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**Red Pine Shadow Analysis
V117- 3.3 80 m HH
Worst Case**

Client

Westwood

Project Description

Shadow flicker analysis on nearby residences from V117-3.3 80 m HH WTG's (v24). Assumes turbines always operating, facing the sun and no cloudy days.

Location: Ivanhoe, MN

Project #: 20162030

Issue Dates

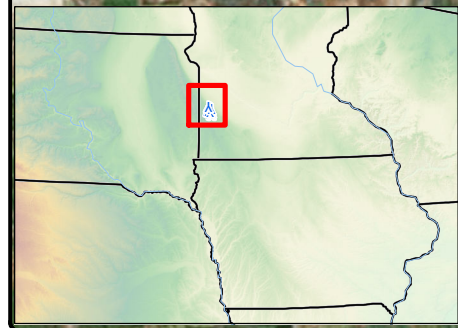
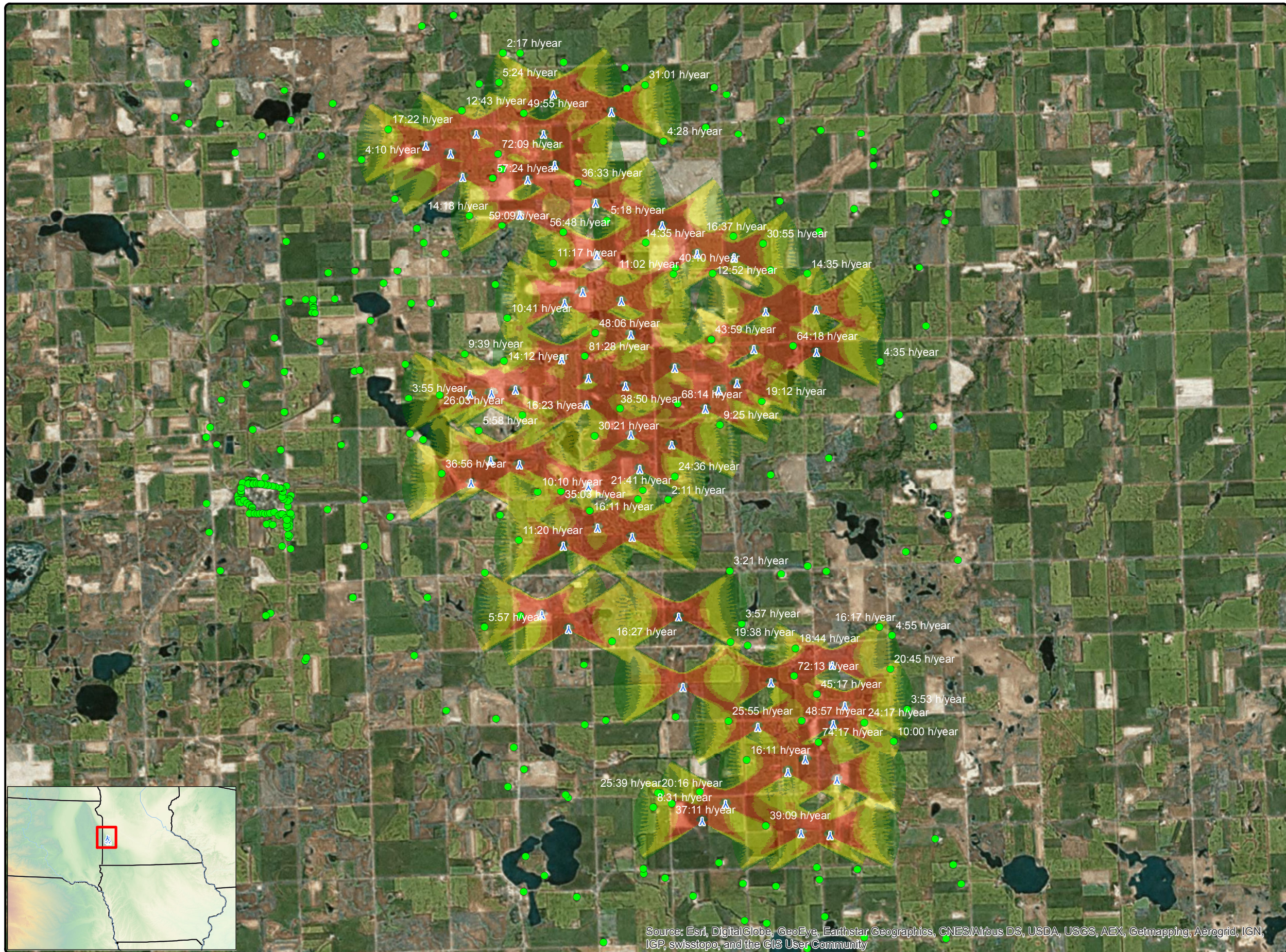
1	Original	2016.06.30
#	Description	Date

Drawn By: JH Checked By: JH

Legend

- ▲ V117 80m HH v24
 - Occupied Residences (hrs/yr)
- Shadow Flicker (hrs/yr)**
- 0 - 5
 - 5 - 10
 - 10 - 30
 - 30 - 50
 - > 50

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**Red Pine Shadow Analysis
V126- 3.3 87 m HH
Worst Case**

Client

Westwood

Project Description

Shadow flicker analysis on nearby residences from V126-3.3 87 m HH WTG's (v25). Assumes turbines always operating, facing the sun and no cloudy days.

Location: Ivanhoe, MN

Project #: 20162030

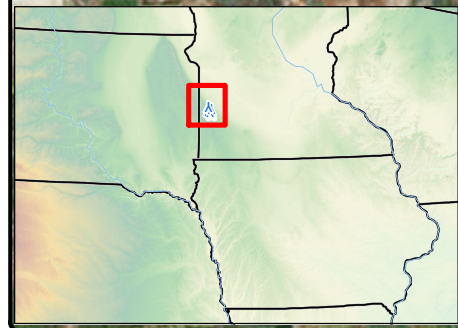
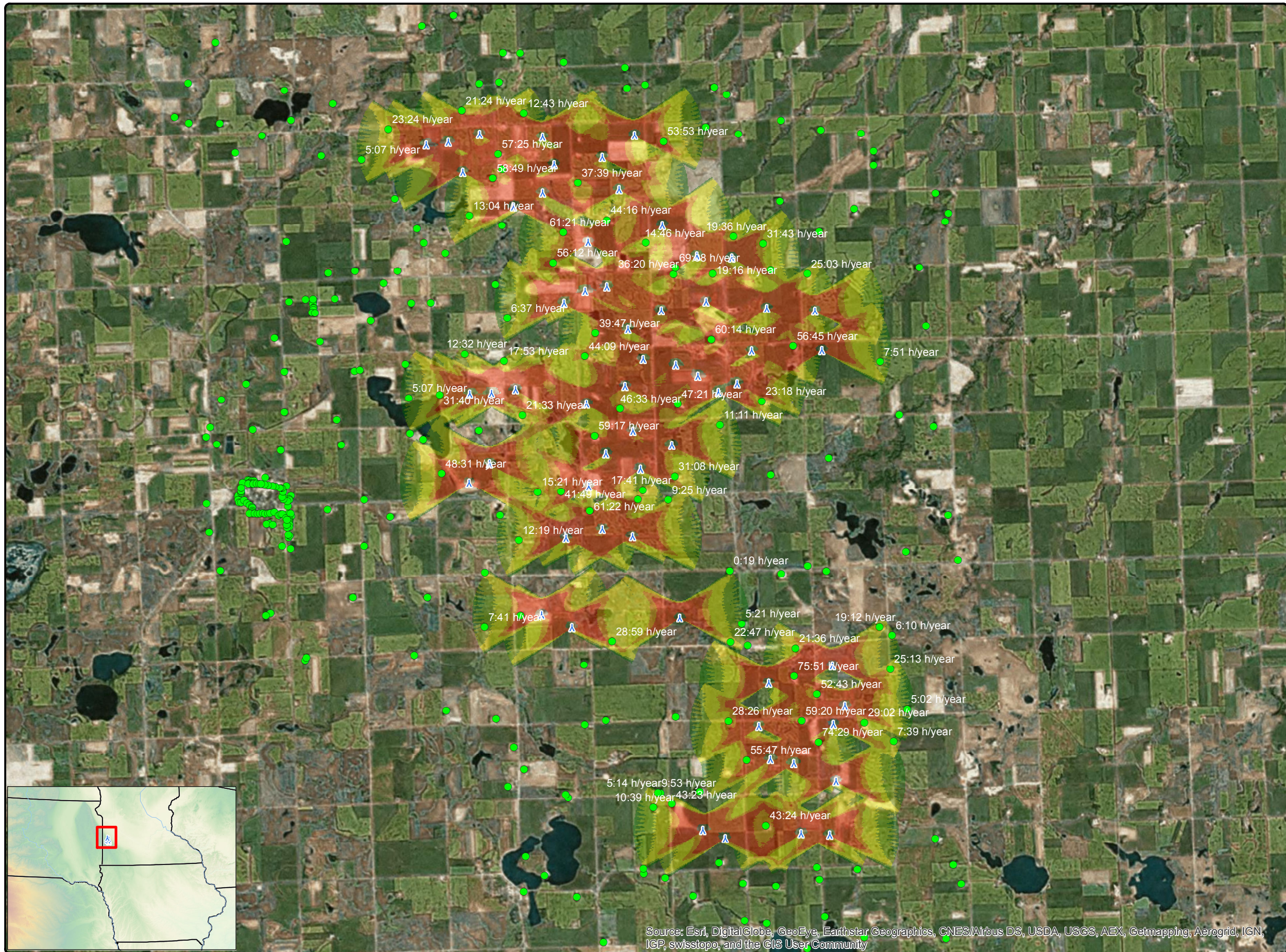
Issue Dates

#	Description	Date
1	Original	2016.06.30
Drawn By: JH		Checked By: JH

Legend

- V126 87m HH v25
- Occupied Residences (hrs/yr)
- Shadow Flicker (hrs/yr)**
- 0 - 5
- 5 - 10
- 10 - 30
- 30 - 50
- > 50

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**Red Pine Shadow Analysis
V100- 2.0 80 m HH
Worst Case**

Client

Westwood

Project Description

Shadow flicker analysis on nearby residences from V100-2.0 80 m HH WTG's (v26). Assumes turbines always operating, facing the sun and no cloudy days.

Location: Ivanhoe, MN

Project #: 20162030

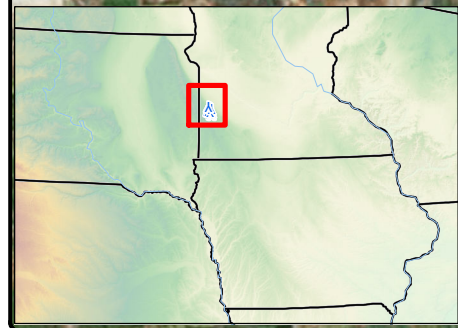
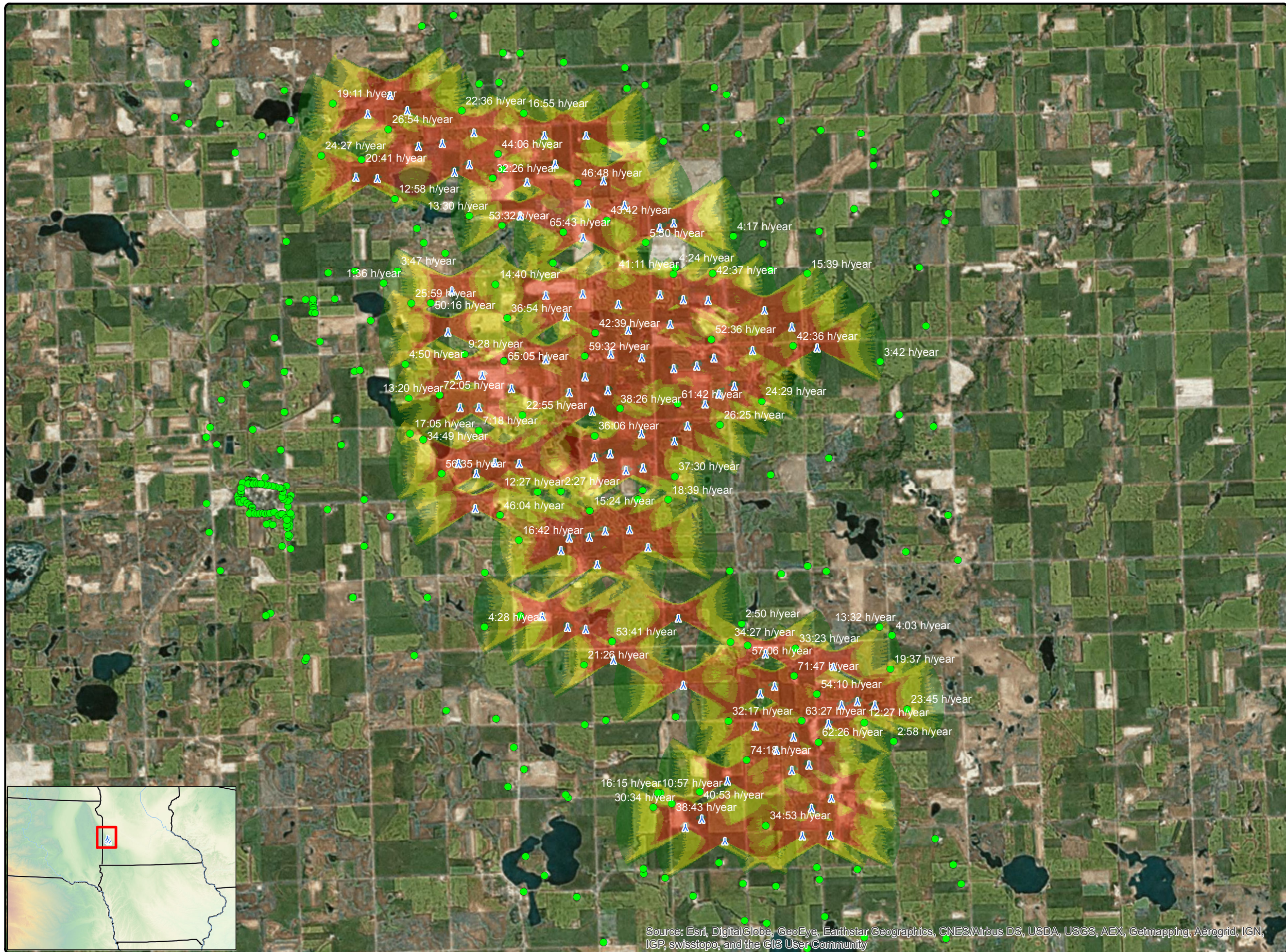
Issue Dates

#	Description	Date
1	Original	2016.06.30
Drawn By: JH		Checked By: JH

Legend

- ▲ V100_80m HH v26
 - Occupied Residences (hrs/yr)
- Shadow Flicker (hrs/yr)**
- 0 - 5
 - 5 - 10
 - 10 - 30
 - 30 - 50
 - > 50

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**Red Pine Shadow Analysis
V117- 3.3 80 m HH
Realistic Case**

Client

Westwood

Project Description

Shadow flicker analysis on nearby residences from V117-3.3 80 m HH WTG's (v24). Accounts for operational time, sunshine probabilities and wind speed and direction data.

Location: Ivanhoe, MN

Project #: 20162030

Issue Dates


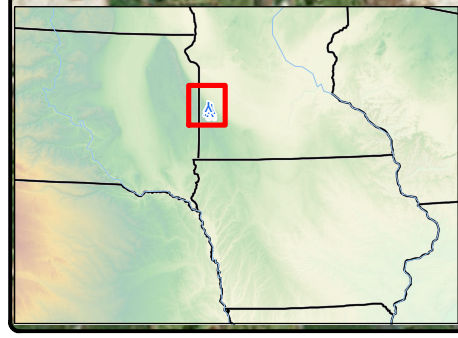
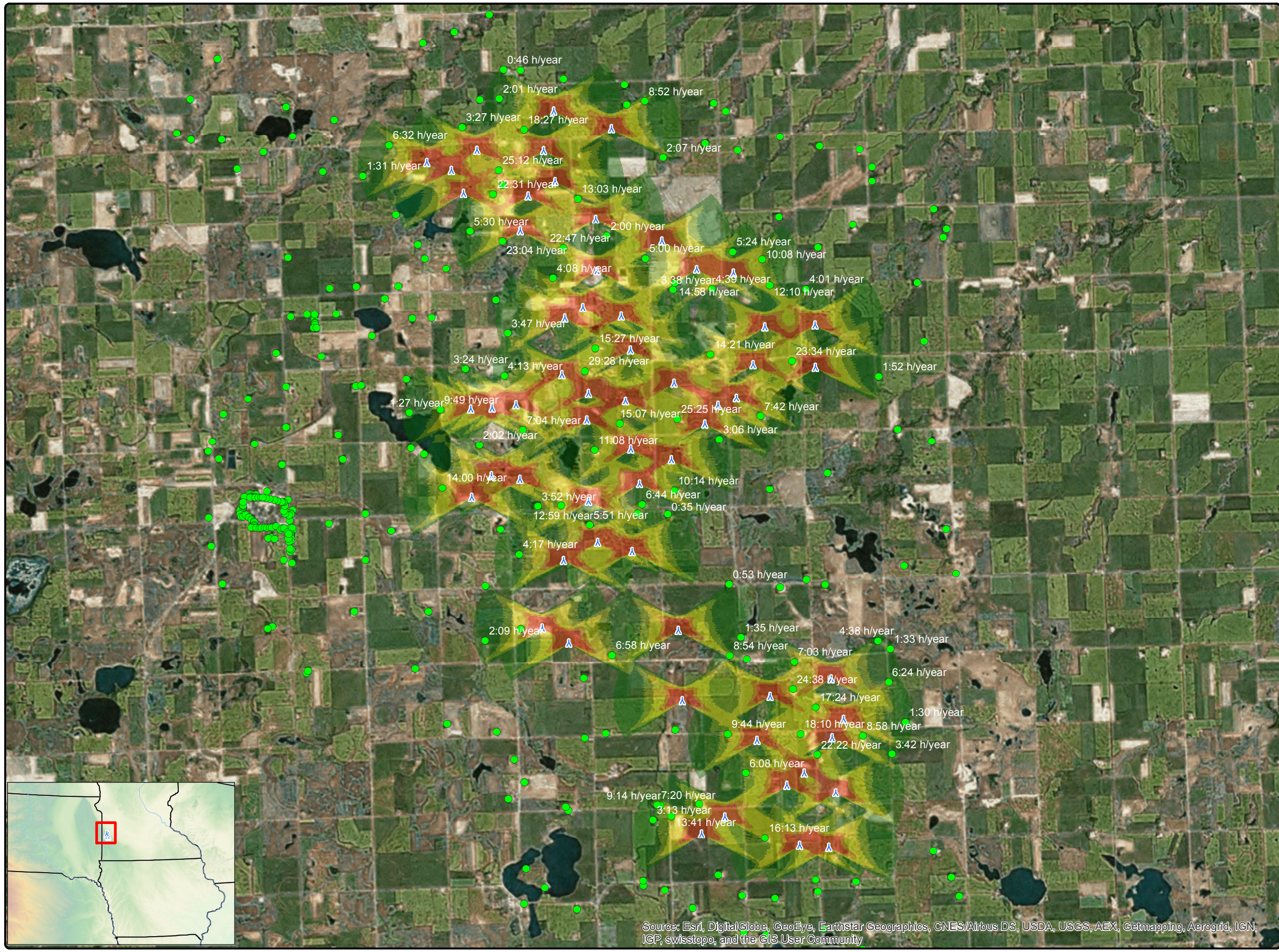
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#	Description	Date

Drawn By: JH Checked By: JH

Legend

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- Shadow Flicker (hrs/yr)**
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**Red Pine Shadow Analysis
V126- 3.3 87 m HH
Realistic Case**

Client

Westwood

Project Description

Shadow flicker analysis on nearby residences from V125-3.3 87 m HH WTG's (v25). Accounts for operational time, sunshine probabilities and wind speed and direction data.

Location: Ivanhoe, MN

Project #: 20162030

Issue Dates

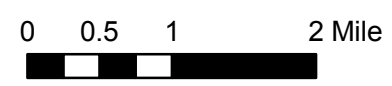
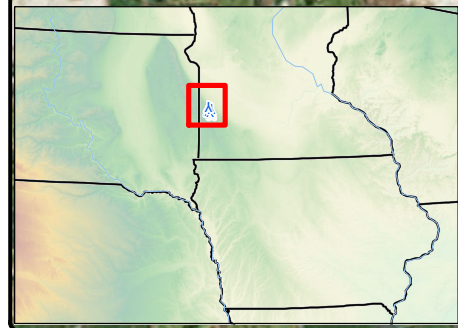
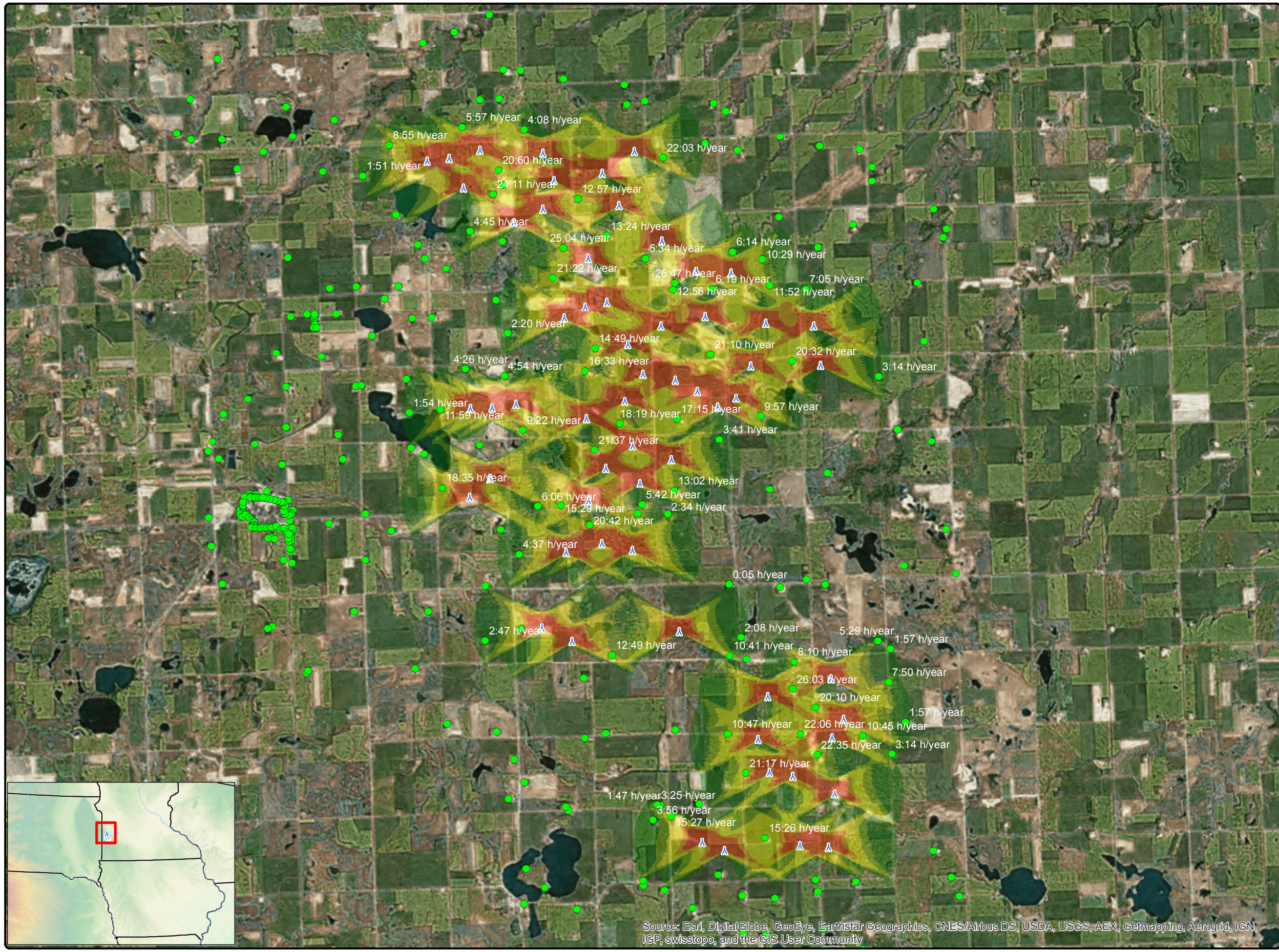
#	Description	Date
1	Original	2016.06.30

Drawn By: JH Checked By: JH

Legend

- V126 87m HH v25
 - Occupied Residences (hrs/yr)
- Shadow Flicker (hrs/yr)**
- 0 - 5
 - 5 - 10
 - 10 - 30
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 - > 50

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**Red Pine Shadow Analysis
V100- 2.0 80 m HH
Realistic Case**

Client

Westwood

Project Description

Shadow flicker analysis on nearby residences from V100-2.0 80 m HH WTG's (v26). Accounts for operational time, sunshine probabilities and wind speed and direction data.

Location: Ivanhoe, MN

Project #: 20162030

Issue Dates

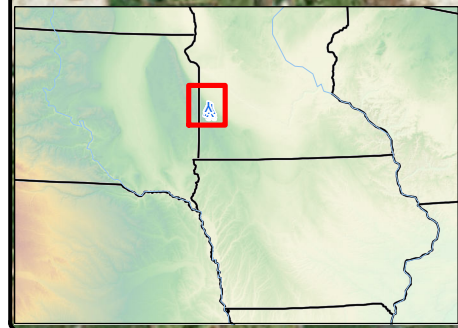
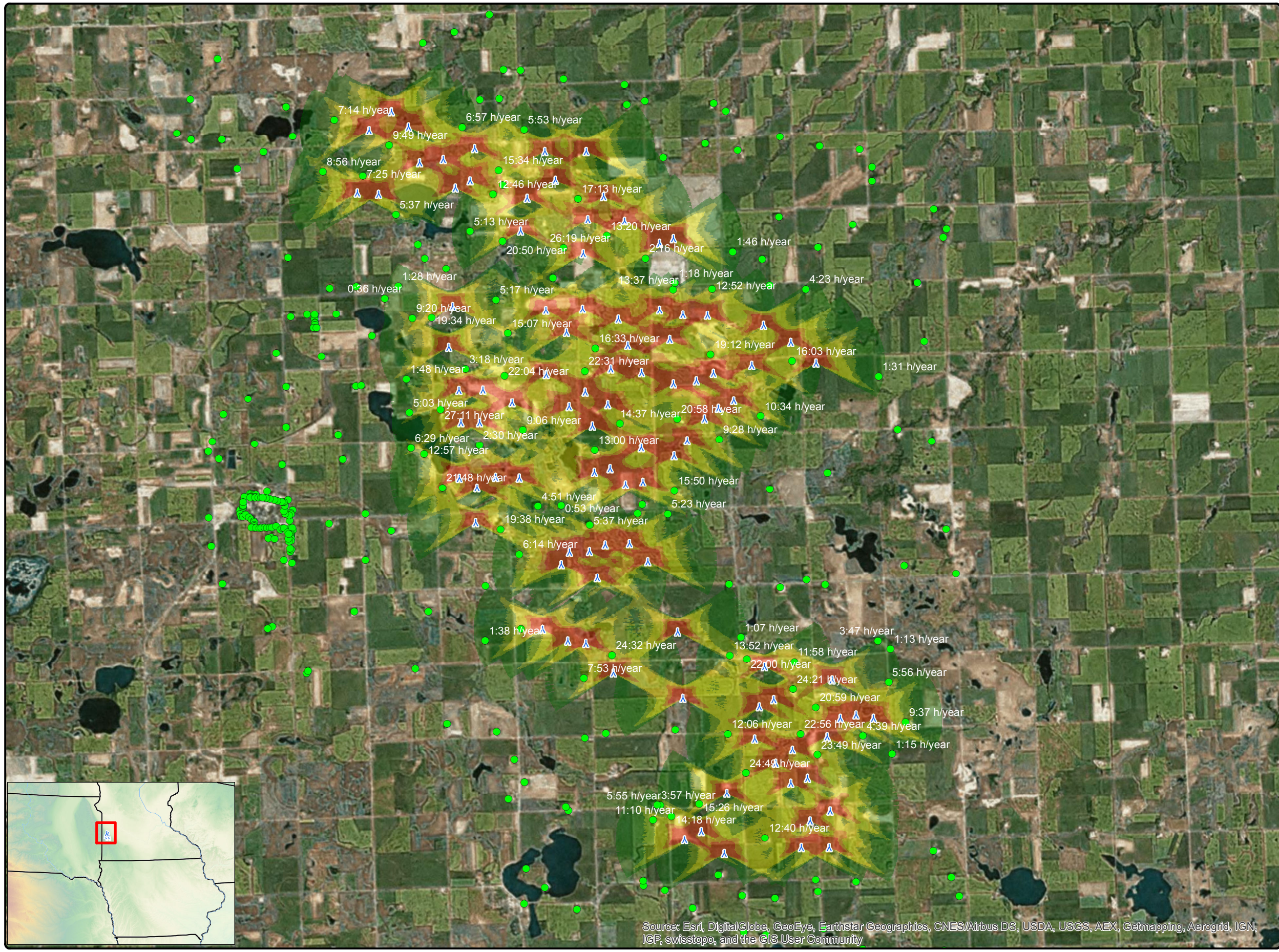
1	Original	2016.06.30
#	Description	Date

Drawn By: JH Checked By: JH

Legend

- V100_80m HH v26
- Occupied Residences (hrs/yr)
- Shadow Flicker (hrs/yr)**
- 0 - 5
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