



## CONNECTICUT RIVER WATERSHED COUNCIL

The River Connects Us

Upper Valley: P.O. Box 206, Saxtons River, VT 05154

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

July 15, 2013

RE: Review of the Draft Proposed Study Plans for FERC project numbers P-1904 (Vernon), P-1855 (Bellows Falls), P-1892 (Wilder)

Dear Secretary Bose:

The Connecticut River Watershed Council, Inc. (CRWC) is a nonprofit membership group established in 1952 to advocate for the protection, restoration, and sustainable use of the Connecticut River throughout its four-state watershed.

The interests and goals represented by CRWC include: improving water quality; enhancing habitat for fish and other aquatic biota; safeguarding and improving wildlife habitat; protecting threatened and endangered species; protecting wetlands; preserving undeveloped shore lands; enhancing public recreation and promoting recreation safety; protecting aesthetic values; protecting archeological, cultural, and historical resources; fostering sustainable economic development, energy production, and preserving the local tax base along the Connecticut River and its tributaries.

We appreciate the opportunity to submit our comments on the revised draft plans for the proposed projects P-1904 (Vernon), P-1855 (Bellows Falls), P-1892 (Wilder).

### **CRWC General Comments on Issues that Flow through all the Studies**

Throughout the studies, each of the Deliverables sections say: “Results and conclusions will be reported in either the PLP or the draft license applications for the projects. Exhibit E of the final license application will include modified results and conclusions, as appropriate, in response to stakeholder comments on the PLP or draft license application.”

- **Recommendation:** The stakeholders in this process should have more time to review the final study conclusions prior to them being included in either the PLP or the draft final application, especially the NGOs without consultant assistance.

In numerous studies, the definition of the point where the TC study responsibility ends and the 1<sup>st</sup> Light responsibility begins has not been resolved to the satisfaction of CRWC. In several of the studies, the language suggests that the study will end at the face of the Vernon Dam leaving a

reach of the river below the Vernon Dam out in the cold. This lack of definition creates a 'no man's land' in flow, fish assemblage, erosion, floodplain, riparian, habitat and recreation studies as well as in the selection of econode locations.

- **Recommendation:** All study plans should clearly identify an agreed upon location where one applicant's responsibility ends and the other's starts so there will be no reach of the river that is not covered by these studies.

Throughout the studies and in the conversations at the working group meetings TC referred to the study work as being "baseline" studies. Their assumption seemed to be that the way the river is now and the dams operate now would be how the river will be in the future with operations as they are right now. CRWC disputes that assumption. This FERC relicensing process as we understand it holds TC to a higher standard than business as usual. If this process discovers changes in operations, flow regime, seasonal operation standards or a way to improve river recreation access then those improved situations should become the new baseline. CRWC has no specific recommendation that covers this observation but want FERC and the applicant to understand that CRWC and our members want a better healthier more user accessible river when this licensing process concludes in 2018.

### **CRWC Comments on Specific Studies**

#### **Study 1 Historic River Bank Position and Erosion**

CRWC has no further comment as the updated draft of Study plan 1 incorporates the CRWC suggestion that along with other research that there will be direct landowner outreach.

#### **Study 2 River Bank Transect**

The problem of erosion is not just a matter of high flows and ice out scour. There is legitimate concern that daily reservoir level fluctuation causes piping of water in and out of a saturated bank, piping that would be an important contributor to the erosion problems landowners are experiencing in the impoundment areas.

Ongoing monitoring would capture data on such effects. The draft plan now says that TC will meet with the working group to discuss increasing monitoring. The plan should say that the ongoing bi-weekly site review will continue to take place throughout the study period and that TC will meet with the working group to see if there is any reason to stop the ongoing monitoring.

- **Recommendation:** The study plan should include the 18 ongoing monitoring sites requested by NHDES, VANR and NHF&G.

#### **Study 3 River Bank Erosion**

CRWC has no further comments as the updated study plan incorporates the suggestions offered by CRWC and other working group members.

#### **Study 4 Hydraulic Model**

Since the proposed hydrologic model will be an important element used in evaluating many of the other environmental, historic and habitat impact studies, the model should be robust enough to evaluate the effects of numerous variable flows including higher and or lower flows anticipated due to the effects of climate change.

The value of a robust model is important for understanding the future health of the river. CRWC understands that the dams cannot store floodwaters but with a model that predicts exceptional water levels caused by climate change be they wet or dry, it should be able to predict impacts over time on river resources. By building in the capacity to predict higher and lower flows than have occurred historically, TC can produce a value added tool for the benefit of the river. The model should be able to predict flows at the flood flow levels already part of the FERC required safety review of the dams.

- **Recommendation:** The hydraulic model should have the capacity that when correlated with the other studies predict impact on river resources due to exceptional flow caused by climate change. The model should be available to planning, river resource and emergency organizations in the watershed.

#### **Study 5 Operations**

CRWC has no further comments as the updated study plan incorporates the suggestions offered by CRWC and other working group members.

#### **Study 6 Water Quality Monitoring**

CRWC called for temperature monitoring from April to November in order to gain a better understanding of potential project effects, especially coupled with the water temperature increases due to Vermont Yankee. We feel that was an appropriate change to the study plan and recommend that FERC hold with those dates in their approved plan. This approach will provide temperature data that would be useful in subsequent studies that depend on water temperature such as downstream migration of juvenile American shad.

TC has made it clear they want nothing to do with the Entergy VY thermal plume. CRWC knows TC is not responsible for the plume or its effects, other than the influence of the impoundment on mixing. Nevertheless, there is only one river and the stakeholders should have information about the plume and its extent to establish accurately where it occurs.

- **Recommendation:** That TC place more than one temperature logger transect above the Vermont Yankee discharge and more than one between the Entergy discharge and the Vernon dam in order to better differentiate between potential impacts of Vermont Yankee and TransCanada on water temperature.

### **Study 7 Aquatic Habitat Mapping**

There is a value to having this information about the “as is” situation within the riverine and reservoir reaches affected by the project. Unfortunately, there is no aspect of this or any other study planned to learn how the aquatic habitat has changed over time since the installation of the dams. Neither this nor any other study will capture this historic river value. Clearly, we cannot recreate the past but TC should conduct a literature search for information about the river before TC or its various predecessors built the dams. Any literature information gathered should become part of the published results of this study and offer a comparison between what was and what is. That comparison is one element of a true study of the status of aquatic habitat

- **Recommendation:** TC should conduct a literature search about river habitat conditions over time. This will allow a some level of comparison of the habitat as it exists today to the habitat conditions prior to the construction of the dams.

### **Study 8 Channel Morphology and Benthic Habitats**

CRWC has the same comments as we made regarding Study 7. There is a value to having this information about the “as is” situation within the riverine and reservoir reaches affected by the project. An unknown is how the channel morphology and benthic habitat has changed over time since the installation of the dams. No study accounts for this river history.

- **Recommendation:** That TC conducts as part of the desktop verification work a literature search about river conditions over time. This will allow some level of a comparison of the channel morphology and benthic habitat as it exists today to the conditions prior to the construction of the dams. The study should present any information and offer a comparison between what was and what is. That comparison is one element of a true study of the river morphology and the creation and or destruction of benthic habitat.

### **Study 9 Instream Flow**

CRWC has no further comments as the updated study plan incorporates the suggestions offered by CRWC and other working group members.

### **Study 10 Fish Assemblage**

Although this version of the draft plan incorporates many of the suggestions provided by the fisheries agencies there are some additional comments submitted by VFW and NHFG that have not yet been incorporated in this draft, specifically the use of various types of gear not just electro fishing and gill netting. Both state agencies call for some portion of the hours of sampling to take place at night.

- **Recommendation:** CRWC supports the call by VFW, NHFG that sampling should take place during day and night time hours and that TC should conduct the sampling with gear as suggested by VFW.

### **Studies 11 – 18 – 19 – 20 Eel survey and Up and Downstream Eel Passage and Timing**

These studies are all related to one species, a species that is hard to capture in the wild by using the techniques suggested by TC but they are the best available. One note is that there is a higher level of damage to eels captured with electro shocking than there are with eel pots. (James B. Reynolds and F. Michael Holliman, 2003)

- **Recommendation:** If the sampling numbers are sufficient to generate useful data using eel pots, then the fieldwork should rely on eel pots as much as possible to reduce harm to eels during sampling.

TC plans to survey only waters affected by project operations for eels and that is problematic given the difficult nature of capturing eels. There are points on tributary waters where up migrating eels will concentrate due to the stream formation or manmade infrastructure. Although these locations are not immediately in the project affected waters they will yield useful data as to the presence of eels throughout the entire reach of river affected by the three projects. Examples of these locations are the falls at Drewsville, NH on the Cold River; the face of the dam in Springfield, VT in the Black River; below the falls at Brockway Mills, VT on the Williams River and at the base of Twin Falls on the Saxtons River. Each is only a short distance from the main river and because each has a defined search area the relative additional effort should not be prohibitive.

- **Recommendation:** In order to get the fullest picture of the presence of American eels in the CT River watershed, eel sampling should take place at several migration barrier locations on the tributaries even though they are outside the immediate influence of the project operations.

### **Study 12 Tessellated Darter Survey**

CRWC has no further comments as the updated study plan incorporates the suggestions offered by CRWC and other working group members.

### **Study 13 Tributary and Backwater Fish Access and Habitats**

CRWC has no further comments as the updated study plan incorporates the suggestions offered by CRWC and other working group members.

### **Study 14 - 15 Resident Fish Spawning in Impoundments**

There are no provisions in the studies that will assess the effects of sediment deposition on the redds of spawning fish and other aquatic species. This sediment deposition would not be determined as part of the embeddedness characterization. Based on personal experience, the buildup of sediment behind the dams is seasonal based of the river flows. Sediment settles out when water velocity slows down in the late spring. Once water levels drop in the spring, the deposition of sediment accelerates and it would be important to know if that occurs in spawning depth water.

- **Recommendation:** The fish spawning study should record where newly deposited sediment has covered suitable spawning habitat. The study should make an assessment of whether the deposition is from project operations or if other flows were a factor.

### **Study 16 Sea Lamprey Spawning Assessment**

In the 30 years that I have fished the wadeable sections of the main river, I have never seen sea lamprey spawn in the main river. I have seen them in the wadeable tributaries all the way from the point where the tributary is just beyond the reservoir effects of the dam to points well up stream of the main river until there is a natural or manmade barrier to further up migration.

- **Recommendation:** TC plans to chase radio tagged lamprey even if they head up tributaries so documenting other untagged lamprey identified during the same on the ground excursion could take place while looking for the tagged fish. This of course could not apply in cases where the tributary work is done by plane but some effort to identify as many spawning lamprey even if they are in tributaries would be useful information. The same barrier points listed in the American eel studies would be useful survey sites.

### **Study 17 Upstream Passage of Riverine Fish Species**

CRWC has no further comments as the updated study plan incorporates the suggestions offered by CRWC and other working group members.

### **Study 21 - 22 American Shad Telemetry and Downstream Migration of Juvenile Shad**

Since TC has rejected outright the CRWC call for a shad population model, it is vital that these two studies be as far reaching as possible. Possible limiting factors on the full restoration of the American shad in the upper reach of the Connecticut River include passage efficiencies at downriver dams along with one other critical unanswered question, the effect of the Entergy VY plant thermal discharge on the downstream migration of adult and juvenile shad. Although the issue has been debated and litigated over the years there still has been no definitive analysis of the possible effects of the plume on successful migration of shad.

TC struck any mention of the VY discharge from this version of the draft plan. CRWC knows that TC is not responsible for the VY discharge but feels that studying the effects of the discharge on migrating shad could indicate that changes might be appropriate as to where the downstream fish tube is located in the forebay area, i.e. further to the east; outside the heated water plume could be of value to increasing spawning and juvenile success.

- **Recommendation:** That TC should study all of the impediments to successful shad spawning and downstream migration including evaluation of the effect of the heated water discharge plume from Vermont Yankee. The study should determine if the plume affects the choice of juvenile shad's downstream passage route, migrant residence time in Vernon pool attributable to the thermal plume and any effects on the timing of shad

migration. The study should recommend if the change in the location of the fish passage tube would improve fish passage.

- **Recommendation:** That TC place more than one temperature logger transect above the Vermont Yankee discharge and more than one between the Entergy discharge and the Vernon dam in order to better differentiate between potential impacts of Vermont Yankee and TransCanada on water temperature. (Same as recommendation under Study 6)
- **Recommendation:** That TC develops a metric for shad migration delay relative to the effects of the thermal plume. This might just provide the first real insight into the effects of the plume on the shad population in the upper river. This would be a value added product that TC could contribute to the health of the river. State agencies and river advocates should have access to the metric system.

### **Study 23 Fish Impingement, Entrainment and Survival**

TC will only be conducting a desktop review of literature regarding fish entrainment and impingement. That may be a viable first step but the study will not be undertaken until 2015, the second and last field season in the ILP process. Given the variable nature of rivers, no two are the same. CRWC is concerned that simply because a study on one river made a finding does not mean the situation is the same on the Connecticut River.

According to the draft updated plan, the reason for waiting until 2015 is that Study 23 will rely on other studies from the 2014 field season. CRWC feels that waiting until 2015 to conduct the desktop study is neither necessary nor protective of fish and other aquatic species in the Connecticut River.

TC does not need to know what species they are dealing with in the project areas while they are distilling information about the parameters of swim speeds, body dimensions and other characteristics for various species from other studies on other rivers. Determining the relationship between the desktop review and the actual species found in the project reach based on the 2014 field work can and should be done over the fall and early winter of 2014-15. TC could produce a matrix of specific standards protective of fish species referenced in the desktop work and once the actual species are known for the projects, those species can be placed into the matrix.

That timing for the preliminary results of the study would allow the working group, FERC, or both with cause in terms of findings of the desktop study to call for an additional on the ground study during the 2015 field season. Fish impingement and entrainment are too important as issues and should not rely on a last minute, no recourse desktop study.

- **Recommendation:** The fish impingement and entrainment study should begin in 2014 with the results of the desktop work prepared in such a way that field generated information gathered in 2014 can easily and quickly be applied to the fish species identified in the project reach of the river.

#### **Study 24 Dwarf Wedge Mussels**

CRWC has no further comments as the updated study plan incorporates the suggestions offered by CRWC and other working group members.

#### **Study 25 Dragonflies and Damselfly Inventory**

CRWC has no further comments as the updated study plan incorporates the suggestions offered by CRWC and other working group members.

#### **Study 26 Cobblestone and Puritan Tiger Beetle**

CRWC has no further comments as the updated study plan incorporates the suggestions offered by CRWC and other working group members.

#### **Study 27 Floodplain, Wetland, Riparian and Littoral Habitats**

The study narrative says that the study will stop at the face of the Vernon Dam. The topic of which company is responsible for the down river reach below Vernon Dam has been part of the working group discussions about this and several other studies. Although CRWC has been assured by FERC that there will be reach of the river left in a company dispute lurch we find that the fact that this statement remains in the update draft problematic. (pg 259 Study area and study sites)

- **Recommendation:** The study should not stop at the face of the Vernon Dam. All study plans should clearly identify an agreed upon location where one applicant's responsibility ends and the other start so there will be no reach of the river that is not surveyed.

This study brings up an issue about sharing the information on Rare, Threatened and Endangered species and habitats. It is an issue in other surveys as well. CRWC understands that circulating maps or other documents with exact locations of RT&E species puts those species at risk but the information generated about RT&E species is useful in other settings than this FERC relicensing. The presence or absence of RT&E species is information that all the stakeholders should have available to them.

- **Recommendation:** TC should make available to the Natural Heritage Programs of VT and NH all information about all RT&E species and habitats. Stakeholders should have access to the overall results about the identification of RT&E species with any sensitive location information redacted.



**Study 28 Fowler's Toad**

CRWC has no further comments as the updated study plan incorporates the suggestions offered by CRWC and other working group members.

**Study 29 Northeast Bulrush**

CRWC has no further comments as the updated study plan incorporates the suggestions offered by CRWC and other working group members.

**Study 30 Recreation Facility Inventory, Uses and Needs**

This study creates the same concern for CRWC mentioned above in Study 27. The language of where the survey will take place is not definitive as it says, "In addition, the study will inventory public recreation access opportunities at the Connecticut River from the upstream end of the Wilder impoundment to downstream limit of the Vernon project." Those present at the working group meetings know that TC and 1st Light do not define that point as the same location.

- **Recommendation:** The study plan should identify an agreed upon location, agreed between TC and 1<sup>st</sup> Light where one applicant's responsibility ends and the other's starts so there will be no reach of the river that is not surveyed.

Although the survey form includes questions about winter activity on the river, the survey itself is still planned to be conducted May through September. It would seem in this timeframe that winter recreation would get less of a response than what actually takes place on the river. As an example, a boating enthusiast or canoer may or may not be a winter ice fisher, yet ice fishing is a major activity in the setbacks throughout the three project areas.

- **Recommendation:** TC should invest some level of effort in surveying winter river users during the winter, especially ice fishers.

Whitewater river users are limited to one location in the project reach of the river, the one at Sumner Falls in Hartland, VT. The survey work there will be of value but more people probably paddle the USACE releases from the Ball Mountain and Townshend dams when they occur then you will ever run into at Sumner Falls.

- **Recommendation:** TC should survey, at least once some number of the participants present during the release at USACE flood control dams on the West River.

There is a difference in the usefulness of a concrete launch site to different segments of the boating public. Power boaters back up drop their metal boat and off they go. Car toppers (canoer, kayak, rowers) find cement damaging to their vessels because of the material used to create their vessels, some even as light as canvas. The historic construction of the cement docking facility has self selected what type of boater will use it. In order to reach out to the new and ever

increasing number of people who do not powerboat on the river require venues for interviews other than with people using the existing dock areas.

- **Recommendation:** TC should contact canoe, rowing and other non-powerboat groups including those who sell people powered vessels and ask for their input about what attracts them to or keeps them away from the river.

There is no mention of the fish ladders or the visitor centers at any of the dams in this or any other recreation plan. CRWC hopes that this is an oversight since the visitor centers are important for both public enjoyment of the river and education about the river. CRWC hopes that this lack of mention of the centers is not a lack of willingness to keep them open, in excellent repair, accessible to all with the intent to strengthen them as an education tool about the river, its uses and power production.

- **Recommendation:** The survey should test the public's knowledge and use of the visitor centers at the dams including what would make them more attractive as focal points for information about the health and uses of the river.

There may be an assumption built into the word "access" that the word includes Americans with Disabilities Act access to recreation sites. Whether or not a site is accessible to the standards of ADA should be spelled out in both the study plan narrative and in the recreation survey forms.

- **Recommendation:** The recreation study plan and survey forms should include information on specifically whether or not access points meet ADA standards.

The revised plan does speak to portage around the Bellows Falls station but there are issues with portage at the other dams. Vernon is either difficult to negotiate down the steep hillside to the launch area below the dam or you take the long walk on the road. The Wilder project has the same problem once you are off the macadam pathway. The pitch of the land is steep and then the flatter shore is usually littered with detritus making walking difficult.

- **Recommendation:** TC should evaluate all three of the portage paths around the dams in conjunction with canoe and other river user groups to increase user safety and portage reliability.

### **Study 31 Whitewater Boating Flow Assessment at Bellows Falls and Sumner Falls**

CRWC has no further comments as the updated study plan incorporates the suggestions offered by working group members and CRWC has the clear expectation that TC will work with American Whitewater, AMC and NE Flow in completing the assessment.

### **Study 32 Bellows Falls Aesthetic Flow**

CRWC has no further comments as the updated study plan incorporates the suggestions offered by CRWC and other working group members.

### **Study 32 Cultural and Historic Resources**

CRWC has no further comments as the updated study plan incorporates the suggestions offered by CRWC and other working group members.

CRWC (and CRJC) would remind FERC and all members of the Cultural and Historic working group that private meetings among only certain of the stakeholders are counterproductive and potentially damaging to the credibility of this portion of the relicensing process.

### **CRWC Comments on Studies Rejected by the Applicant**

TC rejected several studies for various reasons. Those that are of particular concern to CRWC are the recreation economic analysis and a study of the effects of climate change on river resources and on the projects.

**Recreation Economic Analysis:** One of the underlying tenets in the FERC relicensing process is that under the National Environmental Protection Act, power production is no longer the sole focus of FERC. The value of activities like recreation have their own and competing value with power production.

AMC, NE Flow and American Whitewater called for a contingent valuation study. TC has declined so far to conduct such a study. The point of a contingent valuation study is that it seeks to put two competing social goods on an equal footing, in this case recreation and power production. These economic studies assess the value of an activity for society and what may be lost if the activity is prevented from occurring. TC can put a value on the power they produce but without an economic figure for the recreation value there is nothing to put on the other side of the balance scale. FERC cannot balance the two values in this case, as they should, because one value will not be determined.

This lack of balance is not limited to on water activities alone. For those who do not boat but instead bird, hike, ski and wildlife watching face limited access to the river. If you do not boat and depending where you reside, you may not be able to experience New England's greatest river at all. Most land along the river is privately owned so foot or motorized access to the river is limited to whom does one know who owns land along the river. As part of this relicensing process CRWC will ask the question, what can TC do about opening up the river for all types of river related recreation? FERC cannot answer the question without serious study of the economic value of those non-water river related outdoor activities.

- **Recommendation:** FERC should require TC to conduct an economic impact study on the value of a wide gamut of outdoor recreation activities including the value of whitewater opportunities.

**Climate Change:** Both the applicant and seemingly FERC have rejected the call for a study to determine the impact of climate change on project operations and the facilities themselves because they claim that such a study would not lead to license conditions. CRWC rejects that analysis. There are two main concerns about not conducting CRWC Study Request 4. They are: **A)** - affects of warming temperature on the water and **B)** - the impacts of higher than normal flows on the facilities themselves. Understanding each concern could lead to appropriate license conditions.

**A)** River water temperatures have been rising on a historic basis (Paul Jacobson, Charles Fredette and Nels Barrett, American Fisheries Society Monograph 9, 2004 and NOAA National Climate Center, Northeast 12 month average temperate for the period 1896 through 2012). There should be a clear understanding of at the three projects on whether or not the effects of the reservoirs exacerbate the documented temperature increase. There is no way to establish any mitigation measures to protect aquatic life without the base information on the effects of climate change combined with the effects of the reservoirs on water temperature.

**B)** Climate change means more frequent events of more intense weather. Heavier rain when it comes will create unusual higher flows. In winter the potential for higher snow pack combined with quicker melting and the possibility of mixing in heavy rain at the same time could create flooding conditions even beyond what TC models at this time under FERC emergency preparedness requirements. CRWC understands that the three projects are "run of the river" so our concern is not about storing water in an effort to mitigate flooding. CRWC knows that the dams will pass what water they must. Our concern here is that these intense higher flows will increase wear and tear on all three facilities. Increased damages or wear and tear on the facilities caused by more high flow events will have an impact on the economic analysis FERC must perform on the applications.

- **Recommendation:** TC should be required to conduct a study based on CRWC Study Request 4. In particular the study should rely on 30-50 year temperature increase models that incorporates thermal loading from the reservoirs. The other key element would be to anticipate how climate change predictions would affect management of high flow events at the three projects and evaluate if changes to the dam structures would mitigate adverse impacts on the facilities themselves.

Again we appreciate the opportunity to submit our comments on the revised draft plans for the proposed projects P-1904 (Vernon), P-1855 (Bellows Falls), P-1892 (Wilder). We hope you will take our recommendations to heart and by doing so the revised studies will give all of the

stakeholders the information we need to consider in order to develop appropriate recommendations for license conditions.

Sincerely

A handwritten signature in cursive script, appearing to read "David L. Deen".

David L. Deen River Steward

Document Content(s)

CRWCcommentsonTCstudies.DOC.....1-13