



WHEATLAND WIND PROJECT LP | OCTOBER 2016

WELCOME

OCTOBER 2016

WHEATLAND WIND PROJECT | PUBLIC OPEN HOUSE
PLEASE SIGN IN AND WALK AROUND
WE ARE HERE TO ASSIST YOU

**For more information about
the Wheatland Wind Project or
WWLP please visit our website
or contact a representative
by telephone or email**

Dan Tocher
Stakeholder Relations Manager
Email: info@wheatlandwind.com
Number: 1.888.270.5743
www.wheatlandwind.com



WHEATLAND WIND PROJECT LP, BY ITS GENERAL PARTNER WHEATLAND WIND PROJECT LTD. (WWLP)

Greengate Power Corporation is a leading renewable energy company based in Calgary, Alberta. To date, Greengate has successfully developed 450 MW of operating wind projects in Alberta. These projects represent over 30% of the wind energy generated in Alberta and provide a clean source of energy to approximately 200,000 homes.

GREENGATE
power

www.greengatepower.com




Wheatland
wind project LP

www.wheatlandwind.com

Potentia Renewables Inc. is an independent power producer focused on developing, managing and operating renewable energy systems. Potentia Renewables Inc. is a wholly owned subsidiary of Power Corporation of Canada, a diversified international management and holding company.

potentia

www.potentiarenewables.com



PROJECT INFORMATION

PROJECT INFORMATION

PROJECT OWNER

- Wheatland Wind Project LP, by its general partner Wheatland Wind Project Ltd. (WWLP)

PROJECT NAME

- Wheatland Wind Project

HOST MUNICIPALITIES

- Wheatland County

PROJECT TYPE AND SIZE

- Approximately 120 MW wind energy project

COLLECTION SYSTEM

- 34.5 kilovolt (kV) above ground and underground collector lines that connect into the proposed Badlands substation



INTERCONNECTION

PROJECT SUBSTATION

- Badlands Substation is proposed to be located in SE 15-26-18 W4M

POINT OF INTERCONNECTION

- 138 kilovolt (kV) power line built from the proposed Badlands substation to the existing ATCO Electric 7L85 line located within the Project boundary
- Interconnection covered under a separate consultation and application process conducted by ATCO Electric

OTHER INFRASTRUCTURE

ROADS

- Approximately 6 metres wide
- Built with existing material to build the crown of the road
- Top dressed with crush gravel

OPERATIONS AND MAINTENANCE BUILDING

- Approximate location beside Project Substation

TEMPORARY LAY DOWN AREA

- Location to be determined



WHEATLAND WIND PROJECT LP

OCTOBER 2016

PROJECT DETAILS

Number of Wind Turbines Proposed: Up to 47

Total Installed Capacity: Up to 120 MW

Anticipated In Service Date: Q2 2019

Project Duration: 25+ years

Rotor Diameter: Up to 140 metres

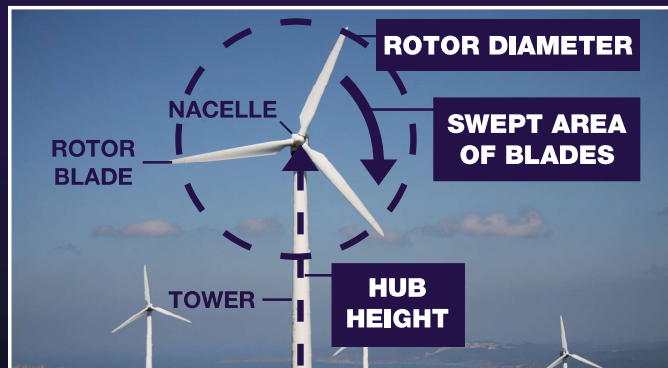
Wind Turbine Capacity: Up to 3.6 MW

Hub Height: Up to 110m

Blade Length: Up to 70 metres

Acres Within Project Boundary: Approximately 14,000

Footprint: Approximately 1 – 2 acres per turbine



**The Project will supply enough
electricity for approximately**

**57,600
HOUSEHOLDS**





COMMUNITY BENEFITS



CLEAN ENERGY

Wind energy is one of the cleanest forms of electrical power generation. It uses no water, and produces no emissions. It is a clean, renewable source of energy.



COST EFFECTIVE

Wind energy is the most cost effective renewable energy source available and can coexist with farms, ranches and other uses.

COMMUNITY FUND AND INVOLVEMENT

- We are setting up a community development fund for the Project
- We will provide a funding commitment throughout the Project life, and will support local initiatives and projects
- More details on the fund will be shared as the Project progresses
- This is in addition to the municipal tax revenues generated by the Project
- We are also interested in supporting local events and activities in the community

Please let us know if there are ways that we can support local initiatives and the community

DURING CONSTRUCTION

- Local spending
- Construction jobs
- Employment and contract opportunities
- Increased accommodation and meals in the area
- Compensation to participating landowners


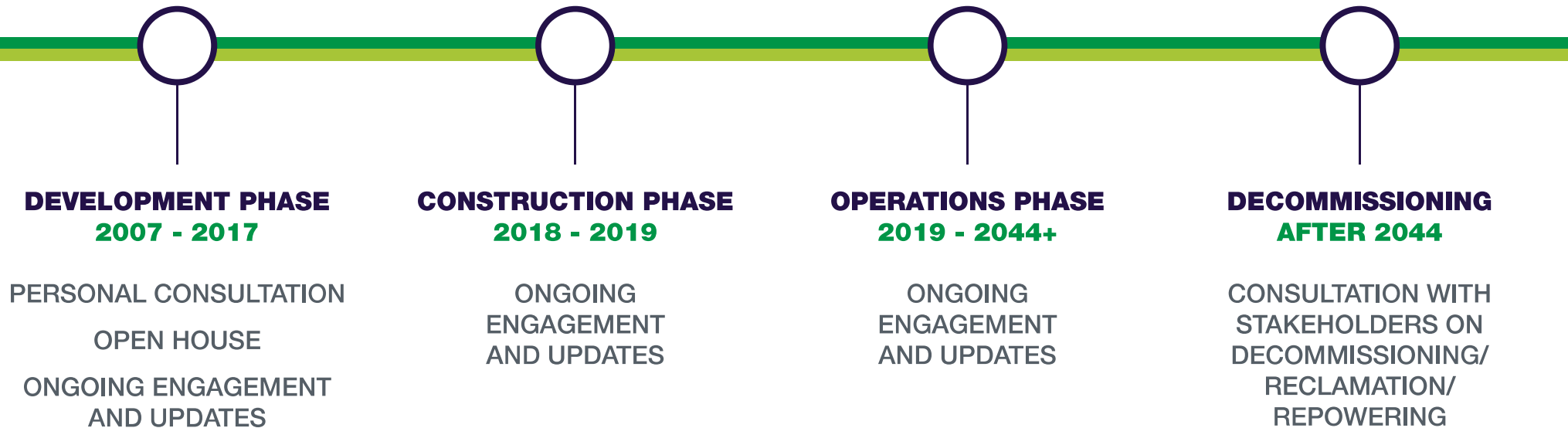
DURING OPERATION

- Local spending
- Operator and maintenance employment and contracting opportunities
- Municipal tax revenues – directly allocated to increasing local services or stabilizing local tax rates
- Compensation to participating landowners – boost for rural economic development



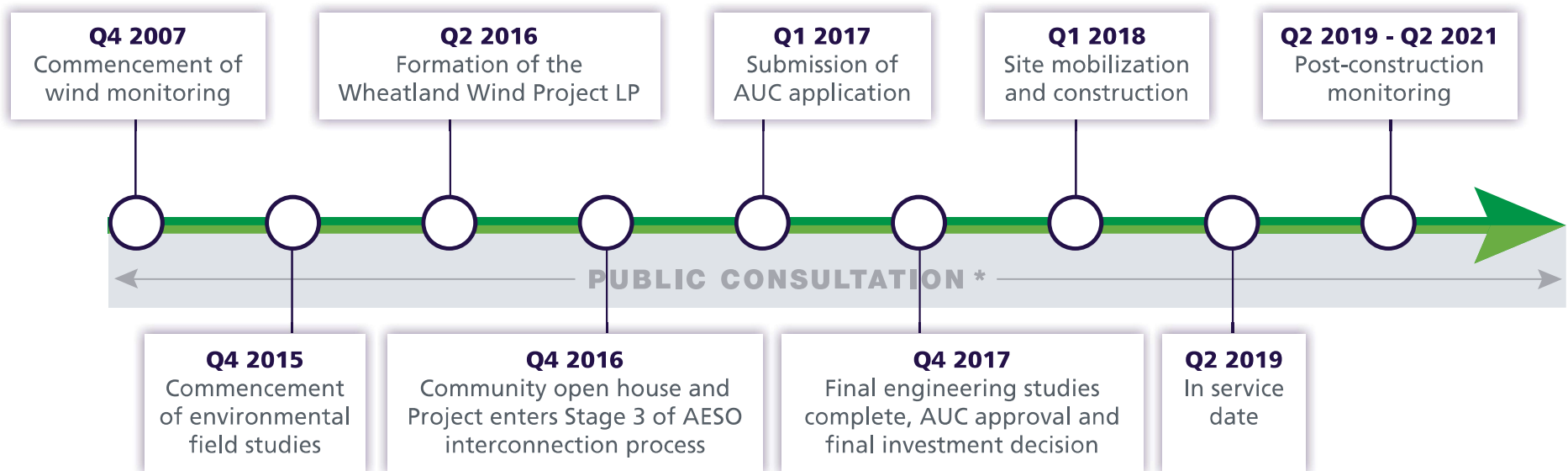
If you are interested in providing goods and services to the Project, please provide your contact information on the contractor list at the sign in table.

CONSULTATION SCHEDULE



We are committed to engaging landowners, public stakeholders, and other members of the local community and we look forward to a continuing dialogue and partnership with you over the coming months and years

EXPECTED PROJECT SCHEDULE



*** Public consultation will continue through the life of the project, from development, through construction, operations and decommissioning**

NOTE

This schedule is subject to change. Project timing is dependent on regulatory approvals, and results of the Government of Alberta's Renewable Electricity Program (www.aeso.ca/rep)

We will continue to provide schedule updates as the Project progresses

STAKEHOLDER CONSIDERATIONS



CONSTRUCTION

DUST

- We will work with the County to ensure dust mitigation is in place and impact is kept to a minimum

INCREASED TRAFFIC

- Main access is through highway 56
- We will work with the County to reduce impacts on the community from traffic



OPERATION

NOISE

- See poster

SHADOW FLICKER

- See poster

VISUAL IMPACT

- See poster

WILDLIFE IMPACTS

- Setbacks used to reduce risk
- Post-construction monitoring plan

TURBINE LIGHTING

- Required for air transportation safety
- Transport Canada regulated

ICE THROW

- Setbacks and operational protocols used to reduce risk



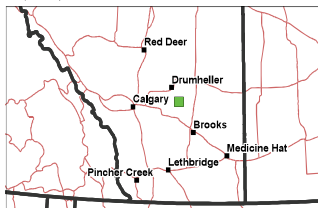
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REGIONAL MAP

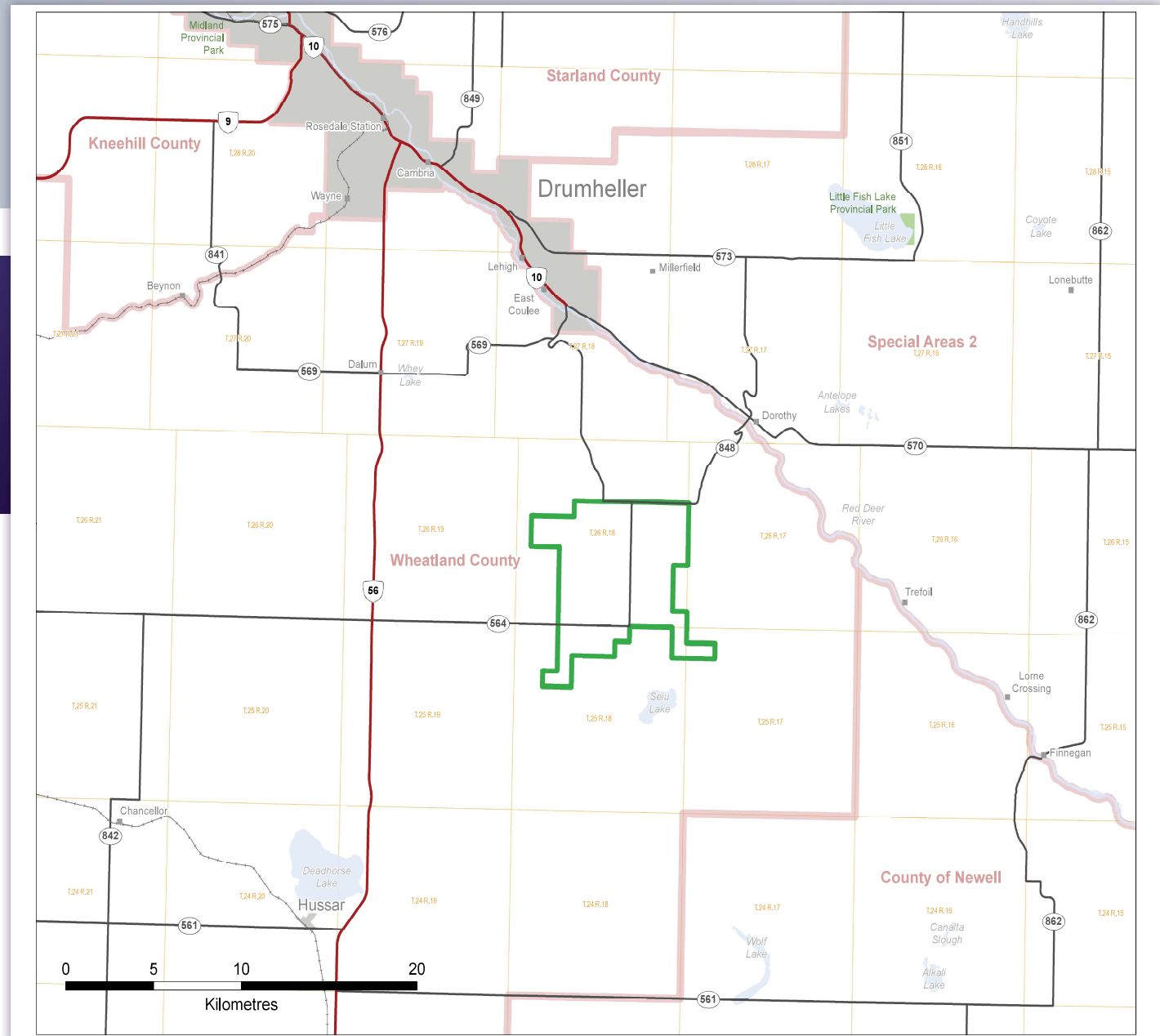
- Project Boundary
- Primary Highway
- Secondary Highway
- Railway
- City, Town or Village
- Major Waterbody
- Provincial Park
- Municipal District or County Boundary
- Provincial Boundary
- Township

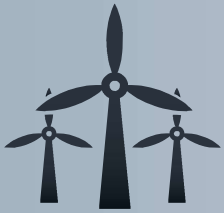
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Prepared By: WSP

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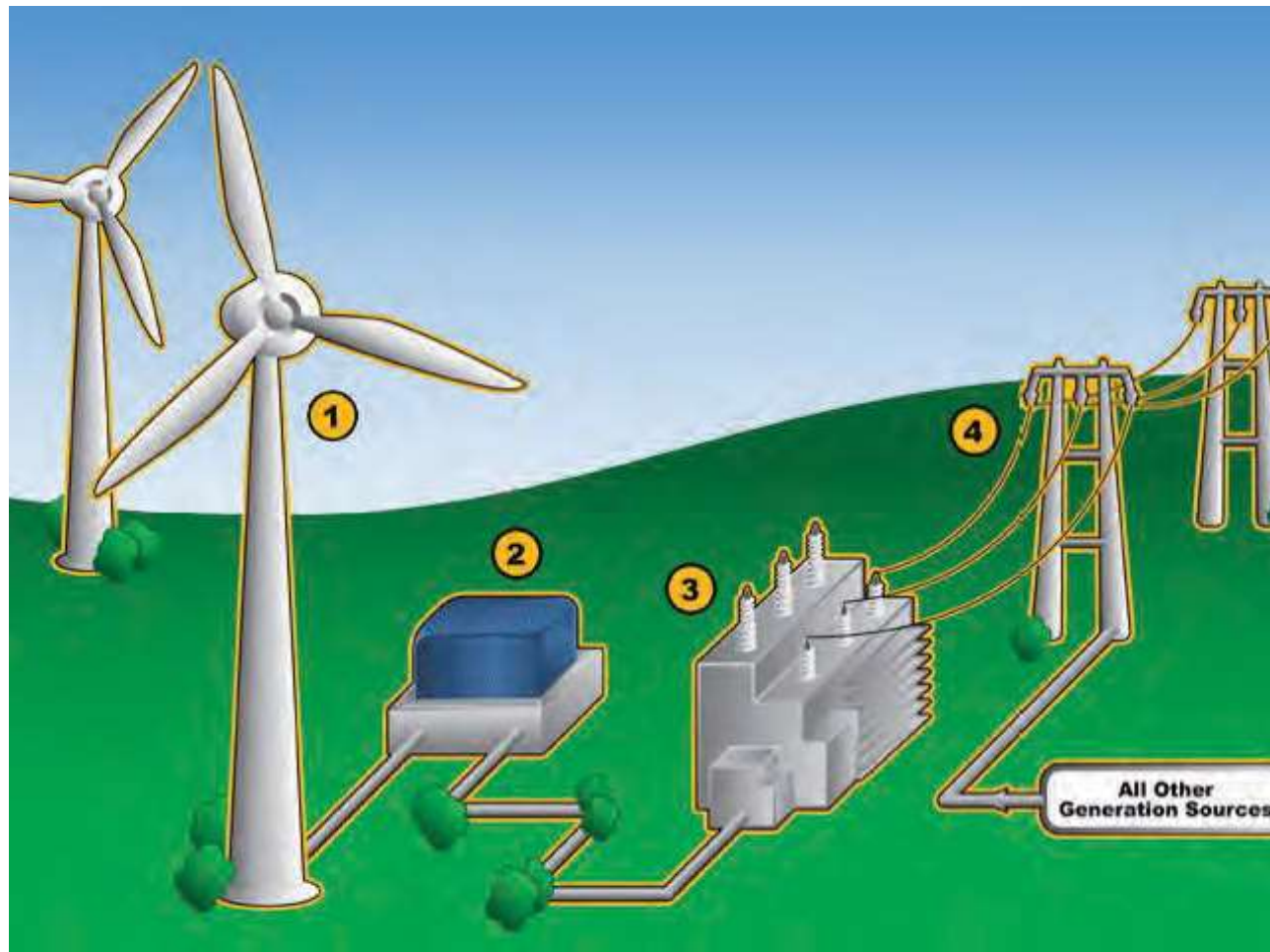


Basemap Data Credits: MapInfo (c) Government of Alberta.





HOW WIND POWER WORKS



- 1** Wind is produced by the uneven heating of the earth's surface by the sun. The wind causes the turbine blades to spin. The spinning blades cause a generator to rotate, converting the wind energy into electricity.
- 2** The transformer increases voltage for transmission to substation.
- 3** The substation further increases voltage for transmission over long distances.
- 4** Electricity generated travels through transmission lines and distribution lines to homes and businesses.



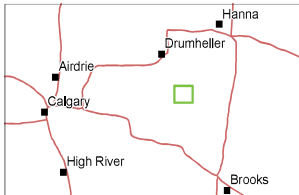
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47 TURBINE PROPOSED PROJECT MAP

- Project Boundary
- Signed Project Lands Within Project Boundary
- Approximate Turbine Location
- Proposed Project Substation and Proposed O&M Building
- Potential Underground or Above Ground Collector (34 kV)
- Potential New Road
- Existing Turbine (Wintering Hills)
- Existing 7L85 Transmission Line (138 kV)
- Minor Highway
- Paved Road
- Other Road
- Residence
- Municipal District and County Boundary
- Township Lines and Section Numbers

Version: 86
Date: 2016-10-21
Layout: 20161011
Prepared By: WSP

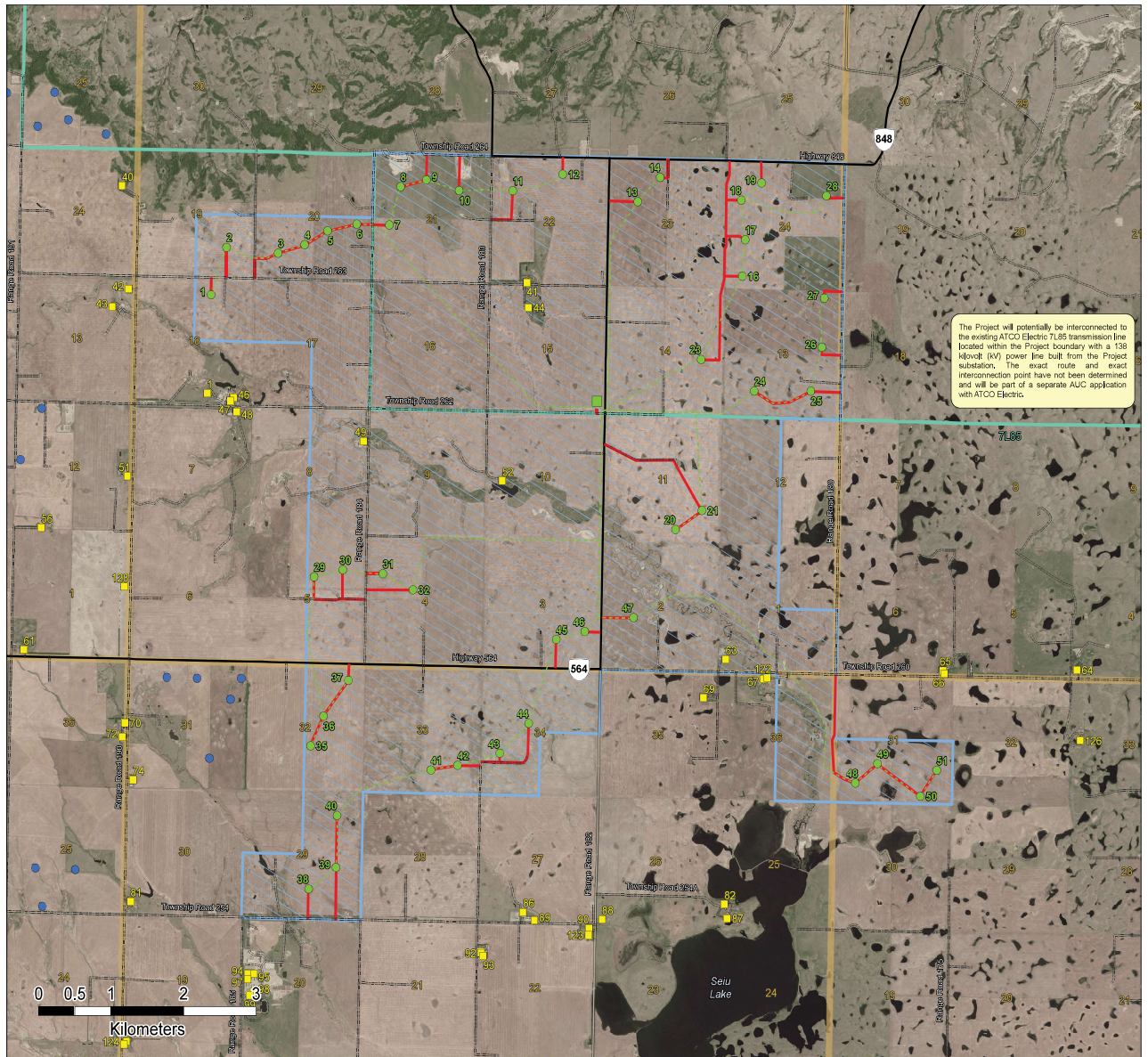
Datum: NAD 83
Projection: UTM Zone 12N
Scale: 1:25,000



Data Credits: MapInfo (c) Government of Alberta; (c) OpenStreetMap contributors; (c) Esri Inc. Imagery Credits: (c) BlackBridge Generation Corp.

T.26

T.25



R.19

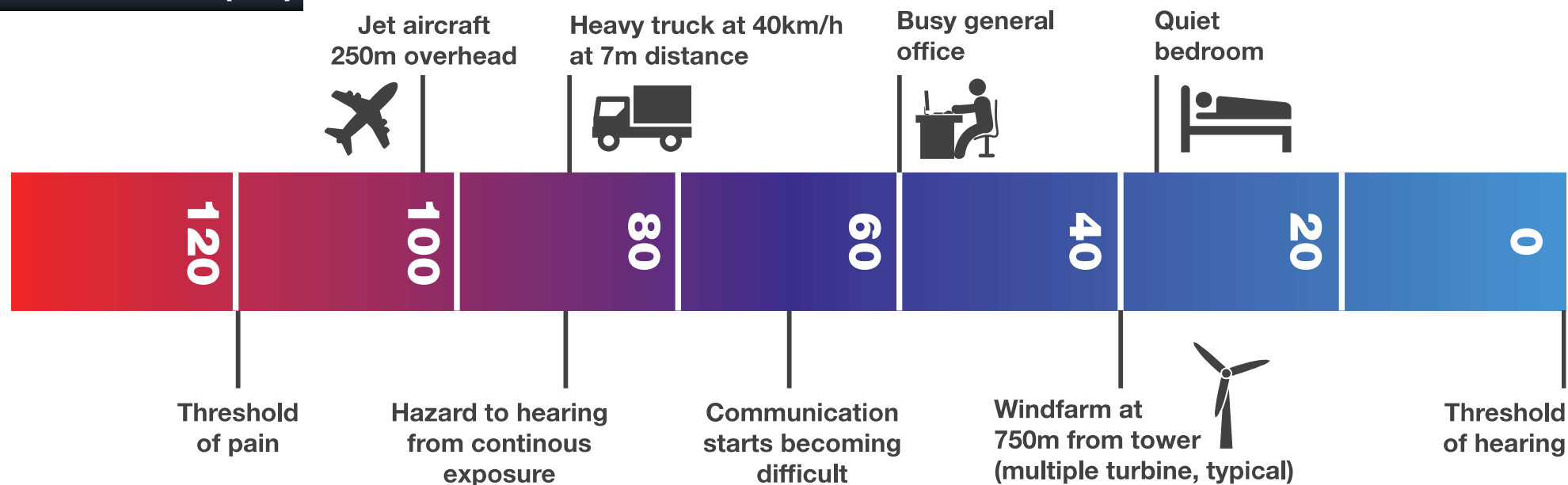
R.18

R.17 W4M



WIND TURBINES AND SOUND

SOUND LEVELS (dBA)



Under windy conditions, turbine noise can be difficult to hear because of the wind.

You can carry on a normal conversation while standing at the base of an operational wind turbine.

Modern wind turbines have been engineered to have low sound.



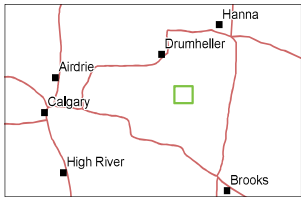
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47 TURBINE PRELIMINARY SOUND MAP

- Cumulative Sound Level: 45 dBA
- Cumulative Sound Level: 40 dBA (AUC Compliance Limit for Design)
- Energy-related Sound Source
- Project Boundary
- Approximate Turbine Location
- Proposed Project Substation and Proposed O&M Building
- Existing Turbine (Wintering Hills)
- Existing 7L85 Transmission Line (138 kV)
- Minor Highway
- Paved Road
- Other Road
- Residence
- Oil and Gas Facility
- ▲ Oil and Gas Active Well
- Municipal District and County Boundary
- Township Lines and Section Numbers

Version: 8
Date: 2016-10-19
Layout: 20161011
Prepared By: WSP

Datum: NAD 83
Projection: UTM Zone 12N
Scale: 1:25,000

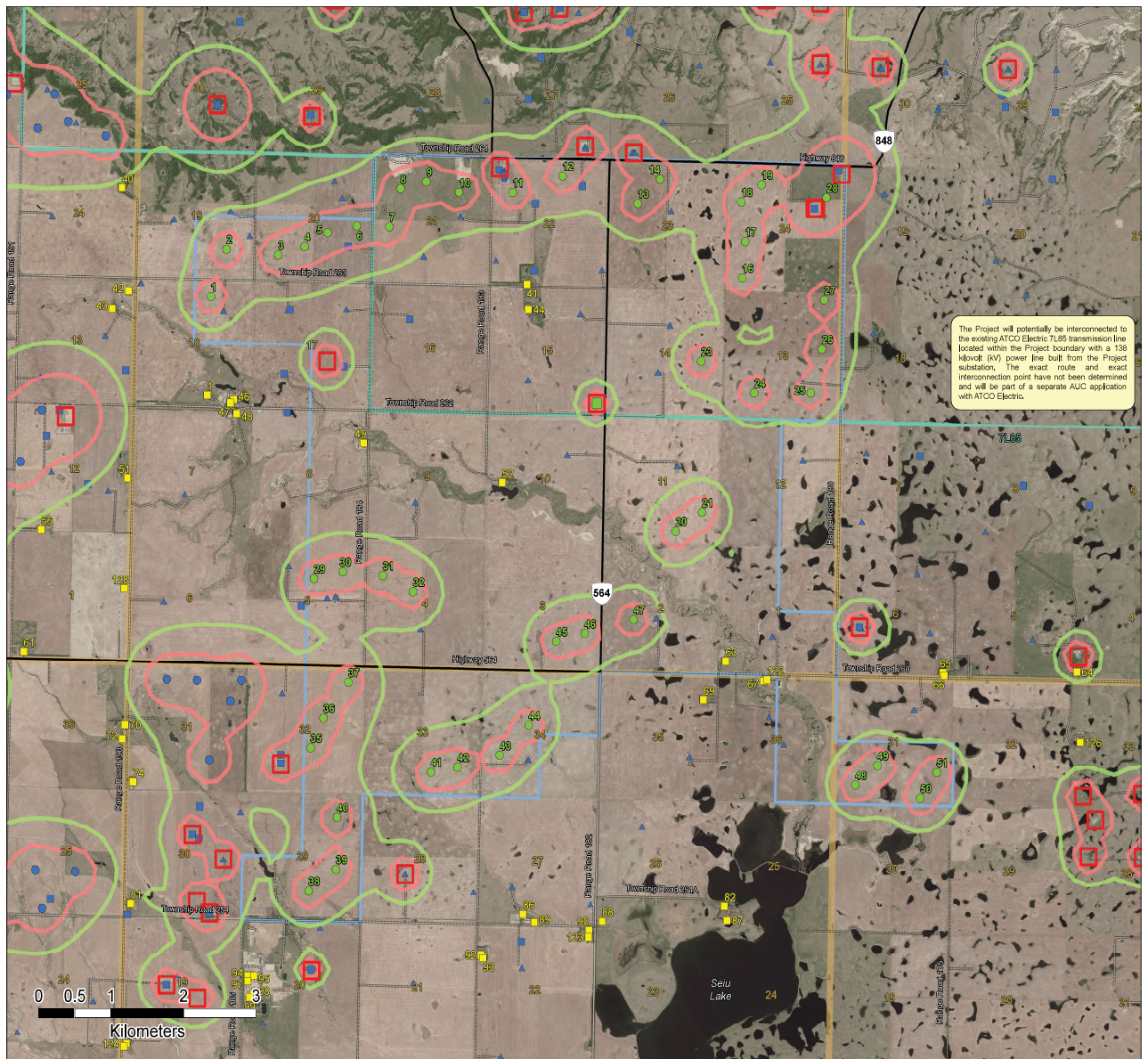


Data Credits: ©BGE (c) Government of Alberta, (c) OpenStreetMap contributors, (c) ESRI Inc. Imagery Credits: (c) BlackBridge Geomatics Corp.

NOTE: The wind turbine used in this analysis is a Senvion 3.4M140 on a 110 m tower

T.26

T.25

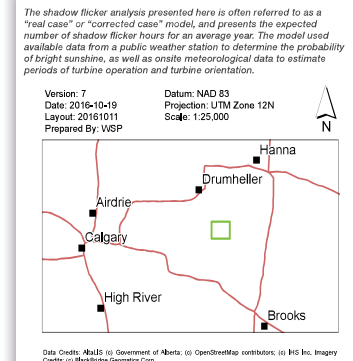
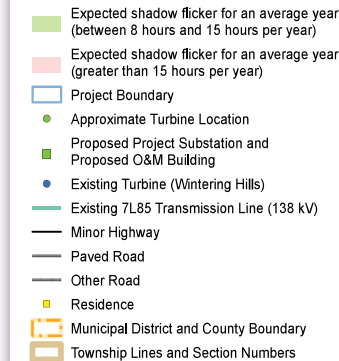
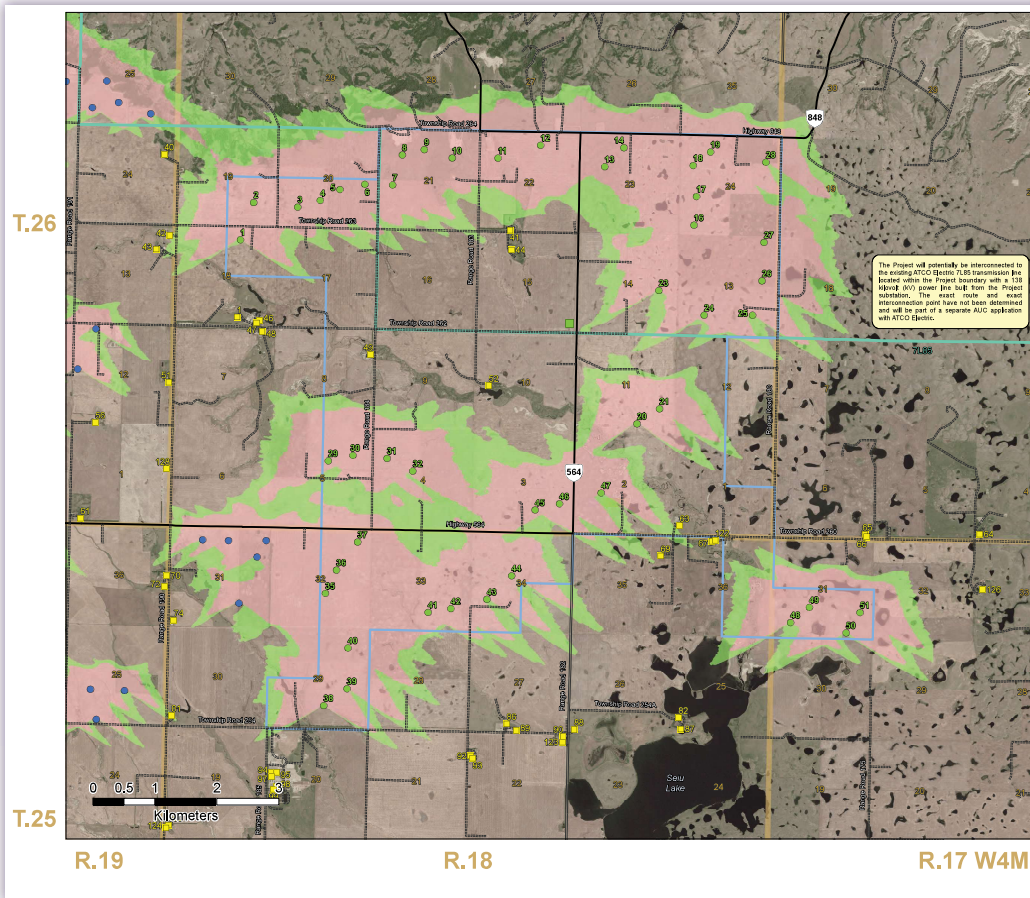


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R.18

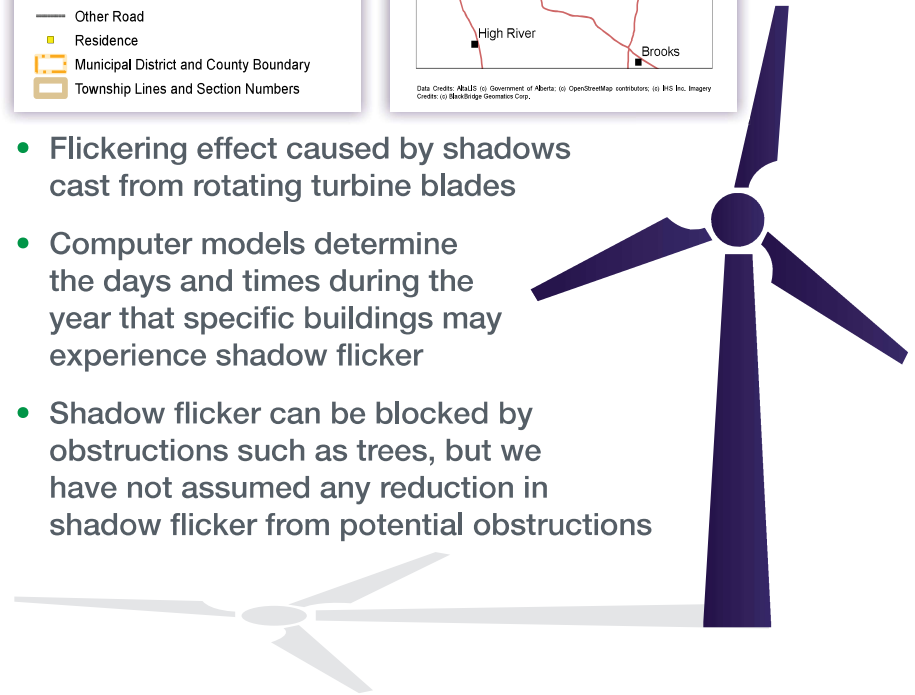
R.17 W4M

47 TURBINE **SHADOW FLICKER** MAP



NOTE:
The wind turbine used in this analysis is a Senvion 3.4M140 on a 110 m tower

- Flickering effect caused by shadows cast from rotating turbine blades
- Computer models determine the days and times during the year that specific buildings may experience shadow flicker
- Shadow flicker can be blocked by obstructions such as trees, but we have not assumed any reduction in shadow flicker from potential obstructions





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OTHER TECHNICAL STUDIES

WIND RESOURCE ASSESSMENT

- Acquired over seven years of wind data from 2007 - 2014

GEOTECHNICAL ASSESSMENT

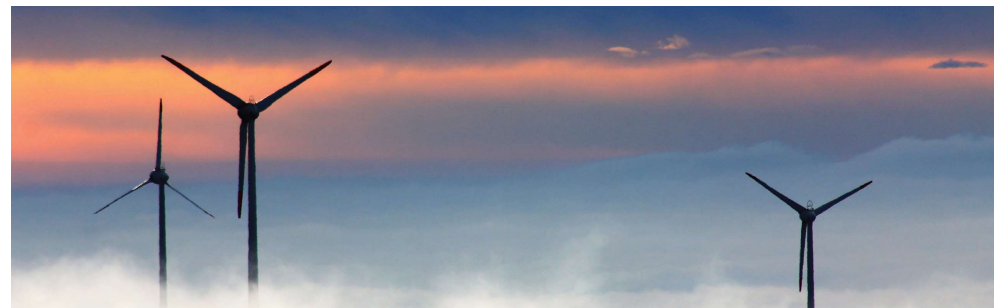
- Information used to design foundations

INTERCONNECTION ASSESSMENT

- Confirmed ability to connect to the grid

OTHER SETBACKS

- Includes noise, shadow flicker, environmental and infrastructure setbacks described in Alberta Utilities Commission (AUC) Rule 007
- The design must also meet the county setbacks which include:
 - Highways
 - Municipal Road Allowances
 - Existing Homes
 - Abandoned Oil Wells
 - Oil or Gas Wells
 - Pipelines
 - Access Roads
- Proposed turbine locations were selected after consideration of these various technical and stakeholder considerations
- Locations will be confirmed after stakeholder feedback



**PLEASE ASK A REPRESENTATIVE IF YOU
ARE INTERESTED IN SEEING THE COMPLETE
LIST OF PROJECT SETBACKS**



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TURBINE LAYOUT VISUAL SIMULATIONS

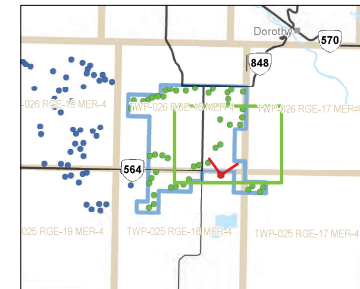
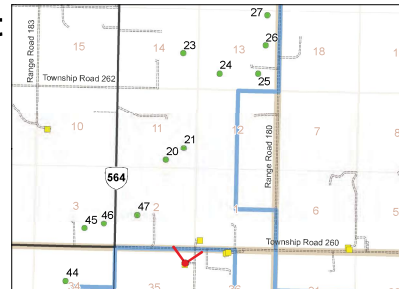
Wheatland Wind Project Visual Simulation

Version: 3
Date: 2016-10-18
Layout: 20161011
Prepared By: WSP

Datum: NAD 83
Projection: UTM Zone 12N
Scale: 1:40,000

Notes:
The photo was taken from a residence on the south side of the project, looking north. The wind turbine displayed is a Servion 3.4M140 on 110 m towers.

0 0.5 1 2 3 4
Kilometers



- Photomontage View
- Project Boundary
- Proposed Turbine Locations
- Existing Turbine Locations
- Residence
- Major Highway
- Minor Highway
- Paved Road
- Other Road
- Railway
- Waterbodies
- Section Lines
- Township Lines



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TURBINE LAYOUT VISUAL SIMULATIONS

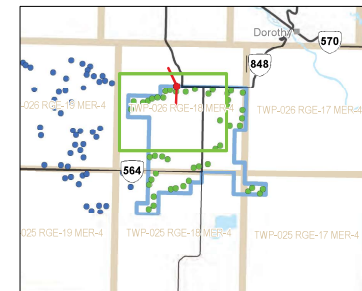
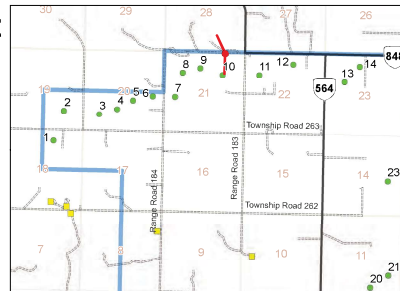
Wheatland Wind Project Visual Simulation

Version: 3
Date: 2016-10-18
Layout: 20161011
Prepared By: WSP

Datum: NAD 83
Projection: UTM Zone 12N
Scale: 1:40,000

Notes:
The photo was taken from the north side of the project, looking south-west. The wind turbine displayed is a Servion 3.4M140 on 110 m towers.

0 0.5 1 2 3 4
Kilometers



- Photomontage View
- ▭ Project Boundary
- Proposed Turbine Locations
- Existing Turbine Locations
- Residence
- Major Highway
- Minor Highway
- Paved Road
- Other Road
- Railway
- Waterbodies
- ▭ Section Lines
- ▭ Township Lines



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TURBINE LAYOUT VISUAL SIMULATIONS

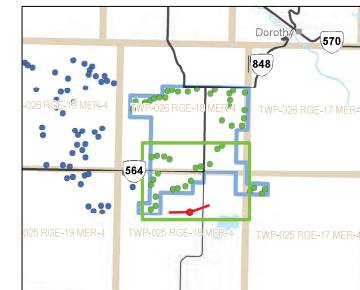
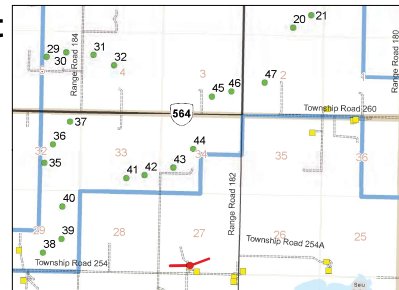
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0 0.5 1 2 3 4
Kilometers



- Photomontage View
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- Proposed Turbine Locations
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REGULATORY APPROVAL PROCESS



Alberta Utilities Commission

Alberta Environment and Parks

Alberta Culture & Tourism

NAV Canada

Transport Canada

Alberta Transportation

Wheatland County



ENVIRONMENTAL CONSIDERATIONS

The Project design considers land use, wildlife and vegetation. The actual footprint of each turbine on the land is small.

Field studies were started in early 2016 and continue today. The majority of our environmental studies will be completed by November 2016.

Those studies include:



- Assessment of Wildlife use and Wildlife habitat
- Land Use Assessments
- Wetland Assessments
- Bird Migration Studies (Spring and Fall)
- Breeding Bird Studies
- Raptor Studies and Nest Surveys
- Bat Studies
- Historical Resource Assessments



We are talking to Alberta Environment and Parks (AEP) to understand any potential concerns. Please ask a representative if you are interested in further details.

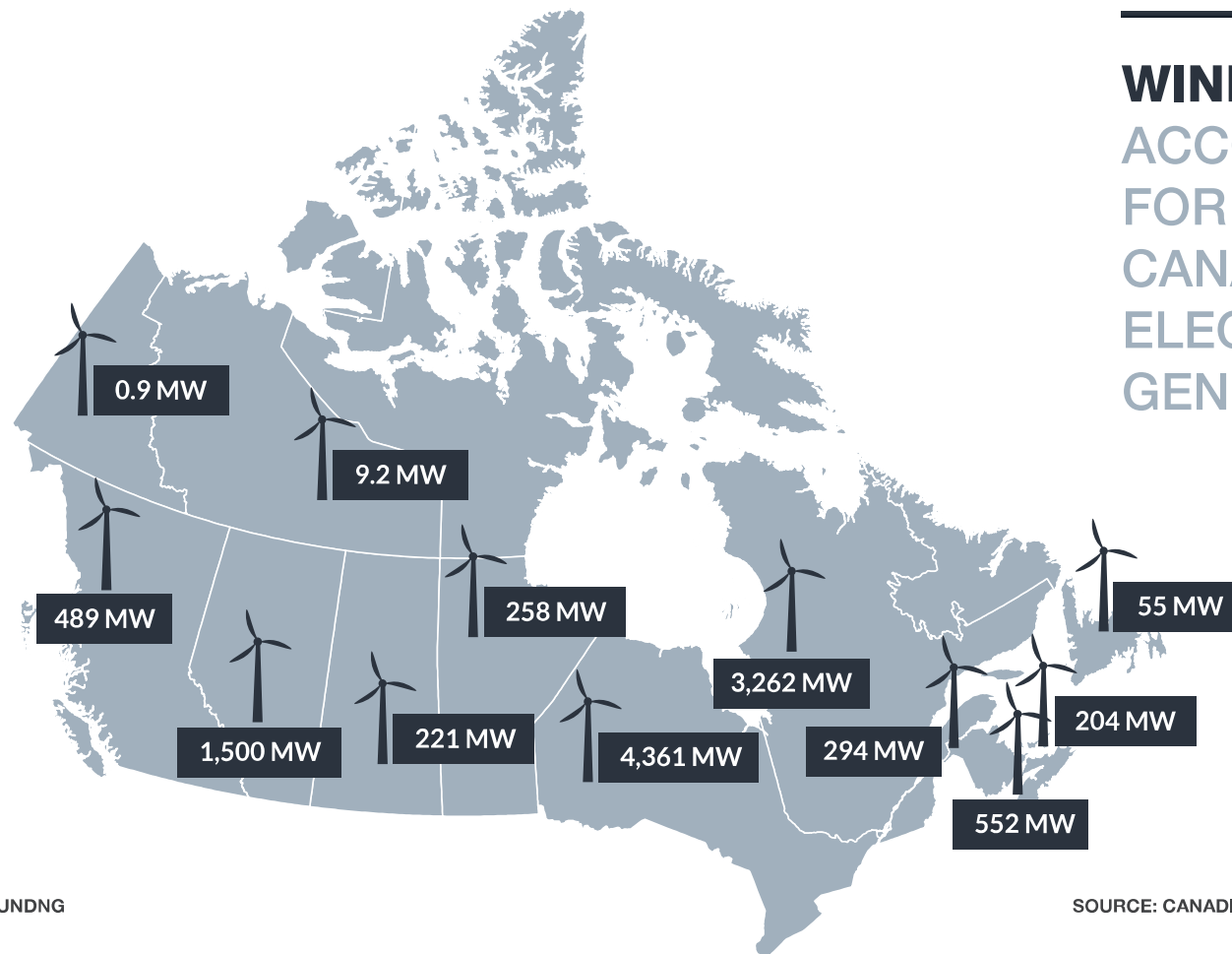




WIND POWER IN CANADA

CANADA'S
CURRENT
INSTALLED
CAPACITY:
11,205 MW

WIND POWER
ACCOUNTS
FOR 5% OF
CANADA'S
ELECTRICITY
GENERATION



* AS OF DECEMBER 2015
MAY NOT SUM TO TOTAL DUE TO ROUNDING

SOURCE: CANADIAN WIND ENERGY ASSOCIATION



STAKEHOLDER PRINCIPLES

- All stakeholders including landowners, municipalities, special interest groups and First Nations, have the right to express their views and seek information from us.
- We will engage in a consultation process with stakeholders to assess suggestions and commendations.
- We will endeavour to provide responses to stakeholder inquiries in a timely and transparent manner.
- When required, we will work with landowners and stakeholders to design projects in a way that reduces the influence on existing land uses, e.g. coordination with agricultural uses.
- We will fully comply with the municipalities' applicable land use bylaws.
- We will review all guidelines set out by Alberta Environment and Parks (AEP) in an effort to protect the local environment.
- We will comply with all directives or decisions set forth by the Alberta Utilities Commission (AUC), in an effort to preserve orderly development in Alberta.
- We will comply with all Alberta Electric System Operator (AESO) requirements to ensure the safe and reliable operation of the local transmission system.

