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Subject: Comments on the Proposed Definition of “waters of the United States”—Recodification & on the Underlying Economic Analysis

The Institute for Policy Integrity (“Policy Integrity”) at New York University School of Law¹ respectfully submits the following comments to the Environmental Protection Agency and the Army Corps of Engineers (“the agencies”) regarding the proposed re-codification of the definition of the “waters of the United States” that existed prior to the 2015 Clean Water Rule.

The agencies’ economic analysis in support of their proposed reversion to an older definition of “waters” is biased, incomplete, and inaccurate. The agencies have failed to monetize significant environmental costs from the proposed rule by wrongly excluding studies based solely on their age. In fact, these older studies remain relevant, and the evidence of significant environmental value in protecting wetlands is further bolstered by more recent studies that the agencies overlook. Meanwhile, the agencies have failed to consider changing circumstances that may reduce compliance costs.

The agencies must rectify these errors in their final economic analysis. If that final, more accurate economic analysis shows that the environmental costs of the proposed revision are in excess of financial benefits, the agencies must either articulate a non-arbitrary justification for proceeding with a net costly rule revision, select instead a net beneficial alternative, or else abandon the revision of the 2015 Clean Water Rule.

Policy Integrity offers the following comments:

- First, evidence used in economic analyses should be selected based on quality and relevance and should not be mechanically excluded based solely on the study’s age. The criteria for inclusion should be applied consistently across evidence of both costs and benefits. Currently, the agencies wrongly exclude relevant studies on the environmental benefits of wetlands based purely on their age, while including old studies of compliance costs, which may actually be outdated because of changing circumstances.
- Second, when estimating costs, the agencies have failed to consider changing conditions like mitigation banks, making these estimates unreliable.
- Third, relevant evidence for quantifiable, forgone benefits from wetland protection was ignored by the agencies, including recent estimates of positive economic value for isolated

¹ This document does not purport to present New York University School of Law’s views, if any.

wetlands. Moreover, not only did the agencies fail to monetize the forgone benefits, but they also failed to quantify the number of acres of wetland that would lose protection.

- Fourth, evidence shows that the 2015 Clean Water Rule would have substantial additional value relative to state-level regulations.
- Finally, the agencies should maintain the 2015 Clean Water Rule as the baseline for analysis.

I. Economic analysis should use studies selected by consistent criteria for quality and relevance, not by arbitrary age tests.

Agencies should use appropriate evidence when estimating costs and benefits of a proposed rule, and selection of evidence should be made based on consistent criteria for quality and relevance. The EPA's "Guidelines for Preparing Economic Analysis" states that estimates are "only as good as the study cases from which [they] are derived, and it is therefore crucial that studies be carefully selected."² Careful selection means that the information is "relevant to its intended use" and that the analysis used to create the information is "reasonable for, and consistent with, the intended application."³

Determining whether a given study meets these criteria requires expert judgement, subject to the standards for rational rulemaking. The Office of Management and Budget's *Circular A-4* requires that evidence should be weighed on its merits, stating that "there is no mechanical formula that can be used to determine whether a particular study is of sufficient quality to justify use in regulatory analysis."⁴ That said, the *Circular* provides some key guideposts: analysis must be "based on the best reasonably obtainable scientific, technical, and economic information available"; agencies should "rely on peer-reviewed literature, where available"; studies used should be "transparent" and "reproducible"; and "analytical consistency in estimating benefits and costs" is paramount.⁵ The *Circular* also requires regulatory analyses to be consistent with agency guidelines under the Information Quality Act, which generally requires information to be accurate, complete, unbiased, transparent, and reproducible.⁶

The agencies have not followed these requirements in the economic analysis of the proposed definition of "waters of the United States." In particular, the analysis is not based on a complete evaluation of all the best available information, it applies different criteria for the selection of cost studies than for benefit studies in a manner that biases the results, and it arbitrarily excludes relevant studies based solely on their age.

In the 2015 Clean Water Rule's economic analysis, the agencies quantified benefits based on 10 valuation studies of wetlands likely to be incrementally protected by the rule.⁷ In the current analysis, the agencies have excluded these studies, claiming that since they were published between 1986 and 2000, the "age of these studies introduces uncertainty."⁸ The agencies do not provide

² U.S. Environmental Protection Agency, *GUIDELINES FOR PREPARING ECONOMIC ANALYSES*, at 7-45 (2010) (hereinafter "Guidelines").

³ *Id.* at 8-13.

⁴ OMB, *Circular A-4*, at 23 (2003).

⁵ *Id.* at *passim*.

⁶ *E.g.*, OMB, *Guidelines for Ensuring Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies* (2001).

⁷ U.S. Environmental Protection Agency and U.S. Department of the Army, *ECONOMIC ANALYSIS OF THE EPA-ARMY CLEAN WATER RULE* at 45 (2015) [hereinafter "2015 Analysis"].

⁸ U.S. Environmental Protection Agency & U.S. Department of the Army, *Economic Analysis for the Proposed Definition of "Waters of the United States"—Recodification of Pre-Existing Rules 8* (2017) [hereinafter "2017 Analysis"].

evidence to support this claim, and using age alone to mechanically determine whether studies should be included in an analysis directly contravenes *Circular A-4*.

By comparison, EPA's calculation of the value of statistical life illustrates an appropriate consideration of study age. Value of statistical life estimates are routinely used in EPA economic analyses of mortality benefits, and EPA derives its estimate from studies published between 1974 and 1991.⁹ EPA's Science Advisory Board evaluated these studies in 2011 and recommended that the studies should continue to be used and incorporated with newer evidence, unless a future evaluation specifically determined that the older studies no longer accurately represented current conditions.¹⁰ Here, in contrast, the agencies did not evaluate whether the benefit studies represent current preferences for wetland protection.

Moreover, the agencies have acted arbitrarily and inconsistently when choosing which studies to include. If one accepts that age alone is a sufficient reason to exclude information—and again, it is not, barring some showing of inaccuracy or irrelevance—then the agencies would also have had to exclude similarly aged cost estimates. Yet instead, the agencies relied upon these similarly aged cost estimates. Three categories of costs presented in the agencies' analysis rely on studies conducted prior to 2003, and the costs in these categories account for at least 30% of the total forgone costs of the proposed recodification. Clean Water Act 402 Concentrated Feeding Operation implementation costs are estimated based on a 2003 analysis.¹¹ Clean Water Act 402 stormwater implementation costs are based on an economic analysis conducted in 1999.¹² And, Clean Water Act 404 permit application costs come from a 2002 study using underlying data from 1999, as well as a Corps analysis conducted in 2000.¹³

Regulatory costs change frequently due to improvements in technology, greater efficiency, and variation in prices. Changes due to technology and efficiency should lower costs, so these changes make older cost studies increasingly unreliable over time. Therefore, age-based evidence selection criteria should be particularly stringent for cost estimates. We reiterate, however, that *Circular A-4* requires that all studies—cost estimates and benefit estimates—be judged on their relevance and quality rather than a mechanical, age-based rule.

II. The agencies failed to consider changing conditions, including the increasing prevalence of mitigation banks, making its old cost estimates less reliable.

In addition to technology improvements and efficiency gains, the agencies' economic analysis also fails to consider expected, future cost reductions, particularly from stream and wetland mitigation banks. The 2015 Clean Water Rule economic analysis acknowledged that stream mitigation bank markets have been growing over time, though unfortunately the expected effect of this growth was not incorporated into the cost-benefit analysis.¹⁴ Continued growth in these markets, which would

⁹ Guidelines, *supra* note 2, at B-2.

¹⁰ U.S. EPA Science Advisory Board, *Review of Valuing Mortality Risk Reductions for Environmental Policy: A White Paper* 15 (2011) ("Older studies will *eventually* fail to adequately represent the current population so the age of the study should be *evaluated* to determine whether it is reasonable to consider it representative of current preferences.") (emphasis added); *id.* at 3 (recommending updating to reflect newer literature, but never implying the existing value of statistical life should not be used in the meantime).

¹¹ National Pollutant Discharge Elimination System Permit Regulation and Effluent Limitation Guidelines and Standards for Concentrated Animal Feeding Operations (CAFOs), Final Rule. *FEDERAL REGISTER* 68 (2003): 7176-7274; and 2015 Analysis, *supra* note 7, at 28.

¹² U.S. Environmental Protection Agency, *ECONOMIC ANALYSIS OF FINAL PHASE II STORMWATER RULE*, (1999); and 2015 Analysis, *supra* note 7, at 25.

¹³ See David Sunding & David Zilberman, *The Economics of Environmental Regulation by Licensing: An Assessment of Recent Changes to the Wetland Permitting Process*, *NAT. RESOUR. J.* 59–90 (2002); see also 2015 Analysis, *supra* note 7, at 37.

¹⁴ 2015 Analysis, *supra* note 7, at 39.

likely be accelerated by a more expansive definition of the “waters of the United States,” would help further reduce costs.

Growth in wetland mitigation banks has already helped lower costs in that area, and continued expansion of those markets is expected to lower costs further. As of 2015, more than 1,500 wetland banks or in-lieu instruments had been approved.¹⁵ As of August 2017, the Army Corp’s Regulatory In-Lieu Fee and Bank Information Tracking System (RIBITS) lists 289 pending mitigation banks,¹⁶ suggesting continued strong growth in the use of mitigation banks.

The state of Washington provides a clear example of the power of mitigation banks to make wetland protection more cost effective. When the state considered adopting wetland mitigation banks, it quantified millions of dollars per year in net benefits, including economies of scale in the restoration of wetlands and reduced costs of permitting and oversight.¹⁷ Similarly, participants at a National Mitigation & Conservation Banking Conference reported that “Besides providing economies of scale, mitigation banking can save buyers considerable amounts of time...While it can take two years to get a permit for on-site mitigation, that time can be cut to just six months by using a mitigation bank. Saving 18 months of time translates into saving 18 months of interest.”¹⁸ As mitigation banks continue to grow in number, competition will tend to drive down prices even further.¹⁹

The agencies must consider how mitigation banks, along with other technological improvements and efficiency gains, will reduce cost estimates.

III. Research shows that wetlands have a quantifiable, positive economic value and that this value has increased over time.

The agencies’ new economic analysis in support of this proposal does not quantify the forgone benefits of wetland mitigation. The agencies make two claims for why older studies cannot be used to estimate benefits: first, “because public attitudes toward nature protection could have changed,” and second, because older studies “may not have benefited from [statistical and methodological] advances.”²⁰ The agencies do not assess or provide support for either of these claims, and evidence shows that these claims are false.

Evidence does not support the claim that statistical and methodological advances render studies published between 1986 and 2000 invalid. Contingent valuation methods have been well studied and established since at least the late 1980s. The primary reference textbook on the topic was published in 1989, the National Oceanic and Atmospheric Administration’s Blue Ribbon Panel on contingent valuation published its findings and recommendations in 1993, and more than 100 contingent valuation studies were published per year by the mid-1980s.²¹

¹⁵ Corps, Institute for Water Resources, *The Mitigation Rule Retrospective* (2015).

¹⁶ https://ribits.usace.army.mil/ribits_apex/f?p=107:158:5746720326223::NO::

¹⁷ Washington Department of Ecology, *Preliminary Cost Benefit and Least Burden Analyses: Chapter 173-700 WAC—Compensatory Wetland Mitigation Banks* (2009), <https://fortress.wa.gov/ecy/publications/documents/0906002.pdf>.

¹⁸ Robin Meadows, *Wetland Mitigation Banking*, Ecosystem Marketplace (2005) (paraphrasing Ken Bailey, Tetra Tech EC Inc., a seller and buyer of wetland credits), <http://www.ecosystemmarketplace.com/articles/wetland-mitigation-banking/>

¹⁹ *Id.* (paraphrasing David John, an early proponent of mitigation banking and CEO of Miller Legg & Assoc.).

²⁰ 2017 Analysis *supra* note 2, at 8.

²¹ See ROBERT CAMERON MITCHELL & RICHARD T CARSON, USING SURVEYS TO VALUE PUBLIC GOODS: THE CONTINGENT VALUATION METHOD (1989); Kenneth Arrow et al., *Report of the NOAA panel on contingent valuation*, 58 FED. REGIST. 4601–4614 (1993); and Richard T. Carson & W. Michael Hanemann, *Contingent Valuation*, in HANDBOOK OF ENVIRONMENTAL ECONOMICS VOLUME 2 821–936 (K.-G. Maler & J.R. Vincent eds., 2005) at 842.

Evidence also does not support the claim that public attitudes toward the environment have reduced wetland value. Wetland benefit studies show that willingness to pay for wetland protection has, if anything, gone up over the last three decades. For instance, recent studies show that willingness to pay for coastal wetlands has remained stable or increased since the 1990s. Willingness to pay for wetland restoration in Louisiana was estimated to be \$0.004 per acre per household in 1986 (using inflation adjusted 2011 dollars).²² A 2014 study estimated that willingness to pay in 2011 was unchanged at \$0.004 per acre per household.²³ Meta-analysis of willingness to pay for coastal wetlands across multiple states shows that public value has gone up since the early 1990s.²⁴

The value of relevant wetlands relative to other goods has likely gone up over time. While overall wetland area in the United States has remained stable over the last two decades, the area of wetland types most likely to be vulnerable under the proposed rule's reduced protections has been shrinking. Nationwide, freshwater forested wetlands experienced a significant 1.2% decline over the period of the U.S. Department of Interior's most recent wetland assessment.²⁵ Prairie wetlands experienced a similar loss of area between 1997 and 2009, the date of the most recent assessment.²⁶ Greater wetland scarcity should cause an increase in the value of remaining wetlands.²⁷ The increase in public value of wetlands is also consistent with a growing scientific understanding of the ecological and economic importance of wetlands, including those that are isolated from other bodies of water.²⁸

IV. Recent and relevant studies of wetland benefits were not included in the agencies' analysis, and these studies show a high willingness to pay for wetlands likely to be left unprotected by the proposed rule.

Recent studies show that willingness to pay for relevant wetlands is positive, quantifiable, and rising over time. The agencies' new economic analysis states that "although the agencies attempted to find more recent studies" of willingness to pay for wetland preservation, "[m]ore recent wetland studies were not available."²⁹ In fact, a large body of recent evidence shows that wetlands have a positive, quantifiable economic value.³⁰

A 2014 study provides high-quality estimates of willingness to pay for relevant wetlands. The authors estimate the value of isolated, forested wetlands in Rhode Island using a real-money choice experiment.³¹ The real-money choice experiment is a hybrid valuation approach that possesses many of the benefits both of stated preference approaches like contingent valuation and of revealed preference approaches. When studying wetlands, stated preference valuations should capture the

²² John C. Bergstrom et al., *Economic value of wetlands-based recreation*, 2 *ECOL. ECON.* 129–147 (1990).

²³ Daniel R. Petrolia, Matthew G. Interis & Joonghyun Hwang, *America's Wetland? A National Survey of Willingness to Pay for Restoration of Louisiana's Coastal Wetlands*, 29 *MAR. RESOUR. ECON.* 17–37 (2014).

²⁴ *Id.* at 32.

²⁵ See TE Dahl, *STATUS AND TRENDS OF WETLANDS IN THE COASTAL WATERSHEDS OF THE CONTERMINOUS UNITED STATES 2004 TO 2009* (2013).

²⁶ See TE Dahl, *STATUS AND TRENDS OF PRAIRIE WETLANDS IN THE UNITED STATES 1997 TO 2009* (2014).

²⁷ See, e.g. Krutilla, J.V., and A.C. Fisher, *THE ECONOMICS OF NATURAL ENVIRONMENTS*. Resources for the Future, Washington, DC (1975).

²⁸ See, e.g. Ralph W. Tiner, *Geographically isolated wetlands of the United States*, 23 *WETLANDS* 494–516 (2003).

²⁹ 2017 Analysis, *supra* note 8, at 8.

³⁰ 2015 Analysis, *supra* note 7, at 44-45 considered relevant wetlands to be "similar to those expected to be incrementally protected under the final [Clean Water] rule." Based on this criterion, the analysis included studies of willingness to pay for "riverine or floodplain, forested, emergent, and depression or isolated wetlands".

³¹ Laurie W. Newell & Stephen K. Swallow, *Real-payment choice experiments: Valuing forested wetlands and spatial attributes within a landscape context*, 92 *ECOL. ECON.* 37–47 (2013).

full range of benefits better than revealed preference or hedonic methods. In general, any value from an environmental amenity that does not vary over space, like existence value, will not be captured by property price-based hedonic valuations.³² Choice experiment (and stated preference methods), by experimentally soliciting willingness to pay, more readily capture these types of values.³³

By using real-money payments for actual wetlands, the method used by the 2014 study avoids a potential problem with stated preference methods, namely, inflated willingness to pay due to hypothetical response bias. One weakness of the real-money method is that individuals might free ride in their contributions, lowering estimated willingness to pay. Therefore, the willingness to pay estimates using real-money choice experiments provide a lower bound on the true willingness to pay for public goods.

The 2014 study finds that the annual value for isolated, forested wetlands is \$0.12 to \$0.15 per household, per acre at a 3% and 7% discount rate, respectively.³⁴ These values (which, again, should be considered as a lower bound) are substantially higher than the average annual value for forested wetlands of \$0.04 to \$0.06 per household per acre estimated in the 2015 Clean Water Rule analysis.³⁵

Multiple recent publications use hedonic methods (a type of revealed preference approach) to estimate wetland value. These studies show that nearby urban wetlands have a positive effect on house prices. In North Carolina, homes within a mile of a wetland are worth \$3,100 than homes that are not close to a wetland.³⁶ In Oregon, a property 1000 feet closer to a wetland is worth roughly \$600 more than a comparable property that is 1000 feet further from a wetland.³⁷ In Arizona decreasing the distance from a house to a wetland by 1% is associated with a price increase of 2%, even if the wetland is intermittently dry and isolated from other water amenities.³⁸ *Circular A-4* requires that “[i]f both revealed-preference and stated-preference studies that are directly applicable to regulatory analysis are available, you should consider both kinds of evidence and compare the findings.”³⁹

Estimates from hedonic studies should be used with caution and attention to the estimation context. For wetlands, hedonic studies are likely to understate the true value for two reasons. First, as noted above, hedonic methods do not capture existence value and other environmental amenity values that do not vary geographically. Second, revealed preference studies can conflate the costs of wetland mitigation with the benefits from wetland preservation. Analysis of the house and land price effects of wetlands on a given property will capture not only the benefits of the wetland to the property owner but also the opportunity costs and direct costs associated with wetlands. For this reason, studies of wetland value on a given land parcel will not provide accurate estimates of the

³² See Timothy J. Bartik, *Measuring the Benefits of Amenity Improvements in Hedonic Price Models*, 64 *LAND ECON.* 172–183 (1988).

³³ See MITCHELL & CARSON (1989), *supra* note 21, at 62–67.

³⁴ The authors conclude that the “full Hicksian willingness to pay equals or exceeds \$0.75 per acre per household for a 10 year wetland conservation contract.” Prices are in 2014 dollars to match the values from the agencies’ 2015 economic analysis. Newell and Swallow (2014), *supra* note 31, at 46.

³⁵ 2015 Analysis, *supra* note 7, at 49.

³⁶ Nikhil Kaza & Todd K. BenDor, *The land value impacts of wetland restoration*, 127 *J. ENVIRON. MANAGE.* 289–299 (2013).

³⁷ Noelwah R. Netusil, *Urban environmental amenities and property values: Does ownership matter?*, 31 *LAND USE POLICY* 371–377 (2013).

³⁸ R.H. Bark et al., *Habitat preservation and restoration: Do homebuyers have preferences for quality habitat?*, 68 *ECOL. ECON.* 1465–1475 (2009).

³⁹ CIRCULAR NO. A-4, *supra* note 4, at 24.

public benefit of wetlands.⁴⁰ Meta-analysis shows that hedonic methods routinely understate willingness to pay for wetlands.⁴¹

Also, the revealed preference estimates given above must be transformed before they can be compared with the benefit estimates used in the 2015 Clean Water Rule analysis. These additional studies focus on estimating the effect of wetland proximity on house or property price. The agencies' economic analysis, however, reports estimates of the value per household of an acre of wetland. To translate the hedonic estimates to a comparable value, agencies would need to gather additional information on the size of the wetlands considered in the hedonic studies in order to calculate the effect of wetland size, as well as additional factors like population distribution and location-independent effects. Nevertheless, these additional studies further support the proposition that the forgone benefits of wetland mitigation are not zero, but rather are significant and quantifiable.

In addition to studies that analyze the value of wetlands likely to be incrementally covered by the 2015 Clean Water Rule, a broader set of wetland valuation studies should also be used. More general wetland valuation studies can provide useful evidence on trends in willingness to pay for wetlands, as discussed above. Willingness to pay for other wetlands also provides a reasonable estimate of the value of wetlands likely to be affected by this proposed rule. The meta-analysis of *Brander, Florax, and Vermaat* (2006) shows that the median willingness to pay for woodland, fresh water marsh, salt marsh, and unvegetated sediment wetlands are all similar, with values ranging from roughly \$50/acre/year for freshwater marshes to \$160/acre/year for unvegetated sediment. Accounting for wetland and study characteristics, the authors find that forested wetlands have the highest value of all wetlands types.⁴² General wetland values are also directly relevant to the value of incremental wetlands. Wetlands function as a system, so loss of freshwater wetlands under the proposed rule will have a negative effect on wetlands that are already protected.⁴³ Therefore part of the value of protecting marginal wetlands stems from their role in supporting healthy ecosystems beyond the direct area of the wetlands themselves.

Additional wetland studies can also provide estimates of willingness to pay for individual amenities that are common across several types of wetlands. Using such estimates, agencies could produce enumerative estimates of the value of incremental wetlands.⁴⁴ A series of recent meta-analyses of wetland value provide a convenient starting point for incorporating this information.⁴⁵

Finally, by not quantifying the benefits of wetland mitigation, the agencies have not followed regulatory analysis requirements. *Circular A-4* states that if there is uncertainty about costs or benefits, agencies "should describe benefits or costs under plausible scenarios and characterize the evidence and assumptions underlying each alternative scenario."⁴⁶ Following this guidance, the

⁴⁰ JE Reynolds & A Regalado, *The effects of wetlands and other factors on rural land values*, LXX APPRAISAL J. 182–190 (2002).

⁴¹ Brander, Florax, and Vermaat, *supra* note 19, at 235

⁴² *Id.* at 235 and 239-240. The analysis reports total value per hectare of wetland rather than a per-capita or per-household value, resulting in apparently large values compared to the per household willingness to pay used in the agencies' economic analyses. The values are in 2014 dollars.

⁴³ See Tiner (2003), *supra* note 28.

⁴⁴ Jason Kinnell et al., *Perceptions and Values for Preventing Ecosystem Change: Pennsylvania Duck Hunters and the Prairie Pothole Region*, 78 LAND ECON. 228–244 (2002).

⁴⁵ Tracy Boyer & Stephen Polasky, *Valuing urban wetlands: A review of non-market valuation studies*, 24 WETLANDS 744–755 (2004); Luke M. Brander, Raymond J. G. M. Florax & Jan E. Vermaat, *The Empirics of Wetland Valuation: A Comprehensive Summary and a Meta-Analysis of the Literature*, 33 ENVIRON. RESOUR. ECON. 223–250 (2006); and Klaus Moeltner & Richard Woodward, *Meta-Functional Benefit Transfer for Wetland Valuation: Making the Most of Small Samples*, 42 ENVIRON. RESOUR. ECON. 89–108 (2009).

⁴⁶ *Circular A-4*, *supra* note 4, at 18.

2015 Clean Water Rule economic analysis addressed uncertainty by estimating costs and benefits under numerous scenarios.⁴⁷ The current economic analysis should perform similar analysis to address uncertainty. Failing to quantify a readily quantifiable and significant factor in the regulatory decision is not an appropriate treatment of uncertainty.

V. Beyond the failure to monetize forgone benefits, the agencies also irrationally fail to quantify forgone benefits.

Even if forgone benefits cannot be monetized (and, again, they can be monetized), *Circular A-4* clearly requires quantification of difficult-to-monetize effects:

If monetization is impossible, explain why and present all available quantitative information. For example, if you can quantify but cannot monetize increases in water quality and fish populations resulting from water quality regulation, you can describe benefits in terms of *stream miles of improved water quality* for boaters and increases in game fish populations for anglers.⁴⁸

In their table of forgone benefits, the agencies list the forgone benefits from wetlands and streams under § 404 as not just un-monetized, but “not quantified.”⁴⁹ The agencies’ economic analysis for the proposed repeal does not quantify the acres of wetlands or miles of streams that would lose protections. By comparison, the 2015 Clean Water Rule both quantified and monetized the benefits, clearly calculating acreage.⁵⁰

The agencies’ principle argument for not quantifying benefits—namely, the age of valuation studies—not only is wrong and inconsistent (as described above), but also only addresses the issue of monetization and has nothing to do with quantification. The agencies have failed to explain why they could not quantify the number of acres of wetlands and miles of streams that would lose protections, especially when such a quantification was readily available from the 2015 analysis.

VI. Studies of state-level policy show that the 2015 Clean Water Rule would provide substantial additional value, that the proposed rule would forgo substantial benefits, and that the cost-effectiveness of the rule is understated by the agencies’ analysis.

The agencies also claim that “states’ responses to this proposed rulemaking could have a significant impact on the avoided costs and forgone benefits”⁵¹ Two recent studies conducted by the Environmental Law Institute and funded by EPA directly refute this claim. The studies quantify the effect of state policies on federal wetland mitigation costs and benefits, showing that under the 2015 Clean Water Rule, federal permitting would provide additional protection for wetlands in at least 50% of states.

Twenty-four states do not have any wetland protections beyond those provided by the Clean Water Act 401 certifications, and Illinois only provides protection for non-Clean Water Act waters if development occurs as part of a state project.⁵² Importantly, the states that have no additional

⁴⁷ 2015 Analysis, *supra* note 7, at 6.

⁴⁸ *Circular A-4*, at 27.

⁴⁹ 2017 Analysis, *supra* note 8, at 10.

⁵⁰ 2015 Analysis, *supra* note 7, at 51.

⁵¹ 2017 Analysis, *supra* note 8, at 9.

⁵² ENVIRONMENTAL LAW INSTITUTE, AMERICA’S VULNERABLE WATERS: ASSESSING THE NATION’S PORTFOLIO OF VULNERABLE AQUATIC RESOURCES SINCE RAPANOS V. UNITED STATES (2011) at iii; *see also* ENVIRONMENTAL LAW INSTITUTE, STATE CONSTRAINTS: STATE-

protections beyond those provided by the Clean Water Act are also those states most likely to contain wetlands left unprotected by the proposed rule. For instance, the agencies estimate that North Dakota has the largest number of acres of wetland that would be incrementally protected under the 2015 Clean Water Rule.⁵³ North Dakota also offers no wetland protection beyond what is provided by the Clean Water Act.⁵⁴

Moreover, the case of North Dakota is not an isolated one. In general, the states that provide the fewest additional wetland protections are also the states that possess the largest areas of wetlands likely to be affected by the proposed rule. According to the agencies' analysis, the states with no additional protections possess two-thirds of the wetland acreage expected to be left unprotected by the proposed rule (1,529 acres out of 2,309 total acres),⁵⁵ so they suffer the majority of the forgone benefits.

At the same time, these states have substantially cheaper per-unit wetland mitigation costs. In the low-cost scenario examined by the agencies, this group of states had an average unit cost of protection less than half of that in states that do offer additional wetland protections (\$24,000 versus \$58,000). In the high-cost scenario, the cost-effectiveness gap was estimated to be even larger, with mitigation costs in the states without additional protections estimated to be only 27% of the costs in other states (\$47,000 versus \$176,000).⁵⁶ The relatively low mitigation costs and relatively high benefits in these states mean that predicted wetland preservation will be even more cost effective than the agencies' economic analysis indicates.

VII. The appropriate baseline for analysis is the 2015 Clean Water Rule.

The agencies announce that they are using the 2015 Clean Water Rule as a baseline for analysis only in order "to provide information to the public on the estimated differential effects." However, the agencies immediately gainsay the legitimacy of that baseline, arguing that because the 2015 Clean Water Rule "has already been stayed by the Sixth Circuit...this proposal would merely codify the legal *status quo*." The misleading implication is that the proposed rule has no real costs or benefits when, in fact, the environmental costs could be quite significant. To the extent the agency proposes to rely on a baseline that does not include the 2015 Clean Water Rule, that would be a mistake. The 2015 Clean Water Rule is appropriate as a baseline not just because it is essential to contextualize the proposal's costs and benefits for the public, but because that choice of baseline is consistent with best analytical practices.

The stay issued by the U.S. Court of Appeals for the Sixth Circuit is not permanent.⁵⁷ There is considerable uncertainty about whether the courts will uphold or remand the 2015 Clean Water Rule. Given that uncertainty, best practices dictate that the 2015 Clean Water Rule must be considered as a baseline. As *Circular A-4* explains:

When more than one baseline is reasonable and the choice of baseline will significantly affect estimated benefits and costs, you should consider measuring benefits and costs against alternative baselines. In doing so you can analyze the effects on benefits and costs of

IMPOSED LIMITATIONS ON THE AUTHORITY OF AGENCIES TO REGULATE WATERS BEYOND THE SCOPE OF THE FEDERAL CLEAN WATER ACT (2013).

⁵³ EPA, Analysis of Jurisdictional Determinations for Economic Analysis and Rule, EPA-HQ-OW-2011-0880-20877 (2015).

⁵⁴ ENVIRONMENTAL LAW INSTITUTE (2013), *supra* note 52, at 9.

⁵⁵ EPA, Analysis of Jurisdictional Determinations (2015), *supra* note 53.

⁵⁶ *Id.*

⁵⁷ *Ohio v. Army Corps of Eng'rs*, Nos. 15-3799/3822/3853/3887 (6th Cir. 2015) (granting the stay pending further order of the court).

making different assumptions about other agencies' regulations, or the degree of compliance with your own existing rules.⁵⁸

The uncertainty about the court rulings is akin to uncertainty about other agencies' regulations or compliance with an existing rule. Because the choice of baselines will "significantly affect estimated benefits and costs," the 2015 Clean Water Rule must be used as a baseline for analysis.

Even though the agencies correctly use the 2015 Clean Water Rule in the baseline, the analysis is still problematic for a separate reason: in this proposed repeal, the agencies have announced that the repeal of the 2015 Clean Water Rule is only the "first step in a comprehensive, two-step process intended to review and revise the definition of 'waters of the United States'."⁵⁹ The agencies make clear that they will replace the rule with a new rule and that they intend to consider replacing the definition of "waters" with one that adheres to Justice Scalia's opinion in *Rapanos*,⁶⁰ which would provide a more stringent standard for determining Clean Water Act jurisdiction over wetlands than either the *status quo* or the 2015 Clean Water Rule.⁶¹ In other words, in a second step as contemplated by the agencies, even more wetlands could lose protection, above and beyond the wetlands that would lose protection under the proposed first-step repeal, resulting in even greater cumulative lost benefits.

The rationality and transparency problems created by the failure to monetize forgone benefits of the proposed repeal are compounded by this two-step process. The forgone benefits at each individual step will of course only be part of the total forgone benefits of the two-step process. Splitting the forgone benefits into two smaller portions makes it easier for decisionmakers and the public to discount the significance of those benefits. This is all the more true for unmonetized effects. The tendency to ignore non-monetized effects is the result of common but irrational mental heuristics like probability neglect. For example, the phenomenon of probability neglect causes people to reduce small probabilities entirely down to zero, resulting in these probabilities playing no role in the decision-making process.⁶² The same is true when unmonetized effects are split into smaller portions: each individual small portion is irrationally treated as being worth near zero, when in fact the aggregate could be quite significant.

To remedy this problem, the agencies need to present the costs and benefits of their entire proposed two-step repeal-and-replace process as compared to the status quo of the 2015 Clean Water Rule. This could be accomplished in a few different ways. First, the agencies could proceed by proposing a single, unified rulemaking using the 2015 Clean Water Rule as a baseline. Second, the agencies could consider the 2015 Clean Water Rule as a baseline at each step of its rulemaking process. Third, in the event that the agencies finalize their proposed repeal and then subsequently treat the repeal as the baseline for a further revision of the rule, the agencies should

⁵⁸ *Circular A-4*, *supra* note 4, at 15. See also Guidelines, *supra* note 2, at 5-2 (2010) ("Multiple baseline scenarios are needed, for example, when it is impossible to make a reasonable unique description of the world in the absence of the proposed regulation. For instance, if the current level of compliance with existing regulations is not known, then it may be necessary to compare the policy scenario to both a full compliance baseline and a partial compliance baseline. Further, if the impact of other rules currently under consideration fundamentally affects the economic analysis of the rule being analyzed, then multiple scenarios, with and without these rules in the baseline, may be necessary.").

⁵⁹ Definition of "Waters of the United States"-Recodification of Pre-Existing Rules, 82 Fed. Reg. 34,899 (27 July 2017).

⁶⁰ *Rapanos v. United States*, 547 U.S. 715 (2006).

⁶¹ Intention to Review and Rescind or Revise the Clean Water Rule, 82 Fed. Reg. 12,532 (6 March 2017) states that "the agencies will consider interpreting the term 'navigable waters,' as defined in the [Clean Water Act] in a manner consistent with the opinion of Justice Scalia in *Rapanos*." For the potential effect of Justice Scalia's definition on jurisdictional determinations, see e.g. Jonathan H. Adler, *Reckoning with Rapanos: Revisiting Waters of the United States and the Limits of Federal Wetland Regulation*, 14 Mo. ENVTL. L. & POL'Y REV. 1, 28 (2006) at 11.

⁶² Cass R. Sunstein, *Probability Neglect: Emotions, Worst Cases, and Law* (John M. Olin Law & Economics, Working Paper No. 138, 2001), available at <http://ssrn.com/abstract=292149>.

compare their preferred revision against an alternative that would reinstate the 2015 Clean Water Rule. *Circular A-4* requires agencies to consider a full range of regulatory alternatives in their cost-benefit analyses, reflecting a full range of options under the agencies' statutory discretion and including alternatives that are both more stringent and less stringent than the agencies' preferred alternative.⁶³ This is consistent with the agencies' legal requirements to justify a departure from a previous rule, such as the need to provide reasons for disregarding the "facts and circumstances that underlay" the original rule, when choosing a new path.⁶⁴ Ultimately, the agencies must explain, relative to the 2015 Clean Water Rule, why they have chosen a different level of wetlands protection and why that new level of protection is justified.

Using the 2015 Clean Water Rule as a baseline, any of the shifts now contemplated by the agencies—including the proposed repeal as well as further reductions in the level of protections for wetlands—almost certainly have forgone benefits that vastly outweigh the anticipated cost savings. Unless the agencies can explain why, relative to the 2015 Clean Water Rule, the cost savings from either the proposed repeal or future revisions justify the forgone benefits, the agencies should not move forward with the proposed recodification.

Sincerely,

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⁶³ *Circular A-4* at 7-8.

⁶⁴ *F.C.C. v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009). See also generally *Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).