

STATE OF MICHIGAN STATE OF MINNESOTA COMMONWEALTH OF PENNSYLVANIA

December 8, 2017

US Army Corps of Engineers, Chicago District
231 S. LaSalle St., Suite 1500
ATTN: GLMRIS – Brandon Road Comments
Chicago, IL 60604

Dear Sir or Madam:

This is in response to the U. S. Army Corps of Engineers’ request for comments on the Great Lakes and Mississippi River Interbasin Study (GLMRIS) – Brandon Road Draft Integrated Feasibility Study and Environmental Impact Statement – Will County, Illinois publicly released in August 2017. (Draft Report.) The Draft Report evaluates several options for control measures at the Brandon Road Lock and Dam to prevent the upstream movement of aquatic nuisance species, including Bighead and Silver carp (Asian carp) from the Mississippi River Basin, through the Illinois Waterway and the Chicago Area Waterway to Lake Michigan and the rest of the Great Lakes.

As the chief legal officers of our respective states, we share a strong, common interest in protecting the unique resources of the Great Lakes and their connected waters from the continuing threat that Asian carp present in the Illinois Waterway will invade and become established in the Great Lakes, causing grave ecological and economic harm. The fact that our states have previously taken concerted legal action to address this threat¹ underscores the seriousness of our states’ interest in and commitment to addressing it.

We commend the Corps for undertaking the analysis of alternatives in the Draft Report and seeking, albeit belatedly, public input on it. But we strongly disagree with the Corps’ conclusion that the “Tentatively Selected Plan,” (TSP) which would retrofit the Brandon Road Lock and Dam with a combination of technologies intended to deter the movement of Asian carp, is the best option for meeting the stated goal of the feasibility study mandated by Congress. Instead, for the reasons outlined below, we urge the Corps to select and implement what the Draft Report itself identifies as the most effective option – closing the Brandon Road Lock. Among the alternatives considered, the “Lock Closure Alternative” (LCA)²:

¹ See *State of Michigan, et al. v US Army Corps of Engineers, et al.*, 758 F 3d 892 (7th Cir 2014).

² See Draft Report, pp. 278-282.

- Is clearly the most effective and reliable means of achieving the congressionally mandated goal of “prevent[ing] the spread of aquatic nuisance species between the Great Lakes and the Mississippi River Basins through the Chicago Sanitary and Ship Canal ...”³;
- Can be implemented most quickly; and
- Has the lowest direct (construction, operation, and maintenance) cost to taxpayers.⁴

I. The Corps Needs to Take Prompt, Effective Action to Address the Continuing Asian Carp Threat to the Great Lakes.

Scientists in both the United States and Canada have concluded that if even a relatively small number of Asian carp enter Lake Michigan through the Chicago Waterway, there is a substantial risk that they could, over time, establish significant populations in shallow-water areas of the Great Lakes, especially Lakes Michigan, Huron, and Erie causing major ecological and economic harm.⁵ As the court that has most closely examined this subject observed, “immeasurable environmental and economic damage would be caused not only to Lake Michigan, but to the Great Lakes as a whole, if the Asian carp establish breeding populations there.”⁶ The Draft Report acknowledges the risk and indeed, that is the reason for both the GLMRIS and the follow-up study focused on Brandon Road.⁷ Asian carp have migrated to, and have been observed through the upper reaches of the Illinois Waterway, to the vicinity of the Brandon Road Lock and Dam.⁸

³ Section 3061(d) of the Water Resources Development Act of 2007, Pub. L. No. 110-114; Section 1538 of the Moving Ahead for Progress in the 21st Century Act, Pub. L. No. 112-141.

⁴ Other than the “No Action” and “Nonstructural” alternatives considered as baselines in the Draft Report. See Draft Report Figure ES-6, p. ES-13.

⁵ See, e.g., Cudmore, et al., *Binational ecological risk assessment of bigheaded carps (Hypophthalmichthys spp.) for the Great Lakes Basin*. (2012) available at http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2011/2011_114-eng.html.

⁶ *Michigan v US Army Corps*, *supra* at 907.

⁷ See Draft Report, e.g., pp. ES-5, 153 and 169, Text box 5-7 http://glmr.is.anl.gov/documents/docs/brandon-rd/GLMRIS-BR_Draft_Report.pdf and Appendix A, pp A-49-50 http://glmr.is.anl.gov/documents/docs/brandon-rd/GLMRIS-BR_Appendix_A-Draft_Fish_and_Wildlife_Coordination_Act_Report.pdf

⁸ See, e.g., the figure published in 2015 by the US Fish and Wildlife Service: <http://www.asiancarp.us/documents/map103015.pdf>.

The Corps is continuing to rely primarily upon the “electric dispersal barriers” located between Brandon Road and Lake Michigan to deter the passage of Asian carp. Unfortunately, there are several lines of evidence indicating that these so-called barriers are not reliable and fully effective. For example, a 2016 study by federal experts showed that the “barriers” were not effective in preventing the movement of small fish as barges were towed through them.⁹ In June, 2017, an adult bighead carp was caught in the Chicago Waterway, well past the “barriers” and only 9 miles from Lake Michigan.¹⁰ Subsequent analysis of that 4 year old fish showed that it had only been present in the Chicago Waterway for a few weeks or months, and had spent most of its life on the other side of the “barriers.”¹¹ In sum, while there is no evidence that Asian carp have yet become established in Lake Michigan, there is a continuing threat that in the absence of more effective action, they will move through the Brandon Road Lock and the Chicago Waterway in sufficient numbers to ultimately invade the Great Lakes, and cause devastating ecological and economic damage.

II. There Is No Dispute that Closing the Brandon Road Lock is the Most Effective Alternative Considered for Preventing the Movement of Asian Carp from the Illinois Waterway Into the Great Lakes.

The Draft Report evaluated the relative effectiveness of each of the alternatives considered in preventing the establishment of Asian carp in the Great Lakes by eliciting opinions from a panel of subject matter experts on several factors that were then used to model the probability that Asian carp would become established in the Great Lakes under each of the alternatives.¹² Using this approach, “[t]he Lock Closure Alternative was ranked the most effective in preventing Bighead and Silver Carp establishment in the Great Lakes Basin.”¹³ Specifically, the estimated probability of establishment with Lock Closure ranged from 1 to 3%, while the estimate for the Tentatively Selected Plan was an order of magnitude higher, ranging from 10 to 17%.¹⁴ Importantly, even the very low estimated probability of establishment with Lock Closure was based solely on the possibility that Asian carp could become established *before* the Brandon Road Lock is closed:

⁹ See <http://www.asiancarp.us/documents/BargeTrafficStudy-InPress.pdf>.

¹⁰ See <http://www.asiancarp.us/news/silvercarpcapture.htm>.

¹¹ See <http://www.asiancarp.us/documents/SIUSummaryofSilverCarpData.pdf>.

¹² See Draft Report, pp. 223-227, Figure 6-19, and Appendix C.

¹³ Draft Report, p. ES-18.

¹⁴ Draft Report, p. ES-13.

The experts believed there is some positive probability Asian carp could become established before the lock could be closed. *After closure*, if there has been no establishment, *the probability of establishment through the CAWS drops to zero*. (Emphasis added.)¹⁵

Indeed, that conclusion is supported by the fact, directly acknowledged by the Corps, that the location and structure of the Brandon Road Lock and Dam mean that if the lock is closed, it would be physically impossible for Asian carp to move upstream into the Chicago Waterway and the Great Lakes:

The physical configuration of Brandon Road Dam prevents the upstream transfer of Mississippi River Basin ANS. There is a 24-foot (7.3-meter) difference in water elevation from the downstream side of the dam to the upstream side of the dam, for a flood that has a 2% chance of occurring in any given year (commonly known as a 500-year flood discharge); this effectively limits upstream transfer. Therefore, *operation of the Brandon Road lock currently provides the only known continuous aquatic pathway that allows Mississippi River Basin ANS to transfer into the Great Lakes Basin at this location*. (Emphasis added.)¹⁶

Simply put, closing the Brandon Road Lock would reliably choke off the upstream movement of Asian carp from the Illinois Waterway. And in doing so, it would best achieve, among the alternatives considered, the goal established by Congress for the GLMRIS.

III. The Corps' Rejection of the Lock Closure Alternative in Favor of Its Tentatively Selected Plan is Fundamentally Flawed, Both Legally and Factually.

While acknowledging that Lock Closure was the most effective alternative, the Draft Report rejects it in favor of the Tentatively Selected Plan on the grounds that it would prevent navigation through the lock and result in a “cost” of losing an estimated \$318.7 million in “transportation cost savings” attributed to the operation of the lock:

Although the Lock Closure Alternative was most effective in preventing Bighead and Silver Carp establishment in the GLB, it would have the greatest impact on navigation.

¹⁵ Draft Report, p. 279.

¹⁶ Draft Report, p. ES-1.

The TSP was chosen over the Lock Closure Alternative because closing Brandon Road Lock would result in a discontinuation of the \$318.7 million per year in transportation cost savings.¹⁷

As outlined below, the Corps' underlying decision-making (a) departs from the relevant statutory authority by effectively basing its decision on minimizing impacts to navigation rather than preventing the spread of Asian carp; (b) relies on a deeply flawed economic analysis of "costs" of the alternatives; and (c) fails to meaningfully balance the competing ecological and economic costs of Asian carp establishment in the Great Lakes if an effective alternative is not chosen.

A. The Laws Governing the Study Require the Corps to Focus on Preventing the Spread of Asian Carp, Not Minimizing Impacts on Navigation.

The most fundamental flaw in the Corps' analysis of the alternatives is its characterization of the purpose of the Study as "to evaluate structural and nonstructural options and technologies near the Brandon Road Lock and Dam site to prevent the upstream transfer of ANS from the Mississippi River Basin into the Great Lakes Basin, *while minimizing impacts on existing waterway uses and users.*" (Emphasis added.)¹⁸ By framing the issue this way, the Corps unjustifiably departed from the controlling statutory authority for the Study.

As noted above, the present Brandon Road Study is an extension of the "GLMRIS" as first authorized by Congress in 2007 and further authorized and focused in 2012.¹⁹ In each instance, Congress directed the Corps to focus on options "to prevent the spread of aquatic nuisance species between the Great Lakes and Mississippi River Basins"²⁰ through the Chicago Area Waterway. And in 2012, the Congress further directed the Corps to specifically consider "hydrological separation," which was defined, in part, as "a physical separation that ... would disconnect the Mississippi River watershed from the Lake Michigan watershed."²¹ But in neither statute did the Congress authorize the Corps to base its evaluation of options on minimizing impacts to existing waterway uses such as commercial navigation. Indeed, by specifically directing the Corps to consider hydrological separation – which would inherently interfere to some extent with existing

¹⁷ Draft Report, p. 381. See also p. ES-18.

¹⁸ Draft Report, p. ES-1.

¹⁹ See n. 3, and Draft Report, pp. 2-3.

²⁰ Section 3061(d) of the Water Resources Development Act of 2007, Pub. L. No. 110-114.

²¹ Section 1538 of the Moving Ahead for Progress in the 21st Century Act, Pub. L. No. 112-141.

navigational uses – the Congress cannot reasonably be understood to have constrained the analysis of options to those that minimize impacts on navigation.

While the Corps is clearly free to consider the relevant consequences and effects of the alternatives, including among other factors, impacts on existing waterway uses, it is improper and unlawful to put navigation on an equal footing with the stated statutory objective to *prevent*²² the spread of harmful aquatic species such as Asian carp. Moreover, by insisting at the outset that the selected alternative must “minimize” impacts on existing navigational uses, the Corps effectively ruled out, in advance, adoption of the Lock Closure Alternative, which inherently has more impact on navigation than any of the other alternatives considered. In doing so, the Corps effectively pre-determined the outcome of what was intended by Congress to be an open evaluation of options. Such pre-determination of agency action is a textbook example arbitrary and capricious decision-making prohibited by the Administrative Procedures Act.²³

B. The Corps’ Analysis of the “Costs” of Lock Closure is Deeply Flawed and Grossly Overstates the Actual Costs of that Alternative.

The Draft Report analyzes the “costs” of each alternative by (a) estimating the direct costs of the project, (e.g. design, construction, operation, maintenance, monitoring, and environmental mitigation measures over a 70-year planning period); (b) estimating “costs of impacts to navigation” using a concept called “National Economic Development(NED)” and then adding them to derive; (c) a total

²² The Corps repeatedly states in the Draft Report that it interprets “prevent” to mean “the reduction of risk to the maximum extent possible because it may be technologically feasible to achieve an absolute solution,” citing *Michigan v U.S. Army Corps of Engineers*, 911 F. Supp. 2d 739, 766 (N.D. Ill. 2012), *aff’d*, 758 F.3d 892 (7th Cir. 2014) for the proposition that such an interpretation is “entirely reasonable.” See, e.g. Draft Report, pp. ES-1, 45. Nonetheless, it departs from the plain language of the relevant statutes. In any event, it has no relevance to the Corps’ tentative decision to reject the Lock Closure Alternative. As noted above, the Corps’ own analysis clearly shows that closure of the Brandon Road lock *can* physically preclude the passage of Asian carp through the Waterway into the Great Lakes. And it is certainly technologically feasible to close the lock.

²³ 5 U.S.C. 706(2)(A). See, e.g. *Forest Guardians v U.S. Fish and Wildlife Service* 611 F.3d. 692,713 (10th Cir. 2010) (noting that “if an agency predetermines the...analysis by committing itself to an outcome, the agency...has acted arbitrarily and capriciously.”)

“NED Costs” per year, which ostensibly represents the total annual “costs” of each alternative.²⁴

Notably, the estimated direct costs of the Lock Closure Alternative, which would primarily consist of replacing the existing lock gates with a permanent concrete wall, are estimated to be \$5.9 million total (\$200 thousand annual average). They are dwarfed by the direct costs of the Tentatively Selected Plan,²⁵ which are estimated to be \$275.3 million total (\$10.5 million annual average).

The Corps’ conclusion that Lock Closure has the higher total “NED Costs” rests entirely on its estimate that Lock Closure would entail an additional annual \$318.7 million in “Costs of Impact to Navigation” or “lost transportation cost savings.” As detailed in the accompanying report, *Review of U. S. Army Corps of Engineers Great Lakes and Mississippi River Interbasin Study – Brandon Road (GLMRIS-BR) Appendix D and Portions of Main Report* (November 2017), prepared for the State of Michigan by two experts in transportation and logistics, Dr. John C. Taylor and Mr. James L. Roach, the Corps’ cost analysis suffers from numerous conceptual, methodological, and empirical flaws that invalidate its conclusion. Some of the main deficiencies in the Corps’ cost analysis are briefly summarized below.

First, the Corps’ use of its National Economic Development (NED) methodology does not measure actual “costs” of the alternatives involved here. It is an artificial construct that is normally used by the Corps to evaluate whether the construction of some new water transportation project can be economically justified, based upon anticipated savings in transportation costs by users of the facility or waterway. These projected transportation cost savings are estimated to accrue because, at least in certain circumstances, it costs less to move cargoes by barge in comparison to other transportation modes such as rail or truck. But it is not designed to, and does not in fact, measure the actual costs involved here.

Second, the Corps’ methodology includes unrealistic assumptions. For example, it appears to assume that if barge traffic is interrupted at any point along the waterway, cargoes currently moving through that point will inevitably shift to a more expensive overland mode of transportation for their entire journey. This would not happen in the real world since barge commodities are typically available

²⁴ The costs of “Nonstructural Alternative” measures (e.g. monitoring and removing Asian Carp from the vicinity of the Brandon Road Lock and Dam) are also added to each of the alternatives other than “No Action.” The results of this analysis are summarized in Figure ES-6., p. ES-13.

²⁵ The Tentatively Selected Plan is far more complex and includes construction, operation, and maintenance of a suite of technologies including an engineered approach channel, water jets, a flushing lock, complex noise, and an electric barrier.

from many sources and numerous transportation options are available. There will be some disruption, but shippers will respond to lock closure by changes in commodity sources, transport modes, and shipping patterns that will continue to meet their needs.

Third, the Corps' analysis depends upon unrealistic and in some cases unsupported projections of future traffic of various commodities through the lock, leading to unreasonable results. Using more realistic assumptions within the Corp's methodology, Taylor and Roach conclude that the Corps' \$318 million estimate is greatly overstated, and a more realistic estimate within that framework would be in the range of \$115-124 million.

In sum, the Corps' \$318.7 million estimate of "costs of impacts to navigation" is a meaningless and misleading figure in the context of comparing the actual costs of the alternatives. While closure of the Brandon Road Lock would disrupt some current navigation, and cause some shippers and businesses to incur increased costs, the Corps' estimate of the magnitude to those costs is not credible.

C. The Corps' Decision-Making Analysis Does Not Meaningfully Balance its Estimated Costs of Lock Closure Against the Ecological and Economic Costs of Not Implementing an Effective Means of Preventing the Establishment of Asian Carp in the Great Lakes.

The Draft Report does include, in Chapter 5, a discussion of the consequences of Asian carp establishment in the Great Lakes.²⁶ But with the limited exception of an attempt to estimate *some* potential economic consequence of the establishment of Asian carp in Lake Erie,²⁷ the Report contains no estimate, expressed in monetary terms, of the ecological and economic "costs" that will result if Asian carp become established in the Great Lakes. As noted in the Draft Report, there are significant methodological challenges to an effort to assign precise dollar values to such costs. Moreover, many of the consequences may not be quantifiable. And, as noted, once Asian carp becomes established, such "costs" of Asian carp establishment are the same for all of the alternatives.²⁸

But the way in which the Corps has structured, presented, and carried out its analysis presents a skewed and misleading picture. On the one hand, the Draft Report, and its decision matrix relies on specific, pseudo-rigorous estimates of the total "NED" costs of each alternative, including the wildly inflated \$318 million estimate of "costs" that "the nation" will purportedly incur if the Brandon Road

²⁶ Report, pp. 156-198.

²⁷ Report, pp. 182-195.

²⁸ Report, p. 182.

Lock is closed. The implication, and apparently the Corps' tentative conclusion, is that lock closure – the most effective alternative – will somehow cost society (or at least the lock users) too much. But the Corps' ultimate economic analysis is entirely one-sided. There is no meaningful attempt to place those “costs” in the context of the costs that society will incur if effective action is not taken and Asian carp become established in the Great Lakes.

Even if such costs of establishment cannot be precisely quantified, it is evident that they will be at least an order of magnitude greater than any plausible estimate of increased transportation costs. For example, one of the many public values provided by the Great Lakes that are at risk if Asian carp become established – the recreational sport fishery – has, standing alone, an annual economic value in the billions of dollars.²⁹ Moreover, the Corps' simplistic and unbalanced economic analysis fails to consider that the harm from establishment of Asian carp in the Great Lakes will be permanent and irreversible.

In sum, the Report obscures the fact it is the failure to prevent the establishment of Asian carp in the Great Lakes, not the closure of the Brandon Road Lock, that will cost the public too much.

IV. Conclusion

For all of the reasons outlined above, we urge the Corps to reconsider its tentative decision and instead select and implement the Lock Closure Alternative as soon as possible. In that regard, it is important to note that the Corps need not wait until it can construct the proposed permanent concrete wall to replace the existing lock gates. Once the decision is made, and appropriate notice is given to Waterway users, the Corps should close the Lock using the gates, and keep them closed pending receipt of congressional approval of permanent closure, if required.

Thank you for considering our comments.



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²⁹ See, e.g., Report, p. 138.