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VIA E-MAIL Laurie.M.Farmer@usace.army.mil

Laurie Farmer
Project Manager
U.S. Army Corps of Engineers
Regulatory Branch
1222 Spruce Street
St. Louis, Missouri 63103-2833

Re: P2601/Applicant William F. Holekamp

Dear Ms. Farmer:

These comments are submitted on behalf of the Missouri Coalition for the Environment ("the Coalition"), a member-support public interest advocacy group. William F. Holekamp is seeking authority to construct a dam on a tributary to Femme Osage Creek to create a private 90-acre lake. According to the public notice, impacts to on-site streams total 9,247 linear feet. As you know, however, the damming of a tributary has adverse impacts downstream of the inundated segments. These downstream impacts, along with the cumulative losses of headwater streams in the Femme Osage watershed should be carefully considered as well.

Headwaters Provide Important Ecosystem Services and Should be Protected

Before I address the undisclosed additional impacts of this proposed project, I would like to reiterate the Coalition's (and its members') interest in the preservation of Missouri's streams in their "natural" state. Our interest in preservation extends to those streams that flow intermittently and to those that flow solely in response to rainfall events. We make no distinction between ephemeral, intermittent and perennial in terms of importance, as each provides distinct and vital functions in the riparian ecosystem. We believe that our voices as members of the public should matter, and that they should play a role in Corps decision-making regarding the fate of our natural resources.

Streams and their headwaters are complex interconnected ecosystems, and intermittent and ephemeral streams are an essential part of that ecosystem. An intermittent or ephemeral stream is no less important than a perennial stream in that each serves unique ecological functions.

Headwater streams protect downstream water quality by, for example, retaining and processing excess nutrients and sediment. Small headwaters are more effective than larger streams and lakes at removing harmful level of nutrients, because in small, shallow streams more water is in direct contact with the streambed, and it is in the streambed where nutrients are processed. Headwater streams need not flow year-round to provide this vital function. Fertilizers and other pollutants enter stream systems during storms, which is also the time when intermittent and ephemeral streams have water and can provide this processing function. Federal and state programs spend considerable sums to reduce non-point source nutrient and sediment inputs in an effort to protect water quality. Removing headwater streams only undermines those efforts.

Headwaters also help maintain biodiversity because they provide a unique array of habitats suitable for local and specialized species. A particular species may only be able to survive within one 100-yard stretch of the stream. Intermittent streams can also provide needed protection for juvenile fish, salamanders and crayfish, because intermittent streams often lack predators. Damming the streams destroys their ability to perform these essential functions.

Even though one of the tributaries at issue in this case has already been altered by a small impoundment, both tributaries represent streams of good water quality and valuable aquatic habitat. As evident from information in the public notice and other stream data in the Corps' possession, the streams have good canopy coverage, beneficial substrate, and healthy populations of fish and macroinvertebrates. According to the Missouri Department of Conservation, the streams are representative of Ozark border streams, many of which have already been lost in St. Charles County.

This decision cannot be made in isolation. The St. Louis District is well aware of the loss of headwater habitat, particularly in St. Charles County, "one of the most waterway troubled areas in our district." (Letter from Charles Frerker to Paul Reitz of Home Depot, October 15, 1998). At some point, the Corps is going to have to stop permitting the filling, channelization and damming of Missouri's natural streams.

Adverse Impacts to Riparian System are Greater Than Disclosed

The public notice lists impacts totaling 9,274 linear feet of stream and .01 acres of wetlands. The notice also lists resident fish species identified by the applicant's agent. A true assessment of impacts, however, requires a more complete examination of the functions provided by these aquatic resources, not simply a list of fish found on a particular day. We do understand that the applicant provided macroinvertebrate data, but has there been an assessment of other functions provided by these streams and of the segment downstream of the dam site? What about groundwater recharge and water purification? And what is the role of these streams in the larger watershed? How will this would-be lake be managed? Is it Holekamp's intention to stock the lake, and will he be introducing exotic species to this watershed? Will motorboat use be common? These practices can have huge impacts on downstream waters and wetlands.

Dams can also have severe negative impacts on streams, as they alter chemical, physical and biological processes. The Environmental Protection Agency ("EPA") has recommended avoiding dam construction whenever possible.¹ At a depth ranging from 20 to as deep as 50-feet, the proposed lake will no longer be habitable for most if not all of the fish species currently found on-site. The dam will not only destroy the aquatic communities that currently inhabit these streams, it will also degrade downstream water quality. Damming streams causes changes in the temperature, dissolved oxygen levels, and turbidity both upstream and downstream of the structure. Dams block free-flowing river systems and impede a river's flushing function that enables sediment and nutrients to be transported downstream. When the impounded water is released from or flows out of the lake, it may be lethal to downstream fish and/or other aquatic organisms.

Damming prevents the natural transport of organic matter that feeds the downstream aquatic community and blocks the movement of fish, mussels and other species. It also transforms ecological flows below the structure. An ordinance of St. Charles County will require the maintenance of "normal flow" below this dam. Maintaining normal flows below the dam will require substantial manipulation of releases. In order to maintain stream sinuosity and habitat, the dam would require a drop structure that allows for variable releases that coincide with normal seasonal variations in flow. Releases from the dam would have to be manipulated so as to allow a downstream flow that fully supports all of the current ecological functions of the stream.

While I am sure that the Corps is well aware of the impacts discussed above, I am not sure that the impacts are properly assessed, considered and/or accounted for. Instead, the Corps' analysis of impacts so often appears to be narrowly focused on "linear feet of stream" and "acres of wetlands." Instead, the full range of impacts must be assessed and properly considered in the Corps' public interest analysis and, if the permit is issued, in the determination of compensatory mitigation requirements.

Holekamp Must Conduct a Rigorous Alternatives Analysis That Adequately Demonstrates Avoidance & Minimization of Harmful Environmental Impacts

The 404(b)(1) Guidelines impose a mandatory duty upon permit applicants to take all appropriate and practicable steps to first avoid and then minimize adverse impacts to aquatic resources. *40 CFR Subpart B, Section 230 et seq. (the "404(b) (1) Guidelines")*. In addition, both the EPA and the Corps have issued a clear mandate regarding an applicant's duty to avoid adverse impacts to aquatic resources "to the maximum extent practicable." *Memorandum of Agreement between the EPA and the Department of the Army Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b) (1) Guidelines ("MOA")*. To be considered for permitting, a proposal must constitute the least environmentally damaging practicable alternative. *404(b)(1) Guidelines*. Compensatory mitigation should be considered and authorized only for those

¹ <http://www.epa.gov/OW/you/chap2.html>

adverse impacts shown to be unavoidable. The avoid-minimize-and-then-compensate model is thus a progressive one.

Before Mr. Holekamp can proceed, he must be required to conduct a proper alternatives analysis in accordance with the 404(b)(1) Guidelines. This analysis should carefully examine the impacts of various alternatives including utilizing already existing recreational lakes or the Missouri River, for that matter. The alternatives analysis should also clearly set forth an analysis of impact minimization.

The alternatives analysis is more than a mere formality, but is instead a federally mandated duty. Once Mr. Holekamp submits the analysis, the Corps is obligated to verify its accuracy and to deny a permit when that analysis is insufficient. *See 40 CFR 1506.5(a) and (b); 33 CFR Part 325, App. B, 8(f) (2); Utahns v. United States, 305 F.3d 1152 (10th Cir. 2002) (rejecting agency finding of no practicable alternatives where applicant failed to meet its burden).* "The burden of proof to demonstrate compliance with the Section 404(b)(1) Guidelines rests with the applicant; where insufficient information is provided to determine compliance, the Guidelines require that no permit be issued." *404(b) (1) Guidelines, 61 Fed. Reg. 30,990, 30,998 (June 18, 1996) (citing 40 CFR 230.12(a) (3) (iv)).*

Corps Must Consider Cumulative Impacts of Filling Headwater Streams

NEPA requires that an agency take a hard look at the full range of environmental impacts, including the potential for "cumulatively significant impacts" to the environment from a combination of the proposal at issue with other existing and reasonably foreseeable actions. *40 C.F.R. § 1508.25(a); Sierra Club v. Bosworth, 352 F. Supp. 2d 909, 925 (D. Minn. 2005).* The Council on Environmental Quality regulations define "cumulative impact" as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." *40 C.F.R. § 1508.7.*

The Corps' own regulations governing the issuance of 404 permits require an evaluation of cumulative impacts as well. "The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest" *33 C.F.R. § 320.4(a)(1).*

Despite repeated pleas from the Coalition, the EPA, USFWS and the MDC, the Corps has consistently refused to consider the cumulative impacts of the many separate permits it continues to issue for stream filling and damming. Development in St. Charles County continues to proceed at a rapid pace, placing intense pressures on the watershed.

We believe that the Corps has already authorized at least two dams in the Femme Osage watershed in St. Charles County. Will this only stop when we run out of tributaries? It is time for the Corps to start following its own regulations and perform a cumulative assessment.

The Proposed Project is Contrary to the Public Interest and Should Not Be Permitted

A Section 404 permit cannot be issued if it would be contrary to the public interest. A determination of the impact on the public interest "requires that the asserted benefits of the project be balanced against the "reasonably foreseeable detriments." 33 C.F.R. § 320.4(a)(1). We are hard-pressed to identify any public benefits in this proposal, particularly given the "troubled" state of St. Charles County's waterways. Allowing private parties to destroy headwaters—even intermittent and ephemeral ones—for their own private enjoyment is untenable and should no longer be permitted.

Mitigation Plan Must Comply With Corps and State Guidance

Given the now well-documented challenges and failures of compensatory mitigation, it is imperative that existing Corps and state guidelines regarding mitigation plans be strictly enforced.² In order to conform with these guidance documents, should this permit be issued, Mr. Holekamp needs to submit a detailed mitigation plan that includes, among other elements, a description of wetland functions lost, a soil map with an analysis of soil suitability for the proposed mitigation, an assessment of local hydrology, written performance standards, a contingency plan should mitigation fail, and a guarantee that the work will be performed as planned. *RGL 02-2; Army Corps of Engineers, St. Louis District Mitigation and Monitoring Guidelines; State of Missouri Aquatic Resources Mitigation Guidelines, G.*

While mitigation plans and permits have come a long way since the 1980s, there are still serious deficiencies in many plans, permits and 401 certifications. At a minimum, the 404 permits and 401 certifications should clearly spell out the specific limitations and mitigation requirements, rather than, as so many do, simply requiring compliance with a mitigation plan that is a separate document never formally incorporated into the 404 permit or 401 certification. In some cases, these three documents are not even consistent. The 404 permit and 401 certification should also include success criteria that can be used

² National Academy of Sciences (2001). "Compensating for Wetland Losses Under the Clean Water Act"; Ambrose, Richard F. "Wetland Mitigation in the United States: Assessing the Success of Mitigation Policies." *Wetlands (Australia)* 19:1-27. Robb, James T. (2002). "Assessing Wetland Compensatory Mitigation Sites to Aid in Establishing Mitigation Ratios." *Wetlands* 22(2), pp. 435-440; Michigan Department of Environmental Quality (2001). "Wetland Mitigation and Permit Compliance Study"; Brown, Stephen C. and Veneman Peter L.M. (2001). "Effectiveness of Compensatory Wetland Mitigation in Massachusetts, USA." *Wetlands* 21(4), p. 508-518. Johnson, Patricia A., Dana L. Mock, Emily J. Teachout and Andy McMillan (2000). "Washington State Wetland Mitigation Evaluation Study. Phase 1: Compliance." Washington State Department of Ecology. Publication No. 00-06-016.

to assess functional replacement. There is no need to wait for new mitigation rules or guidelines before requiring success criteria that we all know are needed.

The failure of permittees to conduct monitoring is also well documented, as is the insufficiency of a five-year monitoring period. *Ambrose, Richard F. "Wetland Mitigation in the United States: Assessing the Success of Mitigation Policies." Wetlands (Australia) 19:1-27.* Recent studies have indicated that the long-term functioning and sustainability of a restoration site may not be apparent until 10 to 40 years after the project is completed. *Id. at 22.* As such, simply continuing to impose a five-year monitoring period on permittees is an old recipe for continued failure. Mr. Holekamp should be required to monitor the mitigation site for no less than 10 years.

Finally, both Corps and State guidance require compensatory mitigation sites be restricted or reserved in perpetuity. *RGL 02-2; State of Missouri Aquatic Resources Mitigation Guidelines.* While deed restrictions are common conditions in both 404 permits and 401 certifications, it is now common knowledge that many of these deed restrictions never get prepared or recorded.

Without greater attention to functional replacement, careful and detailed planning, sufficient monitoring by the applicant, and enforcement of permit conditions, the practice of compensatory mitigation is doomed for repeated failure.

In-Lieu-Fee Arrangements Are Appropriate in Strictly Limited Situations

The impacts from this proposal are substantial, as would be the compensatory mitigation. The public notice lists on-site mitigation, mitigation at the Matson Hill County Park, and/or in-lieu fee mitigation through the Heritage Foundation's Stream Stewardship Trust Fund as the compensatory mitigation options being considered for this project. There are a number of problems with these options. According to Terra Technologies, on-site mitigation is not feasible. It is our understanding that Matson Hill County Park is also unable to provide sufficient mitigation opportunities. In-lieu fee arrangements, while permissible, should be the compensatory mitigation option of last choice.

Both the Corps of Engineers and the Environmental Protection Agency have made clear that in-kind compensatory mitigation should be required wherever practicable. *MOA; Guidance on In-Lieu-Fee Arrangements.*³ In-lieu fee arrangements are the least preferable compensatory mitigation option given the uncertainty and temporal losses involved. Federal guidance on the use of in-lieu-fee arrangements limits the use of in-lieu-fee arrangements to situations where the following conditions are met: 1) there is no practicable opportunity for on-site compensatory mitigation, 2) the in-lieu-fee arrangement is environmentally preferable to on-site compensation, 3) there is no

³ Federal Guidance on the Use of In-Lieu-Fee Arrangements for Compensatory Mitigation Under Section 404 of the Clean Water Act and Section 10 of the Rivers & Harbors Act, 65 Fed. Reg. 66914-66917.

mitigation bank serving the area of the permitted impacts, 4) the use of a mitigation bank serving an area outside of permitted impacts is not practicable or environmentally desirable and, 5) the in-lieu-fee arrangement provides in-kind restoration as mitigation. *Guidance on In Lieu-Fee Arrangements, 65 Fed. Reg. 66915.*

It is not clear from the public notice why the Applicant has proposed an in-lieu-fee arrangement. Before such a proposal can be considered, the Applicant (and, ultimately, the Corps) must demonstrate that the five conditions set forth above have been met, including a showing that the in-lieu-fee arrangement will provide in-kind mitigation to replace the functional values lost through the filling of these tributaries. Finally, before the Corps of Engineers can approve an in-lieu-fee mitigation arrangement, the Corps must ensure that any arrangement with the Stream Stewardship Trust Fund provides assurances of success and timely implementation. *Mitigation Banking Guidance.*⁴

DNR Should Deny 401 Certification

As noted above, Holekamp's proposal would have serious consequences for water quality both upstream and downstream of the dam. State regulations require that DNR give consideration "to both direct and indirect water quality effects before issuing or denying water quality certification." *10 CSR § 20-6.060.* DNR should deny certification under Section 401 of the Clean Water Act until Holekamp can demonstrate that adverse impacts have been avoided to the maximum extent, and that all unavoidable impacts to water quality have been minimized.

Thank you for your attention to these comments. I look forward to your responses.

Sincerely,



Kim Knowles

VIA E-MAIL

Carrie Schulte
MDNR
Water Pollution Control Program
PO Box 176
Jefferson City, MO 65102-0176
carrie.shulte@dnr.mo.gov

⁴ Federal Guidance for Establishment, Use and Operation of Mitigation Banks. ⁴ Department of the Army, 60 Fed. Reg. 58606-58614 (November 28, 1995).