

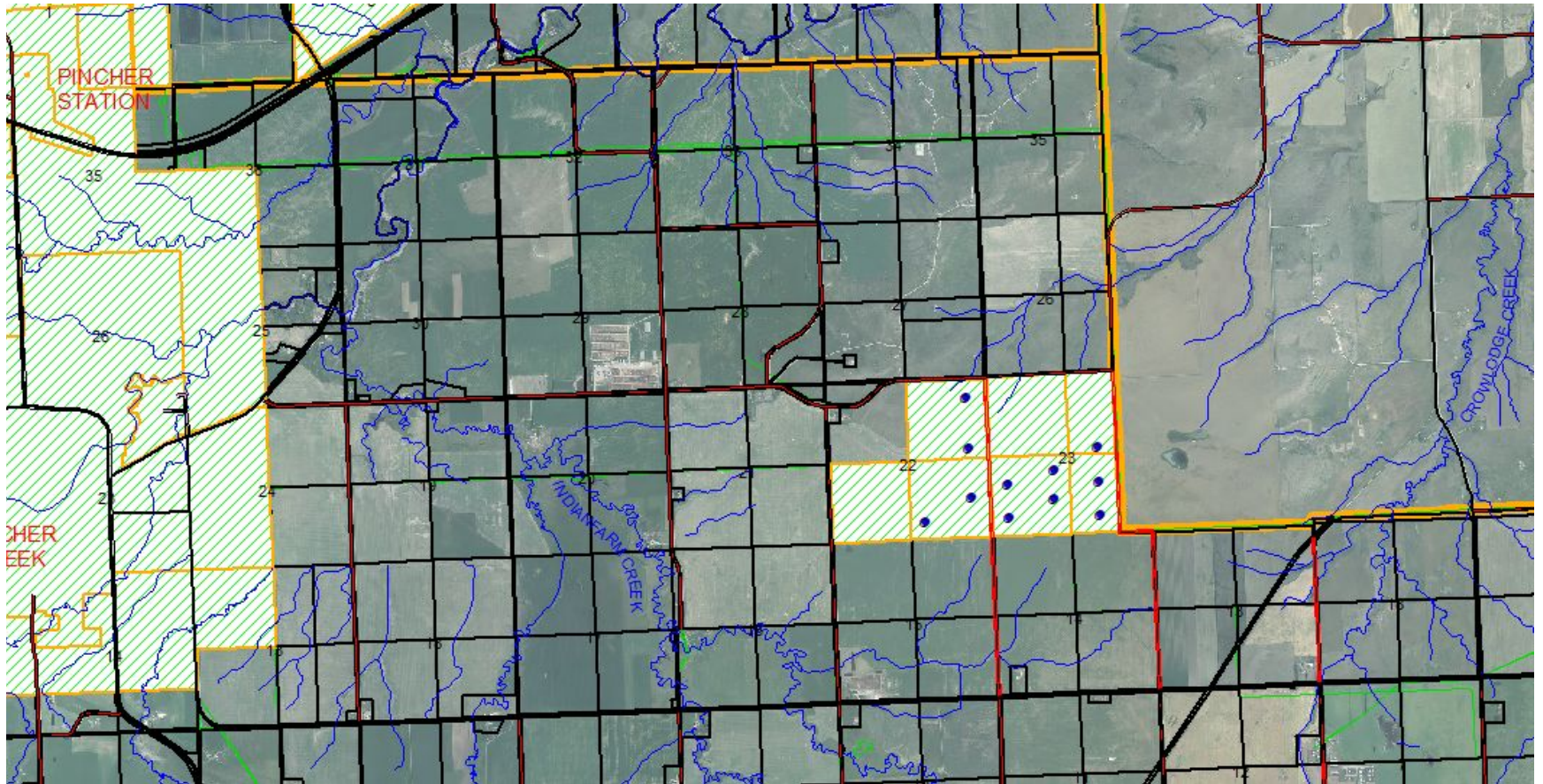
AGENDA
Public Meeting
Renewable Energy Services Ltd.;
McLaughlin Wind Farm Project
Development Permit Applications No. 2018-12 through 2018-14
Tuesday, March 27, 2012; 7:00 pm
Council Chambers, MD Administration Building

1. Call Public Meeting to Order
2. Overview of Project
3. Questions
4. Adjournment

**McLaughlin Wind Farm
~~Development Permit~~
Applications
No. 2018-12 to 2018-14**

Municipal Planning Commission Public Meeting
March 27, 2018

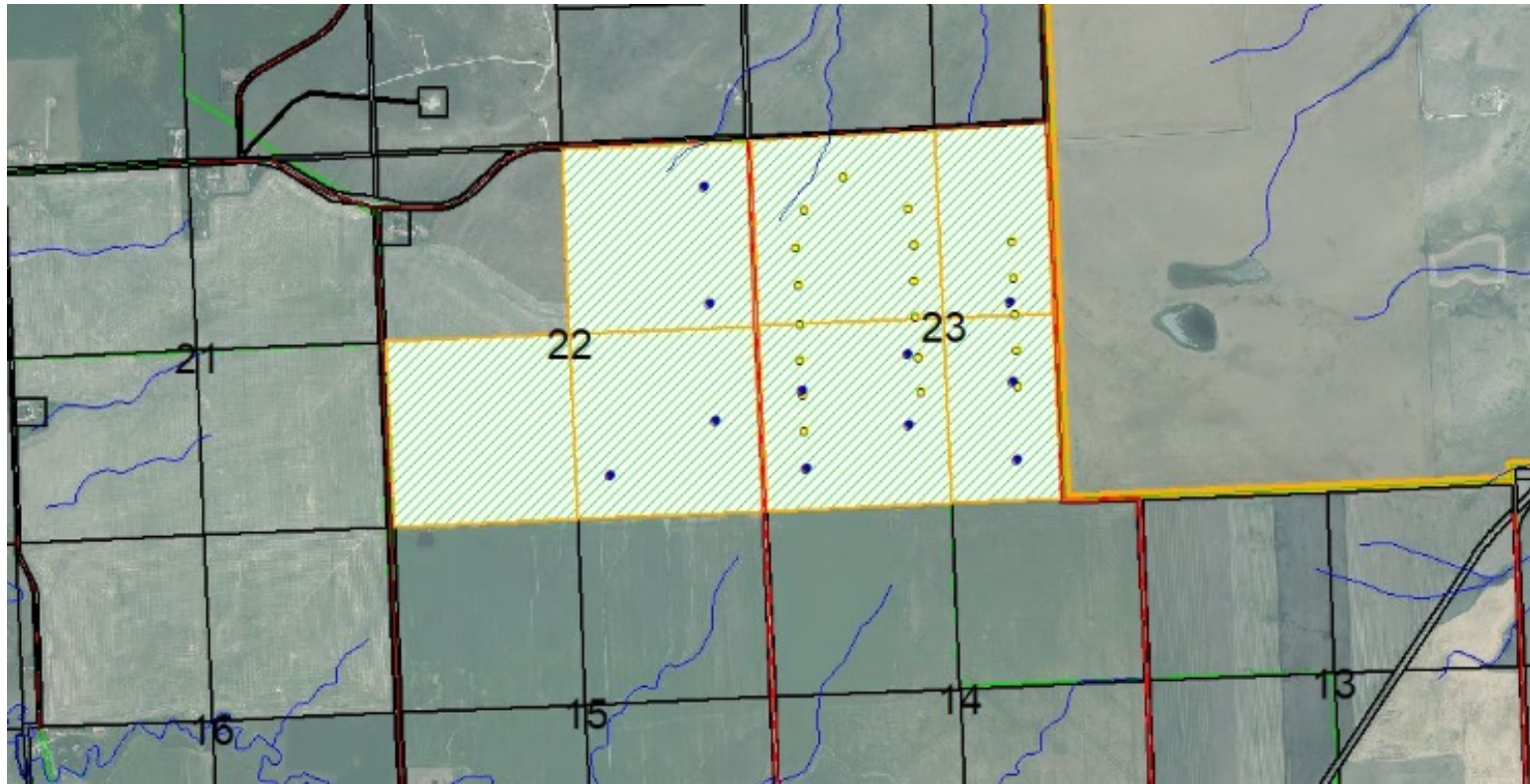
Location Map



McLaughlin Wind Farm Project

- ▶ This project was originally approved under Development Permit No. 2012-03.
- ▶ Originally, the project consisted of 20 wind turbines, with a total height of 132 m.
- ▶ This project has been redesigned.
- ▶ The changes from Permit No. 2012-03 were substantial enough to warrant a new application.
- ▶ Therefore the developer submitted a new application.

Turbine Location Comparison



Blue – New Turbine Locations
Yellow – Previous Turbine Locations

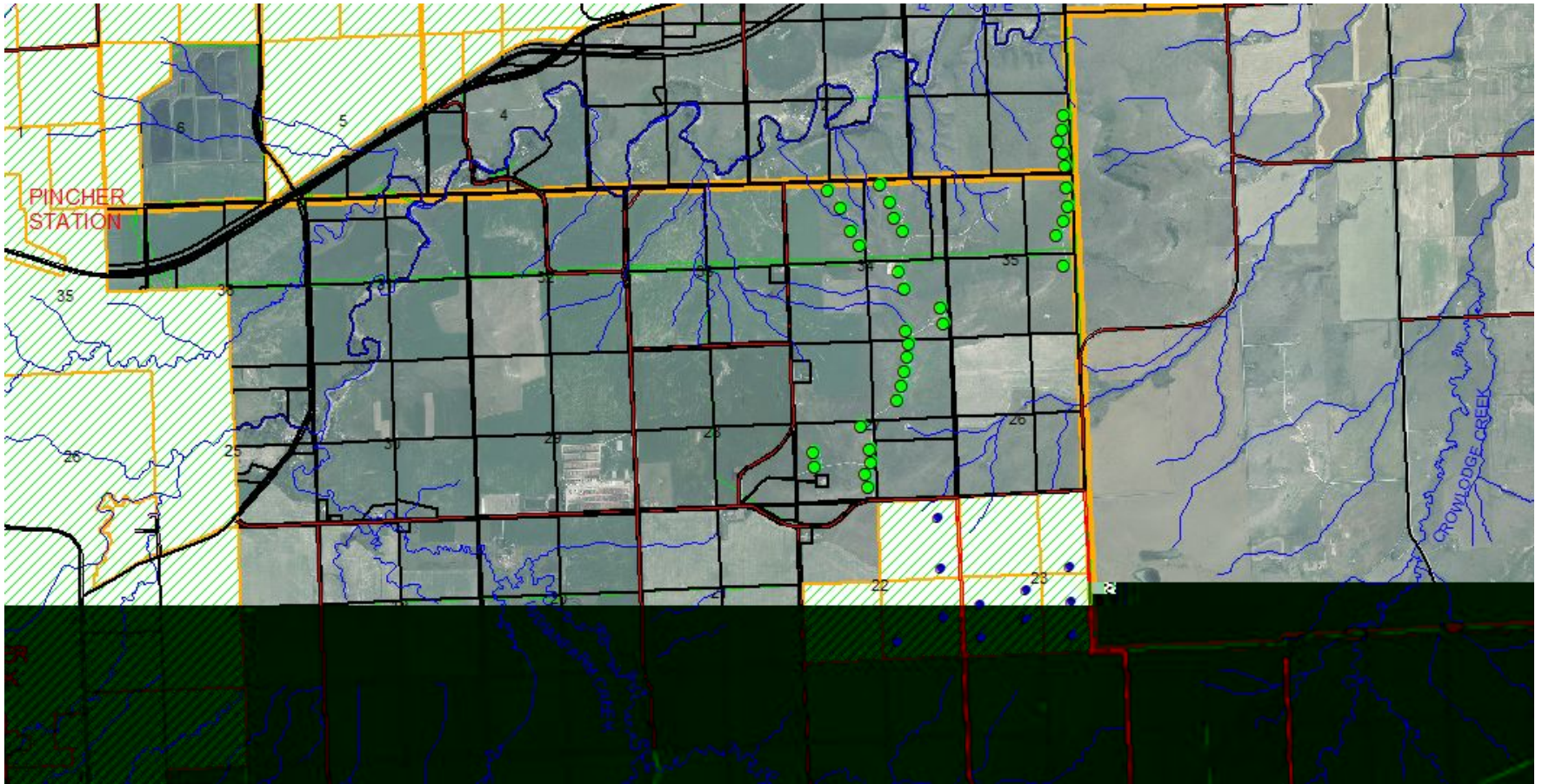
The Required Public Meeting

- ▶ Development Permit Applications No. 2018-12 to 2018-14 were submitted to the MD on January 24, 2018.
- ▶ These applications were presented to the Municipal Planning Commission (MPC) on the meeting held March 6, 2018. At that time, MPC received the information and set the public meeting date.
- ▶ Pursuant to Section 53.17 of the LUB, the development authority cannot make a decision on a Category 3 WECS application prior to holding a public meeting in order to solicit views from the public.
- ▶ This meeting was advertised Pursuant to Section 606 of the Municipal Government Act.

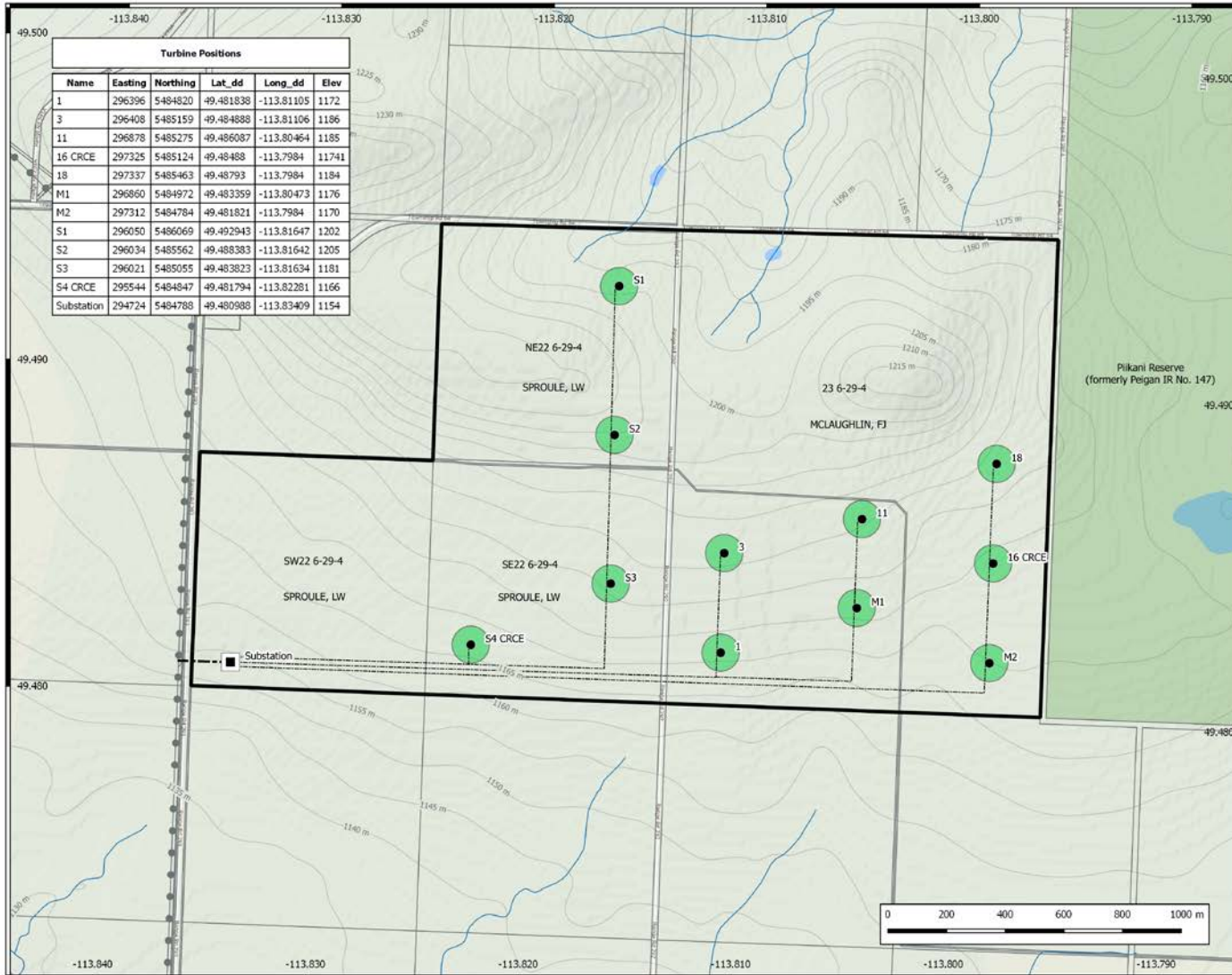
Project Details

- ▶ This proposed project consists of eleven (11) Enercon E-126 EP turbines.
- ▶ Each turbine will have an output of 4.2 MW. The total project output will be 46.2 MW.
- ▶ These turbines will have a hub height of 99 m and a rotor diameter of 127 m, making these turbines 162.5 m in total height.
- ▶ The turbines will be interconnected by 34.5 kVA underground collector system.
- ▶ The collector system will take the power to a centrally located substation (proposed McLaughlin 423S substation).
- ▶ The project is planned to connect to the existing 164L transmission line via a proposed single circuit 138kV transmission line (164AL), approximately 150 m in length.

Wind Farms in the Area



Site Plan



McLaughlin Wind Project



Site Plan

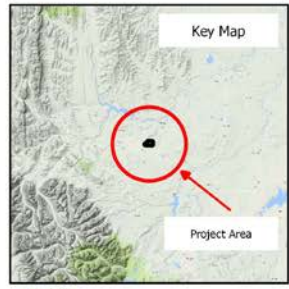
Municipal District of Pincher Creek No. 9
Land Use Bylaw No. 1140-08

Legend

- Project Boundary
- McLaughlin Components**
- Turbine
- Substation
- Rotor Arc
- 34.5 kV Collector
- 138 kV Transmission
- ⊕ Transmission Line
- Contour (5 m)

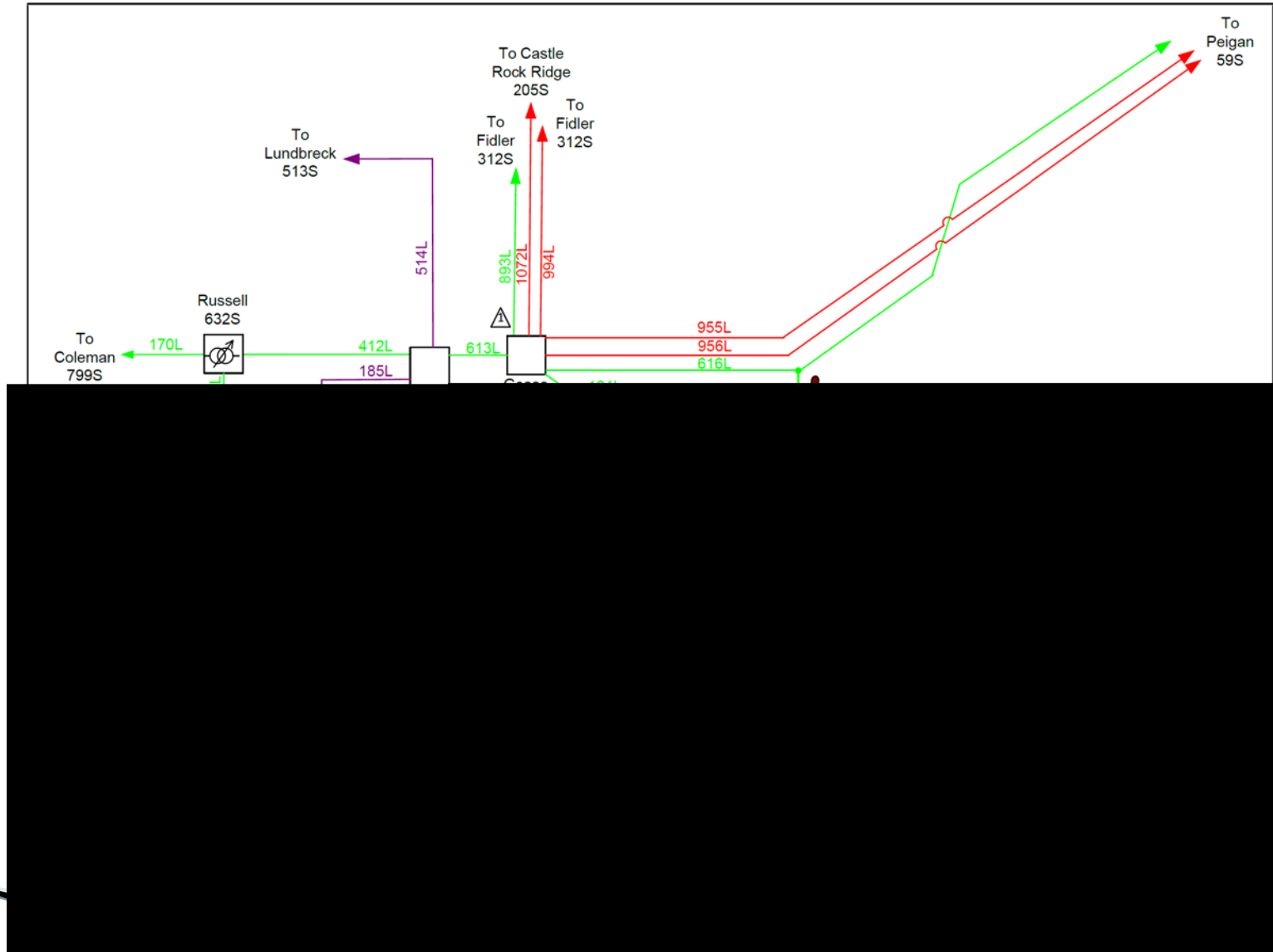
Scale: 1:12,500 2017-08-08

Source: AltaLis 1:20,000
Google Maps
Bing Maps
NAD83 Geographic



Niritik Resource Solutions Inc.

Proposed Transmission Interconnection



Turbine Specifications

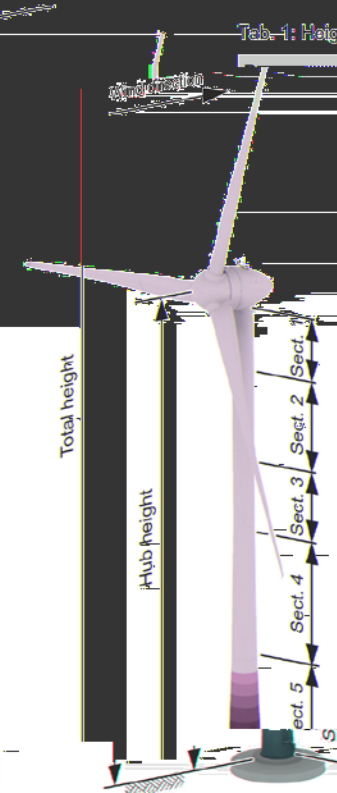
Enercon E-126

Tab-1: Heights, wind zones, type

Parameter	Value
Total height above ground level	162.65 m
Hub height above ground level	99.15 m
Hub height above foundation top edge	99.00 m
Tower height above foundation top edge	95.70 m
Wind zone (DIBt 2012)	WZ 4 GK I,
WTC (IEC 61400-1:2010)	II A
Type	Steel tower
Number of steel sections	5

WZ: Windzone (wind zone)
GK: Geländekategorie (terrain category)
WTC: Wind Turbine Class

Mass
m in t
42
64
163
146
15
477



Tab-2: Dimensions and weights

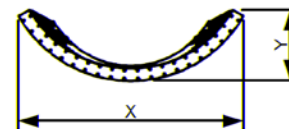
	Length	Diameter	
		/in m	D_{top} in m
Steel section 1	10.88	4.00/ 4.25 ¹	4.28
Steel section 2	20.44	4.28	4.29
Steel section 3	15.96	4.29	4.30
Steel section 4	28.00	4.30	5.20
Steel section 5	20.44	5.20	6.50/ 6.79 ¹
Foundation basket	2.10	6.88 ²	6.86 ¹
Total tower mass			

The length of steel section 5 includes the load ring.

¹ Outer flange diameter

² Outer load ring diameter

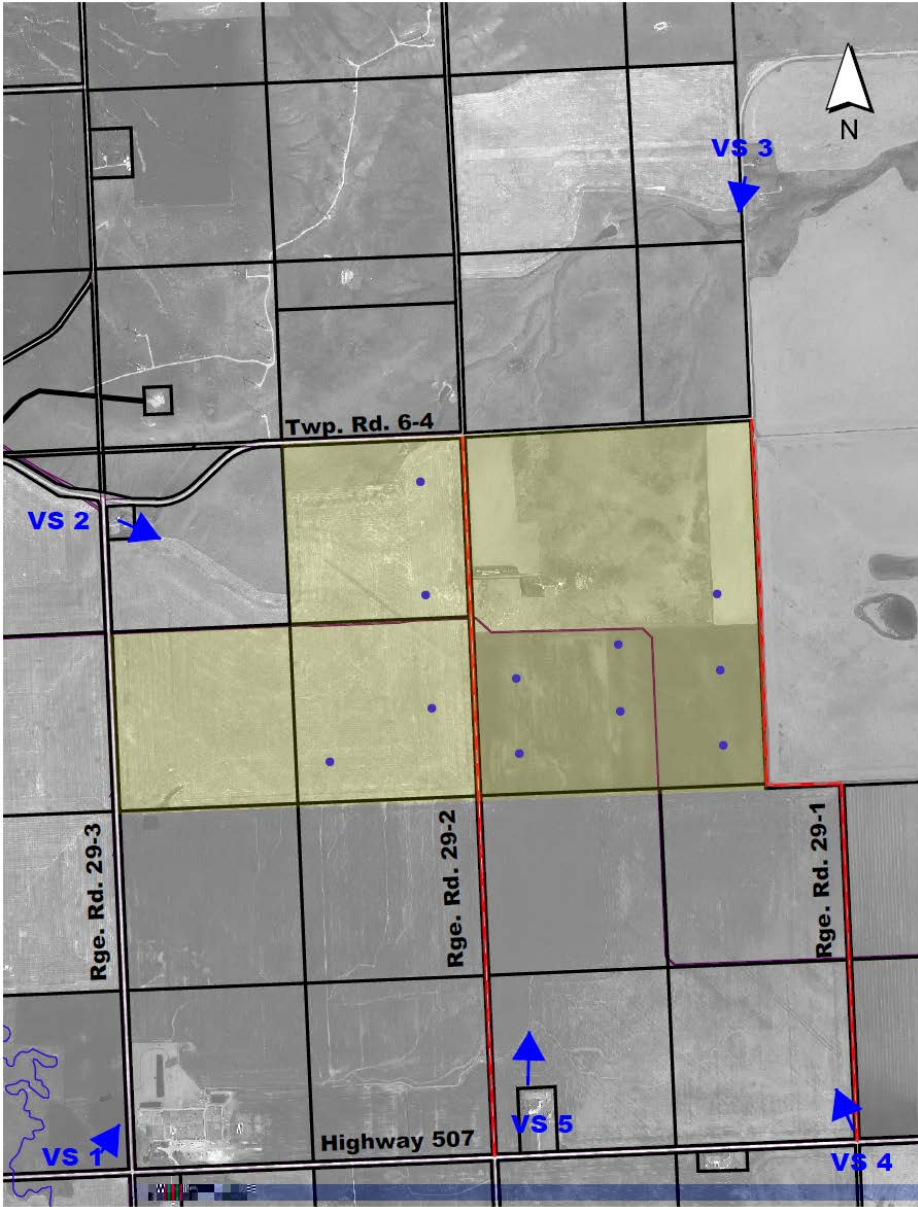
Mass
m in t
51
47



Tab. 3: Maximum values of divided steel sections

	Division	Dimensions	
		X in m	Y in m
Steel section 4	3/3	4.50	1.43
Steel section 5	3/3	5.88	1.86

Location for Visual Simulation Photos



Visual Simulation, Slide No. 1



Original Photograph



Visual Simulation



Location Map

RENEWABLE ENERGY SERVICES LTD.

McLaughlin Wind Project
Visual Simulation 1
Hwy 507 E & Range Rd 293

Image: Easting: 294407
Northing: 5483194
Photograph Date: August 24, 2008
View Angle: 37 Degrees
Focal Length: 38.0 mm
Field of View: 83 Deg
Closest visible wind turbine: 58 DICE, 2003 m
Farthest visible wind turbine: 18, 3,704 m

Turbine: Manufacturer: Enercon
Model: E-120
Hub Height: 95 m
Rotor Diameter: 127 m
Rated Power: 4,200 kW
Power Curve: Load 0

Location System	© 1999-2008, DeLorme	2014-05-05
Analysis by: Renewable Solutions Inc.		

0 200 400 600 800 1000 ft

Visual Simulation, Slide No. 2

 <p>Original Photograph</p> <p>A landscape photograph showing a dirt road on the left and a gravel road on the right, leading through a grassy field under a blue sky with scattered clouds. Several utility poles are visible in the distance.</p>	<p>RENEWABLE ENERGY SERVICES LTD.</p> <p>McLaughlin Wind Project</p> <p>Visual Simulation 2 Range Rd 293 & Township Rd 64</p> <p>Image: Easting: 294,643 Northing: 5,498,088 Photograph Date: August 24, 2008 View Angle: 30° Dipress Focal Length: 38.6 mm Field of View: 52 Deg Closest visible wind turbine: 81, 1,485 m Farthest visible wind turbine: 82, 2,958 m</p> <p>Turbine: Manufacturer: Enercon Model: E-120 Hub Height: 96 ft Rotor Diameter: 127 ft Rated Power: 4,200 kW Power Curve: Load 0</p> <table border="1"><tr><td>Coordinate System</td><td>UTM 18Q UTM Zone 18</td><td>30 1 45 45</td></tr></table> <p>Analyst By: Sarah Rosemary Robinson Inc.</p> 	Coordinate System	UTM 18Q UTM Zone 18	30 1 45 45
Coordinate System	UTM 18Q UTM Zone 18	30 1 45 45		
 <p>Visual Simulation</p> <p>The same landscape as the original photograph, but with several white wind turbines superimposed in the distance, showing their scale relative to the terrain.</p>	 <p>Location Map</p> <p>A topographic map showing contour lines and a red line representing a road. An orange shaded area indicates the location of the wind project. A scale bar at the bottom shows 0, 200, 400, 600, 800, and 1000 feet.</p>			

Visual Simulation, Slide No. 3

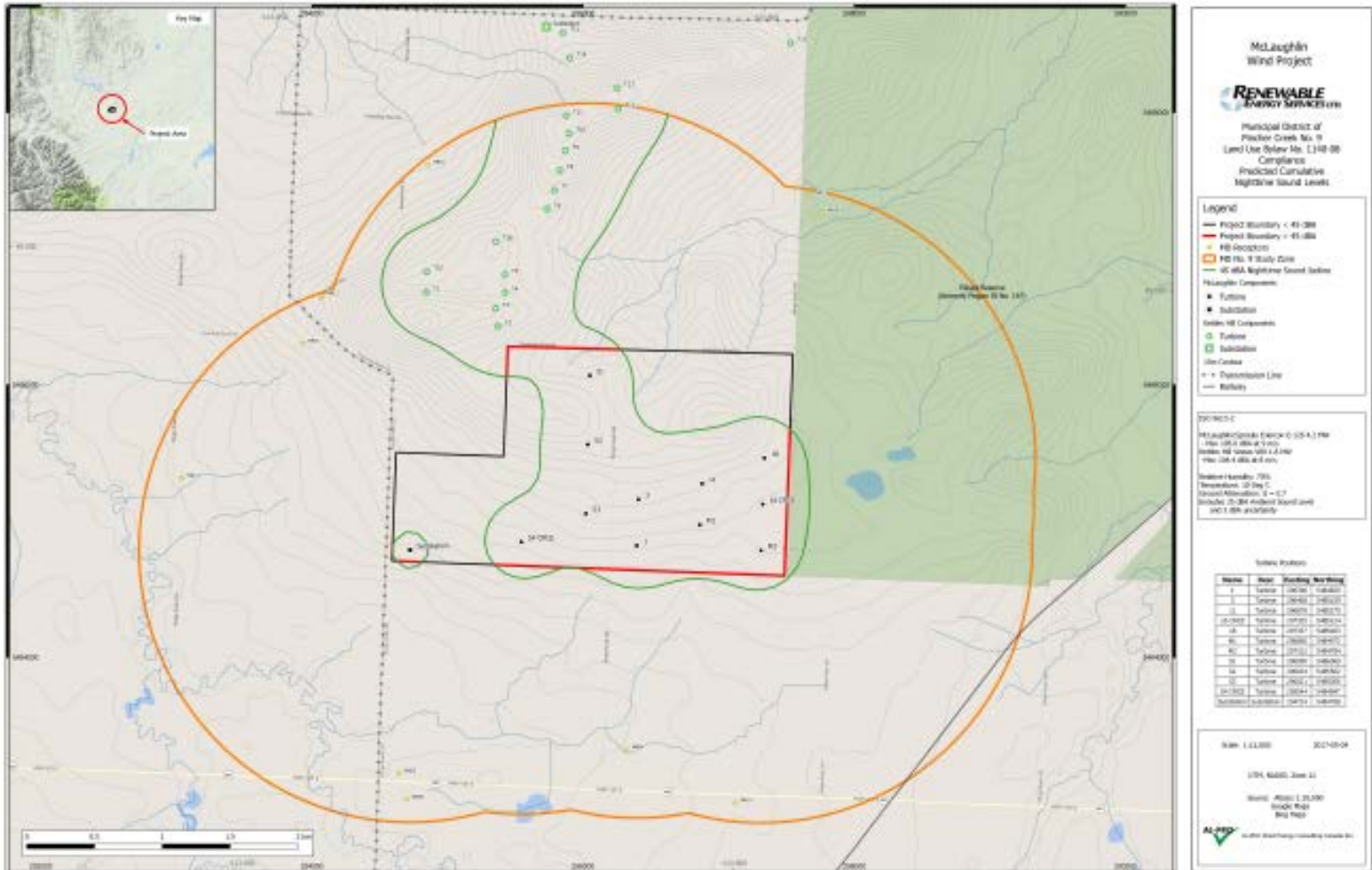
 <p>Original Photograph</p>	<p>RENEWABLE ENERGY SERVICES LTD.</p> <p>McLaughlin Wind Project</p> <p>Visual Simulation 3 Range Rd 291</p> <p>Image: Easting: 294,641 Northing: 5,488,086 Photograph Date: November 25, 2009 View Angle: 387 Degrees Focal Length: 38.6 mm Field of View: 52 Deg Closest visible wind turbine: 38, 1,771 ft Farthest visible wind turbine: 4 CRCC, 5,132 ft</p> <p>Turbine Manufacturer: Enercon Model: E-130 Hub Height: 96 ft Rotor Diameter: 127 ft Rated Power: 4,200 kW Power Curve: Lared 0</p> <table border="1"><tr><td>License Status</td><td>© 2010 RSE, Inc. 01</td><td>001-0545</td></tr></table> <p>Analyst: Sarah Rosewood-Holmes Inc.</p>	License Status	© 2010 RSE, Inc. 01	001-0545
License Status	© 2010 RSE, Inc. 01	001-0545		
 <p>Visual Simulation</p>	 <p>Location Map</p>			

Visual Simulation, Slide No. 4

 <p style="text-align: right; background-color: #90EE90; padding: 2px;">Original Photograph</p>	<div style="text-align: center;">  <p>McLaughlin Wind Project</p> <p>Visual Simulation 4: Highway 507 E</p> </div> <p>Image: Easting: 390,200 Northing: 5,462,987 Photograph Date: August 24, 2008 View Angle: 343 Degrees Focal Length: 38.6 mm Field of View: 53 Deg Closest visible wind turbine: 61, 1,880 m Furthest visible wind turbine: 51, 1,786 m</p> <p>Turbine Manufacturer: Enercon Model: E-120 Hub Height: 95 m Rotor Diameter: 127 m Rated Power: 4,200 kW Power Curve: Level 3</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: small;">Customer System</td> <td style="font-size: small;">07416288, Zone 12</td> <td style="font-size: small;">08/10/08</td> </tr> <tr> <td colspan="2" style="font-size: small;">Analysis by North American Consultants Inc.</td> <td style="text-align: right;"></td> </tr> </table>	Customer System	07416288, Zone 12	08/10/08	Analysis by North American Consultants Inc.		
Customer System	07416288, Zone 12	08/10/08					
Analysis by North American Consultants Inc.							
 <p style="text-align: right; background-color: #90EE90; padding: 2px;">Visual Simulation</p>	<p style="text-align: right; background-color: #90EE90; padding: 2px;">Location Map</p> 						

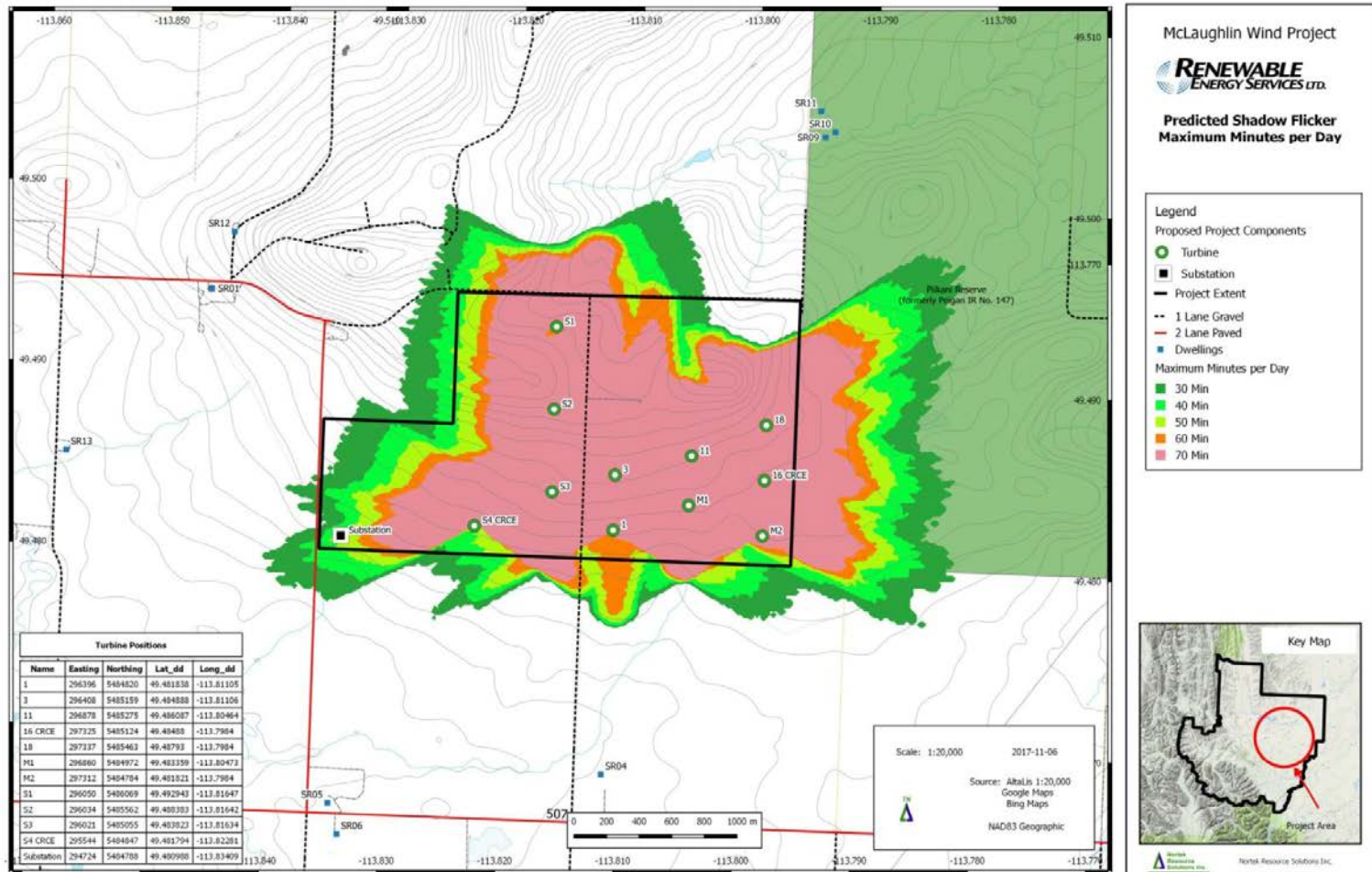
Visual Simulation, Slide No. 5

d ModellingSöme



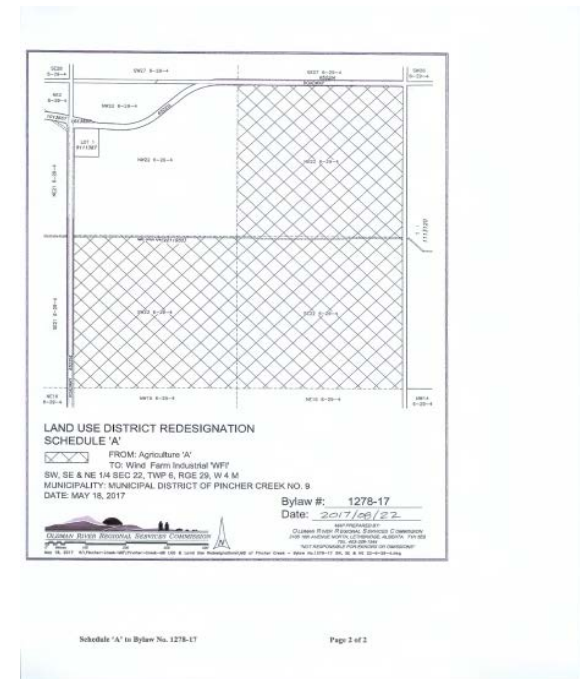
Shadow Analysis

Appendix A, Maximum Minutes per Day Map



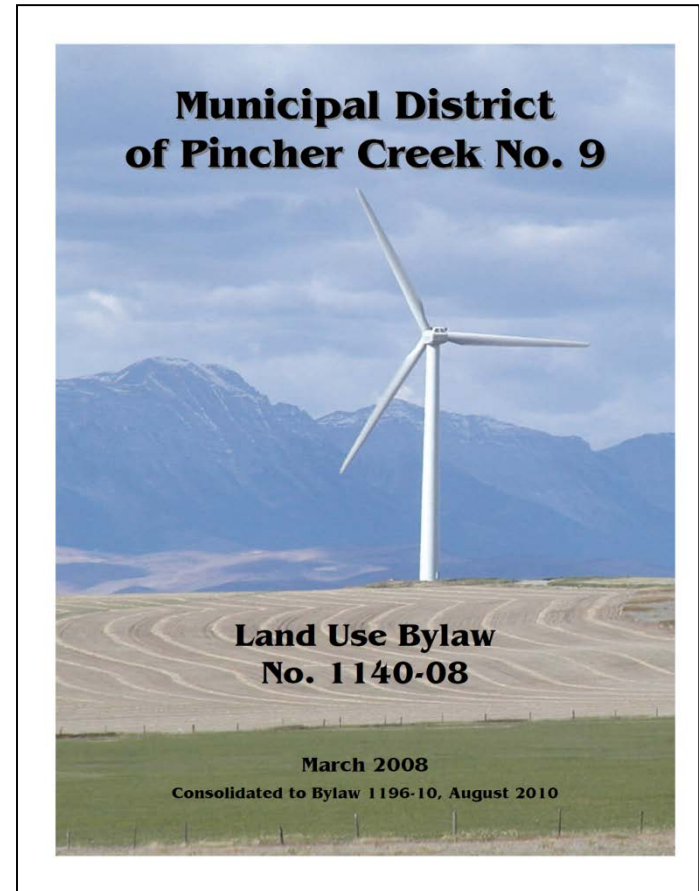
Land Use Designation

- ▶ Pursuant to Section K. 11. of the MD's Municipal Development Plan (MDP), the municipality shall not accept application for a wind farm development until the designation to Wind Farm Industrial (WFI) has been approved.
- ▶ The Project Lands were rezoned to Wind Farm Industrial in 2010 (Bylaw 1178-09) and 2017 (Bylaw 1278-17).



LUB Requirements

- ▶ The applicant has submitted all information requirements as outlined in Section 53 of Land Use Bylaw 1140-08.
- ▶ The MD has referred the application to landowners within 2 km of the project boundary.



LUB Requirements (continued)

- ▶ The applicant has supplied copies of the appropriate reports, comments and requests for approvals from the following:
 - Transport Canada
 - NAVCAN
 - Alberta Culture and Community Spirit
 - Alberta Environment
 - Alberta Transportation
 - Alberta Sustainable Resource Development
 - Alberta Tourism, Parks, and Recreation
 - Alberta Electric System Operator
 - STARS

Municipal Development Plan Requirements

- ▶ Currently there are 450 turbines approved for development within the municipality (98 of those turbines have AUC approval but not municipal approval).
- ▶ Section K. 12. of the MDP states that Council shall commission a review, that examines the impact of wind energy development (Only Category 3) every three (3) years or at such time when 500 WECS have been constructed.
- ▶ If approved, the total approved Category 3 WECS will be 372 (470 if the 98 for the Heritage Wind Farm, AUC Decision 2011-239, are included).

Thank you for attending.

Questions?