

**BEFORE THE STATE OF NORTH DAKOTA  
PUBLIC SERVICE COMMISSION**

**BADGER WIND, LLC  
BADGER WIND PROJECT – LOGAN AND MCINTOSH COUNTIES  
AMENDED SITING APPLICATION**

**CASE NO. PU-24-087**

**PRE-FILED TESTIMONY OF ANDREW KRIEGER  
ON BEHALF OF BADGER WIND, LLC**

June 21, 2024

1 **I. INTRODUCTION AND QUALIFICATIONS**

2  
3 **Q. Please state your name, employer, and business address.**

4 A. My name is Andrew Krieger. I am employed by Ørsted Onshore North America, LLC  
5 (“Ørsted”). My business address is 401 N. Michigan Avenue, Suite 501, Chicago, IL  
6 60606.

7  
8 **Q. What is your position with Ørsted?**

9 A. I am the Onshore Western Permitting Manager for Ørsted.

10  
11 **Q. Briefly describe your work history and education.**

12 A. I am an environmental regulatory and permitting expert with 12 years of professional  
13 experience in environmental policy, regulations, and permitting, and eight years of  
14 experience working with renewable energy. I have worked at Ørsted since 2021 on  
15 onshore and offshore renewable energy projects. Prior to Ørsted, I worked as a  
16 consultant for seven years on environmental regulatory issues for renewable and  
17 conventional energy sources, including for U.S. federal agencies such as the  
18 Department of Interior and the Environmental Protection Agency. I began my  
19 professional career at the U.S. Environmental Protection Agency headquarters in  
20 Washington, DC where I worked for two years. I hold a Masters of Environmental  
21 Science and Management from the University of California, Santa Barbara and a  
22 Bachelors of Science in Ecology and Evolution from the University of Pittsburgh. A  
23 copy of my resume is attached as proposed **BW Exhibit 17-A**.

24  
25 **Q. What is your role with respect to the Badger Wind Project (“Project”)?**

26 A. I am responsible for the Project’s compliance with local, State, and Federal  
27 environmental regulations. My role includes overseeing coordination with  
28 governmental agencies such as the U.S. Fish and Wildlife Service (“USFWS”), the  
29 North Dakota Game and Fish Department (“NDGF”), the State Historical Society of  
30 North Dakota (“SHSND”)/North Dakota State Historic Preservation Office (“SHPO”),  
31 and the United States Army Corps of Engineers (“USACE”). In addition, I oversee the

32 selection and work of consultants completing environmental and wildlife studies and  
33 surveys for the Project that are used to ensure compliance with applicable  
34 requirements and inform siting of Project facilities to avoid or minimize risk to sensitive  
35 and protected resources.

36

37 **Q. What proposed hearing exhibits are you sponsoring in your testimony?**

38 A. I am sponsoring the following proposed hearing exhibits:

- 39 • **BW Exhibit 1**: Application for an Amended Certificate of Site Compatibility
- 40 • **BW Exhibit 2**: Summary of Project Adjustments with Project Update Figure
- 41 • **BW Exhibit 3**: Updated Figures 1-13 in support of Badger Wind, LLC's Application  
42 for an Amended Certificate of Site Compatibility
- 43 • **BW Exhibit 7**: Updated Receptor Table
- 44 • **BW Exhibit 8**: Addendum Class III Archaeology Survey Report (dated May 24,  
45 2024) [**CONFIDENTIAL**]
- 46 • **BW Exhibit 9**: Additional Agency Correspondence
- 47 • **BW Exhibit 10**: Summary of Avoidance, Minimization, and Mitigation Measures
- 48 • **BW Exhibit 11**: Executed Memorandum of Understanding with the North Dakota  
49 Department of Agriculture
- 50 • **BW Exhibit 13**: Wetland and Waterbody Delineation Technical Memorandum  
51 (Spring 2024)
- 52 • **BW Exhibit 14**: 2024 Nest Surveys Technical Memorandum
- 53 • **BW Exhibit 15**: Signed Certification Relating to Order Provisions – Wind Energy  
54 Conversion Facility Siting, with accompanying Tree and Shrub Mitigation  
55 Specifications
- 56 • **BW Exhibit 17**: Prefiled Testimony of Andrew Krieger
- 57 • **BW Exhibit 17-A**: Krieger Resume

58

59 **Q. What is the purpose of your Direct Testimony?**

60 A. The purpose of my testimony is to provide updates regarding the environmental  
61 analysis for the current Project Area and design.

62

63 **II. UPDATES TO THE PROJECT**

64

65 **Q. Did Badger Wind obtain a Certificate of Site Compatibility (“CSC”) for the**  
66 **Project in 2022?**

67 A. Yes. In February 2022, Badger Wind submitted an Application for a Certificate of Site  
68 Compatibility (“2022 CSC Application”). On November 30, 2022, the North Dakota  
69 Public Service Commission (“PSC”) issued its Findings of Fact, Conclusions of Law  
70 and Order granting Certificate of Site Compatibility No. 64 (“2022 Order and CSC”)  
71 (Case No. PU-22-86) to Badger Wind for the Project.

72

73 **Q. Since the 2022 Order and CSC were issued, has Badger Wind submitted an**  
74 **application for an amendment of the CSC?**

75 A. Yes. On February 23, 2024, Badger Wind submitted its application to amend the CSC  
76 to authorize an updated Project boundary and associated layout modifications.

77

78 **Q. Is proposed BW Exhibit 1 Badger Wind’s Application for an Amended Certificate**  
79 **of Site Compatibility (“Application”) for the Project, which was filed with the**  
80 **PSC on February 23, 2024?**

81 A. Yes.

82

83 **Q. In Mark Crowl’s Direct Testimony, he describes the updates made to the Project**  
84 **since the CSC was issued on November 30, 2022. Are you aware of this**  
85 **testimony?**

86 A. Yes.

87

88 **Q. In Mr. Crowl’s Direct Testimony, he also describes the updates made to the**  
89 **Project since the Application was filed on February 23, 2024, which are reflected**  
90 **in Badger Wind’s May 14, 2024 filing. Are you aware of this testimony?**

91 A. Yes.

92

93 **Q. Is the layout shown on updated Application Figures 1-13 (proposed**  
94 **BW Exhibit 3), which were filed on May 14, 2024, the final layout?**

95 A. Yes.

96

97 **Q. Did the Project adjustments described in Mr. Crowl's Direct Testimony and in**  
98 **Badger Wind's May 14, 2024 filing affect resource impact estimates in the**  
99 **Application?**

100 A. The changes to the current layout impact numbers compared to the previous layout  
101 impact numbers result in an overall similar footprint of facilities. Notable changes  
102 include relocation of an access road that eliminated a permanent impact to a wetland.  
103 Overall, the change in impacts is minor. Additionally, while impact calculations are  
104 based on all 102 proposed turbine locations, only up to 93 turbines will be constructed;  
105 thus, the actual temporary and permanent impacts will be less.

106

107 **III. ENVIRONMENTAL AND SITE ANALYSIS OVERVIEW**

108

109 **Q. What was the approach to environmental analysis of the updated Project Area?**

110 A. A detailed environmental analysis was conducted for the Project as part of the 2022  
111 CSC Application. For several resources, the original analysis presented in the 2022  
112 CSC Application and subsequent filings has not substantially changed for the updated  
113 Project Area and design. For other resources, Badger Wind conducted additional  
114 studies and analyses to confirm that the Project continues to comply with applicable  
115 siting requirements, including avoiding and/or minimizing potential human and  
116 environmental impacts.

117

118 **Q. Since the 2022 Order and CSC were issued, what additional wildlife, habitat, and**  
119 **cultural studies/surveys has Badger Wind completed for the updated Project?**

120 A. Since the issuance of the CSC, Badger Wind has completed the following additional  
121 wildlife, habitat, and cultural resource studies and analyses for the updated Project:

- 122 • Additional desktop and field verification surveys for grassland habitat were  
123 conducted in August 2023 to cover updates to the Project. Badger Wind prepared

124 an updated Grassland Habitat Assessment included as Appendix O to the  
125 Application (proposed **BW Exhibit 1**), which presents the combined results of  
126 grassland assessments conducted for the Project during 2021 and 2023.

- 127 • Additional eagle/large bird use surveys began in August 2023 and are anticipated  
128 to be completed in July 2024.
- 129 • A bald eagle nest field verification was completed in January 2024 (see technical  
130 memorandum included with Appendix H to the Application (proposed  
131 **BW Exhibit 1**)).
- 132 • Additional wetland surveys were conducted in October and November 2023 to  
133 cover previously unsurveyed portions of the updated Project design. The Wetland  
134 and Waterbody Assessment is provided as Appendix N to the Application  
135 (proposed **BW Exhibit 1**).
- 136 • A Class I Literature Review and Class II Architectural Reconnaissance Inventory  
137 were completed in November and December 2023 to cover previously unsurveyed  
138 portions of the updated Project design (dated December 15, 2023) (Appendix M to  
139 the Application (proposed **BW Exhibit 1**)).
- 140 • A Class III Archaeology Survey was completed in in November and December  
141 2023 to cover previously unsurveyed portions of the updated Project design (dated  
142 January 24, 2024) (Appendix L to the Application (proposed **BW Exhibit 1**)).

143

144 **Q. Since the Application was filed, have any additional or updated reports been**  
145 **completed?**

146 A. Yes. Since the Application was filed, Badger Wind completed or updated the following  
147 environmental/cultural reports:

- 148 • Additional wetland field delineations were completed in May 2024 for a limited  
149 number of areas not delineated in the fall of 2023. The associated Wetland and  
150 Waterbody Delineation Technical Memorandum (Spring 2024) is provided as  
151 proposed **BW Exhibit 13**.
- 152 • Additional archaeological resource field surveys were completed in May 2024 for  
153 a limited number of areas not covered by the fall 2023 surveys. The associated

154 Addendum Class III Archaeology Survey Report (dated May 24, 2024) is provided  
155 as proposed **BW Exhibit 8**.

- 156 • Additional eagle and raptor nest surveys were completed in the spring of 2024 and  
157 the results are summarized in the 2024 Nest Surveys Technical Memorandum  
158 (proposed **BW Exhibit 14**).

159  
160 Additional reports and updates to reports are discussed in the Direct Testimony of  
161 Mark Cowl (proposed **BW Exhibit 16**).

162

#### 163 **IV. CULTURAL RESOURCES**

164

165 **Q. What were the results of the additional Class III archaeological surveys**  
166 **conducted for the updated Project design?**

- 167 A. The supplemental Class III archaeological survey conducted in November/December  
168 2023 identified one new archaeological site (32LO174) and one new prehistoric  
169 isolated find (32LOX76) (see Application Appendix L, Archaeological Reconnaissance  
170 Survey Report (proposed **BW Exhibit 1**)). The archaeological site (32LO174) has not  
171 been fully evaluated for listing in the National Register of Historic Places (“NRHP”), so  
172 avoidance or full evaluation is recommended. The prehistoric isolated find (32LOX76)  
173 is recommended not eligible for listing in the NRHP.

174

175 Additional archaeological resource field surveys were completed in May 2024 for a  
176 limited number of unsurveyed areas (see Addendum Class III Archaeology Survey  
177 Report, dated May 24, 2024) (proposed **BW Exhibit 8**). No new or previously  
178 recorded cultural resources were identified.

179

180 **Q. What were the results of the additional Class I Literature Review and Class II**  
181 **Architectural Reconnaissance Inventory Badger Wind conducted for the**  
182 **updated Project design?**

- 183 A. The supplemental Class I Literature Review identified one previously documented  
184 aboveground historic resource (32MT00038) that was either not fully evaluated for

185 listing in the NRHP or was previously determined not eligible for inclusion. The Class  
186 II Architectural Reconnaissance Inventory survey identified a total of nine  
187 aboveground resources that are recommended not eligible for listing in the NRHP and  
188 determined that previously documented resource 32MT00038 was no longer present.

189

190 **Q. Have the supplemental Class I, Class II, and Class III results been submitted to**  
191 **SHSND?**

192 A. Yes, the supplemental Class III Archaeological Survey (January 24, 2024), Class I  
193 Literature Review and Class II Architectural Reconnaissance Inventory Survey (dated  
194 December 15, 2023), and addendum Class III Archaeology Survey Report (dated  
195 May 24, 2024) have all been submitted to SHSND for concurrence.

196

197 On April 11, 2024, SHSND provided a concurrence letter for the supplemental  
198 Class III Archaeological Survey (Application Appendix L (proposed **BW Exhibit 1**))  
199 (dated January 24, 2024) and Class I Literature Review and Class II Architectural  
200 Reconnaissance Inventory Survey (Application Appendix M (proposed  
201 **BW Exhibit 1**)), noting that archaeological site 32LO174 should be avoided or fully  
202 evaluated. SHSND provided a second concurrence letter on April 11, 2024 for the  
203 supplemental Class III. Both SHSND letters are provided in proposed **BW Exhibit 9**.

204

205 Badger Wind will provide the PSC with SHSND's concurrence on the addendum Class  
206 III Archaeology Survey Report (dated May 24, 2024) once it is received.

207

208 **Q. Does the Project continue to avoid impacts to the cultural resource sites**  
209 **identified?**

210 A. Yes. Project infrastructure has been sited to avoid NRHP eligible, potentially eligible,  
211 or unevaluated cultural and historic architectural resources. Specifically, the Project  
212 continues to avoid the seven unevaluated archaeological sites and two archaeological  
213 site leads previously identified in 2022, and avoids archaeological site 32LO174  
214 identified during the 2023 survey. Additionally, the Project continues to avoid the five  
215 historic architectural resources and one contributing resource identified in 2022 that

216 are recommended as potentially eligible for listing in the NRHP. As a result, no  
217 impacts to archaeological or architectural resources are anticipated.

218

219 **Q. Will Badger Wind have procedures in place to address previously unidentified**  
220 **cultural resources encountered during construction?**

221 A. Yes. Badger Wind prepared an Unanticipated Discoveries Plan (“UDP”) for the  
222 Project, which will be followed during construction in the event that previously  
223 unidentified potential cultural resources or human remains are encountered. The UDP  
224 details a process for prompt communication and action regarding the discovery of  
225 previously unknown archaeological resources or human remains, should they be  
226 encountered during construction.

227

228 **V. WETLANDS AND WATERBODIES**

229

230 **Q. Please discuss the wetlands and waterbodies surveys conducted for updated**  
231 **Project design.**

232 A. In fall 2023, field wetland delineations and field wetland mapping were completed at  
233 locations not previously surveyed within the updated Project Area that may be  
234 disturbed by Project construction. A Wetland and Waterbodies Assessment was  
235 included as Appendix N to the Application (proposed **BW Exhibit 1**). Additional  
236 wetland field surveys were completed in May 2024 for a limited number of previously  
237 unsurveyed areas; the associated Wetland and Waterbody Delineation Technical  
238 Memorandum (Spring 2024) is provided as proposed **BW Exhibit 13**. In all,  
239 approximately 248 acres of wetlands were delineated/mapped and approximately six  
240 acres of waterbodies/watercourses were delineated/identified within the updated  
241 Project Area.

242

243 **Q. Does the Project continue to be designed to avoid and/or minimize impacts to**  
244 **wetlands and waterbodies?**

245 A. Yes. The Project has been designed to avoid permanent impacts to surveyed  
246 wetlands and minimize temporary wetland impacts.

247

248 As discussed in Mr. Crowl’s testimony (proposed **BW Exhibit 16**) and in the Summary  
249 of Project Adjustments (proposed **BW Exhibit 2**), Badger Wind relocated an access  
250 road, thereby eliminating a permanent impact to a wetland. As a result, the Project  
251 avoids permanent impacts to wetlands and surface waters.

252

253 Where wetlands or surface waters are present, Badger Wind plans to bore  
254 underground collection lines, thereby avoiding impacts. Matting will also be used  
255 when crossing wetlands during construction to minimize temporary disturbances.  
256 Temporary impacts are anticipated to fall under the threshold for a Nationwide Permit  
257 with self-certification in accordance with Section 404 of the Clean Water Act (“CWA”).

258

259 **VI. AVIAN AND BAT ANALYSES**

260

261 **Q. Is Badger Wind conducting additional eagle and large bird surveys for the**  
262 **current Project Area?**

263 A. Yes. At the time the CSC was issued, Badger Wind had completed two years of  
264 baseline eagle/large bird use surveys and fixed-point avian use surveys, and aerial  
265 and ground-based eagle and raptor nest surveys. The surveys identified avian  
266 species within and near the 2022 Project Area. Avian use in the current Project Area  
267 is representative of the previously observed avian use, as turbines located in the area  
268 added to the Project Area since 2022 are located no farther than two miles away from  
269 the previously surveyed area with similar land cover and avian habitat. However,  
270 Badger Wind has commissioned an additional 12 months of eagle and large bird  
271 surveys of the current Project Area to ensure that avian use is sufficiently  
272 characterized for the current Project Area. The additional eagle and large bird surveys  
273 began in August of 2023 and will conclude in July 2024, allowing for an additional year  
274 of data collection prior to commencement of construction.

275

276 **Q. Has Badger Wind updated the Bird and Bat Conservation Strategy (“BBCS”)?**

277 A. Yes. At the time the CSC was issued, Badger Wind had prepared a BBCS in  
278 coordination with USFWS and NDGF. The Project’s BBCS has been updated as of  
279 January 2024 to reflect the current Project Area, additional coordination with USFWS  
280 and NDGF, and additional environmental studies/surveys conducted for the updated  
281 Project. Additionally, an updated USFWS Information for Planning and Consultation  
282 (“IPaC”) was included as well as a description of the Project’s commitments to  
283 voluntary offsets. The updated BBCS has been shared with NDGF and USFWS for  
284 review and was included with the Application as Appendix H (proposed  
285 **BW Exhibit 1**).

286

287 **Q. Has Badger Wind conducted additional eagle and raptor nest surveys for the**  
288 **Project?**

289 A. Yes. A ground-based nest verification survey was completed on January 5, 2024 to  
290 confirm the presence or absence of the two previously identified eagle nests (one  
291 active nest and one alternate nest) within the Project Area (see technical  
292 memorandum included with Appendix H to the Application (proposed **BW Exhibit 1**)).  
293 Additional eagle and raptor nest surveys were also completed in the spring of 2024.  
294 One of the previously identified eagle nests was observed in a deciduous tree and  
295 was classified as being in good condition; however, the nest status was unknown.  
296 The second previously identified eagle nest was missing and not observed during  
297 these surveys. Project turbines are sited at least two miles from the one remaining  
298 nest. The results of the eagle nest surveys are summarized in the 2024 Nest Surveys  
299 Technical Memorandum (proposed **BW Exhibit 14**).

300

301 **Q. Do the results of the avian use surveys and raptor and eagle nest surveys**  
302 **conducted to-date continue to indicate that bald eagle use in the Project Area**  
303 **is consistent with geographical use in this region?**

304 A. Yes.

305

306 **Q. Do the results of the avian use surveys and raptor and eagle nest surveys**  
307 **conducted to-date continue to indicate that golden eagle use of the Project Area**  
308 **is expected to be minimal?**

309 A. Yes. Based on the nest surveys, there are no golden eagle nests within the Project  
310 Area or within ten miles of the Project Area. Given the low observed use rate, golden  
311 eagle use of the Project Area is expected to be minimal. Further, no prairie dog  
312 colonies (a known prey source) exist within the Project Area.

313

314 **Q. Does the Project continue to avoid and/or minimize potential impacts to eagles?**

315 A. Yes. Badger Wind has sited turbines at least two miles from the one known bald eagle  
316 nest located within the Project Area. Accordingly, impacts are not expected to occur  
317 to bald eagle nests.

318

319 No known, active golden eagle nests were identified within the 2022 Project Area or  
320 within ten miles of it. Accordingly, the Project is not anticipated to impact golden  
321 eagles.

322

323 **Q. Does the Project continue to avoid and/or minimize potential impacts to**  
324 **whooping cranes?**

325 A. Yes. At the time the CSC was issued, Badger Wind had completed a whooping crane  
326 habitat assessment in 2021, which indicated that potential whooping crane stopover  
327 habitat is present in the 2022 Project Area, but the habitat is of relatively lower quality  
328 and quantity compared to the nearby reference areas analyzed. Based on previous  
329 survey results, whooping cranes may occur in the Project Area during the migration  
330 season; however, the potential for impacts to whooping cranes is low. Badger Wind  
331 is coordinating with USFWS on additional measures to avoid or minimize potential  
332 impacts to whooping cranes.

333

334 **Q. Does the Project continue to avoid and/or minimize potential impacts to bat**  
335 **species, including the Northern Long-eared Bat (“NLEB”)?**

336 A. Yes. Badger Wind coordinated with USFWS and NDGF on whether additional data  
337 collection regarding bat species is needed for the current Project Area. USFWS and  
338 NDGF did not indicate that additional data collection for bat species was necessary  
339 for the current Project Area. Badger Wind has designed the Project to avoid and/or  
340 minimize potential impacts to bat species, including the NLEB.

341

342 **Q. Has Badger Wind continued to design the Project to avoid and/or minimize**  
343 **potential impacts to unbroken grasslands and grassland birds?**

344 A. Yes. In addition to the grassland habitat assessments conducted for the 2022 Project,  
345 Badger Wind conducted additional desktop and field verification surveys for  
346 grasslands in August of 2023 to cover changes/updates to the Project, which include  
347 the expanded Project boundary. Badger Wind prepared an updated Grassland  
348 Habitat Assessment, which presents the combined results of grassland assessments  
349 conducted for the Project during 2021 and 2023. The results of these surveys have  
350 been used to evaluate and inform Project infrastructure siting decisions to avoid and/or  
351 minimize potential impacts to unbroken grassland habitat.

352

353 **Q. Does the Project continue to avoid and/or minimize potential impacts to sharp-**  
354 **tailed grouse?**

355 A. Yes. Badger Wind has designed the Project to continue to adhere to the Plains Sharp-  
356 Tailed Grouse Conservation Strategy developed by Western EcoSystems  
357 Technology, Inc. (“WEST”) to minimize potential impacts to sharp-tailed grouse during  
358 Project construction and operations.<sup>1</sup> As was committed to in the Plains Sharp-Tailed  
359 Grouse Conservation Strategy, in the current Project layout, no turbines are located  
360 within unbroken grasslands, the majority of turbines are sited in areas that are not  
361 suitable for sharp-tailed grouse habitat, and all turbines located in identified suitable

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<sup>1</sup> Case No. PU-22-86, Docket Item No. 86, BW Exhibit 10 (Plains Sharp-Tailed Grouse Conservation Strategy).

362 habitat are located in previously fragmented areas, which helps minimize impacts to  
363 the local sharp-tailed grouse population. Badger Wind has coordinated with USFWS  
364 and NDGF regarding the current layout and its continued compliance with the Plains  
365 Sharp-Tailed Grouse Conservation Strategy.

366

367 **Q. Badger Wind previously committed to voluntary offsets for potential grassland**  
368 **breeding bird displacement. Do you have an update on that commitment?**

369 A. Yes. Badger Wind executed a Memorandum of Understanding (“MOU”) with the North  
370 Dakota Department of Agriculture outlining Badger Wind’s voluntary mitigation offset  
371 commitments.

372

373 **Q. Is that MOU provided as proposed BW Exhibit 11?**

374 A. Yes.

375

376 **VII. AGENCY COORDINATION**

377

378 **Q. Prior to filing its Application, did Badger Wind contact all agencies and entities**  
379 **identified in Section 69-06-01-05 of the North Dakota Administrative Code**  
380 **(“NDAC”)?**

381 A. Yes.

382

383 **Q. Has Badger Wind received correspondence from and/or consulted with**  
384 **agencies regarding the updated Project?**

385 A. Since receiving its CSC, Badger Wind received comments from or otherwise  
386 consulted with a number of agencies/entities. The correspondence is included in  
387 Appendix D of the Application (proposed BW Exhibit 1).

388

389 After the Application was filed, Badger Wind received (either directly or via filing with  
390 the PSC) additional comments and correspondence from: the SHSND; the NDGF;  
391 the U.S. Department of Commerce, National Telecommunications and Information

392 Administration; the North Dakota Department of Agriculture; and the North Dakota  
393 Department of Environmental Quality (proposed **BW Exhibit 9**).

394

395 **VIII. COMPLIANCE WITH PSC SITING RULES**

396

397 **Q. Are you familiar with the exclusion areas, avoidance areas, selection criteria,**  
398 **and policy criteria identified in NDAC Section 69-06-08-01?**

399 A. Yes.

400

401 **Q. Does the Project Area continue to avoid all general exclusion areas?**

402 A. Yes. There are no categories of general exclusion areas within the Project Area.

403

404 **Q. Please discuss whether any of the exclusion areas specific to wind energy**  
405 **conversion facilities are located within the Project Area.**

406 A. Five exclusion areas specific to wind energy conversion facilities are present within  
407 the Project Area:

408 • Areas less than 1.1 times the height of the turbine from the nearest edge of  
409 an interstate or state roadway right-of-way;

410 • Areas less than 1.1 times the height of the turbine plus 75 feet from the centerline  
411 of any county or maintained township roadway;

412 • Areas less than 1.1 times the height of the turbine from the nearest edge of any  
413 railroad right-of-way;

414 • Areas less than 1.1 times the height of the turbine from the nearest edge of a 115  
415 kV or higher transmission line right-of-way; and

416 • Areas less than 1.1 times the height of the turbine from the property line of a non-  
417 participating landowner and 3 times the height of the turbine from an inhabited rural  
418 residence of a non-participating landowner unless a variance is granted.

419

420 Although present within the Project Area, the turbines have been sited to avoid these  
421 areas.

422

423 **Q. Are there any general avoidance areas present within the Project Area?**

424 A. Yes. The following general avoidance areas are present within the Project Area:

425 • Historical resources which are not designated as exclusion areas: Additional  
426 cultural and architectural resource surveys were conducted in areas not previously  
427 surveyed. The Project will avoid identified eligible cultural and architectural  
428 resources.

429 • Woodlands and wetlands: Wetlands and small woodlands and shelterbelts are  
430 present within the Project Area. As discussed above, the Project avoids  
431 permanent impacts to wetlands.

432

433 **Q. Will the Project continue to comply with the wind energy conversion facility-  
434 specific sound avoidance area requirement?**

435 A. Yes. For further discussion, see the Direct Testimony of Mr. Crowl.

436

437 **Q. Will any significant adverse effects resulting from the location, construction,  
438 and operation of the Project, as they relate to the selection criteria set forth in  
439 the PSC's rules, continue to be at an acceptable minimum or managed and  
440 maintained at an acceptable minimum?**

441 A. Yes.

442

443 **Q. Were the policy criteria set forth in the PSC's siting rules considered and utilized  
444 to the extent possible by Badger Wind when designing the proposed Project?**

445 A. Yes.

446

447 **Q. Were the factors set forth in Section 49-22-09 of the North Dakota Century Code  
448 considered by Badger Wind when designing the proposed Project?**

449 A. Yes.

450

451 **IX. CONCLUSION**

452

453 **Q. From the perspective of minimizing potential environmental impacts, could you**  
454 **summarize the measures previously committed to that Badger Wind is**  
455 **continuing to employ?**

456 A. Yes. As discussed above, Badger Wind is:

- 457 • Continuing to implement the commitments in the Plains Sharp-Tailed Grouse  
458 Conservation Strategy;
- 459 • Continuing to site turbines outside of unbroken grasslands;
- 460 • Continuing to site turbines at least two miles from the one bald eagle nest in the  
461 Project Area;
- 462 • Continuing to avoid all NRHP eligible, potentially eligible, or unevaluated cultural  
463 resource sites and impacts to architectural resources;
- 464 • Continuing to minimize tree removal to minimize potential impacts to bats;
- 465 • Avoiding all permanent wetland impacts (previous layout had a less than 0.01 acre  
466 impact) and continuing to minimize temporary wetland impacts; and
- 467 • Continuing to implement measures outlined in the updated BBCS in coordination  
468 with wildlife agencies.

469

470 **Q. Based on the analysis conducted by Badger Wind, will construction of the**  
471 **Project continue to produce minimal adverse human and environmental**  
472 **effects?**

473 A. Yes.

474

475 **Q. Does this conclude your Testimony?**

476 A. Yes.

477