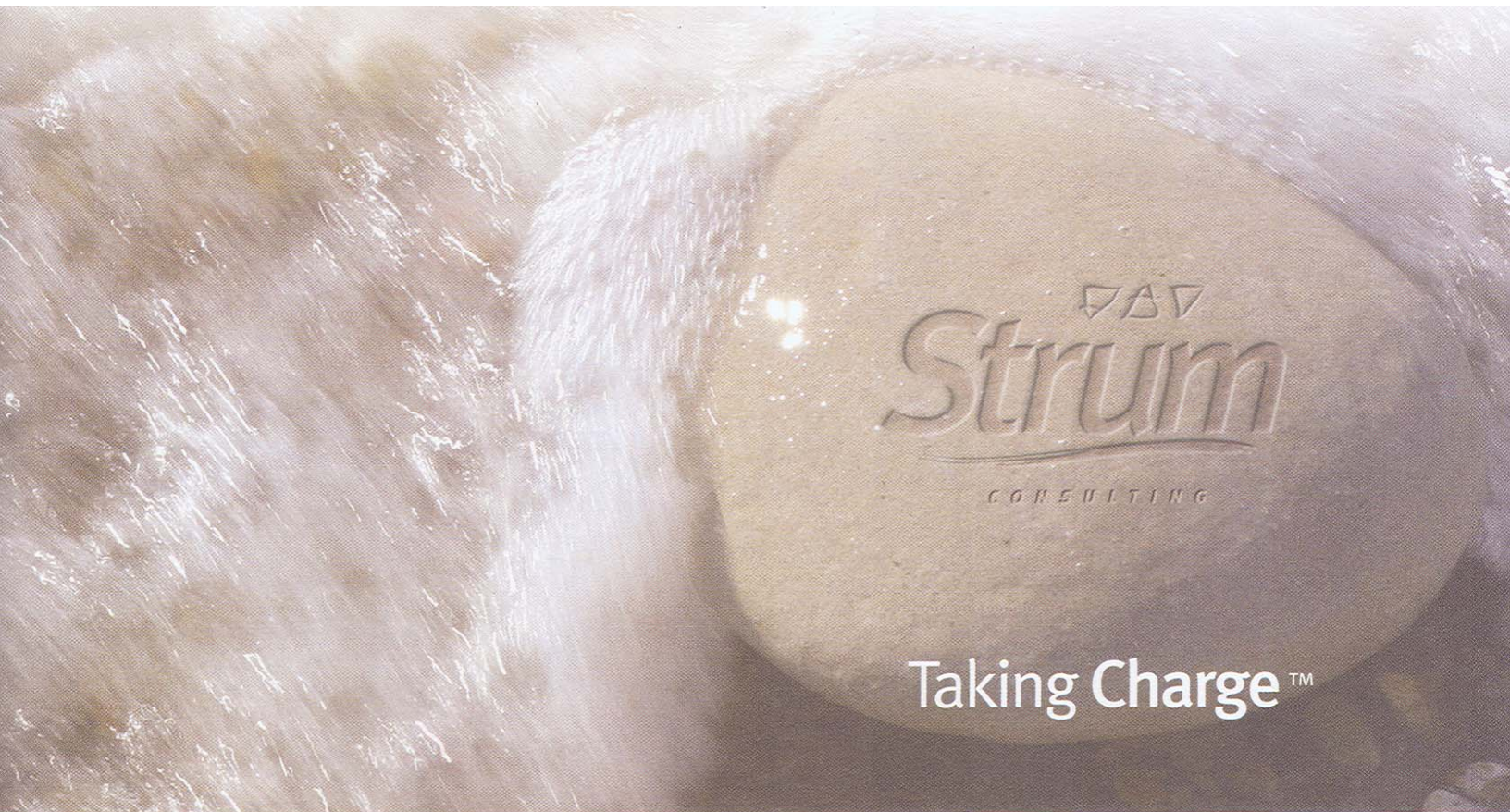




**VISUAL IMPACT ASSESSMENT
Silver Maple Wind Farm**

May 6, 2020





May 6, 2020

SWEB Development USA LLC

**Re: Visual Impact Assessment
Silver Maple Wind Farm**

Attached is the Visual Impact Assessment report prepared for the Silver Maple Wind Farm Project.

This report documents our observations and findings.

We trust this to be satisfactory at this time. Once you have had an opportunity to review this correspondence, please contact us to address any questions you may have.

Thank you,

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EXECUTIVE SUMMARY

A total of 18 scenic resources of State and National significance (SRSNS) are located within 8 miles of the planned Silver Maple Wind Farm proposed by SWEB Developments USA LLC. There would be no visibility of the Project from 7 of these SRSNS. Eleven (11) SRSNS underwent a visual impact assessment in accordance with the State of Maine's *Wind Energy Act* (the WEA). The results of the visual impact assessment indicate that the visual impact would be low on all 11 SRSNS assessed, owing namely to the small size of the Project (5 turbines located within a condensed area less than a mile long).

TABLE OF CONTENTS

	<i>Page</i>
1.0 INTRODUCTION	1
1.2 Regulatory Overview	1
1.2.1 Scenic Resource Identification	1
1.2.2 Regulatory Standards	2
1.3 Methodology	3
1.3.1 Viewshed Analysis	3
1.3.2 Field Investigations	4
1.3.3 Photo Simulations	4
1.3.4 Supporting Information	4
2.0 PROJECT DESCRIPTION.....	5
3.0 VISUAL IMPACT ASSESSMENT	5
3.1 Identification of Scenic Resources	5
3.2 SRSNS Evaluation	7
3.2.1 Evaluation Criteria	7
3.2.2 Chemo Pond.....	7
3.2.2.1 Scenic Impact of Associated Facilities	7
3.2.2.2 Significance of the SRSNS	7
3.2.2.3 Existing Character of the Surrounding Area	8
3.2.2.4 Viewer Expectations	8
3.2.2.5 Purpose and context	8
3.2.2.6 Public Use and Enjoyment.....	9
3.2.2.7 Scope and Scale of the Potential Effect.....	10
3.2.2.8 Cumulative Scenic Impact or Effect	11
3.2.3 Hopkins Pond	12
3.2.3.1 Scenic Impact of Associated Facilities	12
3.2.3.2 Significance of the SRSNS	12
3.2.3.3 Existing Character of the Surrounding Area	13
3.2.3.4 Viewer Expectations	13
3.2.3.5 Purpose and Context	13
3.2.3.6 Public Use and Enjoyment.....	14
3.2.3.7 Scope and Scale of the Potential Effect.....	14
3.2.3.8 Cumulative Scenic Impact or Effect	15
3.2.4 Mountainy Pond.....	17
3.2.4.1 Scenic Impact of Associated Facilities	17
3.2.4.2 Significance of the SRSNS	17
3.2.4.3 Existing Character of the Surrounding Area	17
3.2.4.4 Viewer Expectations	18
3.2.4.5 Purpose and Context	18
3.2.4.6 Public Use and Enjoyment.....	19
3.2.4.7 Scope and Scale of the Potential Effect.....	19
3.2.4.8 Cumulative Scenic Impact or Effect	20
3.2.5 Parks Pond	22
3.2.5.1 Scenic Impact of Associated Facilities	22
3.2.5.2 Significance of the SRSNS	22
3.2.5.3 Existing Character of the Surrounding Area	22
3.2.5.4 Viewer Expectations	23
3.2.5.5 Purpose and Context	23
3.2.5.6 Public Use and Enjoyment.....	24
3.2.5.7 Scope and Scale of the Potential Effect.....	24
3.2.5.8 Cumulative Scenic Impact or Effect	25
3.2.6 Upper Union River Focus Area	26
3.2.6.1 Scenic impact of associated facilities.....	26
3.2.6.2 Significance of the SRSNS	27
3.2.6.3 Existing Character of the Surrounding Area	27
3.2.6.4 Viewer Expectations	27
3.2.6.5 Purpose and Context	27
3.2.6.6 Public Use and Enjoyment.....	29

3.2.6.7 Scope and Scale of the Potential Effect.....	29
3.2.6.8 Cumulative Scenic Impact or Effect.....	30
3.2.7 Bald Bluff Mountain Focus Area	31
3.2.7.1 Scenic Impact of Associated Facilities.....	31
3.2.7.2 Significance of the SRSNS	31
3.2.7.3 Existing Character of the Surrounding Area	32
3.2.7.4 Viewer Expectations	32
3.2.7.5 Purpose and Context.....	32
3.2.7.6 Public Use and Enjoyment.....	33
3.2.7.7 Scope and Scale of the Potential Effect.....	34
3.2.7.8 Cumulative Scenic Impact or Effect.....	35
3.2.8 West Branch Union River (Graham Lake to Great Pond)	36
3.2.8.1 Scenic Impact of Associated Facilities.....	36
3.2.8.2 Significance of the SRSNS	36
3.2.8.3 Existing Character of the Surrounding Area	36
3.2.8.4 Viewer Expectations	37
3.2.8.5 Purpose and Context.....	37
3.2.8.6 Public Use and Enjoyment.....	38
3.2.8.7 Scope and Scale of the Potential Effect.....	38
3.2.8.8 Cumulative Scenic Impact or Effect.....	39
3.2.9 Cliffwood Hall.....	41
3.2.9.1 Scenic Impact of Associated Facilities.....	41
3.2.9.2 Significance of the SRSNS	41
3.2.9.3 Existing character of the surrounding area	41
3.2.9.4 Viewer Expectations	42
3.2.9.5 Purpose and Context.....	42
3.2.9.6 Public Use and Enjoyment.....	43
3.2.9.7 Scope and Scale of the Potential Effect.....	43
3.2.9.8 Cumulative Scenic Impact or Effect.....	44
3.2.10 Harold Allen Schoolhouse	45
3.2.10.1 Scenic Impact of Associated Facilities.....	45
3.2.10.2 Significance of the SRSNS	45
3.2.10.3 Existing Character of the Surrounding Area	45
3.2.10.4 Viewer Expectations	46
3.2.10.5 Purpose and Context.....	46
3.2.10.6 Public Use and Enjoyment.....	47
3.2.10.7 Scope and Scale of the Potential Effect.....	47
3.2.10.8 Cumulative Scenic Impact or Effect.....	48
3.2.11 East Eddington Public Hall	49
3.2.11.1 Scenic Impact of Associated Facilities.....	49
3.2.11.2 Significance of the SRSNS	49
3.2.11.3 Existing Character of the Surrounding Area	49
3.2.11.4 Viewer Expectations	50
3.2.11.5 Purpose and Context.....	50
3.2.11.6 Public Use and Enjoyment.....	51
3.2.11.7 Scope and Scale of the Potential Effect.....	51
3.2.11.8 Cumulative Scenic Impact or Effect.....	52
3.2.12 Holden Town Hall	53
3.2.12.1 Scenic Impact of Associated Facilities.....	53
3.2.12.2 Significance of the SRSNS	53
3.2.12.3 Existing Character of the Surrounding Area	54
3.2.12.4 Viewer Expectations	54
3.2.12.5 Purpose and Context.....	54
3.2.12.6 Public Use and Enjoyment.....	55
3.2.12.7 Scope and Scale of the Potential Effect.....	55
3.2.12.8 Cumulative Scenic Impact or Effect.....	56
4.0 MITIGATIONS	57
5.0 CONCLUSION.....	57
6.0 CLOSURE	58
7.0 STATEMENT OF QUALIFICATIONS AND LIMITATIONS	59

LIST OF TABLES

Table 3.1. Visual Impact Assessment: Identified SRSNS 5
Table 3.2. Visual Impact Parameters for Proposed Silver Maple Turbines 10
Table 3.3. Cumulative Visual Impact Parameters for Proposed Silver Maple Turbines and Existing Pisgah Mountain Turbines 11
Table 3.4. Visual Impact Parameters for Proposed Silver Maple Turbines 15
Table 3.5. Cumulative Visual Impact Parameters for Proposed Silver Maple Turbines and Existing Pisgah Mountain Turbines 16
Table 3.6. Visual Impact Parameters for Proposed Silver Maple Turbines 20
Table 3.7. Cumulative Visual Impact Parameters for Proposed Silver Maple Turbines and Existing Pisgah Mountain Turbines 21
Table 3.8. Visual Impact Parameters for Proposed Silver Maple Turbines 25
Table 3.9. Cumulative Visual Impact Parameters for Proposed Silver Maple Turbines and Existing Pisgah Mountain Turbines 26
Table 3.10. Visual Impact Parameters for Proposed Silver Maple Turbines 29
Table 3.11. Cumulative Visual Impact Parameters for Proposed Silver Maple Turbines and Existing Pisgah Mountain Turbines 30
Table 3.12. Visual Impact Parameters for Proposed Silver Maple Turbines 34
Table 3.13. Cumulative Visual Impact Parameters for Proposed Silver Maple Turbines and Existing Pisgah Mountain Turbines 35
Table 3.14. Visual Impact Parameters for Proposed Silver Maple Turbines 39
Table 3.15. Cumulative Visual Impact Parameters for Proposed Silver Maple Turbines and Existing Pisgah Mountain Turbines 40
Table 3.16. Visual Impact Parameters for Proposed Silver Maple Turbines 44
Table 3.17. Cumulative Visual Impact Parameters for Proposed Silver Maple Turbines and Existing Pisgah Mountain Turbines 45
Table 3.18. Visual Impact Parameters for Proposed Silver Maple Turbines 48
Table 3.19. Cumulative Visual Impact Parameters for Proposed Silver Maple Turbines and Existing Pisgah Mountain Turbines 49
Table 3.20. Visual Impact Parameters for Proposed Silver Maple Turbines 52
Table 3.21. Cumulative Visual Impact Parameters for Proposed Silver Maple Turbines and Existing Pisgah Mountain Turbines 53
Table 3.22. Visual Impact Parameters for Proposed Silver Maple Turbines 56
Table 3.23. Cumulative Visual Impact Parameters for Proposed Silver Maple Turbines and Existing Pisgah Mountain Turbines 56
Table 5.1. Summary of Visual Impact Assessment 57

LIST OF APPENDICES

Appendix A: All SRSNS
Appendix B: Chemo Pond
Appendix C: Hopkins Pond
Appendix D: Mountainy Pond
Appendix E: Parks Pond
Appendix F: Upper Union River Focus Area/West Branch Union River
Appendix G: Bald Bluff Focus Area
Appendix H: Cliffwood Hall/Harold Allan Schoolhouse
Appendix I: East Eddington Public Hall
Appendix J: Holden Town Hall

LIST OF DRAWINGS

Appendix A

Drawing A1 Scenic Resources of State and National Significance
Drawing A2 Photosimulation Camera Locations
Drawing A3 Viewshed (Bare Ground/185 m total height)
Drawing A4 Viewshed (Bare Ground/117 m hub height)
Drawing A5 Viewshed (12 m or 40 ft Forest/185 m total height)
Drawing A6 Viewshed (12 m or 40 ft Forest/117 m hub height)

Drawing A7	Viewshed All Turbines (Bare Ground/185 m & 145 m total heights)
Drawing A8	Viewshed All Turbines (Bare Ground/ 117 m & 95 m hub heights)
Drawing A9	Viewshed All Turbines (12 m or 40 ft Forest/185 m & 145 m total heights)
Drawing A10	Viewshed All Turbines (12 m or 40 ft Forest/117 m & 95 m hub heights)

Appendix B

Drawing B1	Chemo Pond Existing Character of Surrounding Area
Drawing B2	Chemo Pond Extent of View
Drawing B3	Viewshed Chemo Pond (Bare Ground/185 m total height)
Drawing B4	Viewshed Chemo Pond (Bare Ground/117 m hub height)
Drawing B5	Viewshed Chemo Pond (12 m or 40 ft Forest/185 m total height)
Drawing B6	Viewshed Chemo Pond (12 m or 40 ft Forest/117 m hub height)
Drawing B7	Cumulative Impacts Chemo Pond (Bare Ground/185 m & 145 m total heights)
Drawing B8	Cumulative Impacts Chemo Pond (Bare Ground/ 117 m & 95 m hub heights)
Drawing B9	Cumulative Impacts Chemo Pond (12 m or 40 ft Forest/185 m & 145 m total heights)
Drawing B10	Cumulative Impacts Chemo Pond (12 m or 40 ft Forest/117 m & 95 m hub heights)
Drawing B11	Photosimulation Chemo Pond (Day Time)
Drawing B12	Photosimulation Chemo Pond (Night Time)
Drawing B13	Photosimulation Title Page Chemo Pond
Drawing B14	Original Photo Chemo Pond

Appendix C

Drawing C1	Hopkins Pond Existing Character of Surrounding Area
Drawing C2	Hopkins Pond Extent of View
Drawing C3	Viewshed Hopkins Pond (Bare Ground/185 m total height)
Drawing C4	Viewshed Hopkins Pond (Bare Ground/117 m hub height)
Drawing C5	Viewshed Hopkins Pond (12 m or 40 ft Forest/185 m total height)
Drawing C6	Viewshed Hopkins Pond (12 m or 40 ft Forest/117 m hub height)
Drawing C7	Cumulative Impacts Hopkins Pond (Bare Ground/185 m & 145 m total heights)
Drawing C8	Cumulative Impacts Hopkins Pond (Bare Ground/ 117 m & 95 m hub heights)
Drawing C9	Cumulative Impacts Hopkins Pond (12 m or 40 ft Forest/185 m & 145 m total heights)
Drawing C10	Cumulative Impacts Hopkins Pond (12 m or 40 ft Forest/117 m & 95 m hub heights)
Drawing C11	Photosimulation Hopkins Pond (Day Time)
Drawing C12	Photosimulation Hopkins Pond (Night Time)
Drawing C13a	Photosimulation Title Page Hopkins Pond
Drawing C13b	Photosimulation Title Page Hopkins Pond
Drawing C14	Original Photo Hopkins Pond

Appendix D

Drawing D1	Mountainy Pond Existing Character of Surrounding Area
Drawing D2	Mountainy Pond Extent of View
Drawing D3	Viewshed Mountainy Pond (Bare Ground/185 m total height)
Drawing D4	Viewshed Mountainy Pond (Bare Ground/117 m hub height)
Drawing D5	Viewshed Mountainy Pond (12 m or 40 ft Forest/185 m total height)
Drawing D6	Viewshed Mountainy Pond (12 m or 40 ft Forest/117 m hub height)
Drawing D7	Cumulative Impacts Mountainy Pond (Bare Ground/185 m & 145 m total heights)
Drawing D8	Cumulative Impacts Mountainy Pond (Bare Ground/ 117 m & 95 m hub heights)
Drawing D9	Cumulative Impacts Mountainy Pond (12 m or 40 ft Forest/185 m & 145 m total heights)
Drawing D10	Cumulative Impacts Mountainy Pond (12 m or 40 ft Forest/117 m & 95 m hub heights)

Appendix E

Drawing E1	Parks Pond Existing Character of Surrounding Area
Drawing E2	Parks Pond Extent of View
Drawing E3	Viewshed Parks Pond (Bare Ground/185 m total height)
Drawing E4	Viewshed Parks Pond (Bare Ground/117 m hub height)
Drawing E5	Viewshed Parks Pond (12 m or 40 ft Forest/185 m total height)
Drawing E6	Viewshed Parks Pond (12 m or 40 ft Forest/117 m hub height)
Drawing E7	Cumulative Impacts Parks Pond (Bare Ground/185 m & 145 m total heights)
Drawing E8	Cumulative Impacts Parks Pond (Bare Ground/ 117 m & 95 m hub heights)
Drawing E9	Cumulative Impacts Parks Pond (12 m or 40 ft Forest/185 m & 145 m total heights)
Drawing E10	Cumulative Impacts Parks Pond (12 m or 40 ft Forest/117 m & 95 m hub heights)
Drawing E11a	Photosimulation Parks Pond (Day Time)
Drawing E11b	Photosimulation Parks Pond (Day Time)
Drawing E12	Photosimulation Parks Pond (Night Time)
Drawing E13a	Photosimulation Title Page Parks Pond
Drawing E13b	Photosimulation Title Page Parks Pond
Drawing E14	Original Photo Parks Pond

Appendix F

Drawing F1	Upper Union River Existing Character of Surrounding Area
Drawing F2	Upper Union River Extent of View
Drawing F3	Viewshed Upper Union River (Bare Ground/185 m total height)
Drawing F4	Viewshed Upper Union River (Bare Ground/117 m hub height)
Drawing F5	Viewshed Upper Union River (12 m or 40 ft Forest/185 m total height)
Drawing F6	Viewshed Upper Union River (12 m or 40 ft Forest/117 m hub height)
Drawing F7	Cumulative Impacts Upper Union River (Bare Ground/185 m & 145 m total heights)
Drawing F8	Cumulative Impacts Upper Union River (Bare Ground/ 117 m & 95 m hub heights)
Drawing F9	Cumulative Impacts Upper Union River (12 m or 40 ft Forest/185 m & 145 m total heights)
Drawing F10	Cumulative Impacts Upper Union River (12 m or 40 ft Forest/117 m & 95 m hub heights)

Appendix G

Drawing G1	Bald Bluff Existing Character of Surrounding Area
Drawing G2	Bald Bluff Extent of View
Drawing G3	Viewshed Bald Bluff (Bare Ground/185 m total height)
Drawing G4	Viewshed Bald Bluff (Bare Ground/117 m hub height)
Drawing G5	Viewshed Bald Bluff (12 m or 40 ft Forest/185 m total height)
Drawing G6	Viewshed Bald Bluff (12 m or 40 ft Forest/117 m hub height)
Drawing G7	Cumulative Impacts Bald Bluff (Bare Ground/185 m & 145 m total heights)
Drawing G8	Cumulative Impacts Bald Bluff (Bare Ground/ 117 m & 95 m hub heights)
Drawing G9	Cumulative Impacts Bald Bluff (12 m or 40 ft Forest/185 m & 145 m total heights)
Drawing G10	Cumulative Impacts Bald Bluff (12 m or 40 ft Forest/117 m & 95 m hub heights)

Appendix H

Drawing H1	Cliffwood Hall/Harold Allen Schoolhouse Existing Character of Surrounding Area
Drawing H2	Cliffwood Hall/Harold Allen Schoolhouse Extent of View
Drawing H3	Viewshed Cliffwood Hall/Harold Allen Schoolhouse (Bare Ground/185 m total height)
Drawing H4	Viewshed Cliffwood Hall/Harold Allen Schoolhouse (Bare Ground/117 m hub height)
Drawing H5	Viewshed Cliffwood Hall/Harold Allen Schoolhouse (12 m or 40 ft Forest/185 m total height)
Drawing H6	Viewshed Cliffwood Hall/Harold Allen Schoolhouse (12 m or 40 ft Forest/117 m hub height)
Drawing H7	Cumulative Impacts Cliffwood Hall/Harold Allen Schoolhouse (Bare Ground/185 m & 145 m total heights)

Drawing H8	Cumulative Impacts Cliffwood Hall/Harold Allen Schoolhouse (Bare Ground/ 117 m & 95 m hub heights)
Drawing H9	Cumulative Impacts Cliffwood Hall/Harold Allen Schoolhouse (12 m or 40 ft Forest/185 m & 145 m total heights)
Drawing H10	Cumulative Impacts Cliffwood Hall/Harold Allen Schoolhouse (12 m or 40 ft Forest/117 m & 95 m hub heights)
Drawing H11a	Photosimulation Cliffwood Hall/Harold Allen Schoolhouse (Day Time)
Drawing H11b	Photosimulation Cliffwood Hall/Harold Allen Schoolhouse (Day Time)
Drawing H12	Photosimulation Cliffwood Hall/Harold Allen Schoolhouse (Night Time)
Drawing H13a	Photosimulation Title Page Cliffwood Hall/Harold Allen Schoolhouse
Drawing H13b	Photosimulation Title Page Cliffwood Hall/Harold Allen Schoolhouse
Drawing H14	Original Photo Cliffwood Hall/Harold Allen Schoolhouse

Appendix I

Drawing I1	East Eddington Existing Character of Surrounding Area
Drawing I2	East Eddington Extent of View
Drawing I3	Viewshed East Eddington (Bare Ground/185 m total height)
Drawing I4	Viewshed East Eddington (Bare Ground/117 m hub height)
Drawing I5	Viewshed East Eddington (12 m or 40 ft Forest/185 m total height)
Drawing I6	Viewshed East Eddington (12 m or 40 ft Forest/117 m hub height)
Drawing I7	Cumulative Impacts East Eddington (Bare Ground/185 m & 145 m total heights)
Drawing I8	Cumulative Impacts East Eddington (Bare Ground/ 117 m & 95 m hub heights)
Drawing I9	Cumulative Impacts East Eddington (12 m or 40 ft Forest/185 m & 145 m total heights)
Drawing I10	Cumulative Impacts East Eddington (12 m or 40 ft Forest/117 m & 95 m hub heights)
Drawing I11	Photosimulation East Eddington (Day Time)
Drawing I12	Photosimulation East Eddington (Night Time)
Drawing I13	Photosimulation Title Page East Eddington
Drawing I14	Original Photo East Eddington

Appendix J

Drawing J1	Holden Town Hall Existing Character of Surrounding Area
Drawing J2	Holden Town Hall Extent of View
Drawing J3	Viewshed Holden Town Hall (Bare Ground/185 m total height)
Drawing J4	Viewshed Holden Town Hall (Bare Ground/117 m hub height)
Drawing J5	Viewshed Holden Town Hall (12 m or 40 ft Forest/185 m total height)
Drawing J6	Viewshed Holden Town Hall (12 m or 40 ft Forest/117 m hub height)
Drawing J7	Cumulative Impacts Holden Town Hall (Bare Ground/185 m & 145 m total heights)
Drawing J8	Cumulative Impacts Holden Town Hall (Bare Ground/ 117 m & 95 m hub heights)
Drawing J9	Cumulative Impacts Holden Town Hall (12 m or 40 ft Forest/185 m & 145 m total heights)
Drawing J10	Cumulative Impacts Holden Town Hall (12 m or 40 ft Forest/117 m & 95 m hub heights)
Drawing J11a	Photosimulation Holden Town Hall (Day Time)
Drawing J11b	Photosimulation Holden Town Hall (Day Time)
Drawing J12	Photosimulation Holden Town Hall (Night Time)
Drawing J13a	Photosimulation Title Page Holden Town Hall
Drawing J13b	Photosimulation Title Page Holden Town Hall
Drawing J14	Original Photo Holden Town Hall

1.0 INTRODUCTION

Strum Consulting was retained by SWEB Development USA LLC (SWEB) to conduct a visual impact assessment for the proposed Silver Maple Wind Project (the Project) located near the town of Clifton, Maine, USA. SWEB is proposing the development of a 20 megawatt (MW) wind power project that would consist of five wind turbines, and would be located adjacent the existing 9 MW Pisgah Mountain wind energy project that is also owned by SWEB.

SWEB is considering two turbine models which are largely the same, with the exception of the hub height [100m (328 feet) and 117m (384 feet)]. The taller of these two turbine models will be used for this analysis.

Pursuant to section 38 M.S.R.A. § 480-D (1) of the State of Maine's Natural Resource Protection Act (NRPA), applicants for permits under the NRPA must demonstrate that a proposed activity will not unreasonably interfere with existing scenic and aesthetic resources.

The purpose of this assessment is to conduct a visual impact assessment consistent with the requirements of the State of Maine's Wind Energy Act 35-A M.R.S.A. § 3451 (the WEA).

1.2 Regulatory Overview

1.2.1 Scenic Resource Identification

Scenic resources of state or national significance (SRSNS) are defined in the WEA (35-A M.R.S.A. § 3451) as an area or place owned by the public or to which the public has legal right of access that is:

- A. A National Natural Landmark, a federally designated wilderness area or other comparable outstanding natural and cultural feature, such as the Orono Bog or Meddybemps Heath;
- B. A property listed on the National Register of Historic Places pursuant to the National Historic Preservation Act of 1966, as amended, including, but not limited to, the Rockland Breakwater Light and Fort Knox;
- C. A national or state park;
- D. A great pond that is:
 - 1. One of the 66 great ponds located in the State's organized area identified as having outstanding or significant scenic quality in the "Maine's Finest Lakes" Study published by the Executive Department, State Planning Office in October 1989; or
 - 2. One of the 280 great ponds in the State's unorganized or deorganized areas designated as outstanding or significant from a scenic perspective in the "Maine Wildlands Lakes Assessment: published by the Maine Land Use Regulation Commission in June 1987;

- E. A segment of a scenic river or stream identified as having unique or outstanding scenic attributes listed in Appendix G of the “Maine Rivers Study” published by the former Department of Conservation in 1982;
- F. A scenic viewpoint located on state public reserved land or on a trail that is used exclusively for pedestrian use, such as the Appalachian Trail, that the Department of Agriculture, Conservation, and Forestry designates by rule adopted in accordance with section 3457;
- G. A scenic turnout constructed by the Department of Transportation pursuant to Title 23, section 954 on a public road that has been designated by the Commissioner of Transportation pursuant to Title 23, section 4206, subsection 1, paragraph G as a scenic highway; or
- H. Scenic viewpoints located in the coastal area, as defined by Title 38, section 1802, subsection 1, that are ranked as having state or national significance in terms of scenic quality in: (1) One of the scenic inventories prepared for and published by the Executive Department, State Planning Office: “Method for Coastal Scenic Landscape Assessment with Field Results for Kittery to Scarborough and Cape Elizabeth to South Thomaston,” Dominie, et al., October 1987; “Scenic Inventory Mainland Sites of Penobscot Bay,” DeWan and Associates, et al., August 1990; or “Scenic Inventory: Islesboro, Vinalhaven, North Haven and Associated Offshore Islands,” DeWan and Associates, June 1992; or (2) A scenic inventory developed by or prepared for the Executive Department, State Planning Office.

1.2.2 Regulatory Standards

A wind energy development must not significantly compromise views from a Scenic Resource of State or National Significance (SRSNS) as defined in 35-A M.R.S. §3451(9). Locations identified as potential SRSNS were evaluated to determine whether the Project significantly compromises views from a SRSNS such that the Project has an unreasonable adverse effect on the scenic character or existing uses related to scenic character. As outlined in 35-A M.R.S.A. §3452, SRSNS were assessed for the following:

- A. The significance of the potentially affected scenic resource of state or national significance;
- B. The existing character of the surrounding area;
- C. The expectations of the typical viewer;
- D. The expedited wind energy development’s purpose and the context of the proposed activity;
- E. The extent, nature, and duration of potentially affected public uses of the scenic resource of state or national significance and the potential effect of the generating facilities’ presence on the public’s continued use and enjoyment of the scenic resource of state or national significance; and
- F. The scope and scale of the potential effect of views of the generating facilities on the scenic resource of state or national significance, including but not limited to issues related to the number and extent of turbines visible from the scenic resource of state or

national significance, the distance from the scenic resource of state or national significance and the effect of prominent features of the development on the landscape.

In 2018, the department released new rules to provide guidance and clarification on the review process and standards for projects under the WEA. The information provided in Chapter 382 outlines the evaluation criteria used in the Visual Impact Assessment for the assessment of impacts related to scenic character, including:

- A. Review of Scenic impact of associated facilities;
- B. Significance of a potentially affected SRSNS;
- C. Existing character of the surrounding area;
- D. Expectations of the typical viewer;
- E. Purpose and context of the proposed activity;
- F. Public use and enjoyment of a potentially affected SRSNS;
- G. Scope and scale of the potential effect;
- H. Cumulative scenic impact or effect;
- I. Unreasonable adverse effect on scenic character.

1.3 Methodology

1.3.1 Viewshed Analysis

ArcGIS Desktop 10.7 was used to generate viewshed models for the proposed Silver Maple Wind Farm expansion in order to determine the number of turbines visible at each SRSNS. Four of the models predict turbine visibility at hub height or total height (hub + $\frac{1}{2}$ rotor length) for the proposed turbines or all turbines (proposed and existing) based on a bare terrain model. The remaining four models predict turbine visibility using the aforementioned parameters as well as a screening effect for forest cover.

The bare terrain models were based on the 1/3 arc-second National Elevation Data raster 'USGS_13_n45w069' which was clipped to the project extents, projected to NAD 1983 UTM Zone 19N, and resampled to 10 metres.

The forest screen was based on the 2016 National Landcover raster which was clipped to the project extents, reprojected to NAD 1983 UTM Zone 19N and reclassified so that forested cells were assigned a value of 0 and all other landcover types were assigned a value of 1. Using the 'Times' tool in the Math toolbox (Spatial Analyst extension), the forest screen raster and each viewshed raster were multiplied together on a cell-by-cell basis. In the resulting output viewshed rasters, cells corresponding to forest cover were changed to a value of 0, representing zero visibility, while all other cells retained their original value. This methodology is based on a personal communication with Dr. James F. Palmer (February, 19, 2020), who advised that this approach is considered the industry standard.

For SRSNSs which were polygon features (waterbodies and focus areas), the areas within each polygon were calculated for the number of turbines visible based on the viewshed

analyses. The viewshed rasters were converted to polygons using the 'Raster to Polygon' tool (Conversion Toolbox) in ArcGIS Desktop 10.7, then within each new feature class, the polygon areas representing no visibility were removed and the feature classes was clipped to the extents of the SRSNSs and focus areas. The areas representing 1 through 10 visible turbines were summed and the areas were recorded in a table.

The distance of each SRSNS from the nearest and farthest turbine was measured from the camera location for sites where photo-simulations were completed, the remaining locations represent points of highest elevation at each SRSNS within the 8 mile area around the proposed project.

1.3.2 Field Investigations

SRSNS were visited between January and April, 2020 by CES Inc. (Bangor, Maine), at which point detailed notes and observations were made on the scenic quality, usage, evidence recreational activities, etc. Photos and GPS data were also taken during these site visits, which were used to produce the photo simulations for the SRSNS.

1.3.3 Photo Simulations

Photo-simulations, which superimposed the proposed turbines on top of photos, were used to show how the Project is anticipated to look from selected SRSNS locations. The renderings were generated using the Photomontage module in windPro v3.2 software, which creates a camera model that transforms a point feature with a known elevation and geographic location from a map onto a 2-dimensional photo. The camera model is then used to position a 3-dimensional model of the turbines (Project) into images with the correct proportions. Topography and existing Pisgah Mountain turbines, where visible, were used as reference points.

The digital elevation model used to generate the photo-simulations in windPro was the same model employed in the ArcGIS analyses. Adobe Photoshop was used to refine the photo-simulations by adjusting the turbine overlay to ensure that they were behind any foreground features undetected during the rendering process (e.g. tree branches, power lines, topography, etc.).

1.3.4 Supporting Information

Information to support SRSNS evaluation was gathered through the review of numerous desktop resources. Primary information relating to scenic character and significance ratings for SRSNS as outlined in the resources identified in the WEA (see Section 1.2.1):

- Maine Wildlands Lakes Assessment: published by the Maine Land Use Regulation Commission in June 1987;
- Maine Rivers Study: Final Report, published by the State of Maine, department of Conservation in May 1982;
- Maine's Finest Lake: The Results of the Maine Lakes Study, published by the Maine State Planning Office Critical Areas Program in October 1989;

- Beginning with Habitat: Focus Areas of Statewide Ecological Significance; and
- National Register of Historic Places.

To expand upon this information, satellite imagery was thoroughly reviewed (Google Earth, 2020) as well as public resources including community supported organizations, SRSNS webpages, media articles, and conservation organizations.

2.0 PROJECT DESCRIPTION

The proposed Silver Maple Wind Project would be co-located with the existing Pisgah Mountain Wind Power Project, which consists of five 2MW turbines. The Silver Maple Wind Project would add five additional turbines that would be located to the south and east of the existing machines. Access roads and power distribution infrastructure would be shared between the two projects, but the road and transmission line network would need to be expanded to accommodate the new turbines.

3.0 VISUAL IMPACT ASSESSMENT

3.1 Identification of Scenic Resources

A review of potential scenic resources within an 8-mile radius of the Project was completed based on the definitions in the State of Maine’s Wind Energy Act 35-A M.R.S.A., as outlined in section 1.2. The review identified 18 potential SRSNS listed in Table 3.1 and shown on Drawing A1 (Appendix A).

Table 3.1. Visual Impact Assessment: Identified SRSNS

	Turbine Visibility
<i>A) A National natural landmark, federally designated wilderness area or other comparable outstanding natural and cultural feature</i>	
Bald Bluff Mountain Focus Area	Yes
Upper Union River Focus Area	Yes
<i>B) A property listed on the National Register of Historic Places pursuant to the National Historic Preservation Act of 1966</i>	
Harold Allan Schoolhouse	Yes
Cliffwood Hall	Yes
East Eddington Public Hall	Yes
Holden Town Hall	Yes
Lucerne Inn	No
<i>C) A national or state park</i>	
None Identified Within 8 miles	
<i>D) A great pond</i>	
Burnt Pond	No
Chemo Pond	Yes
Floods Pond	No
Halfmile Pond (Amherst)	No

Hatcase Pond	No
Hopkins Pond	Yes
Jellison Hill Pond	No
Mountainy Pond	Yes
Parks Pond	Yes
Second Pond	No
<i>E) A segment of a scenic river or stream identified as having unique or outstanding scenic attributes listed in Appendix G of the "Maine Rivers Study" published by the former Department of Conservation in 1982</i>	
West Branch Union River (Graham Lake to Great Pond)	
<i>F) A scenic viewpoint located on state public reserved land or on a trail that is used exclusively for pedestrian use, such as the Appalachian Trail, that the Department of Agriculture, Conservation and Forestry designates by rule adopted in accordance with section 3457</i>	
None Identified Within 8 miles	
<i>G) A scenic turnout constructed by the Department of Transportation pursuant to Title 23, section 954 on a public road that has been designated by the Commissioner of Transportation pursuant to Title 23, section 4206, subsection 1, paragraph G as a scenic highway;</i>	
None Identified Within 8 miles	
<i>H) Scenic viewpoints located in the coastal area, as defined by Title 38, section 1802, subsection 1, that are ranked as having state or national significance in terms of scenic quality</i>	
None Identified Within 8 miles	

Of these 18 potential SRSNS, 7 sites were found to have no visibility of the turbines due to topographical obstructions (according to the viewshed analysis), and as such there would be no visual impact to these 7 SRSNS (Drawings A2-A10, Appendix A). The viewshed analysis indicated that 11 SRSNS may have visibility (or partial visibility) of project components. The visual impact of the Project to these 11 SRSNS was completed in accordance with the WEA. These SRSNS are:

- Chemo Pond
- Hopkins Pond
- Mountainy Pond
- Parks Pond
- Upper Union River Focus Area
- Bald Bluff River Focus Area
- West Branch Union River (Graham Lake to Great Pond)
- Cliffwood Hall
- Harold Allen Schoolhouse
- East Eddington Public Hall
- Holden Town Hall

3.2 SRSNS Evaluation

3.2.1 Evaluation Criteria

SRSNS were evaluated for numerous resources based on the evaluation criteria outlined the WEA (35-A M.R.S.A. §3452) and the Chapter 382. These resources are as follows:

- Scenic impact of associated facilities: a review of the visual impact that the wind farm's associated facilities are likely to have on the SRSNS (Chapter 382.3.A);
- Significance of the SRSNS: a review of the significance of the potentially affected SRSNS (§3452.3.A, Chapter 382.3.B and Chapter 382.3.I)
- Existing character of the surrounding area: a review of the existing character of the surrounding area of a SRSNS, including a description of the landscape, vegetation and forest cover, topography, and development within the viewshed (§3452.3.B and Chapter 382.3.C)
- Viewer expectations: a review of the expectations of the typical viewer who would be visiting or enjoying the SRSNS (§3452.3.C, Chapter 382.3.D and Chapter 382.3.I)
- Purpose and context: a review of the purpose and the context of the Project in both the physical sense and in the practical sense (§3452.3.D and Chapter 382.3.E).
- Public use and enjoyment: a review of the extent, nature, and duration of potentially affected public uses of the SRSNS and the potential effect of the Project on the continued use and enjoyment (§3452.3.E and Chapter 382.3.F)
- Scope and scale of the potential effect: a review of the scale of the project, including number of turbines, visibility of turbines, horizontal view angle of visible turbines, distance to the visible turbines, and distance to turbines from the more affected viewpoints of the SRSNS (§3452.3.F and Chapter 382.3)
- Cumulative scenic impact or effect: a review of the cumulative scenic impacts of the Project in conjunction with scenic impacts from other wind energy developments (Chapter 382.3.H).

3.2.2 Chemo Pond

3.2.2.1 Scenic Impact of Associated Facilities

The visibility of the associated facilities is expected to be low for this location as they would be blocked or largely obscured by vegetation. During the winter, access roads may be visible due to the lack of foliage. See the photo simulations prepared for this location (Drawings B11-B12, Appendix B).

3.2.2.2 Significance of the SRSNS

Chemo Pond is a 1146 acre lake located in the communities of Bradley, Clifton, and Eddington, Penobscot County¹ (Drawing B1, Appendix B). It is a popular recreational destination with seasonal and permanent residences along much of its perimeter². Residences are located on large lots with lawns often extending to the shoreline. The shoreline of the lake is largely

¹ Lakes of Maine <https://www.lakesofmaine.org/lake-overview.html?m=4278>

² Chemo Pond Lake Association, <https://chemopond.org/>

forested with mature coniferous and deciduous trees, and it listed the Maine Wildlands Lake Assessment as providing significant scenic and recreational resources, as well as a significant warmwater sportfishery³. As such the significance of this SRSNS is high.

3.2.2.3 Existing Character of the Surrounding Area

The shoreline around Chemo Pond is moderately developed with seasonal and year-round residences. The nearest community is the town of Clifton to the east. The lake discharges into a long meandering watercourse to the northwest which passes through wetland habitat prior to passing through a dam at Leonard Mills, in Bradley. The surrounding lands are forested with mature deciduous and coniferous trees. There is evidence of extensive silviculture throughout the watershed surrounding Chemo Pond (see Drawing B1, Appendix B). There is an extensive network of residential and logging access roads surrounding the lake. The existing turbines for the Pisgah Wind Farm are highly visible throughout the lake (Drawings B11-B12, Appendix B).

3.2.2.4 Viewer Expectations

Typical viewers to this site would include year-round and seasonal residents, as well as daily visitors and recreational users. Visitor numbers would increase during the summer months, when visitors would be taking advantage of fishing and water sports. Typical users likely expect views of the lake and surrounding landscape. The existing turbines are highly visible throughout the lake and the visual impact assessment indicates that the proposed additional turbines would also be highly visible throughout the lake, thus having an impact on viewer expectations.

3.2.2.5 Purpose and context

The location of the Silver Maple Wind Project was determined by its proximity to the Pisgah Mountain Wind project. Silver Maple benefits directly from much of the infrastructure built for Pisgah Mountain, including the roads, collector system, and some interconnection infrastructure. The project also will benefit from Pisgah Mountain's compiled wind data, which has allowed SWEB to more accurately predict the expected wind resource of Silver Maple. Further, the Silver Maple project will benefit from the permitting work done for Pisgah Mountain. Including but not limited to, the acoustic data and modelling used for the Pisgah Mountain, and Pisgah Mountain survey work.

- (1) *Data related to the magnitude and reliability of the wind resource at the proposed development site, and the potential energy output expected from the development, as compared with any alternative sites in Maine investigated by the applicant.*

The particular placement of the five turbines was determined via analysis of the strongest locations on these ridgelines, given the annual average wind directions. Further, the turbine locations consider low interference with the existing five turbines of the Pisgah Mountain wind project.

³ Maine State Planning Office. *Maine's Finest Lakes: The Results of the Maine Lakes Study*. October 1989. Appendix D - Summary of Findings for the Lakes in Maine's Organized Townships.

- (2) *The location of the proposed development in relation to existing transmission lines, roads or other infrastructure.*

As stated above, the project location benefits from existing road infrastructure which was specifically designed for delivery and construction of wind energy equipment. The proximity of power lines and an existing substation further bolster the strength of this ridgeline as a uniquely strong location for the Silver Maple Wind Project.

- (3) *The topography and existing characteristics of the area surrounding the proposed development.*

The wind resource in this area is particularly strong, being located on a high elevation ridgeline in an exposed area.

- (4) *The existence of any other permitted wind energy development in the viewshed of any affected SRSNS.*

The Pisgah Mountain project will be directly adjacent to Silver Maple. The fact that the community and passersby are accustomed to viewing wind turbines at this location is expected to mitigate the marginal impacts of these particular five turbines. As opposed to constructing the project on a bare or undeveloped parcel elsewhere in Penobscot or Hancock County.

- (5) *Evidence of any mitigation proposals, such as improved access to the affected SRSNS, or improvements to the quality of the resource.*

The project has taken into effect its proximity to several of Maine's Finest Lakes will limit its impacts on local SRSNS through use of a radar lighting system.

3.2.2.6 Public Use and Enjoyment

The lake is moderately developed with permanent and seasonal residents who would be present year-round or upwards of months. However, non-resident visitors would be expected to spend upwards of a few hours at the location. Although there may be residents at the location year-round, visitor frequency would increase during the summer months. The primary purpose of visitors to this location is to observe the natural and wildlife features of the lake, as well as to partake in recreational activities such as swimming, boating, warmwater fishing, and ice-fishing. As such, the scenic character of the lake and surrounding lands would be considered a part of the enjoyment of this location. Although the viewshed analyses (Section 3.2.2.7) indicates that the turbines will be visible throughout the lake, the Project should not result in a significant impact of current use of the location due to the visibility of the existing Pisgah Wind Farm. Recreational impacts, such as swimming, boating, and fishing, would not be impacted.

The Chemo Pond Lake Association is a volunteer organization committed to protecting and preserving Chemo Pond through responsible stewardship. Additionally, Crossroads Christian Camp is located on the eastern side of the lake.

3.2.2.7 Scope and Scale of the Potential Effect

The viewshed analyses indicate that at best (forest screen - hub height) up to five of the turbines may be visible from 85% of Chemo Pond, while at worst (bare terrain - total height) the same five turbines may be visible from 89% of Chemo Pond (Drawings B3-B6, Appendix B); all five turbines are anticipated to be visible for 79% and 85% of Chemo Pond, respectively (Table 3.2).

The closest turbine (SM4) would be 4.7 miles from the High Visual Impact Investigation Area selected for Chemo Pond (Drawing B2, Appendix B). At approximately 5 miles away, these turbines would be considered background views (Drawing B13, Appendix B) and would take up an insignificant portion of the overall view, 7° of a 360° field of view (Drawing B2, Appendix B), resulting in a minimal visual impact.

Table 3.2 provides a summary of the visual impact assessment for the proposed Silver Maple turbines.

Table 3.2. Visual Impact Parameters for Proposed Silver Maple Turbines

View Angle	Nearest Turbine (miles)		Farthest Turbine (miles)	
7°	SM5 - 4.7		SM1 - 5.5	
Viewshed	Bare Terrain - Total Height (185 m)	Bare Terrain - Hub Height (117 m)	Forest Screen - Total Height (185 m)	Forest Screen - Hub Height (117 m)
% of Chemo Pond where 5 Turbines are Visible	84.56	80.93	82.94	79.35
% of Chemo Pond where 4 Turbines are Visible	0.51	0.87	0.51	0.86
% of Chemo Pond where 3 Turbines are Visible	1.70	2.05	1.69	2.04
% of Chemo Pond where 2 Turbines are Visible	1.39	1.81	1.39	1.81
% of Chemo Pond where 1 Turbines are Visible	0.62	0.71	0.61	0.71
Total %	88.78	86.38	87.14	84.76

3.2.2.8 Cumulative Scenic Impact or Effect

The cumulative visual impact of the proposed Silver Maple Wind Project with the existing Pisgah Mountain Wind Farm was assessed using the same analyses in Section 3.2.2.7 (Scope and Scale of the Potential Effect).

The viewshed analyses indicate that at best (forest screen - hub height) up to 10 of the turbines may be visible from 97% of Chemo Pond, while at worst (bare terrain - total height) up to 10 turbines may be visible from 99% of Chemo Pond (Drawings B7-B10, Appendix B); all 10 turbines may be visible for 96% and 98% of Chemo Pond, respectively (Table 3.5).

The closest turbine to the High Visual Impact Investigation Area selected for Chemo Pond (Drawing B2, Appendix B) is PM2, an existing Pisgah Mountain turbine, at a distance of 4.5 miles. The photo-simulation shows that the proposed Silver Maple turbines would flank the Pisgah Mountain turbines on both sides (Drawing B11, Appendix B); however, the potential angle of view would only be 7°, which is considered an insignificant portion of the overall view. At approximately 5 miles away, the photo-simulation demonstrates that all the turbines could be considered background views.

Table 3.3 provides a summary of the cumulative visual impact assessment for the proposed Silver Maple and existing Pisgah Mountain turbines.

Table 3.3. Cumulative Visual Impact Parameters for Proposed Silver Maple Turbines and Existing Pisgah Mountain Turbines

View Angle	Nearest Turbine (miles)		Farthest Turbine (miles)	
7°	PM2 - 4.5		SM1 - 5.5	
Viewshed	Bare Terrain - Total Height (185 m)	Bare Terrain - Hub Height (117 m)	Forest Screen - Total Height (185 m)	Forest Screen - Hub Height (117 m)
% of Chemo Pond where 10 Turbines are Visible	97.79	97.00	96.22	95.50
% of Chemo Pond where 9 Turbines are Visible	0.26	0.25	0.24	0.24
% of Chemo Pond where 8 Turbines are Visible	0.06	0.10	0.05	0.10
% of Chemo Pond where 7 Turbines are Visible	0.09	0.14	0.08	0.12
% of Chemo Pond where 6 Turbines are Visible	0.06	0.14	0.06	0.13

% of Chemo Pond where 5 Turbines are Visible	0.11	0.12	0.10	0.11
% of Chemo Pond where 4 Turbines are Visible	0.07	0.08	0.07	0.08
% of Chemo Pond where 3 Turbines are Visible	0.04	0.09	0.04	0.08
% of Chemo Pond where 2 Turbines are Visible	0.05	0.10	0.05	0.09
% of Chemo Pond where 1 Turbines are Visible	0.07	0.07	0.06	0.06
Total %	98.60	98.09	96.98	96.52

For the nighttime lighting to be visible, the hub of the turbine would need to be from the observer's location visible and not blocked by vegetation. The forest screen – hub height (117m) viewshed model is the best proxy for this. This model indicates that the night lighting would be visible from all 10 Silver Maple and Pisgah Mountain turbines throughout 95.50% of Chemo Pond (Drawing B10, Appendix B). A photo-simulation simulating this night lighting was prepared for Chemo Pond (Drawing B12 in Appendix B).

3.2.3 Hopkins Pond

3.2.3.1 Scenic Impact of Associated Facilities

The visibility of the associated facilities is expected to be low for this location as they would be blocked or largely obscured by vegetation and topography. See the photo simulations prepared for this location (Drawings C11-C12, Appendix C).

3.2.3.2 Significance of the SRSNS

Hopkins Pond is a lake located near the community of Clifton (Drawing C1, Appendix C). Seasonal residential dwellings surround much of the lake, especially on the north and west side of the lake, and there is a public boat launch on the eastern side. In 2002, an easement of the surrounding land was donated for conservation to the Forest Society of Maine⁴. Hopkins Pond has outstanding scenic and shoreline features, as well as a significant recreational fishery⁵. It provides excellent habitat for fishing, including both warm weather fishing and ice fishing. The highly irregular shoreline, complex surrounding terrain, and picturesque islands makes this lake visually attractive. As such the significance of this SRSNS is high.

⁴ The Forest Society of Maine. *Hopkins Pond*. <https://www.fsmaine.org/conserved-lands/hopkins-pond/>

⁵ Maine State Planning Office. *Maine's Finest Lakes: The Results of the Maine Lakes Study*. October 1989. p 46.

3.2.3.3 Existing Character of the Surrounding Area

Hopkins Pond is a lake located near the community of Clifton, straddling Penobscot and Hancock counties. Part of the lake is developed with seasonal residential dwellings on large, treed lots. It is a large lake, with an area of 442 acres, with a boulder-strewn shoreline and several islands⁶. Areas surrounding the lake are forested with mature evergreen and deciduous trees and high dramatic relief, including Eagle Bluff located northwest of the lake. There is evidence of silviculture, especially to the south and east of the lake (see Drawing C1, Appendix C). The lake has views of the lake itself and surrounding forested landscape. Surrounding vegetation and topography would limit the visibility of many of the turbines from viewers on the lake, as exhibited on the photo simulations for this location (Drawings C11-C12, Appendix C).

3.2.3.4 Viewer Expectations

Typical viewers to this site would include year-round and seasonal residents, as well as daily visitors pursuing recreational activities. Visitor numbers would increase during the summer months, when visitors would be taking advantage of fishing and water sports. Typical users would expect views of the lake and surrounding landscape. The visual impact assessment (Section 3.2.3.7) indicates that the turbines would be poorly visible from this location, with only partial visibility of turbine blades and in some cases hubs at the best vantage points, with no visibility in much of the lake. Therefore, the Project would have a low impact on the viewer's experience.

3.2.3.5 Purpose and Context

The location of the Silver Maple Wind Project was determined by its proximity to the Pisgah Mountain Wind project. Silver Maple benefits directly from much of the infrastructure built for Pisgah Mountain, including the roads, collector system, and some interconnection infrastructure. The project also will benefit from Pisgah Mountain's compiled wind data, which has allowed SWEB to more accurately predict the expected wind resource of Silver Maple. Further, the Silver Maple project will benefit from the permitting work done for Pisgah Mountain. Including but not limited to, the acoustic data and modelling used for the Pisgah Mountain, and Pisgah Mountain survey work.

- (1) *Data related to the magnitude and reliability of the wind resource at the proposed development site, and the potential energy output expected from the development, as compared with any alternative sites in Maine investigated by the applicant.*

The particular placement of the five turbines was determined via analysis of the strongest locations on these ridgelines, given the annual average wind directions. Further, the turbine locations consider low interference with the existing five turbines of the Pisgah Mountain wind project.

- (2) *The location of the proposed development in relation to existing transmission lines, roads or other infrastructure.*

⁶ Maine Department of Inland Fisheries & Wildlife. *Lake Survey Maps: Hopkins Pond*. 1999.

As stated above, the project location benefits from existing road infrastructure which was specifically designed for delivery and construction of wind energy equipment. The proximity of power lines and an existing substation further bolster the strength of this ridgeline as a uniquely strong location for the Silver Maple Wind Project.

- (3) *The topography and existing characteristics of the area surrounding the proposed development.*

The wind resource in this area is particularly strong, being located on a high elevation ridgeline in an exposed area.

- (4) *The existence of any other permitted wind energy development in the viewshed of any affected SRSNS.*

The Pisgah Mountain project will be directly adjacent to Silver Maple. The fact that the community and passersby are accustomed to viewing wind turbines at this location is expected to mitigate the marginal impacts of these particular five turbines. As opposed to constructing the project on a bare or undeveloped parcel elsewhere in Penobscot or Hancock County.

- (5) *Evidence of any mitigation proposals, such as improved access to the affected SRSNS, or improvements to the quality of the resource.*

The project has taken into effect its proximity to several of Maine's Finest Lakes will limit its impacts on local SRSNS through use of a radar lighting system.

3.2.3.6 Public Use and Enjoyment

The lake is partially developed with seasonal residences who may be present upwards of several months. Non-resident visitors would be expected to spend upwards of a few hours at the location. Although there may be residents at the location year-round, visitor frequency would increase during the summer months. The primary purpose of the visitors to this location is to observe the natural and wildlife features of the lake, and to partake in recreational activities such as swimming, boating, and fishing. As such, the scenic character of the lake and surrounding lands would be considered a part of the enjoyment of this location. As the viewshed analyses indicates poor or no visibility of the Project throughout the lake (Section 3.2.3.7), the Project is not expected to impact the continued use and enjoyment of this site.

There does not appear to be any tourism-related businesses, recreational clubs, or organizations whose viability is related to this location.

3.2.3.7 Scope and Scale of the Potential Effect

The viewshed analyses indicate that at best (forest screen - hub height) one turbine may be visible from 0.7% of Hopkins Pond, while at worst (bare terrain - total height) up to five turbines

may be visible from 20% of Hopkins Pond (Drawings C3-C6, Appendix C); though this percentage drops drastically to 0.9% at hub height, suggesting that the majority of turbine visible would be the rotors as they pass above the horizon/tree line.

The closest turbine (SM3) would be 4.0 miles from the High Visual Impact Investigation Area selected for Hopkins Pond (Drawing C2, Appendix C). At 4 miles away, these turbines would be considered background views (Drawing C13, Appendix C) and would take up an insignificant portion of the overall view, 16° of a 360° field of view (Drawing C2, Appendix C), resulting in a minimal visual impact.

Table 3.4 provides a summary of the visual impact assessment for the proposed Silver Maple turbines.

Table 3.4. Visual Impact Parameters for Proposed Silver Maple Turbines

View Angle	Nearest Turbine (miles)		Farthest Turbine (miles)	
14°	SM3 - 4.0		SM2 - 4.3	
Viewshed	Bare Terrain - Total Height (185 m)	Bare Terrain - Hub Height (117 m)	Forest Screen - Total Height (185 m)	Forest Screen - Hub Height (117 m)
% of Hopkins Pond where 5 Turbines are Visible	0.04	0.00	0.00	0.00
% of Hopkins Pond where 4 Turbines are Visible	0.32	0.00	0.00	0.00
% of Hopkins Pond where 3 Turbines are Visible	3.42	0.00	3.31	0.00
% of Hopkins Pond where 2 Turbines are Visible	8.37	0.06	8.34	0.00
% of Hopkins Pond where 1 Turbines are Visible	8.09	0.85	8.03	0.66
Total %	20.23	0.90	19.68	0.66

3.2.3.8 Cumulative Scenic Impact or Effect

The cumulative visual impact of the proposed Silver Maple Wind Project with the existing Pisgah Mountain Wind Farm was assessed using the same analyses in Section 3.2.3.7 (Scope and Scale of the Potential Effect).

The viewshed analyses indicate that at best (forest screen - hub height) up to four of the turbines may be visible from 11% of Hopkins Pond, while at worst (bare terrain - total height) up to nine turbines may be visible from 34% of Hopkins Pond (Drawings C7-C10, Appendix C);

though this percentage drops to 11% at hub height with up to four turbines visible, suggesting that the majority of turbine visible would be the rotors as they pass above the horizon/tree line.

The closest turbine to the High Visual Impact Investigation Area selected for Hopkins Pond (Drawing C2, Appendix C) is SM3, at a distance of 4.0 miles. The proposed Silver Maple turbines would extend the view of the existing wind farm to the southeast, widening the potential angle of view to 16°; however, based on the photo-simulation (Drawing C11, Appendix C), the hubs and rotors of most of the proposed and existing turbines would not be visible from the Investigation Area as the turbines are obscured by the topography and treeline of the area. It is anticipated that the hubs and rotors of two of the proposed turbines, as well as the rotors of some of the existing turbines will be visible along a narrow section of skyline where the topography naturally lowers, resulting in a minimal visual impact.

Table 3.5 provides a summary of the cumulative visual impact assessment for the proposed Silver Maple and existing Pisgah Mountain turbines.

Table 3.5. Cumulative Visual Impact Parameters for Proposed Silver Maple Turbines and Existing Pisgah Mountain Turbines

View Angle	Nearest Turbine (miles)		Farthest Turbine (miles)	
16°	SM3 - 4.0		PM1 - 4.5	
Viewshed	Bare Terrain - Total Height (185 m)	Bare Terrain - Hub Height (117 m)	Forest Screen - Total Height (185 m)	Forest Screen - Hub Height (117 m)
% of Hopkins Pond where 10 Turbines are Visible	0.00	0.00	0.00	0.00
% of Hopkins Pond where 9 Turbines are Visible	0.04	0.00	0.00	0.00
% of Hopkins Pond where 8 Turbines are Visible	0.04	0.00	1.85	0.00
% of Hopkins Pond where 7 Turbines are Visible	2.93	0.00	2.80	0.00
% of Hopkins Pond where 6 Turbines are Visible	2.43	0.00	2.44	0.00
% of Hopkins Pond where 5 Turbines are Visible	6.36	0.00	6.25	0.00
% of Hopkins Pond where 4 Turbines are Visible	3.44	0.59	3.35	0.59

% of Hopkins Pond where 3 Turbines are Visible	4.36	1.46	4.29	1.42
% of Hopkins Pond where 2 Turbines are Visible	6.18	2.81	6.14	2.68
% of Hopkins Pond where 1 Turbines are Visible	8.17	6.34	8.11	6.23
Total %	33.96	11.20	35.24	10.92

For the nighttime lighting to be visible, the hub of the turbine would need to be from the observer’s location visible and not blocked by vegetation. The forest screen – hub height (117m) viewshed model is the best proxy for this. This model indicates that the night lighting may be visible from 1-4 turbines (cumulatively including all Silver Maple and Pisgah Mountain turbines) throughout only 10.92% of Hopkins Pond (Drawing C10, Appendix C). A photo-simulation simulating this night lighting was prepared for Chemo Pond (Drawing C12 in Appendix C).

3.2.4 Mountainy Pond

3.2.4.1 Scenic Impact of Associated Facilities

The visibility of the associated facilities is expected to be low for this location as they would be blocked or largely obscured by vegetation and topography. See the viewshed analysis drawings prepared for this location (Drawings D2-D6, Appendix D).

3.2.4.2 Significance of the SRSNS

Mountainy Pond, located in Dedham, Hancock County (Drawing D1, Appendix D), is a lake with outstanding scenic and shoreline features, and significant fishery features⁷. Listed in the Maine’s Finest Lakes Study, it is an undeveloped lake with a shoreline that is 80% forested and 20% bouldered and high dramatic relief. Forested areas include both conifers (white pine, spruce/fir) and deciduous trees (oak, maple). There is a narrow beach at the north end of the pond, a small spit beach on the south arm, and several islands scattered about the pond. Apart from its scenic aspects, it has highly rated upland habitat and a fishery for smallmouth bass, white and yellow perch, pickerel, landlocked salmon, smelt and brook trout⁸. Due to its outstanding scenic rating, the significance of this SRSNS is high.

3.2.4.3 Existing Character of the Surrounding Area

Mountainy Pond is a largely undeveloped lake located in Hancock County, with only one paved access point through Fire Road 100 at the northern end of the lake. There are several privately owned cabins around the lake with some docks on the lake. Much of the land around

⁷ Maine State Planning Office. *Maine’s Finest Lakes: The Results of the Maine Lakes Study*. October 1989. p 55.

⁸ Fishing Northeast. *Hancock County – Maine Lakes and Ponds*. Retrieved from <https://www.fishingnortheast.net/hancock-county-maine-lakes-ponds-a-m/>

the lake is owned by The Mountainy Pond Club⁹. Recently, the Brewer Water District signed a conservation easement with The Mountainy Pond Club to protect 514-acres of land on the pond as it is part of the watershed for Hatcase Pond, the city's drinking water supply¹⁰. Although the shoreline vegetation is undisturbed, there is extensive evidence of silviculture in the surrounding areas, particularly to the south and east (Drawing D1, Appendix D). There is a network of unpaved logging roads throughout the watershed.

3.2.4.4 Viewer Expectations

Typical viewers to this site would include cottage owners and daily visitors pursuing recreational activities such as fishing, boating, and swimming. Visitors would be present primarily during the spring, summer, and fall, although some visitor may use the area year-round. This lake is largely undeveloped, and visitors to the site would expect outstanding scenic views of the lake and surrounding landscape. The visual impact assessment (Section 3.2.4.7) indicates that there would be low or no visibility of the turbines throughout the lake. Therefore, the impact of the Project on the viewer's experience is expected to be low.

3.2.4.5 Purpose and Context

The location of the Silver Maple Wind Project was determined by its proximity to the Pisgah Mountain Wind project. Silver Maple benefits directly from much of the infrastructure built for Pisgah Mountain, including the roads, collector system, and some interconnection infrastructure. The project also will benefit from Pisgah Mountain's compiled wind data, which has allowed SWEB to more accurately predict the expected wind resource of Silver Maple. Further, the Silver Maple project will benefit from the permitting work done for Pisgah Mountain. Including but not limited to, the acoustic data and modelling used for the Pisgah Mountain, and Pisgah Mountain survey work.

- (1) *Data related to the magnitude and reliability of the wind resource at the proposed development site, and the potential energy output expected from the development, as compared with any alternative sites in Maine investigated by the applicant.*

The particular placement of the five turbines was determined via analysis of the strongest locations on these ridgelines, given the annual average wind directions. Further, the turbine locations consider low interference with the existing five turbines of the Pisgah Mountain wind project.

- (2) *The location of the proposed development in relation to existing transmission lines, roads or other infrastructure.*

As stated above, the project location benefits from existing road infrastructure which was specifically designed for delivery and construction of wind energy equipment. The proximity of power lines and an existing substation further bolster

⁹ Mr. Lakefront. *Mountainy Pond, Dedham, Maine: Among Most Pristine Lakefront Property in Downeast Maine*. December 26, 2013. Mr. Lakefront Blog. <https://blog.mrlakefront.net/mountainy-pond-dedham-maine-among-most-pristine-lakefront-property-in-downeast-maine/>

¹⁰ Nok-Noi Ricker. *Easement to protect Brewer's water source*. Bangor Daily News. May 17, 2010.

the strength of this ridgeline as a uniquely strong location for the Silver Maple Wind Project.

- (3) *The topography and existing characteristics of the area surrounding the proposed development.*

The wind resource in this area is particularly strong, being located on a high elevation ridgeline in an exposed area.

- (4) *The existence of any other permitted wind energy development in the viewshed of any affected SRSNS.*

The Pisgah Mountain project will be directly adjacent to Silver Maple. The fact that the community and passersby are accustomed to viewing wind turbines at this location is expected to mitigate the marginal impacts of these particular five turbines. As opposed to constructing the project on a bare or undeveloped parcel elsewhere in Penobscot or Hancock County.

- (5) *Evidence of any mitigation proposals, such as improved access to the affected SRSNS, or improvements to the quality of the resource.*

The project has taken into effect its proximity to several of Maine's Finest Lakes will limit its impacts on local SRSNS through use of a radar lighting system.

3.2.4.6 Public Use and Enjoyment

Mountainy Pond is a largely undeveloped lake, and thus the number of visitors to this location would be low. There are some cottages located around the lake and there is a boat access at the northern end of the lake. Visitors would be expected to come to the lake primarily during the spring, summer, and fall and would stay for a few hours to several weeks. The primary purpose of their visit would be to visit cottages and partake in recreational activities such as fishing boating and swimming, while enjoying a natural, undeveloped area with impressive shoreline and scenic features. As such, the scenic character of the location would be considered an important part of the enjoyment of the lake. The viewshed analyses indicates poor or no visibility of the Project throughout much of the lake (Section 3.2.4.7) and the Project is not expected to impact the continued use and enjoyment of this site.

Much of the land surrounding Mountainy Pond is protected under a conservation easement purchased by the city of Brewer from the Mountainy Pond Club, which a large portion of the land surrounding the lake.

3.2.4.7 Scope and Scale of the Potential Effect

The viewshed analyses indicate that at best (forest screen - hub height) one turbine may be visible from 2% of Mountainy Pond, while at worst (bare terrain - total height) up to five turbines may be visible from 13% of Mountainy Pond (Drawings D3-D6, Appendix D); though this

percentage drops to 2% at hub height with one turbine visible, suggesting that the majority of turbine visible would be the rotors as they pass above the horizon/tree line.

The closest turbine (SM1) would be 3.5 miles from the High Visual Impact Investigation Area selected for Mountainy Pond (Drawing D2, Appendix D). At almost 4 miles away, these turbines would be considered background views (Drawing D13, Appendix D) and would take up an insignificant portion of the overall view, 6° of a 360° field of view (Drawing D2, Appendix D), resulting in a minimal visual impact.

Table 3.6 provides a summary of the visual impact assessment for the proposed Silver Maple turbines.

Table 3.6. Visual Impact Parameters for Proposed Silver Maple Turbines

View Angle	Nearest Turbine (miles)		Farthest Turbine (miles)	
6°	SM1 – 3.5		SM5 - 4.4	
Viewshed	Bare Terrain - Total Height (185 m)	Bare Terrain - Hub Height (117 m)	Forest Screen - Total Height (185 m)	Forest Screen - Hub Height (117 m)
% of Mountainy Pond where 5 Turbines are Visible	0.05	0.00	0.00	0.00
% of Mountainy Pond where 4 Turbines are Visible	0.25	0.00	0.25	0.00
% of Mountainy Pond where 3 Turbines are Visible	1.45	0.00	1.42	0.00
% of Mountainy Pond where 2 Turbines are Visible	4.51	0.00	4.43	0.00
% of Mountainy Pond where 1 Turbines are Visible	6.79	1.57	6.61	1.50
Total %	13.05	1.57	12.71	1.50

3.2.4.8 Cumulative Scenic Impact or Effect

The cumulative visual impact of the proposed Silver Maple Wind Project with the existing Pisgah Mountain Wind Farm was assessed using the same analyses in Section 3.2.4.7 (Scope and Scale of the Potential Effect).

The viewshed analyses indicate that at best (forest screen - hub height) up to three of the turbines may be visible from 7% of Mountainy Pond, while at worst (bare terrain - total height) up to nine turbines may be visible from 21% of Mountainy Pond (Drawings D7-D10, Appendix D); though this percentage drops to 7% at hub height with up to three turbines visible,

suggesting that the majority of turbine visible would be the rotors as they pass above the horizon/tree line.

The closest turbine to the High Visual Impact Investigation Area selected for Mountainy Pond (Drawing D2, Appendix D) is SM1, at a distance of 3.5 miles. The proposed Silver Maple turbines would extend the view of the existing wind farm to the northwest, widening the potential angle of view to 12°, resulting in minimal visual impact.

Table 3.7 provides a summary of the cumulative visual impact assessment for the proposed Silver Maple and existing Pisgah Mountain turbines.

Table 3.7. Cumulative Visual Impact Parameters for Proposed Silver Maple Turbines and Existing Pisgah Mountain Turbines

View Angle	Nearest Turbine (miles)		Farthest Turbine (miles)	
12°	SM1 – 3.5		PM2- 4.4	
Viewshed	Bare Terrain - Total Height (185 m)	Bare Terrain - Hub Height (117 m)	Forest Screen - Total Height (185 m)	Forest Screen - Hub Height (117 m)
% of Mountainy Pond where 10 Turbines are Visible	0.12	0.00	0.11	0.00
% of Mountainy Pond where 9 Turbines are Visible	0.34	0.00	0.33	0.00
% of Mountainy Pond where 8 Turbines are Visible	0.04	0.00	1.46	0.00
% of Mountainy Pond where 7 Turbines are Visible	0.96	0.00	0.96	0.00
% of Mountainy Pond where 6 Turbines are Visible	0.98	0.00	0.98	0.00
% of Mountainy Pond where 5 Turbines are Visible	0.74	0.00	0.74	0.00
% of Mountainy Pond where 4 Turbines are Visible	3.01	0.00	2.99	0.00
% of Mountainy Pond where 3 Turbines are Visible	3.02	0.08	2.99	0.07

% of Mountainy Pond where 2 Turbines are Visible	3.90	1.35	3.74	1.29
% of Mountainy Pond where 1 Turbines are Visible	7.89	5.51	7.77	5.50
Total %	21.00	6.94	22.06	6.87

For the nighttime lighting to be visible, the hub of the turbine would need to be from the observer’s location visible and not blocked by vegetation. The forest screen – hub height (117m) viewshed model is the best proxy for this. This model indicates that the night lighting may be visible from 1-3 turbines (cumulatively including all Silver Maple and Pisgah Mountain turbines) throughout only 6.87% of Mountainy Pond (Drawing D10, Appendix D).

3.2.5 Parks Pond

3.2.5.1 Scenic Impact of Associated Facilities

The visibility of the associated facilities is expected to be low for this location as they would be blocked by vegetation and topography. See the photo simulations prepared for this location (Drawings E11-E12, Appendix E).

3.2.5.2 Significance of the SRSNS

Parks Pond, located in Clifton, Penobscot County, is a lake with scenic and fishery resources¹¹. The lake is 124 acres with a maximum depth of 28 ft¹². It has a warmwater fishery for Smallmouth bass, White perch, Yellow Perch, Brown trout and Chain Pickerel. It is relatively developed with cottages and a campground, especially to the northwest where it abuts Route 9. As such, the significance of this SRSNS is moderate to high.

3.2.5.3 Existing Character of the Surrounding Area

Parks Pond is located directly south of Route 9 in the rural community of Clifton. Its northern and western shoreline is moderately developed with a campground located along the northern shore. Privately owned residences line the shorelines along its north, western, and eastern edge. Directly north of Route 9 is a nine-hole golf course. Its south eastern edge remains relatively undeveloped, but there appears to be evidence of clearing/silviculture (see Drawing E1, Appendix E). The surrounding areas consist primarily of mixedwood mature forests with some evidence of silviculture to the east and south. Parks Pond Bluff, an escarpment and hiking trail is located to the east. Parks Pond itself is a shallow lake, with a primarily forested shoreline with some bouldered areas. Mature coniferous and deciduous vegetation would block most visibility of the Project from observers visiting the lake (see Drawing E2 and Drawings E11-E12, Appendix E).

¹¹ Maine State Planning Office. *Maine’s Finest Lakes: The Results of the Maine Lakes Study*. October 1989. Appendix D - Summary of Findings for the Lakes in Maine’s Organized Townships.

¹² Maine Department of Inland Fisheries & Wildlife. *Lake Survey Maps: Parks Pond*. 1999.

3.2.5.4 Viewer Expectations

Typical viewers to this site would include year-round and seasonal residents, as well as daily visitors. Visitor numbers would increase during the summer months, when visitors would be taking advantage of fishing and water sports. Typical users would be expected to observe the natural and wildlife features of the lake, and to partake in recreational activities such as camping, swimming, boating, and fishing. The visual impact assessment (Section 3.2.5.7) indicates that the turbines would be poorly visible from this location. Therefore, the Project would have a low impact on the viewer's experience.

3.2.5.5 Purpose and Context

The location of the Silver Maple Wind Project was determined by its proximity to the Pisgah Mountain Wind project. Silver Maple benefits directly from much of the infrastructure built for Pisgah Mountain, including the roads, collector system, and some interconnection infrastructure. The project also will benefit from Pisgah Mountain's compiled wind data, which has allowed SWEB to more accurately predict the expected wind resource of Silver Maple. Further, the Silver Maple project will benefit from the permitting work done for Pisgah Mountain. Including but not limited to, the acoustic data and modelling used for the Pisgah Mountain, and Pisgah Mountain survey work.

- (1) *Data related to the magnitude and reliability of the wind resource at the proposed development site, and the potential energy output expected from the development, as compared with any alternative sites in Maine investigated by the applicant.*

The particular placement of the five turbines was determined via analysis of the strongest locations on these ridgelines, given the annual average wind directions. Further, the turbine locations consider low interference with the existing five turbines of the Pisgah Mountain wind project.

- (2) *The location of the proposed development in relation to existing transmission lines, roads or other infrastructure.*

As stated above, the project location benefits from existing road infrastructure which was specifically designed for delivery and construction of wind energy equipment. The proximity of power lines and an existing substation further bolster the strength of this ridgeline as a uniquely strong location for the Silver Maple Wind Project.

- (3) *The topography and existing characteristics of the area surrounding the proposed development.*

The wind resource in this area is particularly strong, being located on a high elevation ridgeline in an exposed area.

- (4) *The existence of any other permitted wind energy development in the viewshed of any affected SRSNS.*

The Pisgah Mountain project will be directly adjacent to Silver Maple. The fact that the community and passersby are accustomed to viewing wind turbines at this location is expected to mitigate the marginal impacts of these particular five turbines. As opposed to constructing the project on a bare or undeveloped parcel elsewhere in Penobscot or Hancock County.

- (5) *Evidence of any mitigation proposals, such as improved access to the affected SRSNS, or improvements to the quality of the resource.*

The project has taken into effect its proximity to several of Maine's Finest Lakes will limit its impacts on local SRSNS through use of a radar lighting system.

3.2.5.6 Public Use and Enjoyment

Parks Pond is moderately developed with permanent and seasonal residents who would be present year-round or upwards of months. Non-resident visitors would be expected to visit the site for a few hours to a few days. The primary purpose of visitors to this location is to observe the natural and wildlife features of the lake, and to partake in recreational activities such as camping, swimming, boating, and fishing. As such, the scenic character of the lake would be considered a part of the enjoyment of this location. However, as the viewshed analysis indicates poor visibility of the Project from the lake (Section 3.2.5.7), the Project is not expected to impact the continued use and enjoyment of this site.

There is one tourism-related business related to the public use of Parks Pond. Parks Pond Campground is a primarily seasonal campground located on the northern end of the lake.

3.2.5.7 Scope and Scale of the Potential Effect

The viewshed analyses indicate that at best (forest screen - hub height) no turbines may be visible from Parks Pond, while at worst (bare terrain - total height) up to five turbines may be visible from 9% of Hopkins Pond (Drawings E3-E6, Appendix E); though this percentage drops drastically to 0.01% at hub height, suggesting that the majority of turbine visible would be the rotors as they pass above the horizon/tree line.

The closest turbine (SM5) would be 2.8 miles from the High Visual Impact Investigation Area selected for Parks Pond (Drawing E2, Appendix E). At approximately 3 miles away, these turbines might be considered more conspicuous than background views if it were not for the stand of trees obscuring their view (Drawing E11, Appendix E). These turbines would also take up an insignificant portion of the overall view, 9° of a 360° field of view (Drawing E2, Appendix E), resulting in a minimal visual impact if the turbines were visible.

Table 3.8 provides a summary of the visual impact assessment for the proposed Silver Maple turbines.

Table 3.8. Visual Impact Parameters for Proposed Silver Maple Turbines

View Angle	Nearest Turbine (miles)		Farthest Turbine (miles)	
9°	SM5 – 2.8		SM1 – 3.7	
Viewshed	Bare Terrain - Total Height (185 m)	Bare Terrain - Hub Height (117 m)	Forest Screen - Total Height (185 m)	Forest Screen - Hub Height (117 m)
% of Parks Pond where 5 Turbines are Visible	0.01	0.00	0.00	0.00
% of Parks Pond where 4 Turbines are Visible	1.99	0.00	1.09	0.00
% of Parks Pond where 3 Turbines are Visible	1.74	0.00	0.90	0.00
% of Parks Pond where 2 Turbines are Visible	2.16	0.00	2.02	0.00
% of Parks Pond where 1 Turbines are Visible	2.92	0.01	2.86	0.00
Total %	8.82	0.01	6.87	0.00

3.2.5.8 Cumulative Scenic Impact or Effect

The cumulative visual impact of the proposed Silver Maple Wind Project with the existing Pisgah Mountain Wind Farm was assessed using the same analyses in Section 3.2.5.7 (Scope and Scale of the Potential Effect).

The viewshed analyses indicate that at best (forest screen - hub height) up to five of the turbines may be visible from 7% of Parks Pond, while at worst (bare terrain - total height) up to nine turbines may be visible from 40% of Parks Pond (Drawings E7-E10, Appendix E); though this percentage drops drastically to 7% at hub height with up to four turbines visible, suggesting that the majority of turbine visible would be the rotors as they pass above the horizon/tree line.

The closest turbine to the High Visual Impact Investigation Area selected for Parks Pond (Drawing E2, Appendix E) is SM5, at a distance of 2.8 miles. The proposed Silver Maple turbines would extend the view of the existing wind farm to the east, widening the potential angle of view to 17°; however, based on the photo-simulation (Drawing E11, Appendix E), all the turbines would be obscured by a stand of trees along the shore of Parks Pond. As a result, the Silver Maple Wind Farm would have a very minimal visual impact.

Table 3.9 provides a summary of the cumulative visual impact assessment for the proposed Silver Maple and existing Pisgah Mountain turbines.

Table 3.9. Cumulative Visual Impact Parameters for Proposed Silver Maple Turbines and Existing Pisgah Mountain Turbines

View Angle	Nearest Turbine (miles)		Farthest Turbine (miles)	
17°	SM5 – 2.8		SM1- 3.7	
Viewshed	Bare Terrain - Total Height (185 m)	Bare Terrain - Hub Height (117 m)	Forest Screen - Total Height (185 m)	Forest Screen - Hub Height (117 m)
% of Parks Pond where 10 Turbines are Visible	0.00	0.00	0.00	0.00
% of Parks Pond where 9 Turbines are Visible	1.93	0.00	1.69	0.00
% of Parks Pond where 8 Turbines are Visible	0.04	0.00	3.07	0.00
% of Parks Pond where 7 Turbines are Visible	5.55	0.00	4.97	0.00
% of Parks Pond where 6 Turbines are Visible	4.61	0.00	4.00	0.00
% of Parks Pond where 5 Turbines are Visible	8.69	0.00	8.38	0.01
% of Parks Pond where 4 Turbines are Visible	3.61	1.07	3.61	0.94
% of Parks Pond where 3 Turbines are Visible	6.46	1.92	6.44	1.80
% of Parks Pond where 2 Turbines are Visible	3.65	1.93	3.60	1.77
% of Parks Pond where 1 Turbines are Visible	5.08	2.48	4.97	2.48
Total %	39.64	7.39	40.73	7.00

For the nighttime lighting to be visible, the hub of the turbine would need to be from the observer's location visible and not blocked by vegetation. The forest screen – hub height (117m) viewshed model is the best proxy for this. This model indicates that the night lighting may be visible from 1-3 turbines (cumulatively including all Silver Maple and Pisgah Mountain turbines) throughout only 6.87% of Mountainy Pond (Drawing D10, Appendix D).

3.2.6 Upper Union River Focus Area

3.2.6.1 Scenic impact of associated facilities

The visibility of the associated facilities is expected to be low for this location as they quite distant and would be blocked by vegetation and topography (see Drawings F2-F3, Appendix F).

3.2.6.2 Significance of the SRSNS

The Upper Union River Focus Area is a focus area of statewide ecological significance¹³. The undammed and largely unimpaired waters of the West Branch of the Union River support habitat for several rare animal species that depend on clean and free flowing waters, including the Brook floater mussel, Wood turtles, Ribbon snake, and Atlantic salmon. Although the river has scenic significance, the focus area designation is due to its ecological attributes providing clean free-flowing waters to support healthy populations of various aquatic and terrestrial species, as well as providing opportunities for hiking, wildlife observation, paddling, hunting, and angling. Although scenic values are not necessary for many of its ecological attributes, it may be a draw for tourists pursuing recreational activities in the area. As such the significance of this SRSNS is moderate.

3.2.6.3 Existing Character of the Surrounding Area

The Upper Union River Focus Area encompasses the West Branch of the Union River, beginning at Great Pond and extending downstream approximately 13 miles to Graham Lake. It passes through the towns of Great Pond, Aurora, Amherst, Mariaville, and Waltham, all in Hancock County. There is minimal development along the Union River, with some residential properties, small properties, and roads only encroaching upon the shoreline of the river in a few spots. In the upper reach of the river, towards Great Pond, there is extensive blueberry cultivation on the Silsby Plain. The majority of the riparian habitat consists of mature mixedwood forests. There is evidence of silviculture along the length of the river, particularly in its upper half. The River is crossed three times by roads, once by River Road, north of the town of Amherst, once by Route 9 near the town of Amherst and once by Route 181 further downstream.

3.2.6.4 Viewer Expectations

Typical viewers to this site would include local and visiting hikers, outdoorsmen, and naturalists. The purpose of their visit would be to fish and boat in the river, and hike along its shoreline to observe its unique ecological habitat. Visitors would be more numerous during the spring, summer, and fall when they would be expected to stay for one to several hours. Typical viewers would expect views of excellent river habitat with clear water and varied river features with a natural riparian habitat. The viewshed analyses indicate that the visibility of the Project from this location would be low (Section 3.2.6.7) and therefore have little impact on the viewer's experience.

3.2.6.5 Purpose and Context

The location of the Silver Maple Wind Project was determined by its proximity to the Pisgah Mountain Wind project. Silver Maple benefits directly from much of the infrastructure built for Pisgah Mountain, including the roads, collector system, and some interconnection infrastructure. The project also will benefit from Pisgah Mountain's compiled wind data, which has allowed SWEB to more accurately predict the expected wind resource of Silver Maple. Further, the Silver Maple project will benefit from the permitting work done for Pisgah

¹³ Beginning with Habitat. *Focus Areas of Statewide Ecological Significance: Upper Union River.*
https://www.maine.gov/dacf/mnap/focusarea/upper_union_river_focus_area.pdf

Mountain. Including but not limited to, the acoustic data and modelling used for the Pisgah Mountain, and Pisgah Mountain survey work.

- (1) *Data related to the magnitude and reliability of the wind resource at the proposed development site, and the potential energy output expected from the development, as compared with any alternative sites in Maine investigated by the applicant.*

The particular placement of the five turbines was determined via analysis of the strongest locations on these ridgelines, given the annual average wind directions. Further, the turbine locations consider low interference with the existing five turbines of the Pisgah Mountain wind project.

- (2) *The location of the proposed development in relation to existing transmission lines, roads or other infrastructure.*

As stated above, the project location benefits from existing road infrastructure which was specifically designed for delivery and construction of wind energy equipment. The proximity of power lines and an existing substation further bolster the strength of this ridgeline as a uniquely strong location for the Silver Maple Wind Project.

- (3) *The topography and existing characteristics of the area surrounding the proposed development.*

The wind resource in this area is particularly strong, being located on a high elevation ridgeline in an exposed area.

- (4) *The existence of any other permitted wind energy development in the viewshed of any affected SRSNS.*

The Pisgah Mountain project will be directly adjacent to Silver Maple. The fact that the community and passersby are accustomed to viewing wind turbines at this location is expected to mitigate the marginal impacts of these particular five turbines. As opposed to constructing the project on a bare or undeveloped parcel elsewhere in Penobscot or Hancock County.

- (5) *Evidence of any mitigation proposals, such as improved access to the affected SRSNS, or improvements to the quality of the resource.*

The project has taken into effect its proximity to several of Maine's Finest Lakes will limit its impacts on local SRSNS through use of a radar lighting system.

3.2.6.6 Public Use and Enjoyment

Visitors to the Upper Union River Focus Area would fluctuate seasonally, concentrating during the spring, summer, and fall, when they would visit to fish and boat in the river, and hike along its shoreline to observe its unique ecological habitat. Although this location is significant for its ecological habitat, visitors would also expect excellent views of clear-flowing river habitat and surrounding riparian habitat. The Project is expected to have minimal visibility from this location (Section 3.2.6.7) and would not impact the river-focused scenic views. Therefore, the Project is not expected to have an impact on the continued use and enjoyment of this site.

There does not appear to be any tourism-related businesses, recreational clubs, or organizations whose viability is directly related to this location.

3.2.6.7 Scope and Scale of the Potential Effect

The viewshed analyses indicate that at best (forest screen - hub height) no turbines may be visible from the Upper Union River Focus Area, while at worst (bare terrain - total height) up to five turbines may be visible from 20% of the Upper Union River Focus Area (Drawings F3-F6, Appendix F); though this percentage drops to 12% at hub height, suggesting that the majority of turbine visible would be the rotors as they pass above the horizon/tree line.

The closest turbine (SM3) would be 6.1 miles from the High Visual Impact Investigation Area selected for the Upper Union River Focus Area (Drawing F2, Appendix F). At approximately 6 miles away, these turbines would be considered background views (Drawing F13, Appendix F) and would take up an insignificant portion of the overall view, 10° of a 360° field of view (Drawing F2, Appendix F), resulting in a minimal visual impact.

Table 3.10 provides a summary of the visual impact assessment for the proposed Silver Maple turbines.

Table 3.10. Visual Impact Parameters for Proposed Silver Maple Turbines

View Angle	Nearest Turbine (miles)		Farthest Turbine (miles)	
	Bare Terrain - Total Height (185 m)	Bare Terrain - Hub Height (117 m)	Forest Screen - Total Height (185 m)	Forest Screen - Hub Height (117 m)
10°	SM3 - 6.1		SM2 - 6.7	
% of Upper Union River Focus Area where 5 Turbines are Visible	4.64	0.57	0.00	0.00
% of Upper Union River Focus Area where 4 Turbines are Visible	5.31	0.99	0.00	0.00
% of Upper Union River Focus Area where 3 Turbines are Visible	3.82	1.98	0.00	0.00

% of Upper Union River Focus Area where 2 Turbines are Visible	2.69	1.70	0.00	0.00
% of Upper Union River Focus Area where 1 Turbines are Visible	3.99	6.30	0.03	0.00
Total %	20.45	11.54	0.03	0.00

3.2.6.8 Cumulative Scenic Impact or Effect

The cumulative visual impact of the proposed Silver Maple Wind Project with the existing Pisgah Mountain Wind Farm was assessed using the same analyses in Section 3.2.6.7 (Scope and Scale of the Potential Effect).

The viewshed analyses indicate that at best (forest screen - hub height) up to five of the turbines may be visible from 0.3% of the Upper Union River Focus Area, while at worst (bare terrain - total height) up to 10 turbines may be visible from 21% of the Upper Union River Focus Area (Drawings F7-F10, Appendix F); though this percentage drops to 13% at hub height, suggesting that some of the visible turbines would be just the rotors as they pass above the horizon/tree line.

The closest turbine to the High Visual Impact Investigation Area selected for the Upper Union River Focus Area (Drawing F2, Appendix F) is SM3, at a distance of 6.1 miles. The proposed Silver Maple turbines would extend the view of the existing wind farm to the south, widening the potential angle of view to 11°.

Table 3.11 provides a summary of the cumulative visual impact assessment for the proposed Silver Maple and existing Pisgah Mountain turbines.

Table 3.11. Cumulative Visual Impact Parameters for Proposed Silver Maple Turbines and Existing Pisgah Mountain Turbines

View Angle	Nearest Turbine (miles)		Farthest Turbine (miles)	
	SM3 - 6.1		PM1 - 6.8	
Viewshed	Bare Terrain - Total Height (185 m)	Bare Terrain - Hub Height (117 m)	Forest Screen - Total Height (185 m)	Forest Screen - Hub Height (117 m)
11°				
% of Upper Union River Focus Area where 10 Turbines are Visible	1.80	0.21	0.00	0.00
% of Upper Union River Focus Area where 9 Turbines are Visible	0.68	0.22	0.01	0.00
% of Upper Union River Focus Area where 8 Turbines are Visible	0.04	0.47	0.00	0.00

% of Upper Union River Focus Area where 7 Turbines are Visible	2.00	0.55	0.00	0.00
% of Upper Union River Focus Area where 6 Turbines are Visible	2.46	0.48	0.01	0.00
% of Upper Union River Focus Area where 5 Turbines are Visible	1.90	0.49	0.01	0.01
% of Upper Union River Focus Area where 4 Turbines are Visible	2.55	0.84	0.12	0.01
% of Upper Union River Focus Area where 3 Turbines are Visible	3.37	2.22	0.48	0.01
% of Upper Union River Focus Area where 2 Turbines are Visible	2.26	1.97	0.31	0.01
% of Upper Union River Focus Area where 1 Turbines are Visible	4.05	5.26	0.44	0.23
Total %	21.09	12.72	1.39	0.25

For the nighttime lighting to be visible, the hub of the turbine would need to be from the observer's location visible and not blocked by vegetation. The forest screen – hub height (117m) viewshed model is the best proxy for this. This model indicates that the night lighting may be visible from 1-5 turbines (cumulatively including all Silver Maple and Pisgah Mountain turbines) throughout only 0.25% of the Upper Union River Focus Area, owing to the ubiquity of forest cover through this area (Drawing F10, Appendix F).

3.2.7 Bald Bluff Mountain Focus Area

3.2.7.1 Scenic Impact of Associated Facilities

The visibility of the associated facilities is expected to be low for this location as they are quite distant and would be blocked by vegetation and topography (see Drawings G2-G3, Appendix G).

3.2.7.2 Significance of the SRSNS

The Bald Bluff Mountains is a focus area of statewide ecological significance¹⁴. It is part of the Amherst Mountain Community Forest and is state-owned but managed jointly by the Town of Amherst and the Maine Department of Agriculture, Conservation, and Forestry. The area supports numerous ecological communities in good condition, including one of the largest

¹⁴ Beginning with Habitat. *Focus Areas of Statewide Ecological Significance: Upper Union River.*
https://www.maine.gov/dacf/mnap/focusarea/bald_bluff_mountain_focus_area.pdf

naturally occurring Red Pine woodlands in the state and spruce-fir broom-moss forest with little disturbance. The area provides numerous ecological services, such as carbon sequestration, soil stabilizations and support for regional biodiversity, as well as economic contributions, such as providing scenic views and recreational resources. As such the significance of this SRSNS is high.

3.2.7.3 Existing Character of the Surrounding Area

The Bald Bluff Mountain Focus Area is an approximately 60-acre red pine woodland atop the rocky summit of Bald Mountain extends northward along a narrow ridge¹⁴. Located in Amherst, it is easily accessible from Bangor, Brewer, and Ellsworth, and has a marked hiking trail to the top of the mountain¹⁵. Stunted red pine is dominant with scattered eastern white pine trees and saplings. Tree cover is scattered and sparse. Lower slopes of Bald Mountain support hardwood forests and the northern summit harbours an approximately 80-acre Spruce-Fir Broom-Moss Forest in good condition. The areas surrounding the focus area consists of mixedwood forests with evidence of silviculture (see Drawing G1, Appendix G).

3.2.7.4 Viewer Expectations

Typical viewers to Bal Bluff Mountain Focus Area site would include local and visiting hikers and naturalists. The purpose of their visit would be to enjoy the views and scenery, and to observe unique ecological communities. Visitor frequency would be concentrated during the spring, summer, and fall, where they would be expected to stay for one to several hours. Typical viewers would expect views of the landscape and scenery. The Project is expected to have minimal visual impact (Section 3.2.7.7) and would therefore have little impact on the viewer's experience of the location.

3.2.7.5 Purpose and Context

The location of the Silver Maple Wind Project was determined by its proximity to the Pisgah Mountain Wind project. Silver Maple benefits directly from much of the infrastructure built for Pisgah Mountain, including the roads, collector system, and some interconnection infrastructure. The project also will benefit from Pisgah Mountain's compiled wind data, which has allowed SWEB to more accurately predict the expected wind resource of Silver Maple. Further, the Silver Maple project will benefit from the permitting work done for Pisgah Mountain. Including but not limited to, the acoustic data and modelling used for the Pisgah Mountain, and Pisgah Mountain survey work.

- (1) *Data related to the magnitude and reliability of the wind resource at the proposed development site, and the potential energy output expected from the development, as compared with any alternative sites in Maine investigated by the applicant.*

The particular placement of the five turbines was determined via analysis of the strongest locations on these ridgelines, given the annual average wind directions.

¹⁵ Maine Trail Finder. *Amherst Mountains Community Forest – Bald Bluff*. Retrieved from <https://www.mainetrailfinder.com/trails/trail/amherst-mountains-community-forest-bald-bluff>

Further, the turbine locations consider low interference with the existing five turbines of the Pisgah Mountain wind project.

- (2) *The location of the proposed development in relation to existing transmission lines, roads or other infrastructure.*

As stated above, the project location benefits from existing road infrastructure which was specifically designed for delivery and construction of wind energy equipment. The proximity of power lines and an existing substation further bolster the strength of this ridgeline as a uniquely strong location for the Silver Maple Wind Project.

- (3) *The topography and existing characteristics of the area surrounding the proposed development.*

The wind resource in this area is particularly strong, being located on a high elevation ridgeline in an exposed area.

- (4) *The existence of any other permitted wind energy development in the viewshed of any affected SRSNS.*

The Pisgah Mountain project will be directly adjacent to Silver Maple. The fact that the community and passersby are accustomed to viewing wind turbines at this location is expected to mitigate the marginal impacts of these particular five turbines. As opposed to constructing the project on a bare or undeveloped parcel elsewhere in Penobscot or Hancock County.

- (5) *Evidence of any mitigation proposals, such as improved access to the affected SRSNS, or improvements to the quality of the resource.*

The project has taken into effect its proximity to several of Maine's Finest Lakes will limit its impacts on local SRSNS through use of a radar lighting system.

3.2.7.6 Public Use and Enjoyment

Visitor numbers to the Bald Bluff Mountain Focus Area is low at any one point, as the parking lot can accommodate approximately 6 vehicles, and would be highest during the spring, summer and fall. Visitors would hike the mountain for the purpose of enjoying the views and scenery, and to observe ecological communities in good condition. As such, the scenic character of the surrounding lands would be considered an important part of the enjoyment of this location. However, as the Project is expected to have minimal visual impact on the site (Section 3.2.7.7), it is not expected to have an impact on the continued use and enjoyment of this site.

The Bald Bluff Mountain Focus Area is state-owned but co-managed by the town of Amherst and the Maine Bureau of Parks and Lands. The land was purchased with funding from the federal Forest Legacy Program and the Land for Maine’s Future Program.

3.2.7.7 Scope and Scale of the Potential Effect

The viewshed analyses indicate that at best (forest screen - hub height) up to four turbines may be visible from 0.7% of the Bald Bluff Focus Area, while at worst (bare terrain - total height) up to five turbines may be visible from 15% of the Bald Bluff Focus Area (Drawings G3-G6, Appendix G); though this percentage drops to 9% at hub height, suggesting that some of the turbines would only be visible as their rotors pass above the horizon/tree line.

The closest turbine (SM5) would be 6.9 miles from the High Visual Impact Investigation Area selected for the Bald Bluff Focus Area (Drawing G2, Appendix G). At approximately 7 miles away, these turbines would be considered background views (Drawing G13, Appendix G) and would take up an insignificant portion of the overall view, 7° of a 360° field of view (Drawing G2, Appendix G), resulting in a minimal visual impact.

Table 3.12. provides a summary of the visual impact assessment for the proposed Silver Maple turbines.

Table 3.12. Visual Impact Parameters for Proposed Silver Maple Turbines

View Angle	Nearest Turbine (miles)		Farthest Turbine (miles)	
	SM5 - 6.9		SM1 - 7.6	
7°				
Viewshed	Bare Terrain - Total Height (185 m)	Bare Terrain - Hub Height (117 m)	Forest Screen - Total Height (185 m)	Forest Screen - Hub Height (117 m)
% of Bald Bluff Focus Area where 5 Turbines are Visible	7.08	1.29	0.40	0.00
% of Bald Bluff Focus Area where 4 Turbines are Visible	2.18	2.07	0.15	0.19
% of Bald Bluff Focus Area where 3 Turbines are Visible	1.49	1.62	0.27	0.09
% of Bald Bluff Focus Area where 2 Turbines are Visible	1.44	1.16	0.23	0.06
% of Bald Bluff Focus Area where 1 Turbines are Visible	2.64	2.66	0.44	0.37
Total %	14.84	8.80	1.48	0.72

3.2.7.8 Cumulative Scenic Impact or Effect

The cumulative visual impact of the proposed Silver Maple Wind Project with the existing Pisgah Mountain Wind Farm was assessed using the same analyses in Section 3.2.7.7 (Scope and Scale of the Potential Effect).

The viewshed analyses indicate that at best (forest screen - hub height) up to 10 of the turbines may be visible from 2% of the Bald Bluff Focus Area, while at worst (bare terrain - total height) up to 10 turbines may be visible from 16% of the Bald Bluff River Focus Area (Drawings G7-G10, Appendix G); though this percentage drops slightly to 11% at hub height, suggesting that some of the turbine visibility would be attributed to just the rotors as they pass above the horizon/tree line.

The closest turbine to the High Visual Impact Investigation Area selected for the Bald Bluff Focus Area (Drawing G2, Appendix G) is SM5, at a distance of 6.9 miles. The proposed Silver Maple turbines would extend the view of the existing wind farm to the south, widening the potential angle of view to 9°.

Table 3.13 provides a summary of the cumulative visual impact assessment for the proposed Silver Maple and existing Pisgah Mountain turbines.

Table 3.13. Cumulative Visual Impact Parameters for Proposed Silver Maple Turbines and Existing Pisgah Mountain Turbines

View Angle	Nearest Turbine (miles)		Farthest Turbine (miles)	
9°	SM5 - 6.9		SM1 - 7.6	
Viewshed	Bare Terrain - Total Height (185 m)	Bare Terrain - Hub Height (117 m)	Forest Screen - Total Height (185 m)	Forest Screen - Hub Height (117 m)
% of Bald Bluff Focus Area where 10 Turbines are Visible	3.97	0.31	0.56	0.01
% of Bald Bluff Focus Area where 9 Turbines are Visible	1.91	1.07	0.56	0.22
% of Bald Bluff Focus Area where 8 Turbines are Visible	0.04	1.16	0.18	0.06
% of Bald Bluff Focus Area where 7 Turbines are Visible	0.87	0.86	0.18	0.31
% of Bald Bluff Focus Area where 6 Turbines are Visible	0.73	0.75	0.16	0.06

% of Bald Bluff Focus Area where 5 Turbines are Visible	1.34	0.77	0.13	0.05
% of Bald Bluff Focus Area where 4 Turbines are Visible	2.21	0.99	0.70	0.10
% of Bald Bluff Focus Area where 3 Turbines are Visible	1.72	1.84	0.55	0.43
% of Bald Bluff Focus Area where 2 Turbines are Visible	1.17	1.21	0.29	0.26
% of Bald Bluff Focus Area where 1 Turbines are Visible	1.69	2.33	0.58	0.71
Total %	15.66	11.29	3.90	2.22

For the nighttime lighting to be visible, the hub of the turbine would need to be from the observer's location visible and not blocked by vegetation. The forest screen – hub height (117m) viewshed model is the best proxy for this. This model indicates that the night lighting may be visible from 1-10 turbines (cumulatively including all Silver Maple and Pisgah Mountain turbines) throughout only 2.22% of the Upper Union River Focus Area, owing to the ubiquity of forest cover through this area (Drawing G10, Appendix G).

3.2.8 West Branch Union River (Graham Lake to Great Pond)

3.2.8.1 Scenic Impact of Associated Facilities

The visibility of the associated facilities is expected to be low for this location as they are quite distant and would be blocked by vegetation and topography. See the viewshed analysis drawings prepared for this location (Drawing F2-F3, Appendix F).

3.2.8.2 Significance of the SRSNS

The West Branch Union River, from Great Pond to Graham Lake, has five significant resources: geologic/hydrologic features, undeveloped land, scenic views, an inland fishery, and whitewater boating¹⁶. Of scenic importance, the river has a regionally significant diversity of geomorphic, vegetative, and hydrologic elements combining to produce areas of outstanding scenery in the vicinity of the flowage. Although the undeveloped aspect of the river contributes greatly to the river's scenic value, its visual significance is not to provide views of the surrounding lands but of the river itself.

3.2.8.3 Existing Character of the Surrounding Area

The West Branch of the Union River begins at Great Pond and extends downstream approximately 13 miles to Graham Lake. It passes through the towns of Great Pond, Aurora,

¹⁶ State of Maine Department of Conservation. *Maine Rivers Study*. May 1982. pp. 156-157.

Amherst, Mariaville, and Waltham, all in Hancock County. There is minimal development along the Union River, with some residential properties, small properties, and roads only encroaching upon the shoreline of the river in a few spots. In the upper reach of the river, towards Great Pond, there is extensive blueberry cultivation on the Silsby Plain. The majority of the riparian habitat consists of mature mixedwood forests. There is evidence of silviculture along the length of the river, particularly in its upper half. The River is crossed three times by roads, once by River Road, north of the town of Amherst, once by Route 9 near the town of Amherst, and once by Route 181 further downstream.

3.2.8.4 Viewer Expectations

Typical viewers of the West Branch Union River would include local and visiting hikers, outdoorsmen and naturalist. The purpose of their visit would be to fish and boat in the river, and hike along its shoreline. Visitors would be more numerous during the spring, summer, and fall when they would be expected to stay for one to several hours. Typical viewers would expect views of outstanding river habitat with diverse hydrologic and geologic features. The viewshed analyses indicate that the visibility of the Project from this location would be low (Section 3.2.6.7) and therefore have little impact on the viewer's experience.

3.2.8.5 Purpose and Context

The location of the Silver Maple Wind Project was determined by its proximity to the Pisgah Mountain Wind project. Silver Maple benefits directly from much of the infrastructure built for Pisgah Mountain, including the roads, collector system, and some interconnection infrastructure. The project also will benefit from Pisgah Mountain's compiled wind data, which has allowed SWEB to more accurately predict the expected wind resource of Silver Maple. Further, the Silver Maple project will benefit from the permitting work done for Pisgah Mountain. Including but not limited to, the acoustic data and modelling used for the Pisgah Mountain, and Pisgah Mountain survey work.

- (1) Data related to the magnitude and reliability of the wind resource at the proposed development site, and the potential energy output expected from the development, as compared with any alternative sites in Maine investigated by the applicant.*

The particular placement of the five turbines was determined via analysis of the strongest locations on these ridgelines, given the annual average wind directions. Further, the turbine locations consider low interference with the existing five turbines of the Pisgah Mountain wind project.

- (2) The location of the proposed development in relation to existing transmission lines, roads or other infrastructure.*

As stated above, the project location benefits from existing road infrastructure which was specifically designed for delivery and construction of wind energy equipment. The proximity of power lines and an existing substation further bolster

the strength of this ridgeline as a uniquely strong location for the Silver Maple Wind Project.

- (3) *The topography and existing characteristics of the area surrounding the proposed development.*

The wind resource in this area is particularly strong, being located on a high elevation ridgeline in an exposed area.

- (4) *The existence of any other permitted wind energy development in the viewshed of any affected SRSNS.*

The Pisgah Mountain project will be directly adjacent to Silver Maple. The fact that the community and passersby are accustomed to viewing wind turbines at this location is expected to mitigate the marginal impacts of these particular five turbines. As opposed to constructing the project on a bare or undeveloped parcel elsewhere in Penobscot or Hancock County.

- (5) *Evidence of any mitigation proposals, such as improved access to the affected SRSNS, or improvements to the quality of the resource.*

The project has taken into effect its proximity to several of Maine's Finest Lakes will limit its impacts on local SRSNS through use of a radar lighting system.

3.2.8.6 Public Use and Enjoyment

Visitors to the West Branch Union River would fluctuate seasonally, concentrating during the spring, summer, and fall. Users of the location would visit for the purpose of fishing and boating in the river, and hiking along its shoreline. A typical visit would be expected to last from one to several hours. Visitors to this location would expect outstanding scenery in the vicinity of the flowage, including clear-flowing waters and unique hydrologic features. Therefore, the Project is not expected have an impact on the continued use and enjoyment of this site.

There does not appear to be any tourism-related businesses, recreational clubs, or organizations whose viability is directly related to this location.

3.2.8.7 Scope and Scale of the Potential Effect

The viewshed analyses indicate that at best (forest screen - hub height) no turbines may be visible from the Upper Union River Focus Area, while at worst (bare terrain - total height) up to five turbines may be visible from 20% of the Upper Union River Focus Area (Drawings F3-F6, Appendix F); though this percentage drops to 12% at hub height, suggesting that the majority of turbine visible would be the rotors as they pass above the horizon/tree line.

The closest turbine (SM3) would be 6.1 miles from the High Visual Impact Investigation Area selected for the Upper Union River Focus Area (Drawing F2, Appendix F). At approximately 6 miles away, these turbines would be considered background views (Drawing F13, Appendix F) and would take up an insignificant portion of the overall view, 10° of a 360° field of view (Drawing F2, Appendix F), resulting in a minimal visual impact.

Table 3.14 provides a summary of the visual impact assessment for the proposed Silver Maple turbines.

Table 3.14. Visual Impact Parameters for Proposed Silver Maple Turbines

View Angle	Nearest Turbine (miles)		Farthest Turbine (miles)	
10°	SM3 - 6.1		SM2 - 6.7	
Viewshed	Bare Terrain - Total Height (185 m)	Bare Terrain - Hub Height (117 m)	Forest Screen - Total Height (185 m)	Forest Screen - Hub Height (117 m)
% of Upper Union River Focus Area where 5 Turbines are Visible	4.64	0.57	0.00	0.00
% of Upper Union River Focus Area where 4 Turbines are Visible	5.31	0.99	0.00	0.00
% of Upper Union River Focus Area where 3 Turbines are Visible	3.82	1.98	0.00	0.00
% of Upper Union River Focus Area where 2 Turbines are Visible	2.69	1.70	0.00	0.00
% of Upper Union River Focus Area where 1 Turbines are Visible	3.99	6.30	0.03	0.00
Total %	20.45	11.54	0.03	0.00

3.2.8.8 Cumulative Scenic Impact or Effect

The cumulative visual impact of the proposed Silver Maple Wind Project with the existing Pisgah Mountain Wind Farm was assessed using the same analyses in Section 3.2.8.7 (Scope and Scale of the Potential Effect).

The viewshed analyses indicate that at best (forest screen - hub height) up to five of the turbines may be visible from 0.3% of the Upper Union River Focus Area, while at worst (bare terrain - total height) up to 10 turbines may be visible from 21% of the Upper Union River Focus Area (Drawings F7-F10, Appendix F); though this percentage drops to 13% at hub height, suggesting that some of the visible turbines would be just the rotors as they pass above the horizon/tree line.

The closest turbine to the High Visual Impact Investigation Area selected for the Upper Union River Focus Area (Drawing F2, Appendix F) is SM3, at a distance of 6.1 miles. The proposed Silver Maple turbines would extend the view of the existing wind farm to the south, widening the potential angle of view to 11°.

Table 3.15 provides a summary of the cumulative visual impact assessment for the proposed Silver Maple and existing Pisgah Mountain turbines.

Table 3.15. Cumulative Visual Impact Parameters for Proposed Silver Maple Turbines and Existing Pisgah Mountain Turbines

View Angle	Nearest Turbine (miles)		Farthest Turbine (miles)	
11°	SM3 - 6.1		PM1 - 6.8	
Viewshed	Bare Terrain - Total Height (185 m)	Bare Terrain - Hub Height (117 m)	Forest Screen - Total Height (185 m)	Forest Screen - Hub Height (117 m)
% of Upper Union River Focus Area where 10 Turbines are Visible	1.80	0.21	0.00	0.00
% of Upper Union River Focus Area where 9 Turbines are Visible	0.68	0.22	0.01	0.00
% of Upper Union River Focus Area where 8 Turbines are Visible	0.04	0.47	0.00	0.00
% of Upper Union River Focus Area where 7 Turbines are Visible	2.00	0.55	0.00	0.00
% of Upper Union River Focus Area where 6 Turbines are Visible	2.46	0.48	0.01	0.00
% of Upper Union River Focus Area where 5 Turbines are Visible	1.90	0.49	0.01	0.01
% of Upper Union River Focus Area where 4 Turbines are Visible	2.55	0.84	0.12	0.01
% of Upper Union River Focus Area where 3 Turbines are Visible	3.37	2.22	0.48	0.01
% of Upper Union River Focus Area where 2 Turbines are Visible	2.26	1.97	0.31	0.01

% of Upper Union River Focus Area where 1 Turbines are Visible	4.05	5.26	0.44	0.23
Total %	21.09	12.72	1.39	0.25

For the nighttime lighting to be visible, the hub of the turbine would need to be from the observer’s location visible and not blocked by vegetation. The forest screen – hub height (117m) viewshed model is the best proxy for this. This model indicates that the night lighting may be visible from 1-5 turbines (cumulatively including all Silver Maple and Pisgah Mountain turbines) throughout only 0.25% of the Upper Union River Focus Area (Drawing F10, Appendix F)., which surrounds the West Branch Union River from its headwaters to Graham Lake. There would likely not be night lighting visible to an observer on any point of the river.

3.2.9 Cliffwood Hall

3.2.9.1 Scenic Impact of Associated Facilities

The visibility of the associated facilities is expected to be low for this location as they would be blocked or largely obscured by vegetation. See the photo simulation prepared for this location (Drawings H11-H12, Appendix H).

3.2.9.2 Significance of the SRSNS

Cliffwood Hall, located in Clifton, Penobscot County, is a historic site of local significance¹⁷. Built in 1892, it was used as a community building, entertainment and recreation venue, and the location of the Town of Clifton’s governmental functions. It was nominated to the National Register of Historic Places (listing reference # 8000666) as a building that embodies broad patterns of history at the local level, in the areas of entertainment and recreation, and government and politics. Sharing a lot of the Harold Allen Schoolhouse, it currently operates a museum and is maintained and operated by the Clifton Historical Society. The scenic character of the surrounding area was not a factor in its listed in the National Register of Historic Places. As such the significance of this SRSNS is low.

3.2.9.3 Existing character of the surrounding area

Cliffwood Hall and the Harold Allan Schoolhouse are co-located in the community of Clifton Corner (Drawing H1, Appendix H). The area is a small rural community at the corner of State Route 9 and State Route 180. The area consists of residential and commercial buildings as well as areas of open non-agricultural fields. Dense forests consisting of tall (40 to 50ft) evergreen and deciduous trees surround the open areas. There is evidence of silviculture activity in the surrounding forested landscape, especially to the northeast and southwest. Cliffwood Hall itself is a tall, well maintained wooden building that shares a lot with Harold Allan Schoolhouse. They are located in a small clearing, surrounded by mixedwood forests which would largely block any view of the turbines (Drawings H11-H12, Appendix H).

¹⁷ National Register of Historic Places Registration Form. *Cliffwood Hall (#08000666)*. National Register of Historic Places. June 2008.

3.2.9.4 Viewer Expectations

Typical viewers of Cliffwood Hall would include attendees of events and meetings at the public hall, as well as individuals wanting to observe its historic character. Visitors would be expected year-round, although increased during the summer, and a typical visit may last one to several hours depending on its nature. Typical viewers expect a well-preserved historic building. Viewers are not expected to visit this location for views of the surrounding landscape.

3.2.9.5 Purpose and Context

The location of the Silver Maple Wind Project was determined by its proximity to the Pisgah Mountain Wind project. Silver Maple benefits directly from much of the infrastructure built for Pisgah Mountain, including the roads, collector system, and some interconnection infrastructure. The project also will benefit from Pisgah Mountain's compiled wind data, which has allowed SWEB to more accurately predict the expected wind resource of Silver Maple. Further, the Silver Maple project will benefit from the permitting work done for Pisgah Mountain. Including but not limited to, the acoustic data and modelling used for the Pisgah Mountain, and Pisgah Mountain survey work.

- (1) *Data related to the magnitude and reliability of the wind resource at the proposed development site, and the potential energy output expected from the development, as compared with any alternative sites in Maine investigated by the applicant.*

The particular placement of the five turbines was determined via analysis of the strongest locations on these ridgelines, given the annual average wind directions. Further, the turbine locations consider low interference with the existing five turbines of the Pisgah Mountain wind project.

- (2) *The location of the proposed development in relation to existing transmission lines, roads or other infrastructure.*

As stated above, the project location benefits from existing road infrastructure which was specifically designed for delivery and construction of wind energy equipment. The proximity of power lines and an existing substation further bolster the strength of this ridgeline as a uniquely strong location for the Silver Maple Wind Project.

- (3) *The topography and existing characteristics of the area surrounding the proposed development.*

The wind resource in this area is particularly strong, being located on a high elevation ridgeline in an exposed area.

- (4) *The existence of any other permitted wind energy development in the viewshed of any affected SRSNS.*

The Pisgah Mountain project will be directly adjacent to Silver Maple. The fact that the community and passersby are accustomed to viewing wind turbines at this location is expected to mitigate the marginal impacts of these particular five turbines. As opposed to constructing the project on a bare or undeveloped parcel elsewhere in Penobscot or Hancock County.

- (5) *Evidence of any mitigation proposals, such as improved access to the affected SRSNS, or improvements to the quality of the resource.*

The project has taken into effect its proximity to several of Maine's Finest Lakes will limit its impacts on local SRSNS through use of a radar lighting system.

3.2.9.6 Public Use and Enjoyment

The number of visitors to the Cliffwood Hall is likely low as well as seasonal, with more visitors likely to attend during the summer months when tourism is highest; the parking lot can accommodate approximately 10-20 vehicles at a time. Although historically the building would have accommodated large numbers of visitors, as a museum the number of visitors would be significantly less. The primary purpose of visitors to this location is to attend events and meetings at the public hall, and to view its historic natures. Visitors are not expected to visit this location for the purpose of enjoying natural, un-developed areas. As such, the Project is not expected to impact the continued use and enjoyment of Cliffwood Hall.

The Clifton Historical Society operates and maintains this location as a museum and may rely on visitor donations or admission charges for the maintenance of the facilities.

3.2.9.7 Scope and Scale of the Potential Effect

Viewshed analyses should mainly be used as a starting point for identifying areas with potential visibility. Due to the coarseness and uncertainty of the quality of the output raster data, it is understood that viewsheds do not always represent actual visibility as seen on the ground from specific locations. The viewshed analyses completed for Cliffwood Hall / Harold Allen Schoolhouse demonstrates the importance of site visits to areas of importance such as the SRSNS identified in this report.

The viewshed analyses run for just the proposed Silver Maple turbines (Drawings H3-H6, Appendix H) indicate that Cliffwood Hall and the Harold Allen Schoolhouse would be in a small pocket of no visibility, surrounded by an area where all five turbines would be seen (Table 3.16).

Whereas, the viewshed analyses run for the proposed Silver Maple and existing Pisgah Mountain turbines indicate that all 10 turbines would be visible from Cliffwood Hall and the Harold Allen Schoolhouse (Table 3.17 in Section 3.2.9.9 and Drawings H7-H10, Appendix H).

A site visit conducted by CES Inc. to this location verified that there is indeed no visibility of the existing Pisgah Mountain Wind Farm turbines as they are blocked by tall trees located to the south (see the photo simulation presented in Drawings H11 to H14, Appendix H).

The closest turbine (SM5) would be 2.0 miles from Cliffwood Hall / Harold Allen Schoolhouse (Drawing H2, Appendix H). At 2 miles away, these turbines might be considered more conspicuous than background views if it were not for the stand of trees obscuring their view (Drawing H11, Appendix H). These turbines would also take up an insignificant portion of the overall view, 12° of a 360° field of view (Drawing H2, Appendix H), resulting in a minimal visual impact if the turbines were visible.

Table 3.16. Visual Impact Parameters for Proposed Silver Maple Turbines

View Angle	Nearest Turbine (miles)		Farthest Turbine (miles)	
12°	SM5 – 2.0		SM1 – 2.9	
Viewshed	Bare Terrain - Total Height (185 m)	Bare Terrain - Hub Height (117 m)	Forest Screen - Total Height (185 m)	Forest Screen - Hub Height (117 m)
# of Turbines are Visible	0	0	0	0

3.2.9.8 Cumulative Scenic Impact or Effect

The cumulative visual impact of the proposed Silver Maple Wind Project with the existing Pisgah Mountain Wind Farm was assessed using the same analyses in Section 3.2.9.7 (Scope and Scale of the Potential Effect).

The viewshed analyses indicate that all 10 turbines would be visible from Cliffwood Hall and the Harold Allen Schoolhouse (Drawings H7-H10, Appendix H), extending the potential angle of view to 16° (Drawing H2, Appendix H). The closest turbine to these historic buildings would be SM5, at a distance of 2.0 miles (Drawing H2, Appendix H) and might be considered more conspicuous than background views if it were not for the stand of trees obscuring their view (Drawing H11, Appendix H). As a result, the Silver Maple Wind Farm would have a very minimal visual impact.

Table 3.17 provides a summary of the cumulative visual impact assessment for the proposed Silver Maple and existing Pisgah Mountain turbines.

Table 3.17. Cumulative Visual Impact Parameters for Proposed Silver Maple Turbines and Existing Pisgah Mountain Turbines

View Angle	Nearest Turbine (miles)		Farthest Turbine (miles)	
16°	PM2 – 1.9		SM1 – 2.9	
Viewshed	Bare Terrain - Total Height (185 m)	Bare Terrain - Hub Height (117 m)	Forest Screen - Total Height (185 m)	Forest Screen - Hub Height (117 m)
# of Turbines are Visible	10	10	10	10

For the nighttime lighting to be visible, the hub of the turbine would need to be from the observer’s location visible and not blocked by vegetation. The forest screen – hub height (117m) viewshed model is the best proxy for this. This model indicates that the night lighting may be visible from 10 turbines (cumulatively including all Silver Maple and Pisgah Mountain turbines) from Cliffwood Hall (Drawing H10, Appendix H). A photo-simulation simulating this night lighting was prepared for this location along with the Harold Allen Schoolhouse (Drawing H12 in Appendix H), although no lights could be seen from the vantage point of this photo-simulation as the tree cover appeared to be sufficient to block there view of the turbines, despite the forested viewshed model indicating that there may be turbine visibility from this location.

3.2.10 Harold Allen Schoolhouse

3.2.10.1 Scenic Impact of Associated Facilities

The visibility of the associated facilities is expected to be low for this location as they would be blocked or largely obscured by vegetation. See the photo simulation prepared for this location (Drawings H11-H12, Appendix H).

3.2.10.2 Significance of the SRSNS

The Harold Allen Schoolhouse, located in Clifton, Penobscot County, is a historic site of local significance¹⁸. Built in 1863, it is the last surviving one-room schoolhouse in Clifton. It was nominated to the National Register of Historic Places (listing reference # 8000667) for its association with patterns of rural schooling in nineteenth-and-twentieth-century Maine. It currently functions as a museum and is maintained and operated by the Clifton Historical Society (along with Cliffwood Hall). The scenic character of the surrounding area was not a factor in its listed in the National Register of Historic Places. As such the significance of this SRSNS is low.

3.2.10.3 Existing Character of the Surrounding Area

The Harold Allan Schoolhouse and Cliffwood Hall are co-located in the community of Clifton Corner. The area is a small rural community at the corner of State Route 9 and State Route

¹⁸ National Register of Historic Places Registration Form. *Harold Allen Schoolhouse (#08000667)*. National Register of Historic Places. June 2008.

180. The area consists of residential and commercial buildings as well as areas of open non-agricultural fields. Dense forests consisting of tall (40 to 50ft) evergreen and deciduous trees surround the open areas. There is evidence of silviculture activity in the surrounding forested landscape, especially to the north east and south west (see drawing H1, Appendix H). The Harold Allen Schoolhouse itself is a small but well-maintained building that is a historic representation of mid 19th century schoolhouse architecture. The Cliffwood Hall itself would block any visibility of the Project from observers looking out of the windows of the Harold Allen Schoolhouse.

3.2.10.4 Viewer Expectations

Typical viewers of the Harold Allen Schoolhouse include visitors to the museum and individual's wanting to observe its historic natures. Visitors would be expected seasonally when the museum is open during the summer. Typical viewers expect a well-preserved historic building and its museum contents. Viewers are not expected to attend this location for views of the scenic character of the surrounding landscape.

3.2.10.5 Purpose and Context

The location of the Silver Maple Wind Project was determined by its proximity to the Pisgah Mountain Wind project. Silver Maple benefits directly from much of the infrastructure built for Pisgah Mountain, including the roads, collector system, and some interconnection infrastructure. The project also will benefit from Pisgah Mountain's compiled wind data, which has allowed SWEB to more accurately predict the expected wind resource of Silver Maple. Further, the Silver Maple project will benefit from the permitting work done for Pisgah Mountain. Including but not limited to, the acoustic data and modelling used for the Pisgah Mountain, and Pisgah Mountain survey work.

- (1) *Data related to the magnitude and reliability of the wind resource at the proposed development site, and the potential energy output expected from the development, as compared with any alternative sites in Maine investigated by the applicant.*

The particular placement of the five turbines was determined via analysis of the strongest locations on these ridgelines, given the annual average wind directions. Further, the turbine locations consider low interference with the existing five turbines of the Pisgah Mountain wind project.

- (2) *The location of the proposed development in relation to existing transmission lines, roads or other infrastructure.*

As stated above, the project location benefits from existing road infrastructure which was specifically designed for delivery and construction of wind energy equipment. The proximity of power lines and an existing substation further bolster the strength of this ridgeline as a uniquely strong location for the Silver Maple Wind Project.

- (3) *The topography and existing characteristics of the area surrounding the proposed development.*

The wind resource in this area is particularly strong, being located on a high elevation ridgeline in an exposed area.

- (4) *The existence of any other permitted wind energy development in the viewshed of any affected SRSNS.*

The Pisgah Mountain project will be directly adjacent to Silver Maple. The fact that the community and passersby are accustomed to viewing wind turbines at this location is expected to mitigate the marginal impacts of these particular five turbines. As opposed to constructing the project on a bare or undeveloped parcel elsewhere in Penobscot or Hancock County.

- (5) *Evidence of any mitigation proposals, such as improved access to the affected SRSNS, or improvements to the quality of the resource.*

The project has taken into effect its proximity to several of Maine's Finest Lakes will limit its impacts on local SRSNS through use of a radar lighting system.

3.2.10.6 Public Use and Enjoyment

The number of visitors to this location is likely low as well as seasonal, with more visitors likely to attend during the summer months when tourism is highest. The building can likely only accommodate 8-12 visitors at one time. The purpose of visitors to this site is to view the museum's content and its historic nature and not to view the scenic character of the surrounding landscape. Therefore, the Project is expected to have little impact on the continued use and enjoyment of the Harold Allen Schoolhouse.

The Clifton Historical Society operates and maintains this location as a museum, and may rely on visitor donations or admission charges for the maintenance of the facilities.

3.2.10.7 Scope and Scale of the Potential Effect

Viewshed analyses should mainly be used as a starting point for identifying areas with potential visibility. Due to the coarseness and uncertainty of the quality of the output raster data, it is understood that viewsheds do not always represent actual visibility as seen on the ground from specific locations. The viewshed analyses completed for Cliffwood Hall / Harold Allen Schoolhouse demonstrates the importance of site visits to areas of importance such as the SRSNS identified in this report.

The viewshed analyses run for just the proposed Silver Maple turbines (Drawings H3-H6, Appendix H) indicate that Cliffwood Hall and the Harold Allen Schoolhouse would be in a small pocket of no visibility, surrounded by an area where all five turbines would be seen (Table 3.18).

Whereas, the viewshed analyses run for the proposed Silver Maple and existing Pisgah Mountain turbines indicate that all 10 turbines would be visible from Cliffwood Hall and the Harold Allen Schoolhouse (Table 3.19 in Section 3.2.10.9 and Drawings H7-H10, Appendix H).

A site visit conducted by CES Inc. to this location verified that there is indeed no visibility of the existing Pisgah Mountain Wind Farm turbines as they are blocked by tall trees located to the south (see the photo simulation presented in Drawings H11 to H14, Appendix H).

The closest turbine (SM5) would be 2.0 miles from Cliffwood Hall / Harold Allen Schoolhouse (Drawing H2, Appendix H). At 2 miles away, these turbines might be considered more conspicuous than background views if it were not for the stand of trees obscuring their view (Drawing H11, Appendix H). These turbines would also take up an insignificant portion of the overall view, 12° of a 360° field of view (Drawing H2, Appendix H), resulting in a minimal visual impact if the turbines were visible.

Table 3.18. Visual Impact Parameters for Proposed Silver Maple Turbines

View Angle	Nearest Turbine (miles)		Farthest Turbine (miles)	
12°	SM5 – 2.0		SM1 – 2.9	
Viewshed	Bare Terrain - Total Height (185 m)	Bare Terrain - Hub Height (117 m)	Forest Screen - Total Height (185 m)	Forest Screen - Hub Height (117 m)
# of Turbines are Visible	0	0	0	0

3.2.10.8 Cumulative Scenic Impact or Effect

The cumulative visual impact of the proposed Silver Maple Wind Project with the existing Pisgah Mountain Wind Farm was assessed using the same analyses in Section 3.2.10.7 (Scope and Scale of the Potential Effect).

The viewshed analyses indicate that all 10 turbines would be visible from Cliffwood Hall and the Harold Allen Schoolhouse (Drawings H7-H10, Appendix H), extending the potential angle of view to 16° (Drawing H2, Appendix H). The closest turbine to these historic buildings would be SM5, at a distance of 2.0 miles (Drawing H2, Appendix H) and might be considered more conspicuous than background views if it were not for the stand of trees obscuring their view (Drawing H11, Appendix H). As a result, the Silver Maple Wind Farm would have a very minimal visual impact.

Table 3.19 provides a summary of the cumulative visual impact assessment for the proposed Silver Maple and existing Pisgah Mountain turbines.

Table 3.19. Cumulative Visual Impact Parameters for Proposed Silver Maple Turbines and Existing Pisgah Mountain Turbines

View Angle	Nearest Turbine (miles)		Farthest Turbine (miles)	
16°	PM2 – 1.9		SM1 – 2.9	
Viewshed	Bare Terrain - Total Height (185 m)	Bare Terrain - Hub Height (117 m)	Forest Screen - Total Height (185 m)	Forest Screen - Hub Height (117 m)
# of Turbines are Visible	10	10	10	10

For the nighttime lighting to be visible, the hub of the turbine would need to be from the observer’s location visible and not blocked by vegetation. The forest screen – hub height (117m) viewshed model is the best proxy for this. This model indicates that the night lighting may be visible from 10 turbines (cumulatively including all Silver Maple and Pisgah Mountain turbines) from the Harold Allen Schoolhouse (Drawing H10, Appendix H). A photo-simulation simulating this night lighting was prepared for this location along with Cliffwood Hall (Drawing H12 in Appendix H), although no lights could be seen from the vantage point of this photo-simulation as the tree cover appeared to be sufficient to block there view of the turbines, despite the forested viewshed model indicating that there may be turbine visibility from this location.

3.2.11 East Eddington Public Hall

3.2.11.1 Scenic Impact of Associated Facilities

The turbines associated with the Project are visible looking eastward down Route 9 from East Eddington Public Hall. However, the visibility of the associated facilities is expected to be low for this location as they would be blocked or largely obscured by vegetation. See the photo simulation prepared for this location (Drawings I11-I12, Appendix I).

3.2.11.2 Significance of the SRSNS

The East Eddington Public Hall (also known as Comins Hall or the Eddington-Clifton Civic Center), located in Eddington, Penobscot County, is a historic site of local significance. Built in 1879, it was used extensively by the East Eddington Farmer’s Club as well as becoming a site of town meetings, plays, fairs, receptions, lectures, dances, and private functions. It was nominated to the National Register of Historic Places (listing reference #03001503) for its associations with social history, agriculture, politics/government, entertainment, and performing arts. It currently functions as a social and civic meeting hall. The scenic character of the surrounding area was not a factor in its listing in the National Register of Historic Places. As such, the significance of this SRSNS is low.

3.2.11.3 Existing Character of the Surrounding Area

The East Eddington Public Hall is located in the small rural town of Eddington, in an area called Eddington Village. Eddington Village is located at the intersection of Route 9 and route 46, and is a historic area of town which also includes Eddington Community Church and historic

homes. The area consists primarily of moderately dense residential properties and businesses along the main routes, surrounded by wooded lands. Forested areas consist of a tall (40 to 50 ft) evergreen and deciduous trees and there is evidence of silviculture, particularly to the east (Drawing I1, Appendix I). East Eddington Public Hall itself is a large, three-storied wooden building located on a cleared lot, but surrounded by mature trees.

3.2.11.4 Viewer Expectations

Typical viewers to the East Eddington Public Hall would include attendees of events and proceedings at the hall, as well as individuals wanting to observe its historic nature. Visitors would be expected year-round. Typical viewers expect a well-preserved historic building. Viewers are not expected to attend this location for views of the surrounding landscape and, therefore, the Project is expected to have a low impact on the viewer's expectations.

3.2.11.5 Purpose and Context

The location of the Silver Maple Wind Project was determined by its proximity to the Pisgah Mountain Wind project. Silver Maple benefits directly from much of the infrastructure built for Pisgah Mountain, including the roads, collector system, and some interconnection infrastructure. The project also will benefit from Pisgah Mountain's compiled wind data, which has allowed SWEB to more accurately predict the expected wind resource of Silver Maple. Further, the Silver Maple project will benefit from the permitting work done for Pisgah Mountain. Including but not limited to, the acoustic data and modelling used for the Pisgah Mountain, and Pisgah Mountain survey work.

- (1) *Data related to the magnitude and reliability of the wind resource at the proposed development site, and the potential energy output expected from the development, as compared with any alternative sites in Maine investigated by the applicant.*

The particular placement of the five turbines was determined via analysis of the strongest locations on these ridgelines, given the annual average wind directions. Further, the turbine locations consider low interference with the existing five turbines of the Pisgah Mountain wind project.

- (2) *The location of the proposed development in relation to existing transmission lines, roads or other infrastructure.*

As stated above, the project location benefits from existing road infrastructure which was specifically designed for delivery and construction of wind energy equipment. The proximity of power lines and an existing substation further bolster the strength of this ridgeline as a uniquely strong location for the Silver Maple Wind Project.

- (3) *The topography and existing characteristics of the area surrounding the proposed development.*

The wind resource in this area is particularly strong, being located on a high elevation ridgeline in an exposed area.

- (4) *The existence of any other permitted wind energy development in the viewshed of any affected SRSNS.*

The Pisgah Mountain project will be directly adjacent to Silver Maple. The fact that the community and passersby are accustomed to viewing wind turbines at this location is expected to mitigate the marginal impacts of these particular five turbines. As opposed to constructing the project on a bare or undeveloped parcel elsewhere in Penobscot or Hancock County.

- (5) *Evidence of any mitigation proposals, such as improved access to the affected SRSNS, or improvements to the quality of the resource.*

The project has taken into effect its proximity to several of Maine's Finest Lakes will limit its impacts on local SRSNS through use of a radar lighting system.

3.2.11.6 Public Use and Enjoyment

The number of visitors to the East Eddington Public Hall would fluctuate through the year based on the events being held. More visitors would be expected during the summer months when more public events are scheduled. The hall can accommodate a maximum of 285 attendees¹⁹. Typical users would visit the location to attend a publicly held meeting or private social function, staying one to several hours. Visitors are not expected to attend this site for the purpose of enjoying the scenic character of the surrounding lands. As such, the Project is not expected to impact the continued use and enjoyment of the location.

The East Eddington Public Hall is used regularly by local recreational clubs, including the ATV club, and for public suppers¹⁹. Public events can be held at the hall at no charge, whereas the location can be reserved for private events for a small fee.

3.2.11.7 Scope and Scale of the Potential Effect

Viewshed analyses should mainly be used as a starting point for identifying areas with potential visibility. Due to the coarseness and uncertainty of the quality of the output raster data, it is understood that viewsheds do not always represent actual visibility as seen on the ground from specific locations. The viewshed analyses completed for East Eddington demonstrates the importance of site visits to areas of importance such as the SRSNS identified in this report.

The viewshed analyses run for just the proposed Silver Maple turbines (Drawings I3-I6, Appendix I) indicate that East Eddington would be in a small pocket of no visibility, surrounded by an area where all five turbines would be seen (Table 3.20).

¹⁹ Eddington-Clifton Civic Center. <http://www.cominshall.org/>

Whereas, the viewshed analyses run for the proposed Silver Maple and existing Pisgah Mountain turbines indicate that 8 to 10 of the turbines would be visible from East Eddington (Table 3.21 in Section 3.2.11.8 and Drawings I7-I10, Appendix I).

The closest turbine (SM5) would be 3.4 miles from East Eddington and the farthest would be 3.8 miles (Drawing I2, Appendix I). All five turbines would be conspicuous in the background view if it were not for a hill, which effectively obscures two the turbines, and a clump of deciduous trees in the foreground which obscures the majority of a third turbine (Drawing I11, Appendix I). These turbines would also take up an insignificant portion of the overall view, 16° of a 360° field of view (Drawing I2, Appendix I).

Table 3.20. Visual Impact Parameters for Proposed Silver Maple Turbines

View Angle	Nearest Turbine (miles)		Farthest Turbine (miles)	
16°	SM5 – 3.4		SM1 – 3.8	
Viewshed	Bare Terrain - Total Height (185 m)	Bare Terrain - Hub Height (117 m)	Forest Screen - Total Height (185 m)	Forest Screen - Hub Height (117 m)
# of Turbines are Visible	0	0	0	0

3.2.11.8 Cumulative Scenic Impact or Effect

The cumulative visual impact of the proposed Silver Maple Wind Project with the existing Pisgah Mountain Wind Farm was assessed using the same analyses in Section 3.2.11.7 (Scope and Scale of the Potential Effect).

The viewshed analyses indicate that up to 10 turbines would be visible from East Eddington (8 at hub height) (Drawings I7-I10, Appendix I), and that the potential angle of view would be 16° (Drawing I2, Appendix I). The closest turbine to the East Eddington High Visual Impact Investigation Area is PM1, at a distance of 3.0 miles (Drawing I2, Appendix I) would be conspicuous in the background view if it were not for a hill, which effectively obscures two the turbines, and a clump of deciduous trees in the foreground which obscures the majority of a third turbine (Drawing I11, Appendix I). As a result, the Silver Maple Wind Farm would have a minimal visual impact.

Table 3.21 provides a summary of the cumulative visual impact assessment for the proposed Silver Maple and existing Pisgah Mountain turbines.

Table 3.21. Cumulative Visual Impact Parameters for Proposed Silver Maple Turbines and Existing Pisgah Mountain Turbines

View Angle	Nearest Turbine (miles)		Farthest Turbine (miles)	
16°	PM1 – 3.0		SM1 – 3.8	
Viewshed	Bare Terrain - Total Height (185 m)	Bare Terrain - Hub Height (117 m)	Forest Screen - Total Height (185 m)	Forest Screen - Hub Height (117 m)
# of Turbines are Visible	10	8	10	8

For the nighttime lighting to be visible, the hub of the turbine would need to be from the observer’s location visible and not blocked by vegetation. The forest screen – hub height (117m) viewshed model is the best proxy for this. This model indicates that the night lighting may be visible from 8 turbines (cumulatively including all Silver Maple and Pisgah Mountain turbines) from the East Eddington Public Hall (Drawing I10, Appendix I). A Photo-simulation simulating this night lighting was prepared for a vantage point in front of the East Eddington Public Hall near the road (State Route 9) where visibility to the turbines was much better. Two turbines appear in this photo-simulation, from which night lighting would be visible.

3.2.12 Holden Town Hall

3.2.12.1 Scenic Impact of Associated Facilities

The visibility of the associated facilities is expected to be low for this location as they would be blocked or largely obscured by vegetation and other buildings. See the photo simulation prepared for this location (Drawings J11-J12, Appendix J).

3.2.12.2 Significance of the SRSNS

Holden Town Hall, located in Holden, Penobscot County, is a historic site of local significance²⁰. It was nominated to the National Register of Historic Places (listing reference #14000362) for its local architectural importance as well as its contribution to the social, recreational, and governmental history of the town. Built in 1872, it is an eclectic building which exhibits elements of the late Victorian gothic mixed with Italianate and stick style characteristics. Over the years, it has been used by the local chapter of the national Grange of the Order of Patrons of Husbandry and has been the site of the municipality’s governmental functions. In addition, it has been used for receptions and funerals, dinners and socials, plays and presentations, and hosted an annual fall fair. It is currently managed by the Holden Historical Society and is used for occasional civic functions such as meetings and voting, and for community events and private functions²¹. The scenic character of the surrounding area was not a factor in its listing in the National Register of Historic Places. As such the significance of this SRSNS is low.

²⁰ National Register of Historic Places Registration Form. *Holden Town Hall (#14000362)*. National Register of Historic Places. June 2008.

²¹ Holden Historical Society. *Historic Town Hall*. <https://www.holdenmehistory.org/historic-town-hall/>

3.2.12.3 Existing Character of the Surrounding Area

The historic Holden Town Hall is located on Main Road (Route 1A) in Holden, approximately 0.7 miles down the road from the current Holden Town Office and outside of the town centre (Drawing J1, Appendix J). Located immediately adjacent to a gas station and convenient store on one side and an open grassy area on the other, with mature forest (coniferous and deciduous) surrounding it. This part of Holden is rural and consists primarily of residential houses on large wooded lots. Holden Town Hall itself is a well-maintained wooden structure with unique architecture features.

3.2.12.4 Viewer Expectations

Typical viewers of Holden Town Hall would include attendees of the events and meetings at the hall, as well as individuals wanting to view the architectural features of the building. Visitors at the site would be expected during the spring to fall, when open, when they may stay one to several hours. Typical viewers would expect a well-preserved historic building typical of late 19th-century meeting hall. Viewers are not expected to attend this location for views of the scenic character of the surrounding landscape. As such the expectations of the typical viewer are expected to be low.

3.2.12.5 Purpose and Context

The location of the Silver Maple Wind Project was determined by its proximity to the Pisgah Mountain Wind project. Silver Maple benefits directly from much of the infrastructure built for Pisgah Mountain, including the roads, collector system, and some interconnection infrastructure. The project also will benefit from Pisgah Mountain's compiled wind data, which has allowed SWEB to more accurately predict the expected wind resource of Silver Maple. Further, the Silver Maple project will benefit from the permitting work done for Pisgah Mountain. Including but not limited to, the acoustic data and modelling used for the Pisgah Mountain, and Pisgah Mountain survey work.

- (1) *Data related to the magnitude and reliability of the wind resource at the proposed development site, and the potential energy output expected from the development, as compared with any alternative sites in Maine investigated by the applicant.*

The particular placement of the five turbines was determined via analysis of the strongest locations on these ridgelines, given the annual average wind directions. Further, the turbine locations consider low interference with the existing five turbines of the Pisgah Mountain wind project.

- (2) *The location of the proposed development in relation to existing transmission lines, roads or other infrastructure.*

As stated above, the project location benefits from existing road infrastructure which was specifically designed for delivery and construction of wind energy equipment. The proximity of power lines and an existing substation further bolster

the strength of this ridgeline as a uniquely strong location for the Silver Maple Wind Project.

- (3) *The topography and existing characteristics of the area surrounding the proposed development.*

The wind resource in this area is particularly strong, being located on a high elevation ridgeline in an exposed area.

- (4) *The existence of any other permitted wind energy development in the viewshed of any affected SRSNS.*

The Pisgah Mountain project will be directly adjacent to Silver Maple. The fact that the community and passersby are accustomed to viewing wind turbines at this location is expected to mitigate the marginal impacts of these particular five turbines. As opposed to constructing the project on a bare or undeveloped parcel elsewhere in Penobscot or Hancock County.

- (5) *Evidence of any mitigation proposals, such as improved access to the affected SRSNS, or improvements to the quality of the resource.*

The project has taken into effect its proximity to several of Maine's Finest Lakes will limit its impacts on local SRSNS through use of a radar lighting system.

3.2.12.6 Public Use and Enjoyment

Public visitation to this site would be seasonal and dependent on the occurrence of events. The parking lot can accommodate approximately 20-30 vehicles at a time, although the building itself could accommodate more visitors than this. The purpose of the visitors to this site would be to attend events at the hall and to view its architectural characteristics. Visitors are not expected to visit this location for the purpose of enjoying natural, un-developed areas. As such, the Project is not expected to impact the continued use and enjoyment of the historic Holden Town Hall.

The Holden Historical Society operates and maintains this location for public events and may rely on rental fees for the maintenance of the facility.

3.2.12.7 Scope and Scale of the Potential Effect

The viewshed analyses indicate that at best (forest screen – hub height) none of the proposed turbines would be visible from Holden Town Hall, while at worst (bare terrain – total height) up to three turbines may be visible (Drawings J3-J6, Appendix J). The closest turbine (SM2) would be 6.6 miles from the hall making all the turbines background features (Drawing J13, Appendix J), and would take up an insignificant portion of the overall view, 9° of a 360° field of view (Drawing J2, Appendix J) if they were not obscured by a stand of trees (Drawings J11a and b, Appendix J).

Table 3.22 provides a summary of the visual impact assessment for the proposed Silver Maple turbines.

Table 3.22. Visual Impact Parameters for Proposed Silver Maple Turbines

View Angle	Nearest Turbine (miles)		Farthest Turbine (miles)	
9°	SM2 – 6.6		SM3 – 6.9	
Viewshed	Bare Terrain - Total Height (185 m)	Bare Terrain - Hub Height (117 m)	Forest Screen - Total Height (185 m)	Forest Screen - Hub Height (117 m)
# of Turbines are Visible	3	1	0	0

3.2.12.8 Cumulative Scenic Impact or Effect

The cumulative visual impact of the proposed Silver Maple Wind Project with the existing Pisgah Mountain Wind Farm was assessed using the same analyses in Section 3.2.12.7 (Scope and scale of the potential effect).

The viewshed analyses indicate that at best (hub height), no turbines may be visible from Holden Town Hall, while at worst (bare terrain – total height) up to seven turbines may be visible (Drawings J7-J10, Appendix J). The closest turbine to the hall is PM1, Pisgah Mountain wind farm turbine (Drawing J2, Appendix J). At a minimum distance of 6.6 miles, these turbines would be considered background views (Drawing J13a and b, Appendix J) and would make up an insignificant portion of the overall view, 10° of a 360° field of view, if they were not obscured by a stand of trees (Drawings J11a and b, Appendix J). As a result, the Project would have a very minimal visual impact.

Table 3.23 provides a summary of the cumulative visual impact assessment for the proposed Silver Maple and existing Pisgah Mountain turbines.

Table 3.23. Cumulative Visual Impact Parameters for Proposed Silver Maple Turbines and Existing Pisgah Mountain Turbines

View Angle	Nearest Turbine (miles)		Farthest Turbine (miles)	
10°	PM1 – 6.3		SM3 – 6.9	
Viewshed	Bare Terrain - Total Height (185 m)	Bare Terrain - Hub Height (117 m)	Forest Screen - Total Height (185 m)	Forest Screen - Hub Height (117 m)
# of Turbines are Visible	7	4	0	0

For the nighttime lighting to be visible, the hub of the turbine would need to be from the observer’s location visible and not blocked by vegetation. The forest screen – hub height (117m) viewshed model is the best proxy for this. This model indicates that the night lighting

may not be visible from any turbines (cumulatively including all Silver Maple and Pisgah Mountain turbines) from the Holden Town Hall (Drawing J10, Appendix J).

4.0 MITIGATIONS

SWEB has committed to installing a radar-based obstruction lighting control system as part of the development of the Silver Maple Wind Farm that complies all Federal Aviation Administration (FAA) requirements. This system would trigger the night-time navigation lighting system only when necessary as an airplane approaches the Project. This system would effectively mitigate any visual impact that the night-time navigation lighting system would cause.

5.0 CONCLUSION

Table 5 summarizes the visual impact of the Project on the 11 SRSNS locations that would be visible.

Table 5.1. Summary of Visual Impact Assessment

SRSNS	Significance of SRSNS	Scope and Scale of Visual Impact	Significance of Impact
Chemo Pond	High	Low	Low
Hopkins Pond	High	Low	Low
Mountainy Pond	High	Low	Low
Parks Pond	Moderate	Low	Low
Upper Union River Focus Area	High	Low	Low
Bald Bluff Mountain Focus Area	High	Low	Low
West Branch Union River (Graham Lake to Great Pond)	Moderate	Low	Low
Cliffwood Hall	Low	Low	Low
Harold Allen Schoolhouse	Low	Low	Low
East Eddington Public Hall	Low	Low	Low
Holden Town Hall	Low	Low	Low

The results of the visual impact assessment for the Silver Maple Wind Farm indicates that the significance of the visual impact are low for all 11 SRSNS assessed, owing to the low impact of the scope and scale of the visual impact of the development (namely a narrow field of view and significant distances from the SRSNS to the turbines). As the development consists on only 5 turbines that are clustered within a relatively small area, the scope and scale of the visual impact remained low for all SRSNS assessed. It should be noted that the area of visual impact of the proposed Silver Maple Wind Project would overlap with the existing Pisgah Mountain Wind Farm as the two projects are co-located in the same development area. This would result in the visual impacts of the Silver Maple Project being a small incremental increase over the existing wind power development in the area. The addition of the radar-based obstruction

lighting control system would effectively mitigate any visual impact that the night-time navigation lighting system would cause.

6.0 CLOSURE

Thank you for your review of the visual impact assessment for the proposed Silver Maple Wind Farm. While some aspects of this study are subjective in nature, we strived to maintain our objectivity as a third-party consultant. If you have questions about this assessment, please contact us.

7.0 STATEMENT OF QUALIFICATIONS AND LIMITATIONS

This Report (the “Report”) has been prepared by Strum Consulting (“Consultant”) for the benefit of SWEB Development USA LLC (SWEB) (“Client”) in accordance with the agreement between Consultant and Client, including the scope of work detailed therein (the “Agreement”).

The information, data, recommendations, and conclusions contained in the Report (collectively, the “Information”):

- is subject to the scope, schedule, and other constraints and limitations in the Agreement and the qualifications contained in the Report (the “Limitations”)
- represents Consultant’s professional judgement in light of the Limitations and industry standards for the preparation of similar reports
- may be based on information provided to Consultant which has not been independently verified
- has not been updated since the date of issuance of the Report and its accuracy is limited to the time period and circumstances in which it was collected, processed, made or issued
- must be read as a whole and sections thereof should not be read out of such context
- was prepared for the specific purposes described in the Report and the Agreement
- in the case of subsurface, environmental, or geotechnical conditions, may be based on limited testing and on the assumption that such conditions are uniform and not variable either geographically or over time

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This Statement of Qualifications and Limitations forms part of the Report and any use of the Report is subject to the terms hereof.

Should additional information become available, Strum requests that this information be brought to our attention immediately so that we can re-assess the conclusions presented in this report. This report was prepared by Scott Dickey, BSc., MREM, Environmental Scientist and was reviewed by Shawn Duncan, BSc., Vice President.