



Land Procedure

- Acoustic Assessments for Wind Power Projects

NAME OF LAND PROCEDURE:	Acoustic Assessments for Wind Power Projects
APPLICATION:	Clean Energy wind power projects.
ISSUANCE:	Assistant Deputy Minister, Tenures, Competitiveness and Innovation
IMPLEMENTATION:	Ministry of Forests, Lands and Natural Resource Operations
REFERENCES:	<i>Land Act</i> (Ch. 245, R.S.B.C. 1996)
RELATIONSHIP TO PREVIOUS LAND PROCEDURE:	New procedure.

for Dave Peterson, ADM
Tenures, Competitiveness and Innovation
Ministry of Forests, Lands and Natural
Resource Operations

July 12, 2013
Date:

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AMENDMENT:

APPROVED AMENDMENTS:		
Effective Date	Briefing Note /Approval	Summary of Changes:

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1. PURPOSE/SCOPE

The purpose of this procedure is to provide tools and a methodology to respond to complaints received with respect to sound that may originate from wind turbines within a wind power project built on Crown land. For projects that reside on private land, complainants will be directed to their appropriate local government.

The operational policy for wind power projects lists a threshold for acceptable sound of 40dB at residences and or property boundaries of residential parcels (see receptor definition below). As sound levels can vary between day and night and can be affected by ambient sound levels more detail is provided in this procedure to address complaints related to sound and determine if the decibel thresholds have been exceeded and further action is required.

For information on requirements related to sound and wind power project development please review the Crown Land Operational Policy – Wind Power Projects, the Clean Energy Guidebook, and the Clean Energy Development Plan Information Requirements.

2. DEFINITIONS

Ambient sound or sound means all sounds that exist in an area and are not related to a facility under study. Ambient sound may include sound from other existing industrial facilities, transportation sources, animals, and wind. Context for ambient sound should be defined for each project.

dB (decibel) is a unit of measure of sound pressure that compresses a large range of numbers into a more meaningful scale. Hearing tests indicate that the lowest audible pressure is approximately 2×10^{-5} Pa (0 dB), while the sensation of pain is approximately 2×10^2 Pa (140 dB). Generally, an increase of 10 dB is perceived as twice as loud.

Night-time Is defined as the hours from 22:00 to 07:00.

Receptor(s) means the outside of an existing permanently-occupied residence (not owned by the proponent) or the nearest property line of existing, undeveloped parcels zoned residential (not owned by the proponent) in existence at the time of application for a *Land Act* tenure to construct a wind farm.

3. GENERAL PROCEDURES

As wind power projects are generally located in remote areas, information or complaints from the public may be received by any number of agencies ie. local government, the Environmental Assessment Office, the tenure holder and MFLNRO.

For projects located on Crown land any complaints received regarding wind turbine sound should be directed to the appropriate regional office of MFLNRO as the authorizing agency for the land tenure.

3.1 Step 1: Assessing the complaint.

Once a complaint is initiated, the complainant will be requested to fill in a detailed complaint form to the best of their ability. A sound complaint form is provided in Appendix A. In addition to obtaining the complaint form, the Authorizing Agency will also direct the complainant to information outlining the roles and responsibilities of all parties in the complaint process.

The Authorizing Agency needs to reiterate to the complainant that to adequately complete an investigation into a complaint, the complainant is required to provide the requested information and assist the process by allowing measurements at their property as needed. If the complainant is reluctant to provide adequate information or access for investigation then the complaint is filed and no further action taken.

3.2 Step 2: Evaluate the information in the complaint form.

Items to consider:

- A. Did the complainant complete their information sufficiently to address the materiality of the complaint?
 - are they a neighbour,
 - do they have an residential interest in land in proximity to the project
- B. Did they describe in enough detail the sound characterization section?
- C. Did they provide the details on the weather at the time of the complaint event?
- D. Have they completed the Event log?

3.3 Step 3: Decide on appropriate course of action

After reviewing the Complaint Form the land officer will have four options:

- Take no further action as it was determined that the complaint is unwarranted.
- Send correspondence to the complainant to inform them that based on the details of the complaint further investigation isn't warranted.
- Send correspondence to the complainant to request further information about their complaint or to request a meeting to discuss.
- Send correspondence to the complainant to indicate that further compliance investigation work will be required and contact the tenure holder to initiate discussion.

For complaints received that appear to be part of a process similar to a letter writing campaign, no further action is warranted.

If the complainant does not meet the test of permanently residing in a neighbouring residence or having an interest in a neighbouring residentially zoned parcel, then the complainant is informed that based on information provided by them that further investigation is not warranted.

In the event that the complaint form is not detailed enough to allow the land officer to determine if further investigation is warranted, the land officer will make up to three attempts to contact the complainant to request additional information. If contact cannot be made, the complaint form will be filed and no further action taken.

If the complaint appears warranted, the land officer will contact the tenure holder and inform them of the complaint. A copy of the complaint form will be given to the tenure holder and further information will be requested by the land officer of the tenure holder as to the history of the file, or any information that the tenure holder may have that may have precipitated this complaint.

The Land Officer, at their discretion, can at any time in the assessment of a complaint, send the complaint form to the tenure holder for their records and information.

3.4 Step 4: Discussion with the Tenure Holder:

Together with the tenure holder, MFLNRO will determine if the complaint is due to a maintenance issue or loss of forest from timber harvesting.

If so, the tenure holder will provide evidence to the MFLNRO so that a decision on resolution can be made.

If not, MFLNRO, with the tenure holder, will review the complaint condition. If the complaint condition is rare or intermittent, the tenure holder should provide an estimate of how often such a condition may occur. If more than 10% of a night-time period, proof of compliance will be required.

If the condition is a continuous or common occurrence, MFLNRO will request proof of compliance to its satisfaction.

MFLNRO will decide if the proof of compliance will include a detailed compliance measurement program.

The tenure holder will be responsible for engaging a qualified professional to conduct the compliance measurement program and for supplying the detailed analysis of results to MFLNRO. Further information on the requirements of a compliance measurement program are provided in the accompanying document – Best Practice for Wind Power Project Acoustic Assessment or on the Crown Land Uses website- http://www.for.gov.bc.ca/land_tenures/crown_land_application_information/policies.html.

Detailed compliance measurement programs to address complaints should be limited to those receptors identified in the original assessment or are in sufficient proximity to the wind power project that sound from the turbines could result in sound levels above the criteria.

3.5 Step 5: Resolution of a Complaint:

Amicable resolution of a complaint through cooperative investigation between the complainant, the tenure holder and MFLNRO is the desired result of this process. Once a sound complaint has occurred, it can be difficult for all parties to agree on when sufficient effort has been expended in trying to resolve the complaint, or reach a solution that completely satisfies all parties. The decision regarding resolution or closure of a complaint rests solely with the MFLNRO. The decision to close a complaint should be made when the MFLNRO is satisfied that one of the following conditions is met:

- Evidence has been provided that the source of the complaint has been identified, mitigation assessed or addressed, the solution implemented and the result communicated to the complainant.
- The results of a detailed measurement program proving compliance have been reviewed and accepted by MFLNRO.
- The results of a detailed measurement program indicate non-compliance and a mitigation plan (curtailment or other solution) have been approved by MFLNRO, implemented and compliance proven by a second measurement program.

Closure of a complaint would require that the MFLNRO, and the EAO in the case of an *Environmental Assessment Act* certified project, notify both the complainant and the tenure holder of the decision and any conditions resulting from the review.

Failure to resolve the situation may lead the Authorizing Agency to a decision to mitigate the sound complaint by discontinuing the use of the turbine(s) contributing to the

complaint, permanently decommission turbine(s) and may in extreme circumstances require removal of the turbine(s).

3.6 Step 6: Sound Level Compliance Report

If a compliance investigation is required all methods, field summaries, analyses, results and potential mitigation must be provided to MFLNRO in a detailed wind turbine sound level compliance report. The report format is to follow the Table of Contents provided in Appendix B. The proposed Table of Contents also describes detailed data attachments that are to be included for MFLNRO.

Consistent with the Best Practice for Wind Power Project Acoustic Assessment, sound assessments are to be completed by a qualified professional. The names and accreditation of the professionals completing the work along with their signature must accompany the report.

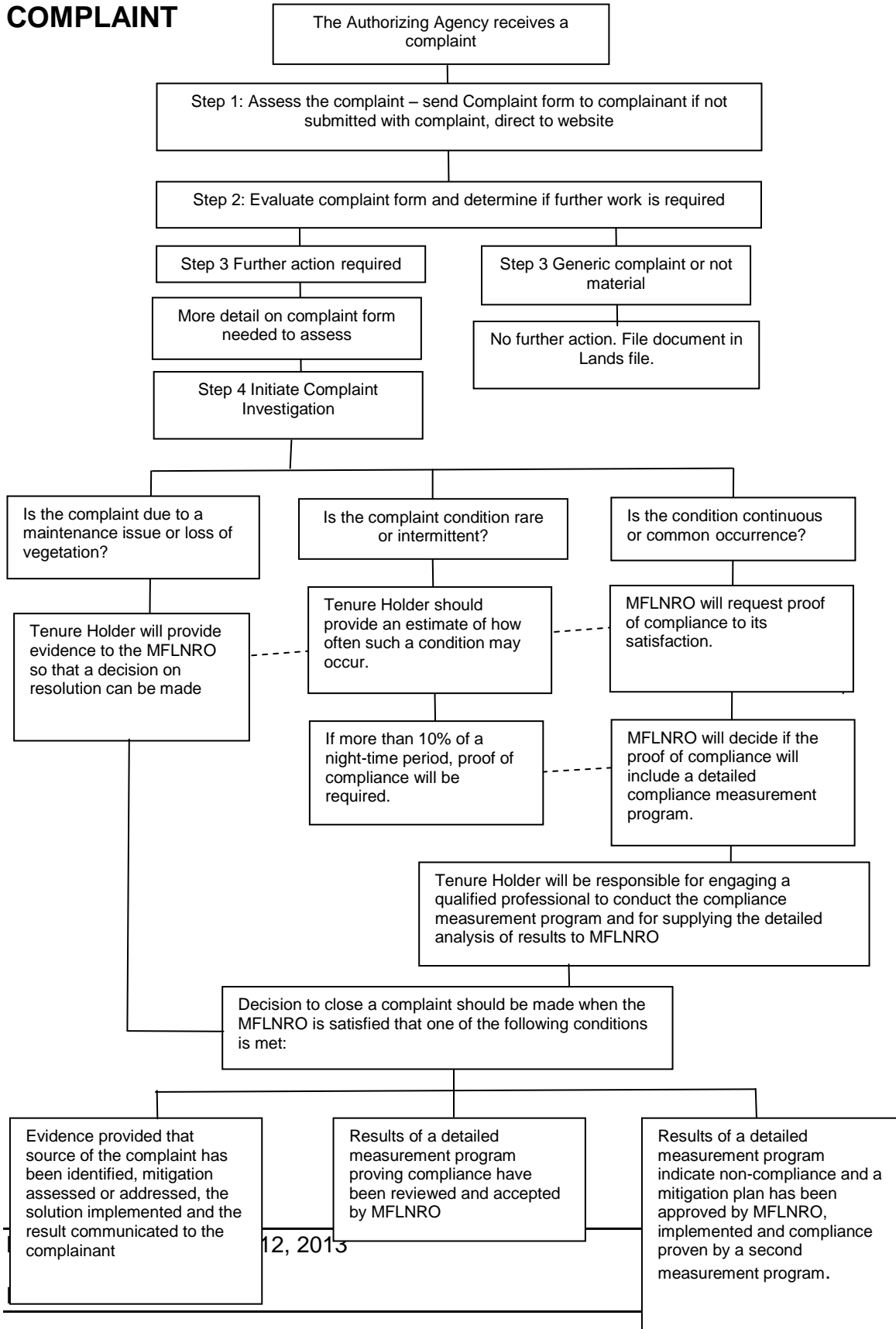
3.7 Addressing safety concerns

Investigating complaints related to any activity on the Crown land base can pose safety concerns for provincial staff and tenure holders or their employees or agents. Tenure holders must have a safety plan that includes considerations for field work and testing that address activities that may be required for sound assessments. If at any time, the employee has concerns for his/her well being, the decision to proceed with the activity will be at the discretion of the employee. Employees will take into account their personal experience in dealing with such matters and will not take unnecessary risks while conducting field activities.

If an employee has prior knowledge that the proposed inspection is related to controversial issues or the employee is meeting with a member of the public suspected of demonstrating aggressive behaviour, the employee must discuss the matter with the designated manager. If deemed appropriate, an employee will not conduct the activity alone.

An employee conducting enforcement activities may be subject to higher personal risk, and staff should be accompanied by a member of the RCMP or local police force.

4. FIGURE 1: DECISION TREE - HOW TO DEAL WITH A COMPLAINT



5. APPENDIX A WIND TURBINE SOUND COMPLAINT FORM

Introduction

A complaint is information provided to the Ministry of Forests, Lands and Natural Resource Operations (FLNRO) alleging that there has been an unauthorized use (contravention of the law) or contravention of an authorization granted pursuant to the Provincial *Land Act*.

For FLNRO to adequately address your complaint, it is important for you to provide us with sufficient information. Please describe the complaint in as much detail as possible on the attached form. Mail or fax a copy to the nearest FLNRO office. The information you provide will be subject to the *Freedom of Information and Protection of Privacy Act* (FOIPP). We will keep your information confidential to the maximum extent possible. Please direct any enquiries about the FOIPP to the Information Policy and Privacy Branch (IPPB) (1 800 663-7867).

FLNRO will acknowledge receipt of your complaint. The information in your complaint will be reviewed, and you may be contacted for further details. Where warranted, the matter will be investigated and appropriate action will be taken. If FLNRO does not have jurisdiction over the matter, if there are no reasonable grounds to believe a contravention has occurred, or if the matter is considered not significant, no threat to public safety or no detrimental impact on the environment or on others, an investigation may not be initiated.

If you have any questions, please contact the nearest FLNRO office in your area.

Your Information

Last name	First name	Phone Number (daytime)
		Phone Number (alternate)
Mailing address	Email address	
Property address (if different from above)		

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Complaint Information

Name, address and phone number of the party alleged to be responsible

Location (legal land description or name of waterway, lease number of file number, if known)

Attach a map or sketch of the area of concern

Sound Characterization

Please provide a general description of the problem:

Date and time of alleged contravention and/or when did the sound become a problem:

When is the sound a problem (day/night)?	Pitch (high/low)?
Where is sound most annoying (inside/outside)?	For how long is the sound a problem?
Is there a noticeable tone (y/n)?	Describe:
Is sound steady/intermittent/pulsating?	Describe:
Is the sound heard and/or a vibration felt (y/n)?	Describe:
What is the sound comparable to?	
Compared to other sound sources in the area, why is this sound a problem?	

Other Comments:

Weather Conditions	
Temperature:	Direction wind is coming from:
Wind Speed (km/h or mph):	Cloud cover (none, partial, complete, etc.):
Precipitation:	Ground cover between dwelling and facility (snow, water, trees, grass, etc.)
Are there any weather conditions when the sound is not a problem?	

Other comments:

speed, cloud conditions (clear or cloudy), and if there is any precipitation when the sound is a problem

Ground cover: Describe what is covering the ground around the facility; for example, is it snow, water, grass, cropland, trees, etc.

Receptor name and location: Identify the person who heard the sound and note their location when the sound was annoying (outdoors, such as on the deck, or in the yard, or indoors, such as in the bedroom or kitchen).

6. APPENDIX B - WIND POWER PROJECT SOUND LEVEL COMPLIANCE REPORT TABLE OF CONTENTS

1. Introduction and Purpose
 - a. Provide a brief description of the purpose for the measurement program and description of the wind power project
2. Complaint Conditions
 - a. Provide a detailed description of the complaint being investigated, and the resulting atmospheric and turbine operating conditions that relate to the complaint.
 - b. Attach the resident completed complaint form
 - c. Include any relevant meteorological or operating data for the time of complaint
 - d. Provide a map showing the wind projects and the receptor(s) under investigation
3. Compliance Condition
 - a. Summarize the compliance conditions committed for the receptor from the original assessment. Include sound level criteria, atmospheric conditions and turbine operating conditions.
4. Measurement Methods
 - a. Provide a detailed description of the measurement program conducted, including equipment details, location of measurement(s)
 - b. Cite any standard followed
 - c. Provide details of how wind incidence on the microphone was managed
 - d. Provide wind screen performance data
 - e. Attach calibration records
5. Data Analysis
 - a. Describe the data sorting and filtering conducted
 - b. Describe the periods of valid turbine operation
 - c. Provide detailed results for the validated data set
 - d. Attach detailed summaries of sound measurement data
 - e. Attach detailed summaries of ground level wind data
6. Results
 - a. Provide tables and graphs showing a comparative analysis of measured sound levels and turbine operating condition/wind speeds
 - b. Show detail regarding the 90% compliance requirement
7. Mitigation Plan (if required)
 - a. If required, provide a description of the mitigation options (reduced sound modes, total curtailment)
 - b. Describe the options selected for the specific non-compliance
 - c. Provide the results of an updated assessment model based on the measurements
 - d. Provide the results of the predicted effectiveness of the mitigation selected
8. Summary
9. References