

Waterfowl (Tundra Swan) Stopover and Staging Area Survey Form

Additional Notes

other sp: Red Winged Blackbird, Horned Lark

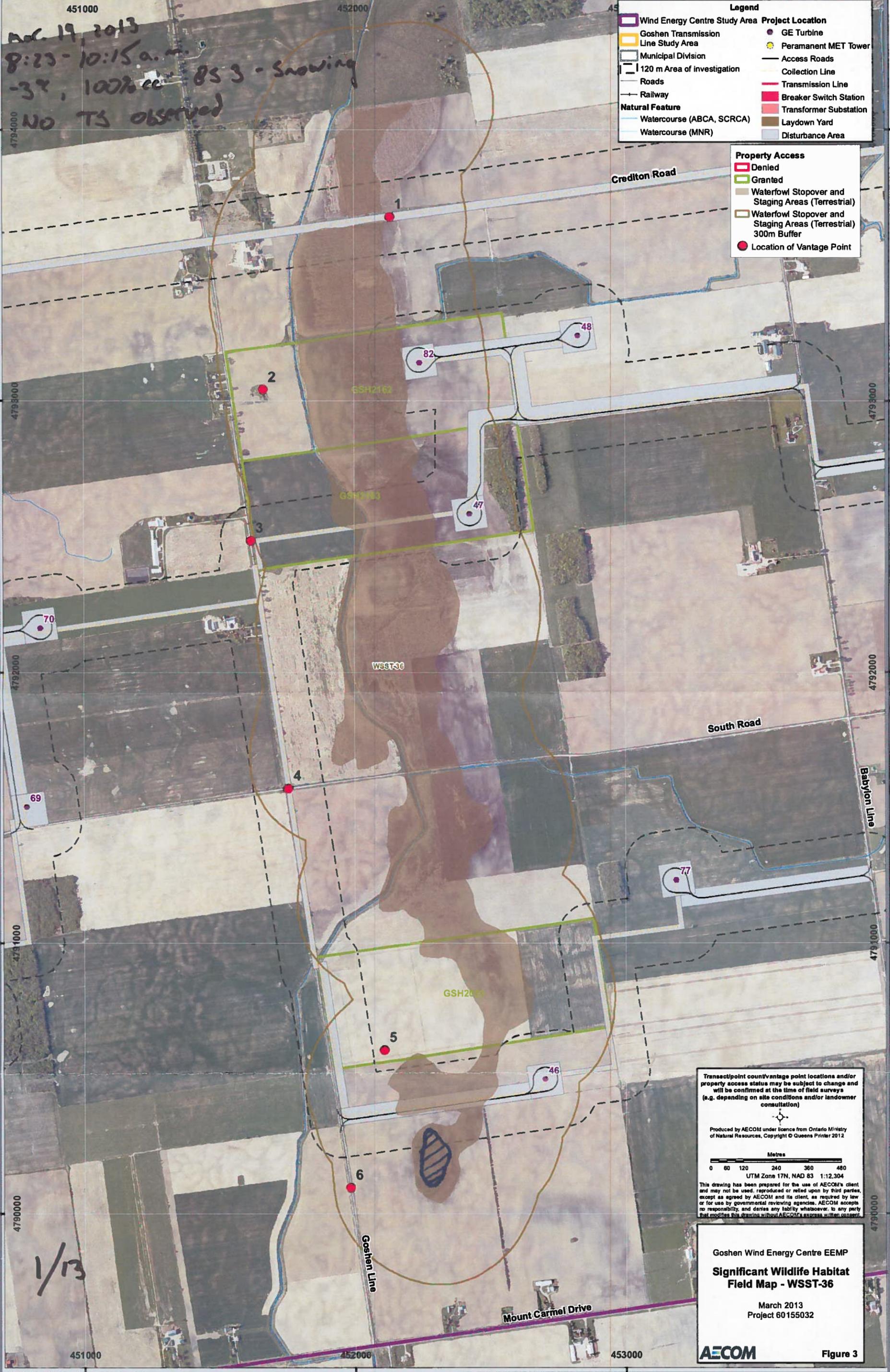
Drove by site on March 13, 2003 at dusk (7:30) observed more than 300 Tundra Swans observed in flooded area south of South Road, and more than 100 Tundra Swans observed in flooded area North of South Rd.
=> water levels of flooded areas have decreased since last night (March 13, 2003)

Waterfowl (Tundra Swan) Stopover and Staging Area Survey Form

Additional Notes

HOLA

Drove by South End of Peatire on March 13 at dusk (7:45).
observed 43 Tundra Swans in southernmost flooded area, and 23
Tundra Swans flying over SW



Dec 19, 2013
 8:23 - 10:15 a.m.
 -3°C, 100% cc - BS 3 - Snowing
 NO TS observed

- Legend**
- Wind Energy Centre Study Area
 - Goshen Transmission Line Study Area
 - Municipal Division
 - 120 m Area of Investigation
 - Roads
 - Railway
 - Natural Feature
 - Watercourse (ABCA, SCRCA)
 - Watercourse (MNR)
 - Project Location
 - GE Turbine
 - Permanent MET Tower
 - Access Roads
 - Collection Line
 - Transmission Line
 - Breaker Switch Station
 - Transformer Substation
 - Laydown Yard
 - Disturbance Area

- Property Access**
- Denied
 - Granted
 - Waterfowl Stopover and Staging Areas (Terrestrial)
 - Waterfowl Stopover and Staging Areas (Terrestrial) 300m Buffer
 - Location of Vantage Point

Transact/point count/vantage point locations and/or property access status may be subject to change and will be confirmed at the time of field surveys (e.g. depending on site conditions and/or landowner consultation)

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Metres

0 60 120 240 360 480

UTM Zone 17N, NAD 83 1:12,304

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Goshen Wind Energy Centre EEMP
Significant Wildlife Habitat
Field Map - WSST-36

March 2013
 Project 60155032

AECOM Figure 3

1/13

Round #3

Round #3

Waterfowl (Tundra Swan) Stopover and Staging Area Survey Form

Study Area: <u>Goshen</u>	Observers: <u>RA, TS</u>
Site Location/ Feature ID: <u>USST-36</u>	

Fill in survey form for each vantage point. Vantage Point Number: 3

Vantage Point UTM <u>See Round #1 Notes</u>	Date: <u>March 19, 2013</u>
Easting: _____ Northing: _____	Start Time: <u>9:23am</u> End Time: <u>9:38am</u>

Weather Conditions		
Temperature (C°): <u>-3</u>	Wind (Dir.): <u>SW</u>	Wind (B.S.): <u>3</u>
Cloud Cover (%): <u>100%</u>	Precipitation: <u>SNOWING</u>	

Check off the following, if completed:

Flooded area clearly delineated on field map? (Yes/No)	<u>Yes</u>
Area occupied by Tundra Swans clearly delineated on field map? (Yes/No)	<u>N/A</u>
Flight path of Tundra Swans clearly delineated on field map? (Yes/No)	<u>N/A</u>
Local site conditions and adjacent land use within 300 m of habitat recorded on map? (Yes/No)	<u>N/A</u>

Waterfowl Observed

Species	Dist.	Dir.	Age	#	Behaviour
-	-	-	-	-	<u>No Tundra Swan Observed</u>
<u>Canada Goose</u>	<u>20m</u>	<u>E</u>	<u>Not</u>	<u>1</u>	<u>Flew south over study</u>

Description of Local Site Conditions and Adjacent Land Use

Agricultural land with no flooding observed

Photo ID	Description (locations, direction, observation, etc.)
<u>71-74</u>	<u>surrounding land use</u>

Round 3

Waterfowl (Tundra Swan) Stopover and Staging Area Survey Form

Study Area: <i>Goshen</i>	Observers: <i>RA, TS</i>
Site Location/ Feature ID: <i>WSS-36</i>	

Fill in survey form for each vantage point. Vantage Point Number: *4*

Vantage Point UTM <i>See Round 1 Map</i>	Date: <i>March 19, 2013</i>
Easting: _____ Northing: _____	Start Time: <i>9:03am</i> End Time: <i>9:18am</i>
Weather Conditions	
Temperature (C°): <i>-3</i>	Wind (Dir.): <i>SW</i> Wind (B.S.): <i>3</i>
Cloud Cover (%): <i>100%</i>	Percipitation: <i>SNOWING</i>

Check off the following, if completed:

Flooded area clearly delineated on field map? (Yes/No)	<i>Yes</i>
Area occupied by Tundra Swans clearly delineated on field map? (Yes/No)	<i>N/A</i>
Flight path of Tundra Swans clearly delineated on field map? (Yes/No)	<i>N/A</i>
Local site conditions and adjacent land use within 300 m of habitat recorded on map? (Yes/No)	<i>N/A</i>

Waterfowl Observed

Species	Dist.	Dir.	Age	#	Behaviour
<i>Unidentified Ducks</i>	<i>~150-200m</i>	<i>E</i>	<i>?</i>	<i>4</i>	<i>Landed in drain</i>
<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>No Tundra Swan Observed</i>

Description of Local Site Conditions and Adjacent Land Use

Agricultural land with very little flooding, water levels dropped significantly since last visit

Photo ID	Description (locations, direction, observation, etc.)
<i>65-70</i>	<i>Surrounding land use</i>

Round 3
Waterfowl (Tundra Swan) Stopover and Staging Area Survey Form

Study Area: <u>Goshen</u>	Observers: <u>AA, TS</u>
Site Location/ Feature ID: <u>L1557-36</u>	

Fill in survey form for each vantage point. Vantage Point Number: 6

Vantage Point UTM <u>See Round #1 Notes</u>	Date: <u>March 19, 2013</u>
Easting: _____ Northing: _____	Start Time: <u>8:23am</u> End Time: <u>8:38am</u>
Weather Conditions	
Temperature (C°): <u>-1°C</u>	Wind (Dir.): <u>SW</u> Wind (B.S.): <u>3</u>
Cloud Cover (%): <u>100%</u>	Percipitation: <u>Light Snow</u>

Check off the following, if completed:

Flooded area clearly delineated on field map? (Yes/No)	<u>Yes</u>
Area occupied by Tundra Swans clearly delineated on field map? (Yes/No)	<u>N/A</u>
Flight path of Tundra Swans clearly delineated on field map? (Yes/No)	<u>N/A</u>
Local site conditions and adjacent land use within 300 m of habitat recorded on map? (Yes/No)	<u>N/A</u>

Waterfowl Observed

Species	Dist.	Dir.	Age	#	Behaviour
<u>Unknown</u>	<u>~150m</u>	<u>NE</u>	<u>?</u>	<u>6</u>	<u>Took off from pool in field and flew north</u>
<u>Duck</u>					
<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>No Tundra Swans Observed</u>

Description of Local Site Conditions and Adjacent Land Use

Agricultural land with some flooding

Photo ID	Description (locations, direction, observation, etc.)
<u>56-60</u>	<u>Surrounding landuse/flooding</u>

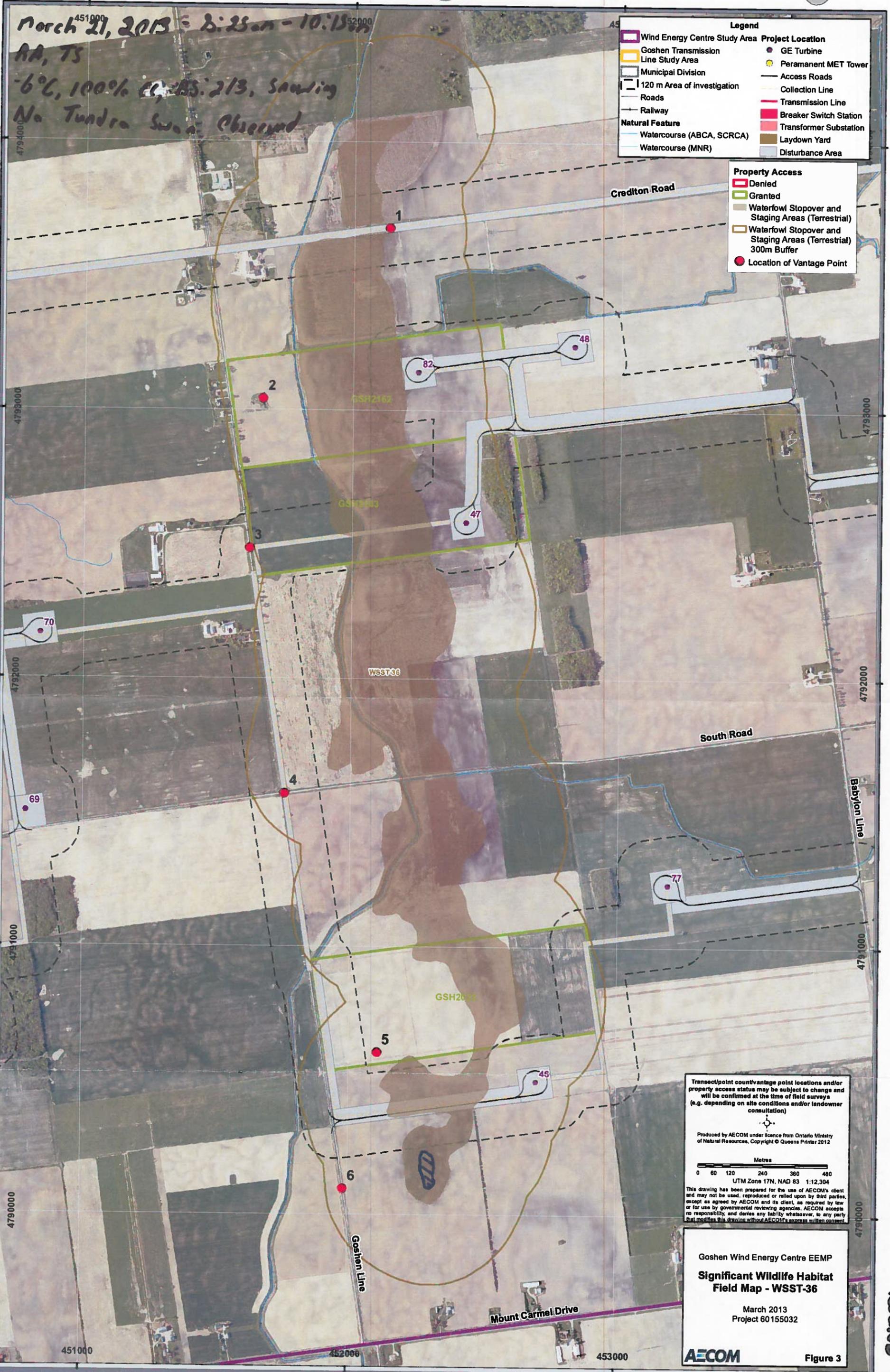
March 21, 2013 - 8:25 am - 10:15 am
 RA, TS
 -6°C, 100% CC, WS: 213, Snowing
 No Tundra Swans Observed

Legend

Wind Energy Centre Study Area	Project Location
Goshen Transmission Line Study Area	GE Turbine
Municipal Division	Permanent MET Tower
120 m Area of investigation	Access Roads
Roads	Collection Line
Railway	Transmission Line
Natural Feature	Breaker Switch Station
Watercourse (ABCA, SCRCA)	Transformer Substation
Watercourse (MNR)	Laydown Yard
	Disturbance Area

Property Access

Denied	Granted
Waterfowl Stopover and Staging Areas (Terrestrial)	Waterfowl Stopover and Staging Areas (Terrestrial) 300m Buffer
Location of Vantage Point	



Transect/point count/vantage point locations and/or property access status may be subject to change and will be confirmed at the time of field surveys (e.g. depending on site conditions and/or landowner consultation)

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Metres
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 UTM Zone 17N, NAD 83 1:12,304

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Goshen Wind Energy Centre EEMP
Significant Wildlife Habitat Field Map - WSST-36
 March 2013
 Project 60155032

AECOM Figure 3

Round #4

Waterfowl (Tundra Swan) Stopover and Staging Area Survey Form

Additional Notes

Species: Horned Larks, Snow bunting

No Tundra Swans observed

Waterfowl (Tundra Swan) Stopover and Staging Area Survey Form

Additional Notes

Species: cardinal Black-capped chickadee, hooded Merganser
No Tundra Swans observed

Waterfowl (Tundra Swan) Stopover and Staging Area Survey Form

Additional Notes

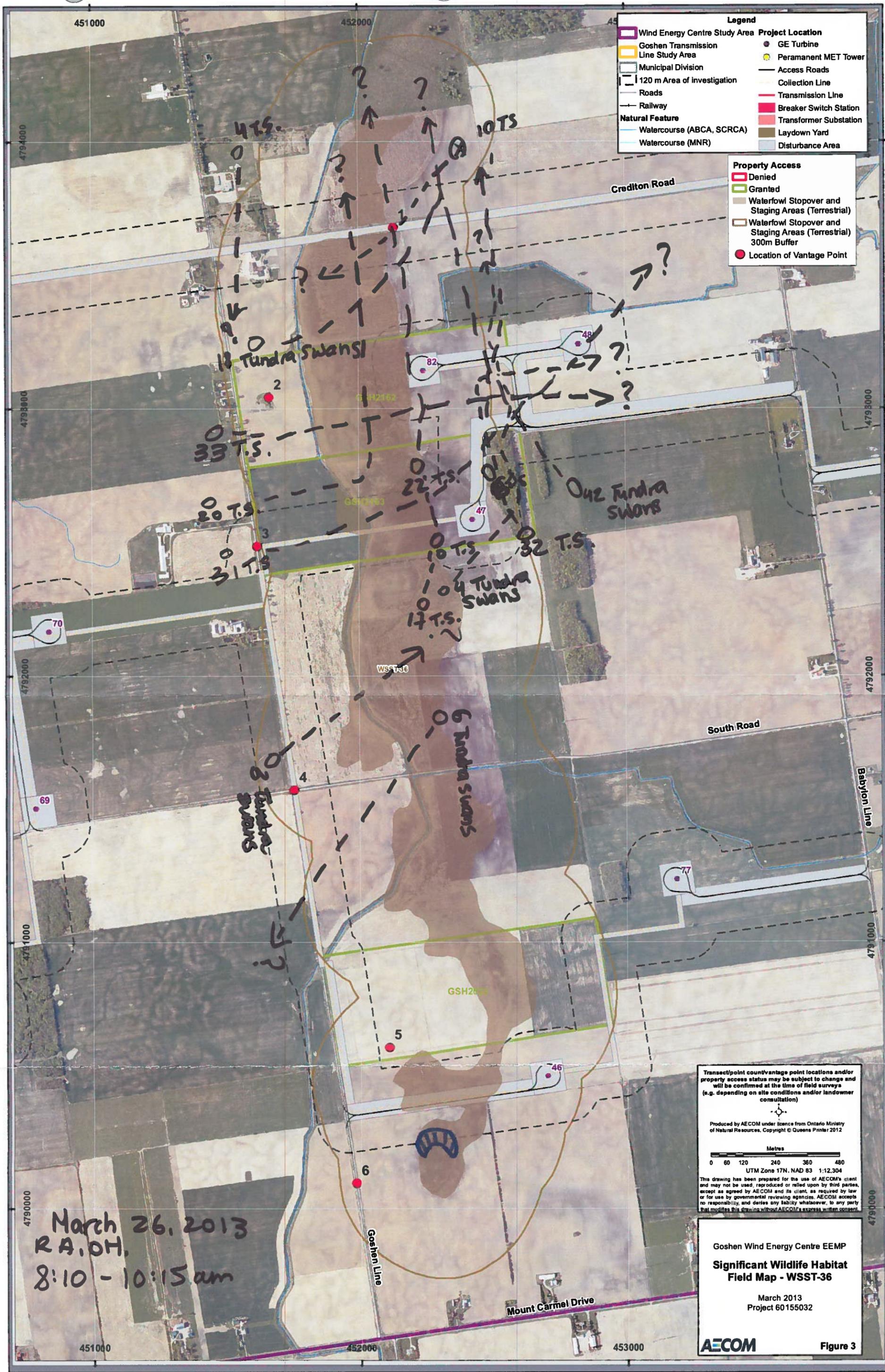
Species observed: Gull sp.

No Tundra Swans observed

Waterfowl (Tundra Swan) Stopover and Staging Area Survey Form

Additional Notes

Species: Snow bunting, Horned Lark, Red-winged Blackbird
- No Tundra Swans observed



Legend

	Wind Energy Centre Study Area		Project Location
	Goshen Transmission Line Study Area		Permanent MET Tower
	Municipal Division		Access Roads
	120 m Area of investigation		Collection Line
	Roads		Transmission Line
	Railway		Breaker Switch Station
	Natural Feature		Transformer Substation
	Watercourse (ABCA, SCRCA)		Laydown Yard
	Watercourse (MNR)		Disturbance Area

Property Access

	Denied
	Granted
	Waterfowl Stopover and Staging Areas (Terrestrial)
	Waterfowl Stopover and Staging Areas (Terrestrial) 300m Buffer
	Location of Vantage Point

Transect/point count/vantage point locations and/or property access status may be subject to change and will be confirmed at the time of field surveys (e.g. depending on site conditions and/or landowner consultation)

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1/13

March 26, 2013
R.A.O.H.
8:10 - 10:15 am

Goshen Wind Energy Centre EEMP
Significant Wildlife Habitat
Field Map - WSST-36

March 2013
Project 60155032

AECOM **Figure 3**

ROUND 2

Round 5
Waterfowl (Tundra Swan) Stopover and Staging Area Survey Form

Study Area: <u>Goshen</u>	Observers: <u>RA, AKI</u>
Site Location/ Feature ID: <u>WSSST-36</u>	

Fill in survey form for each vantage point. Vantage Point Number: 1

Vantage Point UTM <u>See Round 1 Notes</u>	Date: <u>March 26, 2013</u>
Easting: <u>-</u> Northing: <u>-</u>	Start Time: <u>10:00 am</u> End Time: <u>10:15 am</u>
Weather Conditions	
Temperature (C°): <u>1°C</u>	Wind (Dir.): <u>NE</u> Wind (B.S.): <u>1</u>
Cloud Cover (%): <u>100%</u>	Percipitation: <u>None</u>

Check off the following, if completed:

Flooded area clearly delineated on field map? (Yes/No)	<u>Yes</u>
Area occupied by Tundra Swans clearly delineated on field map? (Yes/No)	<u>N/A</u>
Flight path of Tundra Swans clearly delineated on field map? (Yes/No)	<u>Yes</u>
Local site conditions and adjacent land use within 300 m of habitat recorded on map? (Yes/No)	<u>N/A</u>

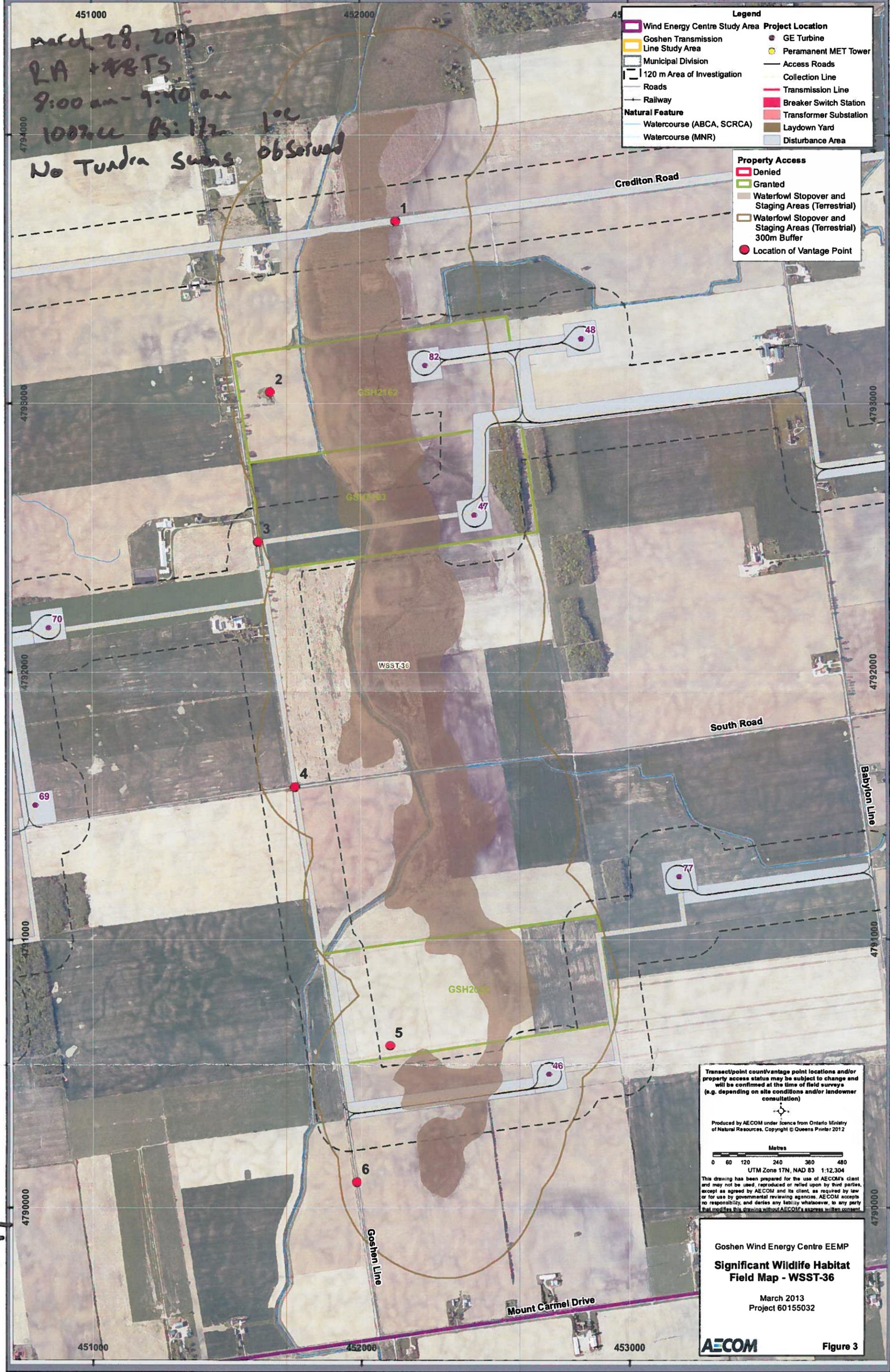
Waterfowl Observed

Species	Dist.	Dir.	Age	#	Behaviour
<u>Tundra Swan</u>	<u>~150m</u>	<u>W</u>	<u>Mat.</u>	<u>4</u>	<u>Flew south over WSSST-36</u>
<u>Tundra Swan</u>	<u>0</u>	<u>N/A</u>	<u>Mat.</u>	<u>10</u>	<u>Flew west over WSSST-36</u>

Description of Local Site Conditions and Adjacent Land Use

Agricultural land with no flooding

Photo ID	Description (locations, direction, observation, etc.)
<u>90-94</u>	<u>Surrounding Land Use</u>



March 28, 2013
 RA + RBTs
 9:00 am - 9:40 am
 100% Bill 102
 No Tundra Swans observed

Legend

Wind Energy Centre Study Area	Project Location
Goshen Transmission Line Study Area	GE Turbine
Municipal Division	Permanent MET Tower
120 m Area of Investigation	Access Roads
Roads	Collection Line
Railway	Transmission Line
Natural Feature	Breaker Switch Station
Watercourse (ABCA, SCRCA)	Transformer Substation
Watercourse (MNR)	Laydown Yard
	Disturbance Area

Property Access

Denied	
Granted	
Waterfowl Stopover and Staging Areas (Terrestrial)	
Waterfowl Stopover and Staging Areas (Terrestrial) 300m Buffer	
Location of Vantage Point	

Transect/point count/vantage point locations and/or property access status may be subject to change and will be confirmed at the time of field surveys (e.g. depending on site conditions and/or landowner consultation)

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Metres

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Goshen Wind Energy Centre EEMP
 Significant Wildlife Habitat
 Field Map - WSST-36

March 2013
 Project 60155032

AECOM

Figure 3

113

KAWD 16

Round #6

Waterfowl (Tundra Swan) Stopover and Staging Area Survey Form

Study Area: <u>Goshka</u>	Observers: <u>AA, TS</u>
Site Location/ Feature ID: <u>WSS7-36</u>	

Fill in survey form for each vantage point. Vantage Point Number: /

Vantage Point UTM <u>See Round 1 Notes</u>	Date: <u>March 28, 2013</u>
Easting: _____ Northing: _____	Start Time: <u>9:24am</u> End Time: <u>9:39am</u>
Weather Conditions	
Temperature (C°): <u>1</u>	Wind (Dir.): <u>W</u> Wind (B.S.): <u>1/2</u>
Cloud Cover (%): <u>100</u>	Percipitation: <u>None</u>

Check off the following, if completed:

Flooded area clearly delineated on field map? (Yes/No)	<u>N/A</u>
Area occupied by Tundra Swans clearly delineated on field map? (Yes/No)	<u>N/A</u>
Flight path of Tundra Swans clearly delineated on field map? (Yes/No)	<u>N/A</u>
Local site conditions and adjacent land use within 300 m of habitat recorded on map? (Yes/No)	<u>N/A</u>

Waterfowl Observed

Species	Dist.	Dir.	Age	#	Behaviour
-	-	-	-	-	<u>No Tundra Swan Observed</u>
<u>Mallard</u>	<u>~100m</u>	<u>S</u>	<u>Not</u>	<u>2</u>	<u>Flying east and landing in watercourse</u>

Description of Local Site Conditions and Adjacent Land Use

Agricultural Land Use No Flooding

Photo ID	Description (locations, direction, observation, etc.)
<u>202-207</u>	<u>Surrounding Land Use</u>



Waterfowl (Tundra Swan) Stopover and Staging Area Survey Form

Additional Notes

Other Species: American Crow, Horned Lark, Mourning Dove, Red-winged Blackbird

Round #6

Waterfowl (Tundra Swan) Stopover and Staging Area Survey Form

Study Area: <u>Gorhen</u>	Observers: <u>AA, TS</u>
Site Location/ Feature ID: <u>WSS7-36</u>	

Fill in survey form for each vantage point. Vantage Point Number: 4

Vantage Point UTM <u>See Round 1 Notes</u>	Date: <u>March 28, 2013</u>
Easting: _____ Northing: _____	Start Time: <u>8:37am</u> End Time: <u>8:48am</u>
Weather Conditions	
Temperature (C°): <u>2</u>	Wind (Dir.): <u>W</u> Wind (B.S.): <u>1/2</u>
Cloud Cover (%): <u>100%</u>	Percipitation: <u>None</u>

Check off the following, if completed:

Flooded area clearly delineated on field map? (Yes/No)	<u>N/A</u>
Area occupied by Tundra Swans clearly delineated on field map? (Yes/No)	<u>N/A</u>
Flight path of Tundra Swans clearly delineated on field map? (Yes/No)	<u>N/A</u>
Local site conditions and adjacent land use within 300 m of habitat recorded on map? (Yes/No)	<u>N/A</u>

Waterfowl Observed

Species	Dist.	Dir.	Age	#	Behaviour
-	-	-	-	-	<u>No Tundra Swan Observed</u>
<u>Mallard</u>	<u>~100m</u>	<u>NE</u>	<u>Mat.</u>	<u>4</u>	<u>Flying east and landing in watercourse</u>

Description of Local Site Conditions and Adjacent Land Use

Agricultural land with no flooding

Photo ID	Description (locations, direction, observation, etc.)
<u>188-193</u>	<u>Surrounding Land Use</u>



Waterfowl (Tundra Swan) Stopover and Staging Area Survey Form

Additional Notes

Other Species: Herring Gull, American Crow, Red-winged Blackbird,
Rock Pigeon

Round #6

Waterfowl (Tundra Swan) Stopover and Staging Area Survey Form

Study Area: <u>Goshen</u>	Observers: <u>RA, TS</u>
Site Location/ Feature ID: <u>WSS7-36</u>	

Fill in survey form for each vantage point. Vantage Point Number: 5

Vantage Point UTM <u>See Round 1 Notes</u>	Date: <u>March 28, 2013</u>
Easting: _____ Northing: _____	Start Time: <u>8:16 am</u> End Time: <u>8:31 am</u>
Weather Conditions	
Temperature (C°): <u>1</u>	Wind (Dir.): <u>W</u> Wind (B.S.): <u>1/2</u>
Cloud Cover (%): <u>100</u>	Percipitation: <u>None</u>

Check off the following, if completed:

Flooded area clearly delineated on field map? (Yes/No)	<u>N/A</u>
Area occupied by Tundra Swans clearly delineated on field map? (Yes/No)	<u>N/A</u>
Flight path of Tundra Swans clearly delineated on field map? (Yes/No)	<u>N/A</u>
Local site conditions and adjacent land use within 300 m of habitat recorded on map? (Yes/No)	<u>N/A</u>

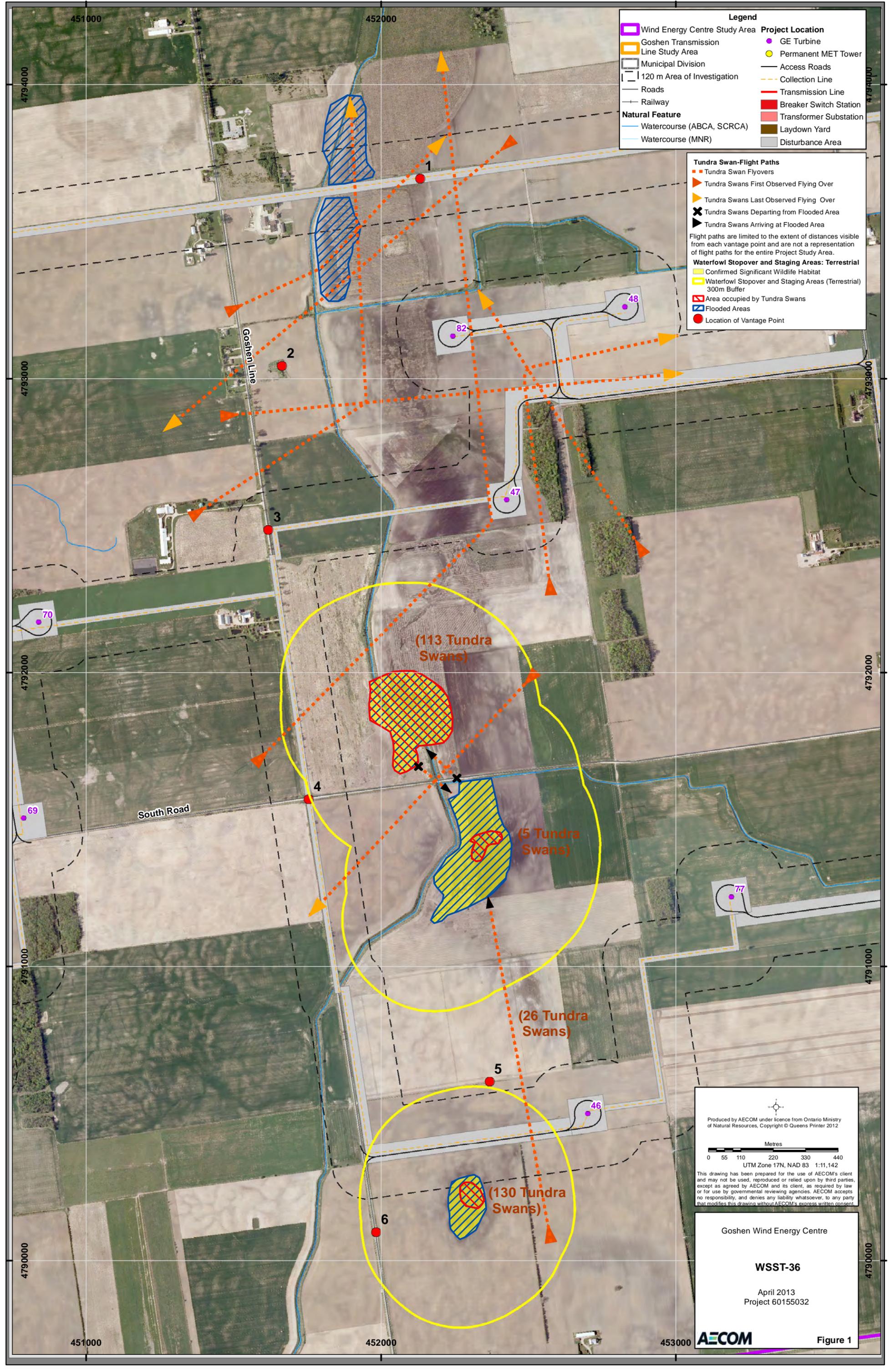
Waterfowl Observed

Species	Dist.	Dir.	Age	#	Behaviour
-	-	-	-	-	<u>No Tundra Swan Observed</u>
<u>Mallard</u>	<u>~150m</u>	<u>NW</u>	<u>Ad.</u>	<u>2</u>	<u>Flying west and landed in watercourse</u>

Description of Local Site Conditions and Adjacent Land Use

Agricultural land with no Flooding

Photo ID	Description (locations, direction, observation, etc.)
<u>184-187</u>	<u>Surrounding land use</u>



Legend

Wind Energy Centre Study Area	Project Location
Goshen Transmission Line Study Area	GE Turbine
Municipal Division	Permanent MET Tower
120 m Area of Investigation	Access Roads
Roads	Collection Line
Railway	Transmission Line
Natural Feature	Breaker Switch Station
Watercourse (ABCA, SCRCA)	Transformer Substation
Watercourse (MNR)	Laydown Yard
	Disturbance Area

Tundra Swan-Flight Paths

- Tundra Swan Flyovers
- Tundra Swans First Observed Flying Over
- Tundra Swans Last Observed Flying Over
- Tundra Swans Departing from Flooded Area
- Tundra Swans Arriving at Flooded Area

Flight paths are limited to the extent of distances visible from each vantage point and are not a representation of flight paths for the entire Project Study Area.

Waterfowl Stopover and Staging Areas: Terrestrial

- Confirmed Significant Wildlife Habitat
- Waterfowl Stopover and Staging Areas (Terrestrial) 300m Buffer
- Area occupied by Tundra Swans
- Flooded Areas
- Location of Vantage Point

(113 Tundra Swans)

(5 Tundra Swans)

(26 Tundra Swans)

(130 Tundra Swans)

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Metres

0 55 110 220 330 440

UTM Zone 17N, NAD 83 1:11,142

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Goshen Wind Energy Centre

WSST-36

April 2013
Project 60155032

Path: N:\0_aecom\60155032\01\Final\GIS\paraf\MXDs\Report\MDC\NHA_Mapping\Goshen\60155032_GSH_FlightPaths_WSST36.mxd