FINAL
Environmental Assessment for a Proposed 161 kV HVTL and Associated Substation

Pleasant Valley Wind, LLC

December 2013
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<thead>
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</tr>
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<tr>
<td>ACRS</td>
<td>Aluminum Core Steel Reinforced</td>
</tr>
<tr>
<td>BMPs</td>
<td>Best Management Practices</td>
</tr>
<tr>
<td>BWSR</td>
<td>Minnesota Board of Soil and Water Resources</td>
</tr>
<tr>
<td>dB</td>
<td>Decibels</td>
</tr>
<tr>
<td>dBA</td>
<td>Decibel A-weighting</td>
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<tr>
<td>DNR</td>
<td>Minnesota Department of Natural Resources</td>
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<tr>
<td>EA</td>
<td>Environmental Assessment</td>
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<tr>
<td>EMF</td>
<td>Electromagnetic Field</td>
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<tr>
<td>EQB</td>
<td>Minnesota Environmental Quality Board</td>
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<tr>
<td>FWS</td>
<td>United States Fish and Wildlife Service</td>
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<td>G</td>
<td>Gauss</td>
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<tr>
<td>GRE</td>
<td>Great River Energy</td>
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<tr>
<td>HVTL</td>
<td>High Voltage Transmission Line</td>
</tr>
<tr>
<td>kV</td>
<td>Kilovolt</td>
</tr>
<tr>
<td>kV/m</td>
<td>Kilovolts per meter</td>
</tr>
<tr>
<td>mG</td>
<td>Milligauss</td>
</tr>
<tr>
<td>MHS</td>
<td>Minnesota Historical Society</td>
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<tr>
<td>MnDOT</td>
<td>Minnesota Department of Transportation</td>
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<tr>
<td>MPCA</td>
<td>Minnesota Pollution Control Agency</td>
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<td>MW</td>
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<tr>
<td>NAC</td>
<td>Noise Area Classification</td>
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<tr>
<td>NESC</td>
<td>National Electric Safety Code</td>
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<tr>
<td>NPDES/SDS</td>
<td>National Pollutant Discharge Elimination System/State Disposal System</td>
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<tr>
<td>OPGW</td>
<td>Optical Ground Wire</td>
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<td>PUC</td>
<td>Minnesota Public Utilities Commission</td>
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<tr>
<td>Pleasant Valley</td>
<td>Pleasant Valley Wind</td>
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<tr>
<td>ROW</td>
<td>Right-of-way</td>
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<tr>
<td>SHPO</td>
<td>Minnesota State Historic Preservation Office</td>
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<tr>
<td>SWPPP</td>
<td>Storm Water Pollution Prevention Plan</td>
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<tr>
<td>USACE</td>
<td>United States Army Corps of Engineers</td>
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1.0 INTRODUCTION

1.1. Proposed Project and Project Need

Pleasant Valley Wind, LLC (Pleasant Valley), a wholly-owned subsidiary of RES America Developments Inc., plans to construct up to 200 megawatt (MW) Large Wind Energy Conversion System in portions of Dodge and Mower counties, Minnesota, approximately 15 miles southwest of Rochester, Minnesota (the Wind Project). Energy generated by the Wind Project will be collected at a 34.5/161 kV project substation and transmitted into the grid by a 161 kilovolt (kV) high voltage transmission line (HVTL) to the Wind Project’s point-of-interconnection at the existing substation owned by Great River Energy (GRE Substation) in Mower County, Minnesota.

Pleasant Valley conducted an Environmental Assessment (EA) in 2010 (MN docket 09-1198) originally to assess two proposed substations and two connecting HVTLs to the GRE Substation. The transmission line options were referred to as the “proposed north route” and “proposed south route;” the substations were referred to as the “proposed north substation” and the “proposed south substation.” Due to changes to the Wind Project from 2010 to 2013, the transmission line and project substation options have changed since the 2010 EA. The “proposed south route” is no longer under consideration; nor is the “proposed south substation.” Furthermore, the “proposed north substation” and proposed 161 kV HVTL transmission line options have been modified from the north route that was assessed in 2010 and will therefore require an Environmental Assessment (EA) for the new route options and the proposed substation. Collectively, the proposed substation and proposed HVTL are referred to in this EA as the “Project”.

Two main route options have been proposed for the location of the transmission line within the County, as described in the next Section. Only one of these transmission routes will ultimately be built by Pleasant Valley.

1.2. Project Location, Description, and Schedule

In general, the proposed 161 kV transmission line will begin at the proposed substation located in the northeast corner of Section 20 of Township 104N, Range 16W and will terminate at the GRE Substation in Section 19 of Township 104N, Range 15W.

The proposed transmission line route options (“Options”) are located in the townships of Sargeant and Pleasant Valley in Mower County (Appendix A, Figure 1):

- **Option 1** is located in Sections 20-24 of Township 104N, Range 16W, and in Sections 18-19 of Township 104N, Range 15W. Option 1 begins at the project substation and parallels the south side of 310th Street (County Road 1) for approximately four miles. It crosses to the north side of the road near the intersection of 310th Street and 680th Avenue and continues along the north side of 310th Street for approximately 0.3 miles before it turns south into GRE Substation. Option 1 is approximately 4.7 miles in length.

- **Option 2** – Option 2 is located in Sections 9-12, 17, and 20 of Township 104N, Range 16W and in Sections 7 and Sections 18-19 of Township 104N, Range 15W. Option 2 begins at the project substation and parallels the west side of 640th Avenue for one mile before turning east near the intersection of 640th Avenue and 320th Street. The route continues on
the north side of 320th Street for approximately 2.5 miles before turning north on the west side of 665th Avenue for 0.5 mile. The route then turns east along the south side of 325th Street for approximately 1.5 miles before turning south, following an interior field line for approximately 0.3 miles and crossing the North Branch of the Root River. After crossing the River, Option 2 crosses to the east side of 680th Street for approximately one mile before turning east along the north side of 310th Street for approximately 0.3 mile before turning south into the GRE Substation. Option 2 is approximately 7.8 miles in length.

- **Option 2A** is a sub-alternative to Option 2 that was added to the Options under analysis based upon input provided to Pleasant Valley during the scoping period. Upon exiting the project substation, Option 2A would head straight north for one mile; instead of paralleling 640th Avenue on the west side of the road, it is set back approximately 750 ft to be located behind (west of) two homes. At 320th Street, Option 2A would turn east along the south side of the road until meeting up with Option 2 near the intersection of 320th Street and 640th Avenue. The remainder of the route is the same as Option 2, described above. Option 2A is 7.8 miles in length, and would add approximately 0.1 mile or less to the overall length of the Option 2, depending on the final location of the project substation.

The proposed 34.5/161 kV project substation will be located in the northeast quarter of Section 20 of Township 104N, Range 16W. The exact location of the project substation is still being determined and will be based on discussions with the landowner as well as design and engineering factors. It should be noted that the project substation location is not shown to scale in the figures in this EA, but the mapped substation polygon encompasses the area within which the substation will likely be placed. For impact calculation purposes within this EA, a “worst-case” assumption was made in order to calculate the longest possible length of 161 kV line Options.

The fenced enclosure for the substation will measure about 320 feet by 320 feet, covering about 2.5 acres and will include the following equipment

- Up to ten 34.5 kV underground collector circuits feeding from turbine sites into the project substation, with a total projected generation capacity of 200 MW,
- One 34.5/161 kV main transformer
- Circuit breakers and protection devices for each collector circuit and CTs/VTs
- A capacitor bank system (35 kV / 12 MVAR)
- A control building to house all protection and control cabinets, and a DC battery system.

The local review process for the Project was initiated October 18, 2013 and is pending (see Section 2.0 below). Construction of the Project could begin as early as summer 2014 and the Project is anticipated to be completed by the planned commercial operation date of the Wind Project, targeted for October 2015.

### 2.0 Regulatory Framework

#### 2.1 Permit Requirement

This Project falls under the State of Minnesota, Power Plant Siting Act (Minnesota Statutes § 216E.05 and Minnesota Rules Chapter 7850) for transmission projects and substations ranging between 100 to 200 kV and requires a route permit from the Minnesota Public Utilities Commission (PUC). However,
for eligible projects, a utility may apply to the local unit of government that has jurisdiction over the project for approval instead of applying to the PUC (see Minn. Rules 7850.5300). The Project is eligible for local review (Subp. 2C). On October 8, 2013, Mower County (County) agreed to act as the lead local unit of government with jurisdiction to approve the Project (see Appendix B).

As required by Minn. Rules 7850.5300, Supb. 3, a Project notice was sent on October 18, 2013 to the PUC and to those persons on the Power Plant Siting General Notification list of the notice of intent to seek local approval of this Project (see Appendix B).

2.2. Environmental Assessment Requirement

In accordance with Minn. Rules 7850.5300 Subp.5, Pleasant Valley must complete an EA for the proposed Project. The EA contains information on the human and environmental impacts of the proposed Project and addresses methods to mitigate such impacts.

Once the EA is complete, the County must publish a notice in the Minnesota Environmental Quality Board (EQB) Monitor that the EA is available for review by the public, how a copy of the EA document may be reviewed, that the public may comment on the EA document, and the procedure for submitting comments to the County. A final decision on the Project cannot be made by the County until at least ten days after the notice of EA availability appears in the EQB Monitor.

2.3. Public Participation and Scoping of Environmental Assessment

On October 25, 2013, the County notified the public via the Austin Daily Herald of a public open house meeting to be held on November 5, 2013 from 2:30 p.m. to 4:00 p.m. in the Commissioner's Room at the Mower County Government Center. In addition, on October 24, 2013, the County sent notice letters of the November 5, 2013 public open house meeting to Project area landowners and sent letters requesting comments on the Project to applicable state and local agencies. Public and agency comments pertaining to the Project can be found in Appendix C.

There were 10 attendees at the November 5, 2013 public open house meeting. Comments made by four of the attendees were transcribed during the open house meeting and additional comments were collected throughout the scoping period, which ended at 4:00 p.m. on November 18, 2013. Appendix C contains a summary of those comments and where they are addressed within this EA.

Federal, state and local agencies were sent a letter requesting their comments on the Project on October 24, 2013. Agencies contacted include: U.S. Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers (USACE), MN Department of Transportation (MnDOT), MN Historical Society – State Historic Preservation Office[r] (SHPO), MN Department of Natural Resources (DNR), MN Pollution Control Agency (MPCA), Mower County Soil & Water Conservation District (SWCD); Mower County Public Works, Administration, and Board of Commissioners. As of December 3, 2013 only MnDOT has provided a response. To review the response letter, see Appendix C.

2.4. Permitting

Upon finalizing the EA, permits and approvals will need to be obtained prior to construction. Pleasant Valley will follow all necessary procedures and will work with the permitting agencies in meeting those requirements. See Table 1 below for a complete list of permits and approvals that may be needed for the Project.
### Table 1: Required Regulatory Permits and Approvals

<table>
<thead>
<tr>
<th>Government Unit</th>
<th>Regulated Activity</th>
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<tr>
<td><strong>Federal</strong></td>
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<tr>
<td>US Fish and Wildlife Services (USFWS)</td>
<td>Consultation and Review of the Project regarding Federally Threatened and Endangered Species</td>
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<tr>
<td>US Army Corps of Engineers (USACE)</td>
<td>Section 404 Permits</td>
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<tr>
<td>Minnesota Public Utilities Commission (PUC)</td>
<td>Notification of status of Local Review</td>
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<tr>
<td>MN State Historic Preservation Office (SHPO)</td>
<td>Cultural and Historic Resources Review</td>
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<tr>
<td>Minnesota Pollution Control Agency (MPCA)</td>
<td>401 Certification</td>
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<td>NPDES Stormwater Permit for Construction</td>
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<td>Small Quantity Generator of Hazardous Waste</td>
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<td><strong>State</strong></td>
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<tr>
<td>Minnesota Department of Natural Resources (DNR)</td>
<td>Consultation and Review of the Project regarding information on Minnesota's rare plants and animals, native plant communities, and other rare features.</td>
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<td>Public Waters Work Permits</td>
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<td>License to Cross Public Lands and Waters</td>
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<td>MN Board of Soil and Water Resources (BWSR)</td>
<td>Wetland Conservation Act Approval</td>
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<td>Minnesota Department of Transportation (MnDOT)</td>
<td>Work within ROW Permit</td>
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<td>Oversize and Overweight Vehicles: Single Trip Permit</td>
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<td><strong>Local</strong></td>
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<td>Mower County</td>
<td>Conditional Use Permit</td>
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<td>Moving Permit</td>
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<td></td>
<td>Access Drive and Entrance Permit</td>
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<td>Utility Permit</td>
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<td>ROW Obstruction, or Excavation Permit</td>
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<td>Permit to construct Sewage Treatment System</td>
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<td></td>
<td>Building Permits</td>
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<tr>
<td>Soil and Water Conservation District (SWCD)(Mower County)</td>
<td>Wetland Permitting</td>
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3.0 ENGINEERING DESIGN, RIGHT-OF-WAY ACQUISITION, AND CONSTRUCTION

3.1. Engineering Design

The Project will be constructed to meet or exceed all National Electric Safety Code (NESC) standards. Additional health and safety information can be found in Section 4.3.

3.1.1. PROPOSED DESIGN

The proposed design of the structures is preliminary and subject to change. The single-circuit 161 kV transmission line will likely be strung on monopole structures, wood but possibly steel, with an average span of 350 to 450 feet between structures. Structure height for the transmission line will be approximately 90 feet above ground with a directly embedded concrete foundation 10 to 12 feet deep and a 21 inch diameter across the base. Inset 1 shows a photo of a 161 kV line with structures similar to the anticipated typical design. This structure type may not be feasible for spanning wetlands or crossing existing transmission lines and may require engineering design alternatives, such as an H-frame structure in select locations. These will be determined during final engineering design. The transmission line right-of-way (ROW) will likely be 60 feet wide. The conductor for the proposed line will include three phases of Aluminum Conductor Steel Reinforced (ACSR) 795 ACSR (Drake) cable accompanied by an optical grounding wire for communications and for lightning protection.

Inset 1 – Example of Typical 161 kV Structure
3.1.2. **Typical Right-of-Way**

Pleasant Valley is evaluating a 100-foot wide route corridor for the route siting in this E.A. However, once the transmission line route is finalized the easements will likely be 60-feet wide, i.e., thirty feet from the centerline of the transmission line and poles. Pleasant Valley will site all transmission line structures on private land outside of public ROWs. On the “road side” of the transmission line poles, Pleasant Valley will secure easements that will overlap with the existing township or county road ROW, where the easement rights will overlap with the road ROW and the transmission easement reserved for Pleasant Valley Wind LLC.

The remaining easement will extend away from the ROW into the adjacent private land, where Pleasant Valley will be the sole holder of the transmission easement in accordance with the agreements signed with the individual property owners. Within this portion of the easement, Pleasant Valley plans to place the poles approximately 15 feet outside the public road ROW, as depicted in the insets below. The proposed transmission line design generally places structures adjacent to road ROWs to minimize impacts on agricultural land, and maintain clearances in accordance with NESC Standards.

**Typical ROW – Along County Roads**

Option 1 will parallel existing County ROWs. The current ROW width of the county road is 100 feet—50 feet from centerline of the road. As depicted below in Inset 2, Pleasant Valley’s transmission line and poles will be sited 15 feet or less from the edge of the county road ROW. Pleasant Valley’s easement will likely be thirty-feet wide on either side of the line and poles, for a total likely easement width of 60 feet.

Inset 2 – Typical ROW Along County Roads
Typical ROW – Along Township Roads

Option 2 will run along existing township road ROWs. The current ROW width of all township roads is 66 feet—33 feet from centerline of the road. As depicted below in Inset 3, Pleasant Valley’s transmission line and poles will be sited 15 feet or less from the edge of the township road ROW. Pleasant Valley’s easement will likely be 30 feet wide on either side of the line and poles, for a total likely easement width of 60 feet.

Inset 3 – Typical ROW Along Township Roads

On the “road side” of the transmission line poles, Pleasant Valley will secure easements that will overlap with the existing township road ROW, where the easement rights will overlap with the ROW reserved for the Township and the transmission easement reserved for Pleasant Valley Wind LLC.

The remaining easement will extend away from the ROW into the adjacent private land, where Pleasant Valley will be the sole holder of the transmission easement in accordance with the agreements signed with the individual property owners. Within this portion of the easement, Pleasant Valley plans to place the poles approximately 15 feet outside the township road ROW. The proposed transmission line design places structures adjacent to township road ROWs to minimize impacts on agricultural land, and maintain clearances in accordance with NESC Standards.

3.1.3. REJECTED ALTERNATIVES

Underground Transmission

While there are aesthetic benefits to burying transmission lines underground, there are considerable drawbacks. Underground transmission lines present significant challenges due to the environmental disturbances, additional repair time, and higher installation and repair costs. Specifically, underground transmission lines were not considered for this project for several reasons:
The cost to construct the HVTL underground would be cost prohibitive due in part to:

- The additional costs are associated with trenching, the cost of electrical cables, conduit, backfilling materials, manholes, risers, and redundant cables to guard against cable failure. An underground HVTL must be encased in a concrete conduit approximately 4-ft wide by 5-ft deep.
- The ground area disturbed during construction would include a trench up to 20-ft wide to install the concrete conduit. The conduit would require a concrete vault approximately every 1,000 feet at the surface for access. Participating Landowners would incur considerably more surface damage for these construction activities than they will for overhead lines.
- If the underground line did fail, the trench and conduit would need to be excavated leading to considerable disruption and reconstruction of the line within the ROW, causing additional interruption to farming activities.

- An underground HVTL would inhibit Participating Landowners from farming the 20-ft wide strip where the line is buried.
- Higher safety risk from digging, especially in an agricultural setting like Mower County where nearly every tillable acre has drain tile.

Co-location With Existing Aboveground Electrical Lines

For Option 1, co-locating the transmission line on the existing single-circuit 161 kV structures along 310th Street was suggested during the scoping process as an alternative to consider. Co-location is not feasible for this Project because, among other things, the existing structures could not be converted to host a double-circuit, i.e., the existing line and Pleasant Valley’s transmission line. The existing transmission line would have to be completely removed and rebuilt with larger poles, and the existing ROW likely widened to account for the taller structures. This intensive construction project would require extended outages of the existing transmission line—perhaps extending over several months, which would create significant reliability problems for both Great River Energy and electricity consumers in the area. Furthermore, the regulatory approvals necessary to co-locate transmission lines of different utilities could take 12-18 months, which would not allow the Project to be constructed on the necessary timeline to deliver the electricity from the Wind Project to the electric grid.

3.2. Right-of-Way Acquisition

All portions of the Project are located on private property and Pleasant Valley’s authority to construct, operate, and maintain the Project derives from easement agreements with the landowners of that private property (Participating Landowners). Pleasant Valley has already begun the easement acquisition process for the Project.

3.3. Construction and Maintenance Procedures

3.3.1. Construction

Construction will commence after the necessary approvals have been obtained from state and local officials, and required permits have been issued. Construction practices will follow the Applicant’s standard operation procedures and mitigation practices to comply will all state and local laws. Typical
construction equipment will be used for the installation of the proposed structures and will include the use of tree or stump removal equipment, mowers, cranes, backhoes, drill rigs, dump trucks, front end loaders, bulldozers, flatbed trailers, pickup trucks, and other various equipment. Poles will be delivered on trailers and held on trailers in the staging area likely near the town of Sargeant. Pole locations will be surveyed and flagged. Access to these locations will be obtained from the existing ROW. In areas where access is difficult, field access will be utilized with landowner consent. Use of heavy equipment for pole installation may include the use of cranes, and other heavy equipment access; however no upgrades to existing public roads are anticipated for the construction of the Project.

Poles will be placed in approximately 2 foot diameter holes and filled with granular material, consistent with construction standards as provided by the design engineer. Once the poles are placed in the ground, three (3) conductors and an OPGW/shield wire will be strung between several poles at one time. A staging area for each of the cable spool trailers and the cable pulling equipment will be placed at either end of a group of poles. The number poles are dependent on the pole spacing, length of conductor and terrain. The cable pulling equipment and the cable/conductor spool will be placed in several staging and pulling areas temporarily located along the transmission line at 1 to 2 mile increments. The cable will be pulled from the cable spool by the pulling equipment and then secured to each pole. This process will be repeated in segments, until the conductors are fully secured to each of their supporting poles.

In general, the construction of the project substation and transmission line is anticipated to occur over approximately 6-8 months. Construction of the transmission line would likely progress at about one linear mile of transmission line per month with some additional mobilization and setup time. Therefore, construction of Option 1 would take about 6 months to complete; and construction of Option 2 or 2A would take about 8 months to complete. It is also possible that the construction of the Project may be spread out over more than one construction season to accommodate the needs of other utilities in the area of the GRE Substation and to schedule potential outages (GRE, Xcel, Freeborn-Mower Coop, etc.), but the overall time when construction activities would take place will be as described above.

All construction work will be completed in accordance with the issuance of required permits. Installation of silt fence and other Best Management Practices (BMPs) for erosion control measures will be used on areas subject to disturbance. A Stormwater Discharge Permit for construction activities under the National Pollutant Discharge Elimination System (NPDES), administered by the MPCA is required and will be completed prior to onsite construction. In addition a Stormwater Pollution Protection Plan (SWPPP) will be developed to minimize soil erosion and identify BMPs to be employed during construction to protect existing site conditions and adjacent resources by minimizing soil erosion. The construction management team will be responsible to ensure implementation and compliance with the permit conditions.

3.3.2. Restoration Procedures

Construction crews will attempt to minimize ground disturbance when possible. However, soil disturbance is likely to occur. Therefore the Applicant will restore lands to their original condition to the maximum extent practicable. Any damage to landowner(s) properties or road ROW during construction will be repaired, replaced, or compensated by the Applicant.

In areas where construction has significantly compacted soils and reestablishing vegetation is difficult, the Applicant will promptly seed the areas and install silt fences, and erosion control measures, which will
protect the soil until the vegetation reestablishes. Specific restoration procedures will be identified as part of the SWPPP, as described further in Section 4.6.3.

Post-construction activities include:

- Removing and disposing of debris;
- Removing all temporary facilities (including staging and laydown areas);
- Employing appropriate erosion control measures.

### 3.3.3. Maintenance

Transmission lines and substations are designed to operate for several decades with minimal maintenance, and the projected lifespan of the Project is 30 years (i.e., the same length of time as the associated Wind Project). However, it is common that annual inspections and maintenance will be required during the 30 years of operation. Pleasant Valley will periodically use the transmission line ROW to perform inspections, maintain equipment, and repair any damage. Any required hardware repairs or tightening would likely be completed in 1-2 days of field activity. The Applicant will use qualified staff to maintain all facilities. Ongoing monitoring of vegetation will occur to ensure unwanted species are managed and safe operation of the transmission lines.

The Project substation will be monitored regularly to keep it functioning in accordance with accepted operating procedures adopted by NECS requirements.

## 4.0 Assessment of Environmental Impacts and Mitigation

Pleasant Valley will minimize environmental impacts during construction of the Project by employing best management practices (BMPs) where appropriate. Some impacts from the Project are discussed in the following sections; however, in general, impacts to the environment from the Project are expected to be minimal and short-term, with minimal mitigation needed.

Correspondence relative to environmental conditions in the Project area and responses received from state and federal agencies that reviewed the Project are provided in Appendix C.

### 4.1. Description of Environmental Setting

The Project is located in Mower County, in a rural, agricultural landscape dominated by cultivated land, mostly corn and soybean crops. The cultivated land is ditched and drained by agricultural drain tile. A small number of farmers in the Project vicinity raise livestock, principally cattle and hogs, with a small number of dairy, beef, and turkey farms and isolated farms are producing organically-raised meat and produce. Within the Project area, the land use is agriculture with scattered homes and farming-related structures including barns, silos and sheds; the Haven Hutterian Brethren Community is also located within the Project area. The nearest incorporated city to the Project is Sargeant (population 61) (US Census, 2010), approximately 2 miles west of the Project; Brownsdale, Dexter, Waltham, and Hayfield are all within 10 miles of the Project. Austin is approximately 15 miles to the southwest of the Project, and
the nearest city with a population over 100,000 is Rochester, Minnesota, approximately 15 miles to the northeast.

4.2. Effects on Human Settlement

An analysis of human settlement impacts, including factors such as land use, displacement, noise, aesthetics, recreational resources, socioeconomics, and public services and infrastructure are discussed below.

4.2.1. LAND USE

Description of Resources/Issues

The Project is located in Sargeant and Pleasant Valley townships where the land use is zoned agricultural. The Mower County Zoning Ordinance defines the purpose of the Agricultural District as a zone that is

“intended to provide a district which will allow suitable areas of the county to be retained in agricultural use; regulate scattered non-farm development; regulate wetlands and woodlands, which, because of their unique physical features provide a valuable natural resource; and, secure economy. To provide a district that will retain, conserve, and enhance agricultural land in the County and to protect this land from necessary urban encroachment including scattered residential development.”

All necessary approvals will be obtained from the appropriate state, county, and township authorities. See Table 1 for more information on permits and approvals.

The planning goals stated in the Mower County Comprehensive Plan are the principals that guide County-level decisions to protect land use. These goals include:


2. Conservation and enhancement of the County’s rich natural resource base (air, water, soils and woodlands) to maintain a high standard of environmental quality and sustain commercial agriculture.

3. Preservation of the rural/small town/agrarian lifestyle in harmony with the urban lifestyle.

4. Accommodation of responsible urban expansion in areas that do not conflict with or appreciably diminish the supply of prime agricultural land or interfere with the rural lifestyle and where the full range of urban services can be provided.

5. Creation of expanded employment opportunities in concert with all units and levels of government as a means to retain young people.


7. Maintenance of quality education standards, which adequately prepare young people for future educational and employment, endeavors.
8. Cooperation and improvement in working relationships between all units of government (Cities, Townships, County and State) to realize common goals and objectives.

9. Preservation of the County’s investment in publicly owned facilities including roads, buildings and equipment.

10. Delivery of an appropriate and efficient level of public services, which recognizes, and is capable of adapting to changing circumstances (an aging population, etc.).

**Impacts**

Option 1’s ROW will cover approximately 34.2 acres; however, only approximately 0.004 acres (177 square feet) of land will be impacted long-term (during the life of the Project facilities) by the structures (assuming 21 inch diameter structures every 350 feet).

Option 2 land use requirements are listed below:

- Option 2’s ROW will cover approximately 56.7 acres; however, only approximately 0.007 acres (295 square feet) of land will be impacted long-term by the structures;

- Option 2A will cover the 56.7 acres of Option 2 plus an additional approximately 0.5 acres; however, only 0.007 acres (298 square feet) of land will be impacted long-term by the structures.

The Project substation will include long-term ground impacts for a gravel enclosure of about 2.5 acres.

Long-term impacts to the land use under the transmission line will be minimal, as agricultural practices can still continue. See Section 4.4.1 for more information on impacts and mitigation to agriculture.

The Project will be developed and constructed consistent with the purpose of the agricultural District zone, and the Mower County Comprehensive Plan. First, the Project will affect only a small amount of agricultural land. This will maintain agricultural lands while promoting responsible development that will not interfere with the rural lifestyle of the area. Second, the Project will transmit renewable energy generated by the Pleasant Valley Wind Project that helps further the State of Minnesota’s ability to meet mandated Renewable Portfolio Standard (RPS) without threatening the rural nature of the area, natural resources, or prime agricultural lands.

**Mitigation**

Participating Landowners will be compensated through the easement agreements for the small amounts of land that will be taken out of production for the life of the Project. The presence of the Project will not otherwise affect the current zoned land use in the Project ROW. In particular, it is the express intention of the Participating Landowners to continue cultivating the private property within the transmission line corridor, with the exception of the pole locations. Accordingly, no further mitigation is necessary.
4.2.2. **DISPLACEMENT**

*Description of Resources/Issues*

Displacement results from ROW acquisitions that require the use of property occupied by a residence or business. A displacement was defined as an impact to an occupied residence or business whose structure is located within the Project ROW.

*Impacts*

Constructing the HVTL and project substation will not require displacement of any residence or business.

*Mitigation*

Because no displacement will occur from this Project, no mitigation is necessary.

4.2.3. **SOUND**

*Description of Resources/Issues*

Humans perceive sound when sound pressure waves encounter the auditory components in the ear. These components convert these pressure waves into perceivable sound. Noise is comprised of a variety of sounds of different intensities, across the entire frequency spectrum and is considered a sound that is perceived as a nuisance.

Sound is measured in units of decibels (dB) on a logarithmic scale. Because human hearing is not equally sensitive to all frequencies of sound, certain frequencies are given more "weight". The A-weighted scale (dBA) corresponds to the sensitivity range for human hearing.

A sound level change of 3 dBA is barely perceptible to human hearing. A 5-dBA change in sound pressure level, however, is clearly noticeable. A 10-dBA change in sound level is perceived as a doubling of loudness, while a 20-dBA change is considered a dramatic change in loudness.

When the distance is doubled from a point source, like a substation, the sound level decreases by six decibels. When the distance is doubled from a line source, like a roadway or transmission line, the sound level decreases by three decibels.

State of Minnesota sound standards require an L50 level of 50 dB(A) or less at nighttime (10:00 p.m. – 7:00 a.m.) for residential receptors (Minn. Rule Chapter 7030.0040), which means during a one-hour period of monitoring, the nighttime levels cannot exceed 50 dB(A) for more than 50 percent of the time (L50). For purposes of comparison, Table 2 illustrates levels of sound for commonly known sources and typical sources already present within the Project area.
Table 2: Common Sound Sources and Levels

<table>
<thead>
<tr>
<th>Noise Source</th>
<th>Sound Pressure Level (dBA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jet Engine (at 25 meters)</td>
<td>140</td>
</tr>
<tr>
<td>Jet Aircraft (at 100 meters)</td>
<td>130</td>
</tr>
<tr>
<td>Rock Concert</td>
<td>120</td>
</tr>
<tr>
<td>Pneumatic Chipper</td>
<td>110</td>
</tr>
<tr>
<td>Jackhammer (at 1 meter)</td>
<td>100</td>
</tr>
<tr>
<td>Chainsaw, Lawn Mower (at 1 meter)</td>
<td>90</td>
</tr>
<tr>
<td>Heavy Truck Traffic</td>
<td>80</td>
</tr>
<tr>
<td>Business Office, Vacuum Cleaner</td>
<td>70</td>
</tr>
<tr>
<td>Conversational Speech, Typical TV Volume</td>
<td>60</td>
</tr>
<tr>
<td>Library</td>
<td>50</td>
</tr>
<tr>
<td>Bedroom</td>
<td>40</td>
</tr>
<tr>
<td>Secluded Woods</td>
<td>30</td>
</tr>
<tr>
<td>Whisper</td>
<td>10</td>
</tr>
</tbody>
</table>

Common Sound Sources and Sound Levels in an Agricultural Setting

<table>
<thead>
<tr>
<th>Noise Source</th>
<th>Sound Pressure Level (dBA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tractor</td>
<td>74-112</td>
</tr>
<tr>
<td>Grain Dryer</td>
<td>81-102</td>
</tr>
<tr>
<td>Combine</td>
<td>80-105</td>
</tr>
<tr>
<td>Grain Grinding</td>
<td>93-97</td>
</tr>
<tr>
<td>Pig Squeals</td>
<td>85-115</td>
</tr>
<tr>
<td>Orchard Sprayer</td>
<td>85-106</td>
</tr>
<tr>
<td>Riding Mower</td>
<td>79-89</td>
</tr>
<tr>
<td>Garden Tractor</td>
<td>88-94</td>
</tr>
<tr>
<td>Crop Dusting Aircraft</td>
<td>83-116</td>
</tr>
<tr>
<td>161 kV HVTL</td>
<td>24-45 b</td>
</tr>
<tr>
<td>Substation Transformers – on substation property</td>
<td>104.3 c</td>
</tr>
<tr>
<td>Project substation – at nearest residences</td>
<td>40-45c</td>
</tr>
<tr>
<td>Agricultural Cropland</td>
<td>44</td>
</tr>
</tbody>
</table>

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*b Under centerline of proposed 161 kV HVTL, under wet weather (worst case) conditions.

*c Garrad-Hassan, 2013.
Impacts

While sound related to wind projects is often cited as a concern, it is less of an issue for the transmission lines associated with the facility. Transmission lines can produce an audible sound or buzz, often referred to as corona discharge that is amplified when moisture and pollutants are in the air.

During operation of the transmission facilities, audible noise may be produced from a corona-generated sound that creates a humming, hissing or crackling noise. This sound will be most noticeable to the human ear during wet weather, under conditions such as fog, rain, or snow. A review of recent calculated noise levels for HVTL (161 kV- 345 kV lines) indicates that the expected corona sound levels would range from 1-18 dBA during normal (dry weather) corona conditions up to 24 – 45 dBA during maximum (wet weather) corona conditions (In general the levels for a 161 kV line would be anticipated to be on the lower side of these ranges, as corona noise generally increases with increasing conductor capacity. The maximum levels would occur underneath the transmission line somewhere within the ROW (likely a few feet off of centerline, depending on site geometry, conductor sag and placement, etc.), and as explained above, the levels would decrease by 3 dB at every doubling of distance. As an example, the sound level for a proposed 161 kV transmission line was recently modeled for another project in Minnesota and the anticipated L50 sound levels at the edge of that ROW - which is 40 feet on either side of the centerline – were calculated to be 10.7 dBA (Northern States Power Company, 2011). The levels at 30 feet (the edge of the Project ROW) would be expected to be slightly higher than those at 40 feet, although likely not discernibly so. The average noise-level during wet weather at the edge of the ROW (30 feet from centerline) for the proposed HVTL is therefore expected to be less than the L50 noise standard of 50 dB (A), in accordance with Minnesota Rules Chapter 7030.0040. No residences are located within the proposed 60-wide ROW of the (30 feet on either side of the HVTL centerline). There are 12 residences (Option 1) to 21 residences (Option 2) located within 0.5 miles of the Project. Along Option 2 only five residences are within 100 feet of the HVTL and only three residences would be within 100 feet if Option 2A is used; no residences are within 100 feet of Option 1. Given the setbacks of the Project from residences, corona noise from the HVTL is anticipated to be at or below the existing rural sound levels already present in the Project area as depicted in Table 2.

At substations, noise is created primarily by transformers. The nearest residences to the project substation would be more than 1,200 feet away. A sound model was completed for the substation, and the calculations show that noise levels at the nearest residences would be in the 40 – 45 dBA range, which is below state noise standards and likely not discernible from existing background levels, as noted in Table 2's reference to “agricultural cropland” sound pressure level of around 44 dBA.

Sound and Wildlife

Animals have different ranges of hearing than humans, and each species may or may not be more sensitive to the types of sound emitted by HVTL. No conclusive effects to wildlife species by the sounds associated with HVTL have been documented by a number of studies that have been conducted in the U.S. (Manitoba Hydro, 2005; Goodwin 1975, Lee 1978). Additionally, there are already transmission lines in the immediate Project area (see Section 4.2.7), so the Project is not introducing a new type of sound to wildlife and domestic animals. The traffic from the adjacent roads would also be louder than
transmission line sound. Therefore, it is not anticipated that sound resulting from the Project will adversely affect wildlife or domestic animals.

**Mitigation**

During construction, sound levels will be minimized by ensuring that construction equipment is equipped with mufflers that are in good working order. Once the Project is operational, no additional mitigation measures are necessary since Project noise is not anticipated to be discernible above background levels.

4.2.4. **AESTHETICS**

**Description of Resources/Issues**

The Project is located in an agricultural landscape dominated by rural farmsteads, row-crop with man-made structures including roads, existing substations, transmission and distribution lines, homes, barns, silos, grain facilities, and sheds across the area (see Appendix A, Figure 2).

The topography of the Project is generally flat to gently sloping. The Project is not located where any major river valleys, bluffs, ridges or other prominent landscape features would require protection from visual impairment. The relatively high elevations within the area make existing wind turbines, towers, tall structures and overhead transmission lines visible from a distance when viewed from the lower ground of the surrounding region.

The visual appeal of the area within the Project is seasonally variable and is dominated by cropland. The visual spectrum varies from brown to black fallow cropland from October, to white through the snow covered winter. In the spring the checkerboard of black cropland and green field margins dominate the landscape until grasses and leaves emerge in early to mid-May, a point at which the landscape becomes dominated by green and brown row-crop production from June through September. Farmsteads and rural buildings are commonly surrounded by tree and shrub-lined shelterbelts and cities within the area are represented by homes located in small remnant urban forests, where agricultural tilling did not occur. Transmission poles will be approximately 90 feet above ground level making them visible from nearby residences, but will not create any greater visual impairment than the existing electrical transmission and distribution lines already present within one mile of residences along the Options 1, 2, and 2A. In many cases, there are stands of trees between occupied residences and the Options, which would limit visibility of the transmission line.

**Impacts**

The transmission line will add a visual element to the Project area; however, the land surrounding the Project has already been extensively impacted by humans and therefore impacts will be minimal. In particular, there are at least two discrete overhead power lines within the Project area. Therefore the impacts of the Project will not add new visual elements to the area.

The visual impact of the overhead transmission poles will decrease as a function of distance.

The transmission structures will not be lit. Once the project substation is constructed, lighting will be required inside the control building and outside within the substation footprint. The substation will contain approximately two (2) incandescent lights mounted inside the control building to allow for
operation and maintenance work. Approximately four (4) tall lighting poles will provide additional lighting within the substation footprint for security and safety reasons. The outside lights will utilize 250 watt (or equivalent) lamps with a 30,000 to 50,000 lumen for each pole. The total number of lights will be determined by the lamp lumen rating, the area covered and the suspension height of the poles, but the maximum lux (luminance in lumen), which is the luminous flux per unit area will not exceed 20 lux inside the substation footprint.

Mitigation

As described above, the lighting for the substation will be limited to what is needed for security and safe operation of the facility. The light sources installed at the substation shall be shielded and directed downward to prevent any light rays from directly shining into a residential zone or property or into a public right-of-way. This will ensure that lights included with the Project will not cause disturbance to neighboring properties. No additional mitigation is necessary.

4.2.5. Recreation

Description of Resources/Issues

State grant-in-aid Snowmobile Trail 325 traverses the Project area (Appendix A, Figure 2). Both Option 1 and Option 2 would cross the snowmobile trail; Option 1 will also parallel the trail for approximately 0.25 miles along the south side of 310th Street, where the snowmobile trail is in the county road ditch ROW.

The nearest publicly-owned recreational area is the Jay C Hormel Nature Center located in Austin, MN, approximately 12 miles southwest of the project substation. The North Branch of the Root River is used for recreational purposes such as canoeing and fishing; both Option 1 and Option 2 cross the North Branch of the Root River. Additionally, the few wooded areas and other wildlife habitat in the Project area are used for recreational hunting purposes.

Impacts

In the locations where Option 1 and Option 2 cross the snowmobile trail, Pleasant Valley will place the structures to avoid impacting the trail. For the portion of Option 1 that parallels the trail, the transmission structures will be setback from the trail which is located within the county road ditch ROW. The transmission structures will be placed on private land outside the county road ditch ROW, likely 15 feet from the ROW edge and therefore would not permanently impact the use of the trail. Depending on the timing of construction, there may be potential impacts to Snowmobile Trail 325 but those impacts will be minimal and temporary, based on length of construction which is not expected to span an entire winter season.

Placement of the transmission structures would avoid impacts to the bed and bank of the North Branch of the Root River, and no interference with the recreational use of the river would occur once the transmission line is operational.
The crossing by either Option will result in some clearing of riparian areas adjacent to the North Branch of the Root River, which can be habitat for game species. Option 1 would result in approximately 0.5 acres of riparian woods being cleared for the ROW immediately adjacent to the county road ROW and an existing 161 kV transmission line ROW that are already cleared; Option 2 would result in approximately 0.8 acres of riparian woods being cleared adjacent to an existing farmstead area. Tree clearing would be long-term for the life of the Project, as no trees are allowed to grow in the ROW for safety reasons. The nominal long-term impacts to game habitat along either of the Options based on the small relative size of the areas cleared and the proximity to other contiguous areas of disturbance would not result in a decline in game populations and the ROW can still be used for hunting purposes by the landowners. See Section 4.6.5 for more information on the potential impacts to wildlife.

**Mitigation**

Pleasant Valley will consider planting certain limited-height plants along the width of the ROW to mitigate habitat loss. Because no adverse impacts to recreational resources are anticipated, no further mitigation is proposed.

### 4.2.6. Public Services

**Description of Resources/Issues**

Public services include those emergency services that are used to benefit public health and safety, including but not limited to hospitals, emergency medical services, police departments, sheriffs’ offices, and fire departments.

**Impacts**

The Project is not expected to permanently impact public services. Increase in traffic on roadways during the 6-8 months of construction may result in increased response times for emergency services. Pleasant Valley will use precaution and utilize staff as flaggers whenever construction vehicles are entering or exiting public roads to maintain normal traffic flows and to minimize interference with emergency vehicles. Limited road closures would be needed during the construction of the Project when electrical conductors are installed directly above a public road. In these instances, flaggers direct traffic, which may be diverted for less than an hour, 3-4 times within a single day as the individual conductors are strung across the road and then lifted and secured to the structures. For Option 1, there would be five public road crossings. For Option 2 and 2A, there would be eight.

**Mitigation**

Prior to Project construction, Pleasant Valley will prepare an emergency response plan (fire protection and medical emergency plan) in consultation with the emergency responders having jurisdiction over the area. Pleasant Valley is also currently drafting a Joint Development Agreement with Mower County which will govern the use of Mower County and Township roads during construction of the Project. RES Americas, which will manage the construction of the Project on behalf of Pleasant Valley, has built
over 500 miles of transmission lines and more than ten percent of the nation’s wind energy projects. Accordingly, Pleasant Valley will be well-resourced to ensure proper coordination of the construction effort. Once operational, the Project would not affect public services, and no further mitigation is proposed.

4.2.7. **Utility & Communication Networks**

*Description of Resources/Issues*

**Utilities**

There are a number of existing electric distribution and transmission lines within the Project area (Figure 2). An existing 161 kV transmission line runs parallel to and on the north side of 310th Street from 650th Avenue to the GRE substation; Option 1 would be on the opposite side (i.e., the south side) of 310th Street for approximately 3.3 miles. An existing overhead distribution line runs parallel to and on the south side of 310th Street for 1.5 miles in several segments between the project substation and the GRE Substation. Option 1 would be on the same side of the road (i.e., the south side) and approximately 15 feet south of this distribution line for the entire length of those 1.5 miles.

Along Option 2, there are no existing transmission lines parallel to any of the route. Existing overhead distribution lines are present in several locations: a distribution line is located on the other side of the road (i.e., the east side) for the one mile that Option 2 runs along 640th Avenue; one-half mile along 665th Avenue; two-and-a-half miles for the portion that follows 325th Street; and approximately 1,000 feet along 680th Street. A short (200 foot) portion of Option 2 is on the same side of 680th Avenue as an existing distribution line, at the point where Option 2 joins 680th Avenue after crossing the North Branch of the Root River.

An existing 345 kV transmission line generally follows the half-section lines 0.5 miles east of 680th Avenue in Pleasant Valley Township and interconnects to the GRE Substation; neither of the route Options would parallel this 345 kV line. In addition to the electrical lines, various telephone and fiber optic cables may be co-located with the existing electrical distribution system in the area.

**Pipelines**

One existing natural gas pipeline is located within the Project area along 680th Avenue; Option 2 would parallel this line for approximately one mile, at a distance of approximately 500 to 600 feet or more (Appendix A, Figure 2). Both Options 1 and 2 would cross the pipeline on the north side of 310th Street approximately 600 feet east of 680th Avenue.

**Communication Networks**

Communication networks include television, radio, microwave, and cellular transmitters and Global Positioning System towers. There are no FCC-registered communication towers or transmitters located within the Project area, with the exception of three private land-mobile towers. One is located at the existing GRE Substation, and two are located in the proximity of residences along Option 2.
Pleasant Valley hired Comsearch to conduct an evaluation of communication networks (i.e., AM radio, FM radio, and over-air television stations in the Project area). Over-air television stations broadcast signals from terrestrially-based facilities directly to television receivers. There are a total of 49 database records for stations within approximately 75 kilometers of the Project. Of these stations, only nine are currently licensed and operating, three of which are low-power stations or translators. Translator stations are low-power stations that receive signals from distant broadcasters and retransmit the signal to a local audience. These stations serve local audiences and have limited range, which is a function of their transmit power and the height of their transmit antenna. The other six stations that are licensed and operating broadcast at full power. Those stations are: KSMQ-TV, KAAL, KXLT-TV, KYIN, KIMT, and KTTC. There are no television broadcast antennas within 15 miles of the Project. Based on the low number of full-power TV channels available in the immediate vicinity of the Project, it is unlikely that off-air television stations are the primary mode of television service for the local communities. TV cable service, where available, and direct broadcast satellite service are more likely the dominant modes of service delivery. Both cable service and direct broadcast satellite service will be unaffected by the presence of the Project.

Comsearch determined that there were ten database records for AM stations and twenty database records for FM stations within a 30-kilometer radius of the Project. Only sixteen of these stations are currently licensed and operating, seven of which are low-power or translator stations that operate with limited range. There are no AM or FM antennas within approximately 10 miles of the Project.

**Impacts**

**Utilities**

To ensure safety, construction activity may require short outages of local distribution lines, which may result in short-term power loss to some local residents. To avoid disturbing existing buried utility lines, such as telephone or fiber optic cable lines, their exact locations will be determined prior to construction. The final design of the Project will incorporate crossings of the existing 161 kV lines that adhere to NESC and NERC standards, resulting in nominal, short-term impacts to those facilities. Most importantly, design and construction of these crossings will involve GRE, the owner of the existing transmission line.

**Pipelines**

No induction or any other interference effects would be expected to occur as a result of the transmission line for the short section where Option 2 parallels the pipeline at a distance of 500 feet or greater (see Appendix A, Figure 2). Pleasant Valley will obtain the exact location of the pipeline and design the pole locations and construction design to avoid impacts at the crossing along 310th Street. Once constructed, the transmission line crossing will not affect the pipeline.

**Communication Networks**

Corona, which consists of the breakdown or ionization of air within a few centimeters of conductors and hardware, can generate electromagnetic “noise” at the same frequencies that radio waves are transmitted. This noise can cause interference with the reception of these signals depending on the frequency and strength of the radio signal. The effects of corona “noise” can intensify during wet weather (Chen, 2012).
Routine maintenance activities such as tightening loose hardware on the transmission line can help minimize corona noise.

If radio interference from transmission line corona does occur, satisfactory reception from amplitude modulated (AM) radio stations can be restored by appropriate modification of (or addition to) the receiving antenna system. Moreover, AM radio frequency interference typically occurs immediately under a transmission line and dissipates rapidly outside of the ROW. For AM stations, interference from tall structures generally only occurs within about 3 kilometers (1.9 miles) of the antenna, therefore no impact to AM stations is anticipated from the Project.

The coverage of FM stations, when the stations are at distances greater than 4.0 kilometers (2.5 miles) from tall structures, is not subject to degradation. Frequency modulated (FM) radio receivers usually do not pick up interference from transmission lines because:

- Corona-generated radio frequency noise currents decrease in magnitude with increasing frequency and are quite small in the FM broadcast band (88-108 Megahertz).
- The interference rejection properties inherent in FM radio systems make them virtually immune to amplitude-type disturbances.

Power lines operate on utility frequency of 50 or 60 Hz, while wireless internet (IEEE 802.11) and cell phones (GSM and CDMA) (both of which are modern day innovations of two-way radios) operate in the Ultra High Frequency band of 2.5 GHz or higher. Cellular phones are not expected to pick up interference from transmission lines because cellular phones operate on a wide range of radio frequencies which continue to increase as telecommunication carriers broaden the abilities of cellular phones. Corona-generated noise has too small of a frequency to be significant. Coupled with satellite communication capabilities built into almost all phones today, interference is not expected to occur with cellular phones. Based on this information, cell phones and wireless internet operates on a different frequency than the transmission line so no impacts are anticipated.

Two-way mobile radios may experience interference because of signal-blocking effects in the immediate vicinity of transmission lines and metallic transmission structures. Movement of mobile units away from the transmission line ROW should restore communications.

Television interference is rare but may occur when a large transmission structure is aligned between the receiver and a weak distant signal, creating a shadow effect. Loose and/or damaged hardware may also cause television interference.

Global Positioning System (GPS) units collect location data from at least three or more satellites at any given time to triangulate location. The accuracy of the location data is affected by the number of satellites, how they are dispersed across the sky at any instant and atmospheric and satellite information factors. Since satellites are in constant motion above the earth, GPS units are constantly picking up and dropping multiple satellite signals.

In 2002, the Institute of Electrical and Electronics Engineers (IEEE) published a study that investigated the effects of overhead power lines on GPS receivers (Silva & Olsen, 2002). Measurements evaluated whether GPS signals could be blocked by overhead conductors or whether use of a GPS signal could be affected by electromagnetic interference (EMI) (i.e., corona discharge or gap discharge noise). The study found that neither occurred.
The 2002 IEEE study found that conductors and associated EMI will not block or affect use of GPS satellite signal. However, it should be noted that a GPS receiver may experience less accuracy due to temporarily poor satellite alignment and/or outages to the base station or transmitter. On rare occasions, a transmission line structure may cause a temporary drop in GPS accuracy due to blockage of line-of-sight to one satellite, but this will only occur if the receiver, structure, and satellite are in a line, which is rare, and will only be temporary as the farm equipment moves. Connection is usually restored within moments and the GPS units return to normal function.

**Mitigation**

**Utilities**

Pleasant Valley will work with the Freeborn-Mower Cooperative Services, the local power provider, to minimize the occurrence and duration of any power outage due to localized temporary impacts to distribution lines during construction. The location of underground utilities will be marked during construction to avoid impacts. Once in operation, the Project would not affect any utilities, and no further mitigation is proposed.

**Pipelines**

No impacts to the pipeline are anticipated, and no mitigation is proposed.

**Communication Networks**

No impacts to cellular or wireless communications are anticipated, so no mitigation is proposed. Impacts to AM and FM broadcast radio and television are not anticipated, but regular maintenance activities will ensure that equipment is installed properly and any broken or loose hardware are replaced or tightened to avoid interference. Interference to GPS systems would be rare and would be expected to only last for moments when one of multiple satellite connections is dropped. However, this is remedied quickly when the movement of the farm equipment would reestablish contact. As noted above, if interference occurs with The mobile tower located in the GRE substation would not be anticipated to be affected by the transmission line placement, and Pleasant Valley is coordinating with GRE on specific pole placements in the vicinity of the GRE substation, which should account for potential interference. Similarly, final design of the HVTL will be designed to avoid adverse effects to the two mobile land units along Option 2. If interference is reported by the Participating Landowners that have the two mobile land units along Option 2, Pleasant Valley will coordinate with those landowners on commercially reasonable efforts to minimize or eliminate the interference. No additional mitigation is proposed.

4.2.8. **TRANSPORTATION**

*Description of Resources/Issues*

**Roadways**

Either county or township roads will generally be paralleled by the Project, depending on the Option selected. Option 1 parallels 310th Street (County Road 1). Option 2 parallels 320th Street, 665th Avenue, 325th Street and 680th Avenue, all Sargeant Township roads. Option 2 is adjacent to 640th Avenue while
2A parallels 640th Avenue but is 750 feet to the west. No state or interstate highways are crossed, paralleled, or otherwise implicated by the Project.

**Airports**

There are no public airports within 10 miles of the Project; the Rochester Municipal Airport, Austin Municipal Airport, and Dodge Center Municipal Airport are the nearest airports, located between 11 and 14 miles from the Project. The nearest FAA-registered private airport is the Petes Airport, located approximately four miles south of Option 1 in Dexter Township. One other FAA-registered private airport is located within 10 miles of the Project: the Scrabeck Airport, approximately 7 miles northeast of Option 2.

There is one known airstrip within a mile of the Project, located in Section 8 of Sargeant County (see Figure 4). It is approximately 1.5 miles north of Option 1, and approximately 0.5 miles northwest of Option 2 and Option 2A. This airstrip is not registered with the FAA and there are no setback provisions in local, state, or federal law for private, non-registered airstrips.

**Impacts**

**Roadways**

Temporary road closures or lane restrictions as a result of the construction of the Project will be minimal if required, and would occur only for short periods within the likely 6-8 month construction period. The Project will not interrupt any road improvement plans.

There may be an increase in traffic on roadways during the construction period. Pleasant Valley will use precaution and utilize staff as flaggers whenever construction vehicles are entering or existing public roads to maintain normal traffic flows. Limited road closures would be needed during the construction of the Project when electrical conductors are installed directly above a public road. In these instances, flaggers direct traffic, which may be diverted for less than an hour, 3-4 times within a single day as the individual conductors are strung across the road and then lifted and secured to the structures. For Option 1, there would be five public road crossings. For Option 2 and 2A, there would be eight.

**Airports**

Because the proposed transmission and substation structures are less than 200 feet high, no coordination or permits from the FAA is required for the Project.

The Project is outside of the defined safety zones, conical surface and approach zones of the three public airports within 15 miles. The Project is more than four miles from the nearest FAA-registered private airport. No impacts to these airports would occur.

Although Option 2A would be approximately one half mile south-southeast of the airstrip located in Section 8 of Sargeant Township, due to the straight north-south orientation of that airstrip, Option 2 should not affect the airstrip’s use. Additionally, it should be noted that there is an existing overhead distribution line along the north side of 320th Street directly south and closer to the airstrip; therefore the
construction of an additional overhead line farther away and out of the direct approach lines of the airstrip would not affect its current use.

**Mitigation**

Pleasant Valley will acquire road-related permits (i.e. overweight/overwidth, driveway installation, road closure, etc.) as needed from MnDOT, the townships, or the County prior to any work activities which may affect roadways. Traffic control, as needed, will be handled by well-experienced construction crews. Pleasant Valley is currently drafting a Joint Development Agreement with Mower County which will govern the use of Mower County and Township roads during construction of the Project.

Because no impacts to airports or airstrips would occur, no mitigation is proposed.

### 4.2.9. SOCIOECONOMICS

**Description of Resources/Issues**

As described above in Section 4.1, the Project is located in portions of Sargeant and Pleasant Valley Townships, in Mower County, Minnesota, a rural agricultural landscape in southeastern Minnesota.

**Impacts**

There will be a crew of approximately 10 staff working on the various construction phases of the Project within the 6-8 months of Project construction, and consequently, there will be a small temporary positive impact on the local community due to revenue created from expenditures by the construction crew (e.g., local community services such as hotels, home rentals, gas stations, restaurants; construction materials such as gravel). As explained in Section 4.4.1 Agriculture, the Project will remove small portions of crop land from production. Long-term positive socioeconomic impacts because of the Project are not anticipated because of its short-term construction timeline; however the substation and HVTL will transmit the power from the Wind Project to the electric grid which will result in significant economic benefit for the community and County.

**Mitigation**

The minimal loss of cropland for the Project is adequately addressed by the easement agreements with the Participating Landowners. No further mitigation for socioeconomics is proposed.

### 4.3. Effects on Public Health and Safety

All facilities will be constructed in accordance with applicable standards, including the NESC and other industry standards. Construction personnel will follow Occupational Safety and Health Administration regulations. Other safety measures such as warning signs, fencing, and gates will be utilized as needed. The following sections provide more detail on specific public health and safety issues.
4.3.1. **Electric, Magnetic and Electromagnetic (EMF) Fields**

*Description of Resources/Issues*

The term electromagnetic field (EMF) refers to electric and magnetic fields that are coupled together such as in high-frequency radiating fields. For the lower frequencies associated with power lines, EMF should be separated into electric fields (EFs) and magnetic fields (MFs), which arise from the flow of electricity and the voltage of a line and are measured in kilovolts per meter (kV/m) and milliGauss (mG), respectively. The intensity of the electric field is proportional to the voltage of the line, and the intensity of the magnetic field is proportional to the current flow through the conductors. Transmission lines operate at a power frequency of 60 hertz (cycles per second).

**Electric Fields**

Electric fields are the result of electric charge, or voltage, on a conductor. The intensity of an electric field is related to the magnitude of the voltage on the conductor and is measured in kilovolts per meter (kV/m). The magnitude of electric field rapidly decreases with distance from the source of the electric field, which are the transmission line conductors in the case of this Project. The presence of trees, buildings, or other solid structures nearby can also significantly reduce the intensity of the electric field. Because the magnitude of the voltage on a transmission line is near-constant (typically within ±5 percent of nominal), the magnitude of electric field will be near-constant for a given transmission line, regardless of the power flowing on the line.

**Magnetic Fields**

Magnetic fields are the result of the flow of electricity, or current, traveling through a conductor. The intensity of a magnetic field is related to the magnitude of the current flow through the conductor and is measured in units of gauss (G) or milligauss (mG). Among other places, energized conductors with associated electric and magnetic fields can be found in transmission lines, local distribution lines, substation transformers, household electrical wiring, and common household appliances. The magnitude of magnetic field rapidly decreases with distance from the source of the magnetic field, which are the transmission line conductors in the case of this Project. Unlike electric fields, magnetic fields are not significantly affected by the presence of trees, buildings, or other solid structures nearby.

Considerable research has been conducted to determine whether exposure to power-frequency (60 hertz) magnetic fields causes biological responses and health effects. EMF research expert Dr. Peter A. Valberg provided testimony in 2010 (Valberg, 2010) on EMF calculation and potential health effects, and the conclusions of his 2009 literature review (Valberg, 2009) of the status of scientific research on potential health effects. He summarized scientific research on HVTLs and MFs as:

> [T]hese studies do not change the factual conclusion that power-line MF exposure is not an established cause of health effects, as has been detailed throughout this report. As has been noted, the overall weight of evidence, combing the epidemiology with laboratory-animal and mechanistic research, fails to support a role for power-line MF in disease risk... [overall] the scientific research literature to date remains an insufficient basis for assigning any actual health risk to power-line MF exposure levels.
Table 3 shows the MF levels associated with common household sources.

<table>
<thead>
<tr>
<th>Magnetic Field Level (mG)</th>
<th>Magnetic Field Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 – 20 mG at 6 inches</td>
<td>1 – 3 mG at 2 ft</td>
</tr>
<tr>
<td>2 – 6 mG at 1 ft</td>
<td>0 mG at 4 ft</td>
</tr>
<tr>
<td>1 – 700 mG at 6 inches</td>
<td>0 – 10 mG at 2 ft</td>
</tr>
<tr>
<td>0 – 70 mG at 1 ft</td>
<td>0 – 1 mG at 4 ft</td>
</tr>
<tr>
<td>0 – 20 mG at 1 ft</td>
<td>0 – 8 mG at 2 ft</td>
</tr>
<tr>
<td></td>
<td>0 – 4 mG at 4 ft</td>
</tr>
<tr>
<td>500 – 1500 mG at 6 inches</td>
<td>3 – 30 mG at 2 ft</td>
</tr>
<tr>
<td>40 – 300 mG at 1 ft</td>
<td>0 – 4 mG at 4 ft</td>
</tr>
<tr>
<td>100 – 300 mG at 6 inches</td>
<td>1 – 30 mG at 2 ft</td>
</tr>
<tr>
<td>1 – 200 mG at 1 ft</td>
<td>0 – 20 mG at 4 ft</td>
</tr>
<tr>
<td>20 – 200 mG at 6 inches</td>
<td>0 – 9 mG at 2 ft</td>
</tr>
<tr>
<td>0 – 30 mG at 1 ft</td>
<td>0 – 6 mG at 4 ft</td>
</tr>
<tr>
<td>100 – 700 mG at 6 inches</td>
<td>4 – 50 mG at 2 ft</td>
</tr>
<tr>
<td>20 – 200 mG at 1 ft</td>
<td>0 – 10 mG at 4 ft</td>
</tr>
</tbody>
</table>


**Impacts**

Table 4 lists the anticipated electric and magnetic field levels from the proposed overhead 161 kV transmission line. Although there are no State of Minnesota or federal standards for transmission line electric field exposure, the EQB has imposed a maximum electric field limit of 8 kV/m measured at one meter (3.28 feet) above ground. Additionally, there are no State of Minnesota or federal standards for transmission line magnetic field exposure. The Institute of Electrical and Electronics Engineers (IEEE) has identified a standard, Standard C95.6-2002, for both outside and within the ROW (9,040 mG, 5 kV/m outside the ROW, and 10 kV/m within the ROW) (IEEE, 2002). The International Commission on Non-Ionizing Radiation Protection (ICNIRP) also has set up guidelines (830 mG and 4.2 kV/m) for public exposure to EMF (ICNIRP, 2010). The electric and magnetic field levels for the HVTL are well below these guidance values.
Table 4: Anticipated 60Hz Electric and Magnetic Field Levels From Overhead 161 kV Transmission Lines

<table>
<thead>
<tr>
<th>Distance from Centerline (feet)</th>
<th>Maximum Level*</th>
<th>0</th>
<th>30</th>
<th>60</th>
<th>100</th>
<th>200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric Field Level (kV/m)</td>
<td></td>
<td>1.326</td>
<td>1.214</td>
<td>0.698</td>
<td>0.213</td>
<td>0.096</td>
</tr>
<tr>
<td>Magnetic Field Level (mG)</td>
<td></td>
<td>70.499</td>
<td>70.180</td>
<td>44.832</td>
<td>20.162</td>
<td>8.687</td>
</tr>
</tbody>
</table>

* Maximum levels are at 10 feet for the electrical field and 5 feet for the magnetic field. Values reflect the right side of the line as those levels will be highest due to two phases being on the right side and only one phase on the left side of the poles.


As Table 4 shows, the anticipated maximum EF and MF levels for the HVTL are comparable to or lower than those found in some common household devices (see Table 3), and the levels found at the edge of the ROW would be significantly lower.

EMF levels for the Project at the edge of the ROW are below the ICNIRP guidelines (830 mG and 4.2 kV/m) for public exposure to EMF. The Project EMF levels are also below IEEE Standard C95.6-2002 both outside and within the ROW (9,040 mG, 5 kV/m outside the ROW, and 10 kV/m within the ROW).

The maximum anticipated magnetic field associated with the Project is 70.499 mG, which occurs at approximately 5 feet from the ROW centerline on the side of the poles that will have two conductors. Magnetic field levels associated with the Project at various intervals from the ROW centerline are given in Table 4. These magnetic field levels were calculated with transmission lines loaded to their conductor thermal limits. Because the ratings of the lines will likely be limited to a lower value by equipment other than the conductor, actual magnetic fields are likely to be much lower. Further, because the actual power flow on a transmission line could vary widely throughout the day depending on electric demand, the actual magnetic field level could also vary widely from hour to hour. In any case, the typical magnitude of the magnetic field associated with the Project’s transmission lines is expected to be well below the calculated values in Table 4. However, it should be noted that maximum anticipated magnetic field level is below the ICNIRP guideline (830 mG) as well as below the IEEE Standard C95.6-2002 (9,040 mG).

The maximum anticipated EF for the Project is 1.326 kV/m, which occurs approximately 10 feet from the ROW centerline on the side of the poles that will have two conductors. This is lower than the 8 kV/m EQB standard, below the ICNIRP guideline (4.2 kV/m) as well as below the IEEE Standard C95.6-2002 (5 kV/m outside the ROW, and 10 kV/m within the ROW).
Pacemakers

Implantable devices such as pacemakers may be subject to interference from strong electric and magnetic fields. The earliest interference from magnetic fields in pacemakers was observed at 1,000 mG, far greater than the magnetic fields associated with the proposed HVTL. Modern bipolar devices are even less susceptible to interactions with electric fields, with interactions starting around 6 kV/m, which is significantly higher than the maximum anticipated EF (1.326 kV/m) for this Project. Therefore, no impacts to pacemakers or other implantable devices are anticipated.

Recent Research on EMF Exposure and Human Health

Many organizations have conducted recent research on EMFs from extremely low frequency (ELF) sources to study their potential effects on human health and safety as a follow-up to studies conducted primarily in the 1980s and 1990s which correlated EMFs and adverse health risks. Several studies and other online sources were cited by several commenters during the public scoping meeting for the Project; some of these studies would appear to indicate that adverse health effects can occur from exposure to EMF levels associated with HVTLs. However, as evidenced by the conclusions of the World Health Organization (WHO) and other studies described more below, the majority of scientists in related fields see no scientifically-based, consistent evidence for health effects caused by EMF, especially at levels that would occur as a result of the proposed 161 kV transmission line. The following discussion summarizes the results of recent, peer reviewed studies on EMF and health effects.

In 2007, the WHO made the following statement regarding effects of EMFs on health (WHO, 2007):

> “Given both the weakness of the evidence for a link between exposure to ELF magnetic fields and childhood leukemia, and the limited impact on public health if there is a link, the benefits of exposure reduction on health are unclear. Thus, the costs of precautionary measure should be very low.” (emphasis added)

The 2009 President’s Cancer Panel heard testimony concerning ELF, radio frequency (RF), and MFs and discussed that prior to 1996, the epidemiologic studies shared weaknesses that once recognized and accounted for, along with the testimony heard, “U.S. environmental organizations... generally conclude that the link between ELF-MF and cancer is controversial or weak.” (Reuben, 2010) (emphasis added).

The International Commission on Non-Ionizing Radiation Protection (ICNIRP) reviewed scientific studies performed since its last published guidelines in 1998 that established exposure limitations to EMFs and published their recommendations in 2010 (ICNIRP, 2010), concluding:

> “[S]cientific data available so far do not indicate that low frequency electric and/or magnetic fields affect the neuroendocrine system in a way that these would have an adverse impact on human health. **There is no substantial evidence for an association between ELF exposure and diseases such as Parkinson’s disease, multiple sclerosis, and cardiovascular diseases.** The evidence for an association between low frequency exposure and Alzheimer’s disease and amyotrophic lateral sclerosis is inconclusive. The evidence for an association between low frequency exposure and developmental and reproductive effects is very weak.” (emphasis added)
In addition, the 2010 ICNIRP recommendations stated “evidence that prolonged exposure to ELF-MF is causally related with an increased risk of childhood leukemia is too weak to form the basis for exposure guidelines.”

**Research on Animal Health and EMF**

Several studies have also been done on the potential effects of EMF on animals, both domesticated and wild. Studies have been done to determine if certain species that may rely on the earth’s magnetic fields for orientation or navigation are affected by EMF, or if flying species passing near extremely low frequency (ELF) radiation associated with HVTL are affected; additional studies have also been done on the potential effects to cattle grazing under HVTL, or dairy cattle subjected to EMF (WHO, 2005).

These studies have shown no to minimal effects of EMF on animals, particularly for EMF levels below the ICNIRP's guidelines, such as the anticipated levels for this Project. The only significant effect was shown to bees, if electrically conductive hives (i.e., man-made boxes or structures made with conductive materials such as metals) are placed directly under an HVTL (WHO, 2005). A study on the effect of beef cattle grazing under HVTLs showed no decrease in frequency of conception, calving, growth rate, or survival (Angell et al, 1990). A study in 2003 did indicate that dairy cattle may experience a decrease in milk production when exposed to EMF (Burchardt, 2003). However, the EF levels in that study were 10 kV/m and the MF levels were 300 mG, both of which are significantly higher than even the maximum anticipated levels associated with this Project. Another more recent study of pregnant dairy cattle (Burchard, 2007) concluded that exposure to MF (300 mG) did not result in animal health hazards, even at levels higher than those anticipated for the Project.

**Mitigation**

As stated above, anticipated EMF levels for the Project and the calculated levels at any location within the ROW are below the EQB, IEEE, and ICNIRP standards and guidelines for public exposure to EMF. The EMF levels are also not at levels that would affect pacemakers. No electrically conductive hives would be allowed to be placed within the transmission ROW, so effects to apiaries would not occur. Pleasant Valley finds no basis to conclude there will be any effects to the public or animals from EMF; thus no mitigation is proposed.

**4.3.2. Stray Voltage and Induced Voltage**

*Description of Resources/Issues*

Stray voltage is a condition that can occur on the electric service entrances to structures from distribution lines, not transmission lines. More precisely, stray voltage is a voltage that exists between the neutral wire of the service entrance and grounded objects in buildings such as barns. Transmission lines do not, by themselves, create stray voltage because they do not connect to businesses or residences.

Induced voltage is an electrical condition through which very low levels of voltage are transferred to and may be measured in objects near an HVTL.
Impacts

No impacts from stray voltage are anticipated from the Project; therefore no mitigation is necessary.

Induced voltage from capacitive coupling normally is not a problem. Where it is, the problem can be mitigated with proper grounding of the affected objects. The main concern with induced voltage on an object is the current flow through a person to ground if a person were to touch an ungrounded metal object under the lines. Insulated electric fences used in livestock operations may pick up an induced charge from transmission lines. Potential shocks can be prevented by shorting out one or more of the fence insulators to ground with a wire when the charger is disconnected or installing an electric filter to ground charges induced from a power line, while still allowing the charger to be effective. Buildings are permitted near transmission lines but are expressly prohibited within the ROW.

Mitigation

Because stray voltage is not caused by transmission lines, no mitigation is necessary.

To ensure that any electric discharge from induced voltages does not reach unsafe levels, the NESC requires that any discharge be less than 5 milliamperes (ma). During construction, Pleasant Valley will ground all existing fixed objects, such as a fence or other large permanent conductive object close to the transmission line, so any discharge will be less than the 5 mA NESC limit. No additional mitigation is necessary.

4.3.3. Severe Weather

Description of Resources/Issues

During winter, ‘icing’ or ice build-up can sometimes occur on transmission line conductors during storm events. Additionally, tornadoes or other straight-line winds could occasionally occur in Mower County.

Impacts

The transmission line will be built to the appropriate NESC standards for icing for this part of the country (in Minnesota the design standards need to account for heavy loading potential). On structures taller than 60 feet (such as the proposed structures for this Project), the NESC requires that two other loading conditions be examined: extreme wind and extreme ice with concurrent wind. Pleasant Valley will adhere to all applicable NESC standards, resulting in the line staying in service during all but the most severe events.

Transmission lines are not designed to withstand tornadoes; in general, however, HVTLs such as this Project are designed to withstand winds in excess of 100 miles per hour.

During the scoping period, safety concerns from storm events such as ice storms or tornadoes were raised, particularly about sections of Option 1 that would be located on the other side of the road of the existing 161 kV line. Extreme weather events are unpredictable, and it is possible that an isolated event (severe icing, tornadoes, or other severe weather) could occur in this section of Option 1, potentially resulting in both lines being affected. However, the presence of a second parallel line would not increase...
the likelihood of such an event occurring, and the protective devices described below in the mitigation section would apply to both the existing and proposed line, whichever Option is built.

**Mitigation**

In addition to adhering to the NESC safety standards, the transmission line will also be equipped with protective devices (breakers and relays located where the transmission lines connect to substations) to safeguard the public in the event of an accident or if the structure or conductor falls to the ground due to tornadoes, icing, or other events more severe than usual and outside of the design standards. The protective equipment will de-energize the transmission line should such an event occur.

Standard safety and cleanup procedures would be followed after an extreme weather event so that the damaged portions are removed and the transmission line are operational again as soon as practicable.

### 4.4. Effects on Land-based Economics

#### 4.4.1. AGRICULTURE

**Description of Resources/Issues**

The Project is located on cultivated land predominately used for corn and soybean production (Figure 2). Most of the crop land in the Project area is improved with drain tile, including the affected properties along both Options.

“Prime” farmland is a USDA designation to define land (soil) that has the best physical and chemical characteristics for producing food, feed, forage, fiber, and oil seed crops. “Prime farmland if-drained” is soil that has the same characteristics as prime farmland if it has been drained, which is typically done through tile drainage systems. One commenter indicated during the scoping period that his property in the vicinity of the Project contains organic soil.

**Impacts**

The ROW for Option 1 will cross approximately 14 acres of prime farmland and 20 acres of prime farmland if drained; however, only 65± square feet of prime farmland and 112± square feet of prime farmland if-drained would be physically required for transmission line poles. The ROW for Option 2 will cross approximately 21 acres of prime farmland and 26 acres of prime farmland if drained; however, only 115± square feet of prime farmland and 149± square feet for prime farmland if-drained would be physically required for transmission line poles.

One comment during the public scoping process for the Project was made regarding organic soil and farming practices. According to County plat information, the organic soil commenter’s property would not be directly affected by either Option, and no impacts would occur. The presence of transmission lines in the vicinity does not preclude organic farming practices from being utilized.
The Project will result in temporary and long-term impacts to properties owned by Participating Landowners.

Temporary disturbances will occur during the construction of the transmission line and the project substation. Restoration of temporary impacts arising from construction will be resolved with the Participating Landowners, and any damage to drain tile lines will be repaired. Long-term disturbances will be a result from the footprint of the poles, which would last for the 30 year lifetime of the Project. The area around the poles and within the transmission line ROW can and will still be farmed following construction. The final footprint of the project substation will be about 2.5 acres. In the aggregate, less than 1/10th of an acre of agricultural land would be taken out of production due to pole impacts. The nominal long-term impacts to prime farmland would not affect the productivity of the affected farms or the region. More importantly, the Long term loss of cropland for the Project is adequately addressed by the easement agreements with the Participating Landowners.

**Effects to Property Values**

Since land use in the Project area is primarily agricultural and Option 1 and Option 2 follow existing county and township roads, it is not anticipated that property values of adjoining or nearby properties will be adversely affected. However, it is very difficult to predict exact impacts to property values as the result of a specific proposed project, as a transmission line is but one of many factors (such as overall regional and national economy, crop values, adjacent land use changes or developments) that may influence the value of a particular parcel in any given year.

Generally, studies of the effect of a transmission line on rural property values have concluded that power line structures and easements do not have a significant impact on rural property values. For instance, a recent study concluded that the differences in sale prices and market values for rural Wisconsin properties with a high-voltage electric transmission line were not statistically significant (1.11% to 2.44%) when compared to properties without a transmission line (Jackson and Thomas, 2010). The study also analyzed the impact of transmission line easement placement on sale price, and noted that sale price differences were greater for easements that crossed the middle of or diagonally across properties, while there was no sale price reduction where the easements ran along the edge or crossed only a small portion the property.

As stated above, the Project will generally parallel existing road ROW, with the exception of one segment along Option 2A where the affected landowners have requested the placement of the transmission line be setback about 750 feet from the road ROW. Therefore, impacts to agricultural land uses within the Project area will minimally impact property values.

**Mitigation**

Other than consideration granted to Participating Landowners, no further mitigation is proposed.
4.5. Effects on Archaeological and Historic Resources

Description of Resources/Issues

On October 24, 2013, the State Historic Preservation Office (SHPO) of the Minnesota Historical Society was contacted to obtain comments regarding cultural resources in the Project area. As of December 3, 2013, a response letter has not been received.

The SHPO Archaeological Site Location Database identified one historic or architecturally significant site within the Project area in Section 25 of Sargeant Township. Additionally, an archaeological field survey was conducted in October 2013 along portions of each Option that had higher potential for archaeological resources, and along which Pleasant Valley had obtained survey permissions from the Participating Landowners. No cultural resources were documented in the surveyed areas along the Options.

Impacts

The culturally significant site in Sargeant Township is located more than one mile from the Project and therefore no impacts would occur. As stated above, no sites were identified during an archaeological field survey of higher probability areas; therefore no impacts are anticipated.

Mitigation

No culturally historic or archaeological sites are anticipated to be discovered during construction based on archaeological assessments of the area, but if one is discovered Pleasant Valley will coordinate with the appropriate agencies.

4.6. Effects on the Natural Environment

4.6.1. Air Quality

Description of Resources/Issues

Air quality issues associated with HVTLs include the production of small quantities of ozone, and oxides of nitrogen due to corona discharges along the transmission lines and at substations.

Impacts

During construction air pollution may be temporarily impacted from dust and particulate matter and emissions from construction vehicles. These impacts will be minimal and temporary. There have been no known incidents of ozone or other air pollutants above the ambient air federal and state standards due to the corona effect from transmission lines.

Mitigation
As stated above, air quality impacts would be assumed to be minimal during construction; dust control BMPs such as watering, if necessary will be enforced to further minimize their effects, per NPDES permit. Once in operation, the Project is anticipated to meet all air quality standards, and no mitigation is proposed.

4.6.2. WATER RESOURCES

Description of Resources/Issues

As shown in Figure 1, the Project area contains several streams, including the North Branch of the Root River. Many of these streams are small, intermittent and likely associated with agricultural drainage in the area. Only two surface waters are considered Public Waters per the DNR’s maps: an unnamed creek, which is crossed by Option 2; and the North Branch of the Root River which is crossed by both Option 1 and Option 2.

The majority of surface waters crossed by the Options are utilized principally as drainage conveyance for agricultural cropland and not for recreation. As described in Section 4.2.5, the North Branch of the Root River is used for canoeing and fishing.

Impacts

Reasonable effort will be made to place poles in locations to minimize adverse impact on drainage ditches and hence the Project is not expected to impact any of the drainage systems in the area.

Wetlands located within the Project vicinity were delineated in September and October 2013. The few instances of emergent wetlands crossed by the transmission line would be spanned by the structures. Wooded wetlands do occur in the vicinity of the North Branch of the Root River. Option 1 would affect approximately 0.5 acres of wooded wetland; Option 2 would affect a total of approximately 0.8 acres of wooded wetland. Impacts to wooded wetlands would include tree clearing for the construction, operation, and maintenance of the transmission line. Current design does not require placement of poles within any wetlands, with the possible except of one pole within the wetland associated with the North Branch of the Root River crossing by Option 2.

Mitigation

If final design indicates the need for pole placement within emergent or wooded wetlands, Pleasant Valley will coordinate with the appropriate agencies to obtain permits and determine the appropriate mitigation. Additionally, Pleasant Valley will consider planting certain limited-height plants along the width of the ROW to mitigate vegetation loss.

4.6.3. WATER QUALITY

Description of Resources/Issues
On October 24, 2013 the MPCA was contacted to obtain comments on the Project. As of December 3, 2013 a response from the MPCA has not been received.

The North Branch of the Root River (segment ID 07040008-717) is located within the Project area as shown in Appendix A, Figure 4. As of 2013, the MPCA lists the North Branch of the Root River as impaired as indicated by excessive turbidity (suspended solids) and aquatic macro invertebrate population assessments1.

**Shoreland Area Crossings**

Mower County Zoning Ordinance has also adopted shoreland management provisions to protect and enhance the quality of surface waters in the county. In accordance with Division 9, the shoreland Management Overlay Regulations in the Mower County Zoning Ordinance, the Project will need to meet the conditions listed in Sections 14-94 through 14-98 to be permitted under a Mower County Conditional Use Permit.

- Shore impact zone is defined in Section 14-94 (a), as a line parallel to and 50 feet from the ordinary high water level (OHWL). Construction is prohibited within this zone and no structures are allowed.
- In addition to the shore impact zone, the minimum structure setback from the OHWL of a river is 100 feet (i.e., an additional 50 feet on either side of the edge of the shore impact zone), per Section 14 96 (b) of the Mower County ordinances. The total distance of the minimum structure setback from the OHWL of a river is approximately 200 feet (plus the width of the river itself).
- The Mower County Zoning Ordinance defines shoreland as land located within 300 feet from public waters, such as a river or a stream. From the OWHL on both banks of the stream the total distance of the Shoreland Overlay Zone area is approximately 600 feet (plus the width of the river itself), unless the landward extend of a river or stream’s floodplain is greater than 300 feet.

**Impacts**

During construction there is a limited possibility of sediment reaching surface waters as the ground is disturbed by excavation, grading, and construction traffic. This could potentially affect water quality if the erosion is not controlled. A National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) construction Stormwater Permit would be required because there will be a total of one acre of land or more disturbed by construction of the Project. The Project will not create any illicit discharges nor contribute to surface water impairments, and will obtain the proper Section 401 Water Quality Certifications prior to construction. The specific proposed BMPs for stormwater runoff will be identified in the NPDES Permit application and Stormwater Pollution Prevention Plan (SWPPP) that will be developed prior to construction of the Project. However, it is anticipated that the following BMPs will be used, as appropriate, to avoid surface and groundwater contamination: installation of silt fencing, straw bales, or ditch blocks and/or covering bare soils with mulch, plastic sheeting, or fiber rolls to protect drainage ways and streams from sediment runoff from exposed soils. Erosion controls will be inspected during construction, especially during significant precipitation events.

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Once the Project is operational, no impacts to water quality would occur.

**Shoreland Area Crossings**

Option 1 and Option 2 both cross the North Branch of the Root River (Figure 5, Crossings #3 and #2, respectively). Flexibility in the design of the transmission line pole spacing will allow Pleasant Valley to place structures far enough apart to completely span the designated Shoreland Impact Zone (which is approximately 100 feet wide) and meet the minimum structure setbacks (which would require a span of approximately 200 feet). This will minimize impacts to the shoreland associated with the North Branch of the Root River within Option 1 and Option 2 (Appendix A, Figure 5).

Option 2 will also cross the Shoreland Impact Zone of the unnamed creek (Figure 5, Crossing #1). Similar to the Root River crossing, design of the transmission line pole spacing is anticipated to allow Pleasant Valley to place structures far enough apart to completely span the designated Shoreland Impact Zone (which is approximately 100 feet wide) and meet the minimum structure setbacks (which would require a span of approximately 200 feet).

**Mitigation**

Construction impacts will be avoided or mitigated where necessary in streams, creeks and surface water drainage systems to prevent flooding issues and untreated surface water discharge. BMPs will be implemented during the construction phase of the Project to prevent sediment from discharging into adjacent water sources, streams or rivers. Any subsurface tile drainage systems impacts will be addressed and repaired during construction. Inspections of all BMPs proposed in the NPDES permit application and SWPPP will be completed on a routine basis to assure no erosion or sedimentation issues occur within or outside of construction limits. Mitigation measures will be utilized where sedimentation issues are a risk. As a result, no significant impacts to water quality are expected and no additional mitigation is proposed.

**Shoreland Area Crossings**

If final design of the transmission line requires structures be placed and/or construction work to occur within the 600 foot wide Shoreland Overlay Zone area associated with any of these three crossings, Pleasant Valley will be subject to applicable Shoreland Alteration Standards outlined in Section 14-97 of the Mower County Zoning Ordinance. Specific conditions or requirements for constructing transmission line pole structures will be addressed by Mower County representatives in the conditional use permitting process.

**4.6.4. SOILS AND GEOLOGIC RESOURCES**

*Description of Resources/Issues*

The dominant general soil association encountered within the Project is the Tripoli-Oran-Readlyn Association. The land varies from nearly level to gently sloping; few areas have slopes greater than six percent. The soils and subsoil are unconsolidated Quaternary sediments consisting mostly of unsorted
till deposits of clay to boulder size materials laid down directly from glacial ice. There are no bedrock outcrops within the Project area. Water well logs from Ripley, Vernon and Dexter Townships show depths of glacial till ranging from 155 to 175 feet overlying the Galena Limestone.

The geological subsection the Project is located in is characterized by rolling plain of loess-mantled ridges over sandstone and carbonate bedrock and till. Ordovician and Devonian dolomite (some limestone, sandstone, and shale) is locally exposed, especially in the dissected stream valleys.

**Impacts**

The Project will impact the soil where the transmission line poles and the substation pad are constructed. Areas of long term disturbance will require removal of existing topsoil. Reclamation of the topsoil will be coordinated with the Participating Landowners. Installation of silt fences and BMPs for erosion control measures will be used in areas subject to disturbance.

**Mitigation**

Pleasant Valley will complete land leveling services to restore the natural grades of the landscape once construction is completed. Therefore, no significant impacts to the topography in the Project vicinity will occur during construction and no additional mitigation is proposed.

**4.6.5. Flora and Fauna**

**Description of Resources/Issues**

The Project area has only a few areas with any non-crop vegetation and those areas are on the perimeter of homes and along the North Branch of the Root River corridor. The vegetation is primarily comprised of linear shrubs and upland deciduous forest tracts.

Game species such as white tailed deer and turkey, along with common species such as raccoon, striped skunk, cottontail rabbit, coyote, red-winged black bird, horned-lark, common grackle, American crow and waterfowl such as mallards occur in the Project area, and may forage in the crop fields. In general wildlife habitat is limited to the small areas of remaining riparian areas or other non-cultivated locations.

A Raptor and Bald Eagle Nest Survey for the Wind Project area was conducted in March, 2013 by Western Ecosystem Technology, Inc. (WEST). During the survey, 14 raptor nests representing two species were documented within two miles of the overall Wind Project boundary. Of these nests, three were identified as active bald eagle nests. One red-tailed hawk nest and ten unoccupied inactive raptor nests were also documented. None of the bald eagle nests were found within the Wind Project area, and none are located within five miles of the proposed transmission line Options. The closest identified raptor nest (unoccupied and inactive) to a route Option was located approximately one-half mile from the Option 2 Root River crossing. No nest, active or inactive, was located within a mile of Option 1.

---

Impacts

No impacts to any documented nests are anticipated as a result of the Project.

As described above, there will be a small amount of brush and tree clearing necessary for construction in the North Branch of the Root River crossing, along with limited woody vegetation clearing where the transmission ROW may cross tree rows or shrubs associated with farmsteads. For Option 1, the woody vegetation clearing is primarily associated with the crossing of the North Branch of the Root River (0.5 acres). Option 2 would result in approximately 0.8 acres of riparian woods being cleared. Additionally, some tree and woody vegetation clearing would occur in up to five discrete areas along Option 2 (two farmsteads located along 640th Avenue, one farmstead located along 325th Street, and two farmsteads located along 680th Avenue) where the ROW crosses trees associated with farmsteads. Utilizing Option 2A would avoid any tree clearing for the two farmsteads located along 640th Avenue. Actual amounts of tree clearing along any of the Options will depend on final design of the transmission line. Tree clearing would be long term for the life of the Project, as no trees are allowed to grow in the ROW for safety reasons. Although there will be a small loss to vegetative cover as a result of the tree and brush clearing, impacts to wildlife habitat will be minimal overall because the Project area has already been disturbed by agricultural practices, roadways and other transmission facilities in the area. Pleasant Valley does not anticipate permanent impacts to wildlife as a result of the transmission line or substation.

Mitigation

To the extent practicable, Pleasant Valley will place the transmission line poles in areas that will reduce the impacts to grasslands or woody vegetation that occur in drainage ways at road crossing sites. Furthermore, Pleasant Valley will consider planting certain limited-height plants along the width of the ROW in the area where trees and brush are cleared to mitigate this habitat loss. Temporary impacts will result to local wildlife during the construction phase, primarily displacement. Pleasant Valley will also follow guidance from the Avian Power Line Interaction Committee (APLIC) to avoid and minimize risk of potential avian collisions or electrocutions. Additionally, Pleasant Valley will install avian flight diverters on the OPGW shield wire of the route where it crosses the North Branch of the Root River to reduce impacts to avian species.

4.6.6. Rare and Unique Natural Resources

Description of Resources/Issues

The Minnesota DNR and the USFWS were contacted on October 24, 2013 regarding vegetation and wildlife resources in the vicinity of the Project. As of December 3, 2013, no response from either agency has been received. A DNR Natural Heritage Information System (NHIS) review was completed on November 25, 2013 and results indicate there are no rare animals, reptiles, fish or freshwater mussels identified within one mile of the proposed Project facilities. Due to environmental degradation from agricultural land conversion, significant migratory bird paths were not encountered.

Plants
The NHIS results document the occurrence of three rare plant species within one mile of the proposed Project Facilities: Wild Quinine (*Parthenium integrifolium*), a state-listed endangered species, and Cowbane (*Oxypolis rigidior*), Rattlesnake-master (*Eryngium yuccifolium*), state-listed threatened species. However, no records of protected plants were documented within the 100-foot analysis corridor, or within one-half mile of either Option.

**Animals**

No records of state or federally-listed animals occur within a mile of the Project. Two state-listed threatened animal species have the potential to occur in the general project vicinity: Loggerhead shrike (*Lanius ludovicianus*) and Blanding’s turtle (*Emydoidea blandingii*). The preferred habitat of the shrike is dry upland prairie or other open grassland with scattered hedgerows, shrubs, and small trees. Shrikes are also found around shelterbelts, old orchards, pastures, cemeteries, grassy roadsides, and farmsteads. Shrikes use the scattered trees and shrubs in these areas as nesting sites and hunting perches. Prey, however, are caught in the surrounding open grassy areas.

Blanding’s turtle is a state-listed threatened species. Blanding’s turtles use wetlands and may also use the creek sand streams within the Project area as travel corridors between wetlands. In addition, Blanding’s turtles will travel long distances over land and use upland areas over a mile distant from wetlands. Uplands are used for nesting, basking, periods of dormancy, and traveling between wetlands.

WEST did not document any state or federal listed species in the Project vicinity during the raptor and bald eagle survey conducted in March 2013 or any of the wildlife surveys that were conducted for the Wind Project starting in 2009.

**Impacts**

No impacts to rare and unique natural resources are anticipated.

No recorded instances of rare plant species occur within the Option analysis corridors. Given the highly cultivated and disturbed nature of the route Options, it is not anticipated that any rare or unique plants would be affected by construction of the Project.

Impacts to Blanding’s turtle and shrike habitat will be minimal, as direct impacts to wetlands and streams will be avoided to the extent feasible, and impacts to tree rows will be minimized. Temporary displacement during construction may occur; however, once the transmission line and substation are operational, no impact is anticipated.

**Mitigation**

As stated above, impacts to wetlands and riparian habitat will be minimized, and if unavoidable will be mitigated as required by the appropriate agencies. Pleasant Valley will consider planting certain limited-height plants along the width of the ROW in the area where trees and brush are cleared to mitigate shrike habitat loss. In the unlikely event federal or state-listed species are encountered during construction, Pleasant Valley will work with the USFWS and DNR on appropriate avoidance, minimization and mitigation measures.
5.0 REFERENCES


Garrad-Hassan, 2013. Sound Modeling Assessment. Pleasant Valley Wind Farm, Dodge and Mower Counties, MN.

Goodwin, J.G., Jr. 1975. Big game movement near a 500 kV transmission line in northern Idaho. Prepared for Bonneville Power Administration, Engineering and Construction Division, Portland, OR.


APPENDIX A: FIGURES
Figure 1: Project Vicinity
Environmental Assessment
Pleasant Valley 161 kV Transmission Line and 34.5/161 kV Substation
Mower County, Minnesota

Copyright © 2009 ESRI

Proposed Transmission Right-Of-Way
- Option 1
- Option 2
- Option 2A

Pleasant Valley Wind Project Boundary
Municipal Boundary
County Boundary

Path: Z:\RES\218174_PleasantValley\map_docs\EAReport\Fig1_EA_PV_ProjectVicinity_8x11L.mxd
Figure 2: Infrastructure Environmental Assessment
Pleasant Valley 161 kV Transmission Line and 34.5/161 kV Substation
Mower County, Minnesota

- Proposed Transmission Right-Of-Way - Option 1
- Proposed Transmission Right-Of-Way - Option 2
- Proposed Transmission Right-Of-Way - Option 2A
- Proposed Substation (not to scale)
- Existing Overhead Lines
- Residence
- Snowmobile Trail
- Northern Nat. Gas. Pipeline
- Existing 161 kV Transmission line
- Existing 345 kV Transmission Line
- County Boundary

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
Figure 3: Land Cover (NLCD)
Environmental Assessment
Pleasant Valley 161 kV Transmission Line
and 34.5/161 kV Substation
Mower County, Minnesota

- Proposed Transmission Right-Of-Way - Option 1
- Proposed Transmission Right-Of-Way - Option 2
- Proposed Transmission Right-Of-Way - Option 2A
- Proposed Substation (not to scale)
- County Boundary
- Decid Forest
- Emergent Wetlands
- High Intensity Residential
- Low Intensity Residential
- Mixed Forest
- Open Water
- Pasture/Hay
- Row Crops
- Transportation
- Woody Wetlands

0 1,000 2,000 4,000 Feet
Figure 4: Water Resources
Environmental Assessment
Pleasant Valley 161 kV Transmission Line
and 34.5/161 kV Substation
Mower County, Minnesota
Figure 5: Shoreland Area Crossings

Environmental Assessment
Pleasant Valley 161 kV Transmission Line and 34.5/161 kV Substation
Mower County, Minnesota

Note - Same Scale for Each Figure
APPENDIX B: REQUEST FOR LOCAL REVIEW
October 1, 2013

VIA ELECTRONIC AND U.S.MAIL

Craig Oscarson
County Coordinator
Mower County
201 1st Street NE
Austin, MN 55912

RE: Notice of Election to Seek Local Review of Proposed Transmission Line and Substation, and Request to Be Added to Commissioner’s Board Meeting Agenda for October 8th

Dear Mr. Oscarson:

Pursuant to Minn. Stat. § 216E.05, subd. 3 and Minn. R. 7850.5300, subp.3, Pleasant Valley Wind, LLC (“Pleasant Valley”) hereby notifies Mower County of its election to seek local approval of a transmission line route and substation associated with the proposed Pleasant Valley Wind Project, a 200 MW large wind energy conversion project (“Project”).

As you know, in 2010 Pleasant Valley previously completed the local approval process through Mower County for transmission and substation facilities associated with the Project. The Environmental Assessment that was completed as part of that process is documented in Minnesota Public Utilities Commission Docket No. IP-6828/LR 09-1198. Due to changes in the Project, including modifications to the proposed transmission and substation facilities, Pleasant Valley would like to submit to Mower County new applications for Conditional Use Permits and work with the County to complete a new Environmental Assessment for an overhead 161 kV transmission line route with a length of less than 10 miles and one 34.5/161 kV project substation. These facilities will be part of the Pleasant Valley Wind Project and will facilitate delivery of the Project’s output to the point of interconnection located within Great River Energy’s Pleasant Valley Substation in the northwest quarter of Section 19 of Pleasant Valley Township of Mower County.

With this notification, Pleasant Valley requests local review of the transmission facilities in order to maintain approval authority at the local level and to allow for an expedited review and approval process. Mower County has 60 days to relinquish jurisdiction of the permitting process to the Public Utilities Commission. Pleasant Valley hereby requests to be added to the agenda of the October 8th meeting of the Board of Commissioners in order to provide a project status update and discuss the local approval process. Pleasant Valley will also provide further detail about the proposed transmission line and project substation for which we seek local approval.
Pleasant Valley appreciates the support that the Project has received from the local community and local officials over the last six years. We look forward to working with you closely on this important project. Please contact me directly with any questions.

Sincerely,

Justin D. Markell
Project Manager
Renewable Energy Systems Americas Inc.
952.210.1720
justin.markell@res-americas.com

CC: Angie Knish, Mower County Environmental Services
    Mike Hanson, Mower County Public Works
October 25, 2013

Burl W. Haar, Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101

RE: Acceptance of Local Review of Transmission and Substation Facilities Associated with the Pleasant Valley Wind Project
Commission Docket Number: LR-13-960

Dear Mr. Haar:

Pleasant Valley Wind, LLC (Pleasant Valley), on behalf of RES America Developments Inc., requested local review for a 161 kV transmission line project from the Mower County Board.

The Mower County Board of Commissioners met on Tuesday, October 8, 2013 and voted to accept the responsibility of local review of the above listed project.

Mower County will proceed with the Environmental Assessment process. Mower County has scheduled a public scoping meeting to provide an opportunity for the public to ask questions, provide comments, and suggest issues to be analyzed in an Environmental Assessment to be developed by the County. The public scoping meeting is scheduled for Tuesday, November 5, 2013 at 2:30 p.m.

If you have any questions, please contact Craig Oscarson, County Coordinator, at 507-437-9549 or Angie Knish, Environmental Services Supervisor, at 507-437-9586.

Sincerely,

Jerry Reinartz
Chair

cc: Angie Knish, Environmental Services Supervisor
Craig Oscarson, County Coordinator
Kristen Nelsen, County Attorney
October 28, 2013

Justin D. Markell
RES America Developments Inc.
12 South 6th Street, Suite 930
Minneapolis, MN 55402

Angela Knish
Mower County Environmental Services
1105 8th Avenue NE
Austin, MN 55912

RE: Local Review of Transmission Line and Substation Facilities Associated with the Pleasant Valley Wind Farm Project in Mower County, Minnesota
Docket No. IP-6828/LR-13-960

Dear Mr. Markell and Ms. Knish:

This letter confirms that the Minnesota Public Utilities Commission (Commission) has received notification that RES America Developments Inc. (RES) has decided to pursue local review approval to construct an overhead 161 kV transmission line with a length of less than 10 miles and one 34.5/161 kV project substation in Sargeant and Pleasant Valley townships in Mower County.

Under the Minn. Stat. Chapter 216E, a route permit from the Commission is required for most high-voltage transmission lines that are greater than 100 kV. However, certain projects may be eligible for review and permitting by local units of government with jurisdiction instead of filing with the Commission. The 161 kV transmission line and substation proposed by RES is eligible for local review pursuant to Minn. Stat. § 216E.05.

RES indicated in its letter that Mower County is the local government unit with jurisdiction to conduct environmental review and permit the proposed project and that Mower County accepted jurisdiction at its October 8th County Board meeting. Under Minn. Stat. § 216E.05, subd. 1(b), a local unit of government may relinquish its jurisdiction by requesting the Commission to assume jurisdiction and make a decision on the permit. The request must be filed within 60 days after an application for the proposed project has been filed.
Under Minn. Rules, part 7850.5300, subp. 5, an environmental assessment must be prepared by the local unit of government with jurisdiction over the project. Specific requirements with regard to the environmental review process include providing an opportunity for the public to participate in the development of the scope of the environmental assessment before it is prepared; publishing notice in the *EQB Monitor* of when the assessment is available for review and of the procedure for commenting on the assessment; and withholding a final decision on the project until at least 10 days after the notice appears in the *EQB Monitor*. A copy of the environmental assessment must be provided to the Commission upon completion, and may be filed using the Commission’s efiling system (https://www.edockets.state.mn.us/EFiling).

This letter acknowledges that RES has sent the required notice under Minn. Rules, part 7850.5300, subp. 3, to those persons on the Commission’s general notification list that a permit has been applied for from the local unit of government.

If you have any questions, please direct them to Scott Ek of the Commission staff at 651-201-2255 or scott.ek@state.mn.us.

Sincerely,

Burl W. Haar
Executive Secretary

Cc: Deb Pile, Department of Commerce
APPENDIX C: SCOPING PERIOD
# SUMMARY OF SCOPING COMMENTS – LOCATION IN EA

12/3/2013

List of Comments/Concerns Raised During Scoping Period Addressed in EA:

<table>
<thead>
<tr>
<th>Commenter</th>
<th>Date / Place of Comment or Concern</th>
<th>Comment and/or Concern Summarized</th>
<th>EA Section Where Concern is Addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jim Risius</td>
<td>11/5/2013 Public Comment, EA Scoping Meeting</td>
<td>• Impact to Root River • Clearing of woods</td>
<td>Water Quality (Section 4.6.3) Natural Environment, Flora and Fauna (Section 4.6.5)</td>
</tr>
<tr>
<td>John Scott</td>
<td>11/5/2013 Public Comment, EA Scoping Meeting</td>
<td>• Devaluation of property • Why can the new line not be placed on the existing poles?</td>
<td>Land-based Economics, Agriculture (Section 4.4.1) Engineering Design (Section 3.1.3)</td>
</tr>
<tr>
<td>Lonnie Wendt</td>
<td>11/5/2013 Public Comment, EA Scoping Meeting</td>
<td>• Safety concern over two parallel lines along County Road 1 (one on either side of road) • Safety concerns ice/tornado • Any way to co-locate the proposed line on existing poles?</td>
<td>Public Health and Safety (Section 4.3) Engineering Design (Section 3.1.3)</td>
</tr>
<tr>
<td>Tina Shafer</td>
<td>11/5/2013 Public Comment, EA Scoping Meeting</td>
<td>• Health effects (such as cancer) on people and environment due to amount of voltage</td>
<td>Public Health and Safety (Section 4.3.1)</td>
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<tr>
<td>Polly Glynn Commissioner, 2nd District</td>
<td>11/5/2013 Question to RES, EA Scoping Meeting</td>
<td>• Possible to build line underground?</td>
<td>Engineering Design (Section 3.1.3)</td>
</tr>
<tr>
<td>Pleasant Valley Wind, LLC</td>
<td>11/18/2013 Mailed Comment to Mower County</td>
<td>• Add an option (Option 2A) behind the two residential homes instead of in front where Option 2 parallels 640th Street – per landowner input</td>
<td>Add and analyze Option 2A to the EA</td>
</tr>
<tr>
<td>Betty Reynolds</td>
<td>11/14/2013 Mailed Comment</td>
<td>• Place lines underground</td>
<td>Engineering Design (Section 3.1.3)</td>
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<tr>
<td>Stacy Kotch, Utility Transmission Route Coordinator MnDOT</td>
<td>11/18/2013 Mailed Comment</td>
<td>• Visual effects</td>
<td>Aesthetics (Section 4.2.4)</td>
</tr>
</tbody>
</table>
|                                 |                                    | • Appears route options do not directly abut state trunk highways  
• If work is required within MnDOT ROW, coordinate with Thomas Streiff | Permitting (Section 2.4) |
| Steve and Tina Shafer           | 11/18/2013 Mailed Comment | • Health effects on humans and livestock from EMF  
• Pacemaker effects  
• Level of Risk  
• Safety concerns – ice/tornado  
• Avian collisions concerns, especially bald eagles, owls, and hawks  
• Effect (low frequency) sound has on wildlife  
• Tree clearing and wildlife habitat loss | Public Health and Safety (Section 4.3)  
Natural Environment, Flora and Fauna (Section 4.6.5)  
Noise (Section 4.2.3)  
Natural Environment, Flora and Fauna (Section 4.6.5)  
Aesthetics (Section 4.2.4)  
Land-based Economics (Section 4.4)  
Utility & Communication Networks (Section 4.2.7) |
| John and Marge Steele           | 11/18/2013 Mailed Comment | • Place lines underground | Engineering Design (Section 3.1.3) |
| Ryan Knutson                    | 11/18/2013 Mailed Comment | • Human health hazards  
• Animal health hazards  
• Land value - decrease  
• Contamination of water supply  
• Effects on organic farming | Public Health and Safety (Section 4.3)  
Electric, Magnetic and Electromagnetic Fields (Section 4.3.1); Flora and Fauna (Section 4.6.5)  
Land-based Economics (Section 4.4)  
Water Quality (4.6.3)  
Land-based Economics, Agriculture (Section 4.4.1) |
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<td>Ice debris hazards</td>
<td>Public Health and Safety (Section 4.3)</td>
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<td>Isaac Gronseth</td>
<td>11/18/2013 Mailed Comment</td>
<td>Cell phone reception</td>
<td>Utility &amp; Communication Networks (Section 4.2.7)</td>
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<td>Tree clearing</td>
<td>Flora and Fauna (Section 4.6.5)</td>
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<td>Safety concerns with ice/tornado</td>
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<td>Land value- decrease</td>
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<td>Beef cattle’s environment</td>
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<td>Haven Hutterian Brethren</td>
<td>11/18/2013 Mailed Comment</td>
<td>Environmental health</td>
<td>Natural Environment (Section 4.6)</td>
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Memorandum

To: County Board of Commissioner's

From: Angie Knish, Environmental Services

CC: Craig Oscarson, Kristen Nelsen, Michael Hanson, Sean Flannery

Date: November 22, 2013

Re: Scoping Document – items for inclusion / exclusion

Attached please find a summary of the scoping period comments received and a copy of the supporting documents.

With the exception of a few items related to the following issues, I am recommending inclusion of all other issues presented by the public.

<table>
<thead>
<tr>
<th>Exclusion</th>
<th>Reason</th>
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</thead>
<tbody>
<tr>
<td>Wind farm inefficiency as alternative energy</td>
<td>Issue is outside the transmission line and substation scoping document</td>
</tr>
<tr>
<td>Health Issues, Disruption of Farmland, Land Value relating to the wind turbines</td>
<td>Issue is outside the transmission line and substation scoping document</td>
</tr>
<tr>
<td>Statements supporting or not supporting one or all transmission routes and/or substation; or entire project including wind turbines, substation and transmission lines</td>
<td>General Comment received and noted to the record.</td>
</tr>
<tr>
<td>Statement to halt project, does not want project.</td>
<td>General Comment received and noted to the record.</td>
</tr>
</tbody>
</table>

All other environmental issues raised as part of the scoping process are proposed to be addressed by the Environmental Assessment (EA) with their proposed sections noted, including devaluation of property.

~Angela
SCOPING PERIOD SUMMARY

Scoping Period:

October 25, 2013 – November 5, 2013
Written comments through November 18, 2013

Scoping Meeting Information:

When: 2:30 P.M., Tuesday November 5, 2013
Presentation will begin at 2:30 P.M.

Where: Commissioner’s Room,
Lower Level - Mower County Government Center
201 1st Street NE
Austin MN 55912

Meeting Attendees: See scanned attachment

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<td>Commenter</td>
<td>Date / Place of Comment</td>
<td>Comment and/or Concern Summarized</td>
<td>EA Sector Where Concern is Addressed</td>
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<tr>
<td>Tina Shafer</td>
<td>11/5/2013 Public Comment, EA Scoping Meeting</td>
<td>• Health effects (such as cancer) on people and environment due to amount of voltage</td>
<td>Public Health and Safety (Section 4.3)</td>
</tr>
<tr>
<td>Polly Glynn Commissioner, 2nd District</td>
<td>11/5/2013 Question to RES, EA Scoping Meeting</td>
<td>• Possible to build line underground?</td>
<td>Engineering Design (Section 3.1)</td>
</tr>
<tr>
<td>Larry Sparks</td>
<td>11/12/2013 Mailed Comment</td>
<td>• Support for project and lack of effects on environment – river crossing tree clearing will benefit wildlife by giving them an alternative to crossing the river instead of crossing the highway • Supports Option 1 because of less impact to homesteads</td>
<td>No response required within the EA</td>
</tr>
<tr>
<td>Pleasant Valley Wind, LLC</td>
<td>11/18/2013 Mailed Comment to Mower County</td>
<td>• Add an option (Option 2A) behind the two residential homes instead of in front where Option 2 parallels 640th Street – per landowner input</td>
<td>Add and analyze Option 2A to the EA</td>
</tr>
<tr>
<td>Betty Reynolds</td>
<td>11/14/2013 Mailed Comment</td>
<td>• Place lines underground</td>
<td>Engineering Design (Section 3.1)</td>
</tr>
<tr>
<td>Stacy Kotch Utility Transmission Route Coordinator MnDOT</td>
<td>11/18/2013 Mailed Comment</td>
<td>• Appears route options do not directly abut state trunk highways • If work is required within MnDOT ROW, coordinate with Thomas Streiff</td>
<td>Permitting (Section 2.4)</td>
</tr>
<tr>
<td>Commenter</td>
<td>Date / Place of Comment</td>
<td>Comment and/or Concern Summarized</td>
<td>EA Section Where Concern is Addressed</td>
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</table>
| Steve and Tina Shafer | 11/18/2013 Mailed Comment | • Health effects on humans and livestock from EMF  
• Pace maker effects  
• Level of Risk  
• Safety concerns – ice/tornado  
• Avian collisions concerns, especially bald eagles, owls, and hawks  
• Effect (low frequency) sound has on wildlife  
• Tree clearing and wildlife habitat loss  
• Aesthetics  
• Land value - decline  
• Underground pipeline locations  
• Wind farm inefficiency as alternative energy | Public Health and Safety (Section 4.3)  
Natural Environment, Flora and Fauna (Section 4.6.5)  
Noise (Section 4.2.3)  
Natural Environment, Flora and Fauna (Section 4.6.5)  
Aesthetics (Section 4.2.4)  
Land-based Economics (Section 4.4)  
Public Services (Section 4.2.6)  
No response required within the EA |
| John and Marge Steele | 11/18/2013 Mailed Comment | • Health issues (wind turbines)  
• Disruption to farmland (wind turbines)  
• Land value (wind turbines)  
• Transmission route preference  
• Wind farm inefficiency as alternative energy  
• Please halt entire project (wind turbine, substation and transmission line.)  
• Place lines underground | No response required within the EA  
No response required within the EA  
No response required within the EA  
No response required within the EA  
No response required within the EA  
No response required within the EA  
Engineering Design (Section 3.1) |
| Ryan Knutson       | 11/18/2013 Mailed Comment | • Human health hazards  
• Animal health hazards | Public Health and Safety (Section 4.3)  
Natural Environment, Flora and Fauna (Section 4.6.5) |
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<th>Commenter</th>
<th>Date / Place of Comment or Concern</th>
<th>Comment and/or Concern Summarized</th>
<th>EA Section Where Concern is Addressed</th>
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<tr>
<td>Isaac Gronseth</td>
<td>11/18/2013 Mailed Comment</td>
<td>• Land value - decrease</td>
<td>Land-based Economics (Section 4.4)</td>
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<td></td>
<td></td>
<td>• Contamination of water supply</td>
<td>Water Quality (4.6.3)</td>
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<td>• Effects on organic farming</td>
<td>Land-based Economics, Agriculture (Section 4.4.1)</td>
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<td>• Ice debris hazards</td>
<td>Public Health and Safety (Section 4.3)</td>
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<td>• Does not want project adjacent to property</td>
<td>No response required within the EA</td>
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<td>• Cell phone reception</td>
<td>Human Settlement (Section 4.2.6)</td>
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<td>• Tree clearing</td>
<td>Flora and Fauna (Section 4.6.5)</td>
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<td>• Safety concerns with ice/tornado</td>
<td>Public Health and Safety (Section 4.3)</td>
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<td>• Land value - decrease</td>
<td>Land-based Economics (Section 4.4)</td>
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<tr>
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<td></td>
<td>• Beef cattle’s environment</td>
<td>Land-based Economics, Agriculture (Section 4.4.1)</td>
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<td></td>
<td>• Human health</td>
<td>Public Health and Safety (Section 4.3)</td>
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<td></td>
<td>• Aesthetics</td>
<td>Aesthetics (Section 4.2.4)</td>
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<tr>
<td></td>
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<td>• Not supportive of project along Option 2</td>
<td>No response required within the EA</td>
</tr>
<tr>
<td>Haven Hutterian Brethren</td>
<td>11/18/2013 Mailed Comment</td>
<td>• Environmental health</td>
<td>Natural Environment (Section 4.6)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Safety concerns with ice and storms/tornado</td>
<td>Public Health and Safety (Section 4.3)</td>
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<td></td>
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<td>• Tree clearing</td>
<td>Flora and Fauna (Section 4.6.5)</td>
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<tr>
<td></td>
<td></td>
<td>• Land value - decrease</td>
<td>Land-based Economics (Section 4.4)</td>
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<tr>
<td></td>
<td></td>
<td>• Not supportive of project along Option 1</td>
<td>No response required within the EA</td>
</tr>
</tbody>
</table>
Thank you for providing feedback regarding the Pleasant Valley 161 kV Transmission Line and 34.5/161 kV Substation Project. Please use the comment form below to submit a scoping comment – comments must be received at the Environmental Services Office no later than Monday, November 18, 2013 at 4:00 P.M.

Name: Larry R. Sparks

Organization (if any):

Mailing Address: 31717 640 Avenue

City: Sergeant
County: Mower
State: Minnesota

Phone Number: 507-440-3482 Zip: 55973
Email: sparks.larry@gmail.com

Comment: from Larry Sparks

1. My great-grandparents, Helmin Berge, homesteaded the Berge land.

2. I have much love and respect for the environmental issues affecting this land (30' off the right-of-way).

3. I believe the transmission line proposed by EPS would not pose an environmental issue for this land (30' off right-of-way) or for the Root River.

4. As many deer cross county road 1 at this point, I actually feel cutting down the tree at this 30' right-of-way would provide a safety feature for the many motorists traveling on county road 1.

5. Using this proposed route would not affect any homesteader. Neither is the alternative route would affect old homestead.

6. Thank you for considering my comments.

Larry R. Sparks 11-9-13

I am a current township officer.
November 18, 2013

VIA ELECTRONIC MAIL

Angie Knish
Environmental Services
Mower County
105 8th Ave NE
Austin, MN 55912

RE: Scoping Comment for Environmental Assessment of the Proposed Transmission Line and Substation

Dear Ms. Knish:

Pursuant to Minn. R. 7850.3700, subp.2, Pleasant Valley Wind, LLC (“Pleasant Valley”) respectfully requests that Mower County consider the following in the scoping decision for the Environmental Assessment (“EA”) that is currently underway for the Pleasant Valley Transmission Line and Substation Project (“Project”).

Pleasant Valley has received input directly from two landowners with residences along the Proposed Route 2. These owners request that Pleasant Valley consider slightly adjusting the alignment of the proposed Transmission Line route on their properties. Proposed Route 2 begins at the Project Substation in the northeast quarter of the northeast quarter of Section 20 in Sargeant Township, and travels north for one mile along the western side of 640th Avenue. These two owners, whose residences front the west side of 640th Avenue in Section 17 of Sargeant Township, ask that we consider placing the Transmission Line approximately 700 feet west of 640th Avenue—that is, locating the structures and line ‘behind’ their residences. The owners assert that if the Transmission Line is parallel to, but 700 feet west of, 640th Avenue, fewer trees will require removal. The attached map illustrates this suggested alternate route segment.

Pleasant Valley requests that Mower County include in the Environmental Assessment this additional route segment along with the Proposed Route 1 and Proposed Route 2 alignments so that the environmental affects of these routes can be fully considered.

Sincerely,

Justin D. Markell
Project Manager
Renewable Energy Systems Americas Inc.
952.210.1720
justin.markell@res-americas.com
Public Works

Dear Angela Knick

I already live on a road with high line travel. If you have to run wire again, please put them under ground. It's enough with all the wire, then we have all the windmills. You can't even enjoy the sky anymore.

Thank you,

B.A. Reynolds
November 18, 2013

Angela Knish, Environmental Services Supervisor
Mower County Public Works/ Environmental Services
1105 8th Ave NE
Austin, MN 55912

Re: In the Matter of the Pleasant Valley 161kV High Voltage Transmission Line (HVTL) and 34.5/161kV Substation Project

Dear Ms. Knish:

On October 25th, 2013, a request was made for public comment on the scope of the Environmental Assessment (EA) relating to the route permit application by Pleasant Valley Wind, LLC for a 161kV High Voltage Transmission Line (HVTL) and 34.5/161kV Substation Project. The Minnesota Department of Transportation (MnDOT) submits the following comments in response to the request.

Upon initial review of the project, it appears that the proposed transmission lines and associated facilities do not directly abut a state trunk highway. MnDOT requests that our agency be made aware of any changes to the proposed project that may make the project area close enough to occupy a portion of current MnDOT right of way.

MnDOT has adopted a formal policy and procedures for accommodation of utilities on the highway rights of way ("Utility Accommodation Policy"). A copy of MnDOT’s policy can be found at http://www.dot.state.mn.us/utility/files/pdf/appendix-b.pdf.

Any HVTL construction work, including delivery or storage of structures, materials or equipment that may affect MnDOT right of way is of concern such that MnDOT should be involved in planning and coordinating such activities. If work is required within MnDOT right of way for temporary or permanent access, please coordinate with Thomas Streiff, District 6APermits, at 507-286-7592 or Thomas.Streiff@state.mn.us.

An Equal Opportunity Employer
MnDOT has a continuing interest in working with the Pleasant Valley Wind, LLC to ensure that possible impacts to the state transportation system are adequately addressed. We appreciate the opportunity to provide these comments.

Sincerely,

Stacy Kotch

Utility Transmission Route Coordinator

Minnesota Department of Transportation

An Equal Opportunity Employer
November 16, 2013

To the Mower County Environmental Services,

We live on 320th St. which is one of the proposed transmission Right-Of-Way options. I spoke up at the November 5th meeting asking about possible health risks coming from the overhead power lines and sub station. I decided to do some research myself. There is so much on the internet. Weeding through what might be legitimate research and what is not, is quite a challenge. Here are a few places I checked out.
*The Bioinitiative Report 2012, (ran in the Canada Free Press) confirms previously reported health risks of overhead power lines EMF’s.
*RETA (Responsible Electricity Transmission for Albertans) many fact sheets with compiled research.
*Hope For The Hills, hopeforthehills.org, a community that got existing power lines taken down. This has never been accomplished before.

From what I have found,
1. Yes, there are links between overhead power line EMF’s and many serious health problems including: Childhood leukemia, Alzheimer’s, Lou Gehrig’s diseases, dementia, breast cancer, brain cancer, lymph cancer, intestinal cancer, depression, suicide, miscarriage, birth defects, heart problems, behavior and mental disorders, sexual dysfunction, sleep disorders, headache, nausea, fatigue, increased infant mortality, embryo abnormality, stunting of growth, the Corona Effect, electric shock, electrical burns and many more.

Livestock and pets are also at risk. Dairy cattle exposed to high EMF levels- decrease of about 5.0% in milk yield, 13.8% in fat corrected milk yield and 16.4% decrease in milk fat among Holstein cows (Burchard et al. 2003) breathing problems in both cows and pigs, low pig birth rate, high piglet mortality, undersize heifers, Deformities in stillborn and surviving puppies and kittens, female dogs ceased cycling, male dogs revealed a lack of sperm, canine lymphoma and more.

Bird deaths resulting from collision with overhead transmission lines, according to the U.S. Fish and Wildlife service (2002) an estimated up to 174 million bird deaths annually in the U.S. from collision with overhead transmission lines, which is greater than the number of bird deaths from hunting. EMF exposure results in significantly reduced egg size, eggshell thinning, reduced egg laying and reduced hatching success. We have at least one pair of Bald Eagles now living in our neighborhood, owls and hawks. How will this affect them?

The low frequency hum or buzz is bound to have an even greater impact on animals in the wild which have significantly more sensitive hearing than humans.

Magnetic fields coming from overhead high voltage lines have been shown to have impact as far away a 656 yards.

2. Over head high voltage power lines and towers have been destroyed during tornadoes and ice storms. The danger of death, injury and significant economic loss becomes increased with every over head high voltage power line that is constructed.

3. The clearing of tree, shrub and other plant growth, for the very wide power line right-of-way is never allowed to recover to its original state. This means a permanent loss of habitat for bird and mammal species.

4. Not only are the towers and lines unsightly, but they obstruct and detract from the many positive aspect of our rural landscape and scenery. We have a beautiful view of the country side. Our view of the sunrise can be breathtaking. We have no tall buildings or power lines to interrupt the natural beauty of our view. There are no over head power lines coming to our farm. They are all buried under ground. These lines would significantly change the beauty that we enjoy every day.

5. The decline of property value. Though this will probably not make it on the Environmental Assessment
list, because some would say it is not an "environmental" concern. To us it IS an economic concern that impacts our environment. Studies indicate an average of 15%-20% devaluation of homes with in 1093.61 yards of over head power lines. Some appraisals have listed up to 91% devaluation of front line homes. Agricultural properties devalued by 16%-29% when over head lines are built on or nearby the properties. I am sure the % varies depending on the state and location. This devaluation at any % , affects resale and also the communities tax base. Will home and land owners be compensated for this loss? Most likely not. I know I would not purchase a home near these power lines or the substation. A local realtor that I asked, stated, they usually drop the asking price $10-$15 thousand when trying to sell.

6. Is there a natural gas line in the area of the proposed lines and is this a proposed danger going over the top of it?

7. How does this affect home owners or farmers in the fields with pace makers?

These would be our concerns to be looked at on the Environmental Assessment.

If the information I just gave you is true, then why would any local or state government allow over head high voltage power lines to be over or near homes?

I understand that there are many variables that come into play with the health issues: what is the strength of the Electro Magnetic Field, the distance from the EMF, length of exposure, the age of the cells at time of exposure, who is doing the study and for what reason. I am sure there are more variables. Because of these variables some studies have found inconclusive evidence at this time. Others have stated, Yes there is an EMF health risk.

I am not a scientist, far from it. My simple question is, Does EMF have an effect on cells? The answer is YES. I have found NO study that states, EMF's do not affect cells. The argument seems to be, What is the effect and the level of risk.

When it comes to deciding what is an acceptable risk, we need to look at the possible consequences.

Let's look at DDT. It was developed in the 1940's. It was eventually used as a pesticide in agricultural areas. Risks were ignored until the late 1950's-1960's. This is when the US Environmental Protection Agency began regulatory actions to prohibit many uses of DDT. In 1962, Rachel Carson's book, Silent Spring, was written about the widespread public concern over the danger of improper pesticide use. In 1972 the EPA issued a cancellation order for DDT based on diverse environmental effects of its use to wildlife as well as human health risks. Today DDT is classified as a probable human carcinogen by US and international authorities. Twenty years of "acceptable" risk resulted in countless deaths. The decline of bird populations, Robins, Falcons, Gull, Heron, Osprey, Pelicans, Bald Eagles and many more. Putting many on the endangered species list. This is just looking at the effects it has had on birds, we are not even taking in the account of what effects it has had on fish, wildlife and humans. It has taken over 40 years for these "acceptable risk, consequences" to recover.

So again we come back to the question of Acceptable Risk and what consequences are we willing to accept?

We are not willing to risk our children and loved ones.

Other jurisdictions have come up with common sense solution to this dilemma; they do not build new above ground high voltage power lines near people.

* The International Commission for Electromagnetic Safety passed the Benevento Resolution resolving to institute the Precautionary Principal which states* when there are indications of possible adverse effect, though they remain uncertain, the risks from doing nothing may be far greater than the risks of taking action to control these exposures. This shifts the burden of proof from those suspecting a risk to those who discount it."
* The Precautionary Principal has been adopted by the European Union in its Constitution Treaty Article 174, and the World Health Organization passed a resolution in 2006 to counter industry's position that annoyance and discomfort do not count, stating "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."

* In many countries, legislation has been passed to protect citizens from above ground power line EMFs. For example, in Austria, it is against the law to build overhead high voltage power lines with in 437.45 yards of a residential area, they must be buried.

* In a Washington State County, new high voltage power lines can only be constructed in industrial areas, unless they are buried.

We are not in favor of either high voltage power line route, or the location of the high voltage substation.
We are not willing to risk our children, loved ones and community around us.

We are not in favor of the Wind Farm, and all the elements that it includes. They are proving to be an inefficient, alternative energy source and the environmental impact is too high of a risk.

Steve and Tina Shafer
New Report Confirms Health Risks of Overhead High Voltage Power Lines

The Bioinitiative Report 2012, released a few weeks ago (Canada Free Press), confirms previously-reported health risks of overhead power line electromagnetic fields (EMFs).

The report, prepared by 29 authors from 10 countries, includes the review of approximately 1,800 new studies on the biological effects and adverse health effects from EMFs such as power lines and from wireless technologies.

Among the many observations and findings, the report indicates the existing public safety limits for EMFs and radio frequency radiation are not adequate to protect public health. Children, pregnant women, and people with autism, in particular, should minimize EMF and wireless exposures. EMF exposure negatively affects behaviour, growth, reproduction and melatonin production—melatonin is one of the body’s most powerful natural defenses against many diseases and other health problems. Oxidative stress, caused by EMF exposure, contributes to cancer, neurodegenerative diseases and immune disorders. DNA integrity in human cells is negatively affected by EMF exposure. To protect living cells from stress and DNA strand breakdown, EMF safety limits must be changed from the current thermal standard based on energy, to a standard based on negative biological responses that occur long before the threshold for thermal changes. The report cites many more health impacts of EMF exposure.

One of the co-editors of the Bioinitiative Report 2012 said, “There is now much more evidence of risks to health affecting billions of people world-wide. The status quo is not acceptable in light of evidence for harm.” New safety standards are urgently needed for protection against EMF and wireless exposures present everywhere in daily life.

See this link for more information on the health impacts of overhead power lines. Burying power lines essentially eliminates the negative EMF impacts of overhead lines.

~ by RETA on January 23, 2013.


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BioInitiative 2012
A Rationale for Biologically-based Standards for Low-Intensity Electromagnetic Fields

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→ Table 1-1 – Conclusions 2012
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11/9/2013
Health

There have been literally hundreds of medical and scientific studies that show conclusive links and causal correlations between many serious health conditions and prolonged exposure to the ELF-EMF (Extremely Low Frequency Electromagnetic Fields) and air pollutants charged by corona ions that emanate from overhead high voltage transmission lines.

These are some of the RETA Fact Sheets pertaining to Your Health.

1. Health Impacts of High Voltage Power Lines
2. High Voltage Power Lines and Leukemia
   1. 1979-1993 Studies
   2. 1993-1999 Studies
   3. 1999-2005 Studies
3. High Voltage Power Lines, Alzheimer's Disease and Dementia
4. High Voltage Power Lines and Cancers
   1. 1982-1991 Studies
   2. 1991-1998 Studies
   3. 1999-2004 Studies
5. High Voltage Power Lines, Suicide and Depression
6. High Voltage Power Lines and Birth Problems
7. High Voltage Power Lines and Other Health Problems
   1. Part I
   2. Part II
8. International Commission for Electromagnetic Safety
10. Health Canada and High Voltage Power Lines
11. Health Impacts of Corona Effect
12. Melatonin and High Voltage Power Lines
13. The World Health Organization and High Voltage Power Lines

While power companies continue to state that there is no irrefutable proof that there are adverse health effects, the overwhelming consensus by the medical and scientific experts around the world, including the International Commission for Electromagnetic Safety, is that there are very serious health effects of overhead high voltage power lines.

1. In the 1988 attempt to put much more modest (240kV) power lines along the Sherwood Park Greenbelt, evidence was presented that showed there were significant health reasons back then for concern.
2. Since then, the evidence that power line EMFs and air pollutants charged by corona ions are a serious health risk has been increasing, not decreasing.
3. Even literature offered by EPCOR, Alitalink and the AESO to answer our questions regarding the health and safety of power line EMFs (authored by the National Institute of Environmental Health Sciences) actually confirms our concerns.

4. There are hundreds of more recent studies that show further causal correlations and conclusive links between overhead power line EMFs and many serious health problems including: leukemia, Alzheimer’s and Lou Gehrig’s diseases, dementia, breast cancer, brain cancer, lymph cancer, intestinal cancer, depression and suicide, miscarriage, birth defects, heart problems, behaviour and mental disorders, sexual dysfunction, sleep disorders, headache, nausea, fatigue, and dozens of others.

5. See this summary table for increased risks of numerous diseases and other ailments due to prolonged exposure to overhead high voltage power line EMFs.

6. It’s not only the medical and scientific communities that are aware of the causal correlations between EMFs and many health problems. Bonneville Power Authority data show that of 323 human studies of EMF effects on leukemia, brain cancer, breast cancer, mental health and reproductive health, one-half show increased risks due to exposure to EMFs.

7. No agency has said there is NO RISK.

8. With the overwhelming medical and scientific evidence of very serious health effects (at a maximum), and reasonable doubt (at a minimum), surely the prudent approach is to not run new power lines above ground near densely populated areas, other homes, schools, daycares and hospitals.

We have assembled some of the data and information supporting this below. Please consult the 19 fact sheets at the “Fact Sheets” link for details and complete reference citations.
Power Lines – Myths vs. Facts

HEALTH IMPACTS OF HIGH VOLTAGE POWER LINES

The Myth: Overhead high voltage power lines and associated electromagnetic fields (EMFs) have no negative impacts on health.

The following negative health outcomes have been conclusively linked with EMF exposure in the scholarly literature: a variety of cancers, leukemia, tumor growth, skin growths, abnormal cell activity, sleep and daily rhythm disturbances, perception and memory differences and impairment, genetic defects, hormone regulation and production, gland deficiencies, mental and behavioral problems, immune system deficiencies, nervous system disorders, fetal development problems, miscarriages, birth defects, and blood and circulatory problems (Wagner 2008).


Many occupational, epidemiological (population health and illness), animal and cell studies reported in the peer-reviewed literature by the Colchester School Parents’ Association (1988) show major increases in the occurrences of many diseases and other health problems in children and adults exposed to EMFs. These include: leukemia, non-Hodgkin’s lymphoma, intestinal cancer, myeloid leukemia, brain tumors, brain cancer, immune system deficiencies, DNA uncoiling, retardation of fertilization, fetal resorption, increased infant mortality, embryo abnormality and stunting of growth.

A comprehensive review of recorded EMF effects on human health and behaviour conducted by Rubtsova (undated) included those effects recorded elsewhere in the literature as well as the following: fatigue, decrease in visual and motor reaction time, attention and memory deterioration, persistent mental disorders, headache, nausea, male sexual dysfunction, changes in cardio-respiratory functions, nervous system changes, and embryonic death.

See other RETA Fact Sheets for more detailed facts on the impacts of overhead high voltage power line EMFs on specific diseases and other adverse health effects.

For information on what you can do go to www.reta.ca

Power Lines – Myths vs. Facts

HIGH VOLTAGE POWER LINES & LEUKEMIA (1999-2005 Studies)

The Myth:
Overhead high voltage power lines and associated electromagnetic fields (EMFs) have not been shown to have any impacts on the occurrence of leukemia.

The Facts:
- In 1999, the U.S. National Institute of Environmental Health Sciences (NIEHS) found the strongest associations between EMFs and negative health were for two forms of leukemia: childhood leukemia and white blood cell leukemia in adults exposed to EMFs on the job. They also reported that epidemiological (population health and illness) studies demonstrate a consistent pattern of increased risk with increasing EMF exposure for both childhood leukemia and white blood cell leukemia.
- Greenland et al. (2000) pooled the results of 12 studies and found the risk of leukemia in children exposed to EMF levels similar to those near high voltage power lines to be anywhere from 1.4 to 4.4 times greater than in children exposed to normal levels. Ahlbom et al. (2000) pooled results of 9 studies, and obtained similar results.
- The World Health Organization International Agency for Research on Cancer (2001) classified EMFs as “possibly carcinogenic to humans” based on a consistent statistical association between EMFs and a doubling of risk of childhood leukemia (as reported by the Electric and Magnetic Fields Research and Public Information Dissemination Program [EMFRAPID] 2002).
- Many other U.S. reports have concluded that some studies provide evidence for an association between EMF exposure and increased risk of leukemia (e.g., EMFRAPID 2002; U.S. National Academy of Sciences 1997; American Cancer Society 1996).
- A broad-ranging 1993 study in Sweden reported a link between the increased risk of white blood cell leukemia and EMFs. More than 1,600 people in 169 different occupations and in over 1,000 different workplaces were assessed (EMFRAPID 2002).
- An association exists between childhood leukemia and distance of home at birth from high voltage power lines, and the risk extends up to 600m; a greater distance than would have been expected from previous studies. This risk could be causing about 1% of childhood leukemia in England and Wales (Draper et al. 2005).

For information on what you can do go to www.reta.ca

Power Lines – Myths vs. Facts

HIGH VOLTAGE POWER LINES & CANCERS (1999-2004 Studies)

The Myth:
Overhead high voltage power lines and associated electromagnetic fields (EMFs) have no impact on the incidence of cancers.

The Fact:

- Through a re-analysis of many studies, Ebi et al. (1999) supported earlier findings for risks of childhood cancers about 2 times the expected for children exposed to EMFs. The authors also indicated that their results do not support suggestions by others that the associations between EMFs and childhood cancers are due to socio-economic status or other neighborhood factors.

- A study of breast cancer in Swedish women living within 300m of high voltage transmission lines was conducted by Forssén et al. (2000). Women below age 50 years at diagnosis had a risk of 1.5 times the expected. Women below age 50 years who had estrogen receptor-positive breast cancer had a risk of 3.2 times the expected.

- A 1997 study in Denmark of workers employed in all utility companies reported a statistically significant link between EMFs and higher risk of all cancers combined, and of lung cancer (Electric and Magnetic Fields Research and Public Information Dissemination Program [EMFRAPID] 2002).

- A link between brain cancer and EMFs was reported in a 1995 study involving more than 138,000 utility workers at five electric utility corporations in the U.S. (EMFRAPID 2002).

- A link was reported between exposure to EMFs and brain cancer in a broad-ranging study of over 1,600 workers in Sweden in 1993 (EMFRAPID 2002).

- Laboratory studies have shown EMF impacts on skin cancer, the numbers of breast cancer tumors and cancer tumor volume (EMFRAPID 2002).

- A study of women living near a high voltage power line in Norway suggested an association between exposure to magnetic fields and breast cancer (Klukiene et al. 2004).

For information on what you can do go to www.reta.ca

Power Lines – Myths vs. Facts

HIGH VOLTAGE POWER LINES & BIRDS

The Myth
Overhead high voltage power lines do not have a negative impact on birds.

The Facts
- Bird deaths resulting from collision with overhead transmission lines have been reported for over 100 years (Coutes 1876, Cohen 1896, Emerson 1904). Species killed during these earlier studies included horned larks, phalaropes (shorebird), ruddy ducks and rails (waterbirds) (species also recorded along EPCOR’s and AltaLink’s preferred and alternate routes for the Heartland line).

- Transmission line collisions resulted in 36% mortality of fledged (able to fly) sandhill cranes in the Rocky Mountains (Drewien 1973), 44% mortality of fledged trumpeter swans in Wyoming (Lockman 1988), and 40% mortality of endangered fledged whooping cranes in the Rocky Mountains (Lewis 1993).

- Based on a wetlands study in North Dakota, waterbirds (46% documented mortality), waterfowl (26%), shorebirds (9%) and perching birds (5%) were most vulnerable to strikes with transmission lines (Paanes 1987). The author used these data to estimate 124 bird deaths per kilometer of power line per year.

- The U.S. Fish and Wildlife Service (2002) estimated up to 174 million bird deaths annually in the U.S. from collisions with overhead transmission lines, which is greater than the number of bird deaths from hunting.

- In the Netherlands, Koops (1987) examined 4,666km of bulk transmission line, and estimated 750,000 to one million birds killed per year.

- Ainley et al. (2001) recommended burying high voltage power lines in areas where there were larger concentrations of birds to eliminate collision deaths.

- The electrical industry is poorly monitored for both bird collisions and electrocutions (Manville 2003). Overhead power lines electrocute tens to hundreds of thousands of birds annually in the U.S.

- Huckabee (1993) and Bevanger (1998) found that large, less maneuverable birds are more vulnerable to collisions with power lines, including herons, cranes, swans, and pelicans. Canada geese, larger duck species and grouse are also less maneuverable. Eared grebes were particularly vulnerable to power line collisions (Malcolm 1982). Bevanger (1998) found that herons, falcons, owls and perching birds were frequently electrocuted by power lines. (All of these species are also recorded along EPCOR’s and AltaLink’s preferred and alternate routes for the Heartland line.)

For information on what you can do go to www.reta.ca

Power Lines – Myths vs. Facts

HIGH VOLTAGE POWER LINE SAFETY AND RELIABILITY

The Myth
Overhead high voltage power lines and towers are safe and reliable.

The Truth

- Overhead high voltage power lines and towers have been destroyed during tornadoes and ice storms, and deteriorate from exposure to the weather.

- For example, during the July 31, 1987 tornado in Edmonton that killed 27 people, injured nearly 300, and left at least 750 families homeless (The Edmonton Sun 1987), high voltage transmission towers and lengths of overhead lines were brought down by winds estimated up to 330 km per hour. (Members of the RETA Board witnessed the downed towers and heavy power lines scattered along the tornado’s path between 17 Street and 34 Street in Mill Woods, and took numerous photographs.)

- In total, the 1987 tornado caused between $1 million and $8 million damage to TransAlta power equipment. The storm destroyed TransAlta’s Stelco substation, as well as 49 240kV double circuit steel towers, 17 138kV double circuit steel towers, and 134 138kV single circuit wooden structures (The Edmonton Sun 1987).

- 8 tornadoes, including the one in 1987, have hit Edmonton and area since 1879, killing 49 people (The Edmonton Sun 1987). Considering that an average of 8 tornadoes per year hit Alberta, it is a known fact that additional tornadoes will hit Edmonton and the rest of Alberta in the future. The danger of death, injury and significant economic loss becomes increased with every overhead high voltage power line that is constructed in Alberta.

- Close to 1.5 million homes in Quebec and 250,000 homes in Ontario were without electricity during the January 1998 ice storm that hit Canada and the U.S., dubbed the worst of its kind in Canadian history (Wikipedia 2009). Rain for 6 days froze onto power equipment and completely crippled parts of the Hydro-Quebec power grid for up to 33 days in the middle of winter. More than 1,000 high voltage towers collapsed in Canada alone, including the associated 735kV, 315kV, 230kV, and 120kV lines. Significant social and economic damage resulted including 46 deaths attributed to lack of electric heating, and from house fires and carbon monoxide poisoning as people built fires trying to compensate for no electric heat (CTV 2008). Hydro-Quebec’s repair costs were about $800 million plus another $2 billion in upgrades in an attempt to prevent similar damage in the future to overhead power lines.

- 6 million people were without electricity for 9 hours in March 1989 in Quebec and area, due to a severe geomagnetic storm induced by the sun that knocked out power in Hydro-Quebec’s overhead high voltage grid (Wikipedia 2009). The storm caused $10 million in damage to Hydro-Quebec, and tens of millions of dollars to its customers.

For information on what you can do go to www.reta.ca

Power Lines – Myths vs. Facts

INTERNATIONAL COMMISSION FOR ELECTROMAGNETIC SAFETY

Without 100% proof that electromagnetic fields (EMFs) cause leukemia, other cancers, Alzheimer’s disease, depression, suicide, and many other health problems, there is no need to warn or protect the public.

The ICEMS, an association of renowned scientists, medical doctors and engineers involved in EMF and health research, met in Benevento, Italy in 2006. They passed the Benevento Resolution which encourages governments to adopt a framework of guidelines for public and occupational EMF exposure that reflect the Precautionary Principle.

1. The Precautionary Principle states when there are indications of possible adverse effects, though they remain uncertain, the risks from doing nothing may be far greater than the risks of taking action to control these exposures. The Precautionary Principle shifts the burden of proof from those suspecting a risk to those who discount it.

2. The Benevento Resolution also included the following resolutions: "More evidence has accumulated suggesting that there are adverse health effects from occupational and public exposures to electric, magnetic and electromagnetic fields, at current exposure levels. There is evidence that present sources of funding bias the analysis and interpretation of research findings towards rejection of evidence of possible public health risks. Epidemiological (population health and illness) and laboratory studies that show increased risks for cancers and other diseases from occupational exposures to EMF cannot be ignored."

In 2008, the ICEMS passed a resolution in Venice which included the following statements: “As an outcome, we are compelled to confirm the existence of non-thermal effects of electromagnetic fields on living matter, which seem to occur at every level of investigation from molecular to epidemiological. The...protection standards recommended by international standards organizations, and supported by the World Health Organization, are inadequate.”

It is difficult, if not impossible, to discount statements of caution and recommendations made by the many medical doctors, scientists and engineers who are members of the ICEMS and who are experts on EMFs and their effects on human and animal health.

Evidence is mounting... exposures to EMF cannot be ignored.

For information on what you can do go to www.reta.ca

Power Lines – Myths vs. Facts

HEALTH IMPACTS OF CORONA EFFECT

The Myth

The corona effect associated with overhead high voltage power lines has no impact on health.

The Facts

- Overhead high voltage power lines ionize the air, emitting trillions of so-called corona ions into the air per second (Abdel-Salam and Abdel-Aziz 1994, Henshaw and Fews 2004). These ions attach to aerosol-sized particles of air pollution including those that are carcinogenic (e.g., diesel exhaust), increasing the electric charge state on these aerosols. The resulting cloud of corona ions and charged aerosols is carried by the wind for significant distances, varying from several hundred metres up to 7 kilometres downwind of power lines (Chalmers 1952, Mühliesen 1953, Henshaw and Fews 2004). When inhaled, electrically charged pollutant aerosol particles deposit in the lungs at a far greater rate than uncharged aerosols (Cohen et al. 1998, Fews et al. 1999, Melandri et al. 1983).

- Preece et al. (2001) found increased incidence of both lung cancer and mouth cancer in populations living downwind of overhead high voltage power lines in southwest England. For lung cancer, there was a statistically significant higher rate downwind.

- A risk analysis conducted by Henshaw (2002), suggests that 200 to 400 excess cases of lung cancer mortality and 2,000 to 3,000 excess cases of cardiovascular and respiratory illnesses and aggravated asthma and allergies may occur annually among the 2.7 million people living within 400m of high voltage power lines in the UK. The researcher suggested that these excess cases of illnesses resulting from the corona effect are likely at a level of public health significance.

- It is known that between 50% and 90% of outdoor pollutant aerosols penetrate indoors in normal ventilation (Hussein et al. 2001). It is therefore safe to assume that near overhead high voltage power lines a significant proportion of pollutant aerosols electrically charged by corona ions will be inhaled indoors (Henshaw and Fews 2004).

- The risks reported above would be particularly significant along Highway 216 adjacent to EPCOR's and AltaLink's preferred route for the Heartland power line where carcinogenic aerosols (diesel exhaust) are in high concentration a very short distance upwind of thousands of homes and many schools.

For information on what you can do go to www.reta.ca

EXECUTIVE SUMMARY OF THE CALIFORNIA EMF RISK EVALUATION FOR POLICYMAKERS AND THE PUBLIC

WHY AND HOW THE EVALUATION WAS DONE:

On behalf of the California Public Utilities Commission (CPUC), three scientists who work for the California Department of Health Services (DHS) were asked to review the studies about possible health problems from electric and magnetic fields (EMFs) from power lines, wiring in buildings, some jobs, and appliances. The CPUC request for review did not include radio frequency EMFs from cell phones and radio towers. Reviewer 1, Vincent Delplancke, Ph.D., is a physicist and epidemiologist; Reviewer 2, Raymond Richard Neutra, M.D., Dr.P.H., is a physician epidemiologist; and Reviewer 3, Geraldine Lee, Ph.D., is an epidemiologist with training in genetics. All three have published original research in the EMF area and have followed the field for many years. They were assisted in their reviews by DHS toxicologists, physicians, and epidemiologists.

THE CONCLUSIONS AFTER REVIEWING ALL THE EVIDENCE:

- To one degree or another, all three of the DHS scientists are inclined to believe that EMFs can cause some degree of increased risk of childhood leukemia, adult brain cancer, Lou Gehrig's Disease, and miscarriage.

- They strongly believe that EMFs do not increase the risk of birth defects, or low birth weight.

- They strongly believe that EMFs are not universal carcinogens, since there are a number of cancer types that are not associated with EMF exposure.

- To one degree or another they are inclined to believe that EMFs do not cause an increased risk of breast cancer, heart disease, Alzheimer's Disease, depression, or symptoms attributed by some to a sensitivity to EMFs. However,

- All three scientists had judgments that were "close to the dividing line between believing and not believing" that EMFs cause some degree of increased risk of suicide, or

- For adult leukemia, two of the scientists are "close to the dividing line between believing or not believing" and one was "prone to believe" that EMFs cause some degree of increased risk.

HOW AND WHY THE CONCLUSIONS DIFFER FROM THOSE OF OTHER RECENT REVIEWS:

While there are important differences between the three DHS reviewers' conclusions, the DHS scientists are more inclined to believe that EMF exposure increased the risk of the above health problems than the majority of the members of scientific committees convened to evaluate the scientific literature by the National Institutes of Environmental Health Sciences Working Group (NIEHS) in 1998, the International Agency for Research on Cancer (IARC) in 2001, and the British National Radiological Protection Board (NRPB) in 2001. These other committees all assessed EMFs as a "possible" carcinogen for childhood leukemia. Thus, like the DHS panel, these other three panels were not much swayed by theoretical arguments of physicists that residential EMFs were so weak as to make any biological effect impossible. NIEHS additionally assessed EMFs as a possible carcinogen for adult lymphoid leukemia and NRPB assessed a possible link with Lou Gehrig's Disease. The three DHS scientists differed in that they had a somewhat higher degree of belief that EMF is linked with these three diseases and gave credence to evidence of a link to adult brain cancer and miscarriage that the other panels either didn't consider or characterized as "inadequate." There are several reasons for these differences. The three DHS scientists thought there were reasons why animal and test tube experiments might have failed to pick up a mechanism or a health problem; hence, the absence of much
support from such animal and test tube studies did not reduce their confidence much or lead them to strongly distrust epidemiological evidence from statistical studies in human populations. They therefore had more faith in the quality of the epidemiological studies in human populations and hence gave more credence to them.

With the exception of miscarriage, which is common, the other diseases for which EMFs may be a contributing cause (childhood leukemia, adult brain cancer, Lou Gehrig’s Disease) have low incidence, with rates between 1/100,000 and 1/10,000 a year. Even doubling such rates and accumulating them over a childhood or a lifetime leaves accumulated lifetime risks between 1/1,000 and 1%. Thus the vast majority (99%-99.9%) of highly exposed people would still not contract these diseases. Furthermore, calculations suggest that the fraction of all cases of the above-mentioned conditions that one could attribute to EMFs would be no more than a few percent of the total cases (if any). However, if EMFs do contribute to the cause of these conditions, even the low fractions of attributable cases and the size of (1/100,000) have triggered regulatory evaluation and, sometimes, actual regulation of chemical agents such as airborne benzene. The uncommon, accumulated high exposure from some jobs in electrical occupations. There are ways to avoid these uncommon accumulated exposures by maintaining a distance from some appliances, changes in home wiring and plumbing, and power lines. However, to put things in perspective, individual decisions about things like buying a house or choosing a jogging route should involve the consideration of certain risks, such as those from traffic, fire, flood, and crime, as well as the uncertain comparable risks from EMFs.

While rodent and chicken egg studies provide little or no support for EMF effects, some studies on early-model higher emitting video display terminals (VDTs) and two new epidemiology studies in humans suggest that EMFs might cause a substantial proportion of miscarriages. Miscarriages are common in any case (about 10 per 100 clinically diagnosed pregnancies) and the theoretical added risk for an EMF-exposed pregnant woman might be an additional 10 per 100 pregnancies according to these two studies. If truly causal this could clearly be of concern to individuals and regulators. However, the type of EMF exposures implicated by these two new epidemiological studies (short, very high exposures) probably come from being within a few inches of appliances and unusual configurations of wiring in walls and grounded plumbing, and only rarely from power lines. Since the majority of people come into contact with non-obvious sources of these fields on a daily basis, it may not be possible to avoid the majority of such exposures in modern life, even if we avoided the obvious sources like some appliances.

Seventy-five percent of the women in the studies had at least one of these brief high exposures during a given day. Even once exposure a day, if experienced regularly during pregnancy, seemed to increase the risk of miscarriage. Nonetheless, the majority of pregnant women with such exposures did NOT miscarry.

FOR PURPOSES OF POLICY ANALYSIS, HOW DID THE THREE SCIENTISTS EXPRESS THEIR JUDGMENT THAT THE ABOVE DEGREES OF RISK MIGHT BE REAL?

The EMF Program’s policy analysis required each of the three DHS scientists to express in numbers their individual professional judgments that the range of added personal risks suggested by the epidemiological studies were “real.” They did this as a numerical “degree of certainty” on a scale of 0 to 100. For the conditions with the most suggestive evidence of EMF risk, the three scientists each came up with a graph that depicts their best judgments with a little “x” and the margin of uncertainty with a shaded bar. The differences in certainty between the three reviewers arises primarily from how sure they were that they could rule out study flaws or other explanatory agents and how much the evidence on one disease influenced certainty in the findings for other diseases.
WHAT ASPECT OF THE "EMF MIXTURE" WOULD NEED TO BE MITIGATED (IF ANY)?

A variety of electrical phenomena are present in the vicinity of power lines, in-home wiring, plumbing, and appliances. These include EMFs with a variety of frequencies and orientations, stray currents from contact with grounded plumbing, and air pollution particles charged by electric fields. The epidemiological studies primarily implicate the magnetic fields or something closely correlated with them. Some researchers think that associated high- or low-frequency stray contact currents or charged air pollution particles are the true explanation rather than magnetic fields. The actions one would take to eliminate the fields are not always the same as one would take to eliminate the currents or the charged particles. There are some situations where different costly measures would be required to address the above-mentioned three possible explanations. There are other situations where one or more inexpensive avoidance actions will address all three. This additional uncertainty about what aspect of the mixture might need to be mitigated will thus provide a challenge for policymakers. The California EMF program funded policy projects to explore options that could be pursued in the face of these uncertainties (see www.dhs.ca.gov/ehiv/emf). These are available to guide CPUC and other state agencies in policy formation. DHS is making no recommendations at this time.

WHAT RESEARCH GAPS EXIST?

Determining whether stray contact currents or charged air pollution particles are really common enough to explain the epidemiology would be highly policy relevant. Certain suggestive test tube and animal studies await replication. Epidemiology of common conditions which could be studied prospectively, like miscarriage and sudden cardiac death, would be policy relevant and could give a better understanding of what aspect of the EMF mixture might be biologically active.
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<th>REVIEWER</th>
<th>DEGREE OF CERTAINTY IN SOME AMOUNT OF ADDITIONAL PERSONAL RISK</th>
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Do wind turbines cause health problems?

by Julie Levy

Do wind turbines cause health problems?

Wind power accounts for about 1 percent of the electricity produced in the United States [source: Gillam]. Nearly 25,000 wind turbines crank out power throughout the country. These massive windmills -- up to 80 feet (24 meters) tall -- capture the energy in wind and convert it into flow-through electrons that people can use to run dishwashers, air conditioning and lights.

That 1 percent may not sound like much until you realize that wind power is just catching on in the United States. Huge new wind farms accounting for thousands more megawatts of capacity are in development as we speak, and estimates put 20 percent of the nation's electricity coming from wind power by 2030 [source: The Oregonian]. The European Union hopes to reach that percentage even sooner -- by 2020.

Until recently, there were three main issues regarding the possible downsides of wind power: bird and bat deaths, cost, and disrupting the appearance of natural landscapes. But a new objection to wind power has popped up in the past few years, resting on the research of a few scientists. The latest argument states that wind power endangers the health of people who live near windmills. Some people call this theory "wind-turbine syndrome." Although the extent of the phenomenon is unknown, there does seem to be something to it.

Those concerned about wind-power syndrome are interested in finding out if and how wind power could be making people sick. Is everyone living near windmills facing health problems? Let's take a look at the possible health risks associated with wind farms and find out whether we should be worried about the steady increase in wind-generated power throughout the world.

Infrasound and The Body

The rapidly spinning blades of huge wind turbines have an effect on their surroundings, and it goes beyond aesthetics. The blade tips of a wind turbine can spin at speeds of up to 80 meters per second, or about 180 miles per hour. In high winds, this rapid spinning can produce sound and vibration -- in addition to disruptions in air pressure [source: MIT].

The extremely low air pressure surrounding a wind turbine could be the reason why bats die near them. A bat's lungs are very delicate, and it seems the low pressure might cause them to expand to the point of bursting blood vessels [source: NewScientist]. Scuba divers can certainly attest to this effect. Pressure on the human body. And the corporal effects of sound -- essentially fluctuations in air pressure that vibrate the eardrum -- are well-documented. For instance, infrasound -- sounds at such low frequency that they can't be picked up by the human ear but can carry through the atmosphere for thousands of kilometers -- is believed to cause certain breathing and digestive problems [source: Infrasound Lab].

Infrasound is the primary issue for those concerned about wind-turbine syndrome. They also say that audible sound and vibrations contribute to the health problems reported by some people who live close to wind farms. Symptoms of wind-turbine syndrome might include:

- headaches
- sleep problems
- right terrors or learning disabilities in children
- ringing in the ears (tinnitus)
- mood problems (irritability, anxiety)
- concentration and memory problems
- issues with equilibrium, dizziness and nausea

These symptoms have been observed and documented by a limited number of scientists studying small groups of people, and the scientific community hasn't concluded whether wind-turbine syndrome exists. There are also mixed opinions on whether wind turbines emit infrasound and if the amount is any more than that emitted by diesel engines or waves crashing on the beach [source: Cleantechnica, ABC Science]. But we do know that at high speeds, wind turbines can produce an audible hum and vibration that can be carried through the air.

It's these sounds and motions that provide clues and possible solutions to wind-turbine syndrome, which we'll explore in the next section.
AROUND THE WORLD
As of May 2008, about 25,000 wind turbines are cranking out power across the country — and the world [source: Gillam]. In Britain, 2,100 turbines supply up to 2 percent of the country’s power; Germany, the world’s top user of wind power, draws 7 percent of its electrical needs from more than 19,000 turbines [source: BBC,BWEA].

INFRASOUND WEAPONS
There was a rumor years ago about an infrasound-based military weapon that would make people lose control of their bowels and poop on themselves. It was said to be a ‘heat-sensitive device.” The rumor wasn’t true, as far as we know [source: ABC Science]. But in theory, such a weapon might work.

Wind-Turbine Syndrome Explanations and Solutions
It’s understood that some people who live in close proximity to wind turbines experience sleep disturbances, headaches and concentration problems. These symptoms and others could be explained as the effects of infrasound as well as constant humming and vibrations.

But here’s the catch: Many of the symptoms of wind turbine syndrome can also be caused by chronic sleep loss — simply and unfortunately an effect of living near a noise-producing entity [source: Ohio Department of Health]. People who live near a highway or busy street may have trouble sleeping, which can lead to other health problems like irritability, anxiety, concentration and diziness.

To solve this sound issue, new wind-power technology employs sound-dampening systems. Engineers are hoping that these newer systems — which can block or cancel out multiple sound frequencies — will reduce any sound-related problems associated with wind farm communities [source: Fraunhofer-Gesellschaft].

Researchers studying wind turbine syndrome also recommend a larger buffer zone around wind farms to protect people from any ill effects. Some people say that the distance should be at least 1.2 miles (2 kilometers) [source: CleanTechnica]. Others suggest at least 2 miles (3.5 kilometers) [source: PlanetGore]. Some wind farms are currently located as close as a half mile (0.8 kilometers) from residential areas.

Whether we should be concerned with the expansion in wind power ultimately comes down to weighing the pros and cons. Is cleaner, cheaper, domestically produced energy worth the potential side effects of some people experiencing headaches? The hope is that new buffer-zone regulations and sound-canceling technologies can do away with the barrier entirely. If the issue persists, we’ll have to decide whether wind power is important enough to pursue anyway — much like deciding whether building a new, noisy highway that would reduce congestion and increase commerce is worth some unfortunate people losing sleep.

For more information on wind turbine syndrome, wind power and related topics, explore the links on the next page.

Lots More Information
Related HowStuffWorks Articles
• How Wind Power Works
• How the Hydrogen Economy Works

More Great Links
• ABC Science
• BWEA: Low Frequency Noise and Wind Turbines
• The Oregonian: Wind whips up health fears - August 10, 2008.

Sources
site=science/greatmamnificentscience
• Infrasound Lab, University of Hawaii.http://www.iesl.hawaii.edu

November 15, 2013

Public Works/Environmental Services
Angela Knish
1105 8th Ave. NE
Austin, MN 55912

RE: Purposed transmission line

Ms. Angela Knish,

First of all, we were not able to attend the meeting on 11/5/13, and we would like to state that we own the land for our farming operation in the NW corner of the intersection of 320th St. and 640th Ave. Presently our son and his wife live on the farm with their two young boys and our son is managing the farm.

We were approached by RES quite awhile ago to sign up our land for a possible wind turbine. Our answer was a definite NO for these reasons:

1. Wind generation is inefficient and double the cost of base load coal/nuclear/hydro-energy.

2. They are health issues for those around them. There are couples with children/grandchildren along 320th St. and 640th Ave.

3. They disrupt farmland.

4. They decrease the value of homes and farms around them.

Those that have signed up their land, I believe have done so only for the extra income they can obtain, and have not been open-minded at the possible consequences which could happen in years to come.
The other comment we have is this. If this must happen, why in good common sense would you go that far out of your way to the north and west for the transmission line. There are NO homes on the south side of Co. 1 from the Great River Substation and if there is a great concern and this must be done, put the darn transmission line underground.

We definitely would like to see a halt to this whole project. There is more at stake here than just producing wind energy.

Respectfully,
John and Marge Steele

[Signatures]
Thank you for providing feedback regarding the Pleasant Valley 161 kV Transmission Line and 34.5/161 kV Substation Project. Please use the comment form below to submit a scoping comment – comments must be received at the Environmental Services Office no later than Monday, November 18, 2013 at 4:00 P.M.

Name: Ryan Knutson
Organization (if any):
Mailing Address: P.O. Box 105
City: Brownsdale
County: Steele
State: Minnesota
Phone Number: 507-993-3276 Zip: 55916
Email:

Comment:

1. Human Health Hazard Concerns
2. Animal Health Hazard Concerns
3. Land Property Value?
4. Contamination of Water System
5. Organic farming concerns. We have all organic soil and have worked hard to accomplish this.
6. Ice chunks falling off wires and hitting someone.
7. Absolutely do not want this project next to my property.

Please give this your consideration! I thank you very much!

Ryan Knutson
507-993-3276
November 15, 2013

Dear Ms. Angela Knish,

I would like to thank you in advance for taking the time to hear my opinions on this matter! My name is Isaac Gronseth and I reside at 32183 680th Ave. I have recently been informed of the power line project that is potentially being routed through my property. This is something I am not in favor of for multiple reasons.

Firstly, it will affect our cell phone service which is already limited from being quite a distance from main towers. This is something I have experienced at other sites with this same project. Secondly, they will be cutting down trees on my property that have significant value to our family. Thirdly, the danger of the lines coming down during inevitable ice and snow storms and tornadoes is too great! Fourthly, I am not in favor of the decrease in property value this will cause. Fifthly the construction of the lines will negatively impact the environment of our livelihood; which is beef cattle. Lastly, the possible health risks associated with this project is something I am vehemently opposed to! I have done research which is scientifically backed which states the long term negative risks and side effects associated with power lines.

My wife and I bought this property for multiple reasons, but one of the main reasons is the beauty and natural seclusion it offers. This project would change everything. And as a fifth generation owner of this property, there would be a great emotional impact on myself and my family!

In addition, the neighbors on this route are also in agreement with me and are not in favor of this project.

Please seriously consider the many reasons why this project should NOT be on this route. I am available for any further discussions before any final decisions are made.

Sincerely,

Isaac Gronseth

507-993-9406 cell
ikegronseth@yahoo.com
November 18, 2013

Public Works / Environmental Services
1105 8th Avenue NE,
Austin, Minnesota 55912

Angela M. Knish,
On behalf of our 51 members residing at the Haven HB Community, we wish to bring forward our
concerns regarding the proposal to construct a 161 kV transmission line and a substation for the
Pleasant Valley Wind Project. We are located along the proposed route County Road 1 (310th Street)
between 640th Ave. and 680th Ave. in Sargeant Township. And we live just down the road from the Great
River Energy Pleasant Valley station and the existing high voltage transmission line. The existing line
runs north to south, east of our community. The construction of an additional 161 kV transmission line
would greatly increase the concern about the following issues. These four issues were also verbalized by
our neighbors at a meeting held by Mower County Works / Environmental Services on Tuesday,
November 5.

1. Are there possible health risks to the environment from the high voltage lines and substation?
2. Concern of the damage and danger, from lines if they came down in ice storms or tornadoes?
3. Concern of wooded properties being destroyed to make way for lines.
4. Concern of property values dropping because of the overhead lines.

We are not in favor of constructing a 161 kV transmission line, and a substation for the Pleasant
Valley Wind Project along this proposed route.

Sincerely,
The members of the Haven Hutterian Brethren Community

[Signatures]

Michael John Decker
Martha Decker
Johanne Decker
Joan Decker
Mary Decker
Diane M. Decker
Dana M. Decker
Mary Decker
Elaine Decker
Cheryl Decker
Susan Wipff
Lorna Decker
Linda Decker
Karen Decker
Victoria Wipff
Margaret Decker
Elizabeth Decker
Elizabeth Decker
Elizabeth M. Decker
Mark Decker
Gute Nacht

Nathan N. Decker

Jonathan Wyz

Dwight Decker

Robert Hofe

David N. Decker

Aaron Hofe
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<th>Name</th>
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<td>Al Greene</td>
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<td>Dan Hughes</td>
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<td>Keith J. Bissett</td>
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<td>Larry Sparks</td>
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<tr>
<td>Sean Flannery</td>
<td>RES Americas/Pleasant Valley</td>
<td><a href="mailto:sean.flannery@res-americas.com">sean.flannery@res-americas.com</a></td>
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<tr>
<td>Joyce Pickle</td>
<td>HDR Engineering</td>
<td><a href="mailto:joyce.pickle@hdrinc.com">joyce.pickle@hdrinc.com</a></td>
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<td>Burt Berge</td>
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<td>Jim Risius</td>
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<tr>
<td>John Scott</td>
<td>Home Owner</td>
<td>507-430-1160</td>
<td>Scott.Family.Team00</td>
</tr>
<tr>
<td>Tina Shafer</td>
<td>Home Owner</td>
<td>319-570-1149</td>
<td><a href="mailto:tina.cox23@gmail.com">tina.cox23@gmail.com</a></td>
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## Speakers List - Sign-in Sheet

Pleasant Valley 161 kV Transmission Line and 34.5/161 kV Substation Scoping Meeting – November 5, 2013, 2:30 p.m.

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<th>Number (order that you will be called upon)</th>
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<td>1.</td>
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IN THE MATTER OF:
Pleasant Valley Transmission Project
Environmental Assessment Scoping Meeting

Mower County Government Center
Board Room, Lower Level
201 First Street Northeast
Austin, Minnesota  55912

Tuesday, November 5, 2013
2:30 p.m. - 3:20 p.m.

REPORTER:
Colleen M. Sichko, Registered Professional Reporter
APPEARANCES:

TIM GABRIELSON, Commissioner, 1st District
POLLY GLYNN, Commissioner, 2nd District
JERRY REINARTZ, Commissioner, 3rd District
TONY BENNETT, Commissioner, 4th District
MIKE ANKENY, Commissioner, 5th District
CRAIG OSCARSON, County Coordinator
KRISTEN NELSON, County Attorney
ANGELA KNISH, Environmental Services Supervisor
JUSTIN MARKEL, Renewable Energy Systems Americas, Inc.
SEAN FLANNERY, Renewable Energy Systems Americas, Inc.

JOYCE PICKLE, HDR Engineering, Inc.

(WHEREUPON, the following proceedings were duly had and entered of record, to-wit:)

SHADDIX & ASSOCIATES  952-888-7687 (800)952-0163
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SHADDIX & ASSOCIATES 952-888-7687 (800)952-0163
MR. REINARTZ: Okay. We'll come out of recess and go into our public hearings.

*     *     *

MR. REINARTZ: Thank you. We'll move on to the next item on the public hearings, Pleasant Valley Transmission Project Environmental Assessment Scoping Meeting.

MS. KNISH: I guess I'm going to start this off. My name is Angela Knish. I'm the environmental services supervisor for Mower County, and the reason that we're here today is that RES, as you may know, has a permit from the State to develop up to a 300 megawatt wind turbine project and, as part of that process, they need to have a substation and transmission lines; and quite often those permits are obtained from the State of Minnesota, but under certain conditions, under statute, it's 216E.05, the developer can ask the county to permit the substation and transfer lines, which RES did, and the county board accepted this authority on October 8th.

So now, as part of that process, the county has to prepare an environmental assessment and so you're called here today and you were given notice asking you to participate in a public hearing called a scoping meeting and it's at this time that all interested parties can make comments or voice concerns to the county board of items
that they would like to have addressed in the environmental assessment. So we're here today to find out what concerns you have regarding your environment.

The comments for today's scoping meeting are limited to issues exclusively related to the transmission line routes and the substation. Now, the reason I say that is because the wind turbine project has already been permitted by the State, so I reinforce that today we're here to talk about the transmission lines and the substation and how that affects your environment.

So as part of this process, if I can explain this -- and I apologize, I tried to throw together some notes -- the county board can ask questions of staff to ensure that they fully understand what is an environmental impact, the public can ask questions of the staff, and there will be a presentation by RES of their proposal. The public can ask questions about environmental impact and we welcome comments and concerns from the public. So today is the time to voice those issues.

Again, I'm going to ask that you, if you're here and you haven't signed the sign-in sheet, please be sure to do that because that's our record of who was here today to talk and then, if you want to be on the speaker's list, I have that here too, but it looks pretty short, so we might kind of wing that rather than go down a list.
because I only have two people.

The chair should encourage people to present factual evidence about possible environmental impacts for the public information and, obviously, we have a court reporter who is present here today taking a record of the proceedings so, if you are going to speak, please stand up, state your name, your first and last name for the transcriber and, if you have a difficult name to spell, please spell it for her. My name is spelled K-n-i-s-h.

The board will then officially close the scoping meeting comment period at 4:00 p.m. on Monday, November 18th, 2013. All comments need to be submitted to the Public Works Office located at 1105 Eighth Avenue Northeast prior to that date and time to be included as consideration for the scoping document. Again, for those who don't like to stand up in the public and talk, we do have written comment sheets that you can take and you can fill those out and you can tape them up and mail them to our office, put a stamp on them and then, when we receive those, we will include those comments for the scoping document.

After the closing of the public comment period, I will be compiling the issues presented and prepare a report to the county board. The county board will have an opportunity to review those issues and then
make a determination as to what shall and shall not be included in the EA, and our anticipated date for that is November 26th at the county board meeting. The county board then must make a decision on scoping items within ten days of the closing of the public comment period. That's why we've got it closing on the 18th and proposing for the 26th.

After that, an EA document will be drafted and reviewed and a recommendation will be made by the staff to either accept or reject the document as drafted. Once the county board finds it acceptable, the EA -- or once acceptable, the EA will be presented to the county board for their formal acceptance or rejection. If they accept the document, it will then be forwarded and published in the Environmental Quality Board's "EQB Monitor."

Ten days after its publication, the county board must make a final decision on the EA and this process is anticipated to run through January 2014. After all this, RES will make an application for conditional use permits to use the land for the intended purpose, which will include additional public hearings at that time.

I'm going to turn this over to the RES representatives so they can take you through their proposal before taking your comments, and questions regarding the substation and transmission lines can be asked following
their presentation and before the scoping period begins. So I'm going to turn this over to you now and let you make your comments for the board, but right now RES will do their presentation.

One final note, I know it's kind of confusing if you're not involved in an EA process. An EA, again, is an environmental assessment and the purpose of it is to determine what kind of impact there's going to be on your environment, so I looked for a really good description of what an environmental impact is. What I found was an environmental impact is a change to the environment, either adverse or beneficial, wholly or partly resulting from organizations' activities, products or services; and the source of that definition was from the EPA.

Again, I guess one last reminder is we're not here today to have a consensus of the neighborhood whether they want this or not, we are here to gather information on those environmental impacts, so I need to remind you to stay within the purpose of the meeting.

With that, I'm going to turn it over to RES and they have a map here for your viewing.

MR. MARKELL: Good afternoon. Chair Reinartz, Commissioners, thank you for your time. My name is Justin Markell. I thank the audience, as well. I'm here on behalf of RES Americas. Also representing RES Americas is
Sean Flannery, our director of permitting for this project, and Joyce Pickle, who is with HDR, our environmental consultants. Again, we are appreciative of the county board for taking jurisdiction over the environmental assessment process and we are glad that there are people in the audience today, some of which are representing the 180 landowners who will be participating in this wind project.

I would like to briefly give a summary of the project itself, the wind project, recognizing that as Angie pointed out, we are here to talk about the transmission line and substation's environmental impacts, but that will be a good context for a discussion about the transmission line project we're envisioning and also, in particular, distinguishing what we're seeking now in 2013 from what we sought and were approved for in 2010. I think that will minimize some confusion for everyone, and then I'll finally turn it back over to Angie to talk about what's next and facilitate the comment process.

So what you see on the screen here is an overall map of the wind farm and what's out here for the audience and what's in your packet, Commissioners, is more detail on the transmission line project. So in 2010, when RES first had this project through the county level permitting process, we were envisioning two discrete transmission lines for two discrete project substations.
That is now not the case.

Previously, we were having a substation down in this area with a transmission line that would run east along the northern tiers of sections in Dexter and then come north to our point of interconnection (indicating). We now -- at that time, we were also envisioning a substation approximately at this point (indicating) with the line use shown in purple representing again what was our northern route.

It's 2013, our project looks different and I'll reflect what that means, but what it means for purposes of this transmission line project is we're going to have one project substation and that's noted here (indicating). We're going to have one route, either this yellow route or the purple route (indicating), 8 miles if it's the purple, roughly 5.1 if it's the yellow, all culminating at the point of interconnection, the GRE Pleasant Valley station in Pleasant Valley Township.

So, again, to be clear, RES is pursuing ultimately constructing one overhead transmission line that will be no longer than 8.1 miles, one project substation, which is the point where RES collects all of our electricity from the turbines, puts it up to a voltage where we run the line overhead to the POI.

Let me talk for a minute about the wind farm
and why this dynamic is different. You may have followed
in the press of late that RES Americas has finally sold the
wind farm that we've been working on here in Mower and
Dodge Counties for seven or eight years. We have signed an
agreement with Xcel Energy, the nation's number one utility
that has wind farms, to build the project for them and then
sell the wind farm once it's operating. We're envisioning
that to be 2015, which is all why we're here now in late
2013 working towards constructing the project, the wind
turbines as Angie mentioned that had been permitted on a
State level, the overhead line project, the substation over
the next 18 months, with the wind farm being 200 megawatts,
not 300 megawatts that had been permitted in the state.
Xcel Energy will own and operate a RES-built wind farm of a
hundred 2 megawatt machines.

So that smaller footprint is why we have now
reduced to having one overhead transmission line, one
project substation, which we also think helps minimize the
impact to the community and the area as a whole.

So that's generally the project level future
and what is coming next. Let me talk a little bit more
about the transmission line project. So the environmental
assessment that we're kicking off today is for what you see
effectively on this map. We envision a project substation
in the northeast quarter of section 20 of Sargeant Township
denoted in green there (indicating). We will then build one of the two routes you see here on this map, either that longer purple route or the shorter route envisioned here in yellow.

RES has not yet decided which of these routes makes the most sense. We are still working with landowners, we're still evaluating, with HDR's assistance, environmental impacts and, of course, the environmental assessment we're kicking off today will play into that decision, as well. What our landowners know -- again, we have 180 currently participating in the wind farm controlling somewhere north of 35,000 acres and that it will ultimately look like this (indicating). So that's the focus of our attention for purposes of the transmission line project.

Whichever route we take, whether from the north or from the west, we will get to a point at 680th Street -- 680th Avenue and 310th Street where we will then need to come into the GRE, Great River Energy Pleasant Valley station. That's our point of interconnect where the electricity we generate will tie into the grid.

Just identifying here the likely size of our project substation, again this is a substation that will be privately owned. Ultimately, Xcel Energy, owner of the wind farm, will own this facility, as well. This is where
the electricity is collected underground and ramped up from 34,000 volts to 161,000. That 161,000 volts of electricity will be carried via the overhead line. We envision a 5 acre site. This will be sited on land that's under agreement with RES Americas. The actual facility will likely be 2 to 3 acres.

This identities the parcel upon which the substation will be located. This is, again, the northeast quarter of section 20 in Sergeant. Where you see reference to ten 34.5 collector circuits, those are the underground collection lines. Those will be sited, again, on land controlled by RES Americas harnessing electricity from the turbines that are scattered across some 60 square miles all to this central substation. The 200 megawatts are then moved via the overhead line to the east.

So this is summarizing what I've mentioned. The map that you see here, the environmental assessment RES is kicking off is for two routes, but to be clear, we will be building only one. The voltage, again, 161,000 kilovolts.

Just clarifying what the two options are, route 1, shorter, straighter; route 2, a little bit longer. Again, that decision is yet under way.

Some brief specs about the transmission line itself: We will be building these on single-pole
structures with the exception, perhaps, of a couple instances where we need to cross an existing transmission line. GRE has a 161 kV transmission line running throughout the project. We may need to use a larger or a multi-pole structure at a couple of crossing points, likely wood with the exception of those crossing points.

The poles that we'll generally be siting on this line as it heads its way toward our POI, some 90 to 105 feet tall. The span distance, the distance between the poles, a good almost 400 feet on average. The easement, what we're talking about here is the width of the easement. Again, RES' agreements with our landowners for the wind farm and their participation allows us to site the overhead line.

We have captured here some typical single-pole structures. If you drive out in this area, if you drive along 310th in Sergeant Township between 640th and 680th, you will see single-pole structures that look like this (indicating). Again, wood is the likely use by RES Americas. We do reflect what a metal pole looks like in the middle here (indicating).

So I want to turn this back over to Angie. I know she talked a little bit about it, but we can dive into it further and then I know she'll open it up to the public. I and my colleagues will be happy to answer questions about
the transmission line project and environmental assessment process and, again, I would like to thank the commission and the county and staff for getting us to this point. We look forward to the continued relationship. Thank you.

MS. KNISH: Again, just to kind of go over the process, again, the scoping meeting comment period will be open here shortly and that will go through November 18th, that's Monday, until 4:00. Then the issues will be gathered and a report sent to the county board. The county board, at their November 26th meeting, will meet to determine the scope of the EA. Around December of this year there will be -- they need to reject or accept, to put that into the publication, into the "Environmental Quality Board Monitor," and then sometime around January, probably January 6th it looks like, the EA will be published and available for review in the "Monitor." Around January 28th, the county board will need to make their final decision and then, after that, the conditional use permit process will go into effect.

So let's get to the best part of the day now. The reason that you are all here is to receive your important comments and concerns and, if I may, we only have one person signed up, so I would like to start with them if they are ready for comments and that would be Jim Risius.

MR. RISIUS: Yes. I am Jim Risius,
R-i-s-i-u-s. We have property along that township -- or County Road 1 that they are proposing the transmission line across it and I just think that it's going to wreck the whole -- you know, it's the Root River and they are going to destroy most of the woods off of it. So the impact on that is real great. I am just not in favor of that, but the rest of it I don't have a problem with because I voted on it for the other way.

MS. KNISH: Is there anyone else that has comments or concerns regarding the environment of the proposed transmission line or substation?

MR. SCOTT: John Scott, Sergeant, Minnesota. I live on 320th Street. I didn't realize we were going to have a transmission line right in front of our house. We're wondering what the cost -- the devaluation of our property, who is going to pay for that? Obviously, this project is going to get pushed through no matter what. Thoughts and comments on that? I guess myself and my future wife, we decided to move out of the area because of the project, but our concern is trying to sell this place because of this large power line in my front yard.

MS. KNISH: Any other comments?

MR. WENDT: Lonnie Wendt, W-e-n-d-t, Pleasant Valley. I just got a question. If it goes down -- the proposal goes down County 1, is that going to put power
lines on both sides of the road, then? Is that the proposal, that there will be power lines on the north side of the road and the south side of the road?

MR. MARKELL: For a certain distance, I think 650th to 680th.

MR. WENDT: But they can't get connected into the power poles that are already there?

MR. MARKELL: Unfortunately, not. Consolidating onto one pole is not a feasible option, and we looked into it, would have preferred that.

MR. WENDT: That was just my concern. If you've got power lines on both sides and Mother Nature happens to come through, that's going to be a bad mess out there no matter if it's an ice storm or a tornado. That's my concern, just the power lines.

MS. KNISH: Any other comments? Sir, I know you are just joining us for the public hearing. We're taking comments about environmental impacts or possible environmental impacts. Any comments from the public?

UNIDENTIFIED SPECTATOR: No.

MR. SCOTT: John Scott again. To bring up a point about what Lonnie was talking about, I did hear -- I'm just new to this, but I heard some scuttlebut about the power company couldn't get along with the other company
that owns that other power line is why you're not putting
those power lines together. I guess I'm obviously not an
engineer, but is that the reason, you couldn't get along
with the other company to put something together to be on
the same side or what is the reason for that? Is it just
hearsay that I hear? Thank you.

  MS. KNISH: Did you want to --

  MR. MARKELL: In short, that's hearsay. It's
more a matter of engineering and feasibility than anything
else.

  MS. KNISH: Anyone else?

  MS. SHAFER: Tina Shafer, S-h-a-f-e-r. I'm
one of the homeowners along the proposed two options. To
me, it doesn't really matter which option. I've heard
studies -- and I don't know, maybe this is something you
guys can answer better -- in big cities or different places
where they have the really high-powered overhead lines or
transmission stations, substations, the number of people
with cancer is greater in those areas and then, as it goes
out from there, it gets less.

    I'm just wondering, no matter where this goes
up, it's crossing over the path of a lot of homes and a lot
of wildlife and so I guess one of my environmental concerns
would be is the amount of voltage going through these lines
and coming out of the substation, is it going to affect the
people and everything around it?

MS. KNISH: Anyone else?

(No response.)

MS. KNISH: Is there anyone else who would like to make comments into the scoping document?

(No response.)

MS. KNISH: Last call, any further comments?

(No response.)

MS. KNISH: If not, I would close the public meeting here today for those comments, but remind you that if you do want to submit written comments, we have sheets here for you to take and we will accept those through November 18th at the Mower County Environmental Services. You just fill this paper out. If you need to add more to it, just add it, then you can fold it like an envelope, put a stamp on it and send it to our office. I will compile the comments from here today along with any written comments that we receive. If you know of any other friends, neighbors or anyone else that has concerns, feel free to take a document for them and they can send that in.

Any further comments? Any last comments before I turn it over to the chair?

(No responses.)

MR. OSCARSON: Does the board need to officially make a motion to close this hearing, Angie, or
MR. REINARTZ: The public comments session is closed.

MS. KNISH: The public comments session for this public meeting today is closed. We will take written comments from now until November 18th.

MR. REINARTZ: Unless someone from the board has any questions regarding the environmental assessment, if there's no further action to be taken today --

MS. GLYNN: I just have a question. Is there -- there is -- is there a reason why it can't be underground lines instead of overhead?

MR. MARKELL: Commissioner Glynn, thank you. The question was, is there a reason this has to be overhead instead of underground; and simply, yes, from an engineering and cost perspective, it's impracticable to run lines like this, 161,000 kilovolts, underground. You can't build the infrastructure to do that. Where we can build the infrastructure is with our collector lines.

We will have, again, ten different circuits collecting all the turbines to the collector substation, but when we need to step up the voltage to get it efficiently to our point of interconnection is where we need to resort to an overhead line. Fortunately, the size of this project and the way that Xcel and RES have worked
together to make it as efficient and productive as possible has allowed us to reduce from two overhead lines to one overhead line and it will still be shorter and less impactful than what we were envisioning and what this board approved three years ago.

MS. GLYNN: Thank you.

MR. REINARTZ: Okay. If there's no further questions from the board, we will adjourn the hearing for today. Is there any other business to come before the board?

MR. BENNETT: Motion to adjourn.

MR. ANKENY: Second.

MR. REINARTZ: All in favor?

(Ayes.)

MR. REINARTZ: Motion is carried, the meeting is closed.

(Proceedings concluded at 3:20 p.m.)
STATE OF MINNESOTA)

) ss.

COUNTY OF DAKOTA )

REPORTER'S CERTIFICATE

I, Colleen M. Sichko, do hereby certify that the above and foregoing transcript, consisting of the preceding 21 pages is a correct transcript of my stenograph notes, and is a full, true and complete transcript of the proceedings to the best of my ability.

Dated November 8, 2013.

______________________________
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Registered Professional Reporter
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| SHADDIx & ASSOCIATES 952-888-7687 (800)952-0163 |
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SHADDIX & ASSOCIATES  952-888-7687 (800)952-0163
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Dave Seykora  
State Program Administrative Coordinator, Minnesota Department of Transportation  
395 John Ireland Blvd, Suite 120  
St Paul, MN 55155

Re: Pleasant Valley 161 kV Transmission Line and 34.5/161 kV Substation

Dear Dave Seykora:

Mower County is requesting your comments on the proposed Pleasant Valley 161 kV Transmission Line and 34.5/161 kV Substation project described below.

Pleasant Valley Wind, LLC (Pleasant Valley), on behalf of RES America Developments Inc., requested local review for a 161 kV transmission line project from the Mower County Board on October 8, 2013. Pleasant Valley is seeking authorization to construct a 161 kV transmission line and a substation for the Pleasant Valley Wind Project. The substation will be in Section 20 of Sargeant Township; the transmission line will connect the substation to the existing Great River Energy Pleasant Valley Station in the NW ¼ of Section 19 of Pleasant Valley Township. Pleasant Valley is evaluating two potential routes for the proposed transmission line, only one of which will ultimately be constructed. The transmission route will either be along County Road 1 (310th Street) between 640th Avenue and 680th Avenue in Sargeant Township, or along 320th Street/325th Street between 640th Avenue and 680th Avenue (see attached map).

Mower County is currently gathering information to prepare the Environmental Assessment. The County would like you to provide information, issues, concerns, and comments on the proposed route options and substation. Written comments can also be provided directly to Mower County and must be received at the Environmental Services Office no later than Monday, November 18, 2013 at 4:00 P.M.

In addition, Mower County has scheduled a public meeting to provide input on the scope of the Environmental Assessment that will be developed by Mower County. The scoping meeting will provide the opportunity for the public to suggest issues to be analyzed in the Environmental Assessment, as well as view project exhibits, ask questions, and provide comments. There also will be a short formal presentation describing the transmission project. Meeting details are provided below.

Scoping Meeting Information:

**When:** 2:30 P.M., Tuesday November 5, 2013  
Presentation will begin at 2:30 P.M.  
**Where:** Commissioner’s Room,  
Lower Level - Mower County Government Center  
201 1st Street NE  
Austin MN 55912

If you should have any questions, please contact Angela Knish at (507) 437-9560.

Sincerely,

Angela Knish  
Environmental Services Supervisor  
Mower County Public Works Department

Attachment: Project map
Tony Sullins  
U.S. Fish & Wildlife Service, Twin Cities Ecological Services Office  
4101 East 80th Street  
Bloomington, MN 55425-1665

Re: Pleasant Valley 161 kV Transmission Line and 34.5/161 kV Substation

Dear Tony Sullins:

Mower County is requesting your comments on the proposed Pleasant Valley 161 kV Transmission Line and 34.5/161 kV Substation project described below.

Pleasant Valley Wind, LLC (Pleasant Valley), on behalf of RES America Developments Inc., requested local review for a 161 kV transmission line project from the Mower County Board on October 8, 2013. Pleasant Valley is seeking authorization to construct a 161 kV transmission line and a substation for the Pleasant Valley Wind Project. The substation will be in Section 20 of Sargeant Township; the transmission line will connect the substation to the existing Great River Energy Pleasant Valley Station in the NW ¼ of Section 19 of Pleasant Valley Township. Pleasant Valley is evaluating two potential routes for the proposed transmission line, only one of which will ultimately be constructed. The transmission route will either be along County Road 1 (310th Street) between 640th Avenue and 680th Avenue in Sargeant Township, or along 320th Street/325th Street between 640th Avenue and 680th Avenue (see attached map).

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  201 1st Street NE  
  Austin MN 55912

If you should have any questions, please contact Angela Knish at (507) 437-9560.

Sincerely,

**Angela Knish**  
Environmental Services Supervisor  
Mower County Public Works Department

Attachment: Project map
Mary Ann Heidemann  
Manager State Historic Preservation Officer, Minnesota Historical Society  
345 Kellog Blvd W  
St Paul, MN 551102

**Re:** Pleasant Valley 161 kV Transmission Line and 34.5/161 kV Substation

Dear Mary Ann Heidemann:

Mower County is requesting your comments on the proposed Pleasant Valley 161 kV Transmission Line and 34.5/161 kV Substation project described below.

Pleasant Valley Wind, LLC (Pleasant Valley), on behalf of RES America Developments Inc., requested local review for a 161 kV transmission line project from the Mower County Board on October 8, 2013. Pleasant Valley is seeking authorization to construct a 161 kV transmission line and a substation for the Pleasant Valley Wind Project. The substation will be in Section 20 of Sargeant Township; the transmission line will connect the substation to the existing Great River Energy Pleasant Valley Station in the NW ¼ of Section 19 of Pleasant Valley Township. Pleasant Valley is evaluating two potential routes for the proposed transmission line, only one of which will ultimately be constructed. The transmission route will either be along County Road 1 (310th Street) between 640th Avenue and 680th Avenue in Sargeant Township, or along 320th Street/325th Street between 640th Avenue and 680th Avenue (see attached map).

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In addition, Mower County has scheduled a public meeting to provide input on the scope of the Environmental Assessment that will be developed by Mower County. The scoping meeting will provide the opportunity for the public to suggest issues to be analyzed in the Environmental Assessment, as well as view project exhibits, ask questions, and provide comments. There also will be a short formal presentation describing the transmission project. Meeting details are provided below.

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  201 1st Street NE  
  Austin MN 55912

If you should have any questions, please contact Angela Knish at (507) 437-9560.

Sincerely,

**Angela Knish**

Angela Knish  
Environmental Services Supervisor  
Mower County Public Works Department

Attachment: Project map
Lisa Joyal  
Endangered Species Environmental Review Coordinator, Natural Heritage Information System  
500 Lafayette Road, Box 25  
St Paul, MN 55155

Re:  Pleasant Valley 161 kV Transmission Line and 34.5/161 kV Substation

Dear Lisa Joyal:

Mower County is requesting your comments on the proposed Pleasant Valley 161 kV Transmission Line and 34.5/161 kV Substation project described below.

Pleasant Valley Wind, LLC (Pleasant Valley), on behalf of RES America Developments Inc., requested local review for a 161 kV transmission line project from the Mower County Board on October 8, 2013. Pleasant Valley is seeking authorization to construct a 161 kV transmission line and a substation for the Pleasant Valley Wind Project. The substation will be in Section 20 of Sargeant Township; the transmission line will connect the substation to the existing Great River Energy Pleasant Valley Station in the NW ¼ of Section 19 of Pleasant Valley Township. Pleasant Valley is evaluating two potential routes for the proposed transmission line, only one of which will ultimately be constructed. The transmission route will either be along County Road 1 (310th Street) between 640th Avenue and 680th Avenue in Sargeant Township, or along 320th Street/325th Street between 640th Avenue and 680th Avenue (see attached map).

Mower County is currently gathering information to prepare the Environmental Assessment. The County would like you to provide information, issues, concerns, and comments on the proposed route options and substation. Written comments can also be provided directly to Mower County and must be received at the Environmental Services Office no later than Monday, November 18, 2013 at 4:00 P.M.

In addition, Mower County has scheduled a public meeting to provide input on the scope of the Environmental Assessment that will be developed by Mower County. The scoping meeting will provide the opportunity for the public to suggest issues to be analyzed in the Environmental Assessment, as well as view project exhibits, ask questions, and provide comments. There also will be a short formal presentation describing the transmission project. Meeting details are provided below.

Scoping Meeting Information:

When:   2:30 P.M., Tuesday November 5, 2013  
         Presentation will begin at 2:30 P.M.
Where:  Commissioner’s Room,  
         Lower Level - Mower County Government Center  
         201 1st Street NE  
         Austin MN  55912

If you should have any questions, please contact Angela Knish at (507) 437-9560.

Sincerely,

Angela Knish

Angela Knish  
Environmental Services Supervisor  
Mower County Public Works Department

Attachment: Project map
Tamara Cameron  
St. Paul District Chief, U.S. Army Corps of Engineers  
290 5th St E, Suite 700  
St. Paul, MN 55101

Re:  Pleasant Valley 161 kV Transmission Line and 34.5/161 kV Substation

Dear Tamara Cameron:

Mower County is requesting your comments on the proposed Pleasant Valley 161 kV Transmission Line and 34.5/161 kV Substation project described below.

Pleasant Valley Wind, LLC (Pleasant Valley), on behalf of RES America Developments Inc., requested local review for a 161 kV transmission line project from the Mower County Board on October 8, 2013. Pleasant Valley is seeking authorization to construct a 161 kV transmission line and a substation for the Pleasant Valley Wind Project. The substation will be in Section 20 of Sargeant Township; the transmission line will connect the substation to the existing Great River Energy Pleasant Valley Station in the NW ¼ of Section 19 of Pleasant Valley Township. Pleasant Valley is evaluating two potential routes for the proposed transmission line, only one of which will ultimately be constructed. The transmission route will either be along County Road 1 (310th Street) between 640th Avenue and 680th Avenue in Sargeant Township, or along 320th Street/325th Street between 640th Avenue and 680th Avenue (see attached map).

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  Presentation will begin at 2:30 P.M.
- **Where:** Commissioner’s Room,  
  Lower Level - Mower County Government Center  
  201 1st Street NE  
  Austin MN  55912

If you should have any questions, please contact Angela Knish at (507) 437-9560.

Sincerely,

**Angela Knish**

Angela Knish  
Environmental Services Supervisor  
Mower County Public Works Department

Attachment: Project map
Karen Kromar  
Environmental Review and Operations Section, Minnesota Pollution Control Agency  
520 Lafayette Road North  
St. Paul, MN 55155

Re:  Pleasant Valley 161 kV Transmission Line and 34.5/161 kV Substation

Dear Karen Kromar:

Mower County is requesting your comments on the proposed Pleasant Valley 161 kV Transmission Line and 34.5/161 kV Substation project described below.

Pleasant Valley Wind, LLC (Pleasant Valley), on behalf of RES America Developments Inc., requested local review for a 161 kV transmission line project from the Mower County Board on October 8, 2013. Pleasant Valley is seeking authorization to construct a 161 kV transmission line and a substation for the Pleasant Valley Wind Project. The substation will be in Section 20 of Sargeant Township; the transmission line will connect the substation to the existing Great River Energy Pleasant Valley Station in the NW ¼ of Section 19 of Pleasant Valley Township. Pleasant Valley is evaluating two potential routes for the proposed transmission line, only one of which will ultimately be constructed. The transmission route will either be along County Road 1 (310th Street) between 640th Avenue and 680th Avenue in Sargeant Township, or along 320th Street/325th Street between 640th Avenue and 680th Avenue (see attached map).

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Lower Level - Mower County Government Center  
201 1st Street NE  
Austin MN 55912

If you should have any questions, please contact Angela Knish at (507) 437-9560.

Sincerely,

Angela Knish  
Environmental Services Supervisor  
Mower County Public Works Department

Attachment: Project map
Bev Norby  
District Manager, Mower Soil & Water Conservation District  
1408 21st Avenue NW  
Austin, MN 55912  

Re:  Pleasant Valley 161 kV Transmission Line and 34.5/161 kV Substation  

Dear Bev Norby:  

Mower County is requesting your comments on the proposed Pleasant Valley 161 kV Transmission Line and 34.5/161 kV Substation project described below.  

Pleasant Valley Wind, LLC (Pleasant Valley), on behalf of RES America Developments Inc., requested local review for a 161 kV transmission line project from the Mower County Board on October 8, 2013. Pleasant Valley is seeking authorization to construct a 161 kV transmission line and a substation for the Pleasant Valley Wind Project. The substation will be in Section 20 of Sargeant Township; the transmission line will connect the substation to the existing Great River Energy Pleasant Valley Station in the NW ¼ of Section 19 of Pleasant Valley Township. Pleasant Valley is evaluating two potential routes for the proposed transmission line, only one of which will ultimately be constructed. The transmission route will either be along County Road 1 (310th Street) between 640th Avenue and 680th Avenue in Sargeant Township, or along 320th Street/325th Street between 640th Avenue and 680th Avenue (see attached map).  

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**Where:**  Commissioner’s Room,  
Lower Level - Mower County Government Center  
201 1st Street NE  
Austin MN 55912  

If you should have any questions, please contact Angela Knish at (507) 437-9560.  

Sincerely,  

**Angela Knish**  

Angela Knish  
Environmental Services Supervisor  
Mower County Public Works Department  

Attachment: Project map
Angie Knish  
Environmental Services/Planning & Zoning Administrator, Mower County Public Works  
1105 8th Avenue NE  
Austin, MN 55912

Re: Pleasant Valley 161 kV Transmission Line and 34.5/161 kV Substation

Dear Angie Knish:

Mower County is requesting your comments on the proposed Pleasant Valley 161 kV Transmission Line and 34.5/161 kV Substation project described below.

Pleasant Valley Wind, LLC (Pleasant Valley), on behalf of RES America Developments Inc., requested local review for a 161 kV transmission line project from the Mower County Board on October 8, 2013. Pleasant Valley is seeking authorization to construct a 161 kV transmission line and a substation for the Pleasant Valley Wind Project. The substation will be in Section 20 of Sargeant Township; the transmission line will connect the substation to the existing Great River Energy Pleasant Valley Station in the NW ¼ of Section 19 of Pleasant Valley Township. Pleasant Valley is evaluating two potential routes for the proposed transmission line, only one of which will ultimately be constructed. The transmission route will either be along County Road 1 (310th Street) between 640th Avenue and 680th Avenue in Sargeant Township, or along 320th Street/325th Street between 640th Avenue and 680th Avenue (see attached map).

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Lower Level - Mower County Government Center  
201 1st Street NE  
Austin MN 55912

If you should have any questions, please contact Angela Knish at (507) 437-9560.

Sincerely,

Angela Knish

Angela Knish  
Environmental Services Supervisor  
Mower County Public Works Department

Attachment: Project map
October 25, 2013

Craig Oscarson
County Coordinator, Mower County Public Works
1105 8th Avenue NE
Austin, MN 55912

Re: Pleasant Valley 161 kV Transmission Line and 34.5/161 kV Substation

Dear Craig Oscarson:

Mower County is requesting your comments on the proposed Pleasant Valley 161 kV Transmission Line and 34.5/161 kV Substation project described below.

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Scoping Meeting Information:

Where: Commissioner’s Room,
Lower Level - Mower County Government Center
201 1st Street NE
Austin MN 55912

When: 2:30 P.M., Tuesday November 5, 2013
Presentation will begin at 2:30 P.M.

If you should have any questions, please contact Angela Knish at (507) 437-9560.

Sincerely,

Angela Knish
Environmental Services Supervisor
Mower County Public Works Department

Attachment: Project map
October 25, 2013

Jerry Reinartz  
Mower County Board of Commissioners, Chair  
PO Box 301  
Grand Meadow, MN 55936

Re: Pleasant Valley 161 kV Transmission Line and 34.5/161 kV Substation

Dear Jerry Reinartz:

Mower County is requesting your comments on the proposed Pleasant Valley 161 kV Transmission Line and 34.5/161 kV Substation project described below.

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Austin MN 55912

If you should have any questions, please contact Angela Knish at (507) 437-9560.

Sincerely,

Angela Knish  
Environmental Services Supervisor  
Mower County Public Works Department

Attachment: Project map
Dear Landowner,

Pleasant Valley Wind, LLC (Pleasant Valley), on behalf of RES America Developments Inc., requested local review for a 161 kV transmission line project from the Mower County Board on October 8, 2013. Pleasant Valley is seeking authorization to construct a 161 kV transmission line and a substation for the Pleasant Valley Wind Project. The substation will be in Section 20 of Sargeant Township; the transmission line will connect the substation to the existing Great River Energy Pleasant Valley Station in the NW ¼ of Section 19 of Pleasant Valley Township. Pleasant Valley is evaluating two potential routes for the proposed transmission line, only one of which will ultimately be constructed. The transmission route will either be along County Road 1 (310th Street) between 640th Avenue and 680th Avenue in Sargeant Township, or along 320th Street/325th Street between 640th Avenue and 680th Avenue (see attached map). County records indicate that you own property within a quarter mile of one or both of these potential routes.

Mower County has scheduled a public meeting to provide input on the scope of the Environmental Assessment that will be developed by Mower County. An Environmental Assessment is generally an assessment of possible environmental impacts that could result from a proposed project, and is generally used by public officials to inform project decisions and permit approvals. The scoping meeting will provide the opportunity for the public to suggest issues to be analyzed in the Environmental Assessment, as well as view project exhibits, ask questions, and provide comments. There also will be a short presentation describing the transmission project. Meeting details are provided below.

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*When:* 2:30 P.M., Tuesday November 5, 2013
Presentation will begin at 2:30 P.M.

*Where:* Commissioner’s Room,
Lower Level - Mower County Government Center
201 1st Street NE
Austin MN 55912

Written comments can also be provided directly to Mower County and must be received at the Environmental Services Office no later than Monday, November 18, 2013 at 4:00 P.M. If you should have any questions now or following the meeting, please contact Angela Knish at (507) 437-9560.

Sincerely,

**Angela M. Knish**

Angela Knish
Environmental Services Supervisor - Mower County Public Works Department

Attachment: Project map
Proposed Substation and Transmission Line Options
Pleasant Valley Wind Project
Mower County, Minnesota
Legal Notice

Mower County

Public Informational and Scoping Meeting

Pleasant Valley 161 kV Transmission Line and 34.5/161 kV Substation

Pleasant Valley Wind, LLC (Pleasant Valley), on behalf of RES America Developments Inc., requested local review for a 161 kV transmission line project from the Mower County Board on October 8, 2013. Pleasant Valley is seeking authorization to construct a 161 kV transmission line and a substation for the Pleasant Valley Wind Project. The substation will be in Section 20 of Sargeant Township; the transmission line will connect the substation to the existing Great River Energy Pleasant Valley Station in the NW 1/4 of Section 19 of Sargeant Township. Pleasant Valley is evaluating two potential routes for the proposed transmission line, only one of which will ultimately be constructed. The transmission route will either be along County Road 1 (310th Street) between 640th Avenue and 680th Avenue in Sargeant Township, or along 320th Street/325th Street between 640th Avenue and 680th Avenue. A copy of the map is also available at the Mower County Public Works Office (1106 8th Ave NE, Austin, MN 55912). A copy of the map can also be downloaded from the Minnesota Public Utilities Commission eDockets website at: https://www.edockets.state.mn.us/EFiling/search.jsp (search on the Year “13” and the Number “960”).

Mower County has scheduled a public meeting to provide input on the scope of the Environmental Assessment that will be developed by Mower County. An Environmental Assessment is generally an assessment of possible environmental impacts that could result from a proposed project, and is generally used by public officials to inform project decisions and permit approvals. The scoping meeting will provide the opportunity for the public to suggest issues to be analyzed in the Environmental Assessment, as well as view project exhibits, ask questions, and provide comments. There will also be a short presentation describing the transmission project. Meeting details are provided below.

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Lower Level - Mower County Government Center
201 1st Street NE
Austin MN 55912

If you have any questions now or following the meeting, please contact Angela Knish at (507) 457-9560.