



**Stantec**

August 21, 2013

Beth Swartz  
Maine Department of Inland Fisheries and Wildlife  
650 State Street  
Bangor, ME 04401

**Subject: Bingham Wind Project  
Supplemental Northern Spring Salamander Stream Guidance Analysis**

Dear Beth:

As requested at the Wednesday, August 7, 2013, meeting, we are providing information about perennial streams that are within the Bingham Wind Project (Project) area and which contain northern spring salamanders (*Gyrinophilus porphyriticus*) or are assumed to contain suitable habitat for northern spring salamanders. This memo helps to summarize information in the joint Maine Department of Environmental Protection (MDEP) joint Natural Resource Protection Act (NRPA) / Site Location of Development Application on how the Project meets the *Recommended Management Guidelines for Land Use in or Adjacent to Roaring Brook Mayfly and Spring Salamander Habitat* (MDIFW, Draft January 5, 2012) (Management Guidelines). This should be viewed alongside the supplemental stream submission provided on August 8, 2013, via FTP upload and as included as Appendix C-3-5 of the U.S. Army Corps of Engineers (Corps) Application for the Project. Extensive surveys concluded Roaring Brook Mayfly are not present within the Project Area.

As described in Section 10.10 of the Maine Department of Environmental Protection (MDEP) application for the Project, 25 streams were identified within the project area that either contained northern spring salamanders or are assumed to support northern spring salamanders,<sup>1</sup> a species of Special Concern in Maine. There are no direct impacts to these identified streams in the form of culvert crossings or any other form of in-stream work; however, vegetation clearing will occur around these streams to accommodate overhead electrical lines. Further information about these streams is available in Appendix C-3-5 of the Corps Application and in the Rare, Threatened, and Endangered Survey Report (Section 7: Exhibit 7C-1 of the MDEP application and Appendix C-3-1 of the Corps Application).

Inadequate tree trimming near electrical lines can cause power outages and thus diminish the reliability of power delivery. Therefore the Applicant must adequately clear vegetation during construction and adopt vegetation maintenance practices to ensure that reliable power is delivered to the grid and ultimately supplied to consumers over the life of the project. There is also a need to maintain appropriate buffers that serve a range of purposes, including environmental preservation, protection of water quality and fisheries, and visual mitigation.

Table 1 provides a summary of the buffer and the vegetation management plan that has been developed specifically for the project to address resource concerns around streams that are known or might contain spring salamanders at the Project. Table 2 (attached) provides a detailed summary of the 25 streams and is excerpted from Appendix C-3-5 of the Corps Application and Exhibit 10A, Table 4 and Exhibit 7A, Table C-2 in the MDEP Application.

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<sup>1</sup> As of the date of this memo, two streams were confirmed to have northern spring salamanders; the other 23 streams have habitat that is suitable for northern spring salamander. For purposes of project design, and to be conservative, all 25 streams are assumed to contain spring salamanders.

**Table 1.** Summary of Buffers for Construction, Operation, and Maintenance of the Bingham Wind Project (Excerpt from Table 10.1 of MDEP Application)

Buffer Type	Location	Buffer Width	Clearing During Construction	Cutting During Maintenance and Operation	Pole Placement	Herbicide Use
Northern Spring Salamander Stream Buffers	As noted on final design drawings; 25 streams	250 feet on each side of stream	Top or remove all capable species that could grow to within 15 feet of a conductor in the next 3-4 years; no other vegetation is cut	Top or remove all capable species that could grow to within 15 feet of a conductor in the next 3-4 years; no other vegetation is cut	Place as close as possible to increase height of buffer	Not Allowed within 250 feet of streams

The Project's compliance with the Management Guidelines is discussed below.

#### Management Guidelines

1. *No construction activities, use of machinery, or other disturbances should occur within the stream channel except as necessary to place stream crossing structures per the standards below.*

The Project meets this Guideline for all 25 streams. No construction activity, use of machinery, or other disturbances will occur within the stream channel.

2. *Maintain a riparian buffer of 250 feet on both sides of the stream, within which the first 25 feet from the stream be retained as a no-cut and no-disturbance zone; and the remaining 25-250 feet be maintained with no less than 60-70% forest canopy cover using single-tree or small-group selection cuts.*

As discussed above, the forest canopy and maximum height of vegetation within the Right of Way is a function of conductor height, and as described in MDIFW guideline #4, powerlines may not be able to meet all criteria. The proximity of the poles to these streams will provide a conductor height that will allow for the establishment of taller vegetation and riparian habitat near these streams, which will provide maximum shading of the northern spring salamander streams.

During construction, only capable species greater than 8 to 10 feet tall will be removed via single-tree or small-group selection cuts. No other vegetation, other than dead or danger trees, will be removed unless necessary for construction access and temporary bridge crossings.

During routine maintenance, only those trees capable of growing to a height within 15 feet from a conductor within the next 3 to 4 years will be topped or removed, allowing for the development of a dense woody-vegetated cover within 250 feet of these streams.

3. *On slopes facing the stream, maintain an unscarified filter strip of at least the width indicated below between the normal highwater mark of the stream and any exposed mineral soil created by management activities. These recommendations follow minimum performance standards for timber harvest as defined in the Maine Land Use Regulation Commission's Rules and Regulations (Chapter 10.27E)<sup>1</sup>.*

<b>Average (%)</b>	<b>Slope of Land Width of Strip (Feet Along Surface of Ground)</b>
0	25
10	45
20	65
30	85
40	105
50	125
60	145
70	165

The Project meets this Guideline for all 25 streams. Management activities are not proposed to create exposed mineral soil within 250 feet of any of these streams. Temporary erosion and sedimentation control measures will be implemented along the access ways. Consistent with the practices along the overhead portion of the collector line and the entire generator lead ROWs, ground disturbance caused by the use of harvesting equipment will be repaired by returning the ground to its original contour, as needed, and seeding and mulching any bare ground.

4. *No development or permanent land use conversion should occur within the 250 ft. riparian buffer. Permanent land use conversion includes any alteration that prevents succession of riparian vegetation to its formerly natural state (e.g., gravel and winter roads, turbine pads and laydown areas, buildings). Powerline right-of-way crossings should meet minimum performance standards as defined for Maine's Site Location of Development law (ME DEP Rules, Chapter 375, Appendix A, Section 2)*

Although there are poles located within 250 feet of streams, no other development (roads, turbine pads, laydown areas) is located within 250 feet of any of these streams.

The MDIFW Recommended Management Guidelines acknowledge that linear projects such as powerlines cannot meet a strict 250 foot development buffer around streams, and instead require that such projects meet the proposed Minimum Performance Standards identified in Appendix A, Section 2 to the Site Law regulations. As described in Section 10.10 of the MDEP Application, the Project meets, or exceeds, these draft performance standards.

Nineteen of the 25 streams will have a structure located within 100 feet of the stream; however, no structures will be located within 25 feet of any of these streams. In all cases, the structure is a pole that will support the conductor. No new roads, turbine pads, or laydown areas are located within 250 feet. As described earlier, the maximum height of vegetation within the ROW is a function of conductor height. The proximity of the poles to these streams will provide a conductor height that will allow for the establishment of taller riparian vegetation near these streams, which will provide maximum shading of the northern spring salamander streams. Table 2 identifies which streams will have structures located within 250 feet of the stream.

In addition, and as described previously in Table 1, the Project has developed specific management guidelines for northern spring salamander streams that will be applicable through the life of the Project.

5. *Stream-crossings should be avoided. If crossings are unavoidable, they should be minimized to a narrow trail with forest canopy cover maintained to the greatest extent possible. Crossing structures should span at least 1.5 times the bankfull width of the stream channel and provide an openness ratio of at least 0.60 meters. In the case of permanent crossings, a spanning arch or bridge structure is recommended. Current, published Best Management Practices (e.g., Moesswilde 2004) for stream crossings should be followed in order to prevent erosion, sedimentation, alteration of stream flow, or other impacts to stream habitat.*

The Project meets this Guideline for all 25 streams. The Project does not include any permanent stream crossings. Timber mats may be used to allow equipment crossing of small streams, provided the mats result in no disturbance to the stream bank or channel. No equipment travel will be permitted within the streams.


6. *Avoid the use of herbicides or pesticides within the 250 ft. riparian buffer. Exceptions may be considered depending on product and circumstance following consultation with MDIFW biologists.*

The Project meets this Guideline for all 25 streams.

In summary, the Project meets the 2012 IFW Guidelines to the extent practicable, given the nature of linear projects such as powerlines that cross the Maine landscape. This limitation is acknowledged within the MDIFW recommendations. We appreciate this opportunity to provide further clarification on these streams and would be happy to answer any additional questions.

We look forward to working with you further on this issue.

Sincerely,  
**STANTEC CONSULTING**



Dale F. Knapp  
Director, Water Resources Division

Attachment: Table 2. Summary of Spring Salamander Streams (from Exhibit 10A, Table 4 and Exhibit 7A, Table C-2 in the MDEP Application)

CC: Dan Courtemanche, MDEP  
Charlie Todd, MDIFW  
Josh Bagnato, FirstWind

Table 2: Summary of Spring Salamander Streams\* (Excerpted from Exhibit 10A, Table 4 and Exhibit 7A, Table C-2 in the MDEP Application).

Stream ID	Associated Wetland ID	Town or Township	NR Map Number	Latitude	Longitude	Approximate Bankfull Width (Ft.)	Stream Name	Number of Poles within 100 Ft. of Stream	Number of Poles/Other Development within 250 Ft. of Stream
S009	MAY_W116	Mayfield Township	8	45.107667	-69.740848	5.5	Unnamed perennial stream	1	3
S014	MAY_W129	Mayfield Township	9	45.106267	-69.725472	6.5	Unnamed perennial stream	1	2
S021	No associated wetland	Mayfield Township	9	45.095207	-69.729712	0.5-5	Unnamed tributary of Rift Brook	0	0
S022	MAY_W155, MAY_W156, MAY_W157	Mayfield Township	10	45.103547	-69.701785	7.5	Unnamed perennial stream	2	5
S023	No associated wetland	Mayfield Township	10	45.104509	-69.693014	40	Bigelow Brook	2	4
S024	MAY_W161	Mayfield Township	10	45.105147	-69.688184	8	Unnamed perennial stream	2	3
S025	MAY_W164	Mayfield Township	10	45.111006	-69.68572	6.5	Unnamed tributary of Kingsbury Pond	1	3
S027	MAY_W170, MAY_W171, MAY_W176	Mayfield Township	11	45.126437	-69.683998	6	Unnamed tributary of Kingsbury Pond	2	4
S043	No associated wetland	Kingsbury Plantation	19	45.149692	-69.648223	4.5	Unnamed tributary of Kingsbury Stream	1	2
S045	No associated wetland	Kingsbury Plantation	20	45.14918	-69.63325	17.5	Bottle Brook	0	2
S046	No associated wetland	Kingsbury Plantation	20	45.150564	-69.626459	3	Unnamed perennial stream	0	1
S047	No associated wetland	Kingsbury Plantation	21	45.151476	-69.621637	2	Unnamed perennial stream	1	1
S048	No associated wetland	Kingsbury Plantation	21	45.152905	-69.615917	6	Unnamed tributary of Kingsbury Stream	0	2
S049	No associated wetland	Kingsbury Plantation	21	45.157892	-69.608567	6.5	Bear Brook	1	1
S050	No associated wetland	Kingsbury Plantation	21	45.161467	-69.602722	20	Unnamed Tributary of Bear Brook	0	1
S051	No associated wetland	Kingsbury Plantation	22	45.152711	-69.584255	4	Unnamed Tributary of Bear Brook	2	4
S052	No associated wetland	Kingsbury Plantation	23	45.143298	-69.569581	40	Kingsbury Stream	0	2
S057	KING_W355	Kingsbury Plantation	25	45.144271	-69.530114	4	Unnamed tributary of Carlton Stream	0	2
S058	PARK_W356	Kingsbury Plantation	25	45.144801	-69.52614	7.5	Unnamed tributary of Carlton Stream	1	2
S062	PARK_W370	Parkman	26	45.141865	-69.488637	37.5	Carlton Stream	1	3
S063	No associated wetland	Parkman	26	45.141913	-69.487303	11	Unnamed tributary of Carlton Stream	1	2
S065	No associated wetland	Parkman	26	45.147123	-69.484222	7	Unnamed tributary of Carlton Stream	1	1
S066	ABB_W376	Parkman	27	45.152116	-69.476821	8.5	Unnamed stream	1	4
S070	ABB_W387	Abbot	28	45.154675	-69.457675	5	Unnamed tributary of Gales Brook	1	2
S071	PARK_W396	Parkman	28	45.154075	-69.439012	11	Unnamed tributary of Gales Brook	1	1

\* Based upon stream delineation data and a general landscape analysis, these streams are characterized by perennial hydrology, coarse substrates, and moderate to fast gradients (i.e., habitat characteristics similar to known northern spring salamander locations). The highlighted streams have been documented to contain northern spring salamanders as of the date of this memo.