identified need.
- May not provide the electrical performance identified in the need
- Longer line (adds about 56 miles)
- Because of extra length, the line would likely cost more

Buddhist Temple Alternative

Ms. Johnson suggested an alternative in the Hampton substation area that would lessen impacts to the Cambodian Buddhist Temple near Hampton. She briefly described the alternative to the group and provided the alternative and a map directly to Scott Ek.

Pros

- Reduces the number of homes impacted
- Further from the City of Hampton
- Route goes around Buddhist Temple, approximately 1000 feet behind temple
- Route is also moved away from photo business, daycare, and a horse stud farm
- Less impacts to Hampton Woods nature area.

Cons

- Goes cross country
- Impacts on farm

Applicant's Preferred Route

Pros

- Doesn't go through City of Hampton
- Least number of miles of all the routes
- Crosses least prime farm land

Cons

- Impacts more homes that other routes (task force member had questions about home counts along the applicant's proposed routes)
- Impacts / reduces property values in the area
- Route goes cross-country through New Market township
- Utilizes only 60% right-of-way
- Impacts or crosses 40% farm land, approximately 77 acres
- Passes through Eureka Township; inconsistent with preservation plans and township values
- Impacts along 220th St.
- Can develop a better alternative that impacts less homes, cropland, wetlands, public waters, etc.
- Forces the impact of expanding energy use on the area; rationalizes substation expansion

Applicant's Alternative Route

Pros

- Can use shoulders on roadways for construction of power line poles
- 91% of existing right-of-way is followed from Hampton to Lake Marion
- Goes through less congested land
- Impacts fewer homes
- Highway 86 is a future arterial roadway and is a pretty straight shot from west to east
- Closer to wind generation areas
- Goes south of Eureka Township

Cons

- Impacts/goes through City of Hampton commercial area
- Comes into City of Lonsdale city limits
- Crosses natural areas and conservation easements
- Crosses more farmland and wetlands
- Crosses an area of geological concern in Castle Rock area, sandstone issue
- Improvements of intersections for I-35 and major arterials would be impacted by double tracking of line; double tracking is ugly.
- Sky Harbor air park and crop dusting businesses that uses the airport will be impacted
- Impacts a historical route – County Road 47
- Some of the roadway right-of-way used by the route does not have a shoulder
- Concerns that home counts along the route are not correct

Identification of Preferred Alternative(s)

To get a sense of the task force's preferences with respect to the alternatives, Charlie asked each task force member to identify three routes as their top priority and three routes as their second priority. Task force members discussed the value in such a process and noted that it was difficult to make such choices because a number of the alternatives proposed by the task force were segments to a route and/or were attempts to make a problematic route better – they may support the segment but do not support the overall route.

An attempt was made by some members of the task force to have the members vote on three routes: the applicant's preferred route, the applicant's alternative route, and the "modified south route" (NW_Alt1B or "Joel's Route"). The task force could not agree on such a vote. Several members noted that all of the alternatives were better than what the applicant proposed. Ultimately the task force decided to express no preferences with respect to the alternatives and to carry all alternatives forward with the pros and cons identified by the task force.

Report Discussion

Charlie discussed logistics for finalizing meeting notes and the advisory task force's report. Meeting notes for this meeting will be sent out for review. A draft final report, for task force review and comment, is scheduled to be sent out the week of May 11. The draft will include information on the review period (about one week) and where to send comments.

Public Comments to Advisory Task Force

A period was set aside at the end of the meeting for public comment. Key points of citizens who addressed the task force are listed below:

Speaker 1

- Thank you to the Task Force for their work
- Supports the I-29 to I-90 route
- Ask which way the power goes - to Nebraska?

Speaker 2

- The task force identified issue and fairness was key and the negotiations under easements needs to be a fair process
- These easement need to be in simple language and easy to understand
- If the power line is abandoned, the land should revert back to landowner
- Prompt payment language should be in the easements
- For aesthetics, recommends the blue poles or galvanized poles rather than the darker rust poles
- Those that have land across from transmission line, there land is impacted but not compensated
- The focus should be on conservation of power and provide incentives to conserve energy – ten step program outlined to get a 10% reduction in energy
- Speaker provided written comments (Appendix C)

Speaker 3

- Scott County four-lane highway and transmission line are close to home
- Concern about cost to build line and cost to landowners

Speaker 4

- Lives on applicant's preferred route and likes southern route better

Speaker 5

- Suggests a larger space to hold these meeting so the public can hear what is going on
- Realizes the increase in future need of energy but would prefer line be outside of 2030 plans
- Supports modified south route

Speaker 6

- Supports modified south route
- Moved to current home to be away from issues like transmission lines

Speaker 7

- Lives in Castle Rock Township
- One homestead, long time resident
- Transmission line impacts/destroys wetlands
- CapX 2020 comes from growth of wind generation in Dakota
- Townships in area are viewed as places for cities like Farmington to grow or gain land
- Long-term effect on wetlands

Speaker 8

- The transmission line would be a one million dollar benefit for Farmington
- Supports modified south route
- Need wise planning to address issues

Speaker 9

- Support moving transmission to I-90 route
- It will have a real economic impact – it may be a longer route but in the end less expensive
- Prefers modified south route if it needs to go through area

Speaker 10

- An option would be to bury the line as a form of mitigation
- Lives 304 ft. from center of Dodd Ave. – already has easements for pipeline and phone line
- Transmission line is ninety feet from home
- It would destroy property
- Knows the community and surrounding area and data used by applicant is not good data – false data.
- Speaker provided written comments (Appendix D)

Speak 11

- Massage therapy business under line and this would be ruined if line went through
- Property values would be lowered
- Impacts a hobby farm
- Not right to put the transmission line through and create these issues

Speaker 12

- What is the impact of transmission line on overall environment? On humans, on livestock
- Studies show transmission lines are linked to autism in children

Speaker 13

- Prefers modified south route
- Impacts fewer homes

Speaker 14

- Transmission line borders property
- In past with eminent domain, neighbors were not properly compensated
- Transmission line would bring property values down
- Easy way out would be to give it to our neighbors but that is not right
- Supports the modified south route

Speaker 15

- Transmission line goes over house and will take it out
- Tough to get a mortgage; FHA/HUD – will not allow a loan if a power line is too close
- Appraiser noted that with line in area there are problems in getting mortgage
- Health issues

Speaker 16

- Beekeeper business and power line impacts bees
- Houses on the maps are not properly marked
- Route identified on 60th Street is on top of house and has two sons close in area, will go through farm and woods, impacts garden
- Impact on grandchildren
- Prefers no route at all

Speaker 17

- Owns woods that section line goes through; would destroy woods with old growth trees
- Impacts smaller plants in woods
- Enjoys exploring woods and making art from items in woods

Speaker 18

- Opposition to southern route
- Built house for keeps
- Questions in data quality, not right, not complete
- Wants hybrid solution that avoids Lonsdale, Veseli, and Webster

Speaker 19

- Modified south route is not perfect
- Uses GPS systems for farm and the line would impact these systems
- A lake in proximity to route
- Dairy farms would be impacted
- Snowmobile trail impacted
- Homes not identified on preferred route; data concerns
- Wildlife damage if alternate route is used
- Routes impact valued lives, health, lifestyle, and land
- Resents effort to send line south

Speaker 20

- Does not want line on 160th Street
- Should go on interstate
- Impacts children's health and should not be crossing a yard where there are children
- Chose acreage on which to live and did not expect power line
- Power company should take the hit

Speaker 21

- Use interstate route
- Select a route that avoids pipeline
- 60th Street is gravel road and has gas valve on it, could be a serious issue if transmission line would cross
- Interstate route is worth a look

Speaker 22

- Supports modified south route – otherwise applicant's route will go through neighbor's yard, dense housing
- Reduced property values because of line
- Modified south route, less populated
- Line is a danger in being close to homes – number of houses impacted and closeness of line is a major issue

Speaker 23

- Supports modified south route because of less impact on people and valuation
- Consider options to bury line rather than aerial

Speaker 23

- Applicant's preferred route goes through back yard at 240th St. North
- Speaker has handicapped child who is impacted by noise; moved to area for quiet; transmission line would be very disruptive to child
- Decreases property values
- Doesn't want to move home; it is convenient for son and cost of moving
- Would not have moved here if knew about line
- Creates hardship and lessens dignity

Speaker 24

- On preferred route and has residential home impact
- Lost protection under eminent domain
- Line is used for dirty energy; line should be routed to minimize human impact
- Alternate routes have been made and ignored
- Modified south/County Road 70 has least impact on people

Speaker 25

- Opposes applicant's alternate route
- The room is too small for this meeting
- Not thinking of dairy/farmland when placing line
- Using up farmland for other things than farming
- Impact to animals – studies/U.K. and Wisconsin
- Process not done right

Speaker 26

- Grew up near Hutchinson
- Headaches when doing wash and hanging clothes on line under transmission line
- Prefers I-90/35 route

Speaker 27

- 345 kV line should go rural, in fields
- Decreases property values in Rice County
- Transmission line impacts ball field at Cedar Lake
- Person killed under transmission line because of arcing (Monticello)

Speaker 28

- Problems or decreases in property values
- Should not have to spend tax dollars for transmission line
- Impact of power lines is ugly and creates health issues
- Impacts wetlands and bald eagles in the area

Speaker 29

- Lives on applicant's alternate route
- Three greenhouses that would be impacted
- There is no access to area for miles; no ROW; peat ground

Speaker 30

- Evaluate the cost of new route south of Lake Marion
- Route is not linear; weaves between communities and all the jogs create additional cost
- The applicants did not choose best route(s)
- Appendix K in route permit application did not include all the comments; 393 comments is not a wide range of comments

Speaker 31

- Preferred route goes over barn
- Backs modified southern route – 70 fewer homes impacted

Speaker 32

- Lives on preferred route and impacts seven children under age of 10
- Decreases the value of home
- Area would be a ghost town and there would be no more growth

Speaker 33

- Would be financially ruined by line

Speaker 34

- No agreement on placement of lines
- What happens with data when there is no agreement?
- Legislation on eminent domain, need to pay attention to what is happening with legislation
- Route should be along I-90 if move substation further south

Speaker 35

- Supports modified southern route
- Impact on horses; health issues
- Impacts school in New Market

Speaker 36

- Supports modified southern route
- This process is insane; line should follow interstate
- Possible cost saved by going I-90

Evaluation

Charlie asked task force members to please complete evaluation forms for the task force process. He thanked the task force for their efforts, understanding this was a very difficult issue to undertake.

office of energy security
Minnesota Department of Commerce

STATE OF MINNESOTA
Energy Facility Permitting

Attendance Sheet
Proposed Brookings County - Hampton 345 kV Transmission Project
Lake Marion to Hampton Advisory Task Force
April 29, 2009

PLEASE FILL IN ANY BLANKS, MAKE SURE INFORMATION IS CORRECT, AND CHECK BOX TO INDICATE ATTENDANCE

Last	First	Title	Local Government Unit	Address 1	Address 2	City	State	Zip	Phone	Email		
Bray	Bill	Water Superintendent	City of Hampton	PO Box 128		Hampton	MN	55031	651-437-8846	cityofhampton@bevcomm.net	☒	In Attendance
Chlan	Ken M.	Township Supervisor	New Market Township	27656 Texas Ave.		Webster	MN	55088	952-652-2603	kcb485@integra.net	☒	In Attendance
Docken	Jeff	County Commissioner	Rice County	6320 Chester Ave.		Northfield	MN	55057	952-652-2876	jdocken@co.rice.mn.us	☒	In Attendance
Dubbels	Merlin	represent →	Sciota Township	609 Gill Lane		Northfield	MN	55057	507-645-5926		☒	In Attendance
Erickson	Joel	City Administrator	City of Lonsdale	415 Central St. W	PO Box 357	Lonsdale	MN	55046	507-744-2327	jerickson@means.net	☒	In Attendance
Helmberger	Joel			24311 Dakota Ave.		Lakeville	MN	55044	651-210-9145	jhelmberger@forwardair.com	☒	In Attendance
Jennings	Carrie	Township Supervisor	Eureka Township	8919 280th St. W		Northfield	MN	55057	952-469-4976	carriegeo@gmail.com	☑	In Attendance
Johnson	Trish			3940 220th St. East		Hampton	MN	55031	651-463-7899	trishlj@frontiernet.net	☒	In Attendance
Kaufenberg	Ray			24501 Dodd Blvd.		Lakeville	MN	55044	952-469-2340	ffscorp@qwestoffice.net	☑	In Attendance
McFadden	Lawrence	Township Supervisor	Webster Township	6120 Elmore Ave.		Webster	MN	55088	507-744-2620	sunnyvalley1946@yahoo.com	☒	In Attendance
Mertens	John	Office of Planning and Analysis	Dakota County	14955 Galaxie Ave.		Apple Valley	MN	55124	952-891-7036	john.mertens@co.dakota.mn.us	☒	In Attendance
Nagel	Mark	Assistant City Administator	City of Elko New Market	601 Main St.	PO Box 99	Elko New Market	MN	55054	952-461-2777	mnagel@ci.enm.mn.us	☒	In Attendance
Salaba	Clarence	Township Clerk	Wheatland Township	9376 60th St. W		Lonsdale	MN	55046	507-744-2274	silvmem@myclearwave.net	☒	In Attendance
Stoffel Ralph			Vermillion Township	9090 170th St		Hastings	Mn	55033	651-437-3500			
Weber, Sandy	Plan Commission		Castle Rock Township	24650 Akron Ave.		Farmington	MN	55024	651-463-4725	Sandra@Crusader Mfg.com	☒	

Appendix A

Lake Marion to Hampton Advisory Task Force
April 29, 2009

Maps of Alternatives and Impact Tables
(distributed at meeting)

Appendix B

Lake Marion to Hampton Advisory Task Force
April 29, 2009

Information on Dispersed Renewable Generation (DRG) Transmission Study

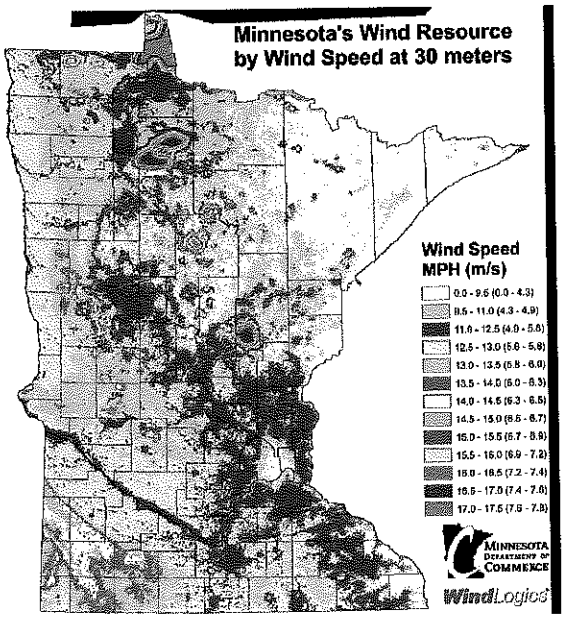
Date: 4-29-09

To: Office of Energy Security / Lake Marion to Hampton Advisory Task Force

From: Citizen member ATF

Ref: Issues and alternatives to study in EIS – Alternative routes

The map below, along with the "DRG Transmission Study" (See attached independent Press Release and Study "Conclusions"), strongly suggest that the high voltage transmission lines proposed by the Applicants would be best located south of the proposed "Preferred Route." Either the proposed Alternative Route (Hwy 86), or a new alternative route on the southern edge of Dakota County (highway 19), would be in closer proximity to higher wind speed areas and future "favorable" wind generation sites (see DRG study). Since the study indicates that 600 MW of new wind generation could be sited without significantly affecting transmission infrastructure, it would follow that if new generation sites were made larger to take advantage of economies of scale, then the excess power generation (over existing infrastructure capacity) could utilize the proposed high voltage lines and carry excess power to Wisconsin and beyond. Further, since the Applicants' lines are required to be dedicated to renewable energy, then building local generation sites would not only bring jobs and revenue to Minnesota but would provide completion to far western wind farms that should result in lower rates for all Minnesota rate payers.



FOR IMMEDIATE RELEASE
Contact: George Crocker, North American Water Office, 651-770-3861

NEW POWERLINE STUDY FINDS THAT LOCAL WIND ENERGY GENERATION CAN AVOID NEW TRANSMISSION LINES

Abundant Opportunity Identified For New Community-Based Renewable Energy Development Throughout Minnesota

Minneapolis, MN - (June 17, 2008). Yesterday, the Minnesota Department of Commerce released the findings of the first of two major powerline studies ordered by the Minnesota Legislature. The study's conclusions affirm those of a previous utility study that found that significant amounts of wind energy can be injected into the existing transmission system at costs far lower than building new transmission lines to more distant wind farms.

"Local, community-based wind projects lower costs to the ratepayers, keep our energy dollars inside Minnesota and move us toward meeting the state's renewable electricity standard," said George Crocker, one of the prime movers behind the previous study and a key participant in the drafting of the state legislation requiring this study.

"The study found that 600 MW of dispersed, community-based wind projects could be integrated across Minnesota into the existing grid system with no additional costs for transmission," notes John Bailey of the Institute for Local Self-Reliance, a long time proponent of decentralized power generation. For comparison, the proposed 600 MW Big Stone II coal fired power plant would need to spend about $250 million for new transmission infrastructure, just in Minnesota.

"This study points clearly towards a major shift in electric utility management," said George Crocker, Executive Director of the North American Water Office (NAWO), a non-profit organization that has worked on energy issues for more than 25 years. "The old way of doing business was to hook up a few very large central station power plants, mostly coal and nuclear, to high voltage powerlines to serve energy consumers in distant cities. The new way, as this study documents, is to serve those same energy consumers by strategically locating smaller locally owned dispersed renewable energy facilities."

This new study complements a similar 2005 study in west central MN that indicated as much as 1,400 MW of dispersed wind energy could be injected into the existing grid just in the west central region with minimal upgrades. "This dispersed generation siting strategy has the potential to allow numerous new renewable generation projects to interconnect to the grid and not be constrained by transmission bottlenecks such as those now existing on Buffalo Ridge," said Mike Michaud, one of the engineers participating in the new study. Interestingly, the study showed that even in a transmission constrained area like SW Minnesota, there is still room for substantial amounts of dispersed, community owned projects to be developed today.

"No longer can old, conventional central-station electric utility thinking claim to provide the cheapest, most reliable electric utility services. In the new paradigm," concluded Mr. Crocker, "utility services will be delivered increasingly by cleaner, cheaper, more reliable, more secure and more equitable renewable energy projects, owned by ordinary people in communities around the state, with the energy delivered through smart grids, rather than dumb powerlines."

The new study is available on the web site of the MN Dept. of Commerce at
www.commerce.state.mn.us

VIII. Conclusions

The collaborative process of the study team with the TRC and public input provided a robust environment for rigorous analysis and creative problem solving.

The statewide aggregate analysis demonstrated a dispersed renewable generation scenario where a total of 600 MW of 10 to 40 MW new generation projects could potentially be sited without significantly affecting any transmission infrastructure. Significant impacts to the high voltage transmission system were found in the initial site distribution, as indicated by the Dorsey transformer issues, which limit the dispersed renewable generator outlet capability in aggregate and at many of the individual sites. Additionally, the single site analysis revealed that 19 of the 42 Potential Short List of DRG Sites had transmission limitations at levels below 40 MW. The transmission limitations were identified for these sites and specific system upgrades were formulated for each site.

The DRG Study team was tasked with identifying favorable project sites with minimal impact to the transmission system located throughout the five outstate Minnesota planning zones. Months of data collection, model building, site screening, steady-state analysis, loss analysis, and transient stability modeling have produced sound results. The study team, with stakeholders' input, has identified a number of promising sites to reach the study's statewide goal of analyzing the impact of 600 MW of DRG on the transmission system. However, there may be existing interconnection requests in a utility queue or MISO queue that might occupy these potential DRG sites.

Table 1 – Statewide Potential DRG Sites

Zone	Zone Total (MW)	DRG Site	DRG Site (MW)
NW	0		
NE	40	Cloquet	40
W-C	100	Glencoe Municipal	40
		Bird Island	40
		Atwater	20
SW	160	Sveadah	19
		Steen	21
		New Ulm	21
		Mountain Lake	21
		Morgan	21
		Magnolia	16
		Lakeside Ethanol	21

Zone	Zone Total (MW)	DRG Site	DRG Site (MW)
		Brookville	19
SE	300	Waseca	39
		Vasa	39
		New Prague	39
		Lafayette	29
		Goodhue	39
		French Lake	39
		Crystal Food	39
		Airtech	39

The team also identified several interesting opportunities for additional analysis that may be investigated in the DRG Phase II Study.

DRG developers need to contact the local utility to examine opportunities for DRG site selection and foster coordination for further study work and/or interconnection requirements.

This study report is the result of extensive examination of the statewide potential for DRG sites. The detailed assessment of any individual site's actual and specific DRG potential requires coordination with the local utility and a regional transmission provider such as MISO or MAPP to conduct interconnection studies and assess delivery possibilities. Most Minnesota utilities have documented interconnection guidelines available on their Web sites that help explain their processes and requirements. The US Federal Energy Regulatory Commission (FERC), the North American Electric Reliability Corporation (NERC) and the Midwest Reliability Organization (MRO) each have generation interconnection requirements as well.

This study report represents a snapshot in time. Due to the tremendous level of wind generation interconnection requests in Minnesota and the surrounding states, some – or possibly all – of this transmission capacity may be used by other resources or interconnection requests, with some due to loop flow issues. This study should be understood as indicative only. The performance of specific projects will depend on actual system performance and assumptions.

In addition, the wind performance identified at specific locations is based on wind forecasting models and should be viewed as providing relative levels among sites. Generators should not rely on the specific capacity factors identified but rather on their own measurements of actual wind conditions at the sites.

Appendix C

Lake Marion to Hampton Advisory Task Force
April 29, 2009

Citizen Speaker 2 – Written Comments

Date: 4-29-09

To: Office of Energy Security / OES EFP staff / Lake Marion to Hampton Advisory Task Force

From: Ray Kaufenberg, at 24510 Dodd Blvd, Lakeville, MN 55044, citizen member ATF

Ref: **"Issues and alternatives to study in EIS"** (in matter of Route Permit App. for a 345 kV transmission line from Brookings Cnty, SD to Hampton, MN.)

Issue: **"FAIRNESS"** (identified by ATF as "very important"); **Sub Issue: FALSE, MISLEADING, AND QUESTIONABLE STATEMENTS BY APPLICANTS**

1. Applicants' statements: (in PUC Docket # ET2/TL-8-1474, Volume 1 [herein referred to as "VOL 1"])

On page "ES-4" of VOL 1 Applicants *"request that the Commission grant a Route Permit for the Preferred Route because it*

A. *impacts fewer homes* [than the Alternative Route] *within the 500 feet of the proposed route centerline,*

B. *makes better use of existing ROW's,*

C. *minimizes impacts to prime farmland..."*

To support the above claims the Applicants state (in VOL 1):

D. *"There are 310 homes within 500 feet of the [preferred] route centerline." (page 4-10)*

E. *"There are 319 homes within 500 feet of the [alternative] route centerline." (page 4-10)*

F. *" 76.2 % of the [preferred] route follows the ROW's of existing transportation, pipeline, and electrical transmission systems." (page 4-13)*

G. *" 70.2 % of the [alternative] route follows the ROW's of existing transportation, pipeline, and electrical transmission systems." (page 4-13)*

H. *"Approximately 25.2 acres of permanent impacts to agriculture [under preferred route]" (page 4-13)*

I. *"Approximately 26.8 acres of permanent impacts to agriculture [under alternative route]" (page 4-13)*

Applicants further state that the following is among the *"primary set of principles guiding the route selection process:"*

J. *"K. electrical system reliability"* (page 4-3)

Discrepancy 1

Applicants' statement 1. A. (above) does not hold true for the route form Lake Marion substation to Hampton substation:

On Table 6-2 (page 6-12, VOL 1) the Applicants state the following regarding the Preferred Route from Lake Marion to Hampton:

"Residences 0-75 [feet from centerline]	*0 "*	
"Residences 75 - 150'	*5"*	**[but, 6 is the correct count*]**
"Residences 150 - 300	*30" [*	***but, 36 is correct count*]***
"Residences 300 - 500	*31" [*	***but, 46 is the correct count*]***
"Total Residences	*66"*	**[but, 88 is the correct count.]**
"Density (homes per mile)	*3.6" [*	***but 4.9 is correct density]***

*source of correct count is a hand-count of the data in Docket # ET2/TL-8-1474, Volume 2 Appendix B-6 MP1 - MP 4 .

Impact: The 22 "Total Residences" difference (between the claimed 66 and correct 88)is a major 33% data error. This error grossly understates the total homes in the portion of Preferred Route from Lake Marion to Hampton, and therefore understates the number of homes in the entire Preferred Route. When the 22 extra homes are added to the 310 total homes for the entire Preferred Route (see 1. D. above), we find 332 total homes are now within 500 feet of the Preferred Route centerline, and this number is now MORE than the 319 total for the Alternative Route (1. E. above). Since the Applicants request [as one of their criteria in 1. A. above] that the Commission grant a Route Permit for the Preferred Route "because it impacts fewer homes [than the Alternative Route] within 500 feet of centerline," and this is now proven to be a false claim, then the question must be asked:

Q Is this data error an honest mistake, or an intentional attempt to manipulate the route decision process by misleading the OES and the Commission?

Discrepancy 2

Applicants' statements 1. B, F, G & J. (above) are false or questionable because they do not hold true for the portion of route from Lake Marion to Ha

Applicants describe the Preferred Route Lake Marion to Hampton as follows* :	Field	ROW	turns	Total mi
south along Pillsbury .5 mi		0.5		
east 1.1 miles in field and wetlands	1.1		1	
northeast along Dodd .8 mi to 240th		0.8	1	
east on 240th 2.3 mi (past north-end of Eureka Estates where route goes north, east, south, & east again around Eureka Estates)		2.3	5	
then field 2 mi	2			
transitions into existing pipeline 1.15 mi		1.15		
turn north along pipeline and RR ROW 1 mi		1	1	
turn east in filed 1.8	1.8		1	
follows 230th street 2.5		2.5		
turn north filed 1 mi	1		1	
turn east along Hwy 50 2.1 mi		2.1	1	
filed 1.3	1.3			
north along Hwy 52 .5 mi		0.5	1	
Totals Lake Marion To Hampton Substation	**7.2**	**10.85**	**12**	**18.05**
*Paraphrased, see page 5-6 VOL 1.	**40%**	**60%**		

Applicants describe Alternative Route Lake Marion to Hampton as follows*:	Field	ROW	turns	total mi
south 4 mi along Pillsbury to Cnty 86		4		
east 5 mi along Cnty 86 crossing south edge of Chub Lake WMA		5	1	
south in field .5	0.5		1	
east 5.8 mi filed lines and existing pipeline to Cnty 47		5.8	1	
northeast 4.5 mi along Cnty 47		4.5	1	
east .8 miles along field lines	0.8		1	
north and northeast .75 mi in field to Hwy 52	0.75		1	
north 2.5 along Hwy 52		2.5	1	
Totals Lake Marion To Hampton Substation	**2.05**	**21.8**	**7**	**23.85**
*Paraphrased, see page 5-6 VOL 1.	**9%**	**91%**		

Impact 1: As seen above, the "Preferred" Route traverses 40% "field" vs 60% "existing ROW." This ratio calls into question the Applicants' claim that: *"76.2 % of the [preferred] route follows the ROW's of existing transportation, pipeline, and electrical transmission systems."* (1. F. above)

Impact 2: As seen above, the "Alternative" Route from Lake Marion to Hampton traverses 9% "field" and 91% "Existing ROW." This ratio calls into question the claim that: *"70.2 % of the [alternative] route follows the ROW's of existing transportation, pipeline, and electrical transmission systems. (1. G. above)*

Impact 3: The fact that the Alternative Route traverses 9% "field" and 91% "Existing ROW," while the Preferred Route traverses 40% "field" and 60% "existing ROW," calls into question the Applicants request that *"the Commission grant a Route Permit for the Preferred Route because it makes better use of existing ROW's"* (see 1. B above)

Q **Is the contradictory use of ROW from Lake Marion to Hampton an exception, or are the Applicants intentionally misleading the OES and Commission?**

Impact 4: The Preferred route from Lake Marion to Hampton has 12 line turns in it, while the Alternative Route has only 7 line turns. This calls into question whether the Applicants are proposing a Preferred Route that takes into consideration *"electrical system reliability"* as one of their "primary set of *principles guiding the route selection process.* " (1. J. above). The Preferred Route, with considerably more turns, would have more tension on the power lines, and thus require more difficulty to repair (if lines when damaged by natural causes or terrorist attacks). Therefore, the Preferred Route is less reliable by its very nature than the Alternative Route. Once again, this calls into question the applicants motives.

Q **Are the Applicants taking into account 1. G. (above) as a "primary consideration," or are they ignoring this MN State rule to forward their agenda?**

Discrepancy 3

Applicants statements 1. C.,H. & I. (above) are false or questionable because they do not hold true for the Lake Marian to Hampton route portion. In addition, the following claim by the Applicants is not true for agricultural lands used for row-crop farming:

"Impacts to agricultural lands are expected to be relatively minor. Agricultural activities will be allowed beneath the transmission line with the *exception of the immediate vicinity of the poles."* (See page 6-10 VOL 1)

Impacts: Most of the agricultural activity from Lake Marion to Hampton is corn and soybean "row crop" farming which primarily uses large farm machinery. For example, farm land on the Preferred Route in Eureka Township, Section 18, was cultivated this year with a 60 foot wide field cultivator and then planted with a 24-row 60' wide corn planter. The planter was pulled by a tractor using GPS auto-steering. This GPS guidance kept the planter running straight and true following straight grid lines, but GPS grid guidance was not designed to go around power poles. The operator could choose to override the GPS system and weave around the poles, but assuming the poles were located on the edge of the field ("field lines") he probably would rather leave unplanted a 6 1/2 foot swath along the edge of the field (6' width of pole base [page 3-10 VOL 1] plus 1/2 ' clearance for machinery) in order to avoid the negative impact to the next round (where the straight line GPS path would cause the planter to over-plant in the swerved area from the previous round resulting in wasted expensive seed and liquid starter fertilizer), and in order to avoid additional chemical spraying problems.

Most conventional row-crop farmers spray herbicide on corn and soybeans, and frequently also spray insecticide on soybeans. Many farmers hire "custom" application of these chemicals. These custom applicators usually spray with large 100 foot or wider beam sprayers, guided by GPS grid guidance. Spray applicators cannot easily or efficiently spray around the "immediate vicinity" of power line poles. Applicators must either:
1) weave around poles -- which leaves a considerable unsprayed portion of land where they weave out to approach the pole and then back again past the pole, and also creates an area of "overspray" adjacent the pole where during the next straight round the swerved area is sprayed again (Overspayed herbicide concentrations can contaminate ground water, which is harmful to humans, and is warned against on product labels); or,
2) skip a 6 1/2 foot swath of land (width of poles plus 6" for clearance), as would probably be favored for a GPS guided planter operator. Skipping a 6 1/2' swath with planter and sprayer is better than planting the swath and then skipping spay because when spraying soybeans for Aphids missing a swath or a weaved area leaves remaining many fast multiplying insects that can make the entire application ineffective for the whole field or farm. So clearly the "permanent impact" to row-crops farming is much more than just in the "immediate vicinity" of power line poles, but includes a 6 1/2 ' swath of land that runs the entire length of the field.

The above Impacts also call into question the Applicant's contention that the Preferred Route has *"Approximately 25.2 acres of permanent impacts to agriculture"* (1. H. above); **and the Alternative Route has** *"Approximately 26.8 acres of permanent impacts to agriculture "* (1. I. above).

Since the Lake Marion to Hampton Preferred Route traverses approximately 7 miles of fields (see "Discrepancy 2" above) and power line poles along "field lines" impact a minimum of a 6 1/2 ' swath along the length of the field (see explanation above), then the permantly impacted area is as follows:
7 miles of fields = 7 X 5,280 ft = 36,960 linear feet, X 6 1/2 ft swath = 259,740 sq ft, divided by 43,560 sq ft per acre = 5.96 acres.
Since the Lake Marion to Hampton section of route is only 18 miles out of 237 (page 4-14 VOL 1) this represents approximately 1/13th of the Project. Therefore, the entire Project could be estimated to impact 13 X 5.96 acres = 77.5 acres. This is considerably more than the 25.2 acres stated by the Applicants to be "permantly impacted," and the 77.5 acres assumes all poles are on "field lines," which may not be the case. If the poles are out into the fields the impact would be much much greater. Moreover, the above 77.5 acre impact does not take into account poles that run along existing ROW's, such as pipeline that are in fields. If the analysis did account for this then the number of permantly impacted acres would be even greater.

Q **Are the Applicants intentionally trying to mislead the OES and the Commission by under-estimating permanent impacts to farming?**

Issue: "FAIRNESS;" Sub issue: FAIRNESS IN NEGOTIATIONS and FAIRNESS THROUGH "SHARED SACRIFICE"

Whereas there has been found to be major significant "discrepancies" in the Application for Route Permit (as discussed above); and **whereas** these discrepancies suggest that the Applicants may have been careless and/or not fully forthright in their disclosures and analysis, and therefore may not necessarily be trusted to act in a fair or forthright manor going forward in their easement negotiations with property owners, and in their efforts to mitigate the negative impacts of the transmition lines; and **whereas** it is in the best interest of the public to provide the Applicants with incentives to do what is right and fair for those bearing the greatest sacrifice for the transmission lines, as well as to provide a deterrent for the Applicants to not propose future additional high voltage transmission lines that could be otherwise avoided through various means including, but not limited to, greater energy conservation by users, smarter grid and power distribution technologies and efficiencies, user-based power generation and other environmentally friendly strategies; and **whereas** there may be considerable conflict-of-interest between the Applicants' motivations for profit and the desires of shareholders and members, verses doing what is in the best long-term interest of the public; **THEREFORE, the Route Permit should be made contingent on the following conditions:**

Fairness and "Shared Sacrifice" Conditions

Approval of the Route Permit application for a 345 kV transmission line from Brookings Cnty, SD to Hampton, MN. , PUC Docket # ET2/TL-8-1474, shall be contingent upon the following conditions:

a. **Applicants shall not be excluded under the "PUBLIC SERVICE CORPORATION EMINENT DOMAIN EXEMPTION."**

b. **Applicants shall be required to offer land owners "fair "easements that:**
1) are written in simple easy to understand language (similar to what has been required of Insurance companies regarding Home Owners insurance policies); or, alternatively, the Applicants shall compensate land owners for court-appointed attorneys.
[Note: Many farmers have only a high school education and by their nature as independent entrepreneurs are adverse to hiring attorneys to solve problems]

2) offer a provision to return the land under easement to the land owner if the power line is abandoned or will no longer be used for the purpose stated in the Certificate of Need application and Need Permit.

3) offer a guarantee of "prompt" payment (within 15 days) after due date for any compensation owed to land owners , or else be subject to a 10% late payment penalty for first 30 days late, and an additional 5% per month penalty thereafter to maximum 50%, and have a way for grievances to be heard by a third party regarding differences between what was promised to property owners and what was delivered.
[Note: Property owners making substantial sacrifices should not have to hire attorneys to make sure contractual and other promises and obligations are met.]

c. **Applicants shall mitigate the negative aesthetics of the power line poles as follows:**
1) In the portion of route from Lake Marion substation to Hampton substation the Applicants shall provide blue colored poles that blend in with the sky (similar to those seen along American Blvd in Bloomington, MN) and be required to maintain poles in favorable appearance.

2) In the portion of route from Brookings, SD to Lake Marion substation the Applicant shall provide galvanized (grayish) poles that blend in with the sky (vs rust-colored poles that provide stark contrast with the sky).

d. Applicants shall be required to "share the sacrifice" more fairly between property owners along the transmission route, and those who benefit from use of the high voltage transmission lines.

Applicants shall be required to compensate easement holders and home owners (current and future) living within 500 feet of the power line centerline with annual "Shared Sacrifice Dividends" (SSD's). These SSD's shall be paid out before public utility shareholder dividends or cooperative utility member dividends are paid (or credited), so that shareholders, COOP members and ultimately electric energy users share the sacrifice with property owners. Property owner sacrifices include being forced to endure the negative impacts of the high voltage transmission lines and having their right to free land-use taken from them at no greater than "market value," when this value may be depressed by recession and other circumstances and would naturally be much higher in the future when their land is developable, developed or re-sold.

SSD's shall be paid out annually to help balance the above inequalities and achieve greater fairness. SSD's would provide property owners with fairer treatment when they are compared to cell phone tower land owners (who receive regular ongoing payments) and large wind farm owners (who receive regular ongoing payments for electric generation yet are allowed to use high voltage transmission lines that cross private properties where property owners receive no regular ongoing compensation). SSD's would also help to discourage utility companies from building more and more high voltage transmission lines before they exhaust other alternatives that require no new infrastructure, such as are highlighted by the recent "DRG" Study* (See attached independent Press Release regarding the study, and "Conclusions" pages). SSD's paid out according to the schedule (below) would give utility companies a financial incentive to more aggressively seek to do what is in the best long-term interest of the public and the environment (vs shareholders), that is, to increase their efforts to reduce power consumption through conservation (beyond the required 1 1/2 % per year mandated by the State).

*Dispersed Renewable Generation Transmission Study, Volume I, Docket Number E999/DI-08-649

Annual percentage reduction in 3 yr. avg. electricity consumption by existing customers through conservation	Percent of "Net Income" to be paid as Shared Sacrifice Dividends
less than 1 ½ %	2.00%
1 ½ % to 2 ½ %	1.00%
over 2 ½ % to 5%	0.50%
over 5% to 10%	0.25%
over 10%	0.10%

Note: As power demand by existing customers decreases through conservation, overall demand may still increase because of new user demand. If overall demand decreases (and utility company revenues decrease) this may compel utilities to request rate increases, however, the net impact on energy users who participated in conservation programs (and now use less electricity) should be minimal, if any. Over time, decreases in consumption will lead to lower capital expenditures for infrastructure and ultimately lower electricity rates.

SEE ATTACHED "TEN FOR 10" LIST FOR EXAMPLE OF HOW UTILITY COMPANIES COULD ACHIEVE 10% OR MORE CONSERVATION GOALS.

Ten for 10

To achieve 10% per year conservation goals utility companies may need only to promote, advertise, and perhaps help finance the following 10 items:

1 rooftop solar panels on commercial buildings --- most cities have enough flat commercial roof capacity to reduce electric demand by 20%.*

2 rooftop solar panels on residential buildings --- California has a goal to have solar panels on 1 million roofs, Minnesota needs a goal.*

3 rooftop wind turbines --- a new generation of small (3 kW, 5 kW and 10 kW) generators with a turbine spinning with zero resistance on magnetic fields can operate at 4 MPH winds, and a 5 kW model can provide enough power for an average home. (See attached picture and website).

4 commercial energy audits ---- one Minnesota electric cooperative boasts of achieving 25% to 33% peak electricity demand reductions by energy audits and helping companies do such things as swapping out inefficient lighting, going on "cycled air" for A/C, updating motors to operate based on load (adding variable speeds), etc.

5 "green" home construction ---- LEED (Leadership in Energy and Environmental Design)homes** and others save up to 30% to 60% on energy use.

6 "Interruptible Electric Service" --- peak electric demand can be greatly reduced by utility companies remotely shutting down water heaters, dishwashers and other electrical devices during peak energy demand times. With a few simple modifications (such as ability to occasionally override the shut down with a phone call) it could be made so attractive that 90% of homes go on it, yet one Minnesota COOP has only 10%.

8 Inner Seal programs --- contractors can seal and make other minor modifications to existing homes to achieve 10 to 25% energy savings.

9 greater distribution efficiency; smart appliances (See company RLTec); and digital Grid upgrades (similar to Smart Grid technology but without GE's big price tag) --- one U.S. Department of Energy study calculated that internal modernization of U.S. grids with Smart Grid would save between 46 and 117 billion dollars over the next 20 years***

10 residential electric savings measures --- see MN Department Of Commerce's "Office of Energy Security" website (http://www.energy.mn.gov); and see "Green" section of Star Tribune 4-19-09. Electric users need more education and simple mild prodding from utility companies.

*Source PBS NOVA broadcast on 4-27-09 ** See www.usgbc.org ***See Wikipedia under "Smart Grid"

FOR IMMEDIATE RELEASE
Contact: George Crocker, North American Water Office, 651-770-3861

NEW POWERLINE STUDY FINDS THAT LOCAL WIND ENERGY GENERATION CAN AVOID NEW TRANSMISSION LINES

Abundant Opportunity Identified For New Community-Based Renewable Energy Development Throughout Minnesota

Minneapolis, MN - (June 17, 2008). Yesterday, the Minnesota Department of Commerce released the findings of the first of two major powerline studies ordered by the Minnesota Legislature. The study's conclusions affirm those of a previous utility study that found that significant amounts of wind energy can be injected into the existing transmission system at costs far lower than building new transmission lines to more distant wind farms.

"Local, community-based wind projects lower costs to the ratepayers, keep our energy dollars inside Minnesota and move us toward meeting the state's renewable electricity standard," said George Crocker, one of the prime movers behind the previous study and a key participant in the drafting of the state legislation requiring this study.

"The study found that 600 MW of dispersed, community-based wind projects could be integrated across Minnesota into the existing grid system with no additional costs for transmission," notes John Bailey of the Institute for Local Self-Reliance, a long time proponent of decentralized power generation. For comparison, the proposed 600 MW Big Stone II coal fired power plant would need to spend about $250 million for new transmission infrastructure, just in Minnesota.

"This study points clearly towards a major shift in electric utility management," said George Crocker, Executive Director of the North American Water Office (NAWO), a non-profit organization that has worked on energy issues for more than 25 years. "The old way of doing business was to hook up a few very large central station power plants, mostly coal and nuclear, to high voltage powerlines to serve energy consumers in distant cities. The new way, as this study documents, is to serve those same energy consumers by strategically locating smaller locally owned dispersed renewable energy facilities."

This new study complements a similar 2005 study in west central MN that indicated as much as 1,400 MW of dispersed wind energy could be injected into the existing grid just in the west central region with minimal upgrades. "This dispersed generation siting strategy has the potential to allow numerous new renewable generation projects to interconnect to the grid and not be constrained by transmission bottlenecks such as those now existing on Buffalo Ridge," said Mike Michaud, one of the engineers participating in the new study. Interestingly, the study showed that even in a transmission constrained area like SW Minnesota, there is still room for substantial amounts of dispersed, community owned projects to be developed today.

"No longer can old, conventional central-station electric utility thinking claim to provide the cheapest, most reliable electric utility services. In the new paradigm," concluded Mr. Crocker, "utility services will be delivered increasingly by cleaner, cheaper, more reliable, more secure and more equitable renewable energy projects, owned by ordinary people in communities around the state, with the energy delivered through smart grids, rather than dumb powerlines."

The new study is available on the web site of the MN Dept. of Commerce at www.commerce.state.mn.us

VIII. Conclusions

The collaborative process of the study team with the TRC and public input provided a robust environment for rigorous analysis and creative problem solving.

The statewide aggregate analysis demonstrated a dispersed renewable generation scenario where a total of 600 MW of 10 to 40 MW new generation projects could potentially be sited without significantly affecting any transmission infrastructure. Significant impacts to the high voltage transmission system were found in the initial site distribution, as indicated by the Dorsey transformer issues, which limit the dispersed renewable generator outlet capability in aggregate and at many of the individual sites. Additionally, the single site analysis revealed that 19 of the 42 Potential Short List of DRG Sites had transmission limitations at levels below 40 MW. The transmission limitations were identified for these sites and specific system upgrades were formulated for each site.

The DRG Study team was tasked with identifying favorable project sites with minimal impact to the transmission system located throughout the five outstate Minnesota planning zones. Months of data collection, model building, site screening, steady-state analysis, loss analysis, and transient stability modeling have produced sound results. The study team, with stakeholders' input, has identified a number of promising sites to reach the study's statewide goal of analyzing the impact of 600 MW of DRG on the transmission system. However, there may be existing interconnection requests in a utility queue or MISO queue that might occupy these potential DRG sites.

Table 1 – Statewide Potential DRG Sites

Zone	Zone Total (MW)	DRG Site	DRG Site (MW)
NW	0		
NE	40	Cloquet	40
W-C	100	Glencoe Municipal	40
		Bird Island	40
		Atwater	20
SW	160	Sveadah	19
		Steen	21
		New Ulm	21
		Mountain Lake	21
		Morgan	21
		Magnolia	16
		Lakeside Ethanol	21

Zone	Zone Total (MW)	DRG Site	DRG Site (MW)
		Brookville	19
SE	300	Waseca	39
		Vasa	39
		New Prague	39
		Lafayette	29
		Goodhue	39
		French Lake	39
		Crystal Food	39
		Airtech	39

The team also identified several interesting opportunities for additional analysis that may be investigated in the DRG Phase II Study.

DRG developers need to contact the local utility to examine opportunities for DRG site selection and foster coordination for further study work and/or interconnection requirements.

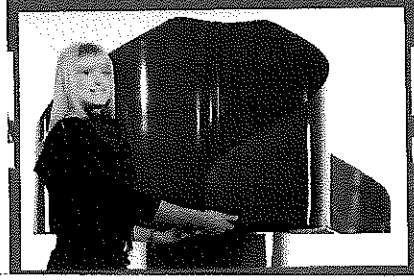
This study report is the result of extensive examination of the statewide potential for DRG sites. The detailed assessment of any individual site's actual and specific DRG potential requires coordination with the local utility and a regional transmission provider such as MISO or MAPP to conduct interconnection studies and assess delivery possibilities. Most Minnesota utilities have documented interconnection guidelines available on their Web sites that help explain their processes and requirements. The US Federal Energy Regulatory Commission (FERC), the North American Electric Reliability Corporation (NERC) and the Midwest Reliability Organization (MRO) each have generation interconnection requirements as well.

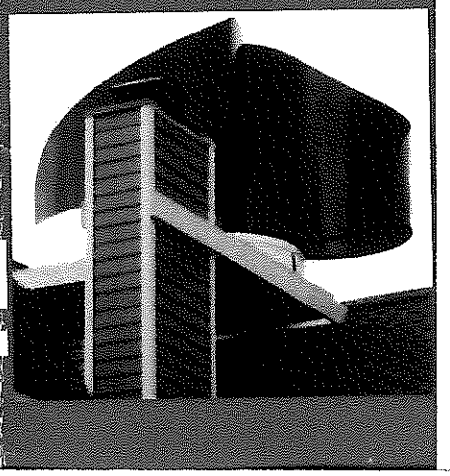
This study report represents a snapshot in time. Due to the tremendous level of wind generation interconnection requests in Minnesota and the surrounding states, some – or possibly all – of this transmission capacity may be used by other resources or interconnection requests, with some due to loop flow issues. This study should be understood as indicative only. The performance of specific projects will depend on actual system performance and assumptions.

In addition, the wind performance identified at specific locations is based on wind forecasting models and should be viewed as providing relative levels among sites. Generators should not rely on the specific capacity factors identified but rather on their own measurements of actual wind conditions at the sites.

Wind Power Solutions

for your Home or Business.





mPH.

Appendix D

Lake Marion to Hampton Advisory Task Force
April 29, 2009

Citizen Speaker 10 – Written Comments

Submitted to:

Office of Energy Security/EOS EFP Staff

By

Kevin & Elizabeth Flaherty

24320 Dodd Blvd. Eureka Township

Regarding

Lake Marion to Hampton portion of route permit application for a 345 kV line from Brookings County,SD to Hampton MN.

- Recommended Alternatives to study
- False & Misrepresented Data regarding "preferred Route" Lake Marion to Hampton

Flaherty Family

- Kevin Flaherty & wife Elizabeth both grew up in Burnsville, MN.
- For last 12 years live at 24320 Dodd Blvd. in Eureka Township
- We have four daughters that also live with us
- We moved to the country to raise our daughters in a quiet peaceful setting, with open spaces, healthy environment surrounded by nature
- Our entire family has and continues to make sacrifices in order for us to remain living in this beautiful setting,
- This beautiful country setting make us the venue of choice with friends and family for a variety of outdoor events such as school team banquets, holidays, outdoor picnics, parties and weekly bon fires.
- Elizabeth and I dream of how special it will be spending quality time here with our Grandchildren exposing them to country and nature.
- Elizabeth's mother Mary is 74 years old and will soon be living with us
- I have given of my time to protect the beauty of the township and my home by serving on the Eureka Township Planning Commission.

Flaherty Family - Continued

The Preferred route that is being proposed will DESTROY everything we love about out country retreat in Eureka Township, EVERYTHING.

NO LONGER SAFE:

- Study after study provides indisputable proof that ongoing exposure of stray voltage from a close proximity will greatly increase the likelihood of CANCER, especially LEUKEMIA in humans.
- My home is located on the East side of Dodd Blvd, There is a 33' road easement from the center of Dodd Blvd. into my property, The sewer line just went through my property last fall creating disruption and hardship with an additional 22' permanent easement, Your 150' easement will force me to live with power lines 99' from my home and the bedroom windows of my children. (exhibits A,B,C,D,E attached)
- My daughter who suffers from migraine head aches will not able to tolerate regular exposure to wet "buzzing" power lines
- The consistent exposure to stray voltage will also have a negative impact on the animals that currently live, nest, and inhabit the property, American Bald eagles, White tail deer, red fox, wild turkeys, pheasant, ducks and geese to mention a few.

Flaherty Family - Continued

The Preferred route that is being proposed will DESTROY everything we love about out country retreat in Eureka Township, EVERYTHING.

Property Value:

- Clearly visual ongoing exposure to stray voltage from close proximity to my home (99') that is widely viewed and understood to be a health hazard that greatly increases the likelihood of CANCER, especially LEUKEMIA in humans will devastate the home and land value.
- My home being located on the East side of Dodd Blvd, with a 150' permanent easement which forcing power lines within 99' of my home and bedroom windows will reduce the home value on the property to nothing/$0.00
- Value driven by the current visual beauty and quiet setting of the property will be destroyed for ever by visual large towers (174' from my home) and power lines (99' from my home) and audibly by the loud and regular "buzzing" of the lines especially when wet.
- Value driven by current wildlife that will no longer live, nest, and inhabit the property will decrease the value from what it is today.

Flaherty Family - Continued

The Preferred route that is being proposed will DESTROY everything we love about out country retreat in Eureka Township, EVERYTHING.

Fairness:

- Less than 1 year ago I was forced to except a permanent easement across the entire West side of my property for a sewer line. The construction of the sewer line changed my property taking out many trees, bushes and other plant life which provided a wind, noise and visual buffer. This will take many years to replace.
- How much of my property should I be forced to give up to easements that have NO benefit to me, my family or community?
- I already have three easements on my property (Co. road easement 33' along entire West property line, Telephone Company easement 20'along entire East and South property line, and Sewer Line easement 22' along entire East side of property and Co. road easement) and the property is only a total of 20 acres.

Flaherty Family - Continued

The Preferred route that is being proposed will DESTROY everything we love about out country retreat in Eureka Township, EVERYTHING.

Fairness:

- My home to the center of Dodd Blvd. is 304'. Current easements use up 55' (33'+22') of my front property, the proposed additional 150' would mean that 205' of my 304' of property frontage would be dedicated to easements leaving me 99'
- My neighbors on the West side of Dodd Blvd. are set back further from Dodd Blvd. (over 500') and have not had to deal with the excessive number of easements imposed on our home and property.
- The phrase "shared sacrifice" is often used by applicant in the many town hall meetings I have attended. What is being asked of my family goes well beyond SHARED or FAIR. I am PLEADING for FAIRNESS
- I strongly believe that all of the health risks and devastating financial impacts the proposed power line and associated 150' easement would have on this my property, I would expect a full buy out at full market value. The fair thing to do would be to select an alternative route.

FALSE DATA – submitted by applicant

REFERENCE:
Applicants Written Statements: In PUC Docket # ET2/TL-8-1474,"Volume 1". On page ES-4, paragraph 2 of Volume 1 (Exhibit F attached)

"The Applicants request that the commission grant a Route Permit for the Preferred Route because **it impacts fewer homes within 500' of the proposed route centerline**, makes better us of existing ROWs, minimizes impact to prime farmland, minimizes impacts to natural resources and identified archaeological sites and has fewer fewer overall transmission line miles.

FALSE STATEMENT from Applicant

The applicants written statement above that "the Preferred Route impacts fewer homes within 500' of the proposed route centerline" IS A FALSE STATEMENT in regards to Lake Marion substation to Hampton substation.

FALSE DATA – submitted by applicant

REFERENCE:

Applicants Written Statements:In PUC Docket "Vol. 1", Page 4-10, Table 4-1. Summary of Impacts and factors Considered (Exhibit G attached)

The Applicant states:

- **PREFERRED ROUTE**

"There are 310 HOMES impacted within 500 feet of the centerline".

THIS STATEMENT FROM APPLICANT IS FALSE

- **There are actually 332 Homes Impacted NOT 310.**

A detailed count using the Applicants MAP (Published in application documents) provides a detailed view of the PREFERRED 1000' swath and the homes located within the 1000' ROUTE. The impacted homes are shown on the Applicants Detailed MAP in a color coded manner based on number of feet from the centerline.

- The facts now show that there are actually more homes impacted in the Applicants PREFERRED Route (332) than that of the ALTERNATIVE Route (319)

FALSE DATA – submitted by applicant

- **The facts now show that there are actually more homes impacted in the Applicants PREFERRED Route (332) than that of the ALTERNATIVE Route (319)**

REFERENCE:
Applicants Written Statements: Table 6-2, (Page 6-12, Vol.1) as relates to PREFERRED Route from Lake Marion to Hampton Substation.

APPLICANT STATES:		CORRECT COUNT
"Residents 0-75 (feet from centerline)	0	0
"Residents 75'-150"	5	6
"Residents 150'-300'	30	36
"Residents 300'-500'	31	46
"Total Residents	**66**	**88**
"Density (homes per mile)	**3.6**	**4.9**

FALSE DATA – submitted by applicant

- **The facts now show that there are actually more homes impacted in the Applicants PREFERRED Route (332) than that of the ALTERNATIVE Route (319)**

Based on the fact that the APPLICANT based there request for ROUTE PERMIT on the argument the the PREFERRED ROUTE Impacted fewer homes than that of the ALTERNATIVE ROUTE.
I respectfully request that the ALTERNATIVE ROUTE submitted by Applicant be immediately changed to the PREFERRED ROUTE in the Applicants request for permit.

(EXHIBIT A)

MCES Parcel 10A
Kevin M. & Elizabeth M. Flaherty
13-01800-018-01
Doc. No. 1380312
Parcel "D-4"

Permanent Drainage and Utility Easement

A Permanent Easement for Drainage and Utility purposes, over, under and across the east 22.00 feet of the west 55.00 feet of a certain tract of land described as Parcel "D-4" in Document No. 1380312, a Document that is on file and of record in the office of the County Recorder, Dakota County, Minnesota lying north of the south 33.00 feet of said Document and the north 22.00 feet of the south 53.00 feet of the west 33.00 feet of said Document.

Containing 11,641 sq. ft. or 0.2672 Acres of land.

(EXHIBIT B)

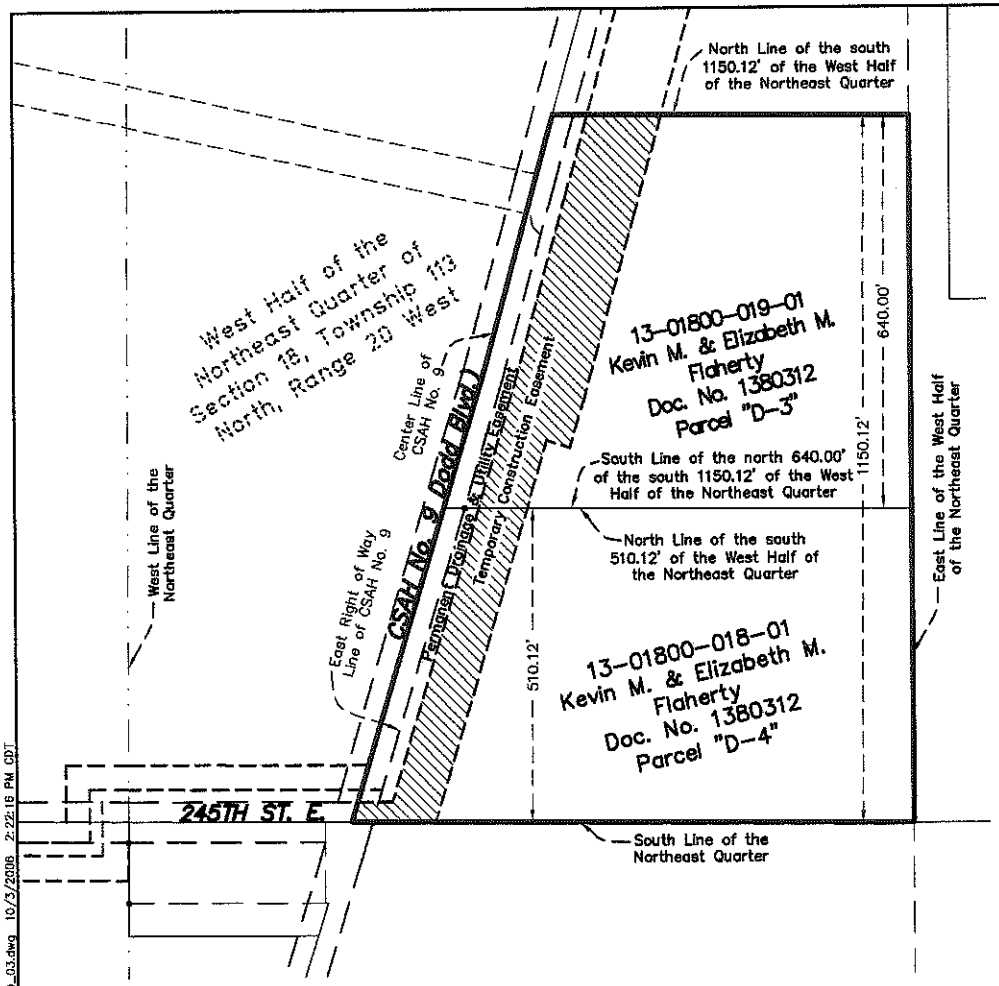
MCES Parcel 10B
Kevin M. & Elizabeth M. Flaherty
13-01800-019-01
Doc. No. 1380312
Parcel "D-3"

Permanent Drainage and Utility Easement

A Permanent Easement for Drainage and Utility purposes, over, under and across the east 22.00 feet of the west 55.00 feet of a certain tract of land described as Parcel "D-3" in Document No. 1380312, a Document that is on file and of record in the office of the County Recorder of said Dakota County, Minnesota, being also a part of the West Half of the Northeast Quarter of Section 18, Township 113 North, Range 20 West in said Dakota County, Minnesota. Said 22.00 foot Easement lying adjacent to, easterly of and measured at right angles to the easterly Right of Way Line of of C.S.A.H. No. 9 (Dodd Boulevard).

Containing 14,633 sq. ft. or 0.3359 Acres of land.

(EXHIBIT C)



Fee Owner: Kevin M. Flaherty and Elizabeth M. Flaherty, joint tenants

MCES Parcel 10A & 10B PID : 13-01800-018-01 & 10-01800-019-01

Total Area of Parcel **	=	871,857 sq. ft. or	20.0151 Acres
Area of existing Roadway Easement	=	39,516 sq. ft. or	0.9172 Acres
Net Total Area of Parcel **	=	832,341 sq. ft. or	19.1079 Acres
Total Area of Permanent Drainage & Utility Easement	=	26,274 sq. ft. or	0.6032 Acres
Area of Permanent Easement in existing Roadway Easement	=	688 sq. ft. or	0.0158 Acres
Net Area of Permanent Drainage & Utility Easement	=	25,586 sq. ft. or	0.5874 Acres
Area of Temporary Construction Easement	=	117,545 sq. ft. or	2.6985 Acres
Area of Temporary Easement in existing Roadway Easement	=	1,136 sq. ft. or	0.0261 Acres
Net Area of Temporary Construction Easement	=	116,409 sq. ft. or	2.6724 Acres

** computed from records

LEGEND:

Permanent Drainage & Utility Easement

Temporary Construction Easement

N

0 200 400

Scale in feet

I, HEREBY CERTIFY THAT THIS SKETCH OF DESCRIPTION WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: PETER A. KRUSEMAN

SIGNATURE:

DATE: 10/03/2006 LIC. NO. 12223

FIELD CREW
DRAWN JKH
DESIGNED
APPROVED PWK
DATE 08/21/2006
PROJ. NO. 2-02-117

St. Paul Office
2335 West Highway 36
St. Paul, MN 55113
Phone: 651-636-4600
Fax: 651-636-1311

Bonestroo Rosene Anderlik & Associates
Engineers & Architects
www.bonestroo.com

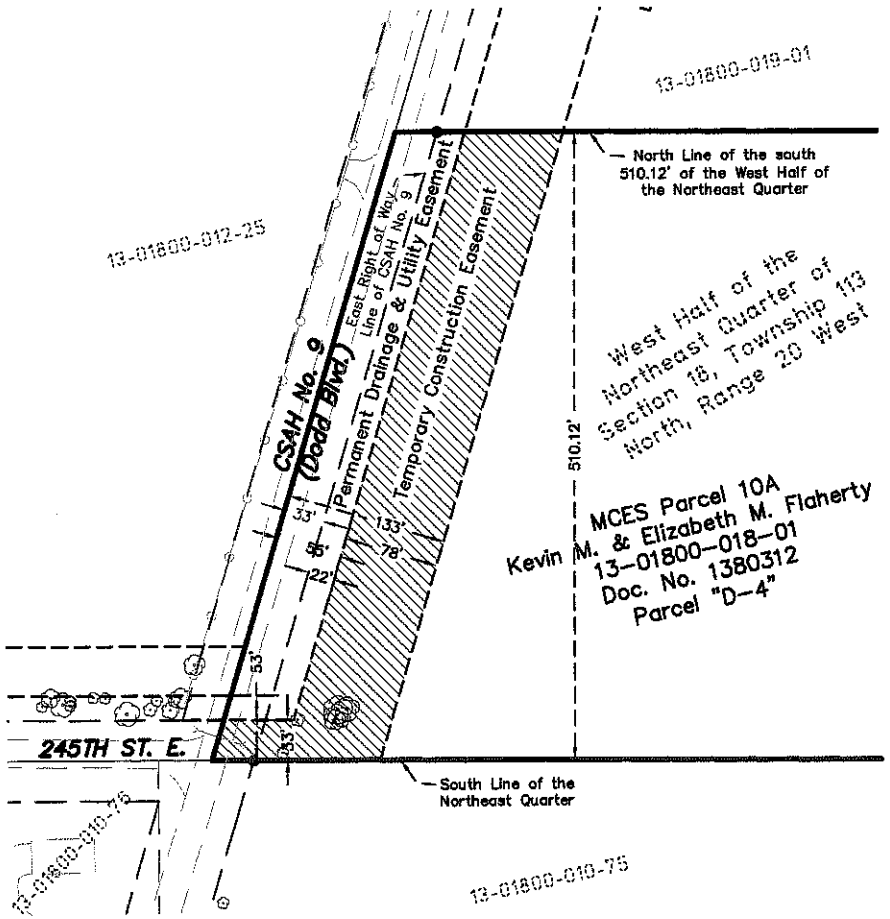
©BONESTROO, ROSENE, ANDERLIK & ASSOCIATES, INC. 2006

M.C.E.S.
Elko-New Market Interceptor
MCES Parcel No. 10A & 10B
Parcel Sketch & Description

2117-1-MCES-10_03
SHEET NUMBER
3 of 3

I:\B\602117\Cad\Dwg\EASEMENTS\2117-1-MCES-10_03.dwg 10/3/2006 2:22:16 PM CDT

(EXHIBIT D)



Fee Owner: Kevin M. Flaherty and Elizabeth M. Flaherty, joint tenants

MCES Parcel 10A PID : 13-01800-018-01		
Total Area of Parcel **	= 435,617 sq. ft. or 10.0004 Acres	
Total Area of Permanent Drainage & Utility Easement	= 11,641 sq. ft. or 0.2672 Acres	
Area of Permanent Easement in existing Roadway Easement	= 688 sq. ft. or 0.0158 Acres	
Net Area of Permanent Drainage & Utility Easement	= 10,953 sq. ft. or 0.2514 Acres	
Area of Temporary Construction Easement	= 43,409 sq. ft. or 0.9965 Acres	
Area of Temporary Easement in existing Roadway Easement	= 1,136 sq. ft. or 0.0261 Acres	
Total Area of Temporary Construction Easement	= 42,273 sq. ft. or 0.9704 Acres	

** computed from records

DESCRIPTION:

Permanent Drainage and Utility Easement

A Permanent Easement for Drainage and Utility purposes, over, under and across the east 22.00 feet of the west 55.00 feet of a certain tract of land described as Parcel "D-4" in Document No. 1380312, a Document that is on file and of record in the office of the County Recorder, Dakota County, Minnesota, lying north of the south 33.00 feet of said Document and the north 22.00 feet of the south 53.00 feet of the west 33.00 feet of said Document.

Containing 11,641 sq. ft. or 0.2672 Acres of land.

Temporary Construction Easement

A Temporary Easement for Construction purposes, over, under and across the east 78.00 feet of the west 133.00 feet of a certain tract of land described as Parcel "D-4" in Document No. 1380312, a Document that is on file and of record in the office of the County Recorder, Dakota County, Minnesota and the south 33.00 feet of the west 55.00 feet of said Document.

Containing 43,409 sq. ft. or 0.9965 Acres of land.

LEGEND:

- Permanent Drainage & Utility Easement
- Temporary Construction Easement
- Denotes Monument Found
- Denoted Deciduous Tree
- Denotes Fence

N

0 100 200
Scale in feet

I HEREBY CERTIFY THAT THIS SKETCH OF DESCRIPTION WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER A. ROSENBERG
SIGNATURE:
DATE: 10/03/2006 LIC. NO. 12222

FIELD CREW
DRAWN JMR
DESIGNED
APPROVED PAW
DATE 08/31/2006
PROJ. NO. B-CC-117

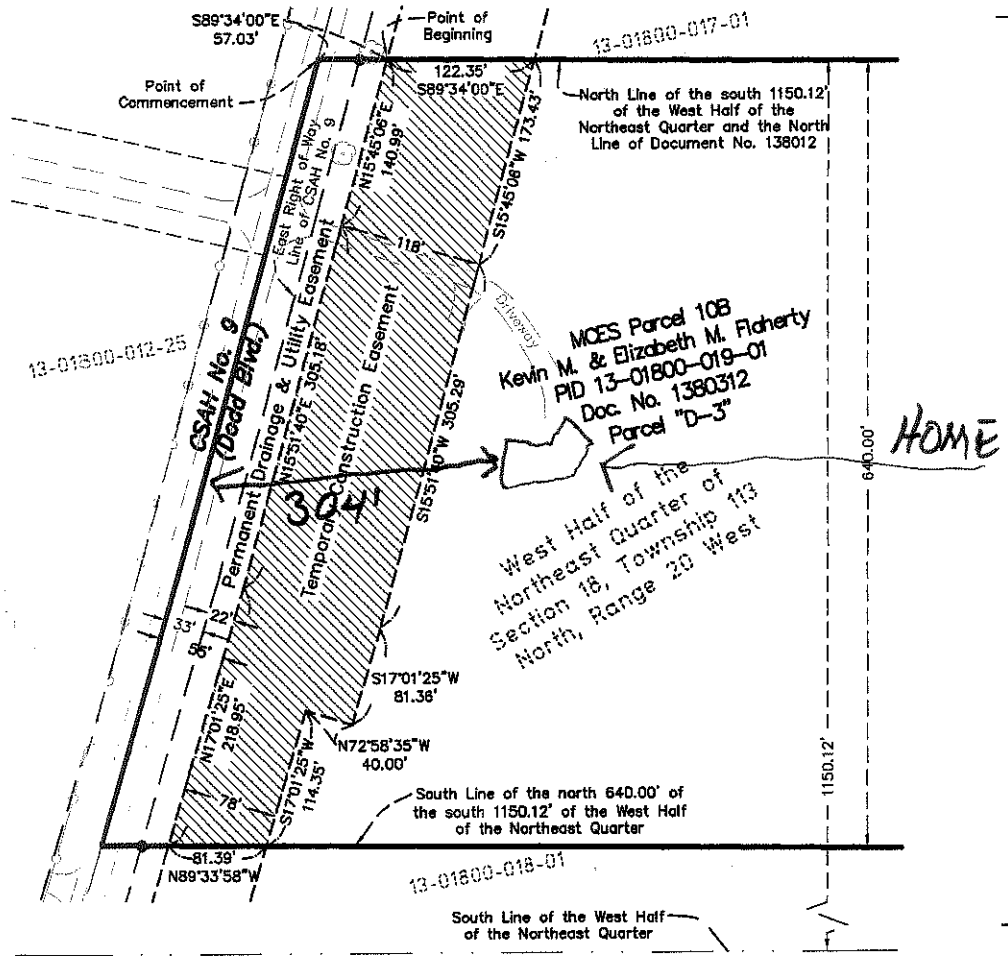
St. Paul Office
2335 West Highway 36
St. Paul, MN 55113
Phone: 651-636-4600
Fax: 651-636-1311
©BONESTROO, ROSENE, ANDERLIK & ASSOCIATES, INC. 2006
Bonestroo Rosene Anderlik & Associates
Engineers & Architects
www.bonestroo.com

M.C.E.S.
Elko-New Market Interceptor
MCES Parcel No. 10A
Parcel Sketch & Description

2117-1-MCES-10_01
SHEET NUMBER
1 of 3

I:\6\602117\Cad\Dwg\EASEMENTS\2117-1-MCES-10_01.dwg 10/3/2006 1:06:43 PM CDT

(EXHIBIT E)



Fee Owner: Kevin M. Flaherty and Elizabeth M. Flaherty, joint tenants

MCES Parcel 10B PID : 13-01800-019-01

Total Area of Parcel ** = 436,240 sq. ft. or 10.0147 Acres

Area of Permanent Drainage & Utility Easement = 14,633 sq. ft. or 0.3359 Acres

Area of Temporary Construction Easement = 74,136 sq. ft. or 1.7019 Acres

** Computed from records

DESCRIPTION:

Permanent Drainage and Utility Easement

A Permanent Easement for Drainage and Utility purposes, over, under and across the east 22.00 feet of the west 55.00 feet of a certain tract of land described as Parcel "D-3" in Document No. 1380312, a Document that is on file and of record in the office of the County Recorder of said Dakota County, Minnesota, being also a part of the West Half of the Northeast Quarter of Section 18, Township 113 North, Range 20 West in said Dakota County, Minnesota. Said 22.00 foot Easement lying adjacent to, easterly of and measured at right angles to the easterly Right of Way Line of of C.S.A.H. No. 9 (Dodd Boulevard).

Containing 14,633 sq. ft. or 0.3359 Acres of land.

Temporary Construction Easement

A Temporary Easement for Construction purposes, over, under and across the West Half of the Northeast Quarter of Section 18, Township 113 North, Range 20 West, Dakota County, Minnesota. Said Easement being also part of a certain tract of land described in Document No. 1380312, a Document that is on file and of record in the office of the County Recorder of said Dakota County, Minnesota. Said Easement being more particularly described as follows;

Commencing at the most northwesterly corner of said Document; Thence along the North Line of said Document, South 89 degrees 34 minutes 00 seconds East, assumed bearing, a distance of 57.03 feet to the Point of Beginning of said Easement herein described; thence continuing along said North Line, South 89 degrees 34 minutes 00 seconds East, a distance of 122.35 feet; thence South 15 degrees 45 minutes 06 seconds West, a distance of 173.43 feet; thence South 15 degrees 51 minutes 40 seconds West, a distance of 305.29 feet; thence South 17 degrees 01 minutes 25 seconds West, a distance of 81.36 feet; thence North 72 degrees 58 minutes 35 seconds West, a distance of 40.00 feet; thence South 17 degrees 01 minutes 25 seconds West, a distance of 114.35 feet to the South Line of said Document; thence along said South Line, North 89 degrees 33 minutes 58 seconds West, 81.39 feet; thence North 17 degrees 01 minutes 25 seconds East, a distance of 218.95 feet; thence North 15 degrees 51 minutes 40 seconds East, a distance of 305.18 feet; thence North 15 degrees 45 minutes 06 seconds East, a distance of 140.99 feet to the Point of Beginning.

Containing 74,136 sq. ft. or 1.7019 Acres of land.

LEGEND:

- Permanent Drainage & Utility Easement
- Temporary Construction Easement
- Denotes Monument Found
- Denoted Deciduous Tree
- Denotes Fence

N

0 100 200
Scale in feet

FIELD CREW | DRAWN | DESIGNED | APPROVED | DATE 08/21/2006 | PROJ. NO. 2117-1-17

I HEREBY CERTIFY THAT THIS SKETCH OF DESCRIPTION WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: JEFFREY A. WIGGERSHAUS
SIGNATURE:
DATE 10/03/2006 LIC. NO. 12222

St. Paul Office
2335 West Highway 36
St. Paul, MN 55113
Phone: 651-636-4600
Fax: 651-636-1311

Bonestroo Rosene Anderlik & Associates
Engineers & Architects
www.bonestroo.com

© BONESTROO, ROSENE, ANDERLIK & ASSOCIATES, INC. 2006

M.C.E.S.
Elko-New Market Interceptor
MCES Parcel No. 10B
Parcel Sketch & Description

2117-1-MCES-10_02
SHEET NUMBER
2 of 3

f:\6\602117\Cad\Dwg\EASEMENTS\2117-1-MCES-10_02.dwg 10/3/2006 2:12:23 PM CDT

CENTERLINE TO HOME 3041

(EXHIBIT F)

Minnesota Statutes Section 216E.03, subdivision 7, and Minnesota Rules 7849.5900 and 7849.5910. Construction of the Project will support State goals to conserve resources, minimize environmental and human settlement impacts and land use conflicts, and ensure the State's electric energy security through the construction of efficient, cost-effective infrastructure.

The Applicants request that the Commission grant a Route Permit for the Preferred Route because it impacts fewer homes within 500 feet of the proposed route centerline, makes better use of existing ROWs, minimizes impacts to prime farmland, minimizes impacts to natural resources and identified archaeological sites and has fewer overall transmission line miles. With fewer overall transmission line miles, the Preferred Route impacts less land, including agricultural land, and reduces overall costs.

NEXT STEPS

The Commission will determine whether this Application is complete and, if so, refer the matter to the Office of Administrative Hearings. An administrative law judge will preside at a contested case hearing and make a recommendation to the Commission as to whether the Route Permit should be granted and, if so, for what route. As part of the routing proceeding, the Minnesota Department of Commerce, Office of Energy Security, Energy Facility Permitting Staff will prepare an Environmental Impact Statement ("EIS"). The administrative law judge's recommendation and the EIS will be forwarded to the Commission for consideration in making its decision.

COMPLETENESS CHECKLIST

The content requirements for an application with the Commission under the Full Permitting Process are identified in Minnesota Rules 7849.5220, Subparts 2 and 3. The rule requirements are listed in Table ES-1 with references indicating where the information can be found in this Application.

Table ES-1. Route Permit Application Completeness Checklist

Authority	Required Information	Where
Minn. R. 7849.5220, Subp. 2	Route Permit for High Voltage Transmission Line	
A.	a statement of proposed ownership of the facility at the time of filing the application and after commercial operation;	1.1
B.	the precise name of any person or organization to be initially named as permittee or permittees and the name of any other person to whom the permit may be transferred if transfer of the permit is contemplated;	1.2
C.	at least two proposed routes for the proposed high voltage transmission line and identification of the applicant's preferred route and the reasons for the preference;	Executive Summary, 2.0, 4.0
D.	a description of the proposed high voltage transmission line and all associated facilities including the size and type of the high voltage transmission line;	2.2, 3.1
E.	the environmental information required under Minn. R. 7849.5220, Subp. 3;	See Minn. R. 7849.5220, Subp.3 (A)-(H) below.
F.	identification of land uses and environmental conditions along the proposed routes;	6.0, 7.0, 8.0, 9.0
G.	the names of each owner whose property is within any of the proposed routes for the high voltage transmission line;	Appendix L
H.	United States Geological Survey topographical maps or other maps acceptable to the commission showing the entire length of the high voltage	Appendix A

(EXHIBIT G.)

Table 4-1. Summary of Impacts and Factors Considered

Factor	Preferred Route and Associated Facilities	Alternate Route and Associated Facilities	Summary
Effects on Human Settlement			
Displacement	No displacement is anticipated.		
Noise	Transmission line and substation noise levels are not predicted to exceed Minnesota Pollution Control Agency ("MPCA") noise limits.		
Aesthetics	Will likely affect visual quality and area aesthetic within close proximity of the transmission line. Crosses the Minnesota River, a scenic byway, and a historic federal highway. Recreational resources are also located nearby. There are 310 homes within 500 feet of the route centerline.	Will likely affect visual quality and area aesthetic within close proximity of the route. Crosses the Minnesota River where it is designated scenic by the State of Minnesota, a scenic byway, and a historic federal highway. Recreational resources are also located nearby. There are 319 homes within 500 feet of the route centerline.	Both routes impact aesthetics similarly. The Alternate Route crosses the Minnesota River where the river is designated scenic. The Preferred Route does not cross the Minnesota River at any location where it is designated scenic. There are slightly fewer homes within 500 feet of the Preferred Route centerline.
Cultural Values	No impacts to cultural values are anticipated.		
Recreation	There are four Wildlife Management Areas ("WMAs") along the route, resulting in an estimated 275 ft^2 of permanent. There are twelve snowmobile trails that cross the route. There is also one SNA, but no Waterfowl Protection Areas ("WPAs") within a mile of the Preferred Route.	There are nine WMAs along the route, resulting in an estimated 495 ft^2 of permanent impacts. There are sixteen snowmobile trails that cross the route. There is also one SNA, and two WPAs within a mile of the Alternate Route.	The Preferred Route has fewer impacts to recreation resources.
Public Services	No impacts to Public Services are anticipated.		
Effects on Public Health and Safety			
Public Health and Safety	The Applicants will ensure that all safety requirements are met during the construction and operation of the proposed transmission line and associated facilities.		
Effects on Land-based Economies			
Agriculture	Approximately 25.2 acres of permanent impacts to agriculture are anticipated for construction of the transmission line. Approximately 42.3 acres of agricultural land would be impacted due to the construction of the Associated Facilities for the Preferred Route.	Approximately 26.5 acres of permanent impacts to agriculture are anticipated for construction of the transmission line. Approximately 42.4 acres of agricultural land would be impacted due to the construction of the Associated Facilities for the Alternate Route.	The Preferred Route permanently impacts approximately one acre less of agricultural land.
Forestry	No impacts to economically important forestry will occur.		
Tourism	No impacts to tourism are anticipated.		

X2020