



Memo

Project No. AB0156C

To: Hilary Hunter
From: Andrew Ryckman
Date: April 20, 2022
Re: **Bekevar Wind Energy Project**
Response to Federal Comments on the *Bekevar Wind Energy*
Project: Environmental Impact Statement

Natural Resource Solutions Inc. (NRSI) has reviewed the comments provided by Environment and Climate Change Canada (ECCC), as circulated by Indigenous Service Canada (ISC) via email on March 16, 2022, relating to the submission of the *Bekevar Wind Energy Project: Environmental Impact Statement* [dated December 16, 2021]. In response to these comments, and the corresponding requests for clarity on project siting and proposed activities, NRSI has prepared the following response memo that addresses the comments provided by ECCC.

NRSI acknowledges that the comments provided by ECCC are based on the December 16, 2021 submission of the Environmental Impact Statement (EIS) for the Bekevar Wind Energy Project (Bekevar WEP or Project). The Project concurrently received comments from the Saskatchewan Ministry of Environment (ENV), which have since been addressed in a slightly revised EIS that was provided to ENV on March 25, 2022, and was circulated to ISC on March 29, 2022, the same day it was accepted as “final” by ENV.

Following the acceptance of the EIS as “final”, the Project has since received the detailed *Technical Review Comments on the Environmental Impact Statement*, dated April 2022. As outlined in these technical comments, the provincial technical reviewers are satisfied with the content of the submission and the compliance of the submission and supporting documents with applicable provincial guidelines, protocols, and expectations. Further, the comments conclude with the confirmation that the Environmental Assessment Review Panel and the ministry have determined the EIS, and supporting material, to have implemented sufficient studies and provided adequate information to support the determinations made within the EIS.

In consideration of the specific submission made by ECCC, the following summary of responses has been formatted to follow the general layout, structure, and headings, of the ECCC comment document.

General Project Clarifications

Following a comprehensive review of the ECCC comments, NRSI wishes to provide the following general clarifications, which address several of the themes within the ECCC comments:

- All Project activities located on Cowessess First Nation reserve lands (herein referred to as “federal lands” per the terminology used by ECCC) occur within habitat deemed ‘Agricultural’, which is almost exclusively cultivated lands. Also included are very small patches of field edge that were deemed too small to map as unique land cover types and that are highly disturbed due to adjacent agricultural practices and therefore have been collectively referred to as ‘Agricultural’ land use.
- Similar to above, the Project footprint (incl. all temporary and permanent activities and footprints) on federal lands does not overlap any wetlands (of any Class), treed habitat, grassland, shrubland, or any other habitat that can be considered natural or native. Any necessary Project location changes on the federal lands will continue to apply this low-impact strategy and will similarly avoid natural features and potential wildlife habitats that have already been considered, and avoided, by the current layout on federal lands.
- All aspects of the EIS, including all impact assessments, mitigation measures, operational monitoring protocol, adaptive management framework, etc., are applicable to the Project as a whole, including the three quarter sections of Cowessess First Nation reserve land.

Identification of Potential Impacts to Wildlife Species

- 1) “...the Project is located within the ranges of a number of Species at Risk (SAR; see Appendix 1) and the migratory corridor used by Whooping Crane (*Grus Americana*, Endangered).”

In consideration of the migratory corridor of Whooping Crane, NRSI acknowledges that the general migratory corridor does overlap with the Bekevar Wind Energy Project, but notes that this species is neither a confirmed Historical Species, nor is it an Expected Species, based on provincial data within the Saskatchewan Conservation Data Centre (SKCDC). Further, NRSI notes that no observations of Whooping Crane were made at any of the 24 bird migration monitoring stations that were surveyed at least 3 times in each of the spring and fall monitoring (totaling 102 unique surveys during each of spring and fall). As such, it is NRSI’s opinion that the combination of historical data, provincially expected species occurrences, and comprehensive site-specific field monitoring, indicate an unlikely presence of this species within the immediate vicinity of the Project.

NRSI has provided further input relating to Appendix 1 of the ECCC comments, discussed later in this memo.

- 2) “Baseline data was collected at two amphibian survey stations and two breeding bird survey stations adjacent to the federal lands...”

NRSI clarifies that the reference to “two breeding bird survey stations” is likely referring to the two migratory bird stations that were conducted adjacent to the federal lands (BMM-01 and BMM-19). One breeding bird station (also referred to as ‘grassland breeding bird station’), GBB-01, was also conducted adjacent to the federal lands.

- 3) "Aside from one grassland breeding bird survey station, no targeted SAR surveys are described within the specific federal lands."

NRSI notes that this comment may be misleading since (as the ECCC comments also note) there were also two migratory bird stations and two amphibian monitoring stations all placed within, or immediately adjacent to, the federal lands. All of these surveys are intended to document the use of local and/or migratory wildlife, including potential presence of SAR, that may be present on federal lands.

Further, NRSI can confirm that the placement of other species-specific surveys (e.g. Common Nighthawk surveys) was made based on the presence of available habitat. As shown on Map 5a of the EIS, the three quarter sections of Cowessess First Nation reserve lands are dominated by agricultural land, with no grassland or shrubland habitat. Also present within the three quarter sections, but not overlapping the Project activities, are numerous wetlands (varying classifications), a wooded habitat, and a small area of potential pasture. The available habitats guided the placement of monitoring stations, which resulted in the placement of two amphibian stations to assess wetlands and a grassland breeding bird station to assess the small area of potential pasture, as well as migratory bird stations to assess general bird movements and consider the potential use of the federal lands as stopover habitats.

Construction [Wetlands]

- 4) "The extent of Project construction effects to wetlands on federal land is not specifically detailed in the Project information that was provided to ECCC for review.

NRSI understands, and acknowledges, that specific impacts to federal land were not separated from those from the Project as a whole. However, NRSI notes that Map 5a of the EIS specifically shows the location of all identified wetlands relative to the proposed Project activities and infrastructure on federal lands.

- 5) "Whether any of these effects will occur on the federal land is uncertain."

NRSI confirms that the Project footprint does not overlap with any wetland, of any classification, on the federal lands, resulting in no anticipated areas of temporary or permanent disturbance to wetlands on these lands. As stated above, Project location changes, if any, will continue to adhere to this low-impact siting strategy.

- 6) "...the access road connecting T8 to T19 appears to approach and potentially cross a Class IV semi-permanent wetland."

As an initial point of clarification, the infrastructure connecting T8 to T19 is an underground collection line (not an access road), which will have a narrow, and temporary, disturbance, and will be restored to baseline conditions after the completion of construction activities. This linear disturbance is depicted on EIS mapping (see Map 5a), including a depiction of the 10m wide 'Construction Disturbance Area' (i.e. temporary limit of disturbance during construction). As shown on the supporting mapping, and as confirmed during site-specific habitat validation exercises and wetland delineations that were specifically completed on federal lands, it was confirmed that no Project activities will encroach into any wetland on federal lands.

In the furthest southeast corner of the three quarter sections of Cowessess First Nation reserve land, on SE-04-13-05-2, the collection line will be placed within the municipal road right-of-way and may overlap with a Class II (temporary) wetland. As this potential effect is within a municipal road right-of-way, it is not subject to federal review.

- 7) ECCC advises ISC to confirm with the Proponent whether there will be any anticipated changes in natural habitats, including wetlands, during construction activities and if all general mitigation measure commitments will be applied to works planned on federal lands.

NRSI confirms that all planned activities that occur on federal lands, including temporary and permanent construction disturbances, will occur entirely within areas of 'Agricultural' land use. No wetlands, wooded habitat, grassland, shrubland, or other natural habitats will be impacted and are not expected to experience any change with the implementation of the mitigation measures identified in the EIS.

NRSI confirms that the mitigation measures presented within the EIS are applicable to all Project activities, regardless of whether they occur on lands that are subject to federal or provincial review.

- 8) "ECCC advises that any anticipated loss of wetlands must be offset to ensure no net loss of wetlands..."

NRSI confirms that there will be no loss of wetland habitat on federal lands.

- 9) "...ISC should seek additional clarification from the Proponent to determine how much wetland loss and/or alternation will occur on federal lands."

NRSI confirms that there will be no wetland loss or alternation occurring on federal lands.

- 10) "For all impacts that cannot be avoided or minimized, ECCC recommends that a Wetland Compensation Plan (WCP) be requested of the Proponent..."

NRSI confirms that all wetlands will be avoided on federal lands, and therefore no WCP is expected.

Construction [Migratory Birds and Species at Risk]

- 11) "Two amphibian SAR were also described by the Proponent in the general Project area and may have potential to use wetland and wetland-adjacent habitats on the federal lands..."

For clarity, one of these amphibian SAR, Northern Leopard Frog, was confirmed by NRSI to be present within the general Project area. This individual was documented at one of the 23 amphibian stations that were conducted across the general Project area, and was found more than 6.5km from the federal lands, which is well beyond the expected distance that this species may travel between habitats.

The second amphibian SAR, Western Tiger Salamander, was documented as a historical record by SKCDC within the general Project area (plus 1km buffer), and was

not confirmed by NRSI biologists during any of the surveys conducted at the Project, including site-specific work conducted on federal lands.

Although it's true that species found in the general landscape may similarly have the potential to occur on the federal lands, NRSI notes that neither of the two immediately adjacent amphibian survey stations documented either species, nor did any of the crews undertaking site-specific habitat assessments and wetland delineations that specifically occurred on the federal lands.

In consideration of the Project not overlapping wetlands of any class on federal lands, and no documentation of either species on (or near) these specific lands, NRSI concludes that the potential for encountering these species is very unlikely. Conservative mitigation measures were established, as detailed in the EIS, for work within 10m of wetland habitat to ensure that, despite a very low likelihood of presence, reasonable steps are taken to avoid, or even further minimize, the potential for effects to these species.

- 12) "...some migratory birds and bird SAR may still use features of the site (e.g., existing structures, exposed soils and stockpiles, or adjacent vegetated areas, seasonal wetlands, ponds)....ECCC advises that any habitat destruction activities (e.g., vegetation clearing mowing, earth movement, flooding, draining, construction, etc.) or high disturbance activities (e.g., drilling, blasting) in areas attractive to migratory birds carry a particularly high risk of disturbing or destroying migratory bird nests or eggs between mid April – late August."

*NRSI acknowledges this comment and had already included a similar commitment for "...any construction activity occurring in, or within, 10m of a non-cultivated habitat" to require a bird nest search throughout the period of April 15 to August 16. In consideration of ECCC's comment that certain activities may carry a potential for increased risk of disturbance into 'late August', **the Project commits to extend the timing window for bird nest searches to August 31 specifically for any activity that will specifically result in habitat destruction.** This modification will be applied to the entire Project, and will be in addition to the existing commitment to also assess the nearby non-cultivated habitat (i.e. within 10m) during the identified the period of April 15 to August 16.*

- 13) In consideration of Project activities in proximity to non-cultivated wetlands, (i.e. potential amphibian Species at Risk habitat), ECCC includes a three-part recommendation for a mitigation and monitoring strategy relating to work within 10 metres of non-cultivated wetlands, from March 15 to October 31.

NRSI would first like to reiterate that through comprehensive surveys, including two amphibian monitoring stations adjacent to federal lands and site-specific walking transects to delineate wetlands, no Species at Risk amphibians were documented on the federal lands and it was determined to be unlikely that amphibian Species at Risk are present and using these habitats. Further, Project activities on federal lands are not proposed to overlap with any wetlands.

Regardless of the unlikely presence of amphibian Species at Risk on these lands, NRSI's EIS takes a conservative approach to apply mitigation measures to all non-cultivated wetlands, following an approach that is consistent with the three-part approach

recommended by ECCC. This approach, as outlined in the EIS, will include a pre-disturbance assessment by a Qualified Professional, the implementation of additional mitigation measures (if appropriate), and regular environmental construction monitoring to evaluate effectiveness of mitigation measures.

- 14) “Additionally, if any Project areas may be suitable fossorial overwintering habitat for these species, appropriate-timed surveys should be undertaken to determine occupancy prior to commencing ground disturbance...”

As confirmed earlier in this report, the entirety of the Project area on federal lands has been placed within areas documented as agricultural habitat, although there may be very small areas of field edge overlapped by the Project activities. Given the habitat present within the Project area, in combination with the lack of Species at Risk observations, NRSI does not anticipate any potential impact to overwintering Species at Risk on federal lands.

- 15) “The Proponent has provided limited information regarding tree sizes and Project construction-related changes to any of the wooded areas identified on the federal lands.”

The entirety of the Project footprint on federal lands occurs within areas documented as ‘Agriculture’, with no anticipated tree removal.

- 16) “Any tree removal anticipated by the Project should be discussed with ECCC Canadian Wildlife Service...”

No tree removal is proposed to occur on the federal lands.

Operation [Migratory Birds and Species at Risk]

- 17) “Based on industry records for wind projects drawn largely from Ontario (BSC et al 2018), the Proponent predicts...”

NRSI notes that the estimates presented in the EIS are based on compiled data from Alberta, not Ontario. Since there is not enough publicly available data from Saskatchewan for a reasonable data summary, Alberta projects were determined to provide a reasonable data surrogate, based on general similarities in geography, habitat, and weather patterns, relative to the other available geographic summaries (i.e. Ontario and Atlantic Canada).

- 18) “The magnitude of Project effects to SAR and migratory birds on federal lands remain relatively uncertain, because:
1. detailed mitigation plans and post-construction monitoring plans specific to the portion of the Project to be located on federal lands have not been provided for review;”

NRSI can confirm that the detailed Adaptive Management Plan & Post-construction Monitoring Plan that was submitted as an appendix to the EIS does include detailed monitoring and mitigation strategies. This plan has been prepared in accordance with provincial guidelines, and includes reference to separate mortality triggers for birds and

Species at Risk (among other species groups), and is applicable to the Project, as a whole, including to the turbines located on federal lands.

- 19) “Specific mitigation measures to avoid and lessen predicted mortality effects to SAR during Project operation on federal lands are not yet detailed.”

NRSI notes that Table 6 of the Adaptive Management Plan & Post-construction Monitoring Plan that was submitted as an appendix to the EIS does include a range of mitigation options that can be implemented if the defined Tier 2 or Tier 3 Management Triggers are met. In NRSI’s experience, the specific mitigation strategy to be implemented can vary considerably based on the particular species (or species group) of interest, magnitude of impact, geographic distribution of impact, etc. etc. As such, it is not realistic to identify a singular specific mitigation strategy that will be effective in every possible scenario. The approach taken by the EIS, and supporting documents, is consistent with the requirements of provincial documentation and is intended to be applied across the Project, as a whole, including the federal lands.

- 20) “Detail regarding how the Projects’ adaptive management of mitigation measures and post-construction monitoring will be applied on the portion of the Project located on federal lands, how results reporting will be shared has not been provided to ECCC.”

The implementation of adaptive management and associated monitoring on federal lands has been detailed above.

The Project is committed to providing a mortality summary, specific to federal lands, to ECCC at the same reporting frequency as required by provincial submissions. This will include, at a minimum, the raw fatality count for turbines on federal lands and a summary of Project-wide fatality estimates. The Project is not expecting to prepare a specific fatality estimate for federal lands due to a high likelihood of bias relating to a very small sample size (i.e. 2 turbines).

Further, the Project has committed to submitting all fatality data to ENV in a format that will facilitate entry into the federal Bird & Bat Wind Energy Database, which is maintained by Birds Canada (and for which both ECCC and NRSI are involved as Steering Committee members). The consultant that completes operational monitoring will also require a federal migratory bird collection permit, which will also require annual reporting of all migratory bird collections made across the entire site.

The redundancy in reporting, as outlined above, will ensure that all data applicable to the federal lands, as well as all site-wide data relating to migratory birds, will be submitted to federal agencies through the appropriate regulatory avenues.

- 21) “Whooping Crane, for example, may be displaced from spring or fall stopover habitats in this portion of their migratory corrido during the Project’s operation phase as migrating individuals avoid newly installed wind-energy infrastructure (Pearse et al. 2021)”

As described above, this particular species has no known historical records within the Project area, nor does SKCDC consider it an ‘Expected Species’ within the Project area (including a conservative 1km buffer area). Further, 24 migratory bird stations were

assessed across 102 individual counts in each of the spring and fall migration periods in 2021, with no documented records of this species migrating through, or stopping over, within any part of the Project area. For these reasons, NRSI disagrees with the ECCC assessment that this species may be displaced from stopover habitats as a result of this Project.

22) "...stopover habitat quality for Whooping Crane in the area of the Project does not appear to have been assessed by the Proponent."

See response above. Potential for this species to utilize stopover habitat within the Project area has been addressed through the completion of a detailed background review, as outlined in the EIS, and confirmed through comprehensive site-specific migratory bird surveys, none of which identified any likelihood of this species utilizing the Project area.

23) "ECCC advises that Project effects to these bat species, as well as to Little Brown Myotis, warrant additional consideration."

The Project is committed to minimizing impacts to all bat species, including current and future Species at Risk, through the implementation of the Adaptive Management Plan & Post-construction Monitoring Plan that was submitted as an appendix to the EIS. This plan has been prepared in accordance with provincial guidelines, and includes reference to separate mortality triggers for non-listed bats and Species at Risk (among other species groups), and is applicable to the Project, as a whole, including to the turbines located on federal lands. Following this plan, management responses will be implemented if any fatality of a Species at Risk, or provincially sensitive species, is documented, or if the general bat management trigger exceeds 2 non-listed bats/MW.

Further, it should be noted that the framework of the Adaptive Management Plan & Post-construction Monitoring Plan does not reference particular species, but instead relies on species status/rank. Therefore, any changes to species status over the life of the Project will immediately warrant consideration as part of the adaptive management strategy. For example, if Hoary Bat were to become a species of Special Concern, it would immediately warrant consideration under Management Trigger Tier 2, which requires a management action for 'Fatality of any wildlife species designated as Special Concern under the Species at Risk Act...'

The provincial determination that the EIS submission was comprehensive and complete provides confirmation that the Adaptive Management Plan & Post-construction Monitoring Plan, which was submitted as an appendix of the EIS, is similarly comprehensive and compliant with all applicable provincial guidelines and requirements.

24) "ECCC recommends that ISC require the Proponent to follow the Wildlife Siting Guidelines for Saskatchewan Wind Energy Projects and the Adaptive Management Guidelines for Saskatchewan Wind Energy Projects."

NRSI confirms that the completed EIS is compliant with both of the referenced documents. This is further confirmed through the acceptance of the approach, content, and determinations of the EIS, as made by the Environmental Assessment Review Panel and ENV within the Technical Review Comments.

25) “ECCC further advises that ISC see opportunities to include operating requirements specific to the Project components (turbines) on federal lands to address predicted mortality effects to bat SAR, such as...”

- “monitoring for predicted mortality effects at the turbines to be located on federal lands...”

The Project is committed to selecting an appropriate representation of turbines in the final selection of the operational monitoring subsample of turbines. This will include consideration to geographic coverage and consideration to prominent habitat and/or landscape features within the Project area, per the requirements under the Adaptive Management Guidelines for Wind Energy Projects. In consideration of the expectation to obtain reasonable geographic coverage of the entire site, the Project will ensure that at least one turbine on federal land will be included in the site-wide 30% sub-sample (i.e. up to 12 turbines) that will be surveyed during the operational phase, per the Adaptive Management Guidelines for Wind Energy Projects. If considered in isolation, specific to federal lands, a selection of at least one of the two proposed turbines (i.e. 50%) remains compliant with the provincial requirement to monitor a subsample of at least 30% of the turbines.

- “inclusion of reporting requirements to inform ISC of monitoring outcomes and conservation and management responses...”

As indicated above, the Project will prepare, and submit to ISC, a report of operational monitoring, including discussion of monitoring results and any applicable conservation and management responses, specific to the turbines on federal lands.

- “consideration of technically achievable fatality minimization measures for the turbines operating on federal lands...”

NRSI notes that each of the suggested examples provided in the ECCC comments, except the “use of local environmental data besides wind speed....to trigger implementation of curtailment...” [i.e. ‘smart curtailment’], have been specifically included in the list of potential minimization options within the Adaptive Management Plan & Post-construction Monitoring Plan that was submitted as an appendix to the EIS. Further, NRSI notes that smart curtailment is a similarly viable option that will be considered if management responses are deemed necessary.

The Project is fully committed to taking appropriate actions, and altering the operational state of the turbine(s), in order to adequately minimize impacts to wildlife based on the site-specific results. However, given the adaptive management framework that has been established for the Project, it is premature to proactively implement measures without first understanding the true impact of the Project.

26) “ECCC also advises consideration of recent peer-reviewed scientific publications and on-going industrial research available to support the Proponent’s inclusion of additional mitigation measures in Project planning and adaptive management of predicted Project residual effects.

The Proponent is committed to ensure that any management actions taken to minimize the realized impacts will be based on other demonstrated success of the approach(es),

through reference to scientific literature, other on-going studies, or previous experience of the Project team.

ECCC's Standard Advice on Migratory Birds

27) "Except when nests are known to be easy to locate, active searching for nests is generally not recommended."

NRSI notes, and agrees with, the understood intent of this standard advice. In consideration of the Project, and the mitigation measure that allows consideration for nest searching prior disturbances in non-cultivated habitats, it should be noted that the vast majority of the Project footprint occurs within cultivated habitats, with relatively small overlaps with non-cultivated lands. The suitability, and effectiveness, of nest searches is often a site-specific decision, that is based on a variety of factors including the habitat type, search area, time of year, target species, etc. For example, a nest search within a small area of non-simple habitat may still be effective due to the localized and focused nature of the search. The decision of whether a nest search is a suitable option and, if so, what level of effort is needed, will occur at the discretion of a Qualified Professional with experience completing similar nest assessments.

ECCC's Standard Advice on Species at Risk

NRSI has reviewed and has no specific comments on the standard advice on Species at Risk. NRSI remains confident that the completed EIS, and corresponding impact assessment, mitigation strategy, and adaptive management framework, along with the further clarifications provided within this response memo, takes a conservative approach and sufficiently demonstrates the avoidance, minimization, and/or mitigation of the potential effects to Species at Risk.

Appendix 1 [List of Species at Risk]

NRSI appreciates the inclusion of the list of Species at Risk that have general ranges that overlap with the Cowessess First Nation lands that are included within the Bekevar Wind Energy Project. As stated by ECCC within the appendix caption, NRSI also notes that this list is based on general species ranges, and does not consider the habitat availability or comprehensive surveys that have been completed within the Project area. In reality, and as discussed within the EIS, the number of Species at Risk that have a reasonable potential to be present within the Project area is considerably smaller than those listed in Appendix 1.

In review of these comments from ECCC, circulated via ISC, NRSI remains confident that the completed EIS provides a comprehensive overview of the habitats presence, wildlife occurrences, conservative impact assessment, comprehensive mitigation strategy, and adaptive management framework that will sufficiently avoid, minimize, and/or mitigate potential effects to wildlife habitat, migratory birds, and Species at Risk that have been confirmed, or have the potential to occur, on the three quarter sections of Cowessess First Nation reserve land that are included within the Bekevar Wind Energy Project.