

Bear Lake Wind Power Project

Shadow Flicker - Assessment Scenario A

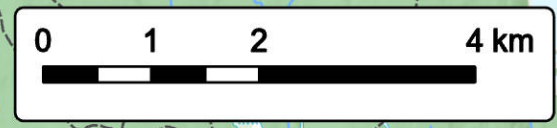


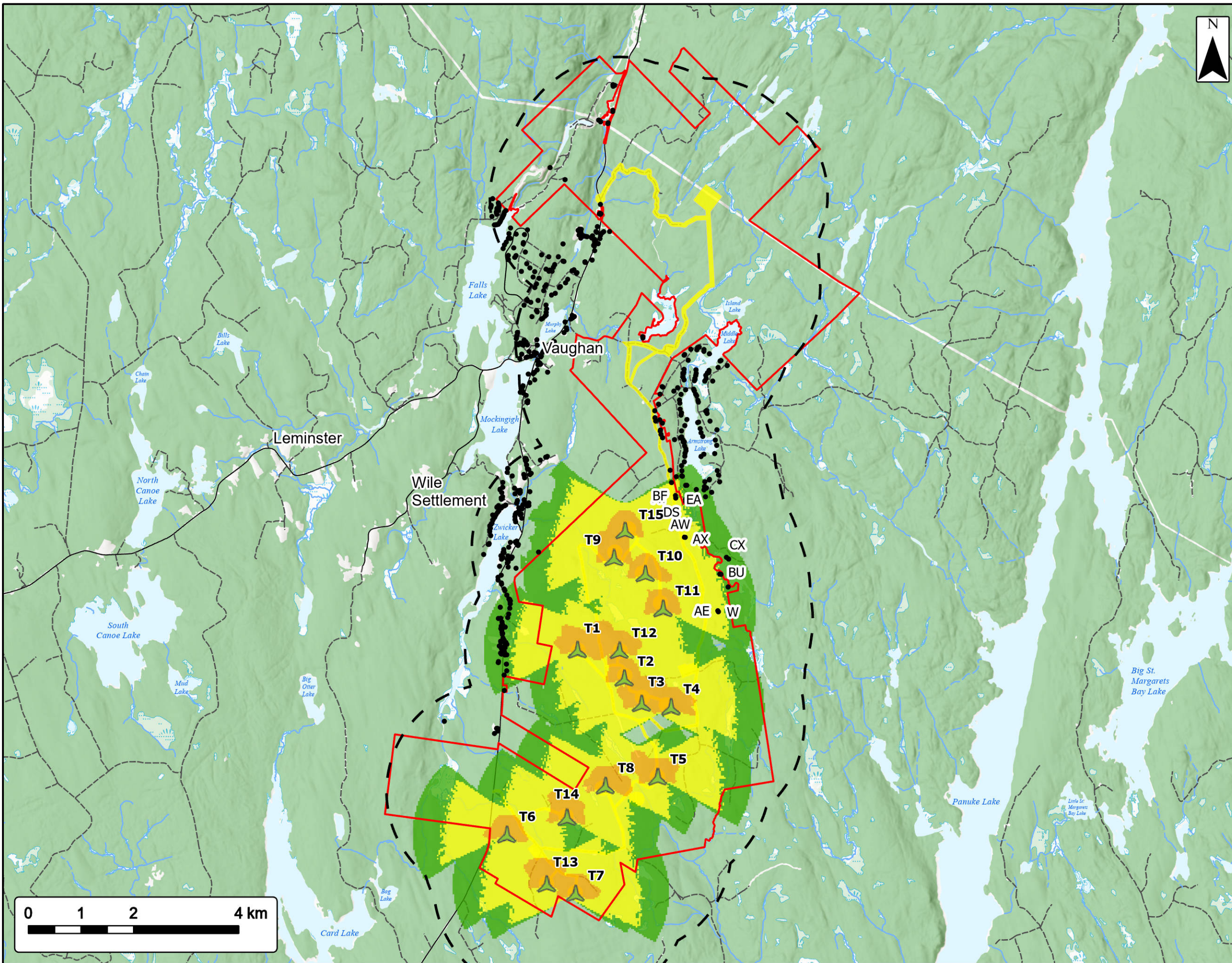
Study Area	
Assessment Area	
2km Assessment Area Buffer	
Proposed Turbine Location	
Non-Participating Receptors within 2km of Assessment Area	
Predicted Shadow Hours/Year (Assessment Scenario A)	
10-30	
30-100	
100+	
Transportation	
Road	
Unpaved Road	
Water Features	
Mapped Stream	
Mapped Indefinite Stream	
Mapped Lakes and Rivers	
Mapped Wet Area	



Coordinate System: NAD83 UTM Zone 20N
 Sources: ESRI Basemaps, GeoNOVA, SNSIS, NRCan, NSNRR, ACCDC, IBA Canada

Date:	Oct 2023	Project #:	23-9128
Scale:	1:70,000	Drawing #:	10.1A
Drawn By:	K. Wallace		
Checked By:	M. Savelle		





Bear Lake Wind Power Project

Shadow Flicker - Assessment Scenario A



Study Area [Red outline symbol]

Assessment Area [Yellow outline symbol]

2km Assessment Area Buffer [Dashed black line symbol]

Proposed Turbine Location [Green turbine symbol]

Non-Participating Receptors within 2km of Assessment Area [Black dot symbol]

Predicted Shadow Minutes/Day (Assessment Scenario A)

- 10-30 [Green color swatch]
- 30-100 [Yellow color swatch]
- 100+ [Orange color swatch]

Transportation

- Road [Solid black line symbol]
- Unpaved Road [Dashed black line symbol]

Water Features

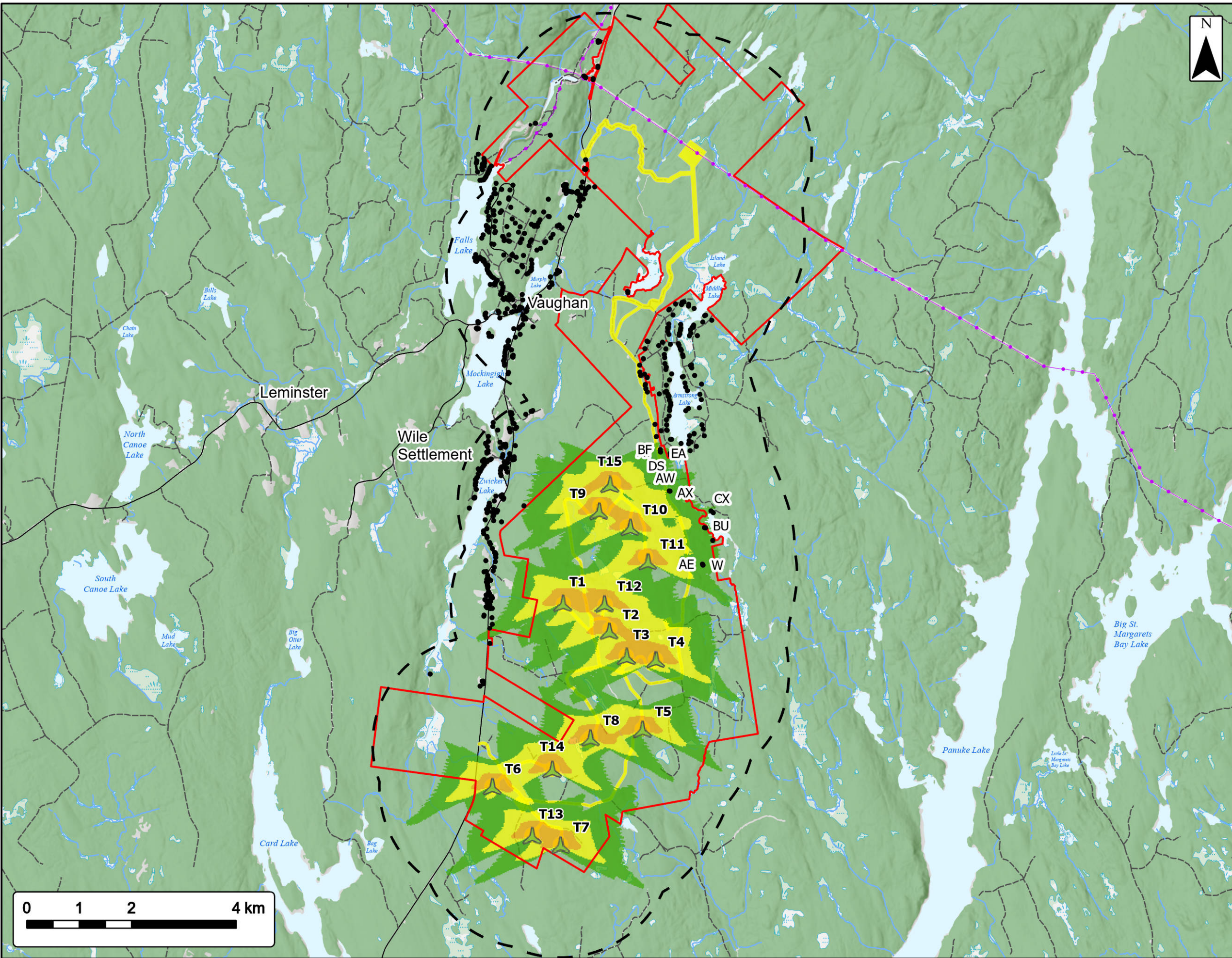
- Mapped Stream [Blue line symbol]
- Mapped Indefinite Stream [Dashed blue line symbol]
- Mapped Lakes and Rivers [Blue area symbol]
- Mapped Wet Area [Light blue area symbol]



Coordinate System: NAD83 UTM Zone 20N
 Sources: ESRI Basemaps, GeoNOVA, SNSIS, NRCan, NSNRR, ACCDC, IBA Canada

Date:	Oct 2023	Project #:	23-9128
Scale:	1:70,000	Drawing #:	10.1B
Drawn By:	K. Wallace		
Checked By:	M. Savelle		





Bear Lake Wind Power Project
Shadow Flicker - Assessment Scenario B



- Study Area
- Assessment Area
- 2 km Assessment Area Buffer
- Proposed Turbine Location
- Non-Participating Receptors within 2km of Assessment Area
- Predicted Shadow Hours/Year (Assessment Scenario B)**
- 10-30
- 30-100
- 100+
- Utilities (line)**
- Existing Pipeline
- Existing Transmission Lines
- Transportation**
- Road
- Unpaved Road
- Water Features**
- Mapped Stream
- Mapped Indefinite Stream
- Mapped Lakes and Rivers
- Mapped Wet Area



Coordinate System: NAD83 UTM Zone 20N Sources: ESRI Basemaps, GeoNOVA, SNSIS, NRCan, NSNRR, ACCDC, IBA Canada

Date: Oct 2023

Project #: 23-9128

Scale: 1:70,000

Drawing #:

Drawn By: K. Wallace





10.1C

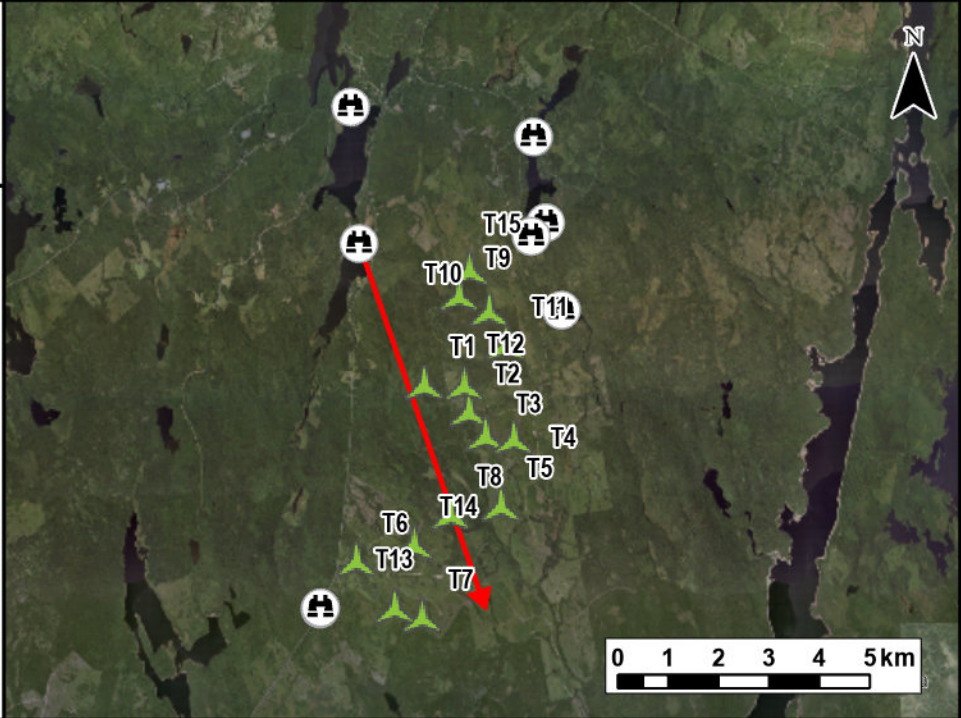
Checked By: M. Savelle





Notes:
 1. Data Sources: GeoNova, Client
 2. Basemaps: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
 3. Projection: NAD83 UTM Zone 20

-  Camera Location
-  Camera Bearing
-  Proposed Turbine Location
-  Turbines Visible

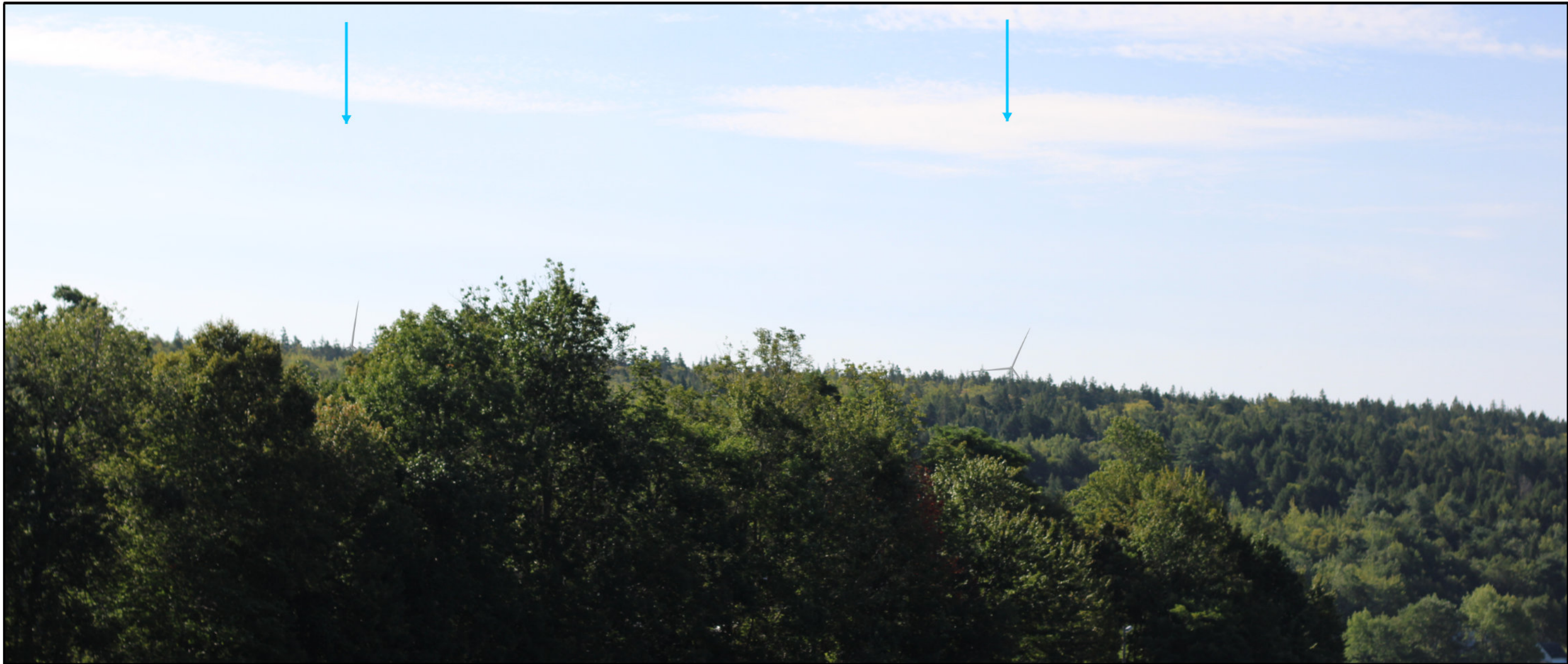


TECHNICAL INFORMATION	
Visual Simulation Location:	Zwicker Lake North
View Coordinates:	Latitude: 44° 48' 55.68" N Longitude: 64° 14' 14.03 W Easting: 402174.83m Northing: 4963196.13m
Distance to Nearest Turbine:	2.2k
Direction of View:	Southeast, Heading 160°
Camera Make/ Model:	Canon EOS REBEL T7
Lens:	50 mm
Image Resolution:	6000 x 4000
Weather Conditions:	Cloudy
Date of Photo:	2023/09/05
Time of Photo:	10:05
Photo Credit:	Strum Consulting





**Bear Lake
Wind Power Project
Visual Simulation
Zwicker Lake North**

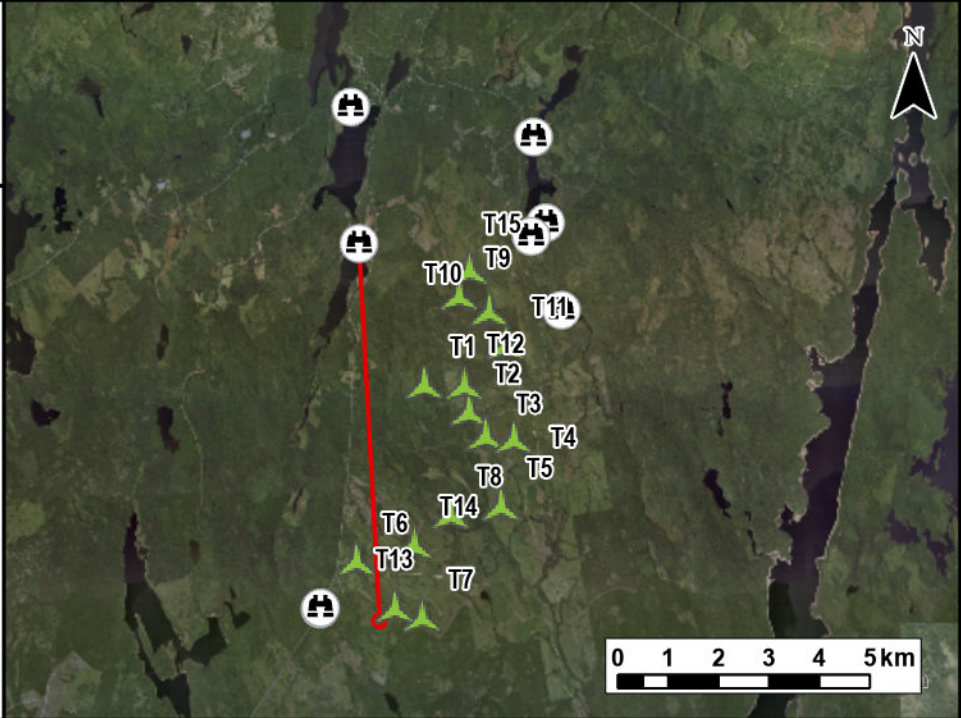
strum
CONSULTING

Date:	Project #:
Oct 2023	23-9128
Scale:	Drawing #:
1:150,000	10.2A
Drawn By:	
E. Johnson	
Checked By:	
M. Savelle	



Notes:
 1. Data Sources: GeoNova, Client
 2. Basemaps: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
 3. Projection: NAD83 UTM Zone 20

-  Camera Location
-  Camera Bearing
-  Proposed Turbine Location
-  Turbines Visible



TECHNICAL INFORMATION

Visual Simulation Location:	Zwicker Lake North
View Coordinates:	Latitude: 44° 48' 55.68" N Longitude: 64° 14' 14.03 W Easting: 402174.83m Northing: 4963196.13m
Distance to Nearest Turbine:	2.2km
Direction of View:	Southeast, Heading 176°
Camera Make/ Model:	Canon EOS REBEL T7
Lens:	50 mm
Image Resolution:	6000 x 4000
Weather Conditions:	Cloudy
Date of Photo:	2023/09/05
Time of Photo:	10:05
Photo Credit:	Strum Consulting





**Bear Lake
 Wind Power Project
 Visual Simulation
 Zwicker Lake North**

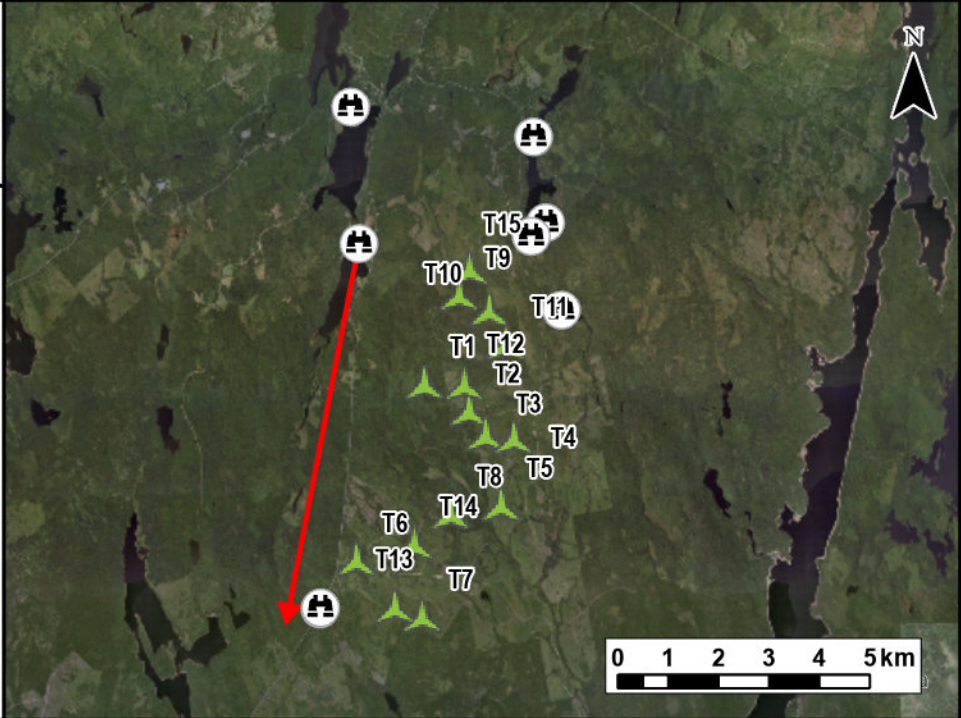


Date:	Project #:
Oct 2023	23-9128
Scale:	Drawing #:
1:150,000	10.2B
Drawn By:	
E. Johnson	
Checked By:	
M. Savelle	



Notes:
 1. Data Sources: GeoNova, Client
 2. Basemaps: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
 3. Projection: NAD83 UTM Zone 20

-  Camera Location
-  Camera Bearing
-  Proposed Turbine Location
-  Turbines Visible



TECHNICAL INFORMATION

Visual Simulation Location:	Zwicker Lake North
View Coordinates:	Latitude: 44° 48' 55.68" N Longitude: 64° 14' 14.03 W Easting: 402174.83m Northing: 4963196.13m
Distance to Nearest Turbine:	2.2km
Direction of View:	Southwest, Heading 190°
Camera Make/ Model:	Canon EOS REBEL T7
Lens:	50 mm
Image Resolution:	6000 x 4000
Weather Conditions:	Cloudy
Date of Photo:	2023/09/05
Time of Photo:	10:05
Photo Credit:	Strum Consulting





**Bear Lake
 Wind Power Project
 Visual Simulation
 Zwicker Lake North**

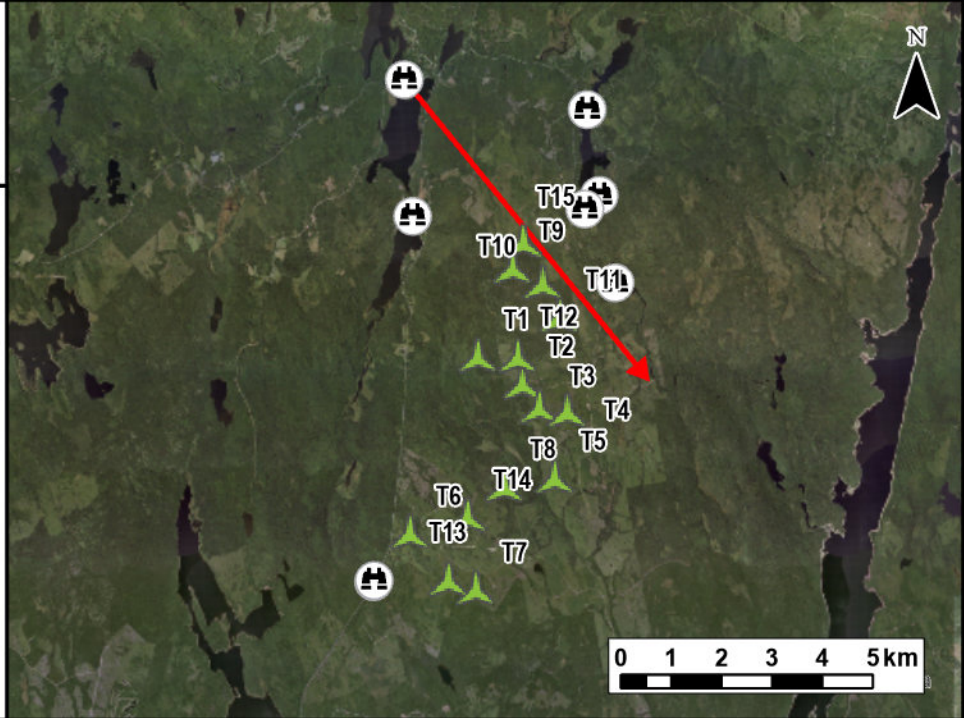


Date:	Project #:
Oct 2023	23-9128
Scale:	Drawing #:
1:150,000	10.2C
Drawn By:	
E. Johnson	
Checked By:	
M. Savelle	



Notes:
 1. Data Sources: GeoNova, Client
 2. Basemaps: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
 3. Projection: NAD83 UTM Zone 20

-  Proposed Turbine Layout
-  Camera Location
-  Camera Bearing
-  Turbines Visible



TECHNICAL INFORMATION

Visual Simulation Location:	Falls Lake Provincial Park
View Coordinates:	Latitude: 44° 50' 23.45" N Longitude: 64° 14' 23.42" W Easting: 402009.78m Northing: 4965907.29m
Distance to Nearest Turbine:	4.04km
Direction of View:	Southeast, Heading 140°
Camera Make/ Model:	Canon EOS REBEL T7
Lens:	50 mm
Image Resolution:	6000 x 4000
Weather Conditions:	Clear
Date of Photo:	2023/09/05
Time of Photo:	10:23
Photo Credit:	Strum Consulting





**Bear Lake
 Wind Power Project
 Visual Simulation
 Falls Lake
 Provincial Park**

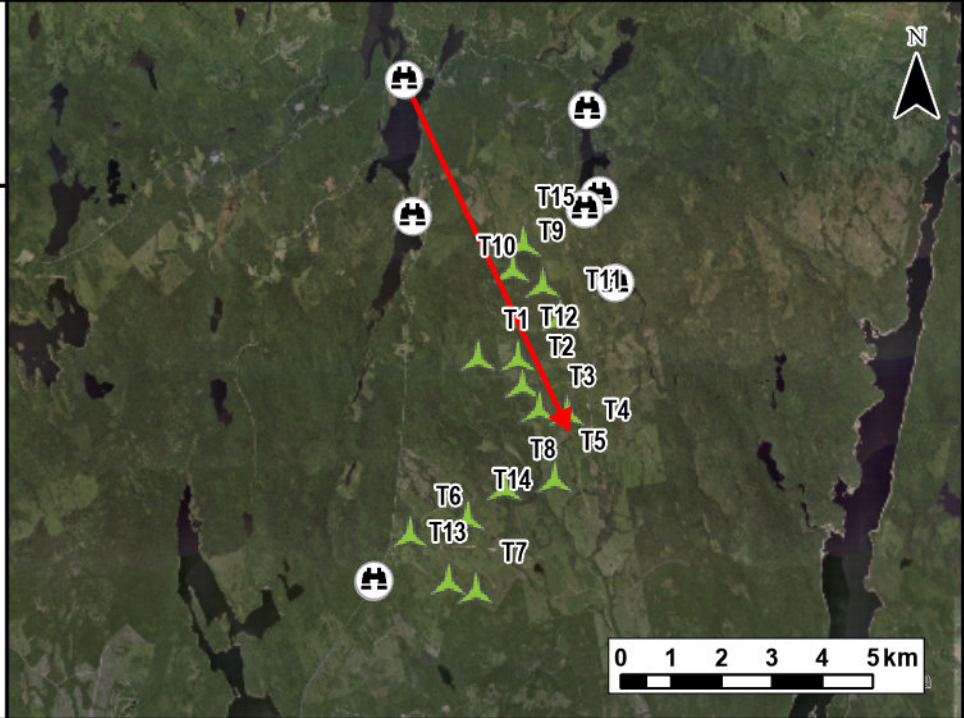


Date:	Project #:
Oct 2023	23-9128
Scale:	Drawing #:
1:150,000	10.2D
Drawn By:	
E. Johnson	
Checked By:	
M. Savelle	



Notes:
 1. Data Sources: GeoNova, Client
 2. Basemaps: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
 3. Projection: NAD83 UTM Zone 20

-  Proposed Turbine Layout
-  Camera Location
-  Camera Bearing
-  Turbines Visible



TECHNICAL INFORMATION

Visual Simulation Location:	Falls Lake Provincial Park
View Coordinates:	Latitude: 44° 50' 23.45" N Longitude: 64° 14' 23.42" W Easting: 402009.78m Northing: 4965907.29m
Distance to Nearest Turbine:	4.04km
Direction of View:	Southeast, Heading 154°
Camera Make/ Model:	Canon EOS REBEL T7
Lens:	50 mm
Image Resolution:	6000 x 4000
Weather Conditions:	Clear
Date of Photo:	2023/09/05
Time of Photo:	10:23
Photo Credit:	Strum Consulting

**Bear Lake
 Wind Power Project
 Visual Simulation
 Falls Lake
 Provincial Park**



Date:	Project #:
Oct 2023	23-9128
Scale:	Drawing #:
1:150,000	10.2E
Drawn By:	
E. Johnson	
Checked By:	
M. Savelle	