

VERMONT AGENCY OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Waterbury Hydroelectric Project – Water Quality Certification

Response to Public Comments

December 11, 2014

The Agency of Natural Resources' Department of Environmental Conservation (Department) placed its tentative decision and draft water quality certification on public notice from November 5 – December 6, 2014 for the purpose of receiving written statements and data bearing on the issuance of a water quality certification to Green Mountain Power Corporation (the applicant or GMP) for the continued operation of the Waterbury Hydroelectric Project located at the Waterbury Dam on the Little River in the town of Waterbury. The Department also conducted a public hearing on December 6, 2014 at the Crossett Brook Middle School in Duxbury for the purpose of receiving oral testimony.

A total of 16 persons, representing themselves or organizations, presented oral and/or written testimony at the hearing or filled letters with the Department. Written comments were received from the applicant, the Vermont Natural Resources Council (VNRC), Friends of the Waterbury Reservoir, Friends of the Winooski River, Central Vermont Trout Unlimited (CVTU), Mad Dog Trout Unlimited (MDTU), American Whitewater (co-signed by Vermont Paddlers Club and New England FLOW), and six individuals.

Following is a summary response to the substantive comments received. The full text of these comments is available for review at the Vermont Department of Environmental Conservation – Watershed Management Division website. A recording of the hearing is also available at the same location.

The Department notes that there may be changes to the certification related to its continuing review and not related to the public comments. Interested persons should carefully review the final decision.

Vermont Natural Resources Council

Finding #9 and #10 / Analysis #94

Comments: VNRC commented and expressed concern about the lack of certainty as to when the State of Vermont will secure the estimated \$40 million necessary to replace the gates. No timeline is included in the draft WQC for securing federal funding or state funding. Lack of legal mechanism for the public to enforce the replacement of the tainter gates which are needed for the project to meet VWQS, VNRC strongly suggest the Department include legal document that outlines a schedule of compliance for the State for the replacement of the tainter gates.

Response: As provided in Finding #9, the Department is committed to aggressively working with the federal government to secure funding to undertake spillway replacement. This commitment is a priority for the Department and the Department will submit a letter to the federal government initiating discussions regarding entering into a Project Cooperation Agreement as soon as possible.

Condition C

Comment: VNRC and FWR expressed concerns about the development of the protocol for drawdowns and suggest that this should be a public process.

FWR comments that the drawdown protocol must be public process and significantly narrowed in order to prevent needless drawdowns, and that the protocol should be developed and approved before the end of Stage I.

Response: The Department has removed the language from Condition C that refers to the development of a protocol for “emergency drawdowns.” As indicated in the water quality certification, the Department will enter into a Project Cooperation Agreement with the U.S. Army Corps of Engineers (Corps) for the replacement of the spillway and tainter gates. After the completion of the project the Corps will issue an Operation, Maintenance, Repair, Replacement, and Rehabilitation Manual. If it is determined that an “emergency drawdown” protocol is needed, the Department will set up a process for the public and stakeholders to assist in review and development of the protocol.

Anti-degradation Comment

Comment: VNRC commented, “The draft certification states that the project ‘will not result in any change in existing physical and water quality conditions *beyond those that have already taken place as a result of prior development at the site*’ (italics added). VNRC does not believe that this is the standard for which a Draft Certification, or compliance with the anti-degradation policy of the VWQS, is measured. If it was, a Water Quality Certificate could simply accept the current impairments and use impaired waters as a baseline for determining whether a project will lower water quality.

“While the Draft Certification will clearly result in an improvement in VWQS in the Little River within a short timeframe, that is not the case for the Waterbury Reservoir which, under the terms of the Draft Certification, may never result in attainment of VWQS in Waterbury Reservoir.

“The Department should revisit the requirements of the anti-degradation provisions of the Clean Water Act and, absent a state rule, at least be consistent with federal requirements/guidance on the subject.”

Response: DEC agrees that the anti-degradation policy is critical in protecting waters with high water quality parameters that exceed the applicable water quality criteria. The sentence with which VNRC takes issue was written in adherence to the Clean Water Act, including the standard for certification and the anti-degradation policy. However, DEC recognizes that the sentence is potentially confusing and has therefore removed the statement “beyond those that have already taken place as a result of prior development at the site.”

Federal regulations require that a certification includes “a statement that there is a reasonable assurance that the activity will be conducted in a manner which will not violate applicable water quality standards.” 40 C.F.R. § 121.2. Therefore, DEC must find that the Project will be conducted in a manner which will not violate the Vermont Water Quality Standards (VWQS).

The federal regulations require states to develop and adopt a statewide antidegradation policy and identify the methods for implementing such policy. 40 C.F.R. § 131.12(a). The federal regulations provide that the policy and implementation methods must, at a minimum: (1) maintain and protect existing instream water uses and the level of water quality necessary to protect the existing uses; (2) maintain and protect water quality where the quality of the waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water unless the State finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State’s continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located;¹ (3) maintain and protect high quality waters that constitute an outstanding National resource; and (4) be consistent with section 316 of the Clean Water Act in cases where potential water quality impairment is associated with a thermal discharge. *Id.*

The VWQS include designated uses, narrative and numeric criteria, and the anti-degradation policy. The Anti-degradation policy provides that “[a]ll waters shall be managed in accordance with these rules to protect, maintain, and improve water quality.” VWQS Section 1-03(A). The policy provides for the maintenance and protection of existing uses (VWQS Section 1-03(B)), the maintenance and protection of high quality waters (VWQS Section 1-03(C)); and the maintenance and protection of outstanding resource waters (VWQS Section 1-03(D)). The Agency’s 2010 Interim Anti-degradation

¹ The federal regulations also require that in allowing water quality to degrade as a result of this finding, the State must also: (a) assure water quality adequate to protect existing uses fully; and (b) assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control. 40 C.F.R. § 131.12(a)(2).

Implementation Procedure (Procedure) refers to these as Tier 1 protection, Tier 2 protection, and Tier 3 protection.

Under Tier 1 review, DEC determines the existing uses of waters and the level of water quality necessary to protect those existing uses. This implementation of the anti-degradation policy adheres to federal and state requirements, specifically 40 C.F.R. § 131.12(a)(1) and VWQS Section 1-03(B), respectively.

Under Tier 2 review, DEC determines waters that exceed the applicable water quality criteria and manages these waters to maintain and protect the high water quality and minimize risk to existing and designated uses. This implementation adheres to 40 C.F.R. § 131.12(a)(2) and VWQS Section 1-03(C).

DEC evaluates how projects will affect non-high quality parameters of waters (which may include impaired parameters) differently from how the same project will affect high quality parameters of waters, because the non-high quality parameters of these waters do not exceed water quality criteria. The anti-degradation policy was intended to prevent degradation of waters down to the minimum water quality criteria—sometimes referred to as the “floor”—whereas non-high quality waters may not even attain the minimum criteria.² As a result, DEC sets forth conditions necessary to bring those waters into attainment of applicable water quality criteria, as it has done in this draft certification.

All water quality parameters in the Waterbury Reservoir and Little River are currently negatively impacted by hydrologic modification. Both water bodies appear on Part F of the 2012 Vermont Priority Waters List, meaning they have been assessed as “altered” by flow regulation to the extent that one or more designated uses are not being met. The Part F list provides that all uses are impacted in both Little River and Waterbury Reservoir due to the flow alterations. As a result, DEC included conditions in the Draft Certification that will reduce these alterations and enable the water quality in these water bodies to improve in order to support their designated and existing uses.

DEC agrees with VNRC that the Draft Certification will result in an improvement to both the Little River and the Waterbury Reservoir. These improvements will bring the non-high quality parameters of the Waterbury Reservoir into attainment with the aquatic life and habitat criteria set forth in the VWQS and will protect and maintain other designated and existing uses. DEC also agrees that the improvements will occur more quickly in the Little River than the Waterbury Reservoir as a result of dam safety concerns.

Central Vermont TU/ Mad Dog TU/Friends of the Winooski River

² See EPA, WATER QUALITY STANDARDS HANDBOOK, 4.5 Protection of Water Quality in High-Quality Waters - 40 CFR 131.12(a)(2), <http://water.epa.gov/scitech/swguidance/standards/handbook/chapter04.cfm>.

Comment: MDTU, FWR, CVTU, and several individuals commented that “Deadlines and penalties for missing these deadlines are needed for all Stages to ensure completion. The relicensing of this facility has a history of delays, which could continue without firm deadlines and subsequent penalties. Without deadlines enforced by penalties, the goals of the Certification could slip or be missed entirely.”

MDTU, FWR, and CVTU comments question whether year round run-of-river operations will ever be achieved and note the continual drawdown impacts on the reservoir. MDTU proposes that the Certification include deadline and penalties for completion of all stages and all parties.

Response: DEC agrees with MDTU and other commenters that deadlines and penalties are important to ensure that the Applicant adheres to the conditions included in the certification. However, DEC believe that it has sufficient authority pursuant to 10 V.S.A. Chapter 201 to adequately enforce the conditions in the certification.

The Secretary has authority to enforce permits, assurances, or orders implementing the water quality standards. 10 V.S.A. § 8003(a)(3). The Secretary may issue an administrative order when the Secretary determines that a violation exists pursuant to 10 V.S.A. § 8008 and an administrative penalty may be included in an administrative order. 10 V.S.A. § 8010. Accordingly, the Secretary has enforcement authority over water quality certifications and may issue penalties for violations to conditions in those certifications. DEC has determined that use of its enforcement authority is a more appropriate mechanism than automatic penalties to address non-compliance with the Certification.

Finding #61 and #62

Comment: FWR and MDTU expressed concern that conservation flows during Stage II may be inadequate to protect high quality habitat, specifically, that spring conservation flow during would be inadequate to protect high quality habitat.

Response: The Department’s flow-habitat analysis indicates that a conservation flow of 60 cfs and 108 cfs from April to mid-May will meet water quality standards for high quality aquatic habitat. In prescribing flow conditions, it is unlikely that optimum flow conditions for one species of fish are to match optimum conditions for another species, but it is important that overall flow-habitat conditions protect all key residence species and life stages utilizing the river at a specific time. As indicated in Finding #62, flows of about 85 cfs to 115 cfs protect between 80 and 90 percent of aquatic habitat available for species and life stages utilizing the Little River in during the spring.

Finding #64

Comment: MDTU and FWR commented that “Generation peaking in the Little River is another real concern. Again, new flows for peaking under Stage II will be less harmful to habitat than the current peaking of 620 cfs. (pg. 4, No. 19) However, peaking in any form is harmful. “Peaking dramatically reduced the amount of habitat in the river compared to steady-state flow conditions at the proposed minimum flows.” (pg. 15, No. 64) The gradual ramp up under Stage II is a step in the right direction, but there are questions about the maximum generation peaking, as the applicant has proposed 391 cfs (pg. 15, No. 64), DEC prefers 300 cfs during certain inflow conditions (pg. 25), and generation flows under other conditions appear undefined. Some of these flows may be too much for high quality habitat under Class B.

Response: During Stage I operations the maximum generation flow will be 300 cfs which is the minimum operating capacity of the current turbine due to cavitation issues. During Stage II, ramping procedure will be implemented and the maximum generation flow will be limited 200 cfs or inflows if greater from January 1 to March 15. The dual flow analysis indicated that flows at these conditions will provide suitable habitat for resident species and life stages utilizing the in the Little River during this time. Additionally, the flows during this period will be adequate to address dam safety concerns until the Tainter gates and spillway are replaced.

Whitewater boating

Comment: American Whitewater (AW), Vermont Paddlers Club (VPC) and New England FLOW (NE FLOW) commented that the decision to operate Waterbury in a run-of-river mode of operation would eliminate the primary purpose of flood control at the dam. Further, they stated that the winter drawdown is associated with State flood control operations.

Response: The Waterbury Dam is operated by the State of Vermont for flood control under federal statute (Federal Title 33, Chapter II, §208.17) and operated by the State as described in the U.S. Army Corps of Engineers Operations, Maintenance, Repair, Replacement, and Rehabilitation Manual (OMRR&R), revised in September 2005. The Department’s decision or conditions within the certification for the operation of the Waterbury Hydroelectric Project do not modify any aspect of the flood control operations at the Waterbury Dam. The OMRR&R does not require a drawdown to be conducted by the State for flood control. The applicant has conducted a winter drawdown for purpose of power generation.

Comment: AW, VPC, and NE FLOW commented that in issuing a decision and certification for the Waterbury Hydroelectric Project, the Department disregarded the FERC environmental assessment that was based on studies and a multi-year public NEPA process.

Response: As stated previously, the applicant proposal for continuing operation was reviewed by the Department for its compliance with the Vermont Water Quality Standards under Section 401 of the federal Clean Water Act. The Department's decision was based on review of all the studies associated with the FERC relicensing process, including the FERC Environmental Assessment, to determine conditions necessary to meet the Vermont Water Quality Standards.

Comment: AW, VPC, and NE FLOW commented on Anti-degradation policy and review of whitewater paddling as an existing use that needs to be evaluated under Tier I review.

Response: The anti-degradation policy requires the Department to conduct Tier 1 review to protect existing uses of waters. The Department's decision to modify operations of the project to a run-of-river facility will protect whitewater recreation as an existing use of the Little River that can be engaged in when flows naturally permit. Whitewater recreation will continue, but not under the current flow regime that does not allow the Little River to support other designated and existing uses required under the Vermont Water Quality Standards.

Comment: AW, VPC and NE FLOW suggested that the Department did not study the impact of peaking on fish habitat or whitewater releases or has the scientific basis to find that there run-of-river alternative is preferable to a modified run-of-river. Release would be 415 to 525 cfs over 4-5 hours.

Response: As part of the FERC relicensing process, the applicant completed a dual flow analysis which was evaluated by the Department for its compliance with the Vermont Water Quality Standards under Section 3-04(B)(4) Water Quality Criteria for Class B waters: Aquatic Biota, Wildlife and Aquatic Habitat. The results of this study indicated that releases of the magnitude need for whitewater reduces the effective habitat for all the fish species and life stages analyzed, and that flows release of this magnitude would not meet criteria for high quality habitat for Class B waters.

Daniel Beideck, Waterbury, VT

Comment: Mr. Beideck commented that the draft water quality certification "...be modified in order to allow a few recreational releases that are advertised and scheduled well in advance for times of the year when other regional rivers are typically too low for whitewater paddling, e.g. the Summer and Fall.

Response: See Department response above.

Robert Finucane, Waterbury, VT

Finding #6

Comment: Mr. Finucane commented that “the Finding states, ‘The primary purpose of the dam is flood control, which was its sole use up until the hydroelectric facility first started operations in 1953.’ This is mistaken as a matter of fact. Reservoir level operations to store and release water to increase generation have been a normal use of dam and reservoir since the completion of construction. Typical of multi-purpose reservoir projects, storage above elevation 592 has the primary purpose of flood control. Storage below that elevation had the sole purpose of storage for hydroelectric generation until recreation was added as a purpose in 1966.”

Response: Noted. The Waterbury Dam and reservoir were part of a comprehensive plan for flood control of the Winooski River and tributaries, which is described in House Document No. 785, 71st Congress, 3rd Session, dated February 26, 1931. As such the primary purpose that the dam was built was for flood control. However, the Finding has been revised to include the use of water being released to augment hydroelectric production downstream on the Winooski River.

Finding #8

Comment: The Finding is mistaken in that in addition to repair projects listed; the dam was raised, widened, and modified with an additional spillway bay in 1958.

Response: Noted. The Finding as be edited to reflect that there has been three major repair projects completed on Waterbury Dam.

Finding #9

Comment: It might be well to note that the gate reconstruction project would be under the jurisdiction of the Public Service Board. Also, powerhouse modifications may be under PSB purview affecting the ability to comply with the construction schedule set forth in Decision and Certification C.

Response: Noted.

Finding #10

Comment: This finding should be modified to reflect that the Department intends to ensure that operating a year-round high winter pool will not unduly increase the risk of death, injury, and property damage downstream as noted in Decision and Certification C.

Response: Noted.

Comment: It will cost more to operate and maintain the dam, to maintain adequate surveillance under snow cover and limited access. It is expected that erosion in the spillway channel will increase due to more frequent discharge. Larger amounts of seepage will have to be pumped. In what ways have the additional costs to the state been evaluated and considered?

Response: The Department acknowledges that the annual maintenance budget for Waterbury Dam will need to be increased to account for winter access. The dam is currently visited at least once per week and this schedule is not expected to decrease anytime soon. The monitoring of existing seepage points will continue.

Pertaining to erosion in the bedrock spillway, this issue has been discussed during annual inspections with the US Army Corps of Engineers. Currently there have been no concerns raised over increased erosion due to more frequent discharge. However, the Department is pursuing a dam safety assurance evaluation of Waterbury Dam with the Corps, and the concern of increased erosion due to increased flow will be evaluated at that time.

In general, the volume of water pumped from the seepage control modification system averages about 2200 gallons per day, with a normal range of about 1500 gallons per day to 3000 gallons per day over the course of a year. It is not known at this time what the long-term pumping rates will be once the power generation operates in run of river mode and the reservoir has a target elevation of 589.5 feet, but it is not expected to be outside of the current range. Power to run the dam is supplied by GMP at no cost to the State and it is assumed at this time that will not change. Routine maintenance of the dewatering system is ongoing, and is funded through appropriations of the legislature. The Department is aware of the responsibility to maintain the dewatering system as long as the State of Vermont is the responsible party.

Comment: Under this proposal, renewable hydroelectric energy production will be reduced and replaced. The ability of the electric system to respond to rapid changes in load will be impaired. Providing replacement energy for system stability will also result in a possible increase in

fossil fuel use and air pollution. In what ways has the extent and environmental impact of replacement energy been evaluated and considered?

Response: The Department is charged with certifying that operations of the Waterbury Hydroelectric Project are in compliance with the Vermont Water Quality Standards under Section 401 of the Federal Clean Water Act. This process does not authorize the Department to evaluate or consider potential environmental impacts associated with replacement of the energy production lost as part of this decision.

Comment: The lost power generation from the project will result in lost revenue for Waterbury and municipalities downstream. In what ways have these costs been estimated and considered?

Response: As stated above, the Department is charged with certifying that operations of the project are in compliance with the Vermont Water Quality Standards under Section 401 of the federal Clean Water Act. The process does not authorize the Department to address issues of economics or compensation for loss of power generation revenue or issues related to decrease in project value associated with the decision.

Comment: Establishment of plant and animal aquatic nuisances in the reservoir are prevented by the seasonal drawdown. Has the risk of infestation in the reservoir with a year-round stable pool been evaluated? Is there a contingency plan to provide for a renewal of the drawdowns in the event invasive species are detected in the reservoir?

Response: Vermont law prohibits the transportation of aquatic plants and aquatic plant parts on the outside of the vehicle boat, personal watercraft, trailer, or other equipment. 23 V.S.A. Chapter 29. Although the drawdown may prevent the establishment of some aquatic invasive plant and animal species, it can also promote the establishment of others while preventing the establishment of native aquatic vegetation. Currently, brittle naiad, an aquatic nuisance species, is found in the reservoir, and is an example of a species that benefits from the drawdown. Brittle naiad can spread by breaking off of a fragment which can drift away, sink, develop roots, and grow into new plants. The annual disturbance from the drawdown has been found to accelerate the spread of this particular species, and has been found in other studies in Vermont to be not an effective way of managing aquatic invasive species.

The Department's Aquatic Invasive Species Management Program employs several methods to reduce the spread and manage aquatic invasive species, such as education and outreach, public greeter programs, and conducting aquatic vegetation surveys. More

information on what the State is doing to help prevent the spread of aquatic invasive species can be found at the following link:

http://www.watershedmanagement.vt.gov/lakes/htm/ans/lp_ans-index.htm

Comment: Waterbury Dam is unusual in that Green Mountain Power contributed land and money to the original construction to buy from the State of Vermont the right to use the reservoir for seasonal storage for power. Has the Department considered whether compensation is due to Green Mountain Power for taking of the right use the reservoir for storage?

Response: As stated previously, the Department is charged with certifying that operations of the Waterbury Hydroelectric project will be conducted in such a manner which will not violate the Vermont Water Quality Standards under Section 401 of the federal Clean Water Act. The process does not authorize the Department to address issues of economic compensation related to decrease power generation, and the applicant has made no such claim.

Comment: Green Mountain Power operates and maintains the gates of the dam, and provides Vermont with free electric power under an agreement with the State dating back to 1936 and premised on the assumption that the reservoir will be operated to provide hydropower storage. Under the run of river operation required by the draft 401, has it been determined that GMP could be required to continue to provide that service and, if not, how expensive it would be for the State to provide it?

Response: The applicant has been a good partner with the State of Vermont in operating and maintaining the Waterbury Dam. During the FERC relicensing process, the applicant has made no such claim or request to modify their agreement with the State.

Applicant's Specific Comments on Findings and Conditions

Finding #7

Comment: We believe the language regarding the 48" bypass pipe should be modified for clarity, as it could currently be interpreted as saying that the 48" bypass pipe taps from the 79" penstock instead of from the Broome gate's conduit. We suggest modifying the following language: "In addition, there is a submerged outlet structure and conduit controlled by a Broome gate; the inlet invert elevation is at elevation 500 feet. The conduit transitions to two 54-inch-diameter steel penstocks that direct water to a valve house where they merge and supply a 79-inch-diameter penstock for the Project turbine and a 48-inch-diameter bypass pipe controlled by a Howell-Bunger valve..." to instead read as follows: "In addition, there is a submerged outlet

structure and conduit controlled by a Broome gate; the inlet invert elevation is at elevation 500 feet. The conduit transitions to two 54-inch-diameter steel penstocks and a 48-inch-diameter bypass pipe. The two 54-inch-diameter steel penstocks merge and supply a 79-inch-diameter penstock for the Project turbine. The 48-inch-diameter bypass pipe passes through the valve house as well, and is controlled by a Howell-Bunger valve.”

Response: Noted. The language in the finding has been clarified.

Finding #12 and footnote #6 (referenced in Finding #23)

Comment: A previous test conducted in 2009 had characterized the minimum operating flow as 266 cfs. Following the results of a 2012 test by GMP, the unit’s minimum operating capacity is now considered to be approximately 300 cfs due to cavitation issues, as indicated in an April 29, 2014 memo to the Department.

Response: Noted. The footnote has been revised to indicate the April 29, 2014 memo.

Finding #20

Comment: The current FERC license allows fall/winter drawdowns as described. In practice, however GMP has only drawn the reservoir below elevation 570 feet once since the reservoir was refilled in 2006 following completion of the major dam structural repairs. The one instance of GMP drawing water levels down below elevation 570 feet (to about elevation 550 feet) in winter 2008 was immediately following the major turbine runner replacement in fall 2007. Historic Waterbury Reservoir water levels from 2006 through 2013 are shown in Figure 1.

Response: Noted. However, it is important to emphasize that the magnitude of the drawdown conducted by the applicant can have a significant impact on the littoral habitat of the reservoir, preventing the establishment of aquatic vegetation and can increase shoreline erosion.

Finding #23

Comment: Due to additional feasibility work GMP has conducted since 2012, some of the technical details outlined in GMP’s 2012 settlement proposal have changed. Specifically:

- a) The 24” bypass that GMP has proposed will be a newly-installed 24” pipe and valve that will tap from the 79” penstock upstream of a planned new penstock butterfly valve (installed for turbine isolation purposes and runaway protection).
- b) The existing 24” pipe will be left for its current purpose, as a penstock drain.
- c) The new 24” pipe will be designed for a maximum flow of 108 cfs.

d) The current unit's minimum operating flow is approximately 300 cfs due to cavitation issues (see response to finding #12).

Response: The Department's decision and water quality certification are based on the applicant's December 4, 2012 proposal. Substantive changes to the proposal received in the applicant's comment that could potentially affect water quality and aquatic habitat were not reviewed as part of this decision.

Finding #39

Comment: GMP anticipates designing the new bypass pipe for a maximum flow of 108 cfs, which is the highest conservation flow the new license will require.

Response: In response to this comment, the Department has altered this finding and Condition D to require the applicant to design the pipe and valve to at a minimum pass a flow of 125 cfs, and to design the pipe and valve to pass a flow of 250 cfs, if determined to be feasible. This will address the Department's concern that reduction in capacity of the bypass flow pipe would increase the frequency that the reservoir will stage up above the normal operating level of 589.5, possibly increase shoreline erosion and impact recreational use of the reservoir. Additionally, decreasing the capacity of the bypass flow pipe would not reduce the percent of time that the project would operate in ecological protective run-of-river conditions that are protective aquatic habitat. The impact of the reduced capacity of the bypass follow pipe would extend the duration of peak flows, albeit at lower magnitude, over a longer period of time, possibly impacting the high quality aquatic habitat.

Condition B

Comment: GMP has two concerns with the conditions regarding the Stage I operations.

They are:

- a) GMP cannot guarantee a continuous minimum flow of 30 cfs (or anything above greater than leakage) until the automated bypass system is fully constructed. As communicated in an email dated November 6, 2014 to ANR staff, GMP has successfully tested an 8" pipe that is typically reserved for maintenance drainage purposes and draws from the unit's cooling system. The 8" pipe appeared to pass approximately 24 cfs under full pond conditions according to a review of USGS gage data. The pipe's output may theoretically drop to 15-20 cfs during the winter drawdown period. GMP will be inspecting the pipe and its gate valve later this month to ensure it is in good working condition, and is willing to conduct re-plumbing to ensure the pipe continues to provide a consistent minimum flow.

GMP has a high level of confidence that this pipe will successfully operate until the Broome gate is closed for construction. That being said, GMP wants to emphasize that the existing infrastructure is not designed to pass a continuous minimum flow greater than leakage, and even though GMP is willing to provide flows through the 8” pipe on a voluntary basis, GMP cannot promise there will not be future issues with the 8” pipe setup that could preclude passing a conservation flow until the automated bypass system is fully operational. This is particularly true since the 8” pipe may potentially impact the function of the unit's cooling system under hot weather conditions in the summer.

b) Condition B states that up ramping procedures of 60 cfs per 30-minute period and down ramping procedures of 30 cfs per 30-minute period must be used during both interim stages (Stage I and Stage II). While this will be feasible during Stage II after the automated bypass system is operational, the existing infrastructure will not allow for the implementation of any ramping between the voluntary conservation flow and the turbine's minimum operating flow (300 cfs).

In recent years, GMP has implemented a voluntary two-step ramping procedure to slow the rate of water level and flow increase within the Little River during unit startup. The procedure involves switching the turbine wicket gates from 0% open to 150% open, and then from $\pm 50\%$ open to generation flows over two 15-minute steps, with an activation of an audible and visual alarm five minutes prior to the wicket gates partially opening. The alarm remains active for approximately three minutes upon activation.

Response: Noted. The Condition has been revised to indicate that the applicant will increase conservation flows at the project, but that 30 cfs may not be able to be guaranteed. Additionally, it is noted that ramping will not be possible until Stage II and that the applicant will use a two-step ramping procedure. The Condition has been revised to indicate the above.

Condition C

Comment: ANR indicates that final design must begin within 30 days of a FERC license being issued or August 1, 2015, whichever is earlier. Additionally, ANR has included a set of hard deadlines for various milestones in the turbine and bypass pipe construction process based on GMP's previously provided schedule, but there is no provision for delays if the FERC license is not issued by July 1, 2015 or to account for the other variables described below with respect to Condition D. In particular, GMP is concerned with a deadline that requires it to incur considerable costs before the FERC license is issued. GMP cannot commit to ordering equipment and signing construction contracts without knowing what additional terms may be imposed by the FERC operating license. GMP recommends ANR use a construction schedule

that is tied to FERC license issuance rather than specific dates, and GMP would be pleased to collaborate with ANR to develop a workable schedule.

Response: Noted. The condition has been modified to indicate that the applicant will begin consultation with the Department no later than 30 days after issuance of the license to develop a construction schedule for the proposed upgrades.

Condition D

Comment: GMP has concerns about meeting the 18-month timeframe within license issuance if the FERC license is issued earlier or later than July 1, 2015. For example, if FERC issues a license on October 1, 2015, GMP might not be able to begin construction until September 2017 because there may not be enough time to complete final design and procure the necessary equipment by September 2016. That would lead to completion in December 2017 — 26 months after issuance of a FERC license. Conversely, if FERC issues a license on April 1, 2015, it would be 20 months between license issuance and completion of the new bypass, even if GMP completes everything as the previous schedule indicated. Because of the tight construction timeframe (September-December) that minimizes recreation impacts and high flow event risks, GMP anticipates the entire design and construction phase will be complete within 17 to 28 months of a FERC license issuance, depending on what month of the year FERC issues a license. GMP recommends ANR uses a construction schedule that is tied to FERC license issuance rather than specific dates.

Response: Condition D has been modified as described in Department response above.

Condition H

Comment: GMP commented that they have significant concerns about Condition H that upon request of the Department they would be required to install fish passage facilities at the project, stating that they have “concerns about the feasibility, practicality, and cost associated with any requirement to install fish passage facilities at the Waterbury Dam.”

Response: Noted.