



VIA ELECTRONIC FILING

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E. Room 1-A
Washington, D.C. 20426

Re: Reply to TransCanada Hydro Northeast Inc.'s Revised Study Plans Project Nos. 1892-026, 1855-045 and 1904-073

August 26, 2013

Dear Secretary Bose,

The Connecticut River Joint Commissions (CRJC) is writing in response to TransCanada's Revised Study Plan (*TransCanada, 2013a*), filed on August 14, 2013 concerning the hydroelectric projects referenced above. The specific replies herein pertain to responses from TransCanada to CRJC's comments on the licensee's Proposed Study Plans (*TransCanada, 2013b*) that were submitted on July 15, 2013 to the Federal Energy Regulatory Commission (FERC).

The Connecticut River Joint Commissions is a public not-for profit organization incorporated in the State of New Hampshire and comprised of two entities, the New Hampshire Connecticut River Valley Resource Commission (CRVRC) and the Vermont Connecticut River Watershed Advisory Commission (CRWAC). New Hampshire's Connecticut River Valley Resource Commission (CRVRC) was created by the New Hampshire Legislature in 1987. The statutory authority of the CRVRC is to plan for and guide the development of the recreational, tourist, commercial and residential uses of the Connecticut River Valley. Vermont's Connecticut River Watershed Advisory Commission (CRWAC) was created in 1988. The CRWAC was established to develop ways to cooperate, and to initiate and encourage interstate cooperation and coordination with the state of New Hampshire.

The Connecticut River Joint Commissions has facilitated coordination of plans, programs, and projects on behalf of the two commissions since 1989. The Connecticut River Joint Commissions appreciates the level of effort put forth by the applicant, TransCanada, in collaborating with stakeholders on the Study Plans.

General Comments on the Proposed Study Plans

1. *CRJC (July 15, 2013) Comment:* The role of climate change in influencing the impact of project operations on the ecology of the Connecticut River system should be addressed. While

Tropical Storm Irene in 2012 appears to have resulted in one of the worst flooding situations in many years, it may not be the most extreme event that will occur in the future. Due to concerns about climate change, model runs should incorporate scenarios of more frequent and intense storm events as well as future prolonged periods of drought to examine worse case conditions.

TC (August 14, 2013) Response: TransCanada respectfully reiterates its position that there is no model that can accurately predict or describe future environmental climate related conditions. The selected hydrologic water years in Study 5 – Operations Modeling have significant variability that the capacity for the projects to handle or be affected by such variability will be tested and shown. Likewise the ability for the projects to adapt to such variability will also be evaluated. The results of which should enable a reasonable determination of what the projects can and cannot do in relation to environmental inputs.

Developing local climate change predictions from current regional models and incorporating them into the operations model would be cost prohibitive (ILP Study Criterion 7; see all criteria in Appendix A of this letter). The additional information would not necessarily inform potential mitigation measures beyond the models TransCanada proposes to develop and utilize (ILP Study Criterion 4). Lastly, unforeseen climate change or any other environmental inputs can be addressed through existing FERC regulation and processes.

In summary, it is neither appropriate nor necessary to speculate and regulate based upon such speculation at this time. (TransCanada, 2013a, Appendix E, p. 18).

CRJC (August 19, 2013) Reply: We respectfully reply that climate change is not speculative. The increase in the intensity and frequency of storm events is well documented (NCADAC, 2013). Vermont has just experienced the wettest two-month (May and June) consecutive stretch in recorded history. We strongly encourage TransCanada to partner with other organizations, such as the University of New Hampshire StormWater Center and the University of Massachusetts Climate System Research Center, preparing more robust storm water models so that the best available scientific data are used to make explicit assumptions about future flows. This can only lead to more accurate predictions and environmental assessments.

The Connecticut River Water Management Plan Riverwide Overview, developed and published by the Connecticut River Joint Commissions in 2008 includes several pages on the subject of “climate change.” In it are examples of recent intense rain episodes with resulting erosion and sedimentation, and a discussion of droughts and how they increase demands for river water (CRJC, 2008:29-30).

2. *CRJC Comment:* Study results should be compiled as a comprehensive electronic topographic base map that extends laterally to at least the extent of the 500-year flood and include bathymetric mapping of instream features. It should show the locations of inventoried species as well as critical habitats. This base map should (1) show 1-foot contours and the extent of flooding during yearly, 100-year and 500-year storm events, (2) be scalable and (3) be available in the public domain.

TC Response: Results of various studies will be mapped and resources affected by project operations will be identified. The informational needs of each study will determine the extent and level of detail included.

We respectfully disagree that mapping for any study should extend to the 500-year flood plain, extents of various flooding events or be required to show 1-foot contours; none of which is associated with or necessary for evaluation of project operations. There is no nexus between this study and exercise and project operations and effects and therefore this study request does not meet ILP Study Criterion 5.

TransCanada develops, updates and distributes dam breach inundation under its FERC required Emergency Action Plans, outside of this ILP relicensing process for response agency evacuation planning purposes.

CRJC Reply: During storm events the dams cause the profile of the river to rise above elevations it normally would if the dams were not there. The issue is that because of the dams riparian areas are inundated that would not otherwise be flooded. Thus, the dams have an effect on resources within the floodplain and these effects need to be assessed.

The problem is that current elevation data and flood insurance rate maps in many riparian areas are so inaccurate that they cannot be used to adequately predict the lateral extent of flooding and consequently the effect of the dams. However, TransCanada is collecting LiDAR data for these areas. Therefore it can create more refined topographic maps with one foot contours, and in conjunction with an appropriate hydrological model it can predict the lateral extent of the flooding. It will then be able to assess the effect of the dams on resources in these areas.

The Connecticut River Valley has experienced several 500-year storms over the past several years (e.g., see CRJ C, 2008:29) and this pattern can be expected to continue. It is both responsible and realistic to ask for mapping that will extend laterally as far as the waters from a 500-year flood. With climate change, 500-year storm events are likely to be much more frequent. Additionally, we note that the floodplain easements that TransCanada has previously acquired may not be adequate in the next 40-50 years with increased flows due to climate change.

We appreciate TransCanada's willingness to share HEC-RAS model input data files with other stakeholders but would like clarification as to whether other resource data collected will be available to stakeholders in digital formats and placed in the public domain.

Request for an Economic Impact Study Plan

CRCJ Comment: The economic impact of project operations has not been addressed in any of the study plans currently proposed. The economic impact of the projects operations, both positive and negative, affects many interests and relates to many resources. In order to assess the cost-benefit of various operational models, a comprehensive and objective assessment of these impacts, including on the local communities, must be made.

TC Response: The baseline for ILP studies is current project operations and the existing resource effects (socioeconomics are described in section 3.13 of each project's PAD). We are not proposing to change project operations so there is no relative cost/benefit to be studied within this ILP study phase.

If we propose project changes, economic impacts of those changes would be evaluated similarly to the effects on other environmental and public resources including renewable energy within the license application.

CRJC Reply: TransCanada is still saying it is not proposing to change project operations. Clearly if the proposed studies indicate project operations have an adverse effect on public interest factors then TransCanada is obligated to consider measures to avoid and minimize those impacts.

One of the factors which must be considered is the economic impact of project operations particularly on the local economies. Data should be obtained in the study phase to evaluate project operations on this factor. The cost/benefit study we propose will identify the range of economic consequences of project operations and will enable TransCanada, FERC and stakeholders to gain a single, objective framework for a balanced understanding of both benefits and costs associated with the relicensing application.

TransCanada cites one specific economic factor, renewable energy. We agree that renewable energy is important. But what is the cost/benefit of TransCanada's energy production to the communities along the river, where electricity rates in some communities are among the highest in the country?

Moreover, project operations will have other ongoing economic impacts. For example: (1) bank erosion has economic effect on resources including farmland, public and private infrastructure, etc. and (2) enhanced accumulation of mercury in fish has economic effect on public health and recreation.

TransCanada has socioeconomic sections in each project PAD (Pre-Application Document) but many of the economic impacts are yet to be determined or may change. For example, TransCanada's contribution to the local tax base is uncertain as the licensee is challenging existing local assessments in Court. Also, significantly, TransCanada has not placed an economic value on its use of our public trust entity, the Connecticut River, which the licensee intends to monopolize for energy generation over the next 40 years.

The purpose of the proposed study plan is to assess the effects of ongoing project operations and, we believe, this should include estimating the economic cost/benefit of those effects as a central, balancing framework for understanding the consequences of relicensing.

Comments on Specific Study Plans

1. Study Plan #4, Hydraulic Modeling Study

CRJC Comment: This study plan, as currently proposed, does not assess the effect of climate change. The applicant's study approach entirely relies on historical stream gage data to extrapolate future flows. As an alternative to a study of climate change per se and since the proposed hydraulic model will be an important element used in fully evaluating many of the other environmental, historic and habitat impact studies, the model should be robust enough to evaluate the effects of variable flows including higher and or lower flows anticipated due to generally accepted precipitation forecasts associated with climate change. The model should have the capacity to incorporate and predict impact on river resources at the flood flow levels already part of the FERC required safety review of the dams.

TC Response: TransCanada respectfully reiterates its position that there is no model that can accurately predict or describe future environmental climate related conditions. The selected hydrologic water years in Study 5 – Operations Modeling have significant variability that the capacity for the projects to handle or be affected by such variability will be tested and shown. Likewise the ability for the projects to adapt to such variability will also be evaluated. The results of which should enable a reasonable determination of what the projects can and cannot do in relation to environmental inputs. Lastly, unforeseen climate change or any other environmental inputs can be addressed through existing FERC regulation and processes.

CRJC Reply: See CRJC's reply to TransCanada's response to climate change above.

2. Study Plan #4, Hydraulic Modeling Study and Study Plan #5, Operations Modeling Study

CRJC Comment: The proposed [modeling] studies [4 and 5]...as currently presented, will not be capable of assessing the effect of the existing dams and their operations on a variety of floodplain resources...The proposed hydraulic and operations modeling studies should be capable of assessing the effect of project operations on a greater variety of significant public interests in the geographic area that would be affected by a 500-year storm. This requires delineating the lateral extent of the 500-year floodplain so that resources in this area can be inventoried.

We encourage the applicant to partner with other entities to (1) develop a more robust hydraulic model (2) clearly define the elevations of the annual, 100-year and 500-year flood events, and (3) share the cost in modifying the study plan.

TC Response: TransCanada respectfully disagrees. The modeling and its application in various terrestrial studies are all designed to assess project operations on floodplain resources, where those resources exist in the project affected areas.

CRJC Reply: ***If TransCanada does not delineate the extent of the floodplain how can the licensee assess the impact on resources affected by dam operations within that area? Moreover, TransCanada consistently limits its surveys to only project lands.***

3. Study Plan #5 Operations Modeling Study and Study Plan #6, Water Quality Monitoring:

CRJC Comment: The studies do not address the accumulation of toxins in the river and their effects on fisheries and public health.

We recommend that Water Quality Study Plan #6 be amended to sample sediments and fish tissue for mercury and dioxin within the project area. The goal of this sampling will be to identify mercury levels in the three reservoirs, and inform possible mitigation measures. The cost for this study modification is modest in relation to the impact mercury has on human health.

TC Response: Although stated as an amendment, we consider this to represent a new study request and it was not expressed in terms of addressing the seven ILP Study requirements. TransCanada respectfully disagrees that this additional sampling is warranted for the following reasons:

1. The atmospheric deposition of mercury and subsequent bio-accumulation in fish tissue is a known problem in all freshwater bodies in both VT and NH. Statewide advisories currently exist to warn the public about eating freshwater fish. No new information is necessary to address the relevant public interest. Our view is that this request does not adequately meet ILP Study Criterion 4.
2. There is no evidence that the operation of the projects affects the bio-accumulation of mercury and dioxin in fish tissue. The three projects are operated in a daily run-of-river mode where inflows are not stored for any significant period of time, but are typically passed through within 24 hours. Since the baseline for assessing project effects is current operations and no change in operation is proposed at this time. Our view is that this request does not adequately meet ILP Study Criterion 5.

We note that neither state water quality regulatory agency with jurisdictional authority has requested such a study (ILP Study Criterion 2).

CRJC Reply: CRJC fully understands that the source of the mercury in the Connecticut River is not due to project operations; however, TransCanada ignores the science (e.g., Evers, 2007) that indicates fluctuating water levels in the reservoirs exacerbate the accumulation of mercury in fish. TransCanada cannot state that “there is no evidence that the operation of the projects affects the bio-accumulation of mercury and dioxin in fish tissue” without being willing to conduct the studies that might affirm (or refute) that assertion. Furthermore, both New Hampshire and Vermont have water quality standards for mercury that need to be addressed.

The Connecticut River Recreation Management Plan prepared and published by the Connecticut River Joint Commissions in 2009 includes top recommendations from each of CRJC’s five local river subcommittees. The Upper Valley, Mount Ascutney, and Wantastiquet subcommittees, which cover the river reaches affected by relicensing, each had a strong recommendation to “reduce mercury contamination in the Connecticut River system” (CRJ C, 2009:68).

4. Study Plan #6, Water Quality Monitoring and Study Plan #27, Terrestrial Studies:

CRJC Comment: The updated studies do not specify parameters or methodologies that can be used to determine if wetlands are being degraded by project operations.

Amend Terrestrial Study Plan #27 to identify the locations of reference sites in high quality wetlands, within and outside of the zone of influence of the project, which can be delineated and monitored for changes in species richness to assess whether wetlands are being degraded by project operations.

TC Response: We note that monitoring of wetlands is included in Study 27 – Floodplain, Wetland, Riparian and Littoral Habitats. That study will identify and map all wetlands that are hydraulically connected to project operations. Water level and temperature monitoring will be conducted at a subset of wetlands to be identified for further field work. Long-term monitoring is not proposed under the study plan as that would be considered a mitigation or management plan not a study.

We consider this amendment to be a request for an expanded study which does not address the ILP study criteria.

A comparison between wetlands within and outside of the project influences would not result in a reasonable determination of project effects since there could be a host of other factors beyond project operations that are the primary influences on either of the wetlands being compared. Therefore, TransCanada does not believe this request adequately meets ILP Study Criterion 5 as the results of this monitoring would not inform the development of license requirements in a new license. There is no need for this additional study scope and the information it would provide (ILP Study Criterion 4).

However, within the study plan, wetlands that are hydraulically connected to project operations wetlands will be identified and mapped within the study area and additional field data collection will be conducted, including in high quality wetlands within the study area.

CRJC Reply: The establishment of baseline reference sites with data on species richness, both within and outside of the influence of dam operations, is suggested as a method to determine if project operations have an impact on wetlands, not as mitigation. Reference sites are wetlands of the same class that define the best possible condition for that class. A crucial component of a biological assessment program is the careful selection of reference sites. (U.S. EPA, 2002).

Wetlands as well as surface waters are “waters of the United States” and both are subject to provisions of Section 401 of the Clean Water Act. “A State’s authority under Section 401 includes consideration of a broad range of chemical, physical, and biological impacts. The State’s responsibility includes acting upon the recognition that wetlands are critical components of healthy, functioning aquatic systems.” (emphasis added) (U.S. EPA, 1989:6). TransCanada has failed to explain how they will determine if wetlands are being degraded by project operations.

5. Study Plan #9, Instream Flow:

CRJC Comment: This study plan should be modified to include a determination of the flow requirements of all significant uses for which the river was designated into the New Hampshire Rivers Management and Protection Program, rather than just aquatic life. CRJC recommends that the applicant initially consult with organizations, natural resource agencies, communities and CRJC's local river subcommittees to consider all of the Instream Protected Uses, Outstanding Characteristics and Resources (IPUOCRs) listed in New Hampshire RSA 483 for which the Connecticut River was designated, in order to determine which are significant and flow dependent. This could be done using the protocols established in the Lamprey Pilot program (NHDES, 2006). Then, a determination should be made of which of these IPUOCRs have not been addressed by the applicant in other studies and warrant a full analysis of their flow requirements. These flow requirements should then be incorporated into the operations model.

TC Response: All of our study plans are specifically designed to assess project operational effects on natural resources within the project affected areas. The studies will provide a broader basis for assessment than the instream flow element of the NH Rivers Management and Protection Program (NH River's Program). Additionally, VTDEC and NHDES through the stringent 401 Water Quality Certification coordinated within the ILP will result in a more efficient, effective and stringent assessment of use and impacts on resources than the NH River's Program or the proposed Pilot Program.

We note that the jurisdictional state agency under the referenced State statute has not requested specific use of these "pilot" protocols. As a result, we consider this request to not meet ILP Study Criteria 3 and 6 by virtue of the fact the requestor is not the jurisdictional agency.

CRJC Reply: This study plan benefits from the experience that Normandeau Associates, Inc. had on the Lamprey Instream Flow study. We are impressed with its technical design to assess the impact on aquatic species. However, we believe it is important for TransCanada to include and analyze, in conjunction with the aquatic species, other flow dependent uses in the instream flow study. We recommend that TransCanada evaluate flows for all significant protected flow-dependent uses for which the Connecticut River was designated into the Rivers Management and Protection Program (RMPP).

New Hampshire law requires the New Hampshire Connecticut River Valley Resource Commission, as the local river management advisory committee responsible for implementing the RMPP (NH RSA 483:8a IV), to "consider and comment on any federal, state, or local governmental plans to approve, license, fund or construct facilities that would alter the resource values and characteristics for which the river or segment is designated." (483:8-a III (b)).

The Connecticut River Water Resources Management Plan Riverwide Overview prepared and published by CRJC in 2008 states "CRJC should identify Instream Protected Uses, Outstanding Characteristics and Resources listed in RSA 483 – for the Connecticut River, based on consultations with organizations, agencies, and communities, as well as discussions in the local river subcommittees." (CRJC, 2008:20). The statutory list of protected uses and

the inventory created by CRJC of river uses, values and instream features should be required reading for the consultants and become part of the bibliography for those relevant studies.

6. Study Plans #'s 1, 2 and 3, Riverbank Erosion Studies:

CRJC Comment: These studies [#s 1, 2 and 3, Historical Riverbank Position and Erosion, Riverbank Transect Study, and Riverbank Erosion Study] as proposed, will describe erosion at diverse locations above and below the three dams but they may be insufficient to determine what proportion of that erosion is directly attributable to dam operations...Expand the number of erosion study sites, particularly, in the Bellows Falls and Vernon impoundments to ensure a more complete range of erosion conditions are evaluated. Include at least five additional study sites in the Bellows Falls and Vernon impoundments. These studies should also be undertaken during high, low and transitioning water levels in order to more effectively evaluate the contribution of fluctuating water levels on erosion. Finally, in order to better assess the effect of project operations, we recommend a geotechnical slope stability analysis be conducted at each of the proposed study sites.

TC Response: We note that Study 1 - Historical Riverbank Position and Erosion is not a field based study, but rather a literature and document review that will inform Studies 2 and 3.

Studies 2 and 3 include provisions for comprehensive evaluations of erosion throughout the project-affected areas and during conditions beyond that which are affected by project operations. Provisions are included in the plans for working group consultation during the course of the studies, which would include the need for additional sites based on field reconnaissance.

We respectfully disagree that geotechnical slope stability analysis, specifically, is warranted at this time.

The study plans indicate that periodic meetings will be held with the Erosion Working Group to solicit comments in order to strengthen data collection procedures, analysis of erosion causes, and continuing studies during the two-year study period.

CRJC Reply: We applaud TransCanada's revision to the study plan to include "consultation with the erosion working group and consideration of increased monitoring based on initial surveys and any information gleaned from the historic data research in Study 1 - Historical Riverbank Position and Erosion that supports the need for more periodic monitoring based upon significant erosion rates."

We understand that sites need to be selected by October 15, 2013 so there is enough time to complete the monitoring before winter. Thus, we will endeavor to make specific recommendations for the locations of additional sites before the as yet unscheduled working group meeting in early October. To this aim, we suggest that our Local River Advisory Subcommittees may be a valuable resource for identifying potential sites. Their members have longstanding familiarity with the river.

The Connecticut River Water Resources Management Plan Riverwide Overview, developed and published by CRJC in 2008 identifies erosion as a significant issue, it states "[r]iverbank

erosion is one of the most prevalent and misunderstood problems on the Connecticut River....” (CRJC, 2008:11).

In conclusion, we strongly suggest that it be clearly elucidated in the erosion study plans that the expected outcome is to identify the proportion of bank erosion that is attributable to project operations. This information is necessary to assess the economic cost of erosion due to project operations and inform the proposed economic impact study plan.

References:

Connecticut River Joint Commissions. 1997. *Connecticut River Corridor Management Plan*. Charlestown, New Hampshire. May 1997.

Connecticut River Joint Commissions. 2008. *Connecticut River Water Resources Management Plan Riverwide Overview: 2008: (a) Headwaters Region; (b) Riverbend Region; (c) Upper Valley Region; (d) Mt. Ascutney Region and (e) Wantastiquet Region*. Charlestown, New Hampshire.

Connecticut River Joint Commissions. 2009. *Connecticut River Recreation Management Plan Riverwide Overview: 2009: (a) Headwaters Region; (b) Riverbend Region; (c) Upper Valley Region; (d) Mt. Ascutney Region and (e) Wantastiquet Region*. Charlestown, New Hampshire.

Evers, D. C. et al., 2007. “Biological Mercury Hotspots in the Northeastern United States and Southeastern Canada,” *Bioscience*, Vol. 57, No. 1, January 2007.

National Climate Assessment and Development Advisory Committee (NCADAC). 2013. *Draft National Climate Assessment*.

New Hampshire Department of Environmental Services. 2006. *Instream Public Uses, Outstanding Characteristics, and Resources of the Lamprey River and Proposed Protected Flow Measures for Flow Dependent Resources Final Report*. 80 p.

TransCanada, 2013a, *TransCanada Revised ILP Study Plan for Wilder, Bellows Falls and Vernon Projects*, August 14, 2013, 2162 p.

TransCanada, 2013b, *TransCanada Hydro Northeast Inc.’s Proposed Study Plan, Response to Commission Staff’s Additional Information Requests, Correction of PAD Deficiencies and Study Reports*. Project Nos. 1892-026, 1855-045, and 1904-073, letter dated, April 15, 2013.

U.S. Environmental Protection Agency. 1989. *Wetlands and 401 Certification (Opportunities and Guidelines for States and Eligible Indian Tribes)*., Washington, DC. EPA-843-B-89-100.

U.S. Environmental Protection Agency. 2002. *Methods for Evaluating Wetland Condition: Using Vegetation to Assess Environmental Conditions in Wetlands*. Office of Water, U.S. Environmental Protection Agency, Washington, DC. EPA-822-R-02-020.

Closing Remarks

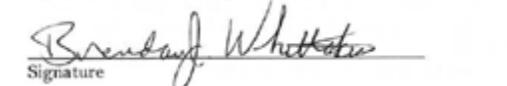
The CRJC hopes that you carefully consider our comments. We offer them on behalf of the non-regulatory Joint Commissions, entrusted by the States of New Hampshire and Vermont to oversee and make recommendations to governments and the public, for the health and well being of the Connecticut River. By working in cooperation with FERC and TransCanada, we seek to ensure that the best possible license conditions are crafted, local public interests are considered, and our shared public trust resource, the Connecticut River, is protected.

If you have any questions regarding the contents of this letter, please feel free to contact either of us via e-mail at Rebecca Brown 2sugarhillmutts@gmail.com and Brendan Whittaker gferbwick@gmail.com.

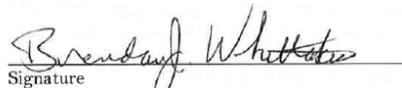
Sincerely,



Rebecca Brown
Chair, New Hampshire Connecticut River Valley Resource Commission


Signature

Brendan Whittaker
Chair, Vermont Connecticut River Watershed Advisory Commission


Signature

Appendix A: CRITERIA FOR COMMENTS ON PROPOSED STUDY PLANS

18 CFR Section 5.12

Comments on the potential applicant's proposed study plan, including any revised information or study requests, must be filed within 90 days after the proposed study plan is filed. This filing must also include an explanation of any study plan concerns and any accommodations reached with the potential applicant regarding those concerns. Any proposed modifications to the potential applicant's proposed study plan must address the criteria in Sec. 5.9(b).

STUDY PLAN CRITERIA

18 CFR Section 5.9(b)

Any information or study request must contain the following:

1. Describe the goals and objectives of each study proposal and the information to be obtained;
2. If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied;
3. If the requester is not a resource agency, explain any relevant public interest considerations in regard to the proposed study;
4. Describe existing information concerning the subject of the study proposal, and the need for additional information;
5. Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements;
6. Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate filed season(s) and the duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge; and
7. Describe considerations of level of effort and cost, as applicable, and why proposed alternative studies would not be sufficient to meet the stated information needs.