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HALDIMAND TRACT ROAD

JOHNSON ROAD

RAMSEY ROAD

WILLOW LANE

PORT MAITLAND ROAD

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W:\active\160960577\drawing\GIS\MXD\NaturalHeritageAssessment\FieldMaps\160960577_FIELDMAP_ProjectLocation_Mapbook_V2Oct13_20101014_DH.mxd - 10/14/2010 @ 3:15:10 PM

October 2010
160960577

## Legend

- Project Location
- Proposed Turbine Location V2 Oct 08
- 120m Investigation Zone V2 Oct 13
- Substation Property
- Proposed Collector Line V2 Sept 30
- Proposed Access Road V2 Oct 13
- ROW Installation Zone V2 Oct 13
- Elexco Aquired Agreements
- Government Lands
- UDI Lands
- Road
- Railway
- Abandoned Railway
- Transmission Line (OBM)
- Deer Wintering Area
- Provincially Significant Wetland
- Non-Provincially Significant Wetland
- Watercourse (OBM)
- Waterbody

**Area of Natural and Scientific Interest (ANSI)**

- Life Science, Provincially Significant
- Earth Science, Provincially Significant
- Earth Science, Regionally Significant

SSCIA-OR


## Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © GREP, 2010; © Samsung, 2010.
3. Image Source: © First Base Solutions, 2010 - Imagery Date: Spring 2006, LIDAR IMAGERY SOURCE???
4. Produced using the Version 2 site plan provided by Samsung issued on October 13, 2010

Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

**FIELD MAP 16**

Title

**PROJECT LOCATION MAP**

Stantec

Stantec Consulting Ltd.
70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

# Wildlife Habitat Assessment

Project Number: 160960577

Project Name: Samsung

Date / Time: 20-Oct-2010 @ 10:00AM. -5:00PM

Field Personnel: Melissa Straus

| Weather Conditions: | Temp: | Wind: | Cloud: | PPT: | PPT in last 24 hrs: |
|---|---|---|---|---|---|
| | 10°c | 6 | 10% | none | none |

Reptile Hibernacula Features i.e. features that would provide a route underground, including buried concrete or rock (e.g. foundations, bridge abutments or culverts with cracks/entry points, exposed rock crevices or inactive animal burrows)

Does the site contain potential reptile hibernacula features? ☐ Yes ☒ No (if yes, describe details in Table 1).

Bat Hibernacula Features i.e. karst topography, abandoned mines or caves

Does the site contain potential bat hibernacula features? ☐ Yes ☒ No (if yes, describe details in Table 1).

Table 1: Potential bat/reptile hibernacula features identified on site

| UTM | Feature type | Photo # | Description | Species observed usin feature |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |

## Species Observations

*List species and type of observation:* (**TK** = track, **SC** = scat, **VO** = vocalization, **OB** = observed, **DP** = distinctive parts, **FE** = feeding evidence, **CA** = carcass, **FY** = eggs, nest, **HO** = house/den, **SI** = other sign)

| Birds | Mammals | Herps | Butterflies / Dragonflies | Other |
|---|---|---|---|---|
| i.e. AMRO/VO | Coyote - SC | | | |

Feature 77

**Woodland Assessment-** *complete 1 assessment for each woodland*

***Woodlot # (indicate on map) :*** C

**Approximate age of stand** ~20 years

**Are large** (i.e. >40cmDBH and >25m tall) **trees present** ☐ Yes ☒ No
If yes, approximate # present or % of stand _____
Location in stand (i.e throughout, in west side only, in FOD2-6 only etc..) _____

**Are snags present?** ☐ Yes ☒ No
If yes provide characterization of number present, height and DBH of snags and indicate if they contain loose bark.

**Trees with cavities present?** ☒ No ☐ Rare ☐ Occasional ☐ Abundant
If present:

| | Height ranges of tree | Range of Tree DBH | Range of Cavity Heights | Cavity sizes (approx. diameter) |
|---|---|---|---|---|
| | | | | |

**Presence of large stick nests** (i.e. raptor nests)? ☐ Yes ☒ No
If yes, UTM and describe tree type, height and position in tree, size of nest, species present

**Evidence of disturbance?** (i.e logging, roads, paths, ATV use, trails) ☐ Yes ☐ No
If yes, describe _____

**Seeps/ springs present?** ☐ Yes ☒ No If yes,

| Seep/Spring # | UTM | Description | Surrounding Habitat |
|---|---|---|---|
| | | | |
| | | | |

**Vernal Pools Present?** ☒ Yes ☐ No If yes,

| # | Location | Depth of water | Size of pool (diameter) | Presence of emergent/submergent veg? | Presence of sh logs at pond e |
|---|---|---|---|---|---|
| 2 | scattered throughout | naiel deep | 3-5m | Gray Dogwood | No |
| | | | | | |
| | | | | | |
| | | | | | |

**ELC COMMUNITY DESCRIPTION & CLASSIFICATION**

| | | | |
|---|---|---|---|
| SITE: 160960577 | | POLYGON: 8 | |
| SURVEYOR(S): MS | DATE: 20-Oct-2010 | | UTME: |
| START: 14:48 | END 15:15 | UTMZ: | UTMN: |

## POLYGON DESCRIPTION

**SYSTEM**
☐ TERRESTRIAL
☐ WETLAND
☐ AQUATIC

**SITE**
☐ OPEN WATER
☐ SHALLOW WATER
☐ SURFICIAL DEP.
☐ BEDROCK

**SUBSTRATE**
☐ ORGANIC
☐ MINERAL SOIL
☐ PARENT MIN.
☐ ACIDIC BEDRK.
☐ BASIC BEDRK.
☐ CARB. BEDRK.

**TOPOGRAPHIC FEATURE**
☐ LACUSTRINE
☐ RIVERINE
☐ BOTTOMLAND
☐ TERRACE
☐ VALLEY SLOPE
☐ TABLELAND
☐ ROLL. UPLAND
☐ CLIFF
☐ TALUS
☐ CREVICE / CAVE
☐ ALVAR
☐ ROCKLAND
☐ BEACH / BAR
☐ SAND DUNE
☐ BLUFF

**HISTORY**
☐ NATURAL
☐ CULTURAL

**COVER**
☐ OPEN
☐ SHRUB
☐ TREED

**PLANT FORM**
☐ PLANKTON
☐ SUBMERGED
☐ FLOATING-LVD.
☐ GRAMINOID
☐ FORB
☐ LICHEN
☐ BRYOPHYTE
☐ DECIDUOUS
☐ CONIFEROUS
☐ MIXED

**COMMUNITY**
☐ LAKE
☐ POND
☐ RIVER
☐ STREAM
☐ MARSH
☐ SWAMP
☐ FEN
☐ BOG
☐ BARREN
☐ MEADOW
☐ PRAIRIE
☐ THICKET
☐ SAVANNAH
☐ WOODLAND
☐ FOREST
☐ PLANTATION

## STAND DESCRIPTION:

| | LAYER | HT | CVR | SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO) |
|---|---|---|---|---|
| 1 | CANOPY | — | — | |
| 2 | SUB-CANOPY | ~~2~~ 3 | 3 | FRAPENN |
| 3 | UNDERSTOREY | 4 | ~~3~~ 4 | GRAYDogwood > Hawthorn |
| 4 | GRD. LAYER | 5-7 | 4 | Goldenrod sp. |

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m
CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| STAND COMPOSITION: | | | | | | | BA: | |
| SIZE CLASS ANALYSIS: | A | < 10 | R | 10 - 24 | N | 25 - 50 | N | > 50 |
| STANDING SNAGS: | N | < 10 | N | 10 - 24 | N | 25 - 50 | N | > 50 |
| DEADFALL / LOGS: | N | < 10 | R | 10 - 24 | N | 25 - 50 | N | > 50 |

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE : ☒ PIONEER ☐ YOUNG ☐ MID-AGE ☐ MATURE ☐ OLD GROWTH

## SOIL ANALYSIS:

| | | | |
|---|---|---|---|
| TEXTURE: | DEPTH TO MOTTLES / GLEY | g = | G= |
| MOISTURE: | DEPTH OF ORGANICS: | | (cm) |
| HOMOGENEOUS / VARIABLE | DEPTH TO BEDROCK: | | (cm) |

## COMMUNITYCLASSIFICATION:

| | |
|---|---|
| COMMUNITY CLASS: | CODE: CU |
| COMMUNITY SERIES: | CODE: CUT [illegible] |
| ECOSITE: Mineral Cultural Thicket | CODE: CUT1 |
| VEGETATION TYPE: Hawthorn Gray Dogwood Cultural Thicket | CODE: CUT1-4 |
| INCLUSION | CODE: |
| COMPLEX | CODE: |

Notes:
Pic 1718

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Lecture 77

**ELC PLANT SPECIES LIST**

SITE: Samsung
POLYGON: 8
DATE: 20-Oct-2010
SURVEYOR(S): M. Straus

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FRAPENN | 3 | R | R | | | Cum sp | | | | | |
| ULMAMER | R | R | — | | | | | | | | |
| ACERUBE | | R | — | | | | | | | | |
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| | | | | | | | | | | | |
| SPALBA | | | | R | | | | | | | |
| Gray Dogwood | | | D | | | Silvary Shrubwberries | | | O | | ✓ |
| Hawthorn | | | O | | | Goldenrod | | | | A | |

Page ...... of ......

**ELC COMMUNITY DESCRIPTION & CLASSIFICATION**

| | | | |
|---|---|---|---|
| SITE: 160960577 | | POLYGON: 9 | |
| SURVEYOR(S): MS | DATE: 20Oct-2010 | | UTME: |
| START: 1515 | END: 1530 | UTMZ: | UTMN: |

## POLYGON DESCRIPTION

**SYSTEM**
- ☐ TERRESTRIAL
- ☐ WETLAND
- ☐ AQUATIC

**SITE**
- ☐ OPEN WATER
- ☐ SHALLOW WATER
- ☐ SURFICIAL DEP.
- ☐ BEDROCK

**SUBSTRATE**
- ☐ ORGANIC
- ☐ MINERAL SOIL
- ☐ PARENT MIN.
- ☐ ACIDIC BEDRK.
- ☐ BASIC BEDRK.
- ☐ CARB. BEDRK.

**TOPOGRAPHIC FEATURE**
- ☐ LACUSTRINE
- ☐ RIVERINE
- ☐ BOTTOMLAND
- ☐ TERRACE
- ☐ VALLEY SLOPE
- ☐ TABLELAND
- ☐ ROLL. UPLAND
- ☐ CLIFF
- ☐ TALUS
- ☐ CREVICE / CAVE
- ☐ ALVAR
- ☐ ROCKLAND
- ☐ BEACH / BAR
- ☐ SAND DUNE
- ☐ BLUFF

**HISTORY**
- ☐ NATURAL
- ☐ CULTURAL

**COVER**
- ☐ OPEN
- ☐ SHRUB
- ☐ TREED

**PLANT FORM**
- ☐ PLANKTON
- ☐ SUBMERGED
- ☐ FLOATING-LVD.
- ☐ GRAMINOID
- ☐ FORB
- ☐ LICHEN
- ☐ BRYOPHYTE
- ☐ DECIDUOUS
- ☐ CONIFEROUS
- ☐ MIXED

**COMMUNITY**
- ☐ LAKE
- ☐ POND
- ☐ RIVER
- ☐ STREAM
- ☐ MARSH
- ☐ SWAMP
- ☐ FEN
- ☐ BOG
- ☐ BARREN
- ☐ MEADOW
- ☐ PRAIRIE
- ☐ THICKET
- ☐ SAVANNAH
- ☐ WOODLAND
- ☐ FOREST
- ☐ PLANTATION

## STAND DESCRIPTION:

| | LAYER | HT | CVR | SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO) |
|---|---|---|---|---|
| 1 | CANOPY | 1 | 4 | FRAPENN |
| 2 | SUB-CANOPY | 2 | 4 | ACERUBR < ULMAMER |
| 3 | UNDERSTOREY | 4 | 3 | Silky Dogwood |
| 4 | GRD. LAYER | 5-7 | 3 | Rubus |

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| STAND COMPOSITION: | | | | | | | BA: | |
| SIZE CLASS ANALYSIS: | O | < 10 | O | 10 - 24 | O | 25 - 50 | N | > 50 |
| STANDING SNAGS: | N | < 10 | N | 10 - 24 | N | 25 - 50 | N | > 50 |
| DEADFALL / LOGS: | R | < 10 | O | 10 - 24 | R | 25 - 50 | N | > 50 |

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| COMM. AGE : | ☐ | PIONEER | ☐ | YOUNG | ☒ | MID-AGE | ☐ | MATURE | ☐ | OLD GROWTH |

## SOIL ANALYSIS:

| | | | |
|---|---|---|---|
| TEXTURE: | DEPTH TO MOTTLES / GLEY | g = | G= |
| MOISTURE: | DEPTH OF ORGANICS: | | (cm) |
| HOMOGENEOUS / VARIABLE | DEPTH TO BEDROCK: | | (cm) |

## COMMUNITYCLASSIFICATION:

| | |
|---|---|
| COMMUNITY CLASS: | CODE: |
| COMMUNITY SERIES: | CODE: |
| ECOSITE: | CODE: |
| VEGETATION TYPE: Green Ash Mineral Deciduous Swamp | CODE: SWD2-2 |
| INCLUSION | CODE: |
| COMPLEX | CODE: |

**Notes:** Pic 719 - Ash green in Dog Silky Areas - 9a - only Ag
[illegible] Subcano

---

Feature 77

**ELC PLANT SPECIES LIST**

SITE: Samsung

POLYGON: 9

DATE: 20-Oct-2010

SURVEYOR(S): M. Strauss

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FRAPENN | D | O | R | R | | Wood Nettle | | | | R | |
| ULMAMER | - | O | R | R | | IMPCAPE | | | | R | |
| ACERUBR | R | O | R | R | | | | | | | |
| RUBIDEA | | | O | O | | | | | | | |
| Prickly Ash | | | R | | | | | | | | |
| Silky Dogwood | | | O | | | | | | | | |

Page ....... of .......

| ELC COMMUNITY DESCRIPTION & CLASSIFICATION | SITE: 1609160877 | POLYGON: 10 | |
|---|---|---|---|
| | SURVEYOR(S): MS | DATE: | UTME: |
| | START: 15:30 | END 16:00 | UTMZ: | UTMN: |

**POLYGON DESCRIPTION**

| SYSTEM | SUBSTRATE | TOPOGRAPHY / LANDFORM / SURFACE EXPRESSION | HUMAN | VEGETATION | COMMUNITY |
|---|---|---|---|---|---|
| ☐ TERRESTRIAL<br>☐ WETLAND<br>☐ AQUATIC | ☐ ORGANIC<br>☐ MINERAL SOIL<br>☐ PARENT MIN.<br>☐ ACIDIC BEDRK.<br>☐ BASIC BEDRK.<br>☐ CARB. BEDRK. | ☐ LACUSTRINE<br>☐ RIVERINE<br>☐ BOTTOMLAND<br>☐ TERRACE<br>☐ VALLEY SLOPE<br>☐ TABLELAND<br>☐ ROLL UPLAND<br>☐ CLIFF<br>☐ TALUS<br>☐ CREVICE / CAVE<br>☐ ALVAR<br>☐ ROCKLAND<br>☐ BEACH / BAR<br>☐ SAND DUNE<br>☐ BLUFF | ☐ NATURAL<br>☐ CULTURAL | ☐ PLANKTON<br>☐ SUBMERGED<br>☐ FLOATING-LVD.<br>☐ GRAMINOID<br>☐ FORB<br>☐ LICHEN<br>☐ BRYOPHYTE<br>☐ DECIDUOUS<br>☐ CONIFEROUS<br>☐ MIXED | ☐ LAKE<br>☐ POND<br>☐ RIVER<br>☐ STREAM<br>☐ MARSH<br>☐ SWAMP<br>☐ FEN<br>☐ BOG<br>☐ BARREN<br>☐ MEADOW<br>☐ PRAIRIE<br>☐ THICKET<br>☐ SAVANNAH<br>☐ WOODLAND<br>☐ FOREST<br>☐ PLANTATION |
| **SITE**<br>☐ OPEN WATER<br>☐ SHALLOW WATER<br>☐ SURFICIAL DEP.<br>☐ BEDROCK | | | **COVER**<br>☐ OPEN<br>☐ SHRUB<br>☐ TREED | | |

**STAND DESCRIPTION:**

| | LAYER | HT | CVR | SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO) |
|---|---|---|---|---|
| 1 | CANOPY | 2 | 4 | CARCOVAT. |
| 2 | SUB-CANOPY | — | — | |
| 3 | UNDERSTOREY | 4 | 3 | Hawthorn |
| 4 | GRD. LAYER | 5-7 | 4 | FRAVI.RC. Viola sp. |

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

| STAND COMPOSITION: | | BA: |
|---|---|---|

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SIZE CLASS ANALYSIS: | O | < 10 | A | 10 - 24 | R | 25 - 50 | N | > 50 |
| STANDING SNAGS: | N | < 10 | N | 10 - 24 | N | 25 - 50 | N | > 50 |
| DEADFALL / LOGS: | R | < 10 | R | 10 - 24 | N | 25 - 50 | N | > 50 |

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

| COMM. AGE : | | PIONEER | X | YOUNG | | MID-AGE | | MATURE | | OLD GROWTH |
|---|---|---|---|---|---|---|---|---|---|---|

**SOIL ANALYSIS:**

| TEXTURE: | DEPTH TO MOTTLES / GLEY | g = | G= |
|---|---|---|---|
| MOISTURE: | DEPTH OF ORGANICS: | | (cm) |
| HOMOGENEOUS / VARIABLE | DEPTH TO BEDROCK: | | (cm) |

**COMMUNITY CLASSIFICATION:**

| | | |
|---|---|---|
| COMMUNITY CLASS: | | CODE: |
| COMMUNITY SERIES: | | CODE: |
| ECOSITE: | | CODE: |
| VEGETATION TYPE: F-M Shagbark Hickory Deci. Forest | | CODE: FOD9-4 |
| ☐ INCLUSION | | CODE: |
| ☐ COMPLEX | | CODE: |

Notes:

Pic 1720 young

Feature 11

| ELC COMMUNITY DESCRIPTION & CLASSIFICATION | SITE: Samsung |
|---|---|
| | POLYGON: 10 |
| | DATE: 20-Oct-2010 |
| | SURVEYOR(S): M. Straves |

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

| | | | | | |
|---|---|---|---|---|---|
| CARCOVAT | D | R | R | + | |
| FRAPENN | O | R | R | + | |
| ULMAMER | R | R | R | + | |
| ULMAMER | - | R | R | | |
| Hawthorn | | | O | | |
| FRAVI.RC | | | | O | |

| | | | | | |
|---|---|---|---|---|---|
| ASPGRYP | | | | O | |
| Viola sp. | | | | | 1? |

Feature 77

ELC COMMUNITY DESCRIPTION CLASSIFICATION

| | | | |
|---|---|---|---|
| SITE: 1609160577 | | POLYGON: 11 | |
| SURVEYOR(S): MS | DATE: | UTME: | |
| START: 16:00 | END: 16:15 | UTMZ: | UTMN: |

**POLYGON DESCRIPTION**

| SYSTEM | SUBSTRATE | TOPOGRAPHIC FEATURE | HISTORY | PLANT FORM | COMMUNITY |
|---|---|---|---|---|---|
| ☐ TERRESTRIAL | ☐ ORGANIC | ☐ LACUSTRINE | ☐ NATURAL | ☐ PLANKTON | ☐ LAKE |
| ☐ WETLAND | ☐ MINERAL SOIL | ☐ RIVERINE | ☐ CULTURAL | ☐ SUBMERGED | ☐ POND |
| ☐ AQUATIC | ☐ PARENT MIN. | ☐ BOTTOMLAND | | ☐ FLOATING-LVD. | ☐ RIVER |
| | ☐ ACIDIC BEDRK. | ☐ TERRACE | | ☐ GRAMINOID | ☐ STREAM |
| SITE | ☐ BASIC BEDRK. | ☐ VALLEY SLOPE | COVER | ☐ FORB | ☐ MARSH |
| ☐ OPEN WATER | ☐ CARB. BEDRK. | ☐ TABLELAND | ☐ OPEN | ☐ LICHEN | ☐ SWAMP |
| ☐ SHALLOW WATER | | ☐ ROLL. UPLAND | ☐ SHRUB | ☐ BRYOPHYTE | ☐ FEN |
| ☐ SURFICIAL DEP. | | ☐ CLIFF | ☐ TREED | ☐ DECIDUOUS | ☐ BOG |
| ☐ BEDROCK | | ☐ TALUS | | ☐ CONIFEROUS | ☐ BARREN |
| | | ☐ CREVICE / CAVE | | ☐ MIXED | ☐ MEADOW |
| | | ☐ ALVAR | | | ☐ PRAIRIE |
| | | ☐ ROCKLAND | | | ☐ THICKET |
| | | ☐ BEACH / BAR | | | ☐ SAVANNAH |
| | | ☐ SAND DUNE | | | ☐ WOODLAND |
| | | ☐ BLUFF | | | ☐ FOREST |
| | | | | | ☐ PLANTATION |

**STAND DESCRIPTION:**

| | LAYER | HT | CVR | SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO) |
|---|---|---|---|---|
| 1 | CANOPY | 2 | 3 | FRAPENN > ULMAMER |
| 2 | SUB-CANOPY | | | |
| 3 | UNDERSTOREY | 3 | 4 | Hawthorn ?, Cornus |
| 4 | GRD. LAYER | 5-7 | 4 | FRAVIRG, AGRGRYP |

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0 = NONE 1 = 0% < CVR ≤ 10% 2 = 10 < CVR ≤ 25% 3 = 25 < CVR ≤ 60% 4 = CVR > 60%

| STAND COMPOSITION: | BA: |
|---|---|

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SIZE CLASS ANALYSIS: | A | < 10 | O | 10 - 24 | A | 25 - 50 | N | > 50 |
| STANDING SNAGS: | N | < 10 | N | 10 - 24 | N | 25 - 50 | N | > 50 |
| DEADFALL / LOGS: | N | < 10 | ✓ | 10 - 24 | N | 25 - 50 | ✓ | > 50 |

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

| COMM. AGE : | | PIONEER | X | YOUNG | | MID-AGE | | MATURE | | OLD GROWTH |
|---|---|---|---|---|---|---|---|---|---|---|

**SOIL ANALYSIS:**

| | | | |
|---|---|---|---|
| TEXTURE: | DEPTH TO MOTTLES / GLEY | g = | G= |
| MOISTURE: | DEPTH OF ORGANICS: | | (cm) |
| HOMOGENEOUS / VARIABLE | DEPTH TO BEDROCK: | | (cm) |

**COMMUNITY CLASSIFICATION:**

| | | |
|---|---|---|
| COMMUNITY CLASS: | | CODE: CUT |
| COMMUNITY SERIES: | | CODE: CUT |
| ECOSITE: | | CODE: |
| VEGETATION TYPE: Green Ash Cultural Woodland | | CODE: CUW1-4* CUT |
| INCLUSION | | CODE: |
| COMPLEX | | CODE: |

Notes: 11b - Pic 1723 - Noodlerstory - Gray Dog + Haw. = CUT 1-4

11 - Pic 1722 CUW1-4

ELC COMMUNITY DESCRIPTION CLASSIFICATION

| | |
|---|---|
| SITE: Samsung | |
| POLYGON: 11 | |
| DATE: 20-Oct-2010 | |
| SURVEYOR(S): M. Straus | |

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

| SPECIES CODE | 1 | 2 | 3 | 4 | SPECIES CODE | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|---|---|---|
| FRAPENN | D | | | | AGRGRYP | | | | O |
| ULMAMER | D | | | | | | | | |
| FRAVIRG | | | | O | | | | | |
| Gray Dogwood | | | A | | | | | | |
| Hawthorn | | | A | | | | | | |

**ELC** COMMUNITY DESCRIPTION / CLASSIFICATION

SITE: 160960577 | POLYGON: (12)
SURVEYOR(S): MS. | DATE: 20-Oct-2010 | UTME:
START: 16.15 | END 16.45 | UTMZ: | UTMN:

## POLYGON DESCRIPTION

| SYSTEM | SUBSTRATE | TOPOGRAPHIC FEATURE | HISTORY | PLANT FORM | COMMUNITY |
|---|---|---|---|---|---|
| ☒ TERRESTRIAL | ☐ ORGANIC | ☐ LACUSTRINE | ☐ NATURAL | ☐ PLANKTON | ☐ LAKE |
| ☐ WETLAND | ☐ MINERAL SOIL | ☐ RIVERINE | ☐ CULTURAL | ☐ SUBMERGED | ☐ POND |
| ☐ AQUATIC | ☐ PARENT MIN. | ☐ BOTTOMLAND | | ☐ FLOATING-LVD. | ☐ RIVER |
| | ☐ ACIDIC BEDRK. | ☐ TERRACE | | ☐ GRAMINOID | ☐ STREAM |
| SITE | ☐ BASIC BEDRK. | ☐ VALLEY SLOPE | COVER | ☐ FORB | ☐ MARSH |
| ☐ OPEN WATER | ☐ CARB. BEDRK. | ☐ TABLELAND | ☐ OPEN | ☐ LICHEN | ☐ SWAMP |
| ☐ SHALLOW WATER | | ☐ ROLL UPLAND | ☐ SHRUB | ☐ BRYOPHYTE | ☐ FEN |
| ☐ SURFICIAL DEP. | | ☐ CLIFF | ☐ TREED | ☐ DECIDUOUS | ☐ BOG |
| ☐ BEDROCK | | ☐ TALUS | | ☐ CONIFEROUS | ☐ BARREN |
| | | ☐ CREVICE / CAVE | | ☐ MIXED | ☐ MEADOW |
| | | ☐ ALVAR | | | ☐ PRAIRIE |
| | | ☐ ROCKLAND | | | ☐ THICKET |
| | | ☐ BEACH / BAR | | | ☐ SAVANNAH |
| | | ☐ SAND DUNE | | | ☐ WOODLAND |
| | | ☐ BLUFF | | | ☐ FOREST |
| | | | | | ☐ PLANTATION |

## STAND DESCRIPTION:

| | LAYER | HT | CVR | SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO) |
|---|---|---|---|---|
| 1 | CANOPY | 1 | 4 | FRAPENN > Salix sp |
| 2 | SUB-CANOPY | 2 | | |
| 3 | UNDERSTOREY | 3-4 | 4 | Salix sp > FRAPENN |
| 4 | GRD. LAYER | 5-7 | 4 | RUBIDEA, Canary Grass |

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES: 0 = NONE 1 = 0% < CVR ≤ 10% 2 = 10 < CVR ≤ 25% 3 = 25 < CVR ≤ 60% 4 = CVR > 60%

STAND COMPOSITION: | BA:

| | | | | |
|---|---|---|---|---|
| SIZE CLASS ANALYSIS: | A < 10 | O 10 - 24 | O 25 - 50 | N > 50 |
| STANDING SNAGS: | N < 10 | N 10 - 24 | N 25 - 50 | N > 50 |
| DEADFALL / LOGS: | R < 10 | O 10 - 24 | O 25 - 50 | N > 50 |

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

| COMM. AGE : | PIONEER | YOUNG | X MID-AGE | MATURE | OLD GROWTH |
|---|---|---|---|---|---|

## SOIL ANALYSIS:

| | | | |
|---|---|---|---|
| TEXTURE: | DEPTH TO MOTTLES / GLEY | g = | G= |
| MOISTURE: | DEPTH OF ORGANICS: | | (cm) |
| HOMOGENEOUS / VARIABLE | DEPTH TO BEDROCK: | | (cm) |

## COMMUNITY CLASSIFICATION:

| | |
|---|---|
| COMMUNITY CLASS: | CODE: |
| COMMUNITY SERIES: | CODE: |
| ECOSITE: | CODE: |
| VEGETATION TYPE: Green Ash Mineral Dec. Swamp | CODE: SWD2-2 |
| INCLUSION | CODE: |
| COMPLEX | CODE: |

Notes:

Pic 1223

Feature 77

**ELC** COMMUNITY DESCRIPTION / CLASSIFICATION

SITE: Samsung
POLYGON: 12
DATE: 20-Oct-2010
SURVEYOR(S): M. Straus

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

| SPECIES | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Salix sp | R | O | O | + |
| POPTRE | R | — | — | — |
| FRAPENN | O | O | R | R |
| RUBIDEA | | | | O |
| Grey Dogwood | | | O | |

| SPECIES | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Cum sp | | | | |
| Alnus rugosa | | | | |
| Reed Canary Grass | | | | O |

606000 607000 608000 609000 610000

4748000 4747000

RAINHAM ROAD
HALDIMAND ROAD 45
RAMSEY ROAD
KINGS ROW
HALDIMAND TOWNLINE ROAD
LAKESHORE ROAD
EDGEWATER PLACE

Hay
Res - Farm
Res - Winter Wheat
Red Clover / Alfalfa
Alfalfa
Cemetary
Res
Soy
Pasture
Ag
Clover
Corn
Hay / Clover
Wheat
Fallow

6 69 8 7 3 1 54

MAS2-2 SWD3-3 OA FOD5-9 FOD9-4 FOD3-6 SWD3-1 FOD9-6* FOD4-4a FOD9-4b SWT1-7 FOD9-42 SWD3-3 FOD5-8 MAM2-2
FOD5-1 CUM1 FOD5-3 SWD2-2 FOD9-6* FOD4-1 SWD2-1 SWD3-3 FOD9-4 FOD4-2 MAS2-9 SWD2-2 FOD9-4-1 SWT2-5 FOD6-1 MAM2-8 MAM2-5 MAM2-10 SWD2-2 FOD5-8 FOD2-4

W:\active\60960577\drawing\GIS\MXD\Natural Heritage Assessment\60960577_DRAFT_ELCoV5_WindFarm_20101214_PW.mxd - 12/15/2010 @ 11:17:08 AM

0 150 300 m
1:12,000

December 2010
160960577

6+7 - FOD9-6* orgy ? or 9-7 m/k Ag, Ol, Hs & Corn

## Legend

- Proposed Turbine Location
- 120m Zone of Investigation
- ROW Installation Zone
- ELC Communities
- Access Road
- Overhead Collector Line
- Underground Collector Line
- Substation Property
- Road
- Transmission Line (OBM)
- Provincially Significant Wetland
- Non-Provincially Significant Wetland
- Watercourse (OBM)
- Waterbody

**Forest Communities (FO)**
FOM2-2- Dry-fresh White Pine – Sugar Maple Mixed Forest
FOD- Deciduous Forest
FOD2-1- Dry-fresh Oak – Red Maple Deciduous Forest
FOD2-2- Dry-fresh Oak – Hickory Deciduous Forest
FOD2-4- Dry-fresh Oak – Hardwood Deciduous Forest
FOD3-1- Dry-fresh Poplar Deciduous Forest
FOD4-1- Dry-fresh Beech Deciduous Forest
FOD4-2- Dry-fresh White Ash Deciduous Forest
FOD5-1- Dry-fresh Sugar Maple Deciduous Forest
FOD5-2- Dry-fresh Sugar Maple – Beech Deciduous Forest
FOD5-3- Dry-fresh Sugar Maple – Oak Deciduous Forest
FOD5-8- Dry-fresh Sugar Maple – White Ash Deciduous Forest
FOD5-11*- Dry-fresh Sugar Maple – Oak – Beech Deciduous Forest
FOD5-12*- Dry-fresh Sugar Maple – Hickory – Beech Deciduous Forest
FOD6-1- Fresh-moist Sugar Maple – Lowland Ash Deciduous Forest
FOD6-5- Fresh-moist Sugar Maple – Hardwood Deciduous Forest
FOD6-6*- Fresh-moist Sugar Maple – Hickory Deciduous Forest
FOD7-1- Fresh-moist White Elm Lowkind Deciduous Forest
FOD7-2- Fresh-moist Ash Lowland Deciduous Forest
FOD9-1- Fresh-moist Oak – Sugar Maple Deciduous Forest
FOD9-4- Fresh-moist Shagbark Hickory Deciduous Forest
FOD9-6*- Fresh-moist Red Oak – Shagbark Hickory Deciduous Forest

**Swamp Communities (SW)**
SWD1-1- Swamp White Oak Mineral Deciduous Swamp
SWD2-2- Green Ash Mineral Deciduous Swamp
SWD2-3*- Ash – Hardwood Mineral Deciduous Swamp
SWD2-4*- Green Ash – Red Maple Mineral Deciduous Swamp
SWD3-1- Red Maple Mineral Deciduous Swamp
SWD3-2- Silver Maple Mineral Deciduous Swamp
SWD3-5*- Swamp Maple - Green Ash Mineral Deciduous Swamp
SWD4-1- Willow Mineral Deciduous Swamp
SWD4-2- White Elm Mineral Deciduous Swamp
SWD3-3- Swamp Maple Mineral Deciduous Swamp
SWD4-6*- Green Ash – Swamp Maple Mineral Deciduous Swamp
SWT- Thicket Swamp
SWT2-4- Buttonbush Mineral Thicket Swamp
SWT2-5- Red Osier Dogwood Mineral Thicket Swamp
SWT2-8- Silky Dogwood Mineral Thicket Swamp
SWT2-9- Gray Dogwood Mineral Thicket Swamp
SWT2-13*- Willow – Dogwood Mineral Thicket Swamp
SWT2-14*- Winterberry – Buttonbush Mineral Thicket Swamp
SWT2-15*- Red Maple Mineral Thicket Swamp
SWT3-7- Winterberry Organic Thicket Swamp

**Marsh Communities (MA)**
MAM2-2- Reed Canary Grass Mineral Meadow Marsh
MAM2-10- Forb Mineral Meadow Marsh
MAM2-11*- Forb – Graminoid Mineral Meadow Marsh
MAS2-1- Cattail Mineral Shallow Marsh
MAS2-8- Rice Cut-grass Mineral Shallow Marsh

**Cultural Communities (CU)**
CUM1- Mineral Cultural Meadow
CUT1-7- European Buckthorn – Sweet Cherry Cultural thicket
CUW1-3*- Ash – Sumac Mineral Cultural Woodland
CUW1-4*- Green Ash Mineral Cultural Woodland
CUW1-5*- Maple-Ash Cultural Woodland
CUW1-6*- Green Ash Cultural Woodland
CUW1-7*- Red maple Mineral Cultural Woodland
CUP3-12*- White Pine – White/Norway Spruce Coniferous Plantation
CUP3-13*- White Spruce Coniferous Plantation

D- Disturbed
R- Residential


## Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © Samsung, 2010.
3. Image Source: © Grand River Conservation Authority, 2010 - Imagery Date: Spring 2006; LIDAR IMAGERY SOURCE???
4. Produced using the Version 5 site plan produced by Stantec updated on Dec 13.

Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
TILE 15 DRAFT

Title
# ELC VEGETATION COMMUNITIES

Stantec

**ELC** COMMUNITY DESCRIPTION & CLASSIFICATION

| SITE: | POLYGON: | |
|---|---|---|
| SURVEYOR(S): | DATE: | UTME: |
| START: / END | | UTMZ. / UTMN. |

## POLYGON DESCRIPTION

| SYSTEM | SUBSTRATE | TOPOGRAPHIC FEATURE | HISTORY | PLANT FORM | COMMUNITY |
|---|---|---|---|---|---|
| ☐ TERRESTRIAL<br>☐ WETLAND<br>☐ AQUATIC | ☐ ORGANIC<br>☐ MINERAL SOIL<br>☐ PARENT MIN.<br>☐ ACIDIC BEDRK.<br>☐ BASIC BEDRK.<br>☐ CARB. BEDRK. | ☐ LACUSTRINE<br>☐ RIVERINE<br>☐ BOTTOMLAND<br>☐ TERRACE<br>☐ VALLEY SLOPE<br>☐ TABLELAND<br>☐ ROLL. UPLAND<br>☐ CLIFF<br>☐ TALUS<br>☐ CREVICE / CAVE<br>☐ ALVAR<br>☐ ROCKLAND<br>☐ BEACH / BAR<br>☐ SAND DUNE<br>☐ BLUFF | ☐ NATURAL<br>☐ CULTURAL | ☐ PLANKTON<br>☐ SUBMERGED<br>☐ FLOATING-LVD.<br>☐ GRAMINOID<br>☐ FORB<br>☐ LICHEN<br>☐ BRYOPHYTE<br>☐ DECIDUOUS<br>☐ CONIFEROUS<br>☐ MIXED | ☐ LAKE<br>☐ POND<br>☐ RIVER<br>☐ STREAM<br>☐ MARSH<br>☐ SWAMP<br>☐ FEN<br>☐ BOG<br>☐ BARREN<br>☐ MEADOW<br>☐ PRAIRIE<br>☐ THICKET<br>☐ SAVANNAH<br>☐ WOODLAND<br>☐ FOREST<br>☐ PLANTATION |

**SITE**

☐ OPEN WATER
☐ SHALLOW WATER
☐ SURFICIAL DEP.
☐ BEDROCK

**COVER**

☐ OPEN
☐ SHRUB
☐ TREED

## STAND DESCRIPTION:

| | LAYER | HT | CVR | SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO) |
|---|---|---|---|---|
| 1 | CANOPY | 1-2 | 4 | FRAPENN > QUERUBR. |
| 2 | SUB-CANOPY | 3 | 4 | FRAPENN > CAROVAT |
| 3 | UNDERSTOREY | 4 | 3 | CORNUS. |
| 4 | GRD. LAYER | | | |

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT≤0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION: BA:

| SIZE CLASS ANALYSIS: | | < 10 | | 10 - 24 | | 25 - 50 | | > 50 |
|---|---|---|---|---|---|---|---|---|
| | | O | | O | | | R | |
| STANDING SNAGS: | | < 10 | | 10 - 24 | | 25 - 50 | | > 50 |
| DEADFALL / LOGS: | | < 10 | | 10 - 24 | | 25 - 50 | | > 50 |

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

| COMM. AGE : | | PIONEER | | YOUNG | X | MID-AGE | | MATURE | | OLD GROWTH |
|---|---|---|---|---|---|---|---|---|---|---|

## SOIL ANALYSIS:

| TEXTURE: | DEPTH TO MOTTLES / GLEY | g = | G= |
|---|---|---|---|
| MOISTURE: | DEPTH OF ORGANICS: | | (cm) |
| HOMOGENEOUS / VARIABLE | DEPTH TO BEDROCK: | | (cm) |

## COMMUNITYCLASSIFICATION:

| | | CODE: |
|---|---|---|
| COMMUNITY CLASS: | | |
| COMMUNITY SERIES: | | |
| ECOSITE: | | |
| VEGETATION TYPE: | Fresh-moist Red Oak-Shagbark Hickory | FOD9-6* |
| INCLUSION | Dec. Forest | |
| COMPLEX | | |

Notes:

Edge.

Feature 81

**ELC** PLANT SPECIES LIST

SITE: Samsung
POLYGON: 15-6.
DATE: 21-Dec-2010
SURVEYOR(S): M. Straw

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

| SPECIES CODE | LAYER 1 | 2 | 3 | 4 | COLL. |
|---|---|---|---|---|---|
| CAROVAT | R | O | | | |
| FRAPENN | D | D | | | |
| QUERUBR | O | | | | |
| ACESACS. | - | R | | | |
| | | | | | |
| FAGGRAN | | R | | | |
| | | | | | |
| | | | | | |
| CORNUS | | | O | | |

| SPECIES CODE | LAYER 1 | 2 | 3 | 4 | COLL. |
|---|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| **ELC**<br>**COMMUNITY DESCRIPTION & CLASSIFICATION** | SITE: | | POLYGON: | |
| | SURVEYOR(S): | DATE | | UTME: |
| | START: | END | UTMZ | UTMN |

## POLYGON DESCRIPTION

| SYSTEM | SUBSTRATE | TOPOGRAPHIC FEATURE | HISTORY | PLANT FORM | COMMUNITY |
|---|---|---|---|---|---|
| ☐ TERRESTRIAL<br>☐ WETLAND<br>☐ AQUATIC | ☐ ORGANIC<br>☐ MINERAL SOIL<br>☐ PARENT MIN.<br>☐ ACIDIC BEDRK.<br>☐ BASIC BEDRK.<br>☐ CARB. BEDRK. | ☐ LACUSTRINE<br>☐ RIVERINE<br>☐ BOTTOMLAND<br>☐ TERRACE<br>☐ VALLEY SLOPE<br>☐ TABLELAND<br>☐ ROLL. UPLAND<br>☐ CLIFF<br>☐ TALUS<br>☐ CREVICE / CAVE<br>☐ ALVAR<br>☐ ROCKLAND<br>☐ BEACH / BAR<br>☐ SAND DUNE<br>☐ BLUFF | ☐ NATURAL<br>☐ CULTURAL | ☐ PLANKTON<br>☐ SUBMERGED<br>☐ FLOATING-LVD.<br>☐ GRAMINOID<br>☐ FORB<br>☐ LICHEN<br>☐ BRYOPHYTE<br>☐ DECIDUOUS<br>☐ CONIFEROUS<br>☐ MIXED | ☐ LAKE<br>☐ POND<br>☐ RIVER<br>☐ STREAM<br>☐ MARSH<br>☐ SWAMP<br>☐ FEN<br>☐ BOG<br>☐ BARREN<br>☐ MEADOW<br>☐ PRAIRIE<br>☐ THICKET<br>☐ SAVANNAH<br>☐ WOODLAND<br>☐ FOREST<br>☐ PLANTATION |
| **SITE** | | | **COVER** | | |
| ☐ OPEN WATER<br>☐ SHALLOW WATER<br>☐ SURFICIAL DEP.<br>☐ BEDROCK | | | ☐ OPEN<br>☐ SHRUB<br>☐ TREED | | |

## STAND DESCRIPTION:

| | LAYER | HT | CVR | SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO) |
|---|---|---|---|---|
| 1 | CANOPY | 1 | 4 | QUERUBR >> |
| 2 | SUB-CANOPY | 2 | 4 | CAROVAT > FRAPENN |
| 3 | UNDERSTOREY | 3 | 4 | Cornus, RHACATH |
| 4 | GRD. LAYER | | | |

HT CODES: 1 = >25 m 2 = 10<HT ≤ 25 m 3 = 2<HT ≤ 10 m 4 = 1<HT ≤ 2 m 5 = 0.5<HT ≤ 1 m 6 = 0.2<HT ≤ 0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| STAND COMPOSITION: | | | | | | | BA: | |
| SIZE CLASS ANALYSIS: | | < 10 | | 10 - 24 | | 25 - 50 | | > 50 |
| STANDING SNAGS: | | < 10 | | 10 - 24 | | 25 - 50 | | > 50 |
| DEADFALL / LOGS: | | < 10 | | 10 - 24 | | 25 - 50 | | > 50 |

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| COMM. AGE : | | PIONEER | | YOUNG | | MID-AGE | | MATURE | | OLD GROWTH |

## SOIL ANALYSIS:

| | | | |
|---|---|---|---|
| TEXTURE: | DEPTH TO MOTTLES / GLEY | g = | G= |
| MOISTURE: | DEPTH OF ORGANICS: | | (cm) |
| HOMOGENEOUS / VARIABLE | DEPTH TO BEDROCK: | | (cm) |

## COMMUNITY CLASSIFICATION:

| | | |
|---|---|---|
| COMMUNITY CLASS: | | CODE: |
| COMMUNITY SERIES: | | CODE: |
| ECOSITE: | | CODE: |
| VEGETATION TYPE: Fresh-moist Red Oak-Shagbark Hickory | | CODE: FOD9-6* |
| INCLUSION | Deci Forest | CODE: |
| COMPLEX | | CODE: |

Notes:

7b - FRAPENN > CAROVAT

a = 9-6*
b = 9-6* } Both Feature 81

---

Feature 81

| | | |
|---|---|---|
| **ELC**<br>**PLANT SPECIES LIST** | SITE: | Samsung |
| | POLYGON: | 15-7 |
| | DATE: | 21-Dec-2010 |
| | SURVEYOR(S): | McStraus |

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD ) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

| SPECIES CODE | LAYER | | | | COLL. | SPECIES CODE | LAYER | | | | COLL. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | | | 1 | 2 | 3 | 4 | |
| QUERUBR | D | | | | | | | | | | |
| CAROVAT | R | O | | | | | | | | | |
| FRAPENN | R | O | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| Cornus | | | O | | | | | | | | |
| | | | | | | | | | | | |
| RHACATH | | | O | | | | | | | | |

Page ....... of .......

# ELC COMMUNITY DESCRIPTION & CLASSIFICATION

| | | | |
|---|---|---|---|
| SITE: | | POLYGON: | |
| SURVEYOR(S): | DATE: | | UTME: |
| START: | END | UTMZ: | UTMN: |

## POLYGON DESCRIPTION

| SYSTEM | SUBSTRATE | TOPOGRAPHIC FEATURE | HISTORY | PLANT FORM | COMMUNITY |
|---|---|---|---|---|---|
| ☐ TERRESTRIAL<br>☐ WETLAND<br>☐ AQUATIC | ☐ ORGANIC<br>☐ MINERAL SOIL<br>☐ PARENT MIN.<br>☐ ACIDIC BEDRK.<br>☐ BASIC BEDRK.<br>☐ CARB. BEDRK. | ☐ LACUSTRINE<br>☐ RIVERINE<br>☐ BOTTOMLAND<br>☐ TERRACE<br>☐ VALLEY SLOPE<br>☐ TABLELAND<br>☐ ROLL UPLAND<br>☐ CLIFF<br>☐ TALUS<br>☐ CREVICE / CAVE<br>☐ ALVAR<br>☐ ROCKLAND<br>☐ BEACH / BAR<br>☐ SAND DUNE<br>☐ BLUFF | ☐ NATURAL<br>☐ CULTURAL | ☐ PLANKTON<br>☐ SUBMERGED<br>☐ FLOATING-LVD.<br>☐ GRAMINOID<br>☐ FORB<br>☐ LICHEN<br>☐ BRYOPHYTE<br>☐ DECIDUOUS<br>☐ CONIFEROUS<br>☐ MIXED | ☐ LAKE<br>☐ POND<br>☐ RIVER<br>☐ STREAM<br>☐ MARSH<br>☐ SWAMP<br>☐ FEN<br>☐ BOG<br>☐ BARREN<br>☐ MEADOW<br>☐ PRAIRIE<br>☐ THICKET<br>☐ SAVANNAH<br>☐ WOODLAND<br>☐ FOREST<br>☐ PLANTATION |
| **SITE**<br>☐ OPEN WATER<br>☐ SHALLOW WATER<br>☐ SURFICIAL DEP.<br>☐ BEDROCK | | | **COVER**<br>☐ OPEN<br>☐ SHRUB<br>☐ TREED | | |

## STAND DESCRIPTION:

| | LAYER | HT | CVR | SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO) |
|---|---|---|---|---|
| 1 | CANOPY | 1 | 3 | FRAPENN |
| 2 | SUB-CANOPY | | | |
| 3 | UNDERSTOREY | | | |
| 4 | GRD. LAYER | | | |

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| STAND COMPOSITION: | | | | | | BA: | |
| SIZE CLASS ANALYSIS: | | < 10 | | 10 - 24 | | 25 - 50 | > 50 |
| STANDING SNAGS: | | < 10 | | 10 - 24 | | 25 - 50 | > 50 |
| DEADFALL / LOGS: | | < 10 | | 10 - 24 | | 25 - 50 | > 50 |

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| COMM. AGE : | | PIONEER | X | YOUNG | | MID-AGE | | MATURE | OLD GROWTH |

## SOIL ANALYSIS:

| | | | |
|---|---|---|---|
| TEXTURE: | DEPTH TO MOTTLES / GLEY | g = | G= |
| MOISTURE: | DEPTH OF ORGANICS: | | (cm) |
| HOMOGENEOUS / VARIABLE | DEPTH TO BEDROCK: | | (cm) |

## COMMUNITY CLASSIFICATION:

| | | |
|---|---|---|
| COMMUNITY CLASS: | | CODE: |
| COMMUNITY SERIES: | | CODE: |
| ECOSITE: | | CODE: |
| VEGETATION TYPE: Green Ash Cultural Woodland | | CODE: CUW1-4 |
| INCLUSION | | CODE: |
| COMPLEX | | CODE: |

Notes: Succeeding forest

Feature 81

# ELC PLANT SPECIES LIST

| | |
|---|---|
| SITE: | Samsung |
| POLYGON: | 15-8 |
| DATE: | 21-Dec-2010 |
| SURVEYOR(S): | M. Straus |

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

| SPECIES CODE | LAYER 1 | 2 | 3 | 4 | COLL. | SPECIES CODE | LAYER 1 | 2 | 3 | 4 | COLL. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FRAPENN | D | | | | | CUM sp. | | | | | |

**ELC** — COMMUNITY DESCRIPTION & CLASSIFICATION

| SITE: | | POLYGON: | |
|---|---|---|---|
| SURVEYOR(S): | | DATE: | UTME: |
| START: | END | UTMZ: | UTMN: |

## POLYGON DESCRIPTION

| SYSTEM | SUBSTRATE | TOPOGRAPHIC FEATURE | HISTORY | PLANT FORM | COMMUNITY |
|---|---|---|---|---|---|
| ☐ TERRESTRIAL<br>☐ WETLAND<br>☐ AQUATIC | ☐ ORGANIC<br>☐ MINERAL SOIL<br>☐ PARENT MIN.<br>☐ ACIDIC BEDRK.<br>☐ BASIC BEDRK.<br>☐ CARB. BEDRK. | ☐ LACUSTRINE<br>☐ RIVERINE<br>☐ BOTTOMLAND<br>☐ TERRACE<br>☐ VALLEY SLOPE<br>☐ TABLELAND<br>☐ ROLL. UPLAND<br>☐ CLIFF<br>☐ TALUS<br>☐ CREVICE / CAVE<br>☐ ALVAR<br>☐ ROCKLAND<br>☐ BEACH / BAR<br>☐ SAND DUNE<br>☐ BLUFF | ☐ NATURAL<br>☐ CULTURAL | ☐ PLANKTON<br>☐ SUBMERGED<br>☐ FLOATING-LVD.<br>☐ GRAMINOID<br>☐ FORB<br>☐ LICHEN<br>☐ BRYOPHYTE<br>☐ DECIDUOUS<br>☐ CONIFEROUS<br>☐ MIXED | ☐ LAKE<br>☐ POND<br>☐ RIVER<br>☐ STREAM<br>☐ MARSH<br>☐ SWAMP<br>☐ FEN<br>☐ BOG<br>☐ BARREN<br>☐ MEADOW<br>☐ PRAIRIE<br>☐ THICKET<br>☐ SAVANNAH<br>☐ WOODLAND<br>☐ FOREST<br>☐ PLANTATION |
| **SITE**<br>☐ OPEN WATER<br>☐ SHALLOW WATER<br>☐ SURFICIAL DEP.<br>☐ BEDROCK | | | **COVER**<br>☐ OPEN<br>☐ SHRUB<br>☐ TREED | | |

## STAND DESCRIPTION:

| | LAYER | HT | CVR | SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO) |
|---|---|---|---|---|
| 1 | CANOPY | 1 | 4 | ACER >> PINRES = FRAPENN |
| 2 | SUB-CANOPY | | | |
| 3 | UNDERSTOREY | | | |
| 4 | GRD. LAYER | | | |

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

| STAND COMPOSITION: | | BA: |
|---|---|---|

| SIZE CLASS ANALYSIS: | W | < 10 | O | 10 - 24 | O | 25 - 50 | N | > 50 |
|---|---|---|---|---|---|---|---|---|
| STANDING SNAGS: | | < 10 | | 10 - 24 | | 25 - 50 | | > 50 |
| DEADFALL / LOGS: | | < 10 | | 10 - 24 | | 25 - 50 | | > 50 |

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

| COMM. AGE : | | PIONEER | | YOUNG | | MID-AGE | | MATURE | | OLD GROWTH |
|---|---|---|---|---|---|---|---|---|---|---|

## SOIL ANALYSIS:

| TEXTURE: | DEPTH TO MOTTLES / GLEY | g = | G= |
|---|---|---|---|
| MOISTURE: | DEPTH OF ORGANICS: | | (cm) |
| HOMOGENEOUS / VARIABLE | DEPTH TO BEDROCK: | | (cm) |

## COMMUNITY CLASSIFICATION:

| COMMUNITY CLASS: | CODE: |
|---|---|
| COMMUNITY SERIES: | CODE: |
| ECOSITE: | CODE: |
| VEGETATION TYPE: Mixed Plantation | CODE: CUP2 |
| INCLUSION | CODE: |
| COMPLEX | CODE: |

Notes: Mixed = Pine + maple + ash

---

**ELC** — PLANT SPECIES LIST

No feature

| SITE: | Samsung |
|---|---|
| POLYGON: | 15-9 |
| DATE: | 21-Dec-2010 |
| SURVEYOR(S): | M. Straus |

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

| SPECIES CODE | LAYER 1 | 2 | 3 | 4 | COLL. |
|---|---|---|---|---|---|
| Acer L (Norway ? Sugar ?) | D | | | | |
| PINRESI | D | | | | |
| FRAPENN | D | | | | |

| SPECIES CODE | LAYER 1 | 2 | 3 | 4 | COLL. |
|---|---|---|---|---|---|

Page ..... of .....


W:\active\60960577\drawing\GIS\MXD\NaturalHeritageAssessment\FieldMap\60960577_FIELDMAP_ProjectLocation_Mapbook_20100921_PW.mxd - 9/22/2010 @ 12:15:19 PM

September 2010
160960577

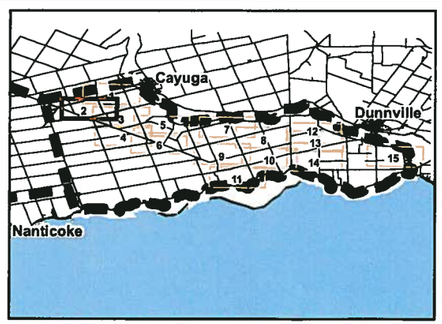
## Legend

- Project Location
- Proposed Turbine Location
- Proposed Access Road
- Proposed Collector Line
- ROW Installation Zone
- 120m Investigation Zone
- Elexco Aquired Agreements
- Government Lands
- UDI Lands
- Road
- Railway
- Abandoned Railway
- Transmission Line (OBM)
- Deer Wintering Area
- Provincially Significant Wetland
- Non-Provincially Significant Wetland
- Watercourse (OBM)
- Waterbody

**Area of Natural and Scientific Interest (ANSI)**

- Life Science, Provincially Significant
- Earth Science, Provincially Significant
- Earth Science, Regionally Significant

Stantec




Original: Don't Throw Out

## Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © GREP, 2010; © Samsung, 2010.
3. Image Source: © First Base Solutions, 2010 - Imagery Date: Spring 2006; LIDAR IMAGERY SOURCE???

Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

**FIELD MAP 2**

Title

**PROJECT LOCATION MAP**

Stantec Consulting Ltd.
70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

# Wildlife Habitat Assessment

581825
Turbine 13 + Access Road

Project Number 161010646

Project Name: Samsung

Date / Time: Sept. 23. 2010

Field Personnel: GAW

| Weather Conditions: | Temp: | Wind: | Cloud: | PPT: | PPT in last 24 hrs: |
|---|---|---|---|---|---|
| | 22° | 2 | 50% | 0 | RAIN |

Reptile Hibernacula Features i.e. features that would provide a route underground, including buried concrete or rock (e.g. foundations, bridge abutments or culverts with cracks/entry points, exposed rock crevices or inactive animal burrows)

Does the site contain potential reptile hibernacula features? ☐ Yes ☒ No (if yes, describe details in Table 1).

Bat Hibernacula Features i.e. karst topography, abandoned mines or caves

Does the site contain potential bat hibernacula features? ☐ Yes ☒ No (if yes, describe details in Table 1).

Table 1: Potential bat/reptile hibernacula features identified on site

| UTM | Feature type | Photo # | Description | Species observed using feature |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |

## Species Observations

*List species and type of observation:* (**TK** = track, **SC** = scat, **VO** = vocalization, **OB** = observed, **DP** = distinctive parts, **FE** = feeding evidence, **CA** = carcass, **FY** = eggs, nest, **HO** = house/den, **SI** = other sign)

| Birds | Mammals | Herps | Butterflies / Dragonflies | Other |
|---|---|---|---|---|
| *i.e. AMRO/VO*<br>EUST<br>BLJA | barn kitty | | Sulphur yellow<br>monarch | |

**Woodland Assessment**- *complete 1 assessment for each woodland*

***Woodlot # (indicate on map) :*** None

**Approximate age of stand** _____

**Are large** (i.e. >40cmDBH and >25m tall) **trees present** ☐ Yes ☐ No
If yes, approximate # present or % of stand _____
Location in stand (i.e throughout, in west side only, in FOD2-6 only etc,.) _____

**Are snags present?** ☐ Yes ☐ No
If yes provide characterization of number present, height and DBH of snags and indicate if they contain loose bark.

**Trees with cavities present?** ☐ No ☐ Rare ☐ Occasional ☐ Abundant
If present:

| | Height ranges of tree | Range of Tree DBH | Range of Cavity Heights | Cavity sizes (approx. diameter) |
|---|---|---|---|---|
| | | | | |

**Presence of large stick nests** (i.e. raptor nests)? ☐ Yes ☐ No
If yes, UTM and describe tree type, height and position in tree, size of nest, species present
_____

**Evidence of disturbance?** (i.e logging, roads, paths, ATV use, trails) ☐ Yes ☐ No
If yes, describe _____

**Seeps/ springs present?** ☐ Yes ☐ No If yes,

| Seep/Spring # | UTM | Description | Surrounding Habitat |
|---|---|---|---|
| | | | |
| | | | |

**Vernal Pools Present?** ☐ Yes ☐ No If yes,

| # | Location | Depth of water | Size of pool (diameter) | Presence of emergent/submergent veg? | Presence of shrubs, logs at pond edge |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

No feature

# ELC — COMMUNITY DESCRIPTION & CLASSIFICATION

| | | | |
|---|---|---|---|
| SITE: 161010646 | | POLYGON: (1) | |
| SURVEYOR(S): GAW | DATE: Sept. 21. 2010 | UTME: | |
| START: | END | UTMZ: | UTMN: |

## POLYGON DESCRIPTION

| SYSTEM | SUBSTRATE | TOPOGRAPHIC FEATURE | HISTORY | PLANT FORM | COMMUNITY |
|---|---|---|---|---|---|
| ☐ TERRESTRIAL<br>☐ WETLAND<br>☐ AQUATIC | ☐ ORGANIC<br>☐ MINERAL SOIL<br>☐ PARENT MIN.<br>☐ ACIDIC BEDRK.<br>☐ BASIC BEDRK.<br>☐ CARB. BEDRK. | ☐ LACUSTRINE<br>☐ RIVERINE<br>☐ BOTTOMLAND<br>☐ TERRACE<br>☐ VALLEY SLOPE<br>☐ TABLELAND<br>☐ ROLL. UPLAND<br>☐ CLIFF<br>☐ TALUS<br>☐ CREVICE / CAVE<br>☐ ALVAR<br>☐ ROCKLAND<br>☐ BEACH / BAR<br>☐ SAND DUNE<br>☐ BLUFF | ☐ NATURAL<br>☐ CULTURAL | ☐ PLANKTON<br>☐ SUBMERGED<br>☐ FLOATING-LVD.<br>☐ GRAMINOID<br>☐ FORB<br>☐ LICHEN<br>☐ BRYOPHYTE<br>☐ DECIDUOUS<br>☐ CONIFEROUS<br>☐ MIXED | ☐ LAKE<br>☐ POND<br>☐ RIVER<br>☐ STREAM<br>☐ MARSH<br>☐ SWAMP<br>☐ FEN<br>☐ BOG<br>☐ BARREN<br>☐ MEADOW<br>☐ PRAIRIE<br>☐ THICKET<br>☐ SAVANNAH<br>☐ WOODLAND<br>☐ FOREST<br>☐ PLANTATION |
| **SITE**<br>☐ OPEN WATER<br>☐ SHALLOW WATER<br>☐ SURFICIAL DEP.<br>☐ BEDROCK | | | **COVER**<br>☐ OPEN<br>☐ SHRUB<br>☐ TREED | | |

## STAND DESCRIPTION:

| | LAYER | HT | CVR | SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO) |
|---|---|---|---|---|
| 1 | CANOPY | 7 | 4 | Grasses, clovers, b.f. trefoil |
| 2 | SUB-CANOPY | | | |
| 3 | UNDERSTOREY | | | |
| 4 | GRD. LAYER | | | |

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT<1 m 6 = 0.2<HT<0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR < 10% 2= 10 < CVR < 25% 3= 25 < CVR < 60% 4= CVR > 60%

| | | | | | |
|---|---|---|---|---|---|
| STAND COMPOSITION: | | | | | BA: |
| SIZE CLASS ANALYSIS: | ☐ < 10 | ☐ 10 - 24 | ☐ 25 - 50 | ☐ > 50 | |
| STANDING SNAGS: | ☐ < 10 | ☐ 10 - 24 | ☐ 25 - 50 | ☐ > 50 | |
| DEADFALL / LOGS: | ☐ < 10 | ☐ 10 - 24 | ☐ 25 - 50 | ☐ > 50 | |

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

| COMM. AGE : | ☐ PIONEER | ☒ YOUNG | ☐ MID-AGE | ☐ MATURE | ☐ OLD GROWTH |
|---|---|---|---|---|---|

## SOIL ANALYSIS:

| | | | |
|---|---|---|---|
| TEXTURE: | DEPTH TO MOTTLES / GLEY | g = | G= |
| MOISTURE: | DEPTH OF ORGANICS: | | (cm) |
| HOMOGENEOUS / VARIABLE | DEPTH TO BEDROCK: | | (cm) |

## COMMUNITYCLASSIFICATION:

| | |
|---|---|
| COMMUNITY CLASS: | CODE: |
| COMMUNITY SERIES: | CODE: |
| ECOSITE: | CODE: |
| VEGETATION TYPE: | CODE: Pasture |
| ☐ INCLUSION | CODE: |
| ☐ COMPLEX | CODE: |

Notes:

# ELC — PLANT SPECIES LIST

| | |
|---|---|
| SITE: Turbine #2 + Access Road | 581819 |
| POLYGON: | |
| DATE: | |
| SURVEYOR(S): | |

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

| SPECIES CODE | LAYER 1 | 2 | 3 | 4 | COLL. |
|---|---|---|---|---|---|
| PLAMAJO | A | | | | |
| ragweed | O | | | | |
| barnyard gr. | O | | | | |
| Green foxtail | O | | | | |
| timothy | O | | | | |
| red clover | A | | | | |
| b. medic | A | | | | |
| alsike clover | A | | | | |
| RUMCRIS | O | | | | |
| ladysthumb | O | | | | |
| ASTNOVA | O | | | | |
| SOLCANA | O | | | | |
| SOLALTI | O | | | | |
| DAUCARO | O | | | | |
| VICCRAC | A | | | | |
| TAROFFI | A | | | | |
| b.f. trefoil | A | | | | |
| teasle | O | | | | |
| c. burdock | O | | | | |
| VITRIPA | O | | | | |
| RUBIDAE | O | | | | |
| chicory | O | | | | |
| bull thistle | O | | | | |
| wht. clover | O | | | | |
| ERIPH.PH | O | | | | |
| Ox-eye daisy | O | | | | |
| orchard grass | A | | | | |

| SPECIES CODE | LAYER 1 | 2 | 3 | 4 | COLL. |
|---|---|---|---|---|---|
| Grasses | A | | | | |
| ROSMULTI | O | | | | |
| ASCSYRI | O | | | | |
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| Hedgerows: | | | | | |
| Plum? | | R | | | X |
| QUEALBA | O | | | | |
| CORFORA | | | A | | |
| ACESASA | O | | | | |
| FRAAMER | O | | | | |
| RHACATH | | A | A | | |
| QUEMACR | O | | | | |
| Crataegus sp. | | A | A | | |
| Shagbark | A | | | | |
| PRUSERO | O | O | | | |

| | | | | |
|---|---|---|---|---|
| **ELC**<br>COMMUNITY DESCRIPTION & CLASSIFICATION | SITE: | | POLYGON: | |
| | SURVEYOR(S): | DATE: | | UTME: |
| | START: | END | UTMZ: | UTMN: |

## POLYGON DESCRIPTION

| SYSTEM | SUBSTRATE | TOPOGRAPHIC FEATURE | HISTORY | PLANT FORM | COMMUNITY |
|---|---|---|---|---|---|
| ☐ TERRESTRIAL<br>☐ WETLAND<br>☐ AQUATIC | ☐ ORGANIC<br>☐ MINERAL SOIL<br>☐ PARENT MIN.<br>☐ ACIDIC BEDRK.<br>☐ BASIC BEDRK.<br>☐ CARB. BEDRK. | ☐ LACUSTRINE<br>☐ RIVERINE<br>☐ BOTTOMLAND<br>☐ TERRACE<br>☐ VALLEY SLOPE<br>☐ TABLELAND<br>☐ ROLL. UPLAND<br>☐ CLIFF<br>☐ TALUS<br>☐ CREVICE / CAVE<br>☐ ALVAR<br>☐ ROCKLAND<br>☐ BEACH / BAR<br>☐ SAND DUNE<br>☐ BLUFF | ☐ NATURAL<br>☐ CULTURAL | ☐ PLANKTON<br>☐ SUBMERGED<br>☐ FLOATING-LVD.<br>☐ GRAMINOID<br>☐ FORB<br>☐ LICHEN<br>☐ BRYOPHYTE<br>☐ DECIDUOUS<br>☐ CONIFEROUS<br>☐ MIXED | ☐ LAKE<br>☐ POND<br>☐ RIVER<br>☐ STREAM<br>☐ MARSH<br>☐ SWAMP<br>☐ FEN<br>☐ BOG<br>☐ BARREN<br>☐ MEADOW<br>☐ PRAIRIE<br>☐ THICKET<br>☐ SAVANNAH<br>☐ WOODLAND<br>☐ FOREST<br>☐ PLANTATION |
| **SITE** | | | **COVER** | | |
| ☐ OPEN WATER<br>☐ SHALLOW WATER<br>☐ SURFICIAL DEP.<br>☐ BEDROCK | | | ☐ OPEN<br>☐ SHRUB<br>☐ TREED | | |

## STAND DESCRIPTION:

| | LAYER | HT | CVR | SPECIES IN ORDER OF DECREASING DOMINANCE<br>(>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO) |
|---|---|---|---|---|
| 1 | CANOPY | | | |
| 2 | SUB-CANOPY | | | |
| 3 | UNDERSTOREY | | | |
| 4 | GRD. LAYER | | | |

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| STAND COMPOSITION: | | | | | | | | | BA: |
| SIZE CLASS ANALYSIS: | | < 10 | | 10 - 24 | | 25 - 50 | | > 50 | |
| STANDING SNAGS: | | < 10 | | 10 - 24 | | 25 - 50 | | > 50 | |
| DEADFALL / LOGS: | | < 10 | | 10 - 24 | | 25 - 50 | | > 50 | |

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| COMM. AGE : | | PIONEER | | YOUNG | | MID-AGE | | MATURE | | OLD GROWTH |

## SOIL ANALYSIS:

| | | | |
|---|---|---|---|
| TEXTURE: | DEPTH TO MOTTLES / GLEY | g = | G= |
| MOISTURE: | DEPTH OF ORGANICS: | | (cm) |
| HOMOGENEOUS / VARIABLE | DEPTH TO BEDROCK: | | (cm) |

## COMMUNITYCLASSIFICATION:

| | | | |
|---|---|---|---|
| COMMUNITY CLASS: | | | CODE: |
| COMMUNITY SERIES: | | | CODE: |
| ECOSITE: | | | CODE: |
| VEGETATION TYPE: | | | CODE: |
| | INCLUSION | | CODE: |
| | COMPLEX | | CODE: |

Notes:

---

| | |
|---|---|
| **ELC**<br>PLANT SPECIES LIST | SITE: |
| | POLYGON: |
| | DATE: |
| | SURVEYOR(S): |

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

| SPECIES CODE | LAYER | | | | COLL. | SPECIES CODE | LAYER | | | | COLL. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | | | 1 | 2 | 3 | 4 | |
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Turbine #2

Stantec Consulting Ltd.
70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

# Wildlife Habitat Assessment

Turbine 581819

Project Number: 161010646

Project Name: Samsung

Date / Time: Sept. 21. 2010

Field Personnel: GAW

| Weather Conditions: | Temp: | Wind: | Cloud: | PPT: | PPT in last 24 hrs: |
|---|---|---|---|---|---|
| | 23° | 4 | 25% | ∅ | ∅ |

Reptile Hibernacula Features i.e. features that would provide a route underground, including buried concrete or rock (e.g. foundations, bridge abutments or culverts with cracks/entry points, exposed rock crevices or inactive animal burrows)

Does the site contain potential reptile hibernacula features? ☒ Yes ☐ No (if yes, describe details in Table 1).

Bat Hibernacula Features i.e. karst topography, abandoned mines or caves

Does the site contain potential bat hibernacula features? ☐ Yes ☒ No (if yes, describe details in Table 1).

Table 1: Potential bat/reptile hibernacula features identified on site

| UTM | Feature type | Photo # | Description | Species observed using feature |
|---|---|---|---|---|
| -see air photo | old barn | ∅ | old barn | ∅ |
| | | | | |
| | | | | |

## Species Observations

*List species and type of observation:* (**TK** = track, **SC** = scat, **VO** = vocalization, **OB** = observed, **DP** = distinctive parts, **FE** = feeding evidence, **CA** = carcass, **FY** = eggs, nest, **HO** = house/den, **SI** = other sign)

| Birds | Mammals | Herps | Butterflies / Dragonflies | Other |
|---|---|---|---|---|
| *i.e. AMRO/VO*<br>MODO<br>BLJA<br>KILL | | | Yellow sulphur<br>cabbage wht | |

**Woodland Assessment-** *complete 1 assessment for each woodland*

***Woodlot # (indicate on map) :*** No Woodlots

**Approximate age of stand** _____

**Are large** (i.e. >40cmDBH and >25m tall) **trees present** ☐ Yes ☐ No
If yes, approximate # present or % of stand _____
Location in stand (i.e throughout, in west side only, in FOD2-6 only etc,.) _____

**Are snags present?** ☐ Yes ☐ No
If yes provide characterization of number present, height and DBH of snags and indicate if they contain loose bark.

**Trees with cavities present?** ☐ No ☐ Rare ☐ Occasional ☐ Abundant
If present:

| | Height ranges of tree | Range of Tree DBH | Range of Cavity Heights | Cavity sizes (approx. diameter) |
|---|---|---|---|---|
| | | | | |

**Presence of large stick nests** (i.e. raptor nests)? ☐ Yes ☐ No
If yes, UTM and describe tree type, height and position in tree, size of nest, species present
_____

**Evidence of disturbance?** (i.e logging, roads, paths, ATV use, trails) ☐ Yes ☐ No
If yes, describe _____

**Seeps/ springs present?** ☐ Yes ☒ No If yes,

| Seep/Spring # | UTM | Description | Surrounding Habitat |
|---|---|---|---|
| | | | |
| | | | |

**Vernal Pools Present?** ☐ Yes ☒ No If yes,

| # | Location | Depth of water | Size of pool (diameter) | Presence of emergent/submergent veg? | Presence of shrubs, logs at pond edge |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

↳ farm pond present


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December 2010
160960577

## Legend

- Proposed Turbine Location
- 120m Zone of Investigation
- ROW Installation Zone
- ELC Communities
- Access Road
- Overhead Collector Line
- Underground Collector Line
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- Road
- Transmission Line (OBM)
- Provincially Significant Wetland
- Non-Provincially Significant Wetland
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**Forest Communities (FO)**
**FOM2-2**- Dry-fresh White Pine – Sugar Maple Mixed Forest
**FOD**- Deciduous Forest
**FOD2-1**- Dry-fresh Oak – Red Maple Deciduous Forest
**FDD2-2**- Dry-fresh Oak – Hickory Deciduous Forest
**FOD2-4**- Dry-fresh Oak – Hardwood Deciduous Forest
**FOD3-1**- Dry-fresh Poplar Deciduous Forest
**FOD4-1**- Dry-fresh Beech Deciduous Forest
**FOD4-2**- Dry-fresh White Ash Deciduous Forest
**FOD5-1**- Dry-fresh Sugar Maple Deciduous Forest
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**FOD5-3**- Dry-fresh Sugar Maple – Oak Deciduous Forest
**FOD5-8**- Dry-fresh Sugar Maple – White Ash Deciduous Forest
**FOD5-11***- Dry-fresh Sugar Maple – Oak – Beech Deciduous Forest
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**Swamp Communities (SW)**
**SWD1-1**- Swamp White Oak Mineral Deciduous Swamp
**SWD2-2**- Green Ash Mineral Deciduous Swamp
**SWD2-3***- Ash – Hardwood Mineral Deciduous Swamp
**SWD2-4***- Green Ash – Red Maple Mineral Deciduous Swamp
**SWD3-1**- Red Maple Mineral Deciduous Swamp
**SWD3-2**- Silver Maple Mineral Deciduous Swamp
**SWD3-5***- Swamp Maple - Green Ash Mineral Deciduous Swamp
**SWD4-1**- Willow Mineral Deciduous Swamp
**SWD4-2**- White Elm Mineral Deciduous Swamp
**SWD3-3**- Swamp Maple Mineral Deciduous Swamp
**SWD4-6***- Green Ash – Swamp Maple Mineral Deciduous Swamp
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**SWT2-4**- Buttonbush Mineral Thicket Swamp
**SWT2-5**- Red Osier Dogwood Mineral Thicket Swamp
**SWT2-8**- Silky Dogwood Mineral Thicket Swamp
**SWT2-9**- Gray Dogwood Mineral Thicket Swamp
**SWT2-13***- Willow – Dogwood Mineral Thicket Swamp
**SWT2-14***- Winterberry – Buttonbush Mineral Thicket Swamp
**SWT2-15***- Red Maple Mineral Thicket Swamp
**SWT3-7**- Winterberry Organic Thicket Swamp

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**CUM1**- Mineral Cultural Meadow
**CUT1-7**- European Buckthorn – Sweet Cherry Cultural thicket
**CUW1-3***- Ash – Sumac Mineral Cultural Woodland
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**CUW1-5***- Maple-Ash Cultural Woodland
**CUW1-6***- Green Ash Cultural Woodland
**CUW1-7***- Red maple Mineral Cultural Woodland
**CUP3-12***- White Pine – White/Norway Spruce Coniferous Plantation
**CUP3-13***- White Spruce Coniferous Plantation

**D**- Disturbed
**R**- Residential


## Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © Samsung, 2010.
3. Image Source: © Grand River Conservation Authority, 2010 - imagery Date: Spring 2006: LIDAR IMAGERY SOURCE???
4. Produced using the Version 5 site plan produced by Stantec updated on Dec 13.

Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
TILE 2 DRAFT

Title
ELC VEGETATION COMMUNITIES

Stantec

No feature association

## ELC — COMMUNITY DESCRIPTION & CLASSIFICATION

| | | | |
|---|---|---|---|
| SITE: | | POLYGON: | |
| SURVEYOR(S): | DATE: | UTME: | |
| START: | END | UTMZ: | UTMN: |

### POLYGON DESCRIPTION

| SYSTEM | SUBSTRATE | TOPOGRAPHIC FEATURE | HISTORY | PLANT FORM | COMMUNITY |
|---|---|---|---|---|---|
| ☐ TERRESTRIAL | ☐ ORGANIC | ☐ LACUSTRINE | ☐ NATURAL | ☐ PLANKTON | ☐ LAKE |
| ☐ WETLAND | ☐ MINERAL SOIL | ☐ RIVERINE | ☐ CULTURAL | ☐ SUBMERGED | ☐ POND |
| ☐ AQUATIC | ☐ PARENT MIN. | ☐ BOTTOMLAND | | ☐ FLOATING-LVD. | ☐ RIVER |
| | ☐ ACIDIC BEDRK. | ☐ TERRACE | | ☐ GRAMINOID | ☐ STREAM |
| | ☐ BASIC BEDRK. | ☐ VALLEY SLOPE | | ☐ FORB | ☐ MARSH |
| | ☐ CARB. BEDRK. | ☐ TABLELAND | | ☐ LICHEN | ☐ SWAMP |
| | | ☐ ROLL. UPLAND | | ☐ BRYOPHYTE | ☐ FEN |
| | | ☐ CLIFF | | ☐ DECIDUOUS | ☐ BOG |
| | | ☐ TALUS | | ☐ CONIFEROUS | ☐ BARREN |
| | | ☐ CREVICE / CAVE | | ☐ MIXED | ☐ MEADOW |
| | | ☐ ALVAR | | | ☐ PRAIRIE |
| | | ☐ ROCKLAND | | | ☐ THICKET |
| | | ☐ BEACH / BAR | | | ☐ SAVANNAH |
| | | ☐ SAND DUNE | | | ☐ WOODLAND |
| | | ☐ BLUFF | | | ☐ FOREST |
| | | | | | ☐ PLANTATION |

| SITE | COVER |
|---|---|
| ☐ OPEN WATER | ☐ OPEN |
| ☐ SHALLOW WATER | ☐ SHRUB |
| ☐ SURFICIAL DEP. | ☐ TREED |
| ☐ BEDROCK | |

### STAND DESCRIPTION:

| | LAYER | HT | CVR | SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO) |
|---|---|---|---|---|
| 1 | CANOPY | | | |
| 2 | SUB-CANOPY | | | |
| 3 | UNDERSTOREY | 4 | 4 | CORRACE |
| 4 | GRD. LAYER | 5-7 | 4 | red canary grass |

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT<1 m 6 = 0.2<HT<0.5 m 7 = HT<0.2 m

CVR CODES 0 = NONE 1 = 0% < CVR < 10% 2 = 10 < CVR < 25% 3 = 25 < CVR < 60% 4 = CVR > 60%

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| STAND COMPOSITION: | | | | | | | BA: | |
| SIZE CLASS ANALYSIS: | | < 10 | | 10 - 24 | | 25 - 50 | | > 50 |
| STANDING SNAGS: | | < 10 | | 10 - 24 | | 25 - 50 | | > 50 |
| DEADFALL / LOGS: | | < 10 | | 10 - 24 | | 25 - 50 | | > 50 |

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| COMM. AGE : | | X | PIONEER | | YOUNG | | MID-AGE | | MATURE | | OLD GROWTH |

### SOIL ANALYSIS:

| | | | |
|---|---|---|---|
| TEXTURE: | DEPTH TO MOTTLES / GLEY | g = | G= |
| MOISTURE: | DEPTH OF ORGANICS: | | (cm) |
| HOMOGENEOUS / VARIABLE | DEPTH TO BEDROCK: | | (cm) |

### COMMUNITY CLASSIFICATION:

| | | |
|---|---|---|
| COMMUNITY CLASS: | | CODE: |
| COMMUNITY SERIES: | | CODE: |
| ECOSITE: | | CODE: |
| VEGETATION TYPE: | Gray Dogwood Thicket Swamp | CODE: SWT2-9 |
| INCLUSION | | CODE: |
| COMPLEX | | CODE: |

Notes: Edge assessment

## ELC — PLANT SPECIES LIST

SITE: Samsung

POLYGON: 2-1

DATE: 22-Oct-2020

SURVEYOR(S): M. Straus

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

| SPECIES CODE | LAYER 1 | 2 | 3 | 4 | COLL. |
|---|---|---|---|---|---|
| CORRACE | | | D | | |

| SPECIES CODE | LAYER 1 | 2 | 3 | 4 | COLL. |
|---|---|---|---|---|---|
| Red canary grass | | | | O | |

Page ..... of .....

| | | | | |
|---|---|---|---|---|
| **ELC**<br>**COMMUNITY DESCRIPTION & CLASSIFICATION** | SITE: | | POLYGON: | |
| | SURVEYOR(S): | DATE: | | UTME: |
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| **SITE** | | | **COVER** | | |
| ☐ OPEN WATER<br>☐ SHALLOW WATER<br>☐ SURFICIAL DEP.<br>☐ BEDROCK | | | ☐ OPEN<br>☐ SHRUB<br>☐ TREED | | |

## STAND DESCRIPTION:

| LAYER | | HT | CVR | SPECIES IN ORDER OF DECREASING DOMINANCE<br>(>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO) |
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| 3 | UNDERSTOREY | | | |
| 4 | GRD. LAYER | | | |

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| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
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| | | | |
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| | |
|---|---|
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| COMMUNITY SERIES: | CODE: |
| ECOSITE: | CODE: |
| VEGETATION TYPE: | CODE: |

| | | | |
|---|---|---|---|
| | INCLUSION | | CODE: |
| | COMPLEX | | CODE: |

Notes:

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| | |
|---|---|
| **ELC**<br>**PLANT SPECIES LIST** | SITE: |
| | POLYGON: |
| | DATE: |
| | SURVEYOR(S): |

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

| SPECIES CODE | LAYER | | | | COLL. | SPECIES CODE | LAYER | | | | COLL. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | | | 1 | 2 | 3 | 4 | |
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**R-** Residential


## Notes

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2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © Samsung, 2010.
3. Image Source: © Grand River Conservation Authority, 2010 - Imagery Date: Spring 2006; LIDAR IMAGERY SOURCE???
4. Produced using the Version 5 site plan produced by Stantec updated on Dec 13.

Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
TILE 4 DRAFT

Title
# ELC VEGETATION COMMUNITIES

Stantec


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**FOD9-6***- Fresh-moist Red Oak – Shagbark Hickory Deciduous Forest

**Swamp Communities (SW)**
**SWD1-1**- Swamp White Oak Mineral Deciduous Swamp
**SWD2-2**- Green Ash Mineral Deciduous Swamp
**SWD2-3***- Ash – Hardwood Mineral Deciduous Swamp
**SWD2-4***- Green Ash – Red Maple Mineral Deciduous Swamp
**SWD3-1**- Red Maple Mineral Deciduous Swamp
**SWD3-2**- Silver Maple Mineral Deciduous Swamp
**SWD3-5***- Swamp Maple - Green Ash Mineral Deciduous Swamp
**SWD4-1**- Willow Mineral Deciduous Swamp
**SWD4-2**- White Elm Mineral Deciduous Swamp
**SWD3-3**- Swamp Maple Mineral Deciduous Swamp
**SWD4-6***- Green Ash – Swamp Maple Mineral Deciduous Swamp
**SWT**- Thicket Swamp
**SWT2-4**- Buttonbush Mineral Thicket Swamp
**SWT2-5**- Red Osier Dogwood Mineral Thicket Swamp
**SWT2-6**- Silky Dogwood Mineral Thicket Swamp
**SWT2-9**- Gray Dogwood Mineral Thicket Swamp
**SWT2-13***- Willow – Dogwood Mineral Thicket Swamp
**SWT2-14***- Winterberry – Buttonbush Mineral Thicket Swamp
**SWT2-15***- Red Maple Mineral Thicket Swamp
**SWT3-7**- Winterberry Organic Thicket Swamp

**Marsh Communities (MA)**
**MAM2-2**- Reed Canary Grass Mineral Meadow Marsh
**MAM2-10**- Forb Mineral Meadow Marsh
**MAM2-11***- Forb – Graminoid Mineral Meadow Marsh
**MAS2-1**- Cattail Mineral Shallow Marsh
**MAS2-8**- Rice Cut-grass Mineral Shallow Marsh

**Cultural Communities (CU)**
**CUM1**- Mineral Cultural Meadow
**CUT1-7**- European Buckthorn – Sweet Cherry Cultural thicket
**CUW1-3***- Ash – Sumac Mineral Cultural Woodland
**CUW1-4***- Green Ash Mineral Cultural Woodland
**CUW1-5***- Maple-Ash Cultural Woodland
**CUW1-6***- Green Ash Cultural Woodland
**CUW1-7***- Red maple Mineral Cultural Woodland
**CUP3-12***- White Pine – White/Norway Spruce Coniferous Plantation
**CUP3-13***- White Spruce Coniferous Plantation

**D**- Disturbed
**R**- Residential


## Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © Samsung, 2010.
3. Image Source: © Grand River Conservation Authority, 2010 - Imagery Date: Spring 2006; LIDAR IMAGERY SOURCE???
4. Produced using the Version 5 site plan produced by Stantec updated on Dec 13.

Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
TILE 7 DRAFT

Title
# ELC VEGETATION COMMUNITIES

Stantec

**ELC** COMMUNITY DESCRIPTION & CLASSIFICATION

| SITE: | | POLYGON: | |
|---|---|---|---|
| SURVEYOR(S): | | DATE: | UTME: |
| START: | END | UTMZ: | UTMN: |

**POLYGON DESCRIPTION**

| SYSTEM | SUBSTRATE | TOPOGRAPHIC FEATURE | HISTORY | PLANT FORM | COMMUNITY |
|---|---|---|---|---|---|
| ☐ TERRESTRIAL<br>☐ WETLAND<br>☐ AQUATIC | ☐ ORGANIC<br>☐ MINERAL SOIL<br>☐ PARENT MIN.<br>☐ ACIDIC BEDRK.<br>☐ BASIC BEDRK.<br>☐ CARB. BEDRK. | ☐ LACUSTRINE<br>☐ RIVERINE,<br>☐ BOTTOMLAND<br>☐ TERRACE<br>☐ VALLEY SLOPE<br>☐ TABLELAND<br>☐ ROLL. UPLAND<br>☐ CLIFF<br>☐ TALUS<br>☐ CREVICE / CAVE<br>☐ ALVAR<br>☐ ROCKLAND<br>☐ BEACH / BAR<br>☐ SAND DUNE<br>☐ BLUFF | ☐ NATURAL<br>☐ CULTURAL | ☐ PLANKTON<br>☐ SUBMERGED<br>☐ FLOATING-LVD.<br>☐ GRAMINOID<br>☐ FORB<br>☐ LICHEN<br>☐ BRYOPHYTE<br>☐ DECIDUOUS<br>☐ CONIFEROUS<br>☐ MIXED | ☐ LAKE<br>☐ POND<br>☐ RIVER<br>☐ STREAM<br>☐ MARSH<br>☐ SWAMP<br>☐ FEN<br>☐ BOG<br>☐ BARREN<br>☐ MEADOW<br>☐ PRAIRIE<br>☐ THICKET<br>☐ SAVANNAH<br>☐ WOODLAND<br>☐ FOREST<br>☐ PLANTATION |
| **SITE**<br>☐ OPEN WATER<br>☐ SHALLOW WATER<br>☐ SURFICIAL DEP.<br>☐ BEDROCK | | | **COVER**<br>☐ OPEN<br>☐ SHRUB<br>☐ TREED | | |

**STAND DESCRIPTION:**

| | LAYER | HT | CVR | SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO) |
|---|---|---|---|---|
| 1 | CANOPY | 2 | 4 | FRAPENN |
| 2 | SUB-CANOPY | 3 | | " |
| 3 | UNDERSTOREY | 4 | 2 | Cornus, [Hawthorn, edge] |
| 4 | GRD. LAYER | | | |

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT≤0.2 m

CVR CODES 0= NONE 1= 0% < CVR < 10% 2= 10 < CVR < 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

| STAND COMPOSITION: | | | | | | | BA: |
|---|---|---|---|---|---|---|---|
| SIZE CLASS ANALYSIS: | A | < 10 | O | 10 - 24 | R | 25 - 50 | N | > 50 |
| STANDING SNAGS: | | < 10 | | 10 - 24 | | 25 - 50 | | > 50 |
| DEADFALL / LOGS: | | < 10 | | 10 - 24 | | 25 - 50 | | > 50 |

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

| COMM. AGE : | | PIONEER | X | YOUNG | | MID-AGE | | MATURE | | OLD GROWTH |
|---|---|---|---|---|---|---|---|---|---|---|

**SOIL ANALYSIS:**

| TEXTURE: | DEPTH TO MOTTLES / GLEY | g = | G= |
|---|---|---|---|
| MOISTURE: | DEPTH OF ORGANICS: | | (cm) |
| HOMOGENEOUS / VARIABLE | DEPTH TO BEDROCK: | | (cm) |

**COMMUNITYCLASSIFICATION:**

| | | CODE: |
|---|---|---|
| COMMUNITY CLASS: | | |
| COMMUNITY SERIES: | | CODE: |
| ECOSITE: | | CODE: |
| VEGETATION TYPE: | Green Ash Mineral Dec. Swamp | CODE: SWD2-2 |
| INCLUSION | | CODE: |
| COMPLEX | | CODE: |

Notes:

Snaggy meltop edge - down into SWD.

b - wide hedgerow - 14

No feature

**ELC** PLANT SPECIES LIST

SITE: Samsung

POLYGON: 7-3

DATE: 22-Dec-2010

SURVEYOR(S): M. Straus

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

| SPECIES CODE | LAYER 1 | 2 | 3 | 4 | COLL. |
|---|---|---|---|---|---|
| FRAPENN | D | D | | | |
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| | | | | | |
| RHACATH | | | R | O | |
| Hawthorn | | | R | O | |
| | | | | | |
| | | | | | |
| COR (RARE?) | | | D | | |
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| SPECIES CODE | LAYER 1 | 2 | 3 | 4 | COLL. |
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|---|---|---|---|---|
| **ELC**<br>COMMUNITY DESCRIPTION & CLASSIFICATION | SITE: | | POLYGON: | |
| | SURVEYOR(S): | DATE: | | UTME: |
| | START: | END | UTMZ: | UTMN: |

## POLYGON DESCRIPTION

| SYSTEM | SUBSTRATE | TOPOGRAPHIC FEATURE | HISTORY | PLANT FORM | COMMUNITY |
|---|---|---|---|---|---|
| ☐ TERRESTRIAL<br>☐ WETLAND<br>☐ AQUATIC | ☐ ORGANIC<br>☐ MINERAL SOIL<br>☐ PARENT MIN.<br>☐ ACIDIC BEDRK.<br>☐ BASIC BEDRK.<br>☐ CARB. BEDRK. | ☐ LACUSTRINE<br>☐ RIVERINE<br>☐ BOTTOMLAND<br>☐ TERRACE<br>☐ VALLEY SLOPE<br>☐ TABLELAND<br>☐ ROLL. UPLAND<br>☐ CLIFF<br>☐ TALUS<br>☐ CREVICE / CAVE<br>☐ ALVAR<br>☐ ROCKLAND<br>☐ BEACH / BAR<br>☐ SAND DUNE<br>☐ BLUFF | ☐ NATURAL<br>☐ CULTURAL | ☐ PLANKTON<br>☐ SUBMERGED<br>☐ FLOATING-LVD.<br>☐ GRAMINOID<br>☐ FORB<br>☐ LICHEN<br>☐ BRYOPHYTE<br>☐ DECIDUOUS<br>☐ CONIFEROUS<br>☐ MIXED | ☐ LAKE<br>☐ POND<br>☐ RIVER<br>☐ STREAM<br>☐ MARSH<br>☐ SWAMP<br>☐ FEN<br>☐ BOG<br>☐ BARREN<br>☐ MEADOW<br>☐ PRAIRIE<br>☐ THICKET<br>☐ SAVANNAH<br>☐ WOODLAND<br>☐ FOREST<br>☐ PLANTATION |
| **SITE** | | | **COVER** | | |
| ☐ OPEN WATER<br>☐ SHALLOW WATER<br>☐ SURFICIAL DEP.<br>☐ BEDROCK | | | ☐ OPEN<br>☐ SHRUB<br>☐ TREED | | |

## STAND DESCRIPTION:

| | LAYER | HT | CVR | SPECIES IN ORDER OF DECREASING DOMINANCE<br>(>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO) |
|---|---|---|---|---|
| 1 | CANOPY | | | |
| 2 | SUB-CANOPY | | | |
| 3 | UNDERSTOREY | | | |
| 4 | GRD. LAYER | | | |

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| STAND COMPOSITION: | | | | | | | BA: | |
| SIZE CLASS ANALYSIS: | | < 10 | | 10 - 24 | | 25 - 50 | | > 50 |
| STANDING SNAGS: | | < 10 | | 10 - 24 | | 25 - 50 | | > 50 |
| DEADFALL / LOGS: | | < 10 | | 10 - 24 | | 25 - 50 | | > 50 |

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| COMM. AGE : | | PIONEER | | YOUNG | | MID-AGE | | MATURE | | OLD GROWTH |

## SOIL ANALYSIS:

| | | | |
|---|---|---|---|
| TEXTURE: | DEPTH TO MOTTLES / GLEY | g = | G= |
| MOISTURE: | DEPTH OF ORGANICS: | | (cm) |
| HOMOGENEOUS / VARIABLE | DEPTH TO BEDROCK: | | (cm) |

## COMMUNITYCLASSIFICATION:

| | |
|---|---|
| COMMUNITY CLASS: | CODE: |
| COMMUNITY SERIES: | CODE: |
| ECOSITE: | CODE: |
| VEGETATION TYPE: | CODE: |

| | | | |
|---|---|---|---|
| | INCLUSION | | CODE: |
| | COMPLEX | | CODE: |

Notes:

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| | |
|---|---|
| **ELC**<br>PLANT SPECIES LIST | SITE: |
| | POLYGON: |
| | DATE: |
| | SURVEYOR(S): |

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

| SPECIES CODE | LAYER | | | | COLL. | SPECIES CODE | LAYER | | | | COLL. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | | | 1 | 2 | 3 | 4 | |

Page ....... of .......

# ELC — COMMUNITY DESCRIPTION & CLASSIFICATION

| | | | |
|---|---|---|---|
| SITE: | | POLYGON: | |
| SURVEYOR(S): | DATE: | | UTME: |
| START: | END | UTMZ. | UTMN: |

## POLYGON DESCRIPTION

| SYSTEM | SUBSTRATE | TOPOGRAPHIC FEATURE | HISTORY | PLANT FORM | COMMUNITY |
|---|---|---|---|---|---|
| ☐ TERRESTRIAL<br>☐ WETLAND<br>☐ AQUATIC | ☐ ORGANIC<br>☐ MINERAL SOIL<br>☐ PARENT MIN.<br>☐ ACIDIC BEDRK.<br>☐ BASIC BEDRK.<br>☐ CARB. BEDRK. | ☐ LACUSTRINE<br>☐ RIVERINE<br>☐ BOTTOMLAND<br>☐ TERRACE<br>☐ VALLEY SLOPE<br>☐ TABLELAND<br>☐ ROLL. UPLAND<br>☐ CLIFF<br>☐ TALUS<br>☐ CREVICE / CAVE<br>☐ ALVAR<br>☐ ROCKLAND<br>☐ BEACH / BAR<br>☐ SAND DUNE<br>☐ BLUFF | ☐ NATURAL<br>☐ CULTURAL | ☐ PLANKTON<br>☐ SUBMERGED<br>☐ FLOATING-LVD.<br>☐ GRAMINOID<br>☐ FORB<br>☐ LICHEN<br>☐ BRYOPHYTE<br>☐ DECIDUOUS<br>☐ CONIFEROUS<br>☐ MIXED | ☐ LAKE<br>☐ POND<br>☐ RIVER<br>☐ STREAM<br>☐ MARSH<br>☐ SWAMP<br>☐ FEN<br>☐ BOG<br>☐ BARREN<br>☐ MEADOW<br>☐ PRAIRIE<br>☐ THICKET<br>☐ SAVANNAH<br>☐ WOODLAND<br>☐ FOREST<br>☐ PLANTATION |
| **SITE**<br>☐ OPEN WATER<br>☐ SHALLOW WATER<br>☐ SURFICIAL DEP.<br>☐ BEDROCK | | | **COVER**<br>☐ OPEN<br>☐ SHRUB<br>☐ TREED | | |

## STAND DESCRIPTION:

| | LAYER | HT | CVR | SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO) |
|---|---|---|---|---|
| 1 | CANOPY | 2 | 2 | PRAPEN |
| 2 | SUB-CANOPY | 3 | — | |
| 3 | UNDERSTOREY | 4 | 2-3 | Cornus spp |
| 4 | GRD. LAYER | 5-7 | 4 | R.C. Grass |

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT<1 m 6 = 0.2<HT<0.5 m 7 = HT<0.2 m

CVR CODES 0 = NONE 1 = 0% < CVR < 10% 2 = 10 < CVR < 25% 3 = 25 < CVR < 60% 4 = CVR > 60%

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| STAND COMPOSITION: | | | | | | | | BA: | |
| SIZE CLASS ANALYSIS: | A | < 10 | O | 10 - 24 | N | 25 - 50 | N | > 50 | |
| STANDING SNAGS: | | ~~< 10~~ | | 10 - 24 | | 25 - 50 | | > 50 | |
| DEADFALL / LOGS: | | ~~< 10~~ | | 10 - 24 | | 25 - 50 | | > 50 | |

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| COMM. AGE : | | PIONEER | X | YOUNG | | MID-AGE | | MATURE | | OLD GROWTH |

## SOIL ANALYSIS:

| | | | |
|---|---|---|---|
| TEXTURE: | DEPTH TO MOTTLES / GLEY | g = | G= |
| MOISTURE: | DEPTH OF ORGANICS: | | (cm) |
| HOMOGENEOUS / VARIABLE | DEPTH TO BEDROCK: | | (cm) |

## COMMUNITY CLASSIFICATION:

| | | |
|---|---|---|
| COMMUNITY CLASS: | | CODE: |
| COMMUNITY SERIES: | | CODE: |
| ECOSITE: | | CODE: |
| VEGETATION TYPE: Mineral Thicket Swamp | | CODE: SWT2 |
| INCLUSION | | CODE: |
| COMPLEX | | CODE: |

Notes: Pic 1934 - possibly has MAM bits
Dogwood SWT

No feature

# ELC — PLANT SPECIES LIST

| | |
|---|---|
| SITE: | Sambury |
| POLYGON: | 7-1 |
| DATE: | 22-Dec-2010 |
| SURVEYOR(S): | M. Straus |

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

| SPECIES CODE | LAYER 1 | 2 | 3 | 4 | COLL. |
|---|---|---|---|---|---|
| PRAPEN | O | — | — | | |
| Cornus. | | | D | | |
| RHACATH | | | O | | |

| SPECIES CODE | LAYER 1 | 2 | 3 | 4 | COLL. |
|---|---|---|---|---|---|
| Red Grass | | | | D | |

# ELC — COMMUNITY DESCRIPTION & CLASSIFICATION

| | | | | |
|---|---|---|---|---|
| SITE: | | | POLYGON: | |
| SURVEYOR(S): | | DATE: | | UTME: |
| START: | END | | UTMZ: | UTMN: |

## POLYGON DESCRIPTION

| SYSTEM | SUBSTRATE | TOPOGRAPHIC FEATURE | HISTORY | PLANT FORM | COMMUNITY |
|---|---|---|---|---|---|
| ☐ TERRESTRIAL | ☐ ORGANIC | ☐ LACUSTRINE | ☐ NATURAL | ☐ PLANKTON | ☐ LAKE |
| ☐ WETLAND | ☐ MINERAL SOIL | ☐ RIVERINE, | ☐ CULTURAL | ☐ SUBMERGED | ☐ POND |
| ☐ AQUATIC | ☐ PARENT MIN. | ☐ BOTTOMLAND | | ☐ FLOATING-LVD. | ☐ RIVER |
| | ☐ ACIDIC BEDRK. | ☐ TERRACE | | ☐ GRAMINOID | ☐ STREAM |
| | ☐ BASIC BEDRK. | ☐ VALLEY SLOPE | | ☐ FORB | ☐ MARSH |
| | ☐ CARB. BEDRK. | ☐ TABLELAND | | ☐ LICHEN | ☐ SWAMP |
| SITE | | ☐ ROLL. UPLAND | COVER | ☐ BRYOPHYTE | ☐ FEN |
| ☐ OPEN WATER | | ☐ CLIFF | ☐ OPEN | ☐ DECIDUOUS | ☐ BOG |
| ☐ SHALLOW WATER | | ☐ TALUS | ☐ SHRUB | ☐ CONIFEROUS | ☐ BARREN |
| ☐ SURFICIAL DEP. | | ☐ CREVICE / CAVE | ☐ TREED | ☐ MIXED | ☐ MEADOW |
| ☐ BEDROCK | | ☐ ALVAR | | | ☐ PRAIRIE |
| | | ☐ ROCKLAND | | | ☐ THICKET |
| | | ☐ BEACH / BAR | | | ☐ SAVANNAH |
| | | ☐ SAND DUNE | | | ☐ WOODLAND |
| | | ☐ BLUFF | | | ☐ FOREST |
| | | | | | ☐ PLANTATION |

## STAND DESCRIPTION:

| | LAYER | HT | CVR | SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO) |
|---|---|---|---|---|
| 1 | CANOPY | 1 | 4 | ACESACS = CARLOVAT > FRAPENN |
| 2 | SUB-CANOPY | 2 | 4 | FAGGRAN |
| 3 | UNDERSTOREY | 3 | 4 | FAGGRAN |
| 4 | GRD. LAYER | — | | |

HT CODES: 1 = >25 m 2 = 10<HT ≤ 25 m 3 = 2<HT ≤ 10 m 4 = 1<HT ≤ 2 m 5 = 0.5<HT ≤ 1 m 6 = 0.2<HT ≤ 0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR < 10% 2= 10 < CVR < 25% 3= 25 < CVR < 60% 4= CVR > 60%

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| STAND COMPOSITION: | | | | | | | | BA: | |
| SIZE CLASS ANALYSIS: | O | < 10 | O | 10 - 24 | O | 25 - 50 | R | > 50 | |
| STANDING SNAGS: | — | < 10 | | 10 - 24 | | 25 - 50 | | > 50 | |
| DEADFALL / LOGS: | — | < 10 | | 10 - 24 | | 25 - 50 | | > 50 | |

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| COMM. AGE : | | PIONEER | | YOUNG | | MID-AGE | X | MATURE | | OLD GROWTH |

## SOIL ANALYSIS:

| | | | |
|---|---|---|---|
| TEXTURE: | DEPTH TO MOTTLES / GLEY | g = | G= |
| MOISTURE: | DEPTH OF ORGANICS: | | (cm) |
| HOMOGENEOUS / VARIABLE | DEPTH TO BEDROCK: | | (cm) |

## COMMUNITYCLASSIFICATION:

| | | |
|---|---|---|
| COMMUNITY CLASS: | | CODE: |
| COMMUNITY SERIES: | | CODE: |
| ECOSITE: | | CODE: |
| VEGETATION TYPE: Fresh-moist Sugar Maple-Hardwood | | CODE: FOD6-5 |
| INCLUSION | Deciduous Forest | CODE: |
| COMPLEX | | CODE: |

Notes: Corner - Hadmore Mh.
Hs + Ag also elsewhere b/c stream
26 - Wide HR - Mh dominant

No feature

# ELC — PLANT SPECIES LIST

| | |
|---|---|
| SITE: | Samsung |
| POLYGON: | 7-2 |
| DATE: | 22-Dec-2010 |
| SURVEYOR(S): | M. Straus |

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

| SPECIES CODE | LAYER 1 | 2 | 3 | 4 | COLL. |
|---|---|---|---|---|---|
| ACESACS | O | O | | | |
| FAGGRAN | R | O | O | | |
| CARLOVAT | O | O | | | |
| FRAPENN | O | O | | | |

| SPECIES CODE | LAYER 1 | 2 | 3 | 4 | COLL. |
|---|---|---|---|---|---|

Page ..... of .....


W:\active\60960577\drawing\GIS\MXD\NaturalHeritageAssessment\60960577_DRAFT_ELCaV5_WindFarm_20101214_PW.mxd - 12/15/2010 @ 11:17:08 AM

December 2010
160960577

## Legend

- Proposed Turbine Location
- 120m Zone of Investigation
- ROW Installation Zone
- ELC Communities
- Access Road
- Overhead Collector Line
- Underground Collector Line
- Substation Property
- Road
- Transmission Line (OBM)
- Provincially Significant Wetland
- Non-Provincially Significant Wetland
- Watercourse (OBM)
- Waterbody

**Forest Communities (FO)**
**FOM2-2**- Dry-fresh White Pine – Sugar Maple Mixed Forest
**FOD**- Deciduous Forest
**FOD2-1**- Dry-fresh Oak – Red Maple Deciduous Forest
**FOD2-2**- Dry-fresh Oak – Hickory Deciduous Forest
**FOD2-4**- Dry-fresh Oak – Hardwood Deciduous Forest
**FOD3-1**- Dry-fresh Poplar Deciduous Forest
**FOD4-1**- Dry-fresh Beech Deciduous Forest
**FOD4-2**- Dry-fresh White Ash Deciduous Forest
**FOD5-1**- Dry-fresh Sugar Maple Deciduous Forest
**FOD5-2**- Dry-fresh Sugar Maple – Beech Deciduous Forest
**FOD5-3**- Dry-fresh Sugar Maple – Oak Deciduous Forest
**FOD5-8**- Dry-fresh Sugar Maple – White Ash Deciduous Forest
**FOD5-11***- Dry-fresh Sugar Maple – Oak – Beech Deciduous Forest
**FOD5-12***- Dry-fresh Sugar Maple – Hickory – Beech Deciduous Forest
**FOD6-1**- Fresh-moist Sugar Maple – Lowland Ash Deciduous Forest
**FOD6-5**- Fresh-moist Sugar Maple – Hardwood Deciduous Forest
**FOD6-6***- Fresh-moist Sugar Maple – Hickory Deciduous Forest
**FOD7-1**- Fresh-moist White Elm Lowkind Deciduous Forest
**FOD7-2**- Fresh-moist Ash Lowland Deciduous Forest
**FOD9-1**- Fresh-moist Oak – Sugar Maple Deciduous Forest
**FOD9-4**- Fresh-moist Shagbark Hickory Deciduous Forest
**FOD9-6***- Fresh-moist Red Oak – Shagbark Hickory Deciduous Forest

**Swamp Communities (SW)**
**SWD1-1**- Swamp White Oak Mineral Deciduous Swamp
**SWD2-2**- Green Ash Mineral Deciduous Swamp
**SWD2-3***- Ash – Hardwood Mineral Deciduous Swamp
**SWD2-4***- Green Ash – Red Maple Mineral Deciduous Swamp
**SWD3-1**- Red Maple Mineral Deciduous Swamp
**SWD3-2**- Silver Maple Mineral Deciduous Swamp
**SWD3-5***- Swamp Maple - Green Ash Mineral Deciduous Swamp
**SWD4-1**- Willow Mineral Deciduous Swamp
**SWD4-2**- White Elm Mineral Deciduous Swamp
**SWD3-3**- Swamp Maple Mineral Deciduous Swamp
**SWD4-6***- Green Ash – Swamp Maple Mineral Deciduous Swamp
**SWT**- Thicket Swamp
**SWT2-4**- Buttonbush Mineral Thicket Swamp
**SWT2-5**- Red Osier Dogwood Mineral Thicket Swamp
**SWT2-8**- Silky Oogwood Mineral Thicket Swamp
**SWT2-9**- Gray Oogwood Mineral Thicket Swamp
**SWT2-13***- Willow – Dogwood Mineral Thicket Swamp
**SWT2-14***- Winterberry – Buttonbush Mineral Thicket Swamp
**SWT2-15***- Red Maple Mineral Thicket Swamp
**SWT3-7**- Winterberry Organic Thicket Swamp

**Marsh Communities (MA)**
**MAM2-2**- Reed Canary Grass Mineral Meadow Marsh
**MAM2-10**- Forb Mineral Meadow Marsh
**MAM2-11***- Forb – Graminoid Mineral Meadow Marsh
**MAS2-1**- Cattail Mineral Shallow Marsh
**MAS2-8**- Rice Cut-grass Mineral Shallow Marsh

**Cultural Communities (CU)**
**CUM1**- Mineral Cultural Meadow
**CUT1-7**- European Buckthorn – Sweet Cherry Cultural thicket
**CUW1-3***- Ash – Sumac Mineral Cultural Woodland
**CUW1-4***- Green Ash Mineral Cultural Woodland
**CUW1-5***- Maple-Ash Cultural Woodland
**CUW1-6***- Green Ash Cultural Woodland
**CUW1-7***- Red maple Mineral Cultural Woodland
**CUP3-12***- White Pine – White/Norway Spruce Coniferous Plantation
**CUP3-13***- White Spruce Coniferous Plantation

**D**- Disturbed
**R**- Residential


## Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N)
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © Samsung, 2010.
3. Image Source: © Grand River Conservation Authority, 2010 - Imagery Date: Spring 2006; LIDAR IMAGERY SOURCE???
4. Produced using the Version 5 site plan produced by Stantec updated on Dec 13.

Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
TILE 16 DRAFT

Title
# ELC VEGETATION COMMUNITIES

Stantec

**ELC** — COMMUNITY DESCRIPTION & CLASSIFICATION

| SITE: | | POLYGON: | |
|---|---|---|---|
| SURVEYOR(S): | | DATE: | UTME: |
| START: | END | UTMZ: | UTMN: |

**POLYGON DESCRIPTION**

| SYSTEM | SUBSTRATE | TOPOGRAPHIC FEATURE | HISTORY | PLANT FORM | COMMUNITY |
|---|---|---|---|---|---|
| ☐ TERRESTRIAL<br>☐ WETLAND<br>☐ AQUATIC | ☐ ORGANIC<br>☐ MINERAL SOIL<br>☐ PARENT MIN.<br>☐ ACIDIC BEDRK.<br>☐ BASIC BEDRK.<br>☐ CARB. BEDRK. | ☐ LACUSTRINE<br>☐ RIVERINE<br>☐ BOTTOMLAND<br>☐ TERRACE<br>☐ VALLEY SLOPE<br>☐ TABLELAND<br>☐ ROLL. UPLAND<br>☐ CLIFF<br>☐ TALUS<br>☐ CREVICE / CAVE<br>☐ ALVAR<br>☐ ROCKLAND<br>☐ BEACH / BAR<br>☐ SAND DUNE<br>☐ BLUFF | ☐ NATURAL<br>☐ CULTURAL | ☐ PLANKTON<br>☐ SUBMERGED<br>☐ FLOATING-LVD.<br>☐ GRAMINOID<br>☐ FORB<br>☐ LICHEN<br>☐ BRYOPHYTE<br>☐ DECIDUOUS<br>☐ CONIFEROUS<br>☐ MIXED | ☐ LAKE<br>☐ POND<br>☐ RIVER<br>☐ STREAM<br>☐ MARSH<br>☐ SWAMP<br>☐ FEN<br>☐ BOG<br>☐ BARREN<br>☐ MEADOW<br>☐ PRAIRIE<br>☐ THICKET<br>☐ SAVANNAH<br>☐ WOODLAND<br>☐ FOREST<br>☐ PLANTATION |
| **SITE**<br>☐ OPEN WATER<br>☐ SHALLOW WATER<br>☐ SURFICIAL DEP.<br>☐ BEDROCK | | | **COVER**<br>☐ OPEN<br>☐ SHRUB<br>☐ TREED | | |

**STAND DESCRIPTION:**

| | LAYER | HT | CVR | SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO) |
|---|---|---|---|---|
| 1 | CANOPY | 2 | 3 | FRAPENN |
| 2 | SUB-CANOPY | 3 | 3 | " |
| 3 | UNDERSTOREY | 4 | 4 | Hawthorn < Gray Dogwood |
| 4 | GRD. LAYER | | | |

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

| STAND COMPOSITION: | | | | | BA: |
|---|---|---|---|---|---|
| SIZE CLASS ANALYSIS: | A < 10 | R 10 - 24 | N 25 - 50 | N > 50 | |
| STANDING SNAGS: | N < 10 | N 10 - 24 | N 25 - 50 | N > 50 | |
| DEADFALL / LOGS: | N < 10 | N 10 - 24 | N 25 - 50 | N > 50 | |

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

| COMM. AGE : | PIONEER | YOUNG | MID-AGE | MATURE | OLD GROWTH |
|---|---|---|---|---|---|
| | | X | | | |

**SOIL ANALYSIS:**

| TEXTURE: | DEPTH TO MOTTLES / GLEY | g = | G= |
|---|---|---|---|
| MOISTURE: | DEPTH OF ORGANICS: | | (cm) |
| HOMOGENEOUS / VARIABLE | DEPTH TO BEDROCK: | | (cm) |

**COMMUNITY CLASSIFICATION:**

| | |
|---|---|
| COMMUNITY CLASS: | CODE: |
| COMMUNITY SERIES: | CODE: |
| ECOSITE: | CODE: |
| VEGETATION TYPE: Green Ash Cultural Woodland | CODE: CUW1-4* |
| INCLUSION | CODE: |
| COMPLEX | CODE: |

Notes: - Landowner stopped & told me it is wet/swampy

Pic 1914

No feature

**ELC** — PLANT SPECIES LIST

| SITE: | Samsung |
|---|---|
| POLYGON: | 16-10 |
| DATE: | 21-Dec-2010 |
| SURVEYOR(S): | M Straus |

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

| SPECIES CODE | LAYER 1 | 2 | 3 | 4 | COLL. |
|---|---|---|---|---|---|
| FRAPENN | O | O | — | | |
| Red Cedar | N | R | — | | |
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| Hawthorn | | | A | | |
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| SPECIES CODE | LAYER 1 | 2 | 3 | 4 | COLL. |
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## ELC
**COMMUNITY DESCRIPTION & CLASSIFICATION**

| | | | |
|---|---|---|---|
| SITE: | | POLYGON: | |
| SURVEYOR(S): | DATE: | | UTME: |
| START: | END | UTMZ: | UTMN: |

### POLYGON DESCRIPTION

**SYSTEM**
- ☐ TERRESTRIAL
- ☐ WETLAND
- ☐ AQUATIC

**SITE**
- ☐ OPEN WATER
- ☐ SHALLOW WATER
- ☐ SURFICIAL DEP.
- ☐ BEDROCK

**SUBSTRATE**
- ☐ ORGANIC
- ☐ MINERAL SOIL
- ☐ PARENT MIN.
- ☐ ACIDIC BEDRK.
- ☐ BASIC BEDRK.
- ☐ CARB. BEDRK.

**TOPOGRAPHIC FEATURE**
- ☐ LACUSTRINE
- ☐ RIVERINE
- ☐ BOTTOMLAND
- ☐ TERRACE
- ☐ VALLEY SLOPE
- ☐ TABLELAND
- ☐ ROLL. UPLAND
- ☐ CLIFF
- ☐ TALUS
- ☐ CREVICE / CAVE
- ☐ ALVAR
- ☐ ROCKLAND
- ☐ BEACH / BAR
- ☐ SAND DUNE
- ☐ BLUFF

**HISTORY**
- ☐ NATURAL
- ☐ CULTURAL

**COVER**
- ☐ OPEN
- ☐ SHRUB
- ☐ TREED

**PLANT FORM**
- ☐ PLANKTON
- ☐ SUBMERGED
- ☐ FLOATING-LVD.
- ☐ GRAMINOID
- ☐ FORB
- ☐ LICHEN
- ☐ BRYOPHYTE
- ☐ DECIDUOUS
- ☐ CONIFEROUS
- ☐ MIXED

**COMMUNITY**
- ☐ LAKE
- ☐ POND
- ☐ RIVER
- ☐ STREAM
- ☐ MARSH
- ☐ SWAMP
- ☐ FEN
- ☐ BOG
- ☐ BARREN
- ☐ MEADOW
- ☐ PRAIRIE
- ☐ THICKET
- ☐ SAVANNAH
- ☐ WOODLAND
- ☐ FOREST
- ☐ PLANTATION

### STAND DESCRIPTION:

| | LAYER | HT | CVR | SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO) |
|---|---|---|---|---|
| 1 | CANOPY | 1 | 4 | FRAPENN >> CAROVAT |
| 2 | SUB-CANOPY | 2 | 4 | " |
| 3 | UNDERSTOREY | 3 | 4. | Cornus |
| 4 | GRD. LAYER | | | |

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| STAND COMPOSITION: | | | | | | | BA: | |
| SIZE CLASS ANALYSIS: | O | < 10 | A | 10 - 24 | O | 25 - 50 | N | > 50 |
| STANDING SNAGS: | | ~~< 10~~ | | ~~10 - 24~~ | | 25 - 50 | | > 50 |
| DEADFALL / LOGS: | | ~~< 10~~ | | ~~10 - 24~~ | | 25 - 50 | | > 50 |

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| COMM. AGE : | ☐ | PIONEER | ☐ | YOUNG | ☒ | MID-AGE | ☐ | MATURE | ☐ | OLD GROWTH |

### SOIL ANALYSIS:

| | | | |
|---|---|---|---|
| TEXTURE: | DEPTH TO MOTTLES / GLEY | g = | G= |
| MOISTURE: | DEPTH OF ORGANICS: | | (cm) |
| HOMOGENEOUS / VARIABLE | DEPTH TO BEDROCK: | | (cm) |

### COMMUNITY CLASSIFICATION:

| | | |
|---|---|---|
| COMMUNITY CLASS: | | CODE: |
| COMMUNITY SERIES: | | CODE: |
| ECOSITE: | | CODE: |
| VEGETATION TYPE: Green Ash Mineral Deciduous Swamp | | CODE: SWD 2-2 |
| ☐ INCLUSION | | CODE: |
| ☐ COMPLEX | | CODE: |

Notes:
- Small pocket of lowland w̄ Car ovat
- standing H2O - vernal pool @ road intersection

2b = Young w̄ Poplar

---

NO feature

## ELC
**PLANT SPECIES LIST**

SITE: Samsung
POLYGON: 16-2
DATE: 21-Dec-2010
SURVEYOR(S): M. Straus

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

| SPECIES CODE | LAYER 1 | 2 | 3 | 4 | COLL. |
|---|---|---|---|---|---|
| FRAPENN | D | D | — | | |
| ULMAMER | R | R | | | |
| QUE (Bur or swamp) | | | | | |
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| FAGGRAN | R | | | | |
| CAROVAT | O | | | | |
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| Cornus - | | | O | | |
| STOL or OBLI | | | | | |
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| SPECIES CODE | LAYER 1 | 2 | 3 | 4 | COLL. |
|---|---|---|---|---|---|
| | | | | | |

Page ....... of .......

598308 599308 600308 601308 602308

4747338 4746338 4745338

RAINS ROAD
SUTOR ROAD
BROOKERS ROAD
RAINHAM ROAD
HALDIMAND ROAD 59

581818
581863
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581811

Woodlot B
Woodlot C
10 A
stable
hay
NG

0 200 400 m
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September 2010
160960577

W:\active\60960577\drawing\GIS\MXD\NaturalHeritageAssessment\FieldMaps\60960577_FIELDMAP_ProjectLocation_Mapbook_20100921_PW.mxd - 9/27/2010 @ 5:35:56 PM

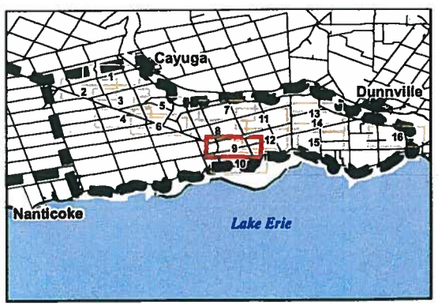
## Legend

- Project Location
- Proposed Turbine Location
- Proposed Access Road
- Proposed Collector Line
- ROW Installation Zone
- 120m Investigation Zone
- Elexco Aquired Agreements
- Government Lands
- UDI Lands
- Road
- Railway
- Abandoned Railway
- Transmission Line (OBM)
- Deer Wintering Area
- Provincially Significant Wetland
- Non-Provincially Significant Wetland
- Watercourse (OBM)
- Waterbody

**Area of Natural and Scientific Interest (ANSI)**

- Life Science, Provincially Significant
- Earth Science, Provincially Significant
- Earth Science, Regionally Significant

2-Dec-2010




Stantec

## Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © GREP, 2010; © Samsung, 2010.
3. Image Source: © First Base Solutions, 2010 - Imagery Date: Spring 2006; **LIDAR IMAGERY SOURCE???**

Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

**FIELD MAP 9**

Title

**PROJECT LOCATION MAP**

Stantec Consulting Ltd.
70 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

# Winter Raptor Observation Form

Project Number: 161010624 Project Name: Samsung - Windt Solar

Date / Time: 14-Jan-2011 Field Personnel: Brandon Holdent, Melissa Straus

| Weather Conditions: | Temp: | Wind: | Cloud: | PPT: | PPT in last 24 hrs: | Ave. Snow Depth: |
|---|---|---|---|---|---|---|
| | -8°C | 3 | 50% | none | snow | 5cm |

153 total **km driven on survey**

| Species / Time | # of Individuals | Location | Behaviour | Map |
|---|---|---|---|---|
| | | *Habitat type, proximity to features (woodlands, ravines etc.)* | *Perched, Hunting, flying, height* | |
| ① 10:50 RTHA adult | 1 | Ag field | Perched 10m | [Trans 6] |
| ② 10.55 NOHA juv./fem. | 1 | Fallow field | Direct flight 10m | [Trans 5] |
| ③ 11.00 light morph RLHA | 1 | Fallow | Perch 10m | [Trans 5] |
| ④ 11:01 RTHA | 1 | marshy | Perched. 10m | [Trans 4] |
| ⑤ 11.04 RTHA adult | 1 | woodlot/farm field | Perched/hunting 10m | [Trans 4] |
| ⑥ 11.10 RLHA dark | 1 | marsh/Ag | Perched 10m | [Trans 3] |
| ⑦ RTHA 11.10 | 1 | marsh | Perched 10 | [Trans 3] |
| ⑧ RTHA adults | 2 | Cum/ | Perched 10m | [Trans 2] |

Quality Control: This form is complete (__) & legible (__).

Signature: M. Melissa Straus (Field Personnel) Signature: _____ (Project Manager)



REV: May, 07 Form 018

**Other Bird Species**

Please record any flock behaviour (i.e. snow buntings, horned larks, gulls, waterfowl, crows, blackbirds) or any significant species.

| Species | # of Individuals | Location | Behaviour | |
|---|---|---|---|---|
| | | *In water, agr. field near puddle, mowed lawn etc.* | *Height/direction of flight, feeding etc.* | |
| 11:18 9 RLHA dark | 1 | Res / Ag | Flight → perched 10m | [Trans2] |
| 10 11:20 RTHA adult | 1 | Cult | Perched 1.5m | [Trans2] |
| (11) 11:25 RLHA dark - juv. | 1 | Ag | Perched 10m - telephone post | [Trans1] |
| 12 RTHA | 1 | Ag | Perched 10m | [Trans1] |
| (13) RLHA dark | 1 | Ag | On ground | [Trans1] |
| 14 AMKE ♂ | 1 | Ag / Res | 10m Perch | [Trans1] + WB |
| (15) light morph RLHA | 1 | Ag | 5m - fly | [WB] |
| (16) RTHA 11:~ | 1 | Ag | ~~5m Perched~~ Perched 5m | [WB] |
| (17) RLHA 11:40 | 1 | Ag | | [WB] |
| (18) RTHA 11:45 | 1 | Wood lot | Perched 10m | [W4] |
| (19) RLHA 11:45 - dark | 1 | Hedgerow / Ag | 5 perched | [W4] |
| (20) RTHA 11:48 | 1 | Res / Ag | 10m perched | [W4] |

Quality Control: This form is complete(__) & legible (__).

Signature: Melissa Straus (Field Personnel) Signature: _____ (Project Manager)

Stantec Consulting Ltd.
70 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

# Winter Raptor Observation Form

Project Number: 160510624 Project Name: Samsung

Date / Time: Jan 14, 2011 Field Personnel: M.S. B.H

| Weather Conditions: | Temp: | Wind: | Cloud: | PPT: | PPT in last 24 hrs: | Ave. Snow Depth: |
|---|---|---|---|---|---|---|
| | | | | | | |

_____ total **km driven on survey**

| Species / Time | # of Individuals | Location | Behaviour | |
|---|---|---|---|---|
| 21 NOHA ♂ | 1 | *Habitat type, proximity to features (woodlands, ravines etc.)* Ag - fallow | *Perched, Hunting, flying, height* flying - 5m | [W4] |
| 22 RTHA | 2 | Ag / woodlot | SE corner woodlot Perched. 5m | [W4] |
| 23 12:00 RTHA | 1 | Res/Park | Perched 10m | [W1] |
| 24 SSHA adult | 1 | marsh > | Flying, 50m | [W1] |
| 12:10 25 RLHA - light | 1 | marsh | Circling - hunting 40m. | [W1] |
| 26 RLHA | 1 | Ag | Perched 10m | [W1] |
| 27 ♀ NOHA 12:15 | 1 | Ag | 0m. | [W1] |
| 28 RTHA | 1 | Ag | 0m | [W1] |
| 29 RLHA | 1 light | Ag | 0m | [W1] |
| 30 RTHA | 1 - juv | woodlot | 2m - perched | [W1] |
| 31 RTHA | 2 | HR / Ag | Perched - 10m / Flying | [W1] |
| 32 RTHA 12:30 | 2 | Ag | Perched - 10m Flying | [W1] |

Quality Control: This form is complete (✓) & legible (✓).

Signature: Melissa Straus (Field Personnel) Signature: _____ (Project Manager)



REV: May, 07 Form 018

**Other Bird Species**

Please record any flock behaviour (i.e. snow buntings, horned larks, gulls, waterfowl, crows, blackbirds) or any significant species.

| Species | # of Individuals | Location | Behaviour | |
|---|---|---|---|---|
| | | *In water, agr. field near puddle, mowed lawn etc.* | *Height/direction of flight, feeding etc.* | |
| (33) RTHA | 1 | Ag | Perched - telephone pole | [W1] |
| (34) - 12:30 RTHA | 1 | Ag | Perched 10m | [W1] |
| (35) RTHA | 1 | Marsh | Perched 5m | [W1] |
| (36) RTHA 12:40 | 1 | Ag | Perched. 10m | [W3] |
| (37) RTHA | 1 | Ag | Perched 10m | [W3] |
| (38) RTHA 12:42 | 2 | Ag | Pe1 " | [W3] |
| (39) RTHA 12:43 | 1 | Fallow | On | [W3] |
| (40) TuVu " | 1 | woodlot / Ag | flying 35m | [W3] |
| (41) RTHA adult 12:50 | 1 | Ag | Perched 10m | [W3] |
| (42) RTHA VULT | 1 | Ag / roadside. | Perched 10m | [W3] |
| (43) RTHA adult 12:55 | 1 | Ag | Perched 10m 10 | [W3] |
| (44) RTHA 12:55 | 2 | Ag | Flying / Perched. 10 | [W3] |
| (45) 13:00 RTHA | 1 | Wood lot | Perched 10 | [W5] |
| (46) AMKE 13:05 | 1 | Ag | Perched wire. 10M | [W5] |

Quality Control: This form is complete (__) & legible (__).

Signature: Melissa Shaw (Field Personnel)

Signature: _____ (Project Manager)

Stantec Consulting Ltd.
70 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

# Winter Raptor Observation Form

Project Number: 161010624 Project Name: Samsung

Date / Time: 14-Jan-2011 Field Personnel: MS, BH

| Weather Conditions: | Temp: | Wind: | Cloud: | PPT: | PPT in last 24 hrs: | Ave. Snow Depth: |
|---|---|---|---|---|---|---|
| | | | | | | |

_____ total **km driven on survey**

| Species / Time | # of Individuals | Location | Behaviour | Map |
|---|---|---|---|---|
| 47 (47) -13:00 RTHA | 2 ♂ ♀ | *Habitat type, proximity to features (woodlands, ravines etc.)* Ag | *Perched, Hunting, flying, height* Perched - 5m | [W5] |
| (48) -13:10 RTHA | 1 | Ag | Perch 5m | [W5] |
| (49) RTHA dark + light adult + light adult | 3 M/RTHA | Ag | Telephone pole & perched | [W5] |
| (50) RTHA 13:15 | 1 | Ag | Perched 10m | [W5] |
| (51) 13:18 SEOW | 10 | Res / Fallow | Perched - 10m | [W5] |
| (52) 13:30 RTHA | 3 | Fallow | 2 Perched - 10m 1 flying | [S2] |
| 53 RTHA 13:37 | 1 | Fallow | Perched 5m | [S2] |
| (54) RTHA 2 adults 13:45 | 2 ♂ | Fallow ? | Perched 5m | [S2] |
| (55) RTHA | 1 | Fallow / Plantation | Perched 10m | [W8] |
| 56 RTHA 13:45 adult | 1 | Fallow | " | [W8] |
| (57) RTHA 14:00 adult | 1 | Fallow | Perched 5 | [W7] |
| (58) RTHA adults | 2 | Fallow | Perched 5 | [W7] |
| (59) AMKE | 1 | N | 11 | [W7] |

Quality Control: This form is complete (__) & legible (__).

Signature: Melissa Strauss (Field Personnel) Signature: _____ (Project Manager)



REV: May, 07 Form 018

**Other Bird Species**

Please record any flock behaviour (i.e. snow buntings, horned larks, gulls, waterfowl, crows, blackbirds) or any significant species.

| Species | # of Individuals | Location | Behaviour | Map |
|---|---|---|---|---|
| | | *In water, agr. field near puddle, mowed lawn etc.* | *Height/direction of flight, feeding etc.* | |
| (60) a+b RTHA | 2 | Fallow | 0m - Perched - 10m | [W7] |
| (61) RTHA | 1 | " | Flying - 40m | [W7] |
| (62) AMKE | 1 | Fallow | Perch 10m | [W7] |
| (63) 14:15 RTHA | 1 | " | Flying 5m | [W7] |
| (64) AMKE by house on river rd | 1 | " | Perched 5m | [W7] |
| (65) RTHA adult | 1 | " | " | Overview No coverage |
| (66) RTHA adult | 1 | " | " | [W11] |
| (67) " 14:26 | 1 | " | " | [W11] |
| (68) RTHA adult | " | " | " | [W12] |
| (69) 14:35 RTHA adult | " | " | " | [W9] |
| (70) RTHA 14:39 | " | marsh fallow | " | [W10] |
| (71) " | 1 | fallow-edge of plantation | Perched 5m | [W10] |
| (72) BAEA adult | 1 | marshy thicket | Perched 5m | [W10] |
| (73) RTHA 14:43 | | fallow | " | [W10] |
| (74) RTHA 14:56 | 1 | | | |

Quality Control: This form is complete (__) & legible (__).

Signature: Melissa Straus (Field Personnel) Signature: _____ (Project Manager)

Stantec Consulting Ltd.
70 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

# Winter Raptor Observation Form

Project Number: 160101624 Project Name: Samsung

Date / Time: 14-Jan-2011 Field Personnel: BH & MS

| Weather Conditions: | Temp: See Page | Wind: | Cloud: | PPT: | PPT in last 24 hrs: | Ave. Snow Depth: |
|---|---|---|---|---|---|---|
| | | | | | | |

_____ total **km driven on survey**

| Species / Time | # of Individuals | Location | Behaviour | |
|---|---|---|---|---|
| 75 RTHA 14:58 | 1 | *Habitat type, proximity to features (woodlands, ravines etc.)* Fallow | *Perched, Hunting, flying, height* Perched - Tele pole | [W10] |
| 76 AMKE 15:00 | 1 | fallow | flying 2-5m | [W12] |
| 77 AmKe | " | " | Perched 5m | [W12] |
| 78 RTHA adult 15:04 | " | " | " | [W12] |
| 79 RTHA adult | " | " | fly 5m | [W13] |
| 80 RTHA 15:12 adult | " | " | Perched/5m | [W13] |
| 81 RTHA | 2 | fallow | Fly < 10m | [W13] |
| 82 15:16 RTHA | 2 | " | Perch <5m | [W13] |
| BAEA 4761 house #-Duo @ nest 15:21 N100 | 1 | Thicket | Perched 25m | Route map - no coverage |
| 84 AMKE 15:28 | 1 | fallow | Perched wire 10m | [W16] |
| 85 RTHA 15:30 | 1 | " | Perched - 10m | [W16] |

Quality Control: This form is complete (__) & legible (__).

Signature: Melissa Strauss (Field Personnel) Signature: _____ (Project Manager)



REV: May, 07 Form 018

**Other Bird Species**

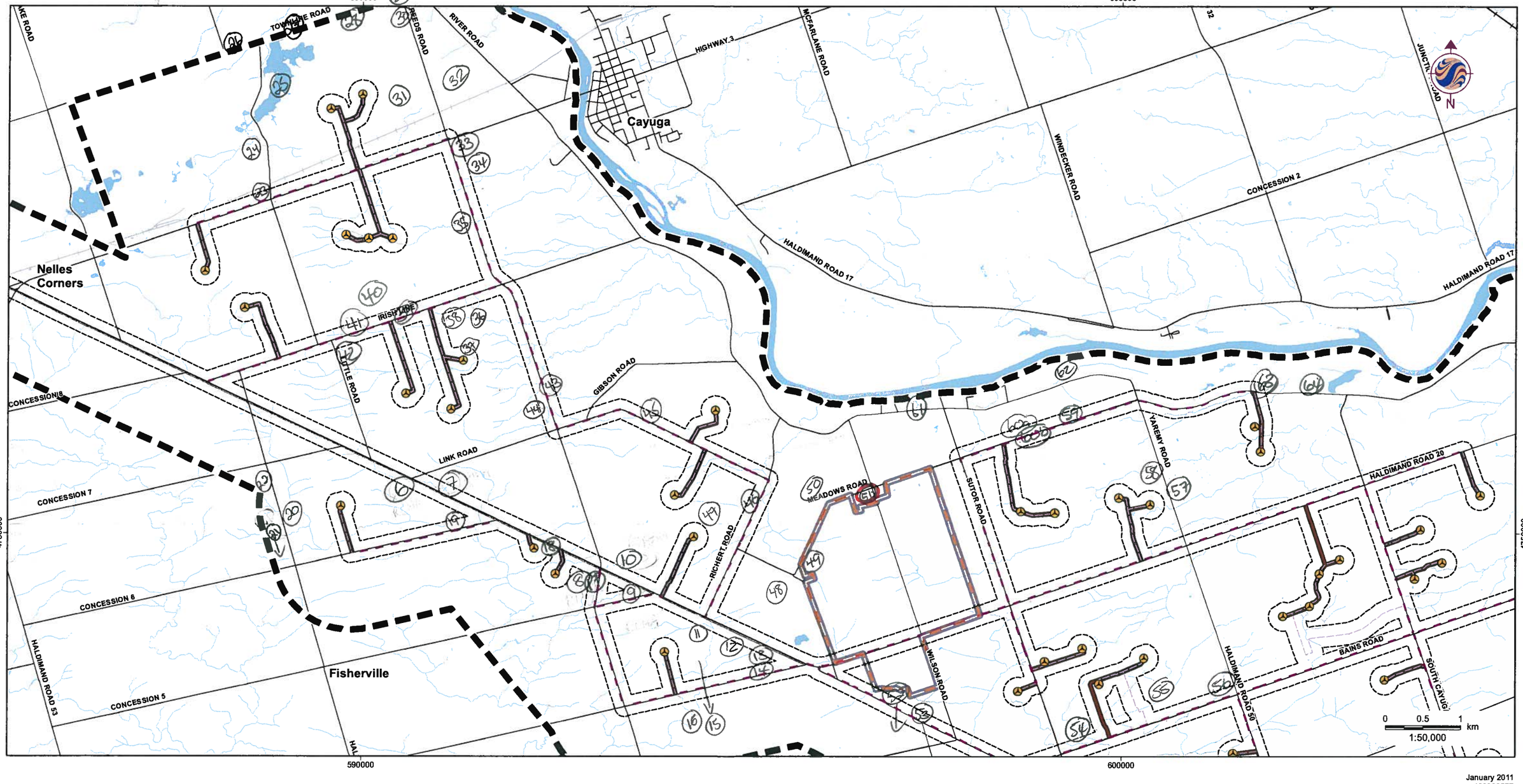
Please record any flock behaviour (i.e. snow buntings, horned larks, gulls, waterfowl, crows, blackbirds) or any significant species.

| Species | # of Individuals | Location | Behaviour | |
|---|---|---|---|---|
| | | *In water, agr. field near puddle, mowed lawn etc.* | *Height/direction of flight, feeding etc.* | |
| (86) NOHA 15:30 | 1 | grassy field/ marsh | Flying/hunt | [W16] |
| (87) RTHA 15:36 | 1 | fallow field | Flying - perched 10 | [W16] |
| (88) " | " | " | Perched 5m | [W16] |
| (89) " 15:43 | 1 | " | " | [W17] |
| (90) 16:04 RTHA | 1 | marsh | Perched 5m | [W17] |
| (91) NOHA. 16:10 juv. | 1 | fallow field | Flight 10m | [W15] |
| (92) RTHA 16:15 (C) | 3 | " | Perched → flight tracks plates 5m | [W14,15] |
| (93) RLHA | 1 | " | Perched 5m | [W14] |
| (94) 16:22 juv RTHA | 1 | fallow | Perched 5m | [W15] |
| (95) RTHA adult | 1 | fallow | Perched 5m | [W15] |
| (96) RTHA 16:30 | 1 | " | Perched 5m | overlap coverage |
| 97 " 16:36 | 1 | " | " 10m | [W15] |

Stopped @ 16:40.

Quality Control: This form is complete (__) & legible (__).

Signature: Melissa Struis (Field Personnel)  Signature: _____ (Project Manager)

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January 2011
160960577

**Legend**

- Study Area
- Zone of Investigation
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Watercourse (MNR)
- Waterbody (MNR)

Overview - Part 2

**Notes**

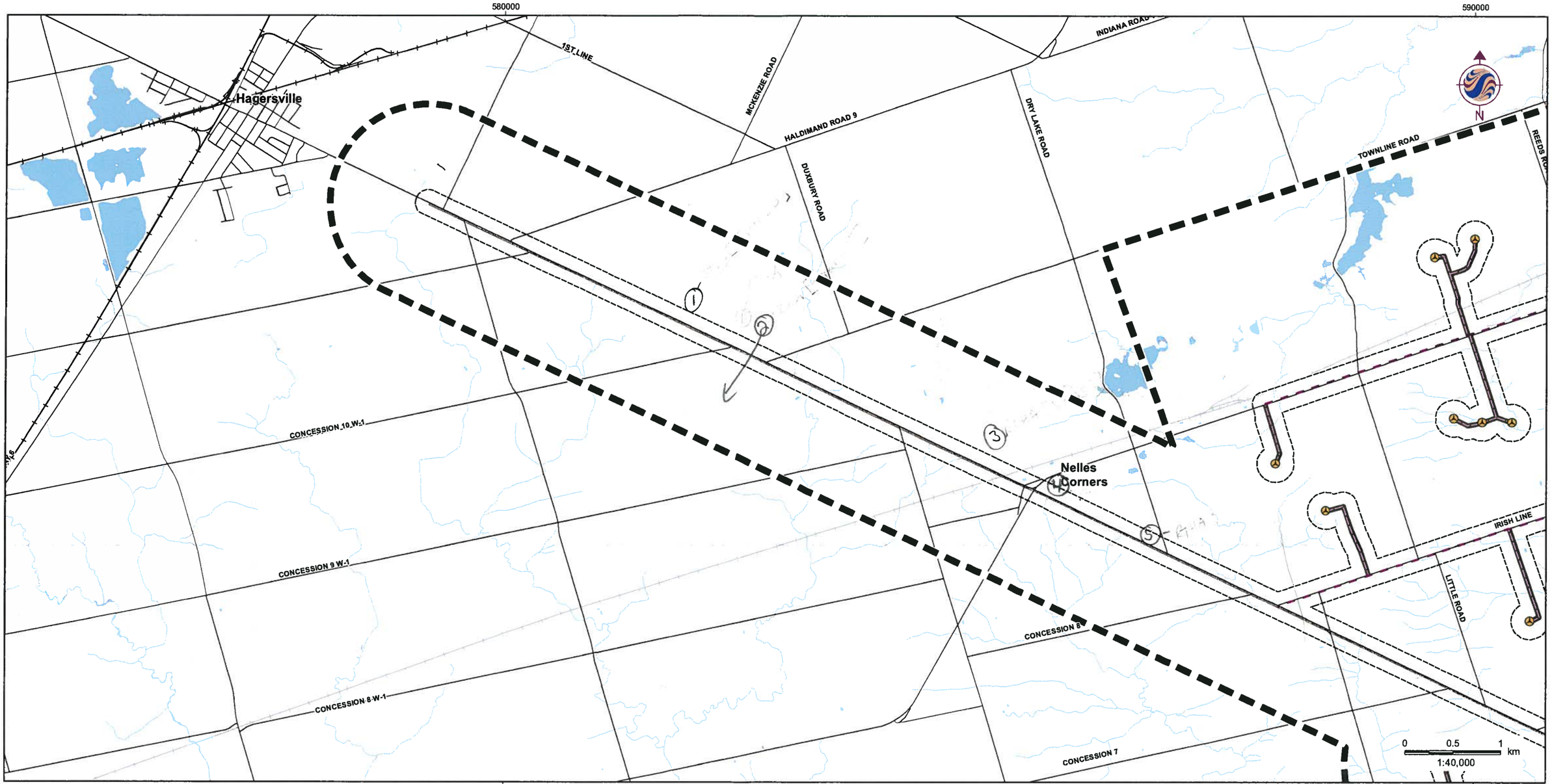
1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © Samsung, 2010.
3. Produced using the Version 5 site plan produced by Stantec updated on Dec 13.

Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
FIELD MAP 2 DRAFT

Title
**STUDY AREA**

Stantec

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**Legend**

- Study Area
- Zone of Investigation
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Watercourse (MNR)
- Waterbody (MNR)

Overview - Part 1

Stantec

**Notes**

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © Samsung, 2010.
3. Produced using the Version 5 site plan produced by Stantec updated on Dec 13.

Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
FIELD MAP 1 DRAFT

Title
**STUDY AREA**

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600000

610000

4750000

HALDIMAND ROAD 17

BURKE

DILTZ RD

BIRD ROAD

Dunnville

Grand River

HALDIMAND ROAD 20

SUTOR ROAD

YAREMY ROAD

HALDIMAND ROAD 50

BAINS ROAD

SOUTH CAYUGA ROAD

HALID DUNN TOWNLINE ROAD

AIKENS ROAD

HALDIMAND ROAD 49

HALDIMAND TRACT ROAD

JOHNSON ROAD

KINGS ROW

SWEETS CORNERS ROAD

BROCKRIDGE ROAD

0 0.5 1 km

1:50,000

600000

610000

4750000

January 2011
160960577

**Legend**

- Study Area
- Zone of Investigation
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Watercourse (MNR)
- Waterbody (MNR)

Overview - Part 3.

**Notes**

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

FIELD MAP 3 DRAFT

Title

**STUDY AREA**

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December 2010
160960577

## Legend

- Proposed Turbine Location
- 120m Zone of Investigation
- ROW Installation Zone
- ELC Communities
- Access Road
- Overhead Collector Line
- Underground Collector Line
- Substation Property
- Road
- Transmission Line (OBM)
- Provincially Significant Wetland
- Non-Provincially Significant Wetland
- Watercourse (OBM)
- Waterbody

**Forest Communities (FO)**
**FOM2-2-** Dry-fresh White Pine – Sugar Maple Mixed Forest
**FOD-** Deciduous Forest
**FOD2-1-** Dry-fresh Oak – Red Maple Deciduous Forest
**FOD2-2-** Dry-fresh Oak – Hickory Deciduous Forest
**FOD2-4-** Dry-fresh Oak – Hardwood Deciduous Forest
**FOD3-1-** Dry-fresh Poplar Deciduous Forest
**FOD4-1-** Dry-fresh Beech Deciduous Forest
**FOD4-2-** Dry-fresh White Ash Deciduous Forest
**FOD5-1-** Dry-fresh Sugar Maple Deciduous Forest
**FOD5-2-** Dry-fresh Sugar Maple – Beech Deciduous Forest
**FOD5-3-** Dry-fresh Sugar Maple – Oak Deciduous Forest
**FOD5-8-** Dry-fresh Sugar Maple – White Ash Deciduous Forest
**FOD5-11*-** Dry-fresh Sugar Maple – Oak – Beech Deciduous Forest
**FOD5-12*-** Dry-fresh Sugar Maple – Hickory – Beech Deciduous Forest
**FOD6-1-** Fresh-moist Sugar Maple – Lowland Ash Deciduous Forest
**FOD6-5-** Fresh-moist Sugar Maple – Hardwood Deciduous Forest
**FOD6-6*-** Fresh-moist Sugar Maple – Hickory Deciduous Forest
**FOD7-1-** Fresh-moist White Elm Lowkind Deciduous Forest
**FOD7-2-** Fresh-moist Ash Lowland Deciduous Forest
**FOD9-1-** Fresh-moist Oak – Sugar Maple Deciduous Forest
**FOD9-4-** Fresh-moist Shagbark Hickory Deciduous Forest
**FOD9-6*-** Fresh-moist Red Oak – Shagbark Hickory Deciduous Forest

**Swamp Communities (SW)**
**SWD1-1-** Swamp White Oak Mineral Deciduous Swamp
**SWD2-2-** Green Ash Mineral Deciduous Swamp
**SWD2-3*-** Ash – Hardwood Mineral Deciduous Swamp
**SWD2-4*-** Green Ash – Red Maple Mineral Deciduous Swamp
**SWD3-1-** Red Maple Mineral Deciduous Swamp
**SWD3-2-** Silver Maple Mineral Deciduous Swamp
**SWD3-5*-** Swamp Maple – Green Ash Mineral Deciduous Swamp
**SWD4-1-** Willow Mineral Deciduous Swamp
**SWD4-2-** White Elm Mineral Deciduous Swamp
**SWD3-3-** Swamp Maple Mineral Deciduous Swamp
**SWD4-6*-** Green Ash – Swamp Maple Mineral Deciduous Swamp
**SWT-** Thicket Swamp
**SWT2-4-** Buttonbush Mineral Thicket Swamp
**SWT2-5-** Red Osier Dogwood Mineral Thicket Swamp
**SWT2-8-** Silky Dogwood Mineral Thicket Swamp
**SWT2-9-** Gray Dogwood Mineral Thicket Swamp
**SWT2-13*-** Willow – Dogwood Mineral Thicket Swamp
**SWT2-14*-** Winterberry – Buttonbush Mineral Thicket Swamp
**SWT2-15*-** Red Maple Mineral Thicket Swamp
**SWT3-7-** Winterberry Organic Thicket Swamp

**Marsh Communities (MA)**
**MAM2-2-** Reed Canary Gress Mineral Meadow Marsh
**MAM2-10-** Forb Mineral Meadow Marsh
**MAM2-11*-** Forb – Graminoid Mineral Meadow Marsh
**MAS2-1-** Cattail Mineral Shallow Marsh
**MAS2-8-** Rice Cut-grass Mineral Shallow Marsh

**Cultural Communities (CU)**
**CUM1-** Mineral Cultural Meadow
**CUT1-7-** European Buckthorn – Sweet Cherry Cultural thicket
**CUW1-3*-** Ash – Sumac Mineral Cultural Woodland
**CUW1-4*-** Green Ash Mineral Cultural Woodland
**CUW1-5*-** Maple-Ash Cultural Woodland
**CUW1-6*-** Green Ash Cultural Woodland
**CUW1-7*-** Red maple Mineral Cultural Woodland
**CUP3-12*-** White Pine – White/Norway Spruce Coniferous Plantation
**CUP3-13*-** White Spruce Coniferous Plantation

**D-** Disturbed
**R-** Residential


## Notes

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2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © Samsung, 2010.
3. Image Source: © Grand River Conservation Authority, 2010 - Imagery Date: Spring 2006; LIDAR IMAGERY SOURCE???
4. Produced using the Version 5 site plan produced by Stantec updated on Dec 13.

Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
**TILE 6** DRAFT

Title
**ELC VEGETATION COMMUNITIES - TRANSMISSION CORRIDOR**

Stantec


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December 2010
160960577

## Legend

- Proposed Turbine Location
- 120m Zone of Investigation
- ROW Installation Zone
- ELC Communities
- Access Road
- Overhead Collector Line
- Underground Collector Line
- Substation Property
- Road
- Transmission Line (OBM)
- Provincially Significant Wetland
- Non-Provincially Significant Wetland
- Watercourse (OBM)
- Waterbody

**Forest Communities (FO)**
**FOM2-2**- Dry-fresh White Pine – Sugar Maple Mixed Forest
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**Swamp Communities (SW)**
**SWD1-1**- Swamp White Oak Mineral Deciduous Swamp
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**SWT2-13***- Willow – Dogwood Mineral Thicket Swamp
**SWT2-14***- Winterberry – Buttonbush Mineral Thicket Swamp
**SWT2-15***- Red Maple Mineral Thicket Swamp
**SWT3-7**- Winterberry Organic Thicket Swamp

**Marsh Communities (MA)**
**MAM2-2**- Reed Canary Grass Mineral Meadow Marsh
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**MAS2-8**- Rice Cut-grass Mineral Shallow Marsh

**Cultural Communities (CU)**
**CUM1**- Mineral Cultural Meadow
**CUT1-7**- European Buckthorn – Sweet Cherry Cultural thicket
**CUW1-3***- Ash – Sumac Mineral Cultural Woodland
**CUW1-4***- Green Ash Mineral Cultural Woodland
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**CUP3-12***- White Pine – White/Norway Spruce Coniferous Plantation
**CUP3-13***- White Spruce Coniferous Plantation

**D**- Disturbed
**R**- Residential


## Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © Samsung, 2010.
3. Image Source: © Grand River Conservation Authority, 2010 - Imagery Date: Spring 2006; **LIDAR IMAGERY SOURCE???**
4. Produced using the Version 5 site plan produced by Stantec updated on Dec 13.

Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
**TILE 5** *DRAFT*

Title
**ELC VEGETATION COMMUNITIES - TRANSMISSION CORRIDOR**

Stantec

584363 585363 586363 587363

4752730

CONCESSION 9

CONCESSION 8

HALDIMAND ROAD 20

HALDIMAND ROAD 55

OLD TALBOT ROAD

DRY LAKE ROAD

IRISH LINE

HIGHWAY 3

Nelles Corners

Soy Ploughed Farm Hay CUM1 Pastures Res Bus Res SWD2-2 FOD5-11 Pasture Lawn Hay/Pasture Hay/Forb Clover Fallow 18 Bare Soil Mowed Farm/Res Pasture/Hay CUP3-13

0 150 300 m

1:10,000

N

584363 585363 586363 587363

4751730

December 2010

160960577

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## Legend

- Proposed Turbine Location
- 120m Zone of Investigation
- ROW Installation Zone
- ELC Communities
- Access Road
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- Road
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**Marsh Communities (MA)**
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**MAS2-1**- Cattail Mineral Shallow Marsh
**MAS2-8**- Rice Cut-grass Mineral Shallow Marsh

**Cultural Communities (CU)**
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**D**- Disturbed
**R**- Residential


## Notes

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3. Image Source: © Grand River Conservation Authority, 2010 - Imagery Date: Spring 2006; **LIDAR IMAGERY SOURCE???**
4. Produced using the Version 5 site plan produced by Stantec updated on Dec 13.

Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

**TILE 4** **DRAFT**

Title

**ELC VEGETATION COMMUNITIES - TRANSMISSION CORRIDOR**

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160960577

## Legend

- Proposed Turbine Location
- 120m Zone of Investigation
- ROW Installation Zone
- ELC Communities
- Access Road
- Overhead Collector Line
- Underground Collector Line
- Substation Property
- Road
- Transmission Line (OBM)
- Provincially Significant Wetland
- Non-Provincially Significant Wetland
- Watercourse (OBM)
- Waterbody

**Forest Communities (FO)**
**FOM2-2-** Dry-fresh White Pine – Sugar Maple Mixed Forest
**FOD-** Deciduous Forest
**FOD2-1-** Dry-fresh Oak – Red Maple Deciduous Forest
**FOD2-2-** Dry-fresh Oak – Hickory Deciduous Forest
**FOD2-4-** Dry-fresh Oak – Hardwood Deciduous Forest
**FOD3-1-** Dry-fresh Poplar Deciduous Forest
**FOD4-1-** Dry-fresh Beech Deciduous Forest
**FOD4-2-** Dry-fresh White Ash Deciduous Forest
**FOD5-1-** Dry-fresh Sugar Maple Deciduous Forest
**FOD5-2-** Dry-fresh Sugar Maple – Beech Deciduous Forest
**FOD5-3-** Dry-fresh Sugar Maple – Oak Deciduous Forest
**FOD5-8-** Dry-fresh Sugar Maple – White Ash Deciduous Forest
**FOD5-11*-** Dry-fresh Sugar Maple – Oak – Beech Deciduous Forest
**FOD5-12*-** Dry-fresh Sugar Maple – Hickory – Beech Deciduous Forest
**FOD6-1-** Fresh-moist Sugar Maple – Lowland Ash Deciduous Forest
**FOD6-5-** Fresh-moist Sugar Maple – Hardwood Deciduous Forest
**FOD6-6*-** Fresh-moist Sugar Maple – Hickory Deciduous Forest
**FOD7-1-** Fresh-moist White Elm Lowkind Decidduous Forest
**FOD7-2-** Fresh-moist Ash Lowland Deciduous Forest
**FOD9-1-** Fresh-moist Oak – Sugar Maple Deciduous Forest
**FOD9-4-** Fresh-moist Shagbark Hickory Deciduous Forest
**FOD9-6*-** Fresh-moist Red Oak – Shagbark Hickory Deciduous Forest

**Swamp Communities (SW)**
**SWD1-1-** Swamp White Oak Mineral Deciduous Swamp
**SWD2-2-** Green Ash Mineral Deciduous Swamp
**SWD2-3*-** Ash – Hardwood Mineral Deciduous Swamp
**SWD2-4*-** Green Ash – Red Maple Mineral Deciduous Swamp
**SWD3-1-** Red Maple Mineral Deciduous Swamp
**SWD3-2-** Silver Maple Mineral Deciduous Swamp
**SWD3-5*-** Swamp Maple – Green Ash Mineral Deciduous Swamp
**SWD4-1-** Willow Mineral Deciduous Swamp
**SWD4-2-** White Elm Mineral Deciduous Swamp
**SWD3-3-** Swamp Maple Mineral Deciduous Swamp
**SWD4-6*-** Green Ash – Swamp Maple Mineral Deciduous Swamp
**SWT-** Thicket Swamp
**SWT2-4-** Buttonbush Mineral Thicket Swamp
**SWT2-5-** Red Osier Dogwood Mineral Thicket Swamp
**SWT2-8-** Silky Dogwood Mineral Thicket Swamp
**SWT2-9-** Gray Dogwood Mineral Thicket Swamp
**SWT2-13*-** Willow – Dogwood Mineral Thicket Swamp
**SWT2-14*-** Winterberry – Buttonbush Mineral Thicket Swamp
**SWT2-15*-** Red Maple Mineral Thicket Swamp
**SWT3-7-** Winterberry Organic Thicket Swamp

**Marsh Communities (MA)**
**MAM2-2-** Reed Canary Grass Mineral Meadow Marsh
**MAM2-10-** Forb Mineral Meadow Marsh
**MAM2-11*-** Forb – Graminoid Mineral Meadow Marsh
**MAS2-1-** Cattail Mineral Shallow Marsh
**MAS2-8-** Rice Cut-grass Mineral Shallow Marsh

**Cultural Communities (CU)**
**CUM1-** Mineral Cultural Meadow
**CUT1-7-** European Buckthorn – Sweet Cherry Cultural thicket
**CUW1-3*-** Ash – Sumac Mineral Cultural Woodland
**CUW1-4*-** Green Ash Mineral Cultural Woodland
**CUW1-5*-** Maple-Ash Cultural Woodland
**CUW1-6*-** Green Ash Cultural Woodland
**CUW1-7*-** Red maple Mineral Cultural Woodland
**CUP3-12*-** White Pine – White/Norway Spruce Coniferous Plantation
**CUP3-13*-** White Spruce Coniferous Plantation

**D-** Disturbed
**R-** Residential


## Notes

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2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © Samsung, 2010.
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Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
TILE 3 DRAFT

Title
**ELC VEGETATION COMMUNITIES - TRANSMISSION CORRIDOR**

Stantec

590570 591570 592570 593570

4749665

CONCESSION 6

HALDIMAND ROAD 20

KOHLER ROAD

CONCESSION 5

Ploughed Fallow Bare Soil Forb Soy Hay Winter Wheat Hay/CUM1 Mowed/CUM1 Res OA

SWD2-2 SWD2-3 SWD3-2 SWD3-1 FOD5-6 FOD3-1 FOD9-4 MAM2-2 SWT2-9 FOD5-12 FOD5-2 FOD5-3 FOD2-2 CUM1

48 24 20 16

N

0 150 300 m

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December 2010
160960577

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## Legend

- Proposed Turbine Location
- 120m Zone of Investigation
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- ELC Communities
- Access Road
- Overhead Collector Line
- Underground Collector Line
- Substation Property
- Road
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**SWD3-5*-** Swamp Maple - Green Ash Mineral Deciduous Swamp
**SWD4-1-** Willow Mineral Deciduous Swamp
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**D-** Disturbed
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## Notes

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4. Produced using the Version 5 site plan produced by Stantec updated on Dec 13.

Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
**TILE 2** **DRAFT**

Title
**ELC VEGETATION COMMUNITIES - TRANSMISSION CORRIDOR**

Stantec

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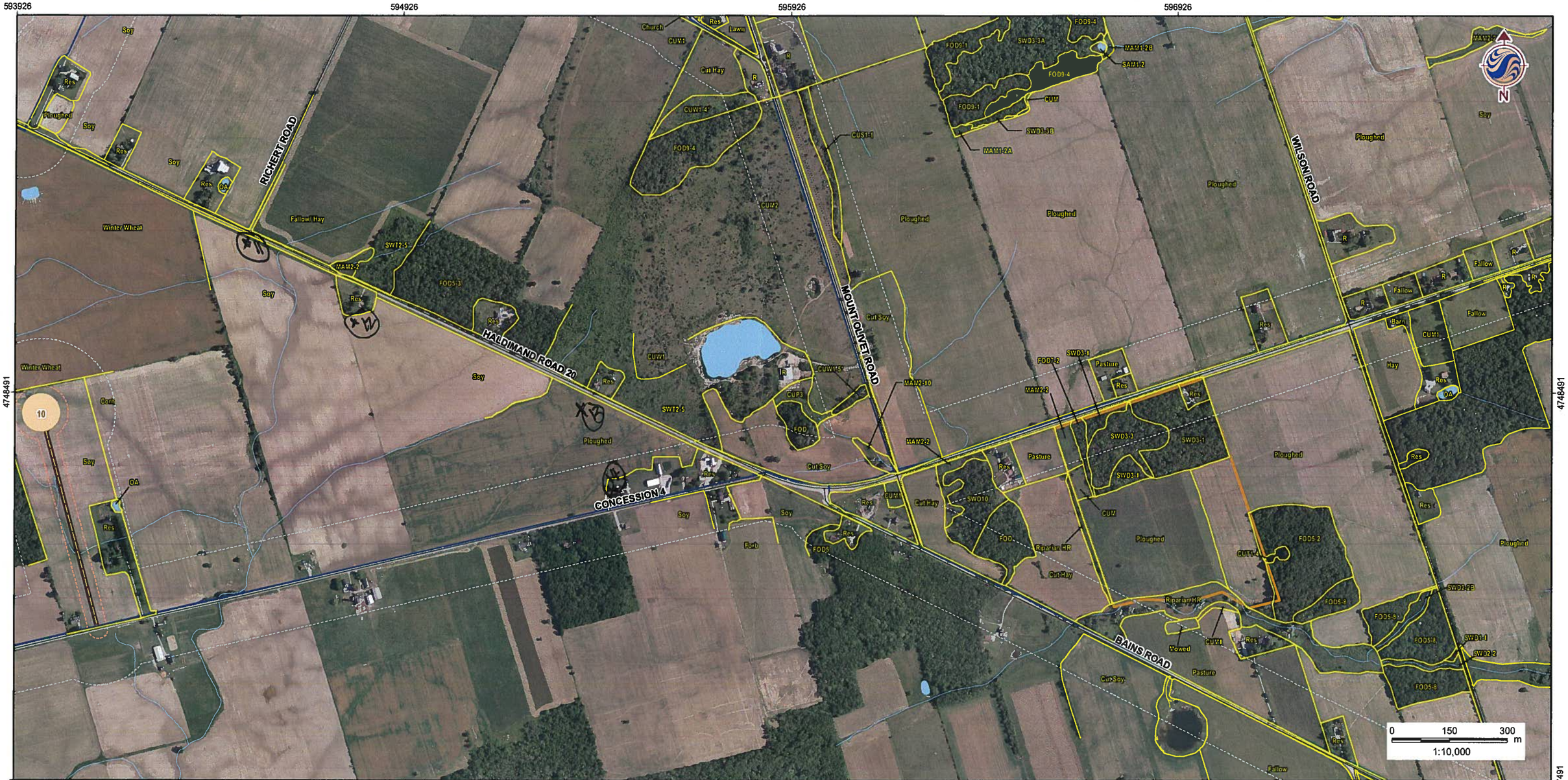


December 2010
160960577

## Legend

- Proposed Turbine Location
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**R**- Residential


## Notes

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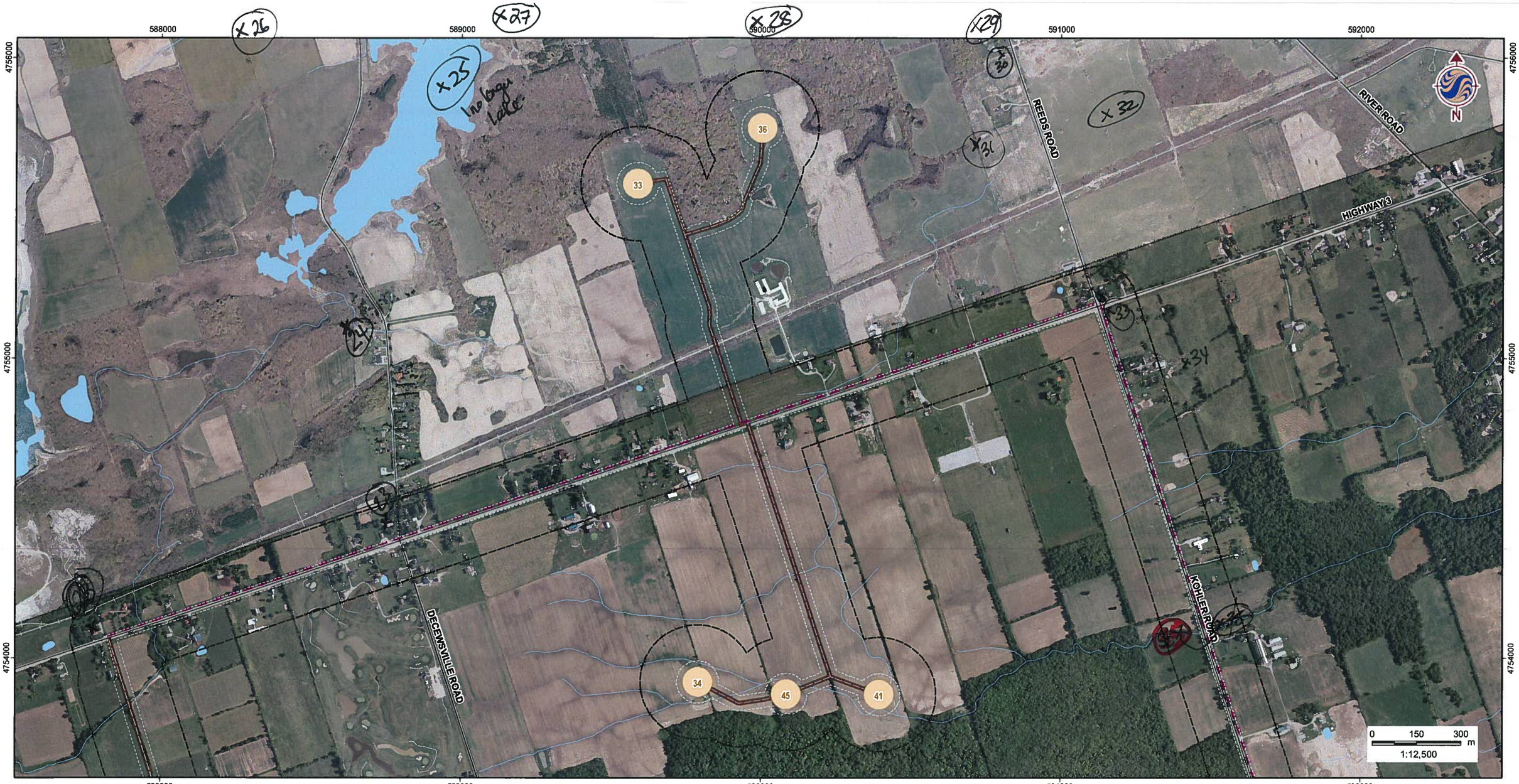
4. Produced using the Version 5 site plan produced by Stantec updated on Dec 13.

Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
**TILE 1** *DRAFT*

Title
**ELC VEGETATION COMMUNITIES - TRANSMISSION CORRIDOR**

Stantec

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January 2011
160960577

## Legend

- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

Stantec

## Notes

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

5.1

DRAFT

Title

# MAPPING INDICES - W1


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January 2011
160960577

## Legend

- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

Stantec

## Notes

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

5.1 DRAFT

Title

# MAPPING INDICES - W3


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January 2011
160960577

## Legend

- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

Stantec

## Notes

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

5.1 DRAFT

Title

**MAPPING INDICES - W4**


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January 2011
160960577

## Legend

- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

Stantec

## Notes

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

5.1 *DRAFT*

Title

**MAPPING INDICES - W5**


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January 2011
160960577

## Legend

- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

Stantec

## Notes

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

5.1 *DRAFT*

Title

**MAPPING INDICES - W6**


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January 2011
160960577

## Legend

- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

Stantec

## Notes

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

5.1 DRAFT

Title

# MAPPING INDICES - W7


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January 2011
160960577

## Legend

- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

Stantec

## Notes

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Client/Project

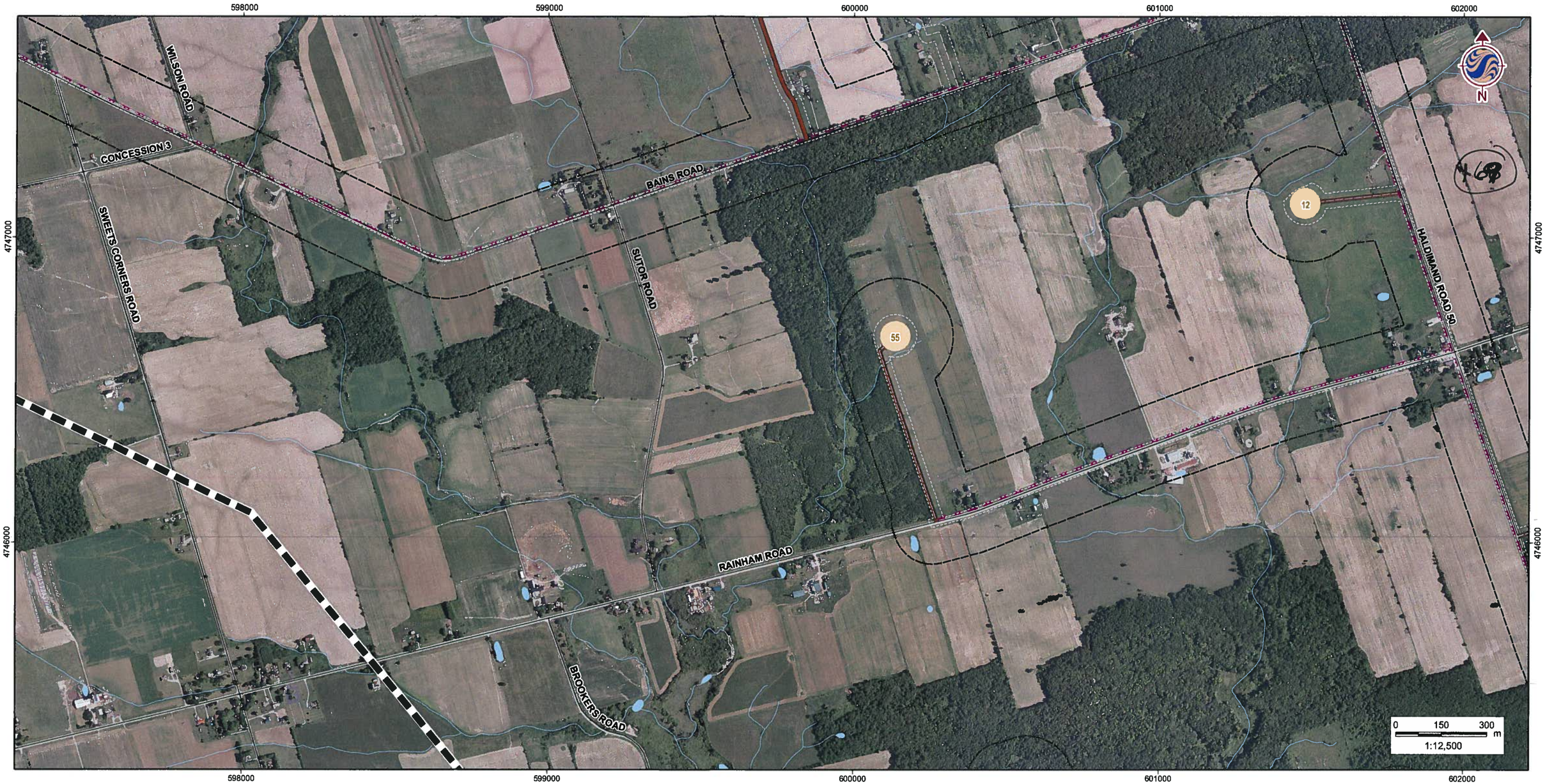
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

5.1 DRAFT

Title

**MAPPING INDICES - W8**

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January 2011
160960577

## Legend

- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
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**Solar Project Location**

- Solar Lands

**Existing Features**

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- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

Stantec

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

5.1 *DRAFT*

Title

**MAPPING INDICES - W9**

599000 600000 601000 602000 603000

4746000 4745000 4744000

SUTOR ROAD
RAINHAM ROAD
BROOKERS ROAD
KALDIMAND ROAD 50
LAKESHORE ROAD
WHITECAP LANE
EVANSPOINT LINE
Lake Erie

X73 X74 X75 X76 X77 X78

9 21 32 5 51

N

0 150 300 m
1:12,500

January 2011
160960577

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## Legend

- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

Stantec

## Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © Samsung, 2010.
3. Image Source: © Terrapoint, 2009 - Imagery Date: July 2009; © Grand River Conservation Authority, 2010 - Imagery Date: Spring 2006.
4. Produced using the Version 5 site plan produced by Stantec updated on Dec 13.

Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

5.1 DRAFT

Title

# MAPPING INDICES - W10


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January 2011
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## Legend

- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

Stantec

## Notes

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

5.1 *DRAFT*

Title

**MAPPING INDICES - W11**


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January 2011
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## Legend

- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

Stantec

## Notes

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

5.1 *DRAFT*

Title

**MAPPING INDICES - W12**


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January 2011
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## Legend

- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

Stantec

## Notes

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

5.1 *DRAFT*

Title

**MAPPING INDICES - W13**


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## Legend

- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

Stantec

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

5.1 *DRAFT*

Title

**MAPPING INDICES - W14**

606000 607000 608000 609000 610000

4748000 4747000 4746000

RAINHAM ROAD

TOWNLINE ROAD HALDIMAND

RAMSEY ROAD

HALDIMAND ROAD 49

KINGS ROW

MYRNAM BEACH ROAD

EDGEWATER PLACE

LAKESHORE ROAD

SHORELINE TRAIL

Lake Erie

6 69 8 7 3 1 54

92 94 95 97 163

N

0 150 300 m

1:12,500

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January 2011
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## Legend

- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

Stantec

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Client/Project

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Figure No.

5.1 *DRAFT*

Title

**MAPPING INDICES - W15**


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## Legend

- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

Stantec

## Notes

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

5.1 *DRAFT*

Title

**MAPPING INDICES - W16**

613000 614000 615000 616000 617000

4748000

4747000

59 62 63 61 60 64

RAMSEY ROAD

JOHNSON ROAD

PORT MAITLAND ROAD

KINGS ROW

DOVER STREET

Grand River

RYMER ROAD

FEEDER CANAL ROAD

SIDDALL ROAD

N

0 150 300 m

1:12,500

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## Legend

- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

Stantec

## Notes

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GRAND RENEWABLE ENERGY PARK

Figure No.

5.1 *DRAFT*

Title

**MAPPING INDICES - W17**


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## Legend

- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

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## Notes

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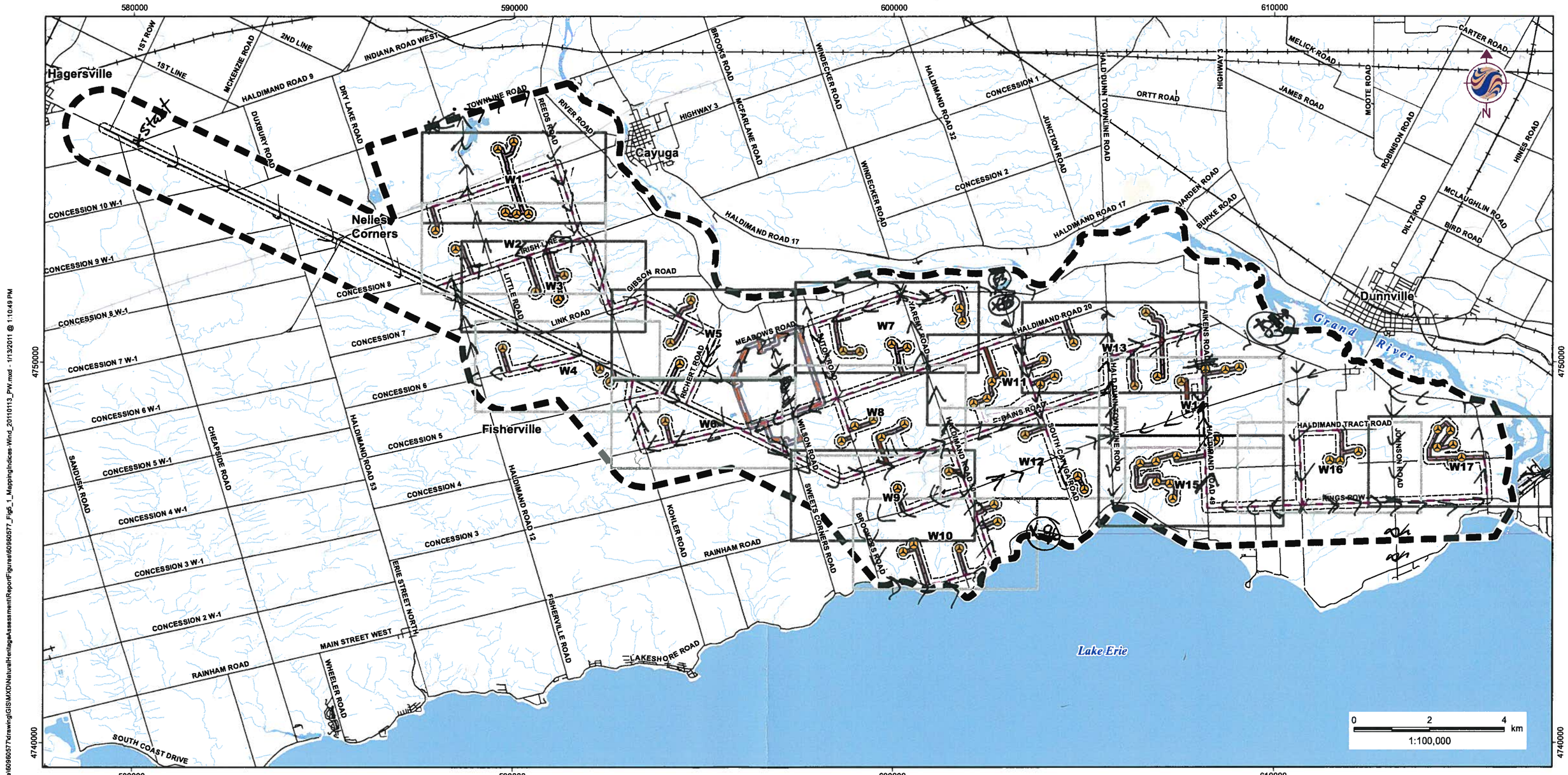
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

5.2 DRAFT

Title

# MAPPING INDICES - S2

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## Legend

- Study Area
- Zone of Investigation
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Watercourse (MNR)
- Waterbody (MNR)

~~Reference~~ Route overview map

Stantec

## Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
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3. Produced using the Version 5 site plan produced by Stantec updated on Dec 13.

Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

5.1 DRAFT

Title

**MAPPING INDICES - WIND PROJECT**

Stantec Consulting Ltd.
70 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

# Winter Raptor Observation Form

Project Number: 161010624.210.100.100 Project Name: Samsung

Date / Time: 28-Jan-2011 10:45 - 16:35 Field Personnel: Melissa Straus & Shannon Catton

| Weather Conditions: | Temp: | Wind: | Cloud: | PPT: | PPT in last 24 hrs: | Ave. Snow Depth: |
|---|---|---|---|---|---|---|
| | -5° | 3 | 100% | light snow | light snow | 5-10 cm |

139.7 total km driven on survey

| Species / Time | # of Individuals | Location | Behaviour | Map |
|---|---|---|---|---|
| | | *Habitat type, proximity to features (woodlands, ravines etc.)* | *Perched, Hunting, flying, height* | |
| ✓✓✓ ① RTHA 10:45 | 1 | Ag | Perched 10m | T6 |
| ✓✓✓ ② RTHA/RLHA 10:55 | 1 of each (2) | Ag | Perched 10m (RLHA flew in | T4 |
| ✓✓✓ ③ RTHA | 1 | Thicket swamp | Perched 10 | T4 |
| ✓✓✓ ④ RTHA | 1 | Swamp | " | |
| ✓✓✓ ⑤ NOHA 11:10 | 1 | field - Ag | Flying <5m | T4 |
| ✓✓✓ ⑥ RTHA 11:20 | 1 | " | Flying <5m | W1 |
| ✓✓✓ ⑦ RLHA light morph | 1 | " | Perched 5m | W1 |
| ✓✓✓ ⑧ RLHA dark morph | 1 | " | " | W1 |
| ✓✓✓ ⑨ RLHA | 1 | Field | " | W1 |
| ✓✓✓ ⑩ RTHA | 1 | " | " | W1 |
| ✓✓✓ ⑪ AMKE | 1 | " | Flying 5m | W1 |

Quality Control: This form is complete (✓) & legible (✓).

Signature: Melissa Straus (Field Personnel) Signature: _____ (Project Manager)



REV: May, 07 Form 018

| | Species | # of Individuals | Location | Behaviour | Map Page |
|---|---|---|---|---|---|
| 12 | SSHA 11:30 | 1 | RS/Thicket | Flying < 5m | W1 |
| 13 | NOHA 11:35 | 1 | Ag/swamp | Flying 5m | W3 |
| 14 | RTHA 11:38 | 1 | Ag | Perched 5m | W3 |
| 15 | " | " | " | " | W3 |
| 16 | " | " | Hedgerow on road | " | W3 |
| 17 | " | " | HR - Stream | " | W2 |
| 18 | Juv. RTHA | 1 | HR - stream | " | W2 |
| 19 | RLHA | 1 | Ag | " | W1 |
| 20 | RTHA 12:15 | 2 | Ag | Perched 5m | W1 |
| 21 | RTHA | 1 | HR | " | W1 |
| 22 | RTHA | 1 | Thicket | " | W3 |
| 23 | " | | Ag | " | W3 |
| 24 | " | " | HR/Ag | " | W3 |
| 25 | RLHA 12:30 | 1 | Edge of con. plantation | " | W3 |
| 26 | RTHA | 1 | silo | " | W3 |
| 27 | " | 1 | edge of wood lot | " | W4 |
| 28 | Juv. Bird | 1 | HR/Ag | " | W4 |

Quality Control: This form is complete (__) & legible (__).

Signature: Helena Strauss (Field Personnel)

Signature: _____ (Project Manager)



REV: May, 07 Form 018

| Species | # of Individuals | Location | Behaviour | Mapbook |
|---|---|---|---|---|
| (29) RLHA | 1 | swamp/fallow | Perched - 5m | W4 |
| (30) RTHA | 1 | Ag | " | W4 |
| (31) RLHA light+dark | 2 | HR | " | W4 |
| (32) RTHA 12:56 | 1 | Fallow | " | W4 |
| (33) RTHA | " | Swamp-Thicket | " | W4 |
| RTHA 13:07 | " | Fallow | " | W4 |
| (35) RLHA dark | " | Ag | " | W4 |
| " RLHA | 1 | HR- Ag | " | W6 |
| " | " | " | " | W6 |
| " | " | Woodlot | " | W5 |
| RTHA | " | SW thicket | " | W5 |
| 39 RTHA 13:25 | " | Fallow | " | W3 |
| (40) RTHA | " | edge woodlot | " | W4 |
| (41) RTHA 13:30 | " | telephone pole | " | W6 |
| (42) RLHA | 1 | " | " | W6 |
| (43) AMKE | 2 | Pasture | " +hunting | W6 |
| (44) RLHA | 1 | Woodlot | Perched 10m | W6 |
| (45) RTHA | 1 | Cus | " | W6 |
| (46) " | 2 | Ploughed Ag | " | W5 |
| (47) RLHA +dark | 1 | " | Ungrazed | W5 |
| (48) NOHA | | | | |

Quality Control: This form is complete (__) & legible (__).

Signature: W Pleasance & Travis (Field Personnel)  Signature: _____ (Project Manager)

| | Species | # of Individuals | Location | Behaviour | Map Book |
|---|---|---|---|---|---|
| 49 | RTHA | 1 | Ag field | Perched 5m | W5 |
| 50 | 14:00 RTHA | 2 | SWT | Flying < 5m | W7 |
| 51 | NOHA | 1 | Ag | " | W7 |
| 52 | RTHA 14:25 pm | 1 | SWT | Perched 5m | W10 |
| 53 | RTHA 14:40 | 2 | MAM | " | W9 |
| 54 | NOHA 14:45 ♂ | 1 | CUM | Flying 5-10m | W12 |
| 55 | RTHA 14:52 | 1 | Woodlot | ' < 5m | W12 |
| 56 | RLHA | 1 | Fallow | hover hunting ~30m | W12 |
| 57 | RTHA 15:07 | 1 | Fallow | Perched 10m | W14 |
| 58 | RTHA 15:15 | 2 | Woodlot | Perched 10m | W13 |
| 59 | RTHA 15:38 | 1 | Ag field | " | Route Map |
| 60 | RTHA 15:53 | 1 | Roadside / Res | " | W3 |
| 61 | RTHA 15:43 | 1 | Road / Ag | " | W14 |
| 62 | RTHA 15:55 | 2 | SWT | " | W16 |
| 63 | " | 1 | Thicket | " | W17 |
| 64 | RTHA 16:14 | 1 | CUM / Res | " | W17 |

Quality Control: This form is complete (__) & legible (__).

Signature: Helena Strauss (Field Personnel)

Signature: _____ (Project Manager)



REV: May, 07 Form 018


January 2011
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## Legend

**Wind Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

Stantec

## Notes
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Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
12.6

DRAFT

Title
**NATURAL FEATURES - T6**

581000 582000 583000 584000 585000

4755000

4754000

4753000

CONCESSION 10

CONCESSION 9 W-1

HALDIMAND ROAD 20

HALDIMAND ROAD 53

DUXBURY ROAD

TOWNLINE ROAD

ABBOTT ROAD

Corners

101 102 103

N

0 150 300 m

1:12,500

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## Legend

**Study Area**
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- Constructable Area
- Transmission Line

**Wind Project Location**
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
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**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
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- Abandoned Railway
- Transmission Line (MNR)
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- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
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- Valleyland
- Vernal Pool
- Wetland
- Woodland

Stantec

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

12.5 DRAFT

Title

**NATURAL FEATURES - T5**

584000 585000 586000 587000 588000

4753000

4752000

CONCESSION 9 W-1

HALDIMAND ROAD 53

CONCESSION 9

OLD TALBOT ROAD

Nelles Corners

DRY LAKE ROAD

HALDIMAND ROAD 20

IRISH LINE

12 ROAD

HALDIMA

CONCESSION 8 W-1

HIGHWAY 3

CONCESSION 8

x1 x2 x3

18 43 104 105 106

N

0 150 300 m

1:12,500

584000 585000 586000 587000 588000

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## Legend

**Wind Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

Stantec

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

12.4 DRAFT

Title

**NATURAL FEATURES - T4**


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## Legend

**Wind Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

Stantec

## Notes

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

12.3 DRAFT

Title

**NATURAL FEATURES - T3**

591000 592000 593000 594000 595000

4750000

4749000

LINK ROAD

CONCESSION 6

CONCESSION 5

KOHLER ROAD

HALDIMAND ROAD 20

RICHERT ROAD

N

0 150 300 m

1:12,500

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## Legend

**Wind Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

Stantec

## Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © Samsung, 2010.
3. Image Source: © Terrapoint, 2009 - imagery Data: July 2009; © Grand River Conservation Authority, 2010 - imagery Date: Spring 2006.
4. Produced using the Version 5 site plan produced by Stantec updated on Dec 13.

Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

12.2 DRAFT

Title

**NATURAL FEATURES - T2**


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January 2011
160960577

## Legend

**Wind Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

12.1 DRAFT

Title

**NATURAL FEATURES - T1**


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January 2011
160960577

## Legend

**Wind Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

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Client/Project

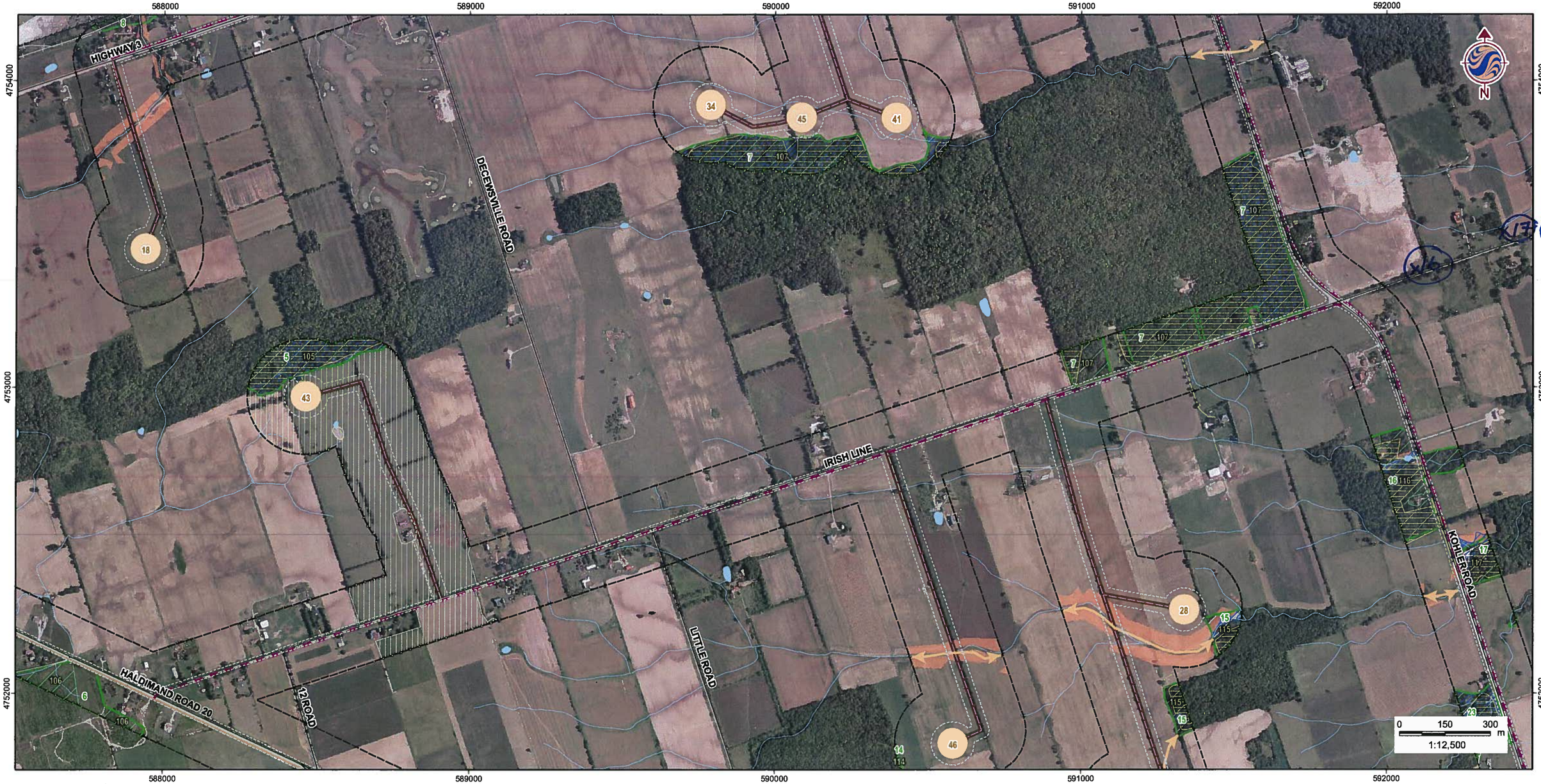
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

10.1 DRAFT

Title

**NATURAL FEATURES - W1**

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January 2011
160960577

## Legend

**Wind Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

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3. Image Source: © Terrapoint, 2009 - Imagery Date: July 2009; © Grand River Conservation Authority, 2010 - Imagery Date: Spring 2006.
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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

10.2 DRAFT

Title

**NATURAL FEATURES - W2**

589000 590000 591000 592000 593000

4753000 4752000 4751000

DECEWSVILLE ROAD
IRISH LINE
LITTLE ROAD
KOHLER ROAD
GIBSON ROAD
HALDIMAND ROAD 12
CONCESSION 7
HALDIMAND ROAD 20
LINK ROAD

N

0 150 300 m
1:12,500

January 2011
160960577

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## Legend

**Study Area**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

10.3 DRAFT

Title

**NATURAL FEATURES - W3**

589000 590000 591000 592000 593000

4751000 4750000 4749000

CONCESSION 7
LINK ROAD
KOHLER ROAD
HALDIMAND ROAD 12
CONCESSION 6
HALDIMAND ROAD 20
ERIE AVENUE NORTH
CONCESSION 5

N

0 150 300 m
1:12,500

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January 2011
160960577

## Legend

**Study Area**
Zone of Investigation
Constructable Area
Transmission Line

**Wind Project Location**
Proposed Turbine Location
Access Road
Overhead Collector Line
Underground Collector Line

**Solar Project Location**
Solar Lands

**Existing Features**
Road
Railway
Abandoned Railway
Transmission Line (MNR)
Watercourse (MNR)
Waterbody (MNR)

**Natural Features**
Animal Movement Corridor
Deer Wintering Area
Grassland Habitat
Natural Feature
Provincially Significant Life Science ANSI
Rare Vegetation Community
Snapping Turtle Habitat
Valleyland
Vernal Pool
Wetland
Woodland

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## Notes

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SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
10.4 DRAFT

Title
**NATURAL FEATURES - W4**

A39

593000 594000 595000 596000 597000

4751000

4750000

GIBSON ROAD
LINK ROAD
KOHLER ROAD
HALDIMAND ROAD 20
RICHERT ROAD
MOUNT OLIVET ROAD
RIVER ROAD
MEADOWS ROAD
WILSON ROAD
Grand River
N

17 117
24 124
25
13
26
27 127
48
22 122
16
20
19 119
31 131
30 130

0 150 300 m
1:12,500

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January 2011
160960577

## Legend

**Wind Project Location**
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

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Figure No.

10.5 DRAFT

Title

**NATURAL FEATURES - W5**


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## Legend

- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**

- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

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3. Image Source: © Terrapoint, 2009 - Imagery Date: July 2009; © Grand River Conservation Authority, 2010 - Imagery Date: Spring 2006.
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Client/Project

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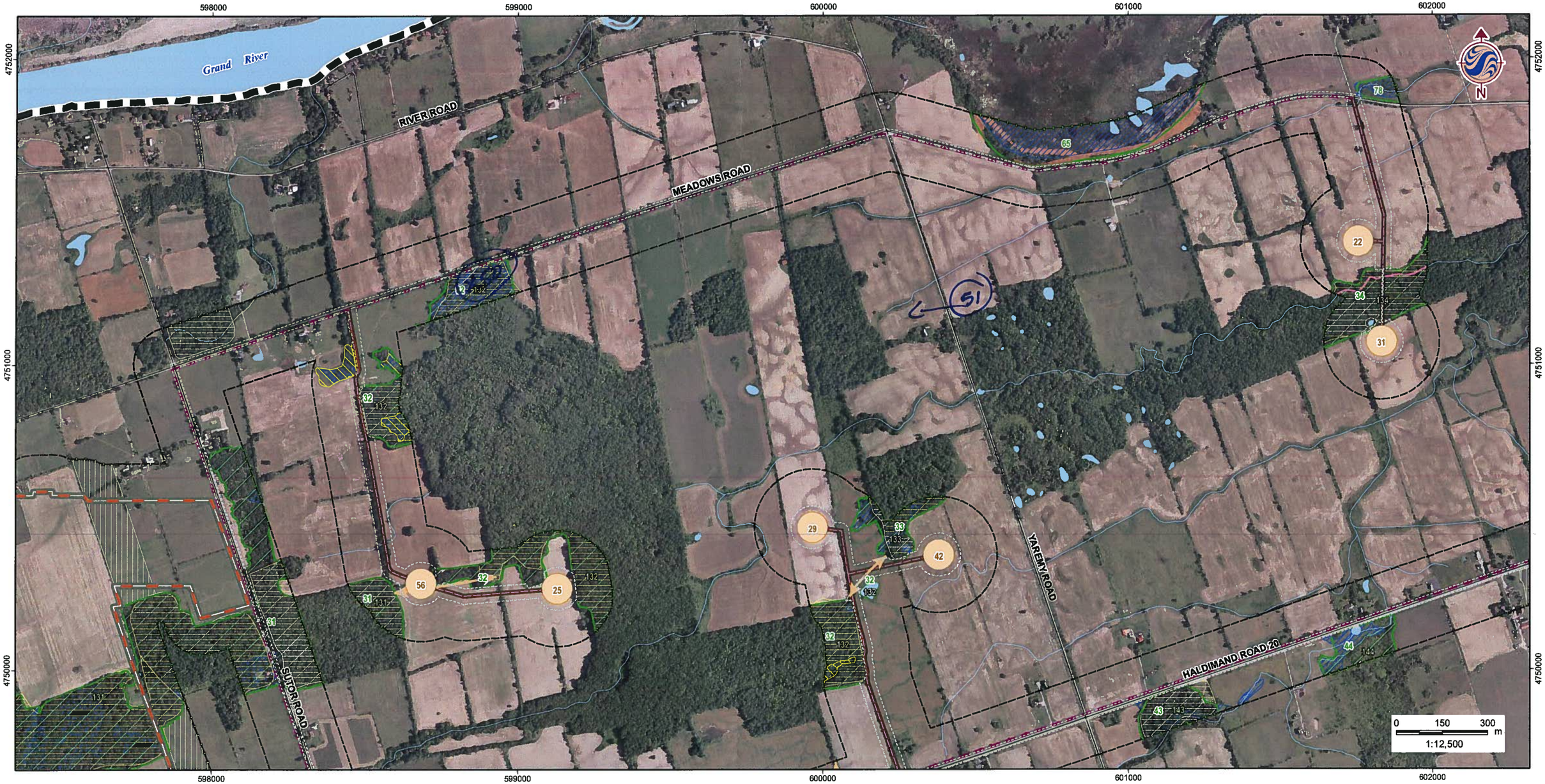
GRAND RENEWABLE ENERGY PARK

Figure No.

10.6 *DRAFT*

Title

**NATURAL FEATURES - W6**

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January 2011
160960577

## Legend

**Study Area**
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
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3. Image Source: © Terrapoint, 2009 - Imagery Date: July 2009; © Grand River Conservation Authority, 2010 - Imagery Date: Spring 2006.
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GRAND RENEWABLE ENERGY PARK

Figure No.

10.7 DRAFT

Title

**NATURAL FEATURES - W7**


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## Legend

**Study Area**
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

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Client/Project

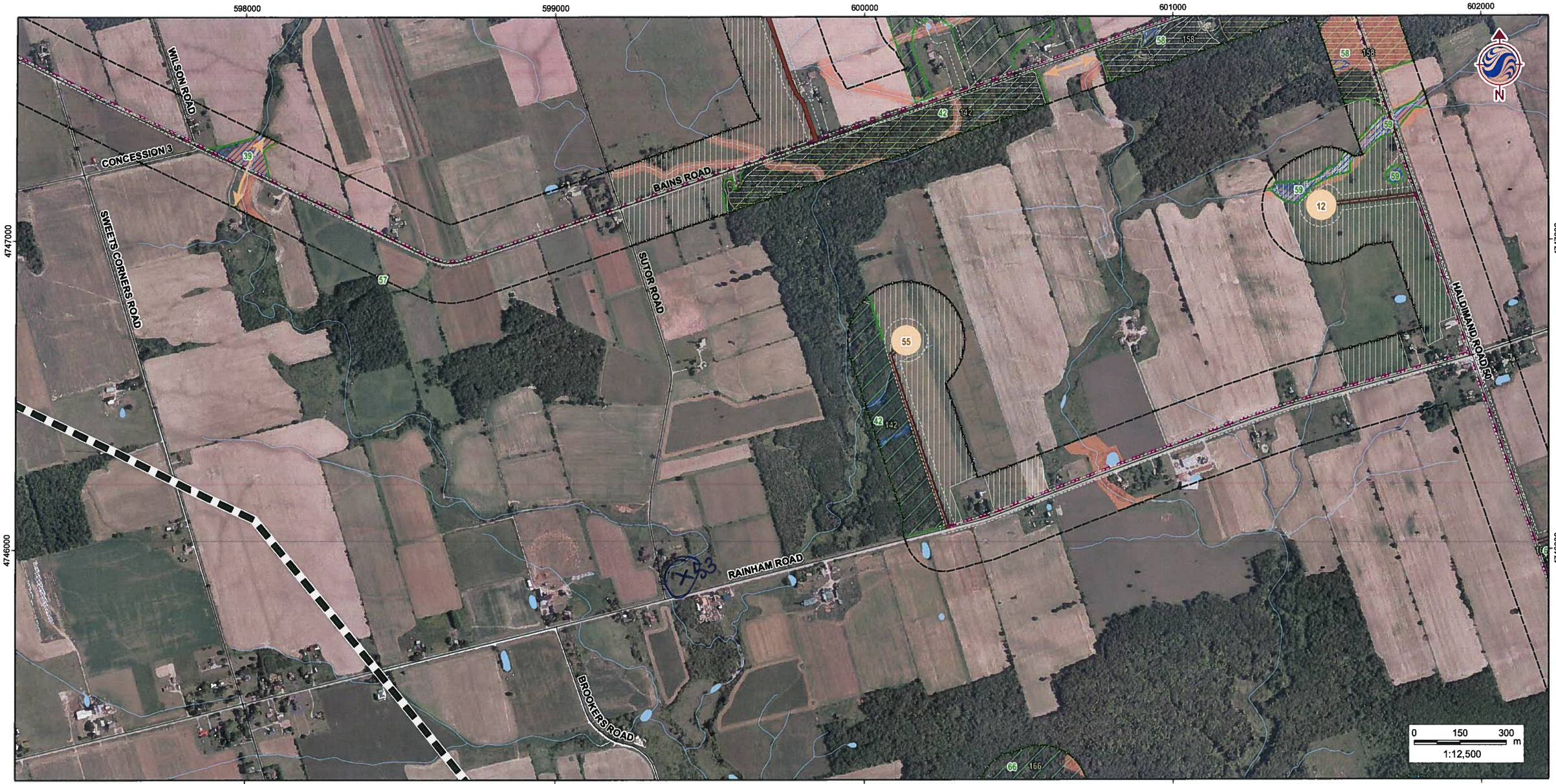
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

10.8 DRAFT

Title

**NATURAL FEATURES - W8**

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## Legend

**Wind Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

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Client/Project

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GRAND RENEWABLE ENERGY PARK

Figure No.

10.9 DRAFT

Title

**NATURAL FEATURES - W9**

599000 600000 601000 602000 603000

4746000 4745000 4744000

SUTOR ROAD
RAINHAM ROAD
BROOKERS ROAD
HALDIMAND ROAD 50
LAKESHORE ROAD
WHITE CAP LANE
EVANSPOINT LINE
Lake Erie

42 142
21
63
168
5
66 166
32
9
51
67 167

N

0 150 300 m
1:12,500

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## Legend

**Wind Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

10.10 DRAFT

Title

**NATURAL FEATURES - W10**

601000 602000 603000 604000 605000

4750000

4749000

HALDIMAND ROAD 20

HALDIMAND ROAD 50

SOUTH CAYUGA ROAD

BAINS ROAD

TOWNLINE ROAD, HALD DUINN

Upper Quarry

N

0 150 300 m

1:12,500

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160960577

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## Legend

**Wind Project Location**
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

10.11 DRAFT

Title

**NATURAL FEATURES - W11**

602000 603000 604000 605000 606000

4748000

4747000

BAINS ROAD

SOUTH CAYUGA ROAD

RAINHAM ROAD

HALDIMAND ROAD 59

TOWNLINE ROAD HALDIMAND

N

0 150 300 m

1:12,500

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160960577

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## Legend

**Study Area**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

XS6

## Notes

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Client/Project

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GRAND RENEWABLE ENERGY PARK

Figure No.

10.12 DRAFT

Title

**NATURAL FEATURES - W12**

Stantec


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## Legend

**Wind Project Location**
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

10.13 DRAFT

Title

**NATURAL FEATURES - W13**

606000 607000 608000 609000 610000

4750000 4749000 4748000

BAINS ROAD
TOWNLINE ROAD HALD DUNN
AIKENS ROAD
RAINHAM ROAD
HALDIMAND ROAD 49

N

0 150 300 m
1:12,500

606000 607000 608000 609000 610000

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160960577

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## Legend

**Wind Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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Client/Project

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GRAND RENEWABLE ENERGY PARK

Figure No.

10.14 DRAFT

Title

**NATURAL FEATURES - W14**

606000 607000 608000 609000 610000

4748000 4747000 4746000

RAINHAM ROAD
TOWNLINE ROAD HALD DUNN
RAMSEY ROAD
HALDIMAND ROAD 49
KINGS ROW
MYRNAM BEACH ROAD
EDGEWATER PLACE
LAKESHORE ROAD
SHORELINE TRAIL
Lake Erie

N

0 150 300 m
1:12,500

January 2011
160960577

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## Legend

**Wind Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

Stantec

## Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © Samsung, 2010.
3. Image Source: © Terrapoint, 2009 - Imagery Date: July 2009; © Grand River Conservation Authority, 2010 - Imagery Date: Spring 2006.
4. Produced using the Version 5 site plan produced by Stantec updated on Dec 13.

Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

10.15 DRAFT

Title

**NATURAL FEATURES - W15**

609000 610000 611000 612000 613000

4748000 4747000 4746000

HALDIMAND TRACT ROAD

HALDIMAND TRAIL

MARSHALL ROAD

RAMSEY ROAD

RAMSEY ROAD

KINGS ROW

JOHNSON ROAD

61 65 66 67 74 174 75 175 83 183 84 184

N

0 150 300 m

1:12,500

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160960577

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## Legend

**Study Area**
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

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- Road
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- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
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- Natural Feature
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- Woodland

Stantec

## Notes

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

10.16 DRAFT

Title

**NATURAL FEATURES - W16**

X64

613000 614000 615000 616000 617000

4748000

4747000

JOHNSON ROAD

RAMSEY ROAD

KINGS ROW

PORT MAITLAND ROAD

DOVER STREET

RYMER ROAD

FEEDER CANAL ROAD

SIDDALL ROAD

Grand River

59 62 63 61 60 64 76 176 77 177 85 185 86 186 87 187a 187b 83 183 84 184

N

0 150 300 m

1:12,500

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160960577

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## Legend

**Study Area**
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
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- Waterbody (MNR)

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- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

Stantec

## Notes

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Client/Project

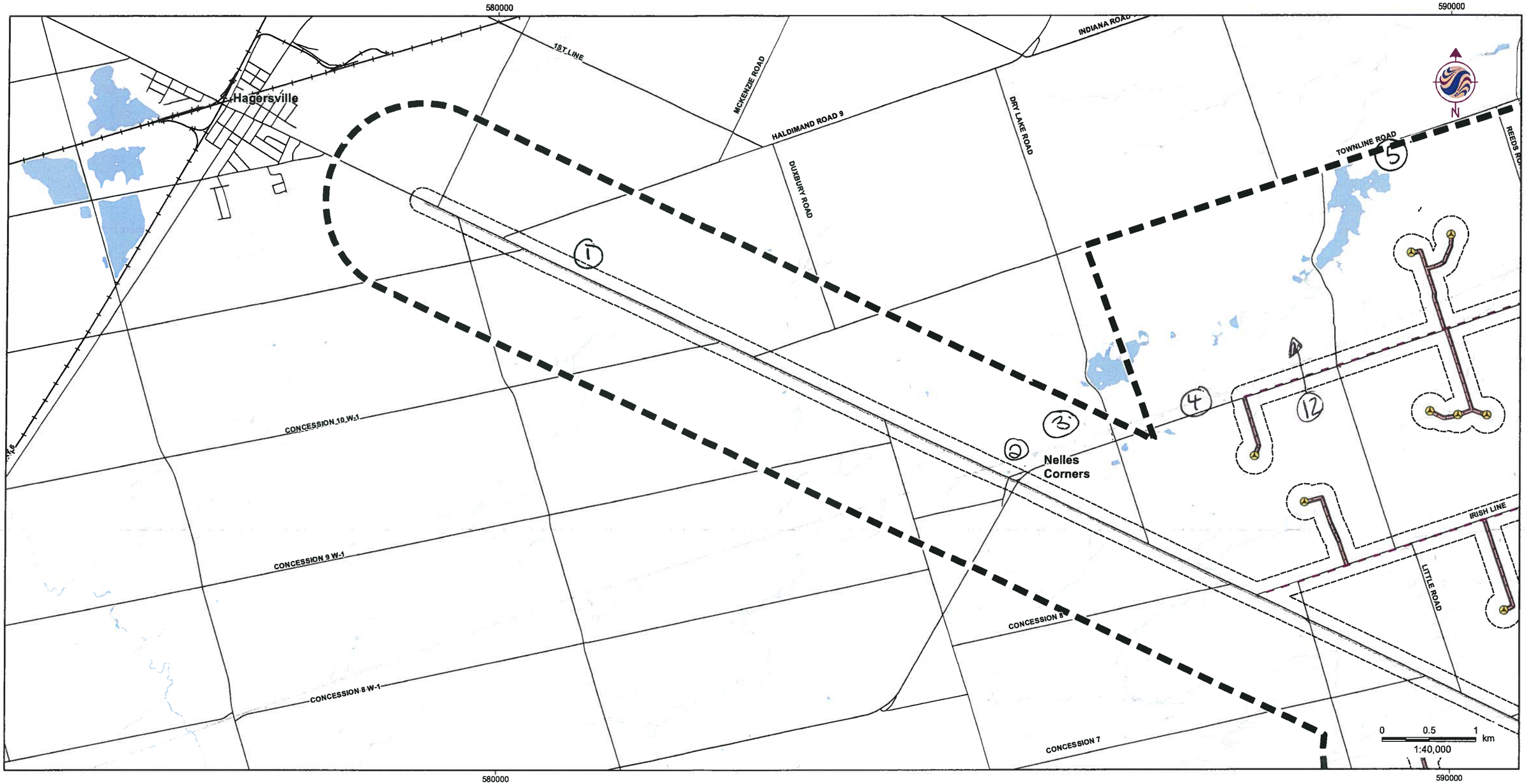
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

10.17 DRAFT

Title

**NATURAL FEATURES - W17**

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**Legend**

- Study Area
- Zone of Investigation
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Watercourse (MNR)
- Waterbody (MNR)

Overview Map - Part 1
28-Jan-2011.

**Notes**

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © Samsung, 2010.
3. Produced using the Version 5 site plan produced by Stantec updated on Dec 13.

Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
FIELD MAP 1 DRAFT

Title
**STUDY AREA**

Stantec

590000

600000

4750000

TOWNLINE ROAD
REEDS ROAD
RIVER ROAD
HIGHWAY 3
MCFARLANE ROAD
WINDECKER ROAD
CONCESSION 2
HALDIMAND ROAD 17
JUNCTION ROAD
Cayuga
Nelles Corners
IRISH LINE
LITTLE ROAD
GIBSON ROAD
CONCESSION 8
CONCESSION 7
CONCESSION 6
CONCESSION 5
HALDIMAND ROAD 53
LINK ROAD
MEADOWS ROAD
RICHERT ROAD
SUTOR ROAD
WILSON ROAD
HAREMY ROAD
HALDIMAND ROAD 20
HALDIMAND ROAD 56
BAINS ROAD
SOUTH CAYUGA
Fisherville

0 0.5 1 km
1:50,000

January 2011
160960577

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**Legend**

- Study Area
- Zone of Investigation
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Watercourse (MNR)
- Waterbody (MNR)

Overview Map - Part 2
28-Jan-2011.

**Notes**

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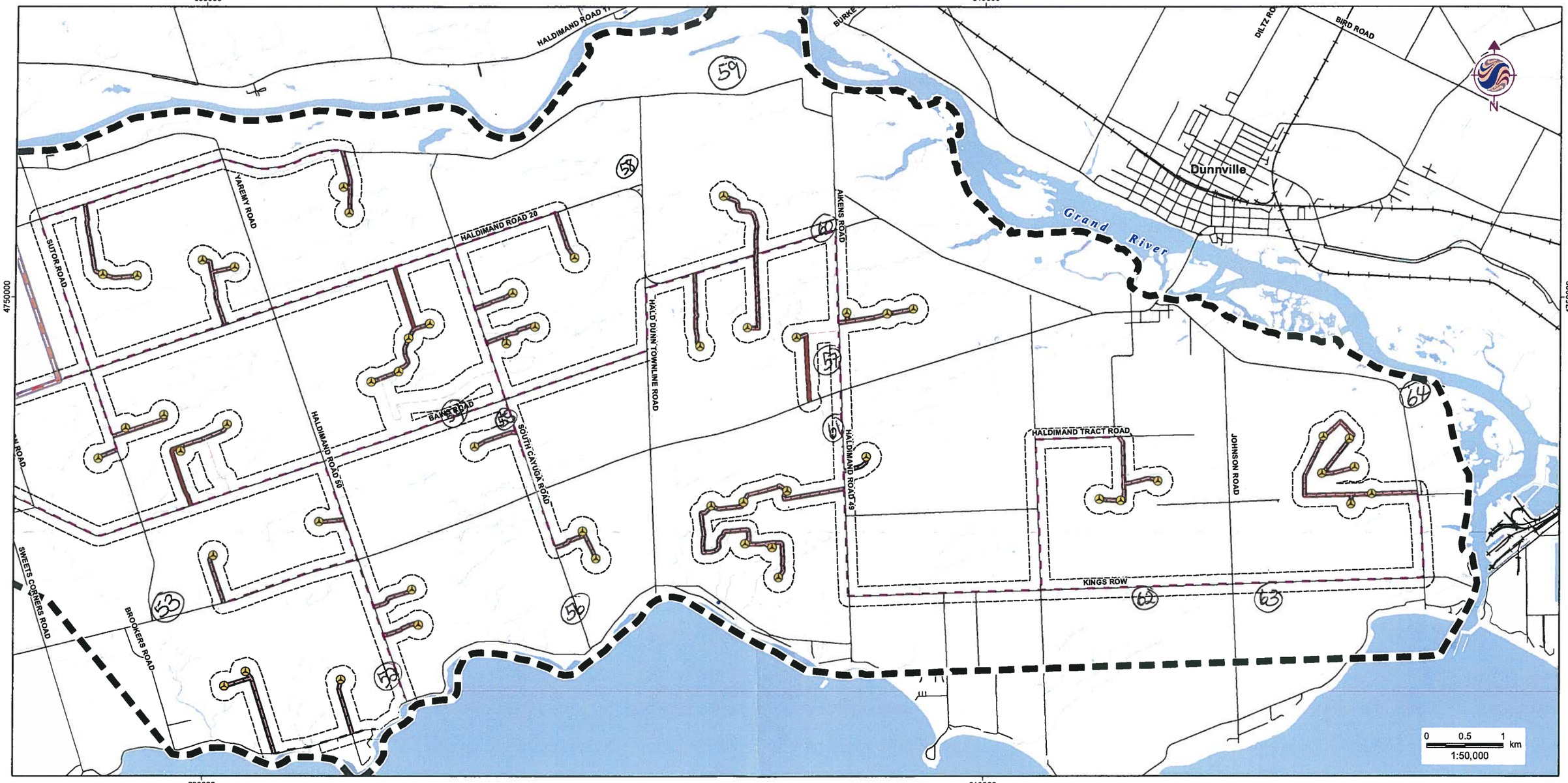
Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
FIELD MAP 2 DRAFT

Title
**STUDY AREA**

Stantec

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160960577

**Legend**

- Study Area
- Zone of Investigation
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Watercourse (MNR)
- Waterbody (MNR)

overview Map - Part 3
28-Jan-2011

**Notes**

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3. Produced using the Version 5 site plan produced by Stantec updated on Dec 13.

Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
FIELD MAP 3 DRAFT

Title
**STUDY AREA**

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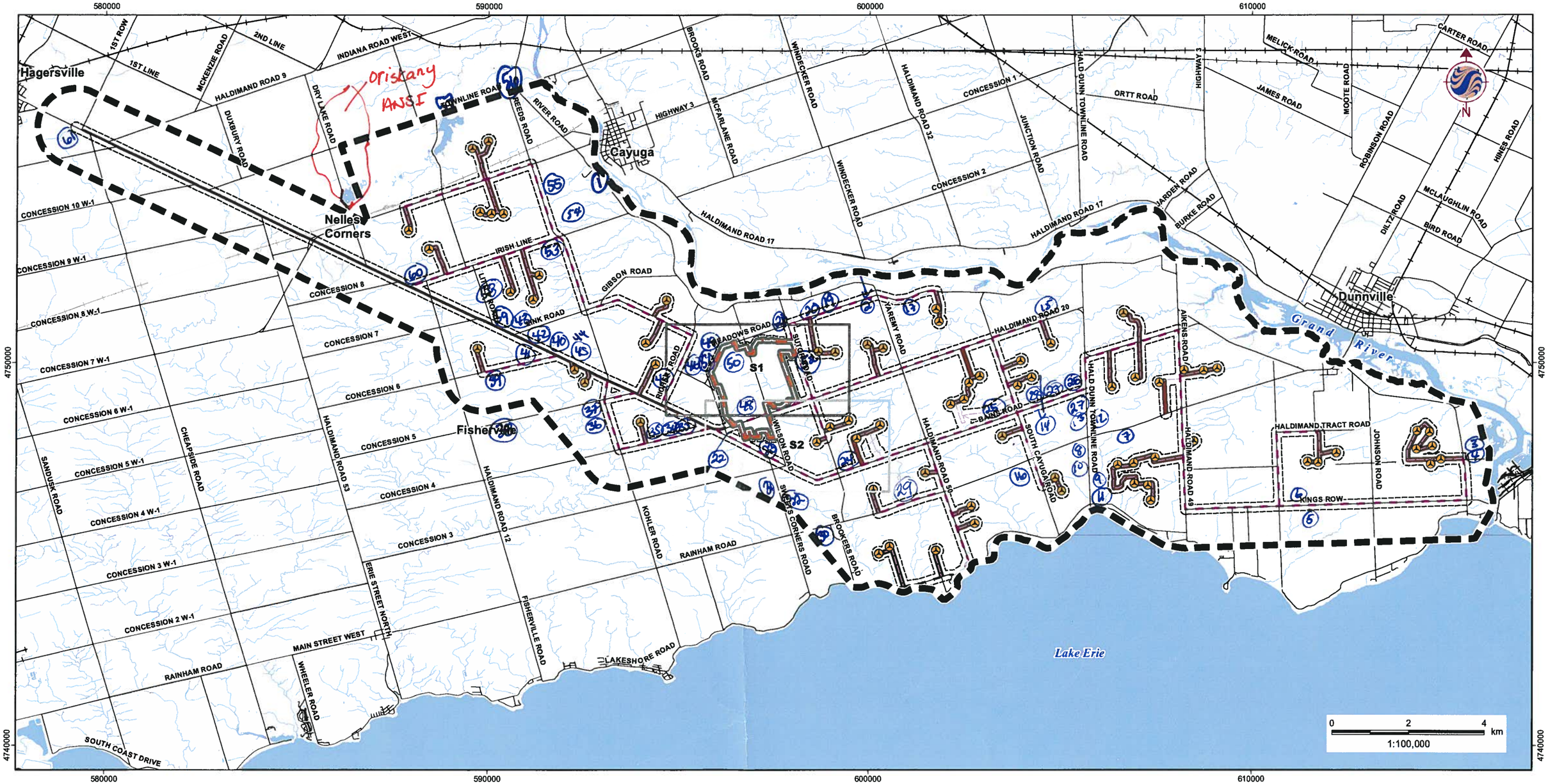


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January 2011
160960577

## Legend

- Study Area
- Zone of Investigation
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Watercourse (MNR)
- Waterbody (MNR)

Overview Map

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## Notes

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Client/Project

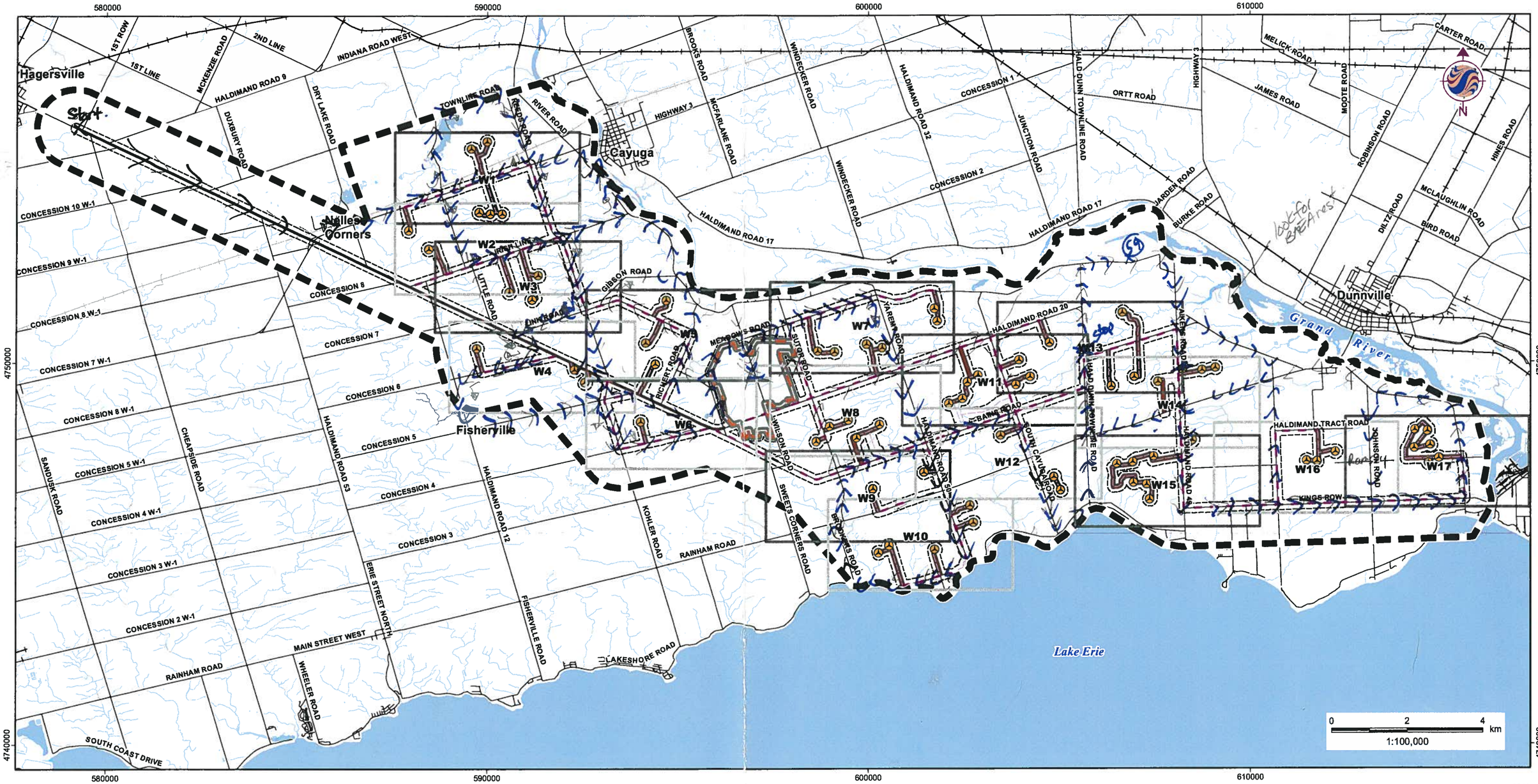
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

5.2 DRAFT

Title

**MAPPING INDICES - SOLAR PROJECT**

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January 2011
160960577

**Legend**

- Study Area
- Zone of Investigation
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Watercourse (MNR)
- Waterbody (MNR)

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Start 10:45

Route Map
28-Jan-2011
MS + SC

**Notes**

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2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © Samsung, 2010.
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Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
5.1 DRAFT

Title
**MAPPING INDICES - WIND PROJECT**

Stantec Consulting Ltd.
70 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

# Winter Raptor Observation Form

Project Number: 161010624 Project Name: Samsung

Date / Time: 9-February-2011 @10:15-16:30 Field Personnel: Stampe Straus

| Weather Conditions: | Temp: | Wind: | Cloud: | PPT: | PPT in last 24 hrs: | Ave. Snow Depth: |
|---|---|---|---|---|---|---|
| | -15°C | Gusts - drifts; Died down a bit in afternoon to 4-5 | 50% | none | none | 120 cm |

181 total km driven on survey

| | Species / Time | # of Individuals | Location | Behaviour | Map # |
|---|---|---|---|---|---|
| | | | *Habitat type, proximity to features (woodlands, ravines etc.)* | *Perched, Hunting, flying, height* | |
| ✓ ✓ ① | RTHA 10:15 | 1 | Edg woodlot, Ag field | Perched 8m | ~W1 |
| ✓ ✓ ② | RTHA 11:00 | 1 | Ag field | Flying <5m | W17 |
| ✓ ✓ ③ | RTHA 11:07 | 1 | Edg woodlot / Ag | Perched 5m | — W17 |
| ✓ ✓ ✓ ④ | SSHA 11:19 | 1 | Residential / road | Flying 20-30m | overview map |
| ✓ ✓ ⑤ | RTHA 11:25 | 1 | Woodlot edg | Perched 5m | W16 |
| ✓ ✓ ⑥ | RTHA 11:50 | 1 | " | " | W14 |
| ✓ ✓ ⑦ | RLHA 12:00 | 1 | Fallow | Flying 10m | W13 |
| ✓ ✓ ⑧ | BAEA 12:00 | 1 | Woodlot / young Spruce plantation | Perched 10m | — W13 |

Quality Control: This form is complete (__) & legible (__).

Signature: Wilma Straus (Field Personnel) Signature: _____ (Project Manager)



REV: May, 07 Form 018

| | Species | # of Individuals | Location | Behaviour | Map Page |
|---|---|---|---|---|---|
| ✓ ✓ (9) | NOHA ♂ 13:20 | 1 | Fallow | Flying ~5m | W10 |
| ✓ ✓ (10) | RTHA 13:35 | 1 | Fallow | Flying ~20m | overview map |
| ✓ ✓ (11) | RTHA 13:50 | 1 | Edge of woodlot/ field | Perched 5m | W7 |
| ✓ ✓ (12) | " 13:52 | 1 | Fallow | Flying 5m | W7 |
| ✓ ✓ 13 | " 14:20 | 1 | Fallow | " | overview map |
| ✓ ✓ 14a | RTHA 14:35 | 14a 5 RTI 14b = 3✓ 14a = 2✓ | Corn Field/ Chicken barn | Perched 5m - on ground (b) (a) | W2 |
| ✓ ✓ 15 | TUVU 14:35 | 5 (same location 14a) | Chicken barn | On ground, 1 Flying 15m | W2 |
| ✓ ✓ (16) | RTHA 14:49 | 1 | Fallow | Perched 5m | ~W1 |
| ✓ ✓ (17) | RLHA 14:51 | 1 | Fallow | Flying - Circling 10m | NW1 |
| ✓ ✓ (18) | RTHA 15:00 | 1 | Thicket | Perched 5m | W1 |
| ✓ ✓ (19) | RTHA + RLHA 15:15 | 1 + 1 | Edge woodlot | " | W4 |
| ✓ ✓ (20) | 1 RTHA | 1 | " | " | W3, W4 |

Quality Control: This form is complete (__) & legible (__).

Signature: Melissa Strauss (Field Personnel)

Signature: _____ (Project Manager)

| | Species | # of Individuals | Location | Behaviour | Map Reference |
|---|---|---|---|---|---|
| 21 | RTHA 15:27 | 1 | Fallow | Perched 5m | WS |
| 22 | RTHA 15:30 dark morph | 1 | Fallow | Flying 5m | WS |
| 23 | RTHA 15:33 | 1 | edge woodlot | Perched 8m | WS |
| 24 | AMKE 15:39 ♀ | 1 | fence post w vole - fallow | Perched 1.5m | WS |
| 25 | RLHA light | 1 | fallow | 0m - 10m | W3 |
| 26 | RTHA 16:00 | 1 | Fallow | flying 5m | W4 |
| 27 | RTHA 16:06 | 1 | woodlot | soaring + circling 40+m | T4 |
| 28 | RTHA 16:10 | 1 | edge of woodlot | Perched 5m | T4 |
| 29 | RTHA 16:11 | 1 | Ag | Flying - 15-20m | T4 |
| 30 | RTHA 16:17 | 1 | HR | Perched 2m | T5 |

Quality Control: This form is complete (✓) & legible (✓).

Signature: Melissa Mews (Field Personnel)

Signature: _____ (Project Manager)



REV: May, 07 Form 018

| Species | # of Individuals | Location | Behaviour |
|---|---|---|---|
| | | | |

Quality Control: This form is complete (__) & legible (__).

Signature: _____ Signature: _____

(Field Personnel) (Project Manager)


January 2011
160960577

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## Legend

**Wind Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
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- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

Stantec

## Notes

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

12.1 *DRAFT*

Title

**NATURAL FEATURES - T1**


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January 2011
160960577

## Legend

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- Transmission Line

**Wind Project Location**
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- Waterbody (MNR)

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

12.2 DRAFT

Title

**NATURAL FEATURES - T2**


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January 2011
160960577

## Legend

**Wind Project Location**
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- Zone of Investigation
- Constructable Area
- Transmission Line

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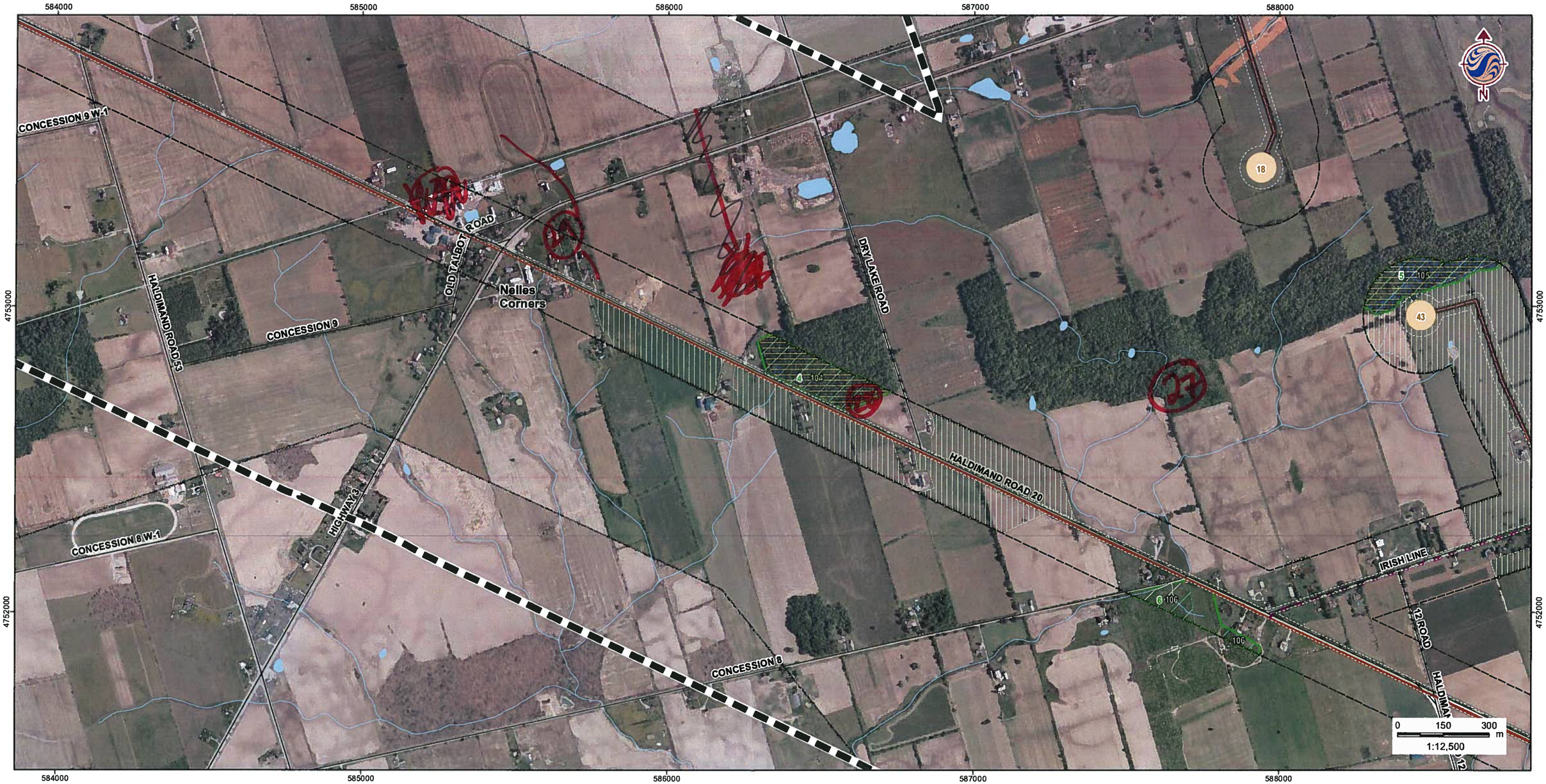
Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
12.3

DRAFT

Title
**NATURAL FEATURES - T3**

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January 2011
160960577

## Legend

**Study Area**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**
- Proposed Turbine Location
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- Underground Collector Line

**Solar Project Location**
- Solar Lands

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- Waterbody (MNR)

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- Grassland Habitat
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- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

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Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
12.4 DRAFT

Title
**NATURAL FEATURES - T4**


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## Legend

**Wind Project Location**
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes
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Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
12.5 DRAFT

Title
**NATURAL FEATURES - T5**


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January 2011
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## Legend

**Study Area**
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
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- Vernal Pool
- Wetland
- Woodland

Stantec

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3. Image Source: © Terrapoint, 2009 - Imagery Date: July 2009; © Grand River Conservation Authority, 2010 - Imagery Date: Spring 2006.
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Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
12.6

DRAFT

Title
**NATURAL FEATURES - T6**


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## Legend

**Wind Project Location**
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

Stantec

## Notes

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

10.1 DRAFT

Title

**NATURAL FEATURES - W1**

588000 589000 590000 591000 592000

4754000 4753000 4752000

HIGHWAY 3
DECEWSVILLE ROAD
IRISH LINE
UTTLE ROAD
KOHLER ROAD
HALDIMAND ROAD 20
12 ROAD

18 34 45 41 43 28 46

0 150 300 m
1:12,500

N

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## Legend

**Wind Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

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Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
10.2 DRAFT

Title
**NATURAL FEATURES - W2**

589000 590000 591000 592000 593000

4753000 4752000 4751000

DECEWSVILLE ROAD
IRISH LINE
LITTLE ROAD
KOHLER ROAD
GIBSON ROAD
HALDIMAND ROAD 12
CONCESSION 7
HALDIMAND ROAD 20
LINK ROAD

N

0 150 300 m
1:12,500

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January 2011
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## Legend

**Study Area**
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

10.3 DRAFT

Title

**NATURAL FEATURES - W3**

589000 590000 591000 592000 593000

4751000 4750000 4749000

CONCESSION 7
LINK ROAD
KOHLER ROAD
HALDIMAND ROAD 12
CONCESSION 6
HALDIMAND ROAD 20
ERIE AVENUE NORTH
CONCESSION 5

10 110 11 111 12 13 19 119 20 120 21 24 58

N

0 150 300 m
1:12,500

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## Legend

**Wind Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

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Figure No.

10.4 DRAFT

Title

**NATURAL FEATURES - W4**


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## Legend

**Wind Project Location**
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

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Client/Project

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Figure No.

10.5 DRAFT

Title

**NATURAL FEATURES - W5**


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## Legend

- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**

- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

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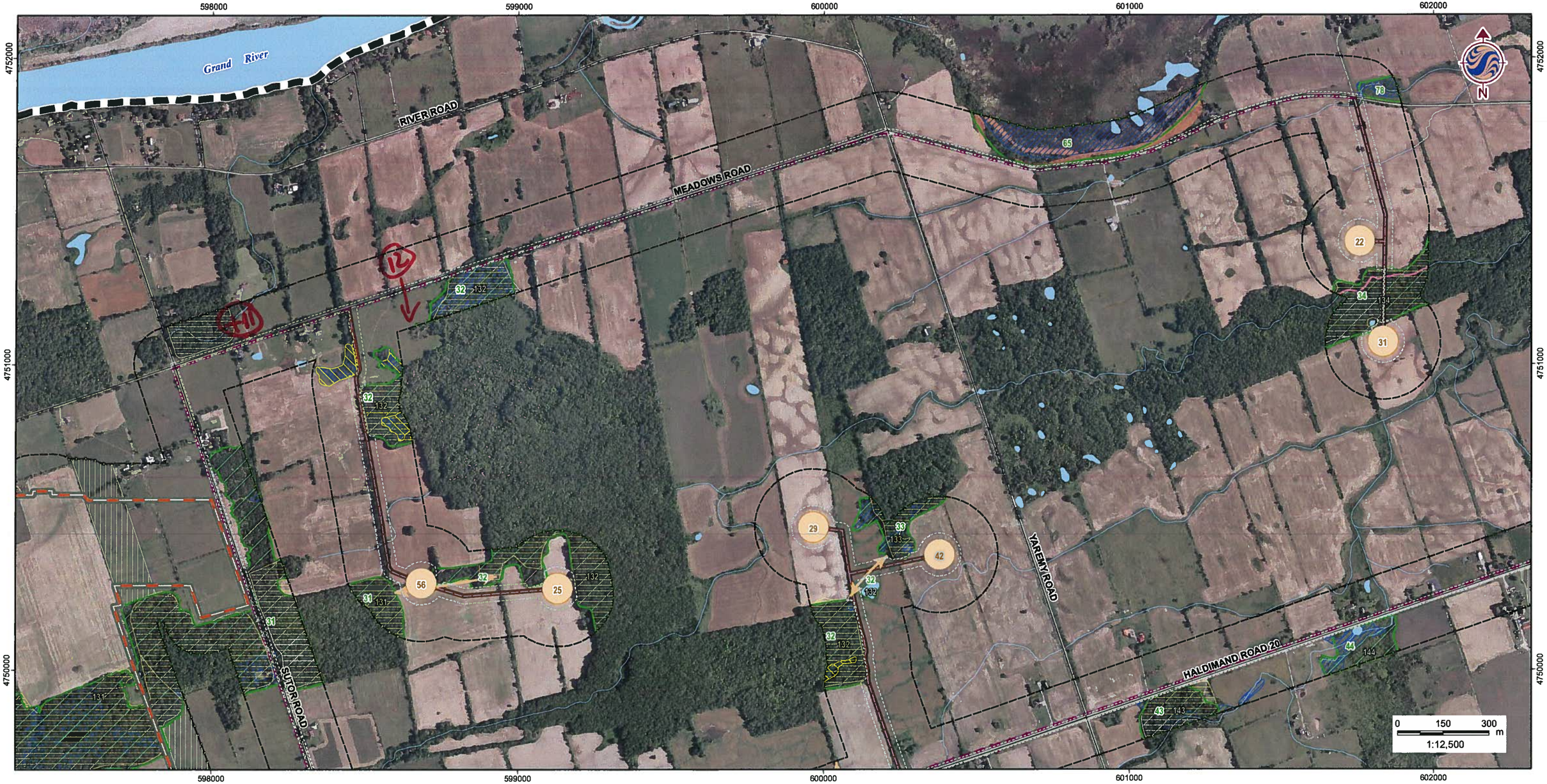
Figure No.

10.6 DRAFT

Title

**NATURAL FEATURES - W6**

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## Legend

**Study Area**
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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Figure No.

10.7 DRAFT

Title

**NATURAL FEATURES - W7**

January 2011
160960577

598000 599000 600000 601000

4749000

4748000

HALDIMAND ROAD 20

HALDIMAND ROAD 50

WILSON ROAD

SUTOR ROAD

BAINS ROAD

BAINS ROAD

N

0 150 300 m

1:12,500

January 2011
160960577

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## Legend

**Wind Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

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GRAND RENEWABLE ENERGY PARK

Figure No.

10.8 DRAFT

Title

**NATURAL FEATURES - W8**

598000 599000 600000 601000 602000

4747000

4746000

WILSON ROAD
CONCESSION 3
SWEETS CORNERS ROAD
BAINS ROAD
SUTOR ROAD
HALDIMAND ROAD 50
RAINHAM ROAD
BROOKERS ROAD

39 57 42 142 59 158 55 12 66 166

N

0 150 300 m
1:12,500

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160960577

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## Legend

**Wind Project Location**
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

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GRAND RENEWABLE ENERGY PARK

Figure No.

10.9 DRAFT

Title

**NATURAL FEATURES - W9**


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## Legend

**Wind Project Location**
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

Study Area
Zone of Investigation
Constructable Area
Transmission Line

Stantec

## Notes

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Client/Project

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Figure No.

10.10 DRAFT

Title

**NATURAL FEATURES - W10**


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## Legend

**Wind Project Location**
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
10.11 DRAFT

Title
**NATURAL FEATURES - W11**


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January 2011
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## Legend

**Study Area**
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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GRAND RENEWABLE ENERGY PARK

Figure No.

10.12 DRAFT

Title

**NATURAL FEATURES - W12**


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## Legend

**Study Area**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

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Client/Project

SAMSUNG C&T
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Figure No.

10.13 *DRAFT*

Title

**NATURAL FEATURES - W13**


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January 2011
160960577

## Legend

**Wind Project Location**
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

10.14 DRAFT

Title

**NATURAL FEATURES - W14**


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January 2011
160960577

## Legend

**Study Area**
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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Client/Project

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Figure No.

10.15 DRAFT

Title

**NATURAL FEATURES - W15**


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160960577

## Legend

**Wind Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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Client/Project

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GRAND RENEWABLE ENERGY PARK

Figure No.

10.16 DRAFT

Title

**NATURAL FEATURES - W16**

613000 614000 615000 616000 617000

4748000

4747000

JOHNSON ROAD

RAMSEY ROAD

KINGS ROW

PORT MAITLAND ROAD

DOVER STREET

RYMER ROAD

FEEDER CANAL ROAD

SIDDALL ROAD

Grand River

59 62 63 61 60 64

77 177 76 176

85 185 83 183 84 184 86 186 87 187a 187b

N

0 150 300 m

1:12,500

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## Legend

**Wind Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

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2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © Samsung, 2010.
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SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

10.17 DRAFT

Title

**NATURAL FEATURES - W17**


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**Legend**

- Study Area
- Zone of Investigation
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Watercourse (MNR)
- Waterbody (MNR)

Overview map
9-February-2011
Stamp & Straus

Stantec

**Notes**

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2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © Samsung, 2010.
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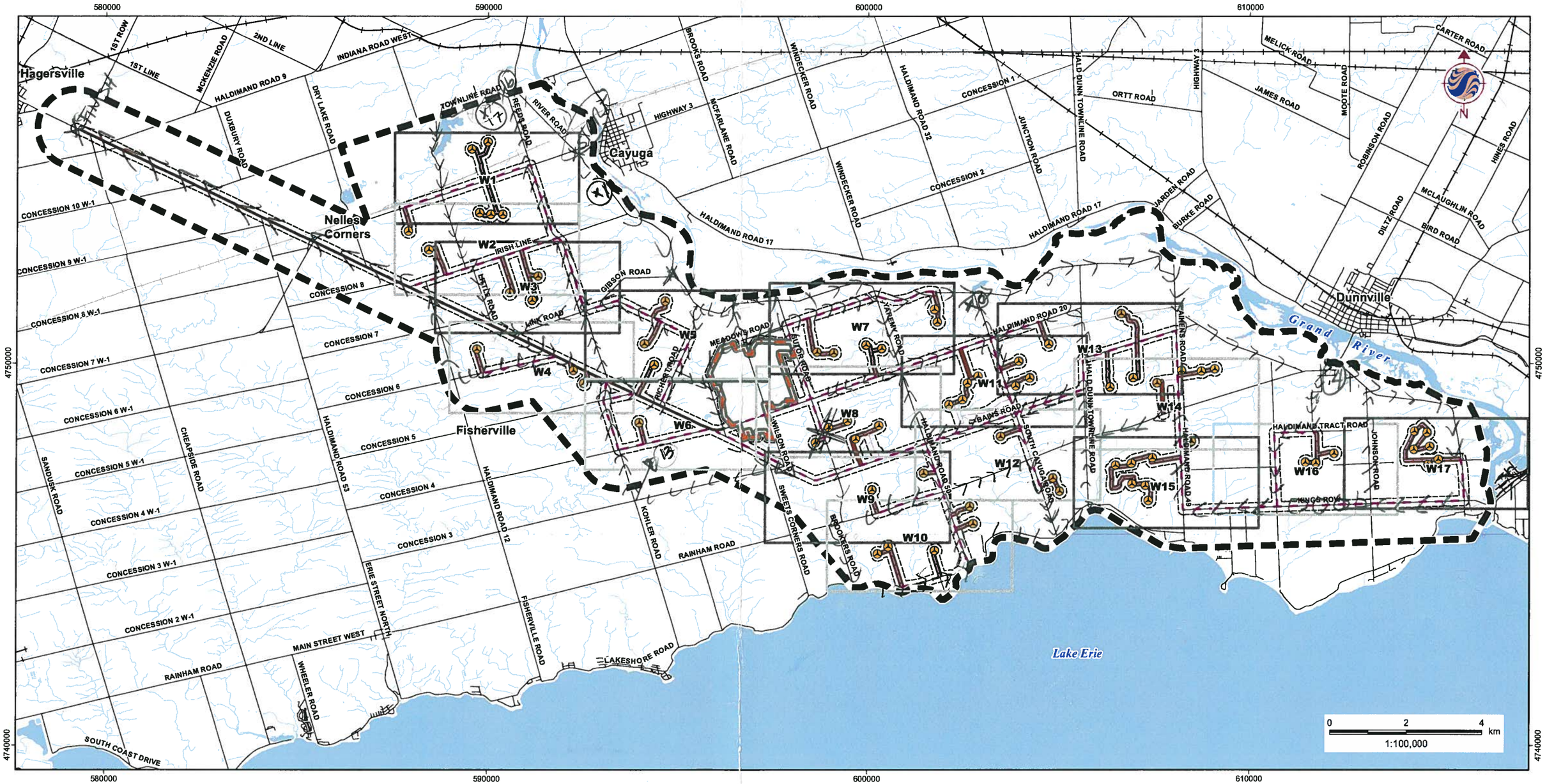
Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
5.3 DRAFT

Title
**MAPPING INDICES - TRANSMISSION LINE**

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**Legend**

- Study Area
- Zone of Investigation
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Watercourse (MNR)
- Waterbody (MNR)

Route Map

**Notes**

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

5.1 DRAFT

Title

**MAPPING INDICES - WIND PROJECT**

Stantec

Stantec Consulting Ltd.
70 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

# Winter Raptor Observation Form

Project Number: 161010646 Project Name: GREP

Date / Time: 7 March 2011 @ 10:15 = 17:20 Field Personnel: J. Leslie + M. Straus

| Weather Conditions: | Temp: | Wind: | Cloud: | PPT: | PPT in last 24 hrs: | Ave. Snow Depth: |
|---|---|---|---|---|---|---|
| | -2°C | 0 | 0% | none | snow? | 5-10cm |

185 total **km driven on survey**

| Species / Time | # of Individuals | Location | Behaviour | |
|---|---|---|---|---|
| | | *Habitat type, proximity to features (woodlands, ravines etc.)* | *Perched, Hunting, flying, height* | |
| ① RTHA 10:20 | 1 | Wetland | Perched 8m | overview map |
| ② RTHA 10:39 | 1 | HR | Flying → Perched 5m | W7 |
| ③ RTHA 11:23 | 2 | wetland / fallow | wheeling in the air ~40-50m | W17 |
| ④ RTHA 11:25 | 1 | Fallow / trailer park | Perched 10m | W17 |
| ⑤ NOHA 12:11 | 1 | multiple habitats - limit passage | Flying 5-8m | W16 |
| ⑥ AMKE 12:13 | 1 | Fallow field | Sitting wire 5m | W16 |
| ⑦ AMKE 12:51 | 1 | Fallow | Perched 5m | W14 |
| 8 RTHA 12:52 | 2 | Fallow | Perched. 5m | W14. |

Quality Control: This form is complete (__) & legible (__).

Signature: Helena Straus (Field Personnel) Signature: _____ (Project Manager)



REV: May, 07 Form 018

| | Species | # of Individuals | Location | Behaviour | |
|---|---|---|---|---|---|
| ✓✓✓(9) | RTHA | 2 | Fallow | Perched 5m | W14 |
| ✓✓(10) | RLHA. -1 light -1 dark. | 2 | fallow | Perched 5m. | W14 |
| ✓(11) | RTHA | 1 | " | " | W15 |
| ✓✓(12) | RTHA 13:30 | 2 | " | On - 5m Perched | W14 |
| ✓(13) | RTHA 13:33 | 1 | " | 5m perched | W14 |
| ✓14 ✓ ✓ | RLHA 13:37 1 dark 1 light | 2 | Fallow | flying - 10-15 m. | W13 |
| ✓(15) ✓ ✓ | RTHA RLHA | 1 1 | Ploughed | flying 5-10m | W13 |
| ✓(16) ✓ | SSHA 13:51 | 1 | Horses/Fallow | flying < 2m | W12 |
| ✓(17) ✓ | RTHA 14:16 | 1 | HR/Fallow | Perched 5m | W7 |
| ✓(18) ✓ | RLHA. 14:16. | 1 | flooded / fallow | Perched 5m. | W7 |

Quality Control: This form is complete (_) & legible (__).

Signature: Melissa Straus (Field Personnel)

Signature: _____ (Project Manager)



REV: May, 07 Form 018

| | Species | # of Individuals | Location | Behaviour | |
|---|---|---|---|---|---|
| 19 | RTHA 14:20 | 1 | Fallow/ Road edge | Perched 5m. | W7 |
| 20 | RTHA 14:22 | 1 | Fallow | Flying 5m. | W7 |
| 21 | " 14:24 | 1 | Fallow/horse | Flying 5m | W7 |
| 22 | RTHA 14:31 | 1 | SWD | Perched 5m | |
| 23 | " 14:35 | 1 | Fallow | 4 5m. | W6 |
| 24 | " 14:39 | 1 | Swamp/old homestead | " | W9 W9 |
| 25 | RTHA 14:45 | 2 | Hedge row/ fallow field | Perched 5m | W12 |
| 26 | RTHA. 14:57. | 1 | Fallow | Perched 5m | W12 |
| 27 | " | 1 | Fallow | " | W14 |
| 28 | " 15:01 | " | " | " | W12. |
| 29 | RTHA 15:05 | 1 | HR | " | W9 |

Quality Control: This form is complete (__) & legible (__).

Signature: Helena Straus (Field Personnel)  Signature: _____ (Project Manager)



REV: May, 07  Form 018

| | Species | # of Individuals | Location | Behaviour | |
|---|---|---|---|---|---|
| 30 | NOHA 15:11 | 1 ♂ | Fallow | Flying <5m. | W10 |
| 31 | RTHA. 15:25 | 1 | Corn. - HR. | Perched 5m. | W9 |
| 32 | " | 1 | Fallow | Flying 2m | W9 |
| 33 | Dagged RLHA | 1 | Fallow. | Perched 5m | W6 |
| 34 | RTHA 15:36 | 1 | Fallow | Perched 5m | W6 |
| 35 | COHA 15:38 | 1 | Corn stubble. | Perched 5m. | W6. |
| 36 | NOHA ♂ | 1 | Fallow | Flying <2m. | W6 |
| 37 | RTHA 15:45 | 1 | " | Perched - telephone pole. | W6 |
| 38 | RTHA 15:52 | 1 | HR/Ploughed | Perched 5m - (vole) then grabbed small rodent + went to hay bale to feed. | W4 |
| 39 | RTHA 16:00 | 1 | Pasture | Flying 5m | W4 |
| 40 | RLHA-light RTHA | 2 1 of each | Fallow | Perched 5m | W4 |
| 41 | RLHA 16:05 | 1 | fallow | " | W4 |

Quality Control: This form is complete (__) & legible (__).

Signature: Melissa Strauss (Field Personnel)

Signature: _____ (Project Manager)

| | Species | # of Individuals | Location | Behaviour | |
|---|---|---|---|---|---|
| 42 | RTHA 16:06 | 1 | Woodlot edge. | Perched. 5m | W4 |
| 43 | RTHA " | " | " | " | W4 |
| 44 | RLHA. 16:09. | 1 | HR | " | W4 |
| 45 | AMKE 16:16. | 1 | Telephone wire | " | W5 |
| 46 | RTHA 16:18 | 1 | Telephone pole Fallow. | " | |
| 47 | RLHA dark 16:20. | 2 | Fallow | Circling 30-50m | W5 |
| 48 | RLHA dark 16:25 | 1 | Ploughed | Perched 5m. | W5 |
| 49 | RTHA. 16:27 | 1 | Edge of woodlot | Perched 5m | W5 |
| 50 | RLHA 16:27 | 1 | HR | Perched 5m. | W5 |
| 51 | RLHA 16:28. | 2 | Fallow | < 2m. | W5. |

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel)  Signature: _____ (Project Manager)

| | Species | # of Individuals | Location | Behaviour | Map page. |
|---|---|---|---|---|---|
| 52 | RTHA 16:38 | 1 | Roadside | Perched 5m | W8 |
| 53 | RTHA 16:47 | 1 | Fallow | " | W2 |
| 54 | " | 3 | Edge of woodlot | " | W2 |
| 55 | RTHA 16:51 | 2 | HR | " | W1 |
| 56 | RTHA 16:56 | 1 | Ploughed | Flying <2m | Overview Map |
| 57 | RTHA 16:59 | 1 | Fallow/ woodbtedge | Perched 5m | overview Map. |
| 58 | " 17:08 | 1 | wood edge | " | W3 |
| 59 | " 17:10 | 1 | Fallow | " | W3 |
| 60 | AMKE 17:11 | 1 | fallow | Flying <5m. | T3 |
| 61 | RTHA 17:18. | 1 | fallow. | Flying - landed on transformer/ hydro tower | T6 |

Quality Control - This form is complete (__) & legible (__).

Signature: Helena Straus (Field Personnel)  Signature: _____ (Project Manager)

| Species | # of Individuals | Location | Behaviour |
|---|---|---|---|
| | | | |

Quality Control: This form is complete (__) & legible (__).

Signature: _____ Signature: _____

(Field Personnel) (Project Manager)

587000 588000 589000 590000 591000

4752000 4751000 4750000

IRISH LINE
CONCESSION 8
12 ROAD
LITTLE ROAD
HALDIMAND ROAD 20
HALDIMAND ROAD 12
LINK ROAD
CONCESSION 7
CONCESSION 6

N

0 150 300 m
1:12,500

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## Legend

**Study Area**
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

Stantec

## Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © Samsung, 2010.
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Figure No.
12.3 DRAFT

Title
**NATURAL FEATURES - T3**


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## Legend

- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**

- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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Figure No.

12.6 DRAFT

Title

**NATURAL FEATURES - T6**


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## Legend

**Study Area**
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

10.1 DRAFT

Title

**NATURAL FEATURES - W1**

588000 589000 590000 591000 592000

4754000 4753000 4752000

HIGHWAY 3
DECEWSVILLE ROAD
IRISH LINE
LITTLE ROAD
KOHLER ROAD
HALDIMAND ROAD 20
12 ROAD

18 34 45 41 43 28 46

N

0 150 300 m
1:12,500

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## Legend

**Wind Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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Client/Project

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GRAND RENEWABLE ENERGY PARK

Figure No.

10.2 DRAFT

Title

**NATURAL FEATURES - W2**

589000 590000 591000 592000 593000

4753000 4752000 4751000

DECEWSVILLE ROAD
IRISH LINE
LITTLE ROAD
KOHLER ROAD
GIBSON ROAD
HALDIMAND ROAD 12
HALDIMAND ROAD 20
CONCESSION 7
LINK ROAD

N

0 150 300 m
1:12,500

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## Legend

**Wind Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

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Client/Project

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GRAND RENEWABLE ENERGY PARK

Figure No.

10.3 DRAFT

Title

**NATURAL FEATURES - W3**

589000 590000 591000 592000 593000

4751000 4750000 4749000

CONCESSION 7
LINK ROAD
KOHLER ROAD
HALDIMAND ROAD 12
CONCESSION 6
HALDIMAND ROAD 20
ERIE AVENUE NORTH
CONCESSION 5

10 110 11 111 12 13 19 119 20 120 21 24 58

N

0 150 300 m
1:12,500

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## Legend

**Wind Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
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- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
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- Woodland

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

10.4 DRAFT

Title

**NATURAL FEATURES - W4**

593000 594000 595000 596000 597000

4751000

4750000

GIBSON ROAD
LINK ROAD
KOHLER ROAD
HALDIMAND ROAD 20
RICHERT ROAD
MOUNT OLIVET ROAD
WILSON ROAD
MEADOWS ROAD
RIVER ROAD
Grand River

17 117
24 124
25
13
28
27 127
48
22 122
16
20
19 119
31 131
30 130

N

0 150 300 m
1:12,500

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## Legend

**Wind Project Location**
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

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Figure No.

10.5 DRAFT

Title

**NATURAL FEATURES - W5**


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## Legend

**Wind Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line
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- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
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- Abandoned Railway
- Transmission Line (MNR)
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- Waterbody (MNR)

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- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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Figure No.
10.6 DRAFT

Title
**NATURAL FEATURES - W6**


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## Legend

**Wind Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
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- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

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- Waterbody (MNR)

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- Woodland

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GRAND RENEWABLE ENERGY PARK

Figure No.
10.7 DRAFT

Title
**NATURAL FEATURES - W7**


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## Legend

**Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © Samsung, 2010.
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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

10.8 DRAFT

Title

**NATURAL FEATURES - W8**


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January 2011
160960577

## Legend

**Wind Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

10.9 DRAFT

Title

**NATURAL FEATURES - W9**

599000 600000 601000 602000 603000

4746000 4745000 4744000

SUTOR ROAD
RAINHAM ROAD
BROOKERS ROAD
HALDIMAND ROAD 50
LAKESHORE ROAD
WHITE CAP LANE
EVANSPOINT LINE
Lake Erie

42 142
21
88
168
5
66 166
32
66 166
9
66 166
51
67 167

N

0 150 300 m
1:12,500

January 2011
160960577

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## Legend

**Wind Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

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2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © Samsung, 2010.
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SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

10.10 DRAFT

Title

**NATURAL FEATURES - W10**


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January 2011
160960577

## Legend

**Wind Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

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GRAND RENEWABLE ENERGY PARK

Figure No.

10.11 *DRAFT*

Title

**NATURAL FEATURES - W11**


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January 2011
160960577

## Legend

**Study Area**
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

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Figure No.

10.12 DRAFT

Title

**NATURAL FEATURES - W12**


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January 2011
160960577

## Legend

**Wind Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

10.13 DRAFT

Title

**NATURAL FEATURES - W13**


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January 2011
160960577

## Legend

**Wind Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

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GRAND RENEWABLE ENERGY PARK

Figure No.

10.14 DRAFT

Title

**NATURAL FEATURES - W14**


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January 2011
160960577

## Legend

**Wind Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

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Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

10.15 *DRAFT*

Title

**NATURAL FEATURES - W15**

609000 610000 611000 612000 613000

4748000

4747000

4746000

HALDIMAND TRACT ROAD

HALDIMAND TRAIL

MARSHALL ROAD

RAMSEY ROAD

RAMSEY ROAD

KINGS ROW

JOHNSON ROAD

65 66 67

74 174

75 175

81

82

83 183

84 184

N

0 150 300 m

1:12,500

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January 2011
160960577

## Legend

**Wind Project Location**
- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line
- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**
- Solar Lands

**Existing Features**
- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**
- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

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Client/Project

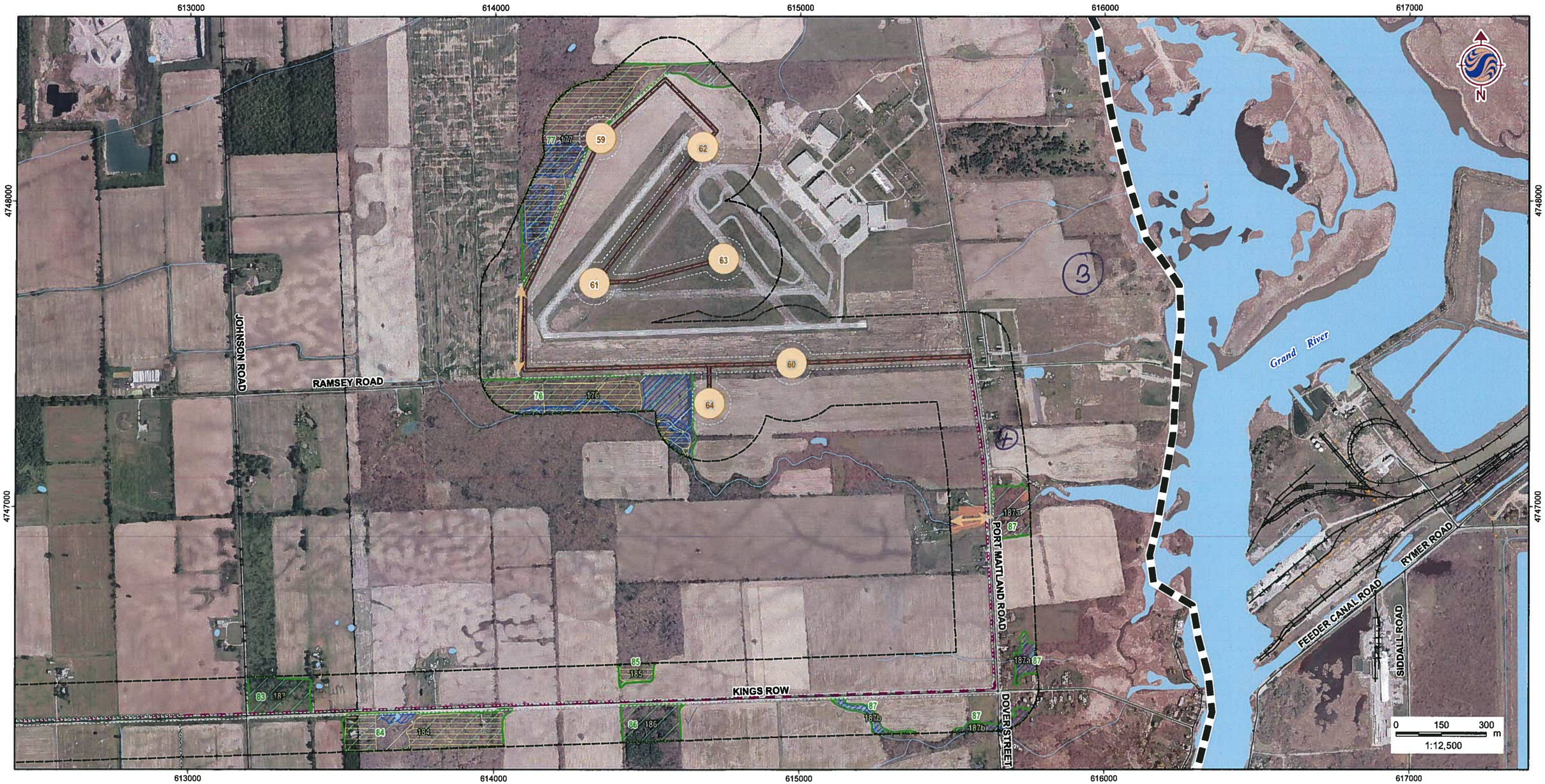
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

10.16 DRAFT

Title

**NATURAL FEATURES - W16**

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January 2011
160960577

## Legend

- Study Area
- Zone of Investigation
- Constructable Area
- Transmission Line

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)

**Natural Features**

- Animal Movement Corridor
- Deer Wintering Area
- Grassland Habitat
- Natural Feature
- Provincially Significant Life Science ANSI
- Rare Vegetation Community
- Snapping Turtle Habitat
- Valleyland
- Vernal Pool
- Wetland
- Woodland

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## Notes

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Client/Project

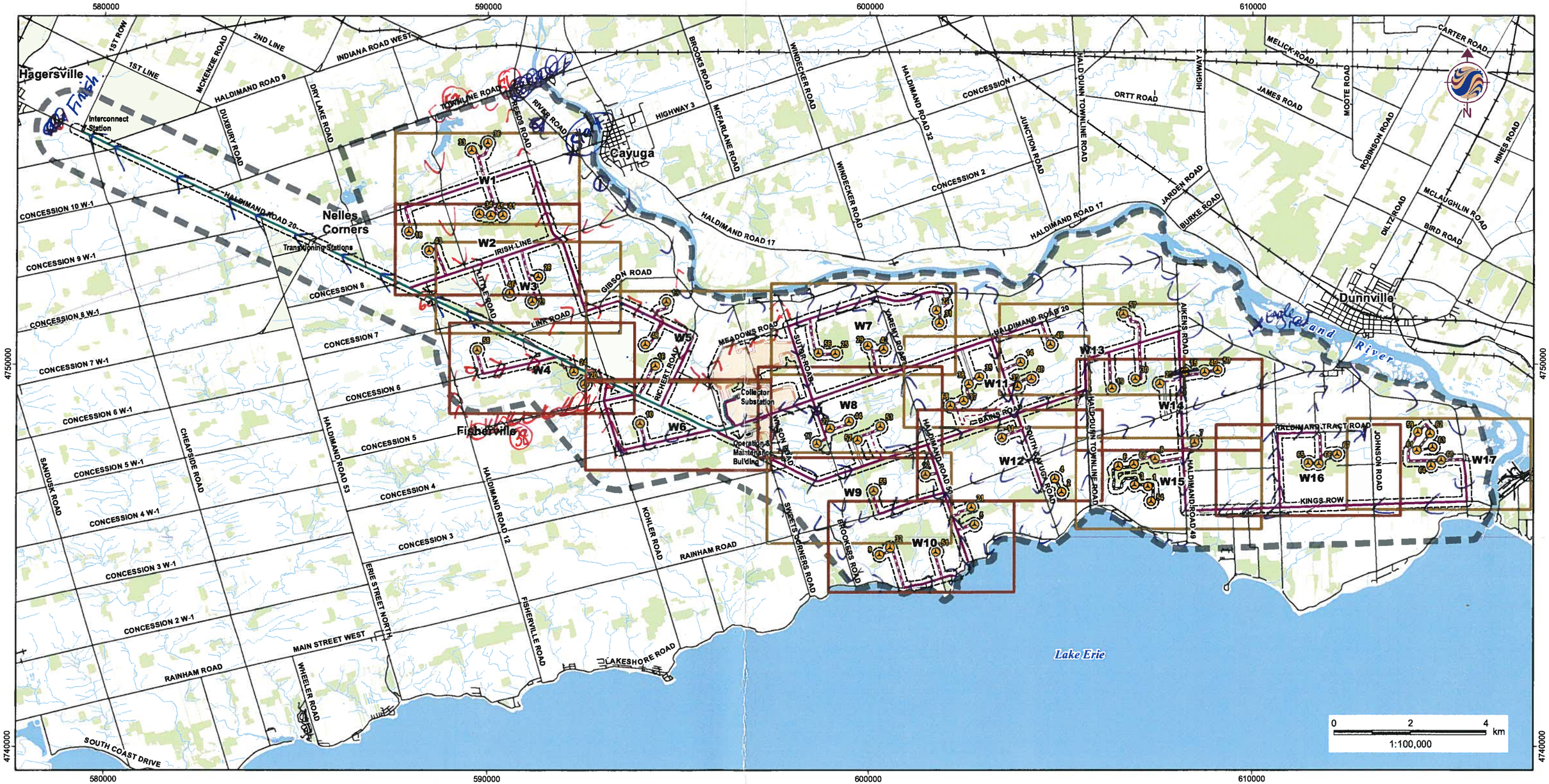
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

10.17 DRAFT

Title

**NATURAL FEATURES - W17**

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February 2011
160960577

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## Legend

- Study Area
- Zone of Investigation

**Wind Project Location**

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

**Solar Project Location**

- Solar Lands

**Transmission Line**

- Overhead Transmission Line
- Underground Transmission Line
- Electrical Transmission Component

**Existing Features**

- Road
- Railway
- Abandoned Railway
- Watercourse (MNR)
- Waterbody (MNR)
- Wooded Area (MNR)

## Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queens Printer Ontario, 2011; © Samsung, 2011.

Route Map

Client/Project
SAMSUNG, PATTERN & KEPCO (SPK)
GRAND RENEWABLE ENERGY PARK

Figure No.
5.1

DRAFT

Title
**MAPPING INDEX - WIND PROJECT**