ATTACHMENT WITH SUPPLEMENTAL INFORMATION

I. The DOI Lands and Interests in the Water Quality of the Assabet River:

Two agencies of the Department, the USFWS and the NPS, have responsibilities under federal law to protect the natural resources of the Assabet, Sudbury and Concord Rivers. This permit will directly affect four areas which have been established by Congress for the values which include the water quality of the Assabet and Concord Rivers. These areas are (1) Assabet River National Wildlife Refuge (the ARNWR or the Refuge) managed by the USFWS, (2) the Sudbury Assabet and Concord Wild and Scenic River (the Scenic River) and (3) Minuteman National Historical Park (the National Park), both managed by the NPS, and (4) Great Meadows National Wildlife Refuge (GMNWR) managed by the USFWS.

1. The Assabet River National Wildlife Refuge:

The core of the upland portion of the ARNWR was created when the Fort Devens Army base transferred 2230 acres to the USFWS in 2000. More recently 114 acres of lands abutting the Assabet River were added. These riparian parcels extend for over four miles of river frontage commencing just below the Gleasondale dam and encompassing uncontiguous parcels along the river to just above the Ben Smith dam. (Exhibit 1) Therefore, the impacts of the effluents discharged from the Marlborough Westerly, Westborough and Hudson WWTPs and the dam and sediment removal alternatives focusing on the Ben Smith and Gleasondale dams, as well as those farther upstream, will directly affect these federal lands and waters.

The ARNWR was authorized under the Migratory Bird Conservation Act (16 U.S.C. §715d) and the Refuge Recreation Act (16 U.S.C. §460k-1) and is managed pursuant to the National Wildlife Refuge System Administration Act of 1966, as amended (16 U.S.C. §668dd-ee). Its primary purposes include protection and enhancement of habitats that support self-sustaining populations of federal trust species and wildlife diversity. Other refuge purposes include recovering populations of threatened, endangered, state-listed, and native species; protecting natural resources including water quality; protecting habitat for migratory birds; expanding opportunities for fish and wildlife-oriented recreation; and protecting cultural resources that occur in the refuge.

The Final Comprehensive Conservation Plan for the ARNWR was completed in January 2005. It calls for a number of implementation actions to expand public access and use of the Refuge's lands and waters and to expand monitoring of water quality and species diversity and reduce the spread of invasive species. Due to its location along the parts of the river that are in the zone of influence of the Ben Smith impoundment, eutrophic conditions causing excessive populations of invasive aquatic plants are of serious concern to the Refuge.

Federally owned parcels run to the midline of the river in many locations; in other places the Refuge owns lands on both sides of the river. Recreational uses that already occur on or over

Refuge lands and waters include fishing and boating. Future planning will evaluate additional public access opportunities along the river and former railroad bed right of way.

Water quality issues are of clear concern to the ARNWR. The Ben Smith dam has altered the flow regime of the natural river and the continued discharge of P, and possibly other contaminants, from upstream sources affect fish and aquatic life in the Wildlife Refuge. The Target Fish Community Analysis included in the U.S. Army Corps of Engineers Sediment and Dam Removal Feasibility Study[1] documents how the fish populations in the Assabet River impoundments have been altered so they are now composed primarily of habitat generalists and pollution tolerant species and the species that would naturally be found New England Rivers are generally absent. In addition, the presence of seasonal growth of aquatic weeds, including duckweed, water chestnut, and other vegetation symptomatic of eutrophication, is of great concern, because this vegetation adversely affects both aquatic life and recreational uses of the Refuge.

2. The Sudbury Assabet and Concord Wild and Scenic River:

The Federal Resource Values Recognized in the SuAsCo Scenic River.

The NPS is responsible under Public Law 106-20 to administer the Sudbury Assabet and Concord Wild and Scenic River (the SuAsCo Scenic River), also known as the SuAsCo Wild and Scenic River. Two rivers, the Sudbury and the Assabet, join in the Town of Concord at Egg Rock; after their confluence, the river is then known as the Concord River. In 1999, Congress recognized some 29 miles of water, wetland and upland areas on these three rivers as a part of the Wild and Scenic River System, see Wild and Scenic Rivers Act of 1968 (Public Law 90-542; 16 USC §1271-1287) (the Act), 1999 amendments at 16 U.S.C. §1274(a)(160).

Wild and Scenic Rivers are so recognized because of their 'outstandingly remarkable resource values', of which the Sudbury, Assabet and Concord have five: scenery, ecology, recreation; history; and literature. One of only 6 rivers designated in New England, the SuAsCo Scenic River provides scarce and valuable opportunities for appreciation of its resources by millions of people and protects increasingly rare wildlife habitats. While only 20 miles from Boston and surrounded by towns and areas of considerable development, the gentle, bucolic meanders, the wide floodplains and wooded shores of the rivers provide acres of natural habitats and pastoral scenes. They constitute a part of the Atlantic Migratory Flyway as well as the fish and wildlife habitats described above. Recreational uses include boating (canoe, kayakers and small motorized boats), fishing, hiking, picnicking and historical visitation.

These rivers are rich in natural and cultural resources, and a treasure for local communities as well as national and international visitors. Many of the scenic, historic, and literary values which supported the designation of the SuAsCo Scenic River are located within Minute Man National Historical Park and Great Meadows National Wildlife Refuge. The park honors the story of the

[1] Assabet River, Massachusetts Sediment and Dam Removal Feasibility Study, United States Army Corps of Engineers, New England District, draft of September, 2009. References to this document will be referred to as "USACE, 2009, page xx"

American Revolution and particularly highlights the Old North Bridge which crosses over the Concord River. Great writers, including Thoreau and Emerson, spent time on, and wrote books read by people throughout the world, about these rivers. The Old Manse, also on the banks of the Concord River, was home to Emerson and Hawthorne. It also is visited by substantial numbers of tourists, school groups and those interested in history, architecture or American literature.

The Congressional designation classified the 15 mile segment of the Sudbury River as a "scenic river". A "scenic" river is one which is "free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads," see §2(b)(2) of the Act, 16 U.S.C. §1273(b)(2). Over 14 miles are classified as "recreational", including four miles along the Assabet River, downstream portions of the Sudbury River about two miles above its confluence with the Assabet River, and eight miles of the Concord River. A "recreational" river is "readily accessible by road or railroad, that may have some development along the shoreline, and that may have undergone some impoundment or diversion in the past" (but is free of impoundments now) §2(b)(3) of the Act, 16 U.S.C. §1273(b)(3). (Exhibit 2)

While the designated component of the SuAsCo Scenic River on the Assabet River begins just below the Damonmill Dam, the Act protects designated rivers from upstream actions. Administration of each component of the system is to "protect and enhance the values which caused it to be included…giv[ing] primary emphasis to protecting its esthetic, scenic, historic, archaeologic, and scientific features… management plans [are authorized to establish specifics] for its protection and development," see §10(a) of the Act, 16 U.S.C. §1281(a).

The purpose of the designation of the Scenic River is to protect its outstandingly remarkable resources, as defined in the initial study of the rivers (Exhibit 3) and to implement the River Conservation Plan. (Exhibit 4)

The vast majority of our Nation's designated Wild and Scenic Rivers are afforded strong resource protection resources because they flow through publicly owned land. The Columbia, Rio Grande, Missouri Rivers and other, primarily western rivers, benefit from extensive areas of public land. In the eastern United States where there are not large swaths of public land, a new model for managing Wild and Scenic Rivers has developed; this requires all partners to work collaboratively to protect these valuable resources. These 'partnership rivers', including the Sudbury, Assabet and Concord Rivers, flow through a patchwork of public and private ownerships. The towns, state and federal governments and nonprofits which have responsibility for protecting river resources must work together to protect these nationally valued river resources, in administering both their funding and permitting programs. As we explain in more detail below, the Act and EPA's own regulations require that in making permit and funding decisions for Wild and Scenic Rivers, EPA must incorporate a broader scope of considerations into its processes than simply conducting single-chemical dilution calculations.

Federal Agency Coordination Requirements to Protect Wild and Scenic Rivers.

Two sections of the Act are relevant to EPA's actions affecting the SuAsCo Scenic River.

1. Inter-agency cooperation between EPA and federal agencies administering Wild and Scenic Rivers is required "*for the purpose of eliminating or diminishing the pollution of waters* in the [designating and proposed wild and scenic] rivers." 16 U.S.C. §1283(c). The Administration's analysis of this text, which accompanied the House draft of the bill, explained that this section was necessary because: "The maintenance of a high-quality water yield in a scenic river area is affected by upstream developments. This section requires the appropriate Federal and State officials to take action to control upstream pollution under their existing authority." H.R. Rep. No. 1623, 1986 U.S.C.C.A.N. 3826.

2. Section 7 of the Act, as well as EPA's regulations at 40 CFR §122.49(a) and 40 CFR §6.302(e), provide that EPA "must follow" the requirements of the Act, which provide that *EPA must "not assist, through grant, loan, license or otherwise the construction of a water resources project* that would have a direct and adverse effect on the values for which a river…was established…[and] below or *above a wild, scenic or recreational river area or on any stream tributary thereto which will…invade the area or unreasonably diminish the scenic, recreational, and fish and wildlife values present in the area.*" Congressional intent was clear about the scope of this language from its adoption. Legislative history indicates that the Act "prohibits other Federal departments or agencies from making loans or grants for, and from licensing, water resource projects on such a river if the project would have an adverse effect on its scenic river values. These prohibitions…do not apply to upstream or downstream developments which will not invade the scenic river area or deprive it of the water needed to maintain its scenic, recreational, and fish and wildlife values." H.R. Rep. No. 1623, 1986 U.S.C.C.A.N. 3811-3812

Water resources projects can include dams; bridges; water diversion or withdrawal projects, including groundwater withdrawal projects; fisheries habitat and watershed restoration/enhancement projects; bank stabilization or channelization projects; boat ramps, piers or docks, and sewage treatment or other pollution discharge outfalls. Federal grants to construct such projects which may be awarded to states, such as those to Massachusetts for its State Revolving Fund, or individual projects authorized for example, through EPA's State and Tribal Grants Program, are encompassed by section 7.

The Act is intentionally more stringent for projects proposed within the boundaries of a WSR than for projects up or downstream. For example, a bridge proposed within a designated WSR segment and constructed without abutments in the river itself could be determined to have "a direct and adverse effect on the values for which such river was established" if it would adversely affect the scenic, undeveloped and wild characteristics of that river. However, that same bridge, downstream from the designated WSR and not visible from the river, might be determined not to "unreasonably diminish its scenic values."

Obviously, the present situation involves a project discharging pollution which may reach ("invade") a designated WSR river. There is a wealth of information documenting how the Assabet River is impaired and how its scenic, recreational, and fish and wildlife values are diminished. Congress' recognized that water pollution is a key concern for designated rivers and it directed that one of the "purposes" of the law was "eliminating" pollution of designated rivers.

Thus both EPA's grant programs and its permit programs are subject to review under Section 7 of the Act.

In administering Section 7 of the Act, it is the responsibility of the DOI and the NPS, as the WSR administering agency, to determine whether the impacts are invasive or unreasonably diminish the values of the area. Examples of previous review by the NPS of actions conducted by Region 1 of EPA includes the NPDES permit issued to the Massachusetts Water Resources Authority to construct an aqueduct under the Sudbury River and during construction, to remove groundwater seepage, treat it at a WWTP and discharge it back into the river. The NPS authorized the EPA to issue the NPDES permit, with substantial modifications to reduce impacts to the river. Other NPS Section 7 approvals for EPA actions were issued for the initial and the 2009 NPDES permit renewal for the Town of Wayland's WWTP. Last fall, the NPS cautioned EPA that the Framingham Birch Road well water withdrawal proposal would require review and that its impacts raised major questions triggering compliance reviews affecting eligibility for State Revolving Fund grants.

The Department of the Interior's agencies reviewed the draft permits in July, 2004 for the four WWTP's and supported requiring discharge limits of 1.0 mg/L of P in the winter and 0.1 mg/L in the summer as consistent with the TMDL Phase I. The NPS expressed skepticism that the ensuing phases of the TMDL would be accomplished without setting out a clear compliance schedule, with major milestones, or requiring a definitive implementation plan to achieve the new limits and to reach the 90% sediment reduction option endorsed by the DEP. While the final permit did not "lay out [the] *complete* process by which water quality standards can and will be met" as stated by Mr. Fosburgh in his July 14, 2004 letter, the final permit generally addressed most of his concerns, adopted compliance schedules, I/I planning requirements, required facility design dates, established construction dates, etc. Based upon the 2004 TMDL and the 2005 permit, the NPS believed that EPA was taking reasonable steps to achieve compliance with state WQS and the WSR Act.

The Act does not require federal action agencies to prepare an environmental impact statement (EIS) as required under the National Environmental Policy Act (NEPA). However, the WSR program routinely works with federal action agencies through their EIS process to conduct the Section 7 compliance reviews concurrently with other federal agency environmental review procedures. But the NPS can conduct site visits, or work from other environmental reports and analyses if they adequately describe the impacts and alternatives to the proposed federal action. It is the federal action agency's responsibility to produce the supportive information, although grant and permit applicants can actually prepare the documentation.

To date, the information and analysis presented concerning the proposal to increase the discharge levels from this facility by 44% while the TMDL has not yet been achieved is not adequate to conclude that this permit/use of federal funds will not unreasonably diminish the values of the designated Scenic River nor invade[2] it. In fact, since the TMDL does not anticipate that

[2] While some P is recycled through seasonal vegetation and contributed by stormwater, since up to 98% of the river's P loads are contributed from the WWTP's, "invasion" is an accurate term to use to describe the onslaught of P that reaches the designated WSR segment.

increased flows for Marlborough can achieve the necessary biomass reduction without a 90% flux reduction and achieving that level of flux reduction will require removal of several dams, there is no approach analyzed in any of the existing reports documenting how Phase II of the TMDL can be realistically implemented within the next five years and concurrently accommodate an increased flow allocation of 44% for Marlborough.

An 'alternatives analysis' contained in the Phase III/IV State EIR[3], does not fulfill federal standards for an adequate NEPA document nor sufficient support for Section 7 purposes. While it does propose that the City implement some excellent programs, such as reducing infiltration/inflow (I/I) and water conservation and reuse, it fails to discuss many other feasible alternatives. It does not evaluate the impacts of increased withdrawals of water from tributaries to the system, such as Northborough's proposal to end its use of MWRA water and draw upon well water.

Importantly, the EIR's "alternatives analysis' is premised on such a serious misunderstanding of the fundamental criteria for evaluating alternatives to reduce eutrophication of the Assabet River that its conclusions cannot be relied upon. It dismisses dispersed cluster package treatment plants and ground water discharge alternatives due to their increased costs for the City of Marlborough, relative to the cost of direct river discharges. This is the incorrect standard for reviewing alternatives for a project impacting a WSR.

The appropriate impact and cost comparisons need to be amongst the various means to prevent P from reaching the river, such as bringing non-compliant septic systems up to standards, reducing existing storm water flows, or reducing the P flows now discharged from WWTP's with small clustered treatment systems, ground water disposal, or even more draconian measures, such as disconnecting industrial and commercial users and requiring them to treat their wastes on site. Other P reduction approaches, like removing the sediment flux deposited by the towns and WWTP's in the past, such as for dam and sediment removal, are also appropriate alternatives to address. Direct river discharge of waste waters will always be cheaper than responsibly treating the wastes at the source. An adequate alternatives review would examine the relative impacts and costs of alternatives to reduce the WWTP's contributions to an impaired water body, not how it can most cheaply send unacceptable volumes of P downriver.

Where do we go from here?

The EPA is the federal agency ultimately responsible for approving and allocating a substantial portion of the funding for the design and construction of the new WWTP for Marlborough. As stated above, this new facility is badly needed. Marlborough is operating at present in violation of its 2005 NPDES permit. Marlborough has not completed construction of its facility, despite the fact that under the compliance schedule in the 2005 permit set design and construction time frames to have the new facility operational by spring 2010. Part of achieving implementation of the 2005 permit requires money. We recognize the efforts of the Town, the EPA, the State and our Congressional delegation to obtain federal funding through the myriad of subsidy programs

[3] Comprehensive Wastewater Management Plan/Environmental Impact Report; Phase II/IV – Evaluation of the Most Feasible Options and Recommended Plan, October 2007, hereafter cited as "Phase III/IV, page xx."

available to facilitate construction of a compliant facility. There is nothing inappropriate with spending federal funds on a WWTP to bring Marlborough into compliance with its 2005 NPDES permit.

Furthermore, the Marlborough grants and NPDES permit are not the only ones that EPA has issued which may impact a designated WSR. Given the short time frame for the duration of this five-year permit (only to November 25, 2010), the commitments by EPA to initiate the new permit cycle, and the ephemerality of the flow increase authorization if the necessary P discharge limits cannot be met, we believe that our staff time is better spent addressing how the 2010 permit cycle for all of the Assabet River WWTP's and how EPA's grant and permit procedures can be revised to ensure that all of your actions are consistent with Section 7.

As the NPS participates in the ensuing 2010 permit process, it will employ the TMDL's 50% biomass reduction standard and the Phase II TMDL implementation framework, along with subsequently produced new information, as it performs its section 7 determinations. Since a "scalable design" has been a recognized criterion for these facilities, achieving the TMDL's goals and schedule makes it clear to all at the outset what the goal of the 2010 permits must be. Hopefully these goals will be shared by all the partners and stakeholders sharing this river.

3. Minute Man National Historical Park:

Minute Man National Historical Park (the National Park) was created by an act of Congress in 1959 to preserve and interpret the events, ideas, significant historic sites, structures, properties and landscapes associated with the opening of the American Revolution at Concord's North Bridge and along the Battle Road of April 19, 1775. The National Park contains 967 acres distributed among three, distinct units and is located approximately 15 miles northwest of Boston, Massachusetts. The North Bridge Unit contains approximately 112 acres; the Wayside Unit contains approximately six acres; and the Battle Road Unit contains approximately 849 acres. The Concord River flows through the North Bridge Unit, while Route 2A traverses the Wayside and Battle Road Units.

On April 19, 1775, the American Revolution began at Lexington and Concord with a clash of arms known to history as "the shot heard round the world." At the National Park the opening battle of the Revolution is brought to life as visitors explore the battlefields and witness the American revolutionary spirit through the writings of the Concord authors. Approximately 1.2 million visitors from all parts of the country and from around the world visit the park every year to see where the American Revolution began. The North Bridge - where the "shot heard 'round the world" was fired on the morning of April 19, 1775 - spans the Concord River. The North Bridge is their primary destination point. This is a place for the contemplation of the meaning of liberty and of the sacrifices that must sometimes be made to maintain liberty. It is an important national battleground and commemorative site.

This part of the Concord River is important not only as a commemorative site but as an intensely popular recreational resource...throughout the spring, summer and fall months it is not unusual to see up to 24 canoes on the banks of the river by the famous North Bridge. Every year up to

10,000 people gather on the banks of the river for Patriot's Day celebrations. The National Park's formal garden overlooking the Concord River is often the site of the annual Riverfest opening event...an event which involves the eight towns along the Scenic River.

The National Park supports a variety of habitats. Forests are dominant, covering approximately 500 acres of the National Park, including about 200 acres of forested wetland. Non-forested wetlands, including several ponds, cover approximately 180 acres. Meadows and fields cover an additional 250 acres, including approximately 100 acres farmed under an agricultural leasing program. The goal of the National Park's land management program is to preserve and protect natural resource areas and habitats and to maintain cultural or historical views and land use, so the park maintains historic agricultural fields and farming techniques, such as using sheep to sustain open pasturage.

Recent NPS expenditures to improve the quality of the river environment included a $1.2 M project to restore the landscape in the immediate area of the North Bridge. This project primarily involved the removal of overgrown invasive plants from the banks and vicinity of the river and replanting the banks with native vegetation to control erosion and re-growth of invasives. Resurfacing and grading the path to the Old North Bridge and repairing associated drainage structures was done to help protect the river from siltation. The NPS also invested in a program to combat stands of invasive purple loosestrife along the banks of the river via the release of Galerucella beetles which attack these plants. Efforts to maintain historic river vistas and to control growth of invasive and exotic plants are always ongoing.

While the lands and waters of the National Park are downstream (north) of Marlborough's WWTP, the entire Concord River suffers from excessive eutrophication and invasive aquatic plants, which are in turn substantially caused by excessive nutrients from the Assabet River. Discharges from this facility affect the federal trust interests the Minute Man National Historical Park is charged to protect. Since the Concord River is the backdrop for all of the interpretive programs at the North Bridge and cannot be separated from the historical events which occurred here, the visual appearance and natural conditions of the river are of great concern to the NPS. Allowing increases in effluents which will increase phosphorous volumes in the Concord River will exacerbate the National Park's problems with aquatic invasives and the federal funds needed to control them. Directly controlling these chemicals at the source of the discharge is a far more appropriate and effective approach.

Great Meadows National Wildlife Refuge:

The USFWS is also responsible for managing the Great Meadows National Wildlife Refuge (GMNWR). This refuge includes 3,863 acres principally located along 12 miles of the Sudbury and Concord Rivers. GMNWR includes property on both sides of the rivers and the United States owns to the center of the river in those areas where it does not own to the opposite shore. Because of its extensive riverfront on the Concord River, the water quality of the Assabet River is a major concern to the USFWS, as it directly impacts the quality of the Concord River.

GMNWR was created on May 3, 1944 under the Migratory Bird Conservation Act (16 U.S.C. §715d) and the Refuge Recreation Act (16 U.S.C. §460k-1) and is managed pursuant to the National Wildlife Refuge System Administration Act of 1966, as amended (16 U.S.C. §668dd-ee). Its primary purpose is to protect habitat for migratory birds. Other refuge purposes include incidental fish and wildlife-oriented recreation, protection of natural resources including water quality, and the conservation of threatened and endangered species.

GMNWR primarily consists of freshwater and riverine wetlands and is also interspersed with forested upland and old field habitats. The refuge supports a diverse mix of migratory birds including waterfowl, wading birds, raptors, shorebirds, and passerines. It is an important site for Blandings turtle, a state-listed species, as well as other reptiles, amphibians, fish and invertebrates. Some of these species spend their entire life-cycle within the refuge; others while migratory, may breed or feed upon species which depend upon the extensive water and marsh systems of the Wildlife Refuge. The extensive and regionally significant wetlands occurring on and adjacent to the refuge, including the Sudbury and Concord Rivers and their associated tributary drainages and headwaters, have been listed as a priority for protection under both the North American Waterfowl Management Plan and the Emergency Wetlands Resources Act of 1986.

The GMNWR also contributes to the cultural life of the area. Most recently, the Boston Pops performed a new orchestral piece at their Holiday Pops concerts titled "The Gifts of Great Meadows" and video images of snowcapped landscapes taken along the frozen Sudbury River within the Refuge were displayed while the Pops performed the piece. Clearly, the beauty and peacefulness of the refuge soothes and inspires thousands of visitors, including the creative musicians amongst us.

Annual visitation to the GMNWR is almost 400,000. Large numbers of visitors use the Sudbury and Concord Rivers including anglers, paddlers, wildlife photographers, and waterfowl hunters.

II. Eutrophication Issues and their Impacts on Federal Resource Areas:

Eutrophication problems affect all of these federal properties. Eutrophication and degraded water quality affects the federal interests of sustaining natural fish, wildlife and aquatic resource populations and habitats, preserving historic and cultural properties and scenes, and providing opportunities for quality outdoor recreation. These values were among those identified by Congress when it created these areas. These values are amongst the missions Congress has charged our Department to protect.

As is generally acknowledged, the Assabet River is clogged with both aquatic plants and algae on its surfaces, as well as smothering the bottoms. This excessive growth forms floating mats of vegetation, impeding recreational use of the waters, producing objectionable odors, unnatural colors, and generally forming a nuisance to those observing, navigating, or fishing on the river. The conditions of the river have significantly altered the naturally occurring species of fish and aquatic life, such that the river is dominated by pollution tolerant species and supports very

limited populations of the fish that would naturally be expected to occur in the river. A recent study conducted by the USACE found that the fish species that do survive in the Assabet River are disproportionately skewed towards the pollution tolerant and introduced species and the expected populations of native species are significantly depressed. (USACE, page 35 and Appendix E.)

While fishing, swimming, and recreational boating are all existing uses of the Assabet River (and have been from historic times as well as inspiring the writings of Thoreau, Longfellow and Emerson) these existing uses have been severely degraded by the current conditions of the Assabet and are not being maintained and protected at present. Instead, recreational boaters and swimmers are confronted with clogged waterways, which are particularly smelly and unsightly in summer. As stated above, while the 2005 NPDES permit moved several WWTP's closer to achieving compliance with WQS, but still, the Assabet remains far from compliant.

Duckweed is an aggressively invasive plant which severely limits recreational appreciation of the river. The eutrophic conditions of the river contribute to the growth of this aquatic invasive plant as well as other floating species and those that adhere to the bottom. Both reduce available oxygen and impair habitats for fish and other aquatic species.

Water chestnut grows in the Assabet River, as well as the Concord and Sudbury Rivers. The GMNWR has had an active and resource-intensive program to combat water chestnut since 1995. Then, with contributions from six conservation partners, it purchased an aquatic weed harvester for over $100,000. For 14 years, the harvester has been in intensive use amongst five partners within the Sudbury, Assabet and Concord watershed. Each partner has access to the harvester during the summer, using a three-person crew to operate the harvester and the dump truck to transport the load of harvested water chestnuts to a dump site. Even with some volunteer labor, the annual personnel costs for refuge maintenance and biological staff are about $9000. An additional $1000 is spent for the crane which is needed to put the harvester in and remove it from each riverine location. Similar costs are likely incurred by each organization using the harvester, as these jobs require appropriate licenses to operate the equipment, so it cannot all be performed by volunteers. Due to the number of hours that this machine has been in use each summer, easily being operated over 50 hours a week for 14 weeks, US FWS's costs for the harvester have increased in recent years, from $375 in 2004, to $1345 in 2005, to $14,350 in 2006, to $16,850 in 2007. 2009 costs were about $12,000. Anticipating the need to replace the harvester, the USFWS has learned that it will cost over $208,000 to purchase a new harvester. In addition, volunteers and staff, riding in canoes and small motorboats devote untold hours each year to hand removal of water chestnuts. These are significant costs, each borne by the partners in this effort, which if the eutrophic contributors were eliminated could be devoted to other resource protection needs. While intensive water chestnut removal actions presently focus on the Sudbury River, this plant does occur on the Assabet and Concord Rivers and the USFWS and partners are taking some actions to address its spread.

III. Concerns with "Emerging Contaminants":

Chemicals in impaired waters can impact the health and productivity of aquatic species directly and can concentrate in predator species through a process known as "bio-accumulation." Impaired water quality can also alter the distribution or density of aquatic plants which fish or wildlife species rely upon for food, shelter or breeding sites.

In addition to concerns about phosphorous, metals, the DOI is concerned about the impacts of pharmaceuticals and personal care products (PPCP), which can enter the waste stream and affect fish, wildlife, and humans. Increasing research is showing developmental disruption in fish and other aquatic species from PPCPs. We have previously provided a number of academic papers and participated in two meetings with your staff focusing on this issue. Last October sampling was conducted at the GMNWR as a part of a study of the Sudbury River to address whether discharges of human wastes have introduced measurable amounts of such chemicals into refuge waters and whether there are observed impacts on fish; your staff was provided with that study proposal. In addition, EPA has initiated a fish sampling study on the Assabet to determine whether any of the effects observed elsewhere are present in local fish populations. These are excellent examples of the collaborative efforts our two agencies can achieve if we work together to address common problems.

While there is insufficient information at present to link waste water discharges to impacts on fish and other aquatic species, the USFWS and the Department will continue to monitor emerging scientific information regarding the connections between human waste streams and the health of aquatic and avian species, so as to fulfill its mission to "ensure that the biological integrity, diversity, and environmental health of the [National Wildlife Refuge] System [is] maintained for the benefit of present and future generations of Americans…[and to] maintain adequate water quantity and water quality to fulfill the mission of the System and the purposes of each Refuge." 16 U.S.C. §668dd(a)(4)(B) and (F).

Separately, in prior correspondence the DOI agencies have raised concerns about the impacts of PPCP's or "emerging contaminants" on the aquatic resources of the river as well as the potential health impacts on downstream consumers of these rivers. Residents of the Town of Billerica draw their drinking water supply from the Concord River and these contaminants are not routinely tested for in standard protocols. The state of current information is not sufficient to assess which of these substances present public health and safety risks. However, some of these substances, namely estrogenic compounds, have been repeatedly documented to cause substantial reproductive and hormonal impacts on fresh water fish (such as the growth of female egg structures in male gonads and reproductive failure at less than toxic levels.)

For many of these compounds, it appears that standard technologies can reduce the levels that are released in the discharge flows. For example, having sufficient capacity to hold the treated effluent in holding ponds for a longer period of time has been reported to reduce levels of some PPCP's. Monitoring of the effluent is of key importance in order to understand what compounds are actually being released to the river. Our technical staff and yours are continuing to explore what other reasonable treatment measures can reduce the discharge of these materials. We will

be reviewing the 2010 permits with an eye to addressing emerging contaminant reduction as well as levels of P and listed pollutants.

IV. Possible Alternative Approaches for a Holistic, Watershed Approach to Achieving Water Quality Standards on the Assabet River:

We all recognize that there are many sources contributing to the eutrophication problems on the Assabet River and that it will take coordination and collaboration and substantial changes in many existing practices to fulfill Phase II of the TMDL within five years. This is why we strongly support Mr. Perkins' commitment to address all four facilities concurrently and on a watershed basis. This is what we understand a commitment to a "holistic approach for both permitting and other actions" to mean. Importantly, by linking these measures, permits can be premised or conditioned on effective implementation of such measures, and vice versa.

Importantly, we believe that since many of the "other actions" involve measures that can be implemented by the local cities and towns within the watershed, and since the relative costs, benefits, and trade-offs of amongst some of these measures may be more appropriately made by local communities, it is very important to include all of the stake-holder communities as well as the dam owners in the up-coming workshop.

However, the fact that the local communities will play a vital role in implementing some measures to address alternative P reduction approaches is not a 'code phrase' for inaction. Water conservation, reducing I/I, or inspecting and enforcing septic system standards do not require compliance schedules mandated by federal agencies. Nor does identifying industrial dischargers contributing highly acidic wastes that reduce the effectiveness of P reduction technologies. (Phase III/IV, page 6-2) These are examples of actions which can be undertaken now and which may expand the range of viable alternatives, reduce costs, or avoid the need to implement more expensive options.

Presented below are some other possible measures that may stimulate all the stakeholders to explore a wider range of ideas. (We are not repeating all of the dam removal and other options explored in detail in other technical reports.) This discussion is not in any sort of order, certainly not ranked as preferred, nor are they currently endorsed by the DOI. The following discussion is offered to help explore other ideas and to engage the larger watershed community so it can, collectively, be able to solve the eutrophication problems of this river. Some solutions may even entail lower costs than historic approaches. For example, addressing the problem holistically may be less expensive overall than the ad hoc approach as exemplified by the alternatives analysis of the Phase III/IV report, which favored individual interests discharging P to the river rather than adopting solutions to reduce eutrophication for the whole watershed.

We recognize that many of these other components of the TMDL will still need further evaluation, perhaps site studies, and public consideration. With the most technologically rigorous discharge limits in place year-round for the four WWTP's, some of these alternatives may be useful to fine-tune the final efforts necessary to achieve the TMDL. In light of the

experience of those measures, adjustments or other measures are subsequently instituted. This will not delay or avoid implementing measures that are already documented as necessary or effective (such as more stringent year-round limits for the WWTP's) while awaiting decisions on other measures, such as dam removal or storm water flow reduction.

- *Exploring a bottom outfall for the Ben Smith and/or other dams*

The DOI agencies recognize that neither the landowner nor the Town of Maynard currently supports removal of the Ben Smith dam for the historic and aesthetic contributions that it makes to the Town's character, as well as its potential to generate electricity. Since the impoundment is so large, there are also many private landowners who do not want to have their 'lake-like' views altered. These concerns may be shared by other communities, dam owners or residents near some of other dams along the Assabet River. The USFWS is exploring an approach which has been included in the designs of many taller dams, which is to have the waters spill out from the bottom of the dam, rather than over the top. Existing conditions for many Federal Energy Regulatory Commission (FERC) licenses is that the river be used for hydropower only during peak flows and the balance of the time, it be operated on a flow of the river basis. If the accumulated sediments are removed, and during low flow periods the waters are discharged from a new outfall placed at the lowest elevation of the river channel, then sediments may be less likely to accumulate, the river might out scour subsequent sediment deposits, the dam could remain in place, the mill ponds could be filled or possibly managed under a regime that involves more frequent filling and flushing, and hydropower could be generated during times of heavier flows. Dam engineers with the USFWS who specialize in fish ladders and other means to improve fish habitats in existing dams have been assigned to investigate whether there are any feasible alternatives such as this. We will provide you with their advice as we receive it.

- *Single-time sediment dredging*

Once all the WWTP's are discharging at levels low enough to sustain the river's water quality, it might be feasible to have a single round of sediment removal, behind some or all of the dams. Sediment removal as a management tool to reduce P flux was rejected by the modeling study (CDM, 2008, page 6-4, USACE, page 16.) Any sediment removal activity would still entail some adverse effects from dredging. Once the WWTP's have ceased discharging P at levels above recommended levels for ponds, lakes, and impoundments, a single-time removal of the upper three feet of P-laden sediments might reduce the need to remove all or some of the dams entirely.

- *Adoption of stormwater regulations by some or all of the communities within the Assabet River watershed*

A year ago, MADEP issued draft stormwater reduction regulations which contain important best management standards to reduce the statewide problem of excessive nutrients flowing into our waterbodies. This problem arises primarily because parking lots, roads, and large areas of impervious surface, and also golf-courses, lawns, and agricultural fields where fertilizer use or animal feces combine with sloping gradients and wash excess nutrients into streams, tributaries,

and larger waterbodies. MADEP estimates that statewide, 60% of the pollutants damaging water quality and causing toxic algae blooms come from stormwater, not sewage. (MADEP Fact Sheet) While the relative percentage of nutrients regularly contributed by stormwater within the Assabet is not this high, stormwater contributions still caused 52% and 77% of the P loads during two of three storm events sampled by the TMDL (TMDL, page 21.) Feasible low-impact design (LID) alternatives include various infiltration basins, grass swales, bioretention system, and filters. Depending upon the scale and timing of a new development, redevelopment, or existing use (areas smaller than 2 acres of impervious area are exempt) these new standards apply with different time-frames.

While many communities recognize the value of such storm management standards, there can be reticence to adopting these standards independently, out of fears that new development might shy away from such communities, choosing to locate in more lax communities instead. Therefore, they look to MADEP to impose the standards state-wide. However, political efforts to slow down this process have been vigorous, particularly in this economic climate, so it is unclear when these regulations will be issued state-wide. However, if a community were to adopt such regulations, or to choose to adopt a more stringent or accelerated version, then actual physical improvements to this problem would follow.

Depending upon the extent of large commercial, industrial and dense housing within a community, i.e. the amount of impervious surfacing (i.e. asphalt and structures), a significant reduction in P flows could be achieved. Likewise, these management practices and LID approaches could reduce nutrient flows from golf courses, playing or agriculture fields, by simply holding stormwaters on-site, rather than having them flow unfiltered into the river or its tributaries. Communities might find it cheaper to implement these design standards than to pay the costs of reaching the highest achievable levels for P reduction, or alternatively, flow increases may be feasible once non-point source contributions are actually reduced.

- R*educing sediment flux and oxygen deficits through in-river approaches*

As described above, the USFWS and a number of partners share a old water-chestnut harvesting machine. A fleet of such equipment, or other equipment that can skim duckweed or other invasive vegetation from the surface of the water would not reduce P loading to the river. However, these approaches could still reduce sediment flux by interrupting the endless recycling of P through seasonal vegetation blooms and die-offs.

Similarly, there already are a number of fountains, aerators, artificial waterfalls and other techniques which can add oxygen to stagnant waters. Again, such measures do not address the underlying causes of eutrophication, but might help address localized problem areas.

- *More vigorous enforcement of septic system standards*

In some locations, non-point sources of P occur from inundated septic systems. While these systems may operate effectively during low-water conditions, with periodic high waters, the P trapped in a leaching field may dissolve and contribute to stormwater loads. Communities have

the authority now to inspect septic systems. But, they generally only require inspections when the structure is sold. However, if a community were to identify areas with multiple non-conforming systems and construct or work with its residents to construct a smaller package treatment plant or other needed on-site upgrades, it might find that it could reduce its P non-point discharges at lower costs than other alternatives.

- *New legislative authorities to help communities address watershed-wide solutions*

At present, each community along the watershed is confined to implementing solutions just within its boundaries. Watershed-wide solutions can be hampered by limitations of town and municipal law. While it may take new state legislation to authorize intermunicipal agreements or the creation of an Assabet regional entity, such new laws could expand the range of viable solutions. This approach could authorize one community to pay for more cost-efficient improvements in another community or could create private funding incentives that might apply across the watershed, rather than just within one community. It could be as simple as the agreement between Northborough and Marlborough to jointly fund their WWTP. It could be modeled on the Cape Cod Commission or the Martha's Vineyard Commission and address wastewater proposals impacting the other communities along the watershed. Or, such new authority could address even broader options.

Conceivably, the City of Marlborough might decide that rather than spend $17 million for a ground water discharge facility in Marlborough (Phase III/IV, page ES-21) it would prefer to spend $13 million to remove the Ben Smith dam and dispose of its sediment (USACE, page 54), especially since removal of the Ben Smith dam alone is projected by the TMDL to reduce biomass by nearly 36% (TMDL, page 29) and sediment flux by 70% when combined with the planned WWTP upgrades (CDM, 2008, page 6-6). This single option is a more effective biomass reduction approach than operating all of the WWTP's at .05 mg/L in the summer plus implementing other measures to meet a 50% reduction in sediment flux (which together only achieves a 32% reduction in biomass, TMDL, page 29.) It could possibly be part of a more balanced flow increase proposal.

Another example, modeled upon the transfer of development rights programs that reallocate development densities through private development right exchange mechanisms (particularly successful in eastern Long Island, New Jersey and Maryland) or the European programs for cap and trade systems for carbon emissions, could involve a "P pollution rights exchange system." Under such a program, the maximum allocated P discharge rights are established, through a mechanism such as the TMDL, and entities can buy and sell such rights, generally through a 'bank' or an 'exchange'. Thus, for example, another community or landowner could be paid to construct a LID stormwater system, or to consent to removal of its dam, allowing the purchaser to increase its WWTP flows or discharge limits. The concept here is that market-based approaches can also work with pollution rights as much as any other salable attribute, as long as there is a fixed supply available. Then, users can assess their willingness to retain or sell their rights and the marketplace creates a mechanism for evaluating the relative costs of alternatives.

V. Implementing Phase II of the TMDL:

The 2010 NPDES Permits:

Given the well established and documented impacts of eutrophication affecting the Assabet River system, full implementation of the TMDL is of paramount importance to the DOI. Given the current uncertainties about removal of the dams and more recent information about how reducing the winter limits of P is likely to substantially reduce the availability of P during the growing season, year-round P reduction from the WWTPs is our primary focus for the near-term. Other alternative P reduction and flux reduction approaches can be evaluated and implemented concurrently.

The TMDL recognized that the dam removal, sediment dredging and other alternatives required more evaluation, so it created a two-phase/10-year process to achieve WQS. Phase II would determine, by spring 2008 (study to be initiated in March 2007), whether or not sediment remediation is viable. If sediment reduction alternatives are not feasible, then new discharge limits would be initiated in 2009, finalized in 2010, and implemented by 2014. (TMDL, page 44) However, the TMDL also cautioned that if the sediment flux could not be reduced, lower discharge limits would be imposed in the 2010 permits. (TMDL, page 9)

The MADEP stated that it "considers the sediment flux to be in large part a reflection of the external loads to the system and as the external load is reduced, so will be the sediment flux of P, at least to some relatively low minimum value." (TMDL, page 81) While DEP identified an alternative focusing on reducing existing WWTP flows to 1.0/.1 mg/L with the presumption that sediment flux could be reduced by 90%, it also recognized that "reduction in sediment flux by 90% [i]s the biggest challenge with the largest uncertainty." (TMDL, page 81)

Therefore, we believe it is more realistic to examine the model runs which assume a lesser level of flux reduction. The TMDL projected the TMDL's goal of a 50% reduction in biomass could also be achieved with a 75% sediment flux reduction at .025 mg/L summer discharge limits for the four WWTPs. These limits achieve a 53% biomass reduction. (TMDL, page 29, model run 23) While it does not achieve the TMDL's goal of a 50% reduction in biomass, a 0.05 mg/L summer limit for P for the four WWTP's came quite close, as the model predicted this limit would achieve a 49% reduction in biomass also assuming a 75% reduction in sediment flux. (TMDL, page 29, model run 19)

The ensuing USACE study contains several important findings. Building upon the modeling work of the TMDL, it focused its model on the role of the phosphorous flux process contributed by sediments held behind the dams. It concludes that some 60% of the sediment flux reduction can be achieved simply through the limits imposed under the 2005 permits. (CDM, 2008, page 6-8) While the TMDL had only predicted a 25% sediment flux reduction from the 0.1 mg/L summer limit (TMDL, page 29), the USACE study identified that the *winter P contributions play a significant role in the total P levels available for summer growth*, so the 2005 permit's winter limits of 1.0 mg/L were also included in their evaluation. Importantly, the report emphasized the

interaction between the winter discharge levels and biomass production in following growing seasons. It stated:

> "If no other improvements were implemented, further reductions in summer P discharge limits, below 0.1mg/L, would not contribute significantly to further reduction in sediment phosphorous flux. This is because the winter instream phosphorous concentration has such a strong effect on the P flux the following summer. Therefore, if the summer P discharge limits were decreased below 0.1 mg/L without any further reduction in winter limits, the P flux in the summer would still be "controlled" by the winter instream phosphorous concentration." (CDM, 2008, page 6-7)

Since the focus of their study was on the feasibility and costs to remove the various dams or dredge the sediments, the CDM did not run models for how much sediment flux could be reduced if all WWTP's had lower year-round limits, such as .05 mg/L or .025 mg/L, but the study's Findings did recommend that the winter limits be set below the 2005 permit levels. (CDM, 2008, page 6-8)

Perhaps another modeling exercise could predict if the remaining 15% of sediment flux can be achieved through lower winter limits alone, but this does not have to be calculated for the 2010 permit cycle. We already have sufficient information to understand that the 2010 permits will need to be set at or near the .025 mg/L level due to the inherent physical realities of the Assabet River. Essentially, the Assabet consists of a string of lakes and the four WWTP's constitute its tributaries. Their effluent levels will need to be set at the levels recommended for this region for lakes and for streams flowing into lakes.

Once the four WWTP's reach their full 2005 permitted design flows (without including any increases from Marlborough), the river will approach having 100% of its volume contributed by waste water flow. (2005 Permit, Response to Comments pages 2 & 30) Given that the impoundments function as lakes or ponds, since the discharge pipes for several plants are either located within or close to the back-upped waters of the impoundments, for the Maynard and Hudson plants, there is little or no free-flowing water not influenced by the impoundment. The other plants, somewhat more upstream of an impoundment, function as the direct tributaries to the next impoundment. Therefore, given uncertainties and the other existing sources of P, discharge limits conforming to EPA's regional in-stream guidance of 0.02375 to 0.025 mg/L are likely to be needed for each WWTP (TMDL, pages 24-25.)

Depending upon the P contributions from storm water, failing septic systems, and sediment flux contributed by the Allen Street, Aluminum City, and Hudson dams, and whether the contributing communities have sufficiently reduced these inputs, and whether the water supply sources come from the ground water recharge system or other sources, it may be feasible at some point to allow flow increases or somewhat higher releases of P for the Westborough and Marlborough facilities. Since the Hudson and Maynard WWTP's discharge into impounded waters that function as lakes, on the basis of current information, it does not appear likely that they could be

permitted to discharge at the .05mg/L level, since that is only appropriate for tributaries to lakes and impoundments[4].

We do not view the recent "relaxation" of the DEP regulation revising the definition of lakes and ponds in its surface WQS to alter the physical need for such limits. The simple reality of this river is that nearly all of its length is impacted by the impoundments, the four WWTP's are expected to comprise about 100% of its flow during low flow periods and 98% of its P load. Since the four WWTP's serve as the primary tributaries to the string of lakes which comprise the Assabet River, the WWTP's limits will have to set in recognition of these conditions.

EPA is well aware of the number of WWTP's across the country, in upstate New York, the west coast, and in Concord, Massachusetts which have been issued NPDES permits at these limits or are implementing technologies which can meet them.

We recognize that it is operationally more difficult and more expensive to reach such low P release limits, particularly during the winter. Therefore, the plant design may need to include

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[4] The anti-degradation guidance in effect when the TMDL was adopted was revised in 2006 and again just last October. The current guidance, titled "Implementation Procedures for the Antidegradation Provisions of the Massachusetts Surface Water Quality Standards, 314 CMR 4.00, effective 10/21/2009 does not include the eutrophication control provisions which previously set maximum water concentration levels for the receiving waters for P of .03 mg/L for lakes, .05mg/L for tributaries of lakes, and .1mg/L for flowing streams. Clearly, when WWTP's constitutes nearly the full flow of P to an impounded river, DEP's determination that .03 and .05mg.l of P are appropriate water concentrations to use is more consistent with EPA's own water quality guidance, so the .07mg/L level in the amended permit can best be viewed as an interim limit. In fact, other sound sources of technical expertise, such as the 1986 Gold Book, cited by the TMDL at page 25, called for P limits in a lake or reservoir of .025mg/L, and .05mg/L for any tributary flowing into a lake or reservoir. EPA's 2000 Ecoregional Guidance criteria for P called for in-stream P levels of .02375mg/L for the Assabet Region. The physical reality of this river is that it is actually a series of functional lakes and these four WWTP's serve as its primary tributaries.

We note that while there have been some regulatory revisions in the DEP rules and their non-degradation guidance since the TMDL was issued and that such revisions appear to weaken DEP's jurisdiction over the Assabet River. However, we do not view such "weaker" regulations and guidance as altering the force of the TMDL and certainly not the physical dynamics of the river. The TMDL was adopted by both EPA and DEP with the 2002 regulations in effect, so the framework and regulatory assumptions for meeting the allocations set out in the TMDL remain operative. Specifically, the 2002 version of 314 CMR defined "Lakes and Ponds" to include "waterbodies situated in a…damned river channel with water usually not flowing…" Section 4.04(5) of those regulations titled "Control of Eutrophication" provided that "there shall be no new or increased point source discharge of nutrients, primarily phosphorous or nitrogen, directly to lakes or ponds. There shall be no new or increased point source discharge to tributaries of lakes or ponds that would encourage cultural eutrophication or the growth of weeds or algae in these lakes or ponds. Any existing point source discharge containing nutrients in concentrations which encourage eutrophication or growth of weeds or algae shall be provided with the highest and best practical treatment to remove such nutrients." Since the TMDL identified the dammed sections of the river as the dominant cause of sediment flux and that the sediment flux in the base year of 1999 ***exceeded*** the entire P allocation from all sources (background, WWTP's, non-point watershed, margin of safety, and future sediment flux) it is clear that DEP's regulation prohibiting increased flows into impoundments or into rivers and streams serving as tributaries to impoundments was an integral component of the "assumptions and requirements" of the TMDL for the Assabet River.

heated enclosures for chemical storage, in-take piping, and those phases of treatment which are less effective when conducted in cold weather.

However, without any assured avenue for achieving the balance of P reduction in this watershed, the WWTP's will need to reduce their discharges to the limit of available technologies. The TMDL stated that "the reduction of sediment phosphorous flux becomes a significant factor in meeting the TMDL goals only after significant reductions in total phosphorous at POTW's are achieved." (TMDL, page 22)

Additional actions may well be required to meet the TMDL goals:

Despite the fact that this letter has focused on the science pointing towards the value of reducing the P discharges year-round, we also recognize that removal of the impounded P-laden sediments can provide a broader range of feasible alternatives for the Assabet communities while restoring the river. Furthermore, overall costs may be less than those incurred through each WWTP attempting to operate at peak conditions.

The Ben Smith dam is the single most effective dam to remove, in terms of its adverse impacts on water quality and the benefits achievable from its removal. Despite its high price, under a cost/benefit review, removing it produces the "best dollar value". (USACE, page 55) Removal of the Ben Smith dam alone is predicted to reduce sediment flux by 70% in combination with the 0.1 mg/L summer/1.0 mg/L winter limits. (CDM, 2008, page 6-6)

The dam owner has filed a notice with FERC that it intends to file an application for an exemption to operate the dam for hydropower production. The owner has not yet filed its application. These are not necessarily routinely granted. In fact, the USFWS and the DOI routinely review and have frequently raised concerns or objections regarding adverse fish and wildlife impacts from FERC licenses and exemptions. FERC must incorporate the conditions that the USFWS and the DOI prescribe. Therefore, there is no certainty that any exemption will be issued for hydropower purposes for the Ben Smith dam.

The preliminary permit that was issued by FERC in 2008 merely gives the owner an application priority relative to other potential applicants; it does not give it any property rights nor authorize construction. DOI filed comments on the application for the preliminary permit, indicating that it did not object to this initial action and cautioning the applicant and FERC that the proposed project might affect the outstanding resource values of the Scenic River. As pointed out above, we are also examining whether or not there are feasible engineering designs and alternatives which could allow a dam structure and mill pond to remain with part-year hydropower generation, retaining flow through low season flows and facilitating high water scouring of the river bottom to reduce renewed build-up of sediments.