Attendance List Attached

John Ragonese (JR) – introduction, overview, working groups. Question – schedule? JR – our goal is to have consensus on each study plan. We will have a revised proposed study plan that reflects input.

Ken Hogan – you don’t need to file each revision with FERC. If use Sharepoint site, can use different versions of the documents and retain those versions. FERC wants people to comment on the latest versions not original version of the PSP. Communicate to people what the latest draft is. July 14th is stakeholder comment deadline, August 13 is deadline for the RSP, then stakeholders have 15 days (Aug 28th) to file comments on the RSP. Then FERC takes comments and RSP and evaluate issues and will issue a Study Plan Determination on Sept 12. FERC only addresses in writing things at issue. FERC generally approves the RSP as modified by FERC.

Bob Nasdor – about closing off revisions prior to July 14th so that commenters have time to review latest draft. Ken Hogan – if there are still outstanding issues, TC should work with stakeholders to nail down those issues.

Kevin Mendik – between July and Aug, will TC post additional notes etc.

**Review of proposed study plan**

Erosion

Study 1 – John Ragonese (JR): looking for readily available historical information and aerial photos to correlate if possible. David – what about public outreach to landowners etc? JR – probably not reaching out, may send out a letter, but not sure what we’d do with information from private surveys. Kevin Mendik – will you look at older orthophotos? Yes, if available/possible.

Study 2 – JR: proposed 20 transects, proportional distribution. Haven’t identified locations yet. Areas of active erosion, different soils, distribution thru project, need landowner permission to survey.

Study 3 – JR: identify and characterize processes of erosion, likely causes and effects of erosion on resources. Nicole (Leb) – will some transects be below the dams? We haven’t identified them yet, but most are in impoundments. Ken Hogan – when will protocols for selecting transects be done? Starting next meeting (ER, WR).

Water Resources

Study 4 and 5 – JR: to identify what is going on in different areas, current ops model and new hydraulic model. So much inflow and length/elevation of impoundments that don’t know now what happens. Develop relationships into ops model – to characterize what may be going on in different areas.

Study 6 – Jen Griffin (JG): many study requests, continue 2012 study, with requested changes – add turbidity in continuous monitoring and adding background/reference site for each project in upstream riverine stretch. 16 stations in mainstem, 10 tributaries (temp only). June thru Sept, with at least 10 days of low flow/high temp conditions. Request April 1 – Nov 15, we suggest June – Sept to get worst case scenarios for DO, also in April/May higher flows and potential loss of recorders/data. Andrea – what constituents? All the same as last year. Question – are you correlating the location of any monitors with municipal wastewater discharge sites? Would you consider it – it would be an opportunity to get additional data? Jen – we can look at that, but monitors are in the same locations as last year. JR – our goal is evaluate the project effects, not municipal. David Deen – start/end dates discussion – at study meetings.

Aquatics

Study 7 – Rick Simmons (RS): generally follows FERC but not mapping below Vernon. Impoundments and riverine sections. Aquatic habitat mapping will include backwater areas where possible. There are about 22 backwater areas. In shallow areas, < 18 inches can draw polygons directly. Question – how defining full pool? RS – top of flashboards back up the dam. JR – define as normal operational flows.

Study 8 – RS: coordinated with other studies including erosion, hydraulics, and aquatic habitat related studies. Tributary and mainstem sites.

Study 9 – RS: transect selection through working group, HSCs with agency consultation. Most of field work in one year. Tom Christopher – will you be doing BF bypassed reach? Yes, and the 17 miles below Wilder and the 6 miles below BF. Melissa Grader – with question about extent of FL’s project below Vernon. JR – right now the project boundary goes to the base of Vernon dam. We know where our project boundary is. Ken Hogan – FERC has been looking at this “no man’s land”. FL filed info that 9,600 feet below Vernon dam is top of FL’s pond. FERC is not convinced of FL’s report, but project boundary is not the limit of study locations, and both applicants have some responsibility in that area since FL’s low pond is further downstream of the dam. Ken Hogan – example – at Turner’s low pool, Vernon discharge may be the control until pond fills (e.g., ramping rates). JR – we disagree.

Study 10 – Doug Hjorth (DH): fish assemblage/baseline.

Study 11 – DH: excluding ponds etc that were requested but are outside of project.

Study 12 – DH: don’t believe we can determine project effects on populations within the 2 year timeframe (second goal of requests). Baseline is project as currently licensed, so don’t feel it is necessary to sample waters not in the project. Better to sample and evaluate current population in relation to DWM. Stations determined after aquatic habitat mapping.

Study 13 – RS: 112 streams with 56 major tribs, and 56 minor tribs. Will look this summer at those and with consultation, will select sample sites. Tribs, backwaters, setbacks will put water level monitors at backwater and river to determine what happens in backwaters when river goes up/down a certain amount. Will put some water leve/temp. HOBOs at the key erosion sites also. Photographic evidence as well. John Devine – will you integrate this info with HEC-RAS model? Yes, and with erosion monitoring. John D – will you capture erosion transects as well? Yes, will put transducers there. John R – the idea is to tie these tranducers to several resource evaluations.

Study 14 – RS: this summer with side scan and bathymetry. Mapping entire impoundment. Lit review on species listed for study, field study to find spawning sites in 2015. John Devine – other than VY assemblage studies, have there been others? Rick – Yoder et al, but not a lot of info outside of VY pool. Gabe Gries – NHFG has some limited data. Rick – we’d love to know where the sites agencies have found are.

Study 15 – RS: Related study, similar to study 14. Including water level recorders, WQ sampling, behavior data, etc.

Study 16 – DH: 20 fish each at BF and V tagged and released above dams. Spawning success – based on larvae emergence.

Study 17 – DH: summary

Study 18 – RS: nighttime systematic surveys at least one night/week. Ken Hogan – doing surveys at BF bypass spillway at the dam and at the barrier dam? Yes – and baited eel pots in the bypassed reach.

Study 19 – RS: excluding pit tagging for DS passage, can’t do it at turbines only at bypasses and will use radio telemetry instead. Part is survival thru turbines focus only, believe survival will high thru other routes, quantify by balloon tags.

Study 20 – RS: feel it is pre-mature at this time, not many above these projects and no place to do it, proposing to do thorough lit review instead, focused on CT river basin and northeast. Focus on cues that stimulate migration.

Question from John Devine – schedules, with timing of FERC submittals of study reports. John R – we’ll do the best we can to get the results out as soon as we can, if there is information available by the 1 year we’ll provide it hopefully in time to determine if additional work might be needed. Ken Hogan – if determinations are needed on second year studies will make that quickly. Expect that first year study report is at least a progress report to verify that study is being implemented as planned.

Study 21 – same locations as USGS study.

Study 22 – JG: route selection and survival. Similar to eel downstream study. Through one of the new Vernon Kaplan units, and use past data on the Francis units.

Study 23 – RS: desktop entrainment study, estimate survival.

Study 24 – JG: adaptive 2-phase plan with specific task plans. Second phase would involve agencies to determine what those studies would look like. Phase 1 has 2 tasks – 17 mile Wilder riverine not included in last study. Then determine best sites for quantitative sampling. Abundance, microhabitat, etc. Phase 2 has 3 tasks.

Study 25 – JG: summary

Terrestrial

Study 26 – Maryalice Fischer (MAF): baseline study

Study 27 – MAF: vegetation and wildlife, within 200’ of river.

Study 28 – MAF: baseline study

Study 29 – MAF: baseline study

Recreation and Aesthetics

Study 30 – DH: existing use info, and why people aren’t using rec areas, estimate future use up to 2050. Desktop and field surveys. Question – will study include maintenance? Yes – condition of the facilities. Tom Christopher – you ignored the request for economic/spending info. If you will be collecting data on use, it would be simple to collect this economic data. DH – the content of the interview forms will be worked out with the working group, but the trick with interviews is to not have too many questions. Question – what about proposed recreation sites and coord/integration with missing recreational opportunities in the general area? DH – determined by establishing the demand for those things – whether additional facilities are needed and if so, where. John R – in our application there will probably be a recreation plan. Kevin Mendik – onsite will not get to people not using areas, are you looking at partnering with CRWC, AMC etc to plug their members into the surveys? John R – worthy discussion at working group, and not impossible to do. Ken Hogan – glad to hear TC is working collaboratively on survey questions, to the extent that you can come up with first draft questions before your first meeting, highly recommend that. He can get examples of surveys created in the past to start with. Bob – to build on Kevin’s comment – there are things in the projects eg BF portage inadequacy, that is why it is important to reach out to user groups.

Study 31 – DH: BF bypass. Bob – the issue you need to take into account is the fish barrier, since it is a substantial hazard. John R – we have considered it, we are not taking out the barrier dam to do this study. If there is general consensus that it should be removed, that’s possible but TC was required to install the dam and it has a purpose. Kevin Mendik – in terms of operational constraints do you think it will be possible? John R – there are 2 gates, open minimum to not damage gates, it is 3000 cfs. If flashboards, other challenges esp. Boaters have told us that it is a very dangerous reach, people have died, it makes us very nervous. Not sure how we can have a controlled release and need to go through first. We know that it still has appeal and we will look at it.

Study 32 – DH: Question from Tom Christopher – using gate for flows you’d get a minimum of 3000 cfs, is that what you’d use for aesthetic flows? John R – not sure how we can do it yet, dam is designed for 3,000 cfs and above, may need to use another structure to deliver test flows, need to figure out a way to make a reasonable assessment of flows. These are huge gates.

Cultural/Historical

Study 33 – JR: Still an element of consultation that may occur to finalize APE. May need to wait for hydraulic modeling to help refine the APE areas. Not proposing additional site identifications, Phase 1B or Phase 2. That comes after Phase 1A consultation. Will determine eligibility of Wilder project. Intend to develop HPMPs. Vernon is at the 5-year monitoring under the HPMP. Have begun consultation with Narragansett tribe and they may have their own study needs. Question – will you tie in the erosion mitigation? John R – any time we put a shovel in the ground we do a cultural assessment and look at sites with erosion during the periodic monitoring. Nicole – did you get input from Abenaki? JR – we reached out, haven’t gotten back. What is your coordination with the SHPOs? JR – they are who we coordinate with. Comment about using acronyms and introducing people.

Lunch break

**Preliminary data collection**

LiDAR - Flew LiDAR photogrammetry and data collection – already occurred early May 2013. For relicensing, EAPs, etc. Geographic scope from base of Moore Dam to Vernon dam – riverine and impoundments. 1-foot contours and 3-6 inch vertical resolution. Producing a digital elevation model. As we develop erosion transects, identify backwater etc. areas, we may produce additional/new mapping. Got ground and terrestrial vegetation elevations. Will also get river elevation with LiDAR, and know timing of flows, inflows, discharge etc. to help calibrate the hydraulic model.

Habitat Mapping/Bathemetry/Mesohabitat – main channel and side channel components of the mainstem and will get habitat in deeper waters (2 foot elevations) and 1 foot in shallower areas.

Erosion Monitoring Sites/Transects – to identify key locations for study.

Operational monitoring tranducers – to create model with high confidence. Putting a lot out there at erosion, tributaries, backwater areas, other habitats – wherever trying to develop relationships between habitats and project operations.

Hydraulic modeling – linking HEC –RAS with site index relationships for specific resources. Can’t be fully developed until we get some of the other information above.

Dwarf Wedgemussel Study – to close the gap on surveying below Wilder from the prior DWM study.

Question – did you collect color imaging with LiDAR? JR - Yes

Question – how far outside the project boundary did you go? JR - Essentially we wanted to pick up the project and its area – including Deerfield River and down to Holyoke Dam – for purposes of Moore EAP.

Question – you have never set up transects prior to this for erosion? JR - No. Except for Vernon Neck/East Bank at Vernon, to monitor movement at the top of the bank and visual monitoring of alluvial island below Vernon dam. We have some bathemetry there.

Question – these different areas of erosion monitoring, will be discussed in the study meetings? JR - Yes.

Question – there is no existing LiDAR that would be comparable? JR - No.

**Declined Studies**

Recreation economic analysis - DH. We did not feel there is a linkage to potential enhancement measures that might be considered in the future. Contingent valuation at Sumner Falls and BF Bypassed reach – premature before we had studied the recreational opportunities there. Contingent valuation at Vernon to consider lost whitewater opportunities, but FERC’s analytical baseline is the project as licensed, therefore incorrect baseline.

Tom Christopher – Wilder dam there are currently whitewater opportunities with present Wilder operations. Would seem to be shortsighted to overlook recreational study on that reach. Potential of bypass reach at BF - we asked for contingent valuation to determine what people would pay if such an opportunity existed. This is basic economic information. There are no whitewater parks in the region.

DH – competing resource issues and uses, until we get more information it is premature.

Tom – if the competing use is operational flows, then should look at operational flows.

Ken Hogan – pretty standard in licensing – look at the need first.

Tom – if FERC were to issue license conditions relative to future analysis would that go to Form 80?

Ken Hogan – no, within 2 years.

John R – recreation study will determine is there an absence, a need or whatever and then

Ken Hogan – FERC baseline is current operations. But the information generated from properly designed recreation study would inform on the value, demand, need for mitigation. We want to get the data to determine mitigation (call it enhancements) moving into the future.

Bob – these words perhaps, could, maybe – what is the process for turning those into “will” conduct an economic analysis or whatever.

Ken Hogan – one approach could be to have trigger points while you are developing your study plans – if we hit this trigger point, we would develop further studies.

JR – we think we are approaching these issues in a reasonable way. We do not agree that we need to mitigate for pre=project operations.

Shad Population Model

Rick – our projects deal with about 1% of the total shad migration, and with impacts of downstream dams it could take decades to develop that model. But we are going forward doing shad telemetry that will contribute to the USGS model.

Whitewater Feasibility

JR – this is a mitigation proposal and we feel like we will get to the question of suitability of whitewater opportunity through the other studies.

Kevin – if when we conduct the whitewater suitability, based on the data then you could move on to studying whitewater park.

JR – Yes

Bob – isn’t whitewater park is a 4th stage of the study?

JR – would term it as – if whitewater was suitable there, and other resource uses are compatible and if users agreed that whitewater is needed, then it would be one of potentially many recreational enhancements to look at.

Tom – it would be NE Flow’s hope that if this idea grows fuller, it be considered within terms/context of what would be compatible with fisheries and other uses.

JR – not trying to isolate whitewater boaters.

Establish Permanent Plots – MAF: Premature and mitigation, not enough time to get data for license application.

Nicole – does TC keep track of those declined studies for future use?

JR - need to assess floodplains first. Still open for discussion until FERC determination of what we will or won’t do.

Preservation of cultural, historic records – JR. This is not a study, this is asking us to do/create something and is mitigation. The point is we do this are part of our historic plans. Those in themselves are a mitigation package. Just not a study.

Kevin – just to clarify. NPS was looking at this as a study, but just looking at the potential to pull together all of this great information, and could collaborate with SHPOs etc.

Joe Graveline – there were lots of cult/hist resources lost over the last licensings. Towns in northern MA are looking at developing historical tours and make the allure of getting near the river and its history, a part of their economic base. Not intended to be dumped on TCs shoulders, but an opportunity to collaborate.

Ken Hogan – compilation of existing information?

Kevin – yes, partnership with TC, SHPOs, towns – what information does TC have that maybe historical societies could collect, protect, display.

Ken - how does it relate as a study request?

JR – we produced historical movie on Vernon in response to VT SHPO request to capture elements being changed in the powerhouse. As a mitigation measure.

Joe Graveline – there is a tremendous amount of historical research that has been done by SHPOs etc, and they restrict access to archeological information. This is an opportunity to change that and get the information accessible and transparent.

JR – there is a lot of history to these projects. To the extent it is confidential to SHPOs and/or tribes, we respect that.

Floodplain Development – MAF – misunderstanding about what drawdown at dams for high inflow really means. No way of determining which structures in the floodplain should be protected versus flooded.

JR – we know we will look at operational alternatives. Not within our nexus to study what is being developed within the floodplain – out of scope of our projects. We will be able to identify what alternatives there may be to river profile operations

Ken Hogan – interest in request is to allow overland flows, so would other studies look at inundation without looking at structures?

JR – Yes.

Andrea Donelon – similarly I thought that information would be part of the EAPs?

JR – yes, but EAP model is a different model and not at enough resolution, that is the purpose of the HEC-RAS model.

Climate Change – DH – trying to relate climate change to project operations that might change as a result of climate change – very costly and wouldn’t inform measures for mitigation in the future. We are developing tools (modeling) to evaluate alternatives in flows. We are doing fairly intense water temperature monitoring and the modeling will be useful tools that can be used when we get to the stage when how do we address things like general water temperature changes in the future.

Stormwater Model – JR – CRJC was trying to identify larger basin-wide consideration that should be made when looking at proposed operational changes, etc. We are not interested in looking at what others are doing in tributaries, what others do with their dams, is negligible. The other aspect is stormwater events, and while there is clearly linkage, TC’s ability to control stormwater with these projects is non-existent. We have no way to manage for storms – we only manage for flows within the operating ranges. We may have misinterpreted this, but no nexus.

Andy - City of Leb – not necessarily stormwater model, but more about communications between TC and others during storm events.

Westboro Railyard into Project – JR. Several comments about relation between TC operations and Westboro Railyard. Comment, not a study request so we couldn’t formulate it into a study plan. However, FERC in AIR requested more information. There was term used in the report “fluctuating water levels” and that was being conveyed at the public meetings as referring to Wilder operations. According to the authors were really referring to seasonal high flows. For instance, flows during Hurricane Irene came primarily from the White River, not CT River.

Loss of Whitewater – DH – mitigation not study request

Decommissioning Fund, Economic Health, etc – DH. First we don’t propose to decommission any of the projects. FERC has or has access to all the info it needs to determine if a fund would be needed. A study would not be appropriate.

Tom – Absent results of the study to establish such a fund, maybe TC should just establish a fund.

JR – not by us. We have evaluated decommissioning options on projects and don’t think we need to study the economic health of a $68 billion company.

Schedule – of next meetings. JR

WebEx information – please let JR know. And he will send it, but encourage people to attend in person.

**General Questions about process –**

Andrea – you only have 5 meetings scheduled while FL has 9. JR – we will get through what we can, some studies are less controversial.

Andrea – do you expect to go through all studies in those 5 meetings or just scratch the surface? JR – if we can get through 23 of them and only have 10 left, we can schedule more meetings, also had been thinking about meetings every Monday.

Andy – City of Lebanon – how to coordinate with TC? JR – we need to coordinate the licensing of these 3 projects in the short ILP timeframe, can’t really coordinate with whatever the city needs to coordinate on.

**Attendance List**

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