Economic Analysis for the Final Rule: Definition of "Waters of the United States"—Recodification of Pre-Existing Rules

U.S. Environmental Protection Agency

and

Department of the Army

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Abbreviations

AJD	Approved jurisdictional determination
ASWM	Association of State Wetland Managers
CAFO	Concentrated animal feeding operation
CFR	Code of Federal Regulations
CWA	Clean Water Act
EA	Economic analysis
ELI	Environmental Law Institute
ESA	Endangered Species Act
FR	Federal Register
FTE	Full-time equivalent
ICR	Information Collection Request
NHD	National Hydrography Dataset
NPDES	National Pollutant Discharge Elimination System
NWI	National Wetlands Inventory
OMB	Office of Management and Budget
OPA	Oil Pollution Act of 1990
ORM2	Operation and Maintenance Business Information Link, Regulatory Module
OSLTF	Oil Spill Liability Trust Fund
Rapanos	*Rapanos v. United States*, 547 U.S. 715 (2006)
RIA	Regulatory Impact Analysis
RFA	Regulatory Flexibility Act
RPA	Resource and Programmatic Assessment
RPW	Relatively permanent waters
SBA	Small Business Administration
SBREFA	Small Business Regulatory Enforcement Fairness Act
SCSV	Stochastic Search Variable
SISNOSE	Significant economic impact on a substantial number of small entities
SPCC	Spill Prevention, Control and Countermeasure
SWANCC	*Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*, 531 U.S. 159 (2001)
USACE	U.S. Army Corps of Engineers

U.S. EPA	U.S. Environmental Protection Agency
U.S. FWS	U.S. Fish and Wildlife Service
TAS	Treatment as State
TMDL	Total Maximum Daily Load
TNW	Traditional navigable water
WTP	Willingness to pay
WQS	Water quality standards

Executive Summary

"Waters of the United States" is a foundational term establishing the jurisdictional scope of the Clean Water Act (CWA). The U.S. Environmental Protection Agency and Department of the Army ("the agencies") have prepared a final rule to repeal the Clean Water Rule: Definition of "Waters of the United States" (80 FR 37054; June 29, 2015) (hereinafter referred to as the "2015 Rule") defining the term "waters of the United States" and to restore the regulatory text that existed prior to the 2015 Rule. The agencies will implement the pre-2015 Rule regulations informed by applicable agency guidance documents and consistent with Supreme Court decisions and longstanding agency practice.

In this Economic Analysis (EA), the agencies assessed the impacts of moving from the baseline of the 2015 Rule to pre-2015 practice based on the effects to CWA programs that rely on the definition of "waters of the United States." The 2015 Rule has been the definition of "waters of the United States" in the Code of Federal Regulations since its effective date in August 2015. However, as discussed in the preamble to this final rule, the 2015 Rule was judicially stayed or administratively determined to be inapplicable for most of its existence (October 2015 to August 2018) and remains preliminarily enjoined by courts in more than half of the states.[1] In those states where the 2015 Rule has been enjoined, the agencies have been implementing the pre-2015 Rule regulatory regime.

For this analysis, the agencies used the economic analysis prepared for the 2015 Rule as a starting point, and thus pursued a quantitative assessment. However, this analysis made several significant changes to the 2015 Rule analysis to account for existing state laws and programs that regulate water and potential responses of state governments, as well as other analytic changes incorporating better information in assessing the potential benefits and costs. The agencies also discuss some non-quantified effects. The agencies note that portions of the analysis relied upon in this final rule economic analysis were included in the *Economic Analysis for the Proposed Revised Definition of "Waters of the United States." See* Docket ID EPA-HQ-OW-2018-0149-0004.

Environmental Federalism

The agencies carefully examined the state programs based on the economics literature on environmental federalism, the local provision of public goods, and federalism more broadly. The agencies assessed current state programs based on available information and the insight they provide regarding predicting future plans following this final rule. This revealed behavior, along with economic theory gleaned from the literature, suggests how state governments *could* respond to the shift in the regulatory landscape. States have a continuum of responses to a change in CWA jurisdiction based on legal, economic, and other constraints. These responses may differ depending on the type of water resources, as well as across programs within a given state. The agencies recognize that for this final rule, states may respond by

[1]At this time, the 2015 Rule continues to be subject to a preliminary injunction in Alaska, Arizona, Arkansas, Idaho, Iowa, Missouri, Montana, Nebraska, Nevada, North Dakota, Oregon, South Dakota, Wyoming, Georgia, Alabama, Florida, Indiana, Kansas, Kentucky, North Carolina, South Carolina, Utah, West Virginia, Wisconsin, Texas, Mississippi, and Louisiana. In New Mexico, the agencies are awaiting additional clarification from the federal district court for the District of North Dakota regarding the applicable definition of "waters of the United States."

retaining or returning to their pre-2015 regulatory approach. The analysis considered CWA section 404 dredged and fill permitting and other surface water quality programs separately because a state's responses to a change in jurisdiction may differ between the two types of programs.

A state might choose to not regulate waters that fall solely under its jurisdiction. In this case, where federal jurisdiction is reduced, the agencies would expect avoided costs and forgone benefits. At the other end of the continuum are states with regulations that are as broad or broader in scope than the jurisdiction of the CWA under the 2015 Rule. In these states, the change in jurisdictional scope resulting from a return to pre-2015 practice would have no cost or benefit implications. Many, if not most, states likely fall in between these extremes. The federalism literature illustrates that states may actually be in a better position than the federal government to regulate local environmental public goods (*e.g.*, water quality). When given more flexibility over which waters to regulate, states may be able to direct resources toward their high priority waters and limit expenditures on their low priority waters, thereby maximizing the net benefits derived from their waters. The agencies emphasize, however, that if states do make regulatory changes to maintain the previous federal baseline level of CWA jurisdiction then the states will likely incur some transition costs in the short-run. The cumulative costs to states could be more or less than the cost to the federal government.

There are further complications to this analysis. First, there are differences in state roles across CWA programs. While most states have been authorized to administer at least some, if not all, parts of the CWA section 402 National Pollutant Discharge Elimination System (NPDES) program, only two states have assumed administration of the section 404 dredged and fill material program, and therefore, some states may lack the capacity to administer the section 404 program, expand state dredged and fill permit programs that currently exist, or create new regulatory programs.

Second, this analysis did not consider how the 573 federally-recognized tribes might respond to a change in CWA jurisdiction, nor did it include tribes in its calculations of costs and benefits. Currently, 61 tribes have been found eligible to administer a section 303(c) water quality standards program, and the EPA has approved water quality standards for 45 of these tribes. The EPA has promulgated federal water quality standards for one tribe, and a few tribes have water quality standards that are not currently federally approved. Many tribes may lack the capacity to administer a water quality standards program. Other tribes may rely on the federal government for enforcement of water quality standards, particularly for enforcement of non-tribal members. Currently, no tribes have obtained treatment in a manner similar to a state (TAS) status to administer either the section 402 or 404 program. The agencies (or with a few exceptions for section 402, the state) generally issue section 402 and 404 permits on tribal lands. A few tribes have some type of permitting program for discharges of dredged or fill material into "waters of the tribe." Many tribes may lack the capacity to administer either the 402 or the 404 programs, to create permitting programs for discharges, or to expand permitting programs that currently exist. Further, some tribes have stated to the agencies during tribal consultation and engagement on the separate rulemaking proposing a revised definition of "waters of the United States" that they are not interested in seeking TAS for CWA programs like water quality standards and sections 402 and 404 if the federal government reduces the scope of CWA jurisdiction. In addition, this economic analysis did not account for potential effects related to subsistence fishing, rice growing, or cultural uses of water that are unique to tribes and their reliance on certain ephemeral features, wetlands, and isolated waters that would no longer be considered jurisdictional following the repeal of the 2015 Rule.

For state dredged and fill programs, the agencies grouped possible state responses to a change in CWA jurisdiction under the final rule into three possible categories based on how the state's laws may limit in some manner their regulations of aquatic resources, whether the state has a state-level dredged and fill program, and whether the state regulates waters more broadly than the CWA.

Table ES-1: Dredged/fill categorization criteria

Category	State regulatory indicators	Likely response
1	State has broad legal limitations on regulating aquatic resources OR does not have a state-level dredged and fill program and exclusively relies on section 401 certification to address dredged and fill activities.	Unlikely to increase state regulatory practices to address changes in federal jurisdiction.
2	Has a state-level dredged and fill program that does not regulate waters of the state more broadly than CWA AND does not have broad legal limitations on regulating aquatic resources	Likely to continue the state's current permitting practices and may choose to change state programs to provide some regulatory coverage of waters that would no longer be "waters of the United States."
3	Has a state-level dredged and fill program AND regulates "waters of the state" more broadly than CWA	Likely to continue the state's current dredged/fill permitting practices, which already regulate beyond some areas of pre-2015 practice.

For state surface water programs, potential state responses under the final rule were grouped into two possible categories based on the state's legal limitations on regulating aquatic resources and whether the state has NPDES authorization.

Table ES-2: Surface water discharge permitting categorization criteria

Category	State regulatory indicators	Likely response
1	State does not have NPDES authorization OR has broad legal limitations on regulating aquatic resources	State programs likely to reduce scope following a reduction of federal jurisdiction.[2]
2	NPDES-authorized state that ALSO does not have broad legal limitations on regulating aquatic resources	States are likely to continue their current regulatory practices, which may provide partial regulatory coverage of waters that are no longer "waters of the United States."

The dredged and fill and other surface water state response categories were then used to create a number of possible state response scenarios for use in the analysis. Scenario 0 is a lower bound in which no states are assumed to regulate the newly non-jurisdictional waters, and Scenario 3 is an upper bound which assumes the largest number of states will regulate newly non-jurisdictional waters. Table ES-3 lays out what is included in each scenario.

[2] Where the EPA implements the programs, the scope will change consistent with the federal changes.

Table ES-3: Treatment of the effect of state response on costs and benefits in the sensitivity analysis

	Sensitivity Analysis			Appendix D	
	Scenario 1	**Scenario 2**	**Scenario 3**	**Scenario 0**	**Scenario 1a**
Change in baseline dredged and fill practices (affects Section 404 programs)					
1 - Unlikely to increase (18)	Included	Included	Included	Included	Included
2 - May increase (9)	Included	Included	Excluded	Included	Excluded
3 - Likely continue (23)	Excluded	Excluded	Excluded	Included	Excluded
Change in baseline surface water practices (affects Sections 402, 311, and 401 programs)					
1 - Likely reduce (11)	Included	Included	Included	Included	Included
2 - Likely continue (39)	Included	Excluded	Excluded	Included	Included

Data and Analytic Uncertainties

The agencies believe the best option for assessing the benefits and costs of the final rule was to use an updated version of the 2015 Rule analysis and the Stage 1 analysis conducted for the 2019 proposed rule revising the definition of "waters of the United States" (U.S. EPA and Department of the Army, 2018b) for the analysis of this final rule. This analysis builds upon the analysis done for the 2015 Rule and its proposed repeal, which the agencies are finalizing with this action. It additionally made several significant changes and improvements. As discussed in the EA for the 2019 proposed rule to revise the definition of "waters of the United States," the agencies have now considered potential state responses following a change in CWA jurisdiction. Another improvement made in this analysis was an updated wetlands benefits analysis. Because the wetlands valuation analysis for the 2015 Rule did not follow a number of the best practices for benefit transfer, it was deemed too uncertain to be included in the EA for the 2017 proposed rule for this final action. This analysis improved upon the 2015 analysis by utilizing a meta-analysis of wetland valuation studies that combined and synthesized the results from multiple valuation studies to estimate a new transfer function. Meta-analyses have the advantage of drawing information on willingness to pay (WTP) from a large number of disparate sources in order to control for a relatively large number of variables that influence WTP. Because meta-analyses can control for the confounding attributes of the underlying studies in a theoretically consistent way, it is sometimes possible to make use of a larger number of studies than would be considered for a unit or function transfer.

Benefit and cost estimates are presented for each state response scenario. For a variety of reasons, the agencies were not able to quantify certain foregone benefits. Scenario 1, which is the most conservative federalism scenario in that it assumes the smallest number of states will take on the regulation of newly non-jurisdictional waters, finds the rule produces annual avoided costs ranging between $116 and $174 million and forgone benefits ranging between $69 to $79 million.

Table ES-4: Estimates of annual avoided costs and forgone benefits of the CWA jurisdictional change from the 2015 Rule to Pre-2015 Practice excluding the impact from states that are most likely to continue the 2015 Rule dredged and fill practices (Scenario 1)

	Annual Avoided Costs (2018$ millions)		Annual Forgone Benefits (2018$ millions)	
	Low	**High**	**Low**	**High**
CWA 402 CAFO Administration	$0.1	$0.1	$3.1	$5.4
CWA 402 CAFO Implementation	$5.0	$5.0		
CWA 402 Stormwater Administration	$0.3	$0.3	$29.3	$37.2
CWA 402 Stormwater Implementation	$29.5	$36.8		
CWA 404 Permit Application	$12.5	$31.4	$36.7	$36.7
CWA 404 Mitigation – Wetlands	$36.5	$54.5		
SUBTOTAL	**$84.0**	**$128.0**	**$69.1**	**$79.3**
CWA 311 Compliance	$13.4	$13.4	*not quantified*	*not quantified*
CWA 401 Administration	$0.4	$0.4	*not quantified*	*not quantified*
CWA 402 Pesticide General Permit Implementation	$3.5	$3.8	*not quantified*	*not quantified*
CWA 404 Mitigation – Streams[1]	$14.5	$28.8	*not quantified*	*not quantified*
TOTAL	**$115.7**	**$174.4**	**$69.1**	**$79.3**

These results exclude the costs and benefits for 404 permit applications and wetland mitigation for states classified as response category 3 for regulation of dredged or fill material.

[1]Stream mitigation benefits are not quantified in this Economic Analyses due to a lack of available studies estimating the value of mitigation.

Scenario 2 assumes a larger number of states will take actions to regulate newly non-jurisdictional waters. Avoided annual costs range from $71 to $123 million and annual forgone benefits are estimated to be roughly $41 to $42 million.

Table ES-5: Estimates of annual avoided costs and forgone benefits of the CWA jurisdictional change from the 2015 Rule to Pre-2015 Practice excluding the impact from states that are likely to continue the 2015 Rule dredged and fill and surface water practices (Scenario 2)

	Annual Avoided Costs (2018$ millions)		Annual Forgone Benefits (2018$ millions)	
	Low	**High**	**Low**	**High**
CWA 402 CAFO Administration	$0.0	$0.0	$0.4	$0.7
CWA 402 CAFO Implementation	$0.7	$0.7		
CWA 402 Stormwater Administration	$0.0	$0.0	$3.8	$4.8
CWA 402 Stormwater Implementation	$3.8	$4.7		
CWA 404 Permit Application	$12.5	$31.4	$36.7	$36.7
CWA 404 Mitigation – Wetlands	$36.5	$54.5		
SUBTOTAL	**$53.6**	**$91.3**	**$40.9**	**$42.3**
CWA 311 Compliance	$1.9	$1.9	*not quantified*	*not quantified*
CWA 401 Administration	$0.1	$0.1	*not quantified*	*not quantified*

Table ES-5: Estimates of annual avoided costs and forgone benefits of the CWA jurisdictional change from the 2015 Rule to Pre-2015 Practice excluding the impact from states that are likely to continue the 2015 Rule dredged and fill and surface water practices (Scenario 2)

	Annual Avoided Costs (2018$ millions)			Annual Forgone Benefits (2018$ millions)	
	Low	**High**		**Low**	**High**
CWA 402 Pesticide General Permit Implementation	$0.7	$0.8		*not quantified*	*not quantified*
CWA 404 Mitigation – Streams	$14.5	$28.8		*not quantified*	*not quantified*
TOTAL	**$70.8**	**$122.9**		**$40.9**	**$42.3**

These results exclude the costs and benefits for 404 permit applications and wetland mitigation for states classified as response category 3 for regulation of dredged or fill material, and it excludes the costs and benefits for all other categories for states classified as response category 2 for other surface water regulation.

Scenario 3 assumes the largest number of states will take actions to regulate newly non-jurisdictional waters. Avoided annual costs range from $61 to $104 million and annual forgone benefits are estimated to be roughly $37 to $39 million. The change in cost and benefit estimates between Scenarios 1, 2, and 3 shows the importance of accounting for state response to the change in CWA jurisdiction.

Table ES-6: Estimates of annual avoided costs and forgone benefits of the CWA jurisdictional change from the 2015 Rule to Pre-2015 Practice excluding the impact from states that may or are likely to continue the 2015 Rule dredged and fill practices and are likely to continue the 2015 Rule surface water practices (Scenario 3)

	Annual Avoided Costs (2018$ millions)			Annual Forgone Benefits (2018$ millions)	
	Low	**High**		**Low**	**High**
CWA 402 CAFO Administration	$0.0	$0.0		$0.4	$0.7
CWA 402 CAFO Implementation	$0.7	$0.7			
CWA 402 Stormwater Administration	$0.0	$0.0		$3.8	$4.8
CWA 402 Stormwater Implementation	$3.8	$4.7			
CWA 404 Permit Application	$8.6	$21.5		$33.0	$33.0
CWA 404 Mitigation – Wetlands	$30.4	$46.4			
SUBTOTAL	**$43.6**	**$73.4**		**$37.2**	**$38.6**
CWA 311 Compliance	$1.9	$1.9		*not quantified*	*not quantified*
CWA 401 Administration	$0.1	$0.1		*not quantified*	*not quantified*
CWA 402 Pesticide General Permit Implementation	$0.7	$0.8		*not quantified*	*not quantified*
CWA 404 Mitigation – Streams	$14.2	$28.2		*not quantified*	*not quantified*
TOTAL	**$60.5**	**$104.3**		**$37.2**	**$38.6**

These results exclude the costs and benefits for 404 permit applications and wetland mitigation for states classified as response category 2 and 3 for regulation of dredged or fill material, and they exclude the costs and benefits for all other categories for states classified as response category 2 for other surface water regulation.

The agencies do not take a position on which of these three federalism scenario is most likely. Rather, the three scenarios reflect the range of cost savings and foregone benefits that may be experienced by this action. Overall, avoided annual costs savings range from $60.5 to $174.4 million in 2018 dollars and annual forgone benefits range from $37.2 to $79.3 million in 2018 dollars. These values reflect the agencies' estimate of costs and benefits for Executive Order 12866.

The estimated annual cost savings are also used to comply with Executive Order 13771. Because this executive order requires comparing the costs or cost savings of different regulations across agencies and across years, OMB requires an accounting method that is different from that used for Executive Order 12866. For E.O. 13771, agencies are required to adjust all cost estimates in three ways: (1) express all estimates to 2016 dollars using the GDP deflator, (2) calculate the present value as of 2016 rather than the first year of the rule, and (3) assume that the impacts of regulations continue in perpetuity using a 7% discount rate. Using the average of the range of cost savings of $117.45 million in 2018 dollars and (1) deflating back to 2016 dollars using the GDP deflator, and (2) discounting back three years at 7% (assuming the first year of rule is 2019), the annual cost-saving for E.O. 13771 reporting purposes is $94 million in 2016 dollars. The present value of these cost-savings, assuming they continue in perpetuity and using a 7% discount rate, is $1.34 billion.

I Introduction and Overview

The Environmental Protection Agency (EPA) and the Department of the Army ("the agencies") are finalizing a rule to repeal the 2015 Clean Water Rule: Definition of "Waters of the United States" ("2015 Rule"), which amended portions of the Code of Federal Regulations (CFR), and to restore the regulatory text that existed prior to the 2015 Rule. The agencies will implement the pre-2015 Rule regulations informed by applicable agency guidance documents and consistent with Supreme Court decisions and longstanding agency practice. "Waters of the United States" is a foundational term establishing the jurisdictional scope of the Clean Water Act (CWA). Waters that currently are outside the scope of CWA jurisdiction or will be following a change to the definition of "waters of the United States" may be subject to separate state or tribal authorities. The definition of "waters of the United States" was last changed on June 29, 2015, when the agencies issued the "2015 Rule." 80 FR 37054.

On February 28, 2017, the President issued Executive Order 13778, entitled "Restoring the Rule of Law, Federalism, and Economic Growth by Reviewing the 'Waters of the United States' Rule." The Executive Order directs the EPA and the Army to review the 2015 Rule and to rescind or revise the 2015 Rule as appropriate and consistent with law. On July 27, 2017, the agencies issued the "Step One" notice of proposed rulemaking (82 FR 34899) that proposed to repeal the 2015 Rule and to recodify the regulatory text that existed prior to the promulgation of the 2015 Rule. On July 12, 2018, the agencies published a supplemental notice of proposed rulemaking to clarify, supplement, and seek additional comment on the Step One notice of proposed rulemaking (83 FR 32227). With this final rule, the regulations defining "waters of the United States" will be those portions of 33 CFR part 328 and 40 CFR parts 110, 112, 116, 117, 122, 230, 232, 300, 302, and 401 as they existed immediately prior to the 2015 Rule's amendments. The agencies will continue to implement the pre-2015 regulations as informed by applicable agency guidance documents and consistent with Supreme Court decisions and longstanding agency practice.

This Economic Analysis (EA) assesses the impacts of moving from the baseline of the 2015 Rule to pre-2015 practice across the country based on the estimated effects to CWA programs that rely on the definition of "waters of the United States." The 2015 Rule has been the definition of "waters of the United States" in the Code of Federal Regulations since its effective date in August 2015. However, as discussed in the preamble to this final rule, the 2015 Rule was judicially stayed or administratively determined to be inapplicable for most of its existence (October 2015 to August 2018) and remains preliminarily enjoined by courts in more than half of the states. In those states where the 2015 Rule has been enjoined, the agencies have been implementing the pre-2015 Rule regulatory regime.

Unlike many environmental regulations, the purpose of this final rule is not to correct a market failure. This final rule instead returns the relationship between the federal government, states, and tribes to the longstanding and familiar distribution of power and responsibilities that existed under the CWA for many years prior to the 2015 Rule, and which the agencies have been implementing in those states where the 2015 Rule has been enjoined.

I.A The 2015 Rule

At the time of publication of this final rule, the 2015 Rule is being implemented in fewer than half of the states and is the existing regulation in the Code of Federal Regulations. As such, it serves as the baseline for analysis in this EA. The 2015 Rule defined "waters of the United States" to include:

- Traditional navigable waters (TNWs) ((a)(1));[3]
- Interstate waters including interstate wetlands ((a)(2));
- Territorial seas ((a)(3));
- Impoundments of jurisdictional waters ((a)(4));
- Tributaries of the above waters ((a)(5));
- Adjacent waters of the aforementioned waters ((a)(6));
- Similarly situated regional waters found to have a significant nexus ((a)(7)); and
- Certain waters with a case-specific significant nexus ((a)(8)).

The 2015 Rule identified certain waters that can be "waters of the United States" only where a case-specific determination has found a significant nexus between the water and TNWs, interstate waters, or the territorial seas. The 2015 Rule specified five types of waters (prairie potholes, Delmarva and Carolina bays, pocosins, western vernal pools in California, and Texas coastal prairie wetlands) that the agencies had determined to be "similarly situated" in the watershed that drains to the nearest TNW, interstate water, or territorial sea, and thus would be considered in combination with waters of the same subcategory within the point of entry watershed in a significant nexus analysis (referred to as (a)(7) waters in the 2015 Rule). In addition, the 2015 Rule specified that waters located within the 100-year floodplain of a TNW, interstate water, or the territorial seas, and waters located within 4,000 feet from the high tide line or the ordinary high water mark of TNWs, interstate waters, the territorial seas, impoundments, or covered tributaries may be found to have a significant nexus on a case-specific basis, but the agencies would need to make a determination of "similarly situated" waters on a case-by-case basis. These were referred to as (a)(8) waters in the 2015 Rule. The 2015 Rule set forth nine functions relevant to these case-specific significant nexus analyses.

The agencies excluded specified waters from the definition of "waters of the United States" in the 2015 Rule, carrying forward the existing exclusions for prior converted cropland and waste treatment systems. The 2015 Rule created additional exclusions from the definition of "waters of the United States," including for certain waters and features that have been generally considered to not be "waters of the United States" in practice (*e.g.*, exclusions for certain ditches that are not located in or draining wetlands);

[3] There are numerous regulations that utilize the definition of "waters of the United States," and each is codified consistent with its place in a particular section of the Code of Federal Regulations. For simplicity, the agencies refer to the 2015 Rule and this final rule recodifying the pre-existing regulations as organized into (a) provisions in terms of waters that are "waters of the United States," and intend the reference to encompass the appropriate cites in each section of the Code of Federal Regulations. For example, a reference to (a)(1) is a reference to all instances in the CFR identified as subject to the 2015 Rule and this final rule that state "All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide." However, the (a) provisions in the 2015 Rule and this final rule do not always refer to the same types of waters. For example, (a)(3) in the 2015 Rule refers to the territorial seas, while the territorial seas are captured in the (a)(6) provision in this final rule.

for other types of ditches; for groundwater and erosional features; for stormwater control features constructed in dry land to convey, treat, or store stormwater; and for cooling ponds that are created in dry land.

In the 2015 Rule, the agencies defined a tributary as a water that (1) contributes flow, either directly or through another water (including an impoundment), to a TNW, interstate water, or the territorial seas, and (2) that is characterized by the presence of physical indicators of bed and banks and an ordinary high water mark. All perennial, intermittent, and ephemeral streams that met the definition of "tributary" would be "waters of the United States" under the 2015 Rule, unless specifically excluded.

Under the 2015 Rule, all adjacent waters, including wetlands, would be jurisdictional where the waters are adjacent to a TNW, interstate water, territorial sea, jurisdictional impoundment, or a jurisdictional tributary, and where the water met that rule's definition of "adjacent." The 2015 Rule carried forward the definition of "adjacent"—waters that are bordering, contiguous, or neighboring the aforementioned waters—and it also defined "neighboring" and included open waters such as lakes and ponds as adjacent. The 2015 Rule defined "neighboring" to mean:

- all waters located within 100 feet of the ordinary high water mark of (1) through (5) water,
- all waters located within the 100-year floodplain of a (1) through (5) water and not more than 1,500 feet from the ordinary high water mark of such water, and
- all waters located within 1,500 feet of the high tide line of a (1) or (3) water, and all waters within 1,500 feet of the ordinary high water mark of the Great Lakes.

The definition of "adjacent" in the 2015 Rule did not include those waters in which established, normal farming, silviculture, and ranching activities occur. Wetlands and farm ponds in which normal farming activities occur, as those terms are used in section 404(f) of the CWA and its implementing regulations, would not be *per se* jurisdictional as "adjacent" waters under the 2015 Rule. Instead, waters in which normal farming, ranching, and silviculture activities occur would be subject to case-specific review under the 2015 Rule.

I.B Final Rule

The agencies are recodifying the regulations that were in place prior to the 2015 Rule[4] through this final rule. They will implement the final rule consistent with Supreme Court decisions in *United States v.*

[4] The Corps' regulations at 33 CFR 328.3 that existed prior to the 2015 Rule were promulgated in 1986. In 1986, the Corps consolidated and recodified its regulations to align with clarifications EPA had previously promulgated. *See* 51 FR 41206 (Nov. 13, 1986). The EPA codification of the definition of "waters of the United States" is found at 40 CFR 110.1, 112.2, 116.3, 117.1, 122.2, 230.3, 232.2, 300.5, 401.11, and Appendix E to Part 300. In 1988, the EPA essentially recodified the existing section 404 program definitions in a new separate part, including the definition of "waters of the United States" at 40 CFR 232.3. See 53 FR 20764 (June 6, 1988). On August 25, 1993, the agencies amended the regulatory definition of

Riverside Bayview Homes (Riverside Bayview), *Solid Waste Agency of Northern Cook County v. United States (SWANCC)*, and *Rapanos v. United States (Rapanos)*,[5] and with how they were implementing the definition of "waters of the United States" prior to the 2015 Rule and as they have been implementing the definition of "waters of the United States" in the states where the 2015 Rule has been enjoined.

The now-recodified, pre-2015 regulations include:

- Traditional navigable waters ((a)(1));
- Interstate waters including interstate wetlands ((a)(2));
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters ((a)(3)):
  - Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
  - (From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
  - Which are used or could be used for industrial purposes by industries in interstate commerce;
- Impoundments of jurisdictional waters ((a)(4));
- Tributaries of the above waters ((a)(5));
- Territorial seas ((a)(6));
- Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (1) through (6) of this section ((a)(7)).

The pre-2015 regulations also exclude prior converted cropland and waste treatment systems from the definition of "waters of the United States."

The Supreme Court's decisions in *SWANCC* and *Rapanos* and the agencies' subsequent interpretive guidance in 2003 and 2008, respectively, inform the agencies' implementation of this final rule. In 2001,

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"waters of the United States" to categorically exclude "prior converted croplands." 58 FR 45008, 45031 (Aug. 25, 1993) (codified at 33 CFR 328.3(b)(2) (1994)).

[5] *United States v. Riverside Bayview Homes*, 474 U.S. 121 (1985); *Solid Waste Agency of Northern Cook County v. United States*, 531 U.S. 159 (2001); *Rapanos v. United States*, 547 U.S. 715 (2006).

the agencies issued a joint legal memorandum describing CWA jurisdiction in light of the U.S. Supreme Court's decision in *SWANCC*. The guidance was superseded on January 15, 2003, with new joint guidance (hereinafter the *SWANCC* Guidance).[6] In 2007, the agencies issued a joint memorandum entitled, "Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in *Rapanos v. United States* and *Carabell v. United States*," providing guidance to their respective staffs on implementing the *Rapanos* decision. The guidance was reissued on December 2, 2008, with minor changes (hereinafter the *Rapanos* Guidance).[7]

The (a)(3) provision of the agencies' pre-2015 regulations was addressed in the 2001 *SWANCC* decision and the agencies' subsequent 2003 *SWANCC* guidance. Under the *SWANCC* Guidance, which will inform the agencies' implementation of this final rule, the agencies do not assert jurisdiction over nonnavigable, isolated, intrastate waters ((a)(3) waters under pre-2015 regulations and this final rule) based solely on the presence of migratory birds or other factors listed in the 1986 and 1988 preamble language commonly referred to as the "Migratory Bird Rule." In addition, the *SWANCC* Guidance clarifies that agency field staff should obtain formal approval from EPA and Army Headquarters prior to asserting jurisdiction over such waters based solely on links to interstate commerce. Since the 2001 decision in *SWANCC*, the agencies have generally not asserted jurisdiction over nonnavigable, isolated, intrastate waters using the (a)(3) portion of the regulations.

Under the *Rapanos* Guidance, which will inform the agencies' implementation of this final rule, the agencies determine that a water may be jurisdictional if it meets either the plurality's or Justice Kennedy's standard for jurisdictional waters. "Relatively permanent" waters ("RPWs") are interpreted in the guidance as tributaries[8] that typically flow year-round or have continuous flow at least seasonally (*e.g.*, typically three months).[9] Wetlands that have a "continuous surface connection" are those that are directly abutting (*e.g.*, they are not separated by upland, a berm, dike, or similar feature from the "water of the United States" to which they are adjacent).[10]

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[6] *See* 68 FR 1991, 1995 (January 15, 2003), *available at* https://www.epa.gov/sites/production/files/2016-04/documents/swancc_guidance_jan_03.pdf.

[7] *See* U.S. EPA and U.S. Army Corps of Engineers. Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in *Rapanos v. United States & Carabell v. United States* at 1 (Dec. 2, 2008), *available at* https://www.epa.gov/sites/production/files/2016-02/documents/cwa_jurisdiction_following_rapanos120208.pdf.

[8] For purposes of the *Rapanos* Guidance, a tributary includes natural, man-altered, or man-made water bodies that carry flow directly or indirectly into a traditional navigable water.

[9] The agencies have further clarified that three months for seasonal flow was provided as an example in the guidance, and the agencies have flexibility under the guidance to determine what seasonally means in a specific case. For instance, in one case, the agencies found that two months of continuous flow was seasonal at a particular site in a particular region of the country. *See* "Memorandum to Assert Jurisdiction for NWP-2007-945," *available at* https://usace.contentdm.oclc.org/utils/getfile/collection/p16021coll5/id/1437

[10] The *Rapanos* Guidance recognizes the plurality's "continuous surface connection" does not refer to a continuous surface water connection. *See, e.g., Rapanos* Guidance at 7 n.28 ("A continuous surface connection does not require surface water to be continuously present between the wetland and the tributary.").

Under the *Rapanos* Guidance, the agencies assert jurisdiction over the following waters without the need for further analysis:

- TNWs;
- Wetlands adjacent to TNWs;
- Non-navigable tributaries of TNWs that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (*e.g.*, typically three months); and
- Wetlands that directly abut such tributaries.

The agencies assess whether the following waters are jurisdictional based on a case-specific analysis to determine whether they have a significant nexus with a TNW:

- Non-navigable tributaries that are not relatively permanent;
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent; and
- Wetlands adjacent to, but that do not directly abut, a relatively permanent non-navigable tributary.

Under the *Rapanos* Guidance, the agencies generally do not assert jurisdiction over the following features: swales or erosional features (*e.g.*, gullies, small washes characterized by low volume, infrequent, or short duration flow) or ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water. Under the *Rapanos* Guidance, a significant nexus analysis assesses the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to that same tributary, including consideration of hydrologic and ecologic factors, to determine if they significantly affect the chemical, physical, and biological integrity of downstream TNWs. Under the final rule and consistent with pre-2015 practice, the agencies interpret TNWs or (a)(1) waters to encompass tidal waters, including tidally-influenced ditches and wetlands. The agencies issued guidance in 2007 regarding which waters the agencies consider to be TNWs (U.S. Army Corps of Engineers and U.S. EPA, 2007).[11]

Under the *Rapanos* Guidance, the agencies interpret all wetlands that are bordering, contiguous, or neighboring other jurisdictional waters to be jurisdictional per the definition of "adjacent" that existed in the regulations prior to the 2015 Rule (hereinafter referred to as the 1980s regulations), with the exception that wetlands adjacent to non-navigable tributaries that are not relatively permanent and wetlands adjacent to but not directly abutting a relatively permanent non-navigable tributary require a significant nexus analysis to determine jurisdiction. In the *Rapanos* Guidance, the agencies clarify that they consider wetlands adjacent if they meet one of three criteria: 1) there is an unbroken surface or shallow sub-surface connection to jurisdictional waters; 2) they are physically separated from jurisdictional waters by man-

[11] *See* "U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook, Appendix D, 'Traditional Navigable Waters,'" *available at* https://usace.contentdm.oclc.org/digital/collection/p16021coll11/id/2321/.

made dikes or barriers, natural river berms, beach dunes, and the like; or 3) their proximity to a jurisdictional water is reasonably close. Non-jurisdictional ditches and other features like swales can contribute to a surface hydrologic connection between a wetland and the water to which it is adjacent.

The *SWANCC* Guidance and the *Rapanos* Guidance only address the categories of waters at issue in those respective Supreme Court cases, and thus do not address certain categories of "waters of the United States" in this final rule, including interstate waters, impoundments, and the territorial seas. The final rule defines "waters of the United States" to include interstate waters, including interstate wetlands. Under the final rule and consistent with pre-2015 practice, interstate waters are "waters of the United States" even if they are not navigable for purposes of federal regulation under (a)(1) and do not connect to such waters.

Under the final rule and consistent with pre-2015 practice, impoundments of jurisdictional waters and the territorial seas remain jurisdictional. Impoundments and the territorial seas were not addressed in the *Riverside Bayview, SWANCC,* or *Rapanos* Supreme Court decisions.

Waste treatment systems and prior converted cropland have been excluded from the definition of "waters of the United States" since 1979 and 1993, respectively. Excluded waters are non-jurisdictional and not subject to the regulatory programs of the CWA. The agencies have also interpreted certain waters to be non-jurisdictional in preamble language explaining the 1980s regulations[12] and in the *Rapanos* Guidance. The 1986 and 1988 preamble language states that generally the agencies do not consider certain waters, such as artificially irrigated areas which would revert to upland if the irrigation ceased or certain artificial stock water ponds created on dry land, to be "waters of the United States." The *Rapanos* Guidance states that the agencies generally will not assert jurisdiction over the following features: swales or erosional features (*e.g.*, gullies, small washes characterized by low volume, infrequent, or short duration flow) and ditches (including roadside ditches) excavated wholly in and draining only upland and that do not carry a relatively permanent flow of water.

I.C Summary of Changes in CWA Jurisdiction Due to the Final Rule

In this section, the agencies describe changes to the CWA jurisdictional status of categories of aquatic resources that would occur under implementation of this final rule recodifying the pre-existing regulations. The agencies describe these changes compared to the baseline of the 2015 Rule. Throughout this document, when referring to the final rule, the agencies mean the final regulatory text reinstating the pre-2015 definition of "waters of the United States," as implemented consistent with Supreme Court decisions and longstanding agency practice, and informed by applicable agency guidance documents. In the following discussion of changes to CWA jurisdiction due to the final rule, it is important to remember this context of implementation of the final rule, as for several categories of waters (including tributaries, adjacent wetlands, lakes and ponds, and exclusions from the definition of "waters of the United States"), the agencies' guidance documents and longstanding practice, as implemented consistent with the Supreme Court decisions, are what result in the change in jurisdiction as compared to the 2015 Rule. This is different from the straight language of the final regulatory text itself. In the states where the 2015 Rule was enjoined at the time this final rule was signed, there will be no practical change in implementation of

[12] *See* 51 FR 41206, 41217 (Nov. 13, 1986).

definition of "waters of the United States." In those states, the agencies have been implementing pre-2015 practice, the regulations for which this final rule will formally reinstate in the Code of Federal Regulations.

In addition to qualitatively describing changes in CWA jurisdiction due to the final rule, the agencies have also incorporated relevant aspects of their analyses in the *Resource and Programmatic Assessment for the Proposed Revised Definition of "Waters of the United States"* (RPA; U.S. EPA and Department of the Army, 2018a). In the RPA, the agencies investigated two types of analytic approaches with respect to aquatic resources to better understand the potential change in the scope of CWA jurisdiction due to the 2019 proposed rule when comparing it against the baseline of the 2015 Rule and the alternate baseline of pre-2015 practice. In one analysis, the agencies examined data records in the Army Corps of Engineers' Operation and Maintenance Business Information Link, Regulatory Module (ORM2) database that documents Corps approved jurisdictional determinations (AJDs) associated with various aquatic resource types for fiscal years 2013-2017. As discussed in the RPA, the agencies did not use data from ORM2 for AJDs that were made under the 2015 Rule. The relatively small number of AJDs made under the 2015 Rule before it was stayed by the courts and in the parts of the country where the 2015 Rule has been implemented was not a representative sample when compared to the large numbers of AJDs documented in ORM2 under pre-2015 practice, which the agencies continued to implement nationwide from October 2015 to August 2018 and currently continue to implement in more than half of the states. The agencies were also concerned about using AJD information reflecting the categories of waters that the agencies would have found jurisdictional or non-jurisdictional under the 2015 Rule because a disproportionate number of the AJDs finalized under the 2015 Rule involved exclusions and non-significant nexus determination categories. Furthermore, the 2015 Rule was not implemented at all in approximately 13 states (the states covered by the U.S. District Court for the District of the North Dakota's preliminary injunction, the scope of which has changed in some respects over time), so the available data were not national in scope for AJDs under that rule. In the second analysis, the agencies attempted to use publicly available data from national datasets (*i.e.*, the National Hydrography Dataset (NHD) and the National Wetlands Inventory (NWI)) to estimate the potential extent of aquatic resources across the country, but ultimately concluded that the limitations of the datasets precluded using the data to quantify the potential extent of waters whose CWA jurisdictional status could change under the 2019 proposed rule.[13]

For more information about the limitations of the data used in this summary of jurisdictional change, please see Section II.C ("Data and Analytic Uncertainties") and the RPA for the 2019 proposed rule, including Appendix A of that document.

Using the baseline of the 2015 Rule and, where possible, the ORM2, NHD, and NWI datasets, this aquatic resource analysis examines the changes from the 2015 Rule to the final rule as implemented for the following categories of waters: traditional navigable waters (TNWs); interstate waters; territorial seas; impoundments; tributaries; ditches; lakes and ponds; adjacent wetlands; nonnavigable, isolated, intrastate waters; and exclusions.

[13] The agencies did not use the NHD or the NWI to quantify the extent of jurisdictional waters across the country as part of the 2015 rulemaking either.

I.C.1 Traditional Navigable Waters (TNWs)

The agencies continue the regulation of TNWs or (a)(1) waters, including waters subject to the ebb and flow of the tide. The final rule is identical to the baseline and has no effect on which waters would be regulated as TNWs. Although no change is being made to this category, the data available in ORM2, the NHD, and the NWI are discussed for completeness.

The agencies generally determine whether a water is a TNW for purposes of a specific AJD (*i.e.*, on a "case-specific" basis), and that determination cannot be relied upon in future determinations. A "case-specific" determination does not designate the upper and lower extents of the TNW; a water is only designated a TNW for that one AJD and only in the specified review area. In addition, under pre-2015 practice some Corps Districts have chosen to document an aquatic resource as a perennial RPW instead of a case-specific TNW for ease of documentation and workload. Some AJDs for RPWs therefore are TNWs, so the ORM2 data on TNWs under pre-2015 practice likely underestimate the number of TNWs. However, those aquatic resources would be captured in the RPW category described in the "Tributaries" section below. According to ORM2 data for FY13-FY17, 17,630 waters were determined to be jurisdictional as TNWs under pre-2015 practice. This number includes any tidal wetlands that the Corps has determined are (a)(1) waters, but the agencies were unable to parse out how many of these determinations may have been for such wetlands. Waters that have been found to be TNWs under pre-2015 practice would also be considered jurisdictional as TNWs under the 2015 Rule and under implementation of this final rule. The agencies anticipate that waters that have been found to be jurisdictional under the 2015 Rule as TNWs would remain jurisdictional as TNWs under implementation of this final rule.

TNWs are not mapped as a category in NHD, and the agencies do not have a national map of TNWs. The extent of tidal waters, including ditches and wetlands, regulated as (a)(1) waters under implementation of this final rule and the 2015 Rule also cannot be ascertained from available data. For these reasons, baseline estimates using NHD or NWI were not possible for this category. However, because this category is unchanged, even if a baseline estimate were possible using NHD or NWI, there would be no change in the baseline as compared to implementation of the final rule.

I.C.2 Interstate Waters

The agencies continue the regulation of interstate waters, including interstate wetlands, with this final rule. The agencies are making no change to this category. Any waters that are part of a state or international boundary or that cross state or international boundaries may be considered jurisdictional as interstate waters.

Although no change is being made to this category, the data available in ORM2, the NHD, and the NWI are discussed for completeness. The *Rapanos* AJD form used under pre-2015 practice does not indicate whether a water is jurisdictional because it is an "interstate water." Instead, these waters are being represented by other ORM2 categories of aquatic resources. The Corps added "interstate waters" as a category that could be documented for AJDs conducted under the 2015 Rule, but the agencies have not analyzed the 2015 Rule AJDs for the reasons previously discussed. The agencies anticipate that waters, if any, that have been found to be jurisdictional under the 2015 Rule as interstate waters would remain jurisdictional under implementation of this final rule.

"Interstate waters" are also not mapped as a distinct category in either NHD or NWI. Therefore, no data currently exists that indicates the extent of these waters (including any interstate wetlands). Because the agencies are making no changes to this category of aquatic resources, even if an analysis of NHD or NWI data were possible to estimate the extent of these waters, the agencies anticipate that there would be no change to interstate waters.

I.C.3 The Territorial Seas

The agencies will continue the regulation of "the territorial seas" as "waters of the United States" under the final rule. The 2015 Rule moved the location of "the territorial seas" to (a)(3), while this final rule returns them to their pre-existing location at (a)(6). The agencies anticipate that there will be no change in the jurisdictional status of these waters as compared to the baseline – these waters are jurisdictional by rule in all cases.

Although no change is being made to this category, the data available in ORM2, the NHD, and the NWI are discussed for completeness. Territorial seas would all be categorized as TNWs in AJDs conducted under pre-2015 practice. The ORM2 database does not record under pre-2015 practice whether a water is a "territorial sea." The Corps added "territorial seas" as a category that could be documented for AJDs conducted under the 2015 Rule, but the agencies did not analyze the 2015 Rule AJDs for the reasons previously discussed.

Neither the NHD nor the NWI specifically map "the territorial seas." However, because this category is unchanged, even if a baseline estimate were possible using NHD or NWI, there would be no change in the baseline as compared to implementation of the final rule.

I.C.4 Impoundments

The agencies will continue to include impoundments of jurisdictional waters in the definition of "waters of the United States." The number of impounded waters that are jurisdictional would change under implementation of the final rule because certain waters that are impounded would be no longer jurisdictional. For example, impoundments of those ephemeral streams determined to be jurisdictional under the 2015 Rule by virtue of meeting that rule's "tributary" definition would have also been jurisdictional under that regulation. Such impoundments would only be jurisdictional under implementation of this final rule if the ephemeral tributary is found to have a case-specific significant nexus to a TNW. In addition, certain other wetlands would no longer be jurisdictional under implementation of the final rule that may have been jurisdictional under the 2015 Rule. Therefore, impoundments of such wetlands would not be jurisdictional under implementation of the final rule.

According to ORM2 data from FY13-FY17, 751 waters were determined to be jurisdictional impoundments under pre-2015 practice. Based on these ORM2 data, 7.5 percent of impoundments were located on non-RPWs. The agencies anticipate that such impoundments would also be jurisdictional under the 2015 Rule. However, the agencies have no information regarding whether the waters impounded would be jurisdictional under the 2015 Rule. As discussed previously, the agencies did not analyze AJDs for the 2015 Rule and were unable to quantify the change in jurisdiction of impoundments as compared to the 2015 Rule baseline based on ORM2 data.

Many lakes and ponds are mapped in both the NHD and the NWI, but neither dataset explicitly specifies if a waterbody is an impoundment of another waterbody. For the reasons described in Section II.C, the

agencies were unable to use the NHD or the NWI to quantify the extent of impoundments across the country that are jurisdictional under either rule and whose jurisdictional status might change as a result of implementation of the final rule.

I.C.5 Tributaries

Under the final rule, the agencies anticipate that fewer streams will be regulated under the CWA than under the baseline. Under the final rule as implemented according to the *Rapanos* Guidance, all tributaries that are RPWs and non-RPW tributaries that have a significant nexus with a TNW are jurisdictional. RPWs include waters that are perennial as well as intermittent waters that are seasonal. Non-RPWs include non-seasonal intermittent tributaries and ephemeral tributaries. Perennial RPWs do not require further analysis. Seasonal RPWs are also jurisdictional under implementation of the final rule, but as a matter of policy the Corps conducts a significant nexus determination for such waters for documentation purposes. Under the *Rapanos* Guidance, the unit of analysis of the significant nexus evaluation is the individual tributary (the entire reach of the stream that is of the same order) and any wetlands that are adjacent to that reach of that tributary. Under the 2015 Rule, the scope of aggregation was the single point of entry watershed that drains to the nearest primary water (*i.e.*, (a)(1) through (a)(3) water).

Under the 2015 Rule, all streams that met that rule's definition of "tributary" (*i.e.*, contribute flow to a TNW, interstate water, or territorial sea and have the physical indicators of a bed and banks and an ordinary high water mark), regardless of flow regime, and that were not specifically excluded, were jurisdictional without the need for a case-specific significant nexus evaluation. As compared to the 2015 Rule, under the final rule as implemented under the *Rapanos* Guidance, the agencies would not treat non-RPWs as jurisdictional if they are not determined to have a significant nexus to a TNW.

Although the agencies were unable to quantify what the change in jurisdiction for tributaries would be as compared to the 2015 Rule on a national scale due to the lack of information on the precise extent of streams nationwide[14] and the fact that ephemeral streams are not categorically jurisdictional under pre-2015 practice, the agencies expect that in portions of the country where non-relatively permanent (*i.e.*, non-seasonal intermittent and ephemeral) streams are more prevalent (*e.g.*, the arid West), the change might be greater relative to other parts of the country.

Tributaries evaluated under pre-2015 practice are categorized as either RPWs or non-RPWs. In ORM2 from FY13-FY17, 15,980 waters were determined to be jurisdictional as RPWs under pre-2015 practice. The agencies anticipate that these RPWs would be jurisdictional under the 2015 Rule. As discussed previously, the agencies did not evaluate AJDs in ORM2 made under the 2015 Rule. Even if the agencies had evaluated the AJDs made under the 2015 Rule, the ORM2 database for AJDs made under the 2015 Rule indicate if a water is jurisdictional as a tributary under that rule, but it does not track if the tributary is an RPW or a non-RPW. However, the agencies believe that if that information was included in the ORM2 database, that all RPWs found to be jurisdictional tributaries under the 2015 Rule would also be jurisdictional under the final rule.

[14] Note that only those streams meeting the 2015 Rule's definition of "tributary" would be jurisdictional as a tributary under that rule.

Data from ORM2 indicate that some but not all non-RPWs are jurisdictional under pre-2015 practice. From FY13-FY17, 3,776 waters in ORM2 were determined to be jurisdictional non-RPWs after a case-specific significant nexus evaluation, while 2,012 non-RPWs were determined to be non-jurisdictional after a case-specific significant nexus evaluation. Likely most of these 3,776 non-RPWs that were determined to jurisdictional under pre-2015 practice would be considered jurisdictional under the 2015 Rule. Some of these 2,012 non-RPWs that were determined to be non-jurisdictional under pre-2015 practice would be considered jurisdictional under the 2015 Rule where they met that rule's definition of "tributary" (and were not otherwise specifically excluded under the 2015 Rule), resulting in a change in jurisdiction . The agencies were unable to approximate what percentage of non-RPWs found to be non-jurisdictional under pre-2015 practice would have been jurisdictional under the 2015 Rule. Thus, the agencies were unable to use the ORM2 data to approximate how implementation of the final rule, which would be equivalent to pre-2015 practice, would change the jurisdictional status of waters considered to be non-RPWs as compared to the 2015 Rule.

As discussed further in Section II.C ("Data and Analytic Uncertainties"), the NHD cannot be relied upon to represent jurisdictional waters under any definition of "waters of the United States." The NHD is not a regulatory dataset and does not indicate whether streams and other features are jurisdictional for CWA purposes.[15] It does not map many ephemeral streams outside of the arid West. In addition, RPWs and non-RPWs cannot be neatly split into the categories of perennial, intermittent, and ephemeral flow regime that the NHD uses, and though a stream mapped in NHD is likely to meet the tributary conditions of the 2015 Rule of having both a bed and banks and ordinary high water mark, the presence of such physical characteristics cannot be guaranteed for mapped streams. Thus, it is not possible to use the NHD to estimate the change in CWA jurisdiction from the 2015 Rule. Because the NHD is the most comprehensive national stream dataset, the agencies are providing a summary of the stream types that are mapped in the dataset, with the caveat that these statistics cannot be translated into CWA jurisdiction under the 2015 Rule or the final rule.

In the NHD at high resolution, 30 percent of streams are mapped as perennial, 52 percent are mapped as intermittent, and 18 percent are mapped as ephemeral.[16] However, the actual percentage of ephemeral streams across the country is likely higher than 18 percent since many are not mapped or are mapped as intermittent. In the arid West (Arizona, California, Colorado, Idaho, Nevada, New Mexico, Oregon, Texas, Utah, Washington, and Wyoming), 13 percent of streams (by stream length) are mapped as perennial, 48 percent are mapped as intermittent, and 39 percent are mapped as ephemeral. Note that these numbers are not meant to reflect potential changes in CWA jurisdictional under the 2015 Rule as compared to implementation of the final rule.

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[15] It is the agencies' longstanding position that neither the NHD nor the NWI represent waters subject to CWA jurisdiction. *See*, e.g., letters dated July 28, 2014, and August 6, 2014, from EPA Office of Water Acting Assistant Administrator Nancy Stoner to Congressman Lamar Smith. Available at: https://web.archive.org/web/20180919173837/https://science.house.gov/sites/republicans.science.house.gov/files/documents/epa_releases_maps_letter.pdf.

[16] These percentages do not account for artificial paths, unclassified streams, ditches/canals, and other flowlines that are mapped in the NHD.

I.C.6 Ditches

The final rule differs from the 2015 Rule regarding ditches. Under the final rule, as implemented, a ditch is jurisdictional when it meets one of the criteria, discussed in this section, to be a "water of the United States," including but not limited to tidal ditches, ditches that are interstate waters, ditches that are relatively permanent waters per the *Rapanos* Guidance, and certain ditches that are non-relatively permanent waters and that have a significant nexus consistent with the *Rapanos* Guidance. Ditches are not excluded in rule text; however, ditches (including roadside ditches) excavated wholly in and draining only upland and that do not carry a relatively permanent flow of water are generally not treated as jurisdictional under the final rule.

Under the 2015 Rule, a ditch was jurisdictional if it is a TNW (including tidal ditches), an interstate water, or a "tributary" (so long as it is not excluded). The 2015 Rule excluded ditches with ephemeral flow that are not a relocated tributary or excavated in a tributary; ditches with intermittent flow that are not a relocated tributary, excavated in a tributary, or drain wetlands; and ditches that do not flow, either directly or through another water, into a TNW, interstate water, or the territorial seas.

Under the final rule, ditches that are TNWs (including tidal ditches) and ditches that are an interstate water would not represent a change from the baseline – such waters would continue to be "waters of the United States."

The main changes for ditches between the final rule as implemented, and the 2015 Rule are for ditches that are tributaries and those that are excluded from the definition of "waters of the United States" under the 2015 Rule. Certain non-relatively permanent ditches would be jurisdictional under the 2015 Rule where they met that rule's definition of "tributary" and were not specifically excluded. These ditches may not be jurisdictional under the final rule as implemented because they lack a case-specific significant nexus. For example, a non-seasonal intermittent ditch that drains a wetland would have been *per se* jurisdictional under the 2015 Rule so long as it met the 2015 Rule's definition of "tributary" but would require a case-specific significant nexus to a TNW in order to be jurisdictional under the final rule as implemented.

Under the final rule as implemented, ditches constructed in tributaries, that alter or relocate a tributary, or that drain more than uplands would be jurisdictional, so long as such ditches are either RPWs or are non-RPWs that have a significant nexus to a TNW. Such waters were also jurisdictional under the 2015 Rule so long as they met that rule's definition of "tributary," with the exception of ditches with ephemeral flow that do not drain only uplands (*e.g.*, ephemeral ditches that drain wetlands), as such ditches are specifically excluded under the 2015 Rule. There may be some non-RPW intermittent ditches that alter or relocate a tributary or are constructed in tributaries or adjacent wetlands and met the conditions of the 2015 Rule's definition of "tributary" that would be jurisdictional under the baseline but would not jurisdictional under the final rule because they are determined not to have a case-specific significant nexus.

The agencies were unable to estimate the change in jurisdiction for ditches using either the ORM2 data or the NHD and NWI data. As previously discussed, the agencies did not analyze ORM2 data for the 2015 Rule AJDs. ORM2 does not track ditches separately as a category for tributary jurisdiction, so the data could not be used to determine which ditches the agencies found to be jurisdictional under the 2015 Rule that would not be jurisdictional under the final rule as implemented. Because the NHD does not map all

ditches and canals and does not assign a hydrologic permanence category to the ditches and canals it does map, the dataset could not be used to estimate the change in jurisdiction of ditches. In addition, the datasets could not be used in all circumstances to determine if a ditch is a relocated stream or if it drains a wetland.

I.C.7 Lakes and Ponds

The agencies anticipate that there may be a change in jurisdiction between the 2015 Rule and the final rule as implemented for certain lakes and ponds. Under the final rule as implemented, TNW lakes and ponds, interstate lakes and ponds, and all relatively permanent lakes and ponds that are considered tributaries are regulated as "waters of the United States." In addition, non-relatively permanent lakes and ponds that are considered tributaries undergo a case-specific significant nexus evaluation to determine their jurisdictional status. These non-RPW lakes and ponds would include both non-seasonal intermittent waters as well as ephemeral waters. Some but not all non-relatively permanent lake and pond tributaries would be found to be jurisdictional under pre-2015 practice.

Under the 2015 Rule, lakes and ponds that are TNWs, interstate, or "adjacent" were jurisdictional. "Adjacent" was defined in the 2015 Rule to mean "bordering, contiguous, or neighboring."

TNWs and interstate waters are discussed previously – such lakes and ponds will experience no change in jurisdiction under the final rule as compared to the 2015 Rule. One main difference between the final rule and the 2015 Rule is that pre-2015 practice treats lakes and ponds that are part of the stream network as "tributaries" while the 2015 Rule treated such lakes and ponds as "adjacent." All of the lakes and ponds that are considered as jurisdictional tributaries under the final rule would have been considered "adjacent" under the 2015 Rule, as such lakes and ponds would be part of the stream network and would either be considered bordering or contiguous. However, the 2015 Rule would have also included as jurisdictional additional lakes and ponds that would likely not be considered "waters of the United States" under the final rule. Such waters include non-relatively permanent lakes and ponds that contribute flow to a TNW but that do not have a case-specific significant nexus to a TNW. Such waters may have been considered jurisdictional under the (a)(3) provision of the final rule prior to the 2001 *SWANCC* decision, but the agencies have not determined any waters to be jurisdictional under pre-2015 practice using the (a)(3) provision since *SWANCC*. The 2015 Rule included as *per se* jurisdictional non-relatively permanent lakes and ponds that are part of the stream network of a TNW, as such lakes and ponds would have been "adjacent" under the 2015 Rule – such waters did not require a case-specific significant nexus determination. In addition, the 2015 Rule included lakes and ponds that are not a headwater or in-stream so long as those waters met that rule's definition of "neighboring" or if the lake or pond met the criteria to be considered under a case-specific analysis under the 2015 Rule's (a)(7) and (a)(8) categories and was found to have a significant nexus to a TNW, interstate water, or territorial sea. For example, a lake or pond that is located within 100 feet of the ordinary high water mark of a tributary would have been considered a jurisdictional adjacent water under the 2015 Rule but likely would not be considered jurisdictional under the final rule. Similarly, a lake or pond that is located with 4,000 feet for the ordinary high water mark of a tributary that has a case-specific significant nexus to a TNW, interstate water, or a territorial sea, either alone or in combination with similar situated waters in the region, would have been jurisdictional under the 2015 Rule but likely would not be jurisdictional under the final rule as implemented. Thus, the final rule as implemented will include fewer lakes and ponds as jurisdictional than the 2015 Rule, but this change cannot be quantified.

Available data from ORM2 on the status of lakes and ponds that are tributaries under the final rule as implemented is discussed in the "Tributaries" section above. The agencies were not able to easily parse out from the available AJD data under pre-2015 practice if the tributary at issue is a lake, a pond, or a stream, as there is no field in ORM2 for the project manager to denote such. Thus, the agencies are not able to estimate the percentage of non-relatively permanent lake and pond tributaries which are deemed jurisdictional under pre-2015 practice. Furthermore, as discussed above in the "Tributaries" section, the agencies do not further indicate if a non-RPW is a non-seasonal intermittent water or ephemeral, further complicating any quantification of change for this category of waters.

For the reasons described in Section II.C., the agencies were unable to use NHD or NWI to estimate the potential change in CWA jurisdiction for lakes and ponds under implementation of the final rule, as compared to the 2015 Rule.

I.C.8 Adjacent Wetlands

Under the final rule, wetlands that are "adjacent" include wetlands that are bordering, contiguous, or neighboring a "water of the United States," including wetlands behind a berm, constructed barriers, and the like. The *Rapanos* Guidance states that adjacent wetlands are to be evaluated differently depending on the water to which they are adjacent (*i.e.*, TNWs, RPWs, and non-RPWs). Wetlands adjacent to TNWs are *per se* jurisdictional under the final rule as implemented. Under the final rule as implemented under the *Rapanos* Guidance, wetlands adjacent to RPWs are analyzed in different ways, depending on whether or not they are directly abutting. Adjacent wetlands that directly abut an RPW are jurisdictional without the need for further analysis under the final rule. Wetlands adjacent to but not directly abutting an RPW require a case-specific significant nexus analysis to determine their jurisdictional status. Similarly, all wetlands adjacent to non-RPWs require a case-specific significant nexus evaluation to determine their jurisdictional status.

Under the 2015 Rule, all waters, including wetlands, adjacent to a TNW, interstate water, territorial sea, a tributary (as defined in that rule), or impoundment of a jurisdictional water were considered "waters of the United States." The 2015 Rule's definition of "adjacent" was the same as the final rule's definition of "adjacent." However, the 2015 Rule also defined "neighboring," which is not defined in the final rule or in the guidance documents implementing the final rule. Under the 2015 Rule, wetlands that are part of an ongoing farming, ranching, or silvicultural operation were not "adjacent," but may have been jurisdictional based on a case-specific significant nexus analysis.

There are differences between the final rule as implemented and the 2015 Rule regarding which wetlands would be considered as jurisdictional adjacent wetlands. The agencies believe that more wetlands would be considered adjacent under the 2015 Rule than under the final rule. This is in part due to the 2015 Rule's definition of "neighboring," as some wetlands would have been considered adjacent as "neighboring" under the 2015 Rule that would not be considered adjacent under the final rule. In addition, the 2015 Rule included more streams as "tributaries" than the final rule as implemented and, therefore, also covered more wetlands adjacent to those 2015 Rule tributaries. In addition, there may be some wetlands that are part of an ongoing farming, ranching, or silvicultural operation that would not have been "adjacent" under the 2015 Rule and that lack a case-specific significant nexus to a TNW, interstate water, or territorial sea. Such wetlands would not have been jurisdictional under the 2015 Rule but may be jurisdictional under the final rule. For example, if a wetland that is part of an ongoing farming operation is

adjacent to a TNW, that wetland would be *per se* jurisdictional under the final rule as implemented without the need for a case-specific significant nexus determination. Such wetlands would not have been considered jurisdictional as adjacent under the 2015 Rule but could meet the conditions under (a)(8) to be considered jurisdictional. The agencies were unable to quantify the final rule's change in jurisdiction of adjacent wetlands compared to the 2015 Rule.

The agencies analyzed data in ORM2 from FY13-17 for AJDs for adjacent wetlands conducted under pre-2015 practice. The ORM2 database under pre-2015 practice includes the following categories of adjacent wetlands: wetlands adjacent to TNWs, wetlands that directly abut RPWs, wetlands adjacent to but that do not directly abut RPWs, and wetlands adjacent to non-RPWs. Although the agencies did not analyze ORM2 data for AJDs conducted under the 2015 Rule, for comparative purposes the agencies do qualitatively describe the differences between the final rule as implemented and the 2015 Rule for each previous mentioned category of adjacent wetlands.

Data in ORM2 from FY13-FY17 indicate that 5,261 waters were determined to be jurisdictional as wetlands adjacent to TNWs under pre-2015 practice. Wetlands that are adjacent to TNWs under pre-2015 practice, also would have been jurisdictional under the 2015 Rule. The agencies anticipate that there may be some wetlands considered jurisdictional under the 2015 Rule as wetlands adjacent to TNWs because they meet that rule's definition of "neighboring" that would not be jurisdictional under the final rule because they would not be considered adjacent. The agencies did not review AJDs made under the 2015 Rule and were not able to quantify this difference using ORM2 data.

Under pre-2015 practice, from FY13-FY17, 11,203 waters were determined to be jurisdictional wetlands directly abutting an RPW. These wetlands would also have been jurisdictional under the 2015 Rule. The agencies do not anticipate that the final rule would change the jurisdictional status of these wetlands as compared to the 2015 Rule. However, the agencies anticipate that there may be some additional wetlands that would have been considered jurisdictional under the 2015 Rule as "adjacent" because they met that rule's definition of "neighboring" that would not be jurisdictional under the final rule because they would not be considered adjacent but were unable to quantify this change using ORM2 data.

Under pre-2015 practice, the agencies' data indicate that most wetlands that are adjacent to but that do not directly abut RPWs are found to be jurisdictional following a significant nexus analysis. In ORM2 from FY13-FY17, there were 3,939 adjacent wetlands that do not directly abut an RPW, and thus required additional jurisdictional analysis. Of these, 3,834 waters were determined to be jurisdictional because they had a significant nexus, and 105 were found non-jurisdictional because they lacked a significant nexus – meaning approximately 97 percent of such wetlands were determined to be jurisdictional under pre-2015 practice. Under the 2015 Rule, wetlands that met the definition of "adjacent" would have been considered "waters of the United States" without the need for a case-specific analysis of significant nexus. The agencies anticipate that many, if not all, of 105 non-abutting wetlands adjacent to RPWs that were determined to be non-jurisdictional under pre-2015 practice would have met the 2015 Rule's definition of "adjacent" and would have been jurisdictional under that rule. The agencies did not analyze AJDs from the 2015 Rule and were unable to use that data to estimate the change in the jurisdictional status of non-abutting wetlands adjacent to RPWs. As noted previously, the 2015 Rule would consider more wetlands as adjacent than the final rule as implemented due to the 2015 Rule's definition of "neighboring." Such

wetlands would also represent a change in jurisdiction, but the agencies were unable to quantify this change using ORM2 data.

Available data from AJDs indicate that under pre-2015 practice, most wetlands adjacent to non-RPWs were determined to be jurisdictional after a case-specific significant nexus analysis that considered both the non-RPW and its adjacent wetlands. In ORM2 from FY13-FY17, 1,681 waters were determined to be jurisdictional wetlands adjacent to a non-RPW[17] and 152 wetlands adjacent to a non-RPW were determined to be non-jurisdictional – 92 percent of wetlands adjacent to non-RPWs were determined to be jurisdictional. Assuming that the non-RPWs met the 2015 Rule's definition of "tributary" (*i.e.*, have both a bed and banks and an ordinary high water mark) and were not specifically excluded, wetlands adjacent to non-RPWs would have been be *per se* jurisdictional under the 2015 Rule without the need for a case-specific analysis, and the 152 wetlands that were determined to be non-jurisdictional under pre-2015 practice would have been jurisdictional under the 2015 Rule. As discussed, the 2015 Rule would have considered more wetlands as adjacent than the final rule as implemented due to the 2015 Rule's definition of neighboring. Thus, compared to the 2015 Rule, fewer wetlands will be considered jurisdictional under the final rule for this category of wetlands. The agencies did not analyze AJDs from the 2015 Rule and cannot use those AJDs to quantify an estimated change in jurisdiction.

Although the ORM2, NHD, and NWI datasets provide some general aquatic resource location information, as described above, they cannot be used to quantify with precision changes to the jurisdictional status of wetlands under the implementation of the final rule as compared to the baseline of the 2015 Rule. For the reasons discussed above, however, the agencies anticipate that there will be fewer wetlands subject to the CWA as "waters of the United States" under implementation of the final rule compared to the 2015 Rule.

I.C.9 Nonnavigable, Isolated, Intrastate Waters

Under the final rule as implemented using the *SWANCC* Guidance, nonnavigable, isolated, intrastate waters would not be considered "waters of the United States" based solely on the presence of migratory birds or other factors listed in the Migratory Bird Rule. Since the Supreme Court's decision in 2001 in *SWANCC*, the agencies have not determined jurisdiction based on the (a)(3) category of the pre-2015 regulations which the agencies are recodifying with this final rule. In addition, the *Rapanos* Guidance notes that waters deemed non-jurisdictional under *SWANCC* also would not be found jurisdictional under a significant nexus analysis.[18] However, under the 2015 Rule, certain nonnavigable, isolated, intrastate waters like those at issue in *SWANCC* would be deemed federally jurisdictional as "adjacent" waters or other waters found on a case-specific basis to have a "significant nexus" with primary waters. Thus, the final rule will result in fewer nonnavigable, isolated, intrastate waters being considered jurisdictional as compared to the 2015 Rule as implemented.

[17] The non-RPWs were also determined to be jurisdictional in these cases, as under pre-2015 practice the agencies evaluate the tributary along with any adjacent wetlands for a case-specific significant nexus.

[18] *See Rapanos* Guidance at 9, n.32. ("Nothing in this guidance should be interpreted as providing authority to assert jurisdiction over waters deemed non jurisdictional by *SWANCC*.")

In ORM2 from FY13-FY17, 20,353 waters were determined to be non-jurisdictional non-navigable, intrastate, isolated waters under (a)(3) of pre-2015 practice, which will be reinstated nationwide with this final rule. As compared to the final rule as implemented, there may be a change as compared to the 2015 Rule baseline, but the agencies were not able to quantify any such change and have not analyzed data from ORM2 for AJDs conducting using the 2015 Rule. These features are not mapped in NHD/NWI as their own category.

I.C.10 Waters Excluded from the Definition of "Waters of the United States"

The prior sections of this chapter discuss the potential effects of implementation of this final rule's definition of "waters of the United States" on waters that may have been found to be jurisdictional under the 2015 Rule and that may not be jurisdictional under implementation of this final rule. This section addresses potential effects of implementation of exclusions and of waters that would generally not be "waters of the United States" under the final rule compared to exclusions under the 2015 Rule.

Where the agencies assume no changes or limited changes when comparing the waters excluded or considered generally non-jurisdictional under the final rule as implemented and the 2015 Rule's exclusions, there is no further discussion. For example, the agencies anticipate no change in the implementation of the exclusions for waste treatment systems and prior converted cropland. In addition, many of the water features that the 2015 Rule specifically excluded are generally not considered "waters of the United States" under the final rule, resulting in no likely change in jurisdiction. The 1986 and 1988 preambles that will be utilized to implement the final rule use the terms "dry land" and "upland" interchangeably, while the 2015 Rule exclusively used the term "dry land." However, the two terms are meant to be synonymous, so there is no intended change for using "dry land" in place of "upland" or for reverting back to the use of "upland" in implementation of this final rule. Categories of waters where there is no anticipated change include artificially irrigated areas which would revert to upland if the irrigation ceased and artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water for primarily aesthetic reasons.[19] In addition, groundwater, including groundwater drained through subsurface drainage systems, was excluded in the 2015 Rule, and, though groundwater is not specifically excluded in the regulatory text of the final rule, it is not considered a "water of the United States" under implementation of the final rule. Similarly, puddles were explicitly excluded in the 2015 Rule and were not considered "waters of the United States" under the final rule's implementation and have never been considered as such, even though they are not included in the list of features that are generally non-jurisdictional.

One distinction that is not noted in the discussion of exclusions below is that under the 1986 and 1988 preamble language the agencies retain the authority on a case-by-case basis to determine that a particular feature generally considered non-jurisdictional is in fact a "water of the United States." That case-by-case consideration thus will be reinstated under implementation of this final rule, as the agencies will be utilizing the 1986 and the 1988 preamble language. The agencies did not retain that case-by-case authority for excluded features under the 2015 Rule – all excluded waters under the 2015 Rule would not

[19] For simplicity, the language used is taken from the 1986 and 1988 preamble language but there are no apparent major differences between that language and the exclusions in the 2015 Rule.

be "waters of the United States," unless they met the terms to be a TNW, interstate water, or territorial sea. Though not discussed below, the case-by-case authority in the 1986 and the 1988 preamble language means there is the potential for certain waters to be jurisdictional under the final rule that would not have been jurisdictional under the 2015 Rule. This change cannot be quantified.

Under pre-2015 practice, the agencies do not record in the ORM2 database if a water is excluded from the definition of "waters of the United States" due to one of the regulatory exclusions. Such waters may be entered into the database as "uplands." However, other aquatic resources or features that the Corps determines to not meet the regulatory definition of "waters of the United States" are also categorized as "uplands" in the database. The Corps conducted 14,357 upland determinations in FY13-17 under pre-2015 practice. The agencies were unable to query ORM2 to determine how many waters have been determined to meet an exclusion from the definition of "waters of the United States" under pre-2015 practice. After the 2015 Rule was finalized, the ORM2 database was updated to track when waters were determined not to be "waters of the United States" due to the exclusions under the 2015 Rule, but the agencies did not analyze the 2015 Rule AJDs for the reasons previously stated. The agencies were unable to use ORM2 data to estimate the change in jurisdiction for waters and features that are excluded from the definition of "waters of the United States."

For the reasons described in Section II. C, the agencies were unable to use the NHD or the NWI to estimate the extent of excluded waters under the final rule or the 2015 Rule.

I.C.10.1 Ditches

Under the final rule, ditches are not explicitly excluded from the definition of "waters of the United States." However, the *Rapanos* Guidance, will inform the agencies' implementation of the final rule, states that ditches (including roadside ditches) excavated wholly in and draining only upland and that do not carry a relatively permanent flow of water are generally not jurisdictional. In comparison, the 2015 Rule excluded three categories of ditches[20]: (1) ditches with ephemeral flow that are not a relocated tributary or excavated in a tributary; (2) ditches with intermittent flow that are not a relocated tributary, excavated in a tributary, or drain wetlands; and (3) ditches that do not flow, either directly or through another water, into a TNW, interstate water, or territorial sea.

The discussion of the change in jurisdiction for ditches is included in Section I.C.6. The agencies are unable to quantify changes as a result of implementation of the final rule because the data needed to do so are not available.

I.C.10.2 Artificial Lakes and Ponds and Water-Filled Depressions

Implementation of the final rule includes use of the 1986 and 1988 preamble language regarding categories of waters that are generally not jurisdictional.[21] The 1986 and 1988 preamble language incudes

[20] Ditches that are TNWs, interstate waters, or territorial seas would not be excluded under the 2015 Rule, even if they met one of the excluded ditch categories (*e.g.*, a tidal ditch would not be excluded, even if it is not a relocated tributary, is not excavated in a tributary, or does not drain wetlands).

[21] *See* 51 FR 41206, 41217 (Nov. 13, 1986) and 53 FR 20764, 20765 (June 6, 1988).

as generally non-jurisdictional artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing. This differs from the 2015 Rule's exclusion which excluded artificial, constructed lakes and ponds created in dry land such as farm and stock watering ponds, irrigation ponds, settling basins, fields flooded for rice growing, log cleaning ponds, or cooling ponds. The 2015 Rule's exclusion was worded slightly differently (uses "constructed" instead of "excavating and/or diking") but was intended to capture the same type of features as the 1986 and 1988 preamble language. Some differences that are more substantive include that the 2015 Rule added "log cleaning ponds" to the exclusion, whereas such ponds are not explicitly included as waters that are generally non-jurisdictional in the 1986 and 1988 preamble language. The 1986 and 1988 preamble language states these excluded features are to be used exclusively for the stated purposes while the 2015 Rule did not state this. The 2015 Rule's exclusion explicitly stated "fields flooded for rice growing," which may not equate to artificial lakes and ponds in the same category in the 1986 and 1988 preamble language.[22] In addition, the 2015 Rule explicitly excluded artificial, constructed farm ponds created in dry land, whereas farm ponds are not listed in the similar category in the 1986 and 1988 preamble language. The agencies were unable to quantify that change.

The 1986 and 1988 preamble language that will be used to implement the final rule includes in the waters that are generally non-jurisdictional the category of water-filled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining, fill, sand, or gravel. The 2015 Rule's exclusion differed because it explicitly added water-filled depressions created in dry land incidental to mining. Such depressions are not explicitly included in the 1986 and 1988 preamble language. In addition, there are minor text changes, but they are not anticipated to create changes in the way the exclusion is implemented. The 1986 and 1988 preamble language also differs from the 2015 Rule's exclusion because the preamble language includes additional specifications that such waters are generally non-jurisdictional unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of "waters of the United States." While the 2015 Rule text did not include this abandonment provision, the agencies noted in their response to comments for the 2015 Rule that they intended to continue to implement that abandonment provision.[23]

I.C.10.3 Erosional Features and Lawfully Constructed Grassed Waterways

The 2015 Rule excluded erosional features, including gullies, rills, and other ephemeral features that did not meet the definition of "tributary" and lawfully constructed grassed waterways. While such features

[22] "Fields flooded for rice growing" may not always be considered "[a]rtificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as…rice growing." 51 FR 41217 (November 13, 1986). Lakes and ponds generally have an ordinary high water mark in the absence of adjacent wetlands, but a flooded rice field may not.

[23] U.S. Environmental Protection Agency and U.S. Department of the Army (U.S. EPA and Department of the Army). 2015b. Response to Comments for the Clean Water Rule: Definition of "Waters of the United States." Chapter 7, page 209. Available at regulations.gov for Docket ID No. EPA-HQ-OW-2011-0880 (https://www.regulations.gov/document?D=EPA-HQ-OW-2011-0880-20872).

are not included as features that are generally non-jurisdictional under the 1986 and 1988 preamble language, the *Rapanos* Guidance notes that the agencies will generally not assert jurisdiction over swales or erosional features (*e.g.*, gullies, small washes characterized by low volume, infrequent, or short duration flow. Gullies and rills would not be considered tributaries under the final rule and thus would also be non-jurisdictional. There could be lawfully constructed grassed waterways that would be considered jurisdictional under the final rule that would have been excluded under the 2015 Rule. The agencies are unable to quantify the magnitude, if any, of such a change.

I.C.10.4 Stormwater Control Features

The 2015 Rule excluded stormwater control features constructed to convey, treat, or store stormwater that are created in dry land. Stormwater control features are not included in waters that are generally non-jurisdictional under the 1986 and 1988 preamble language, though some stormwater features may be considered and found non-jurisdictional on a case-specific basis. The agencies were unable to quantify the magnitude, if any, of such a change.

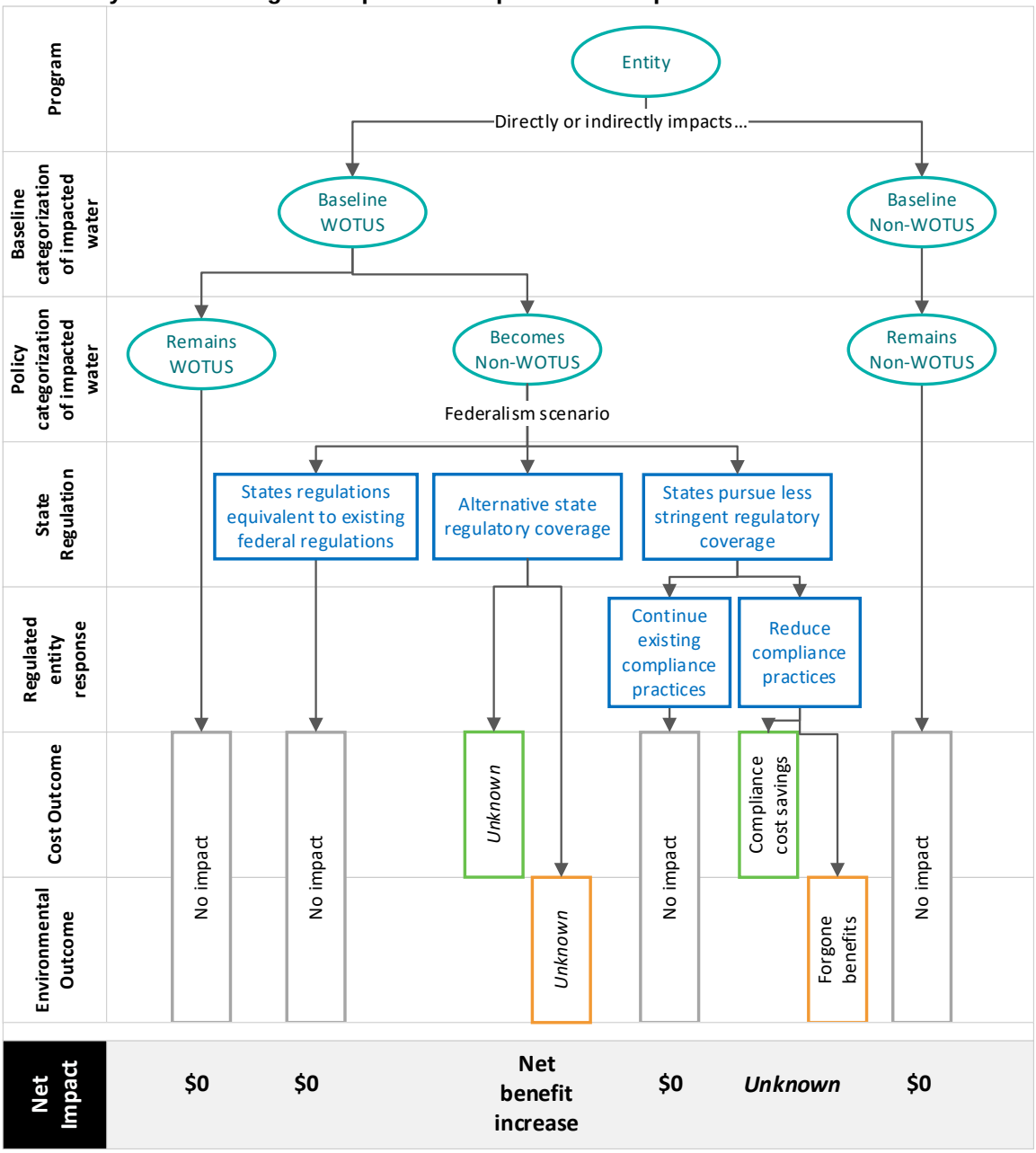
I.C.10.5 Wastewater Recycling Structures

The 2015 Rule excluded wastewater recycling structures constructed in dry land; detention and retention basins built for wastewater recycling; groundwater recharge basins; percolation ponds built for wastewater recycling; and water distributary structures built for wastewater recycling. Such waters are likely not considered jurisdictional under the final rule unless they are connected to the tributary network, and even then, some such waters could be considered as excluded under the exclusion for waste treatment systems. The agencies were unable to quantify the magnitude, if any, of such a change.

II Discussion and Analyses of the Major Causes of Uncertainty

The final economic welfare implications of this final rule will be a function of the amount, type, and location of water resources that change CWA jurisdictional status, the level of water resource regulation undertaken by individual states and tribe before and in response to the change in definition, and the responses of regulated entities to the final rule. Actions taken by tribes to address a change in CWA jurisdiction will also have an impact on costs and benefits associated with this final rule, but because the agencies were not able to include tribes in their analysis, only states are discussed in this section. Tree-diagrams like the one in Figure II-1 provide a systematic framework for understanding and qualitatively analyzing the potential implications of the final rule and provide a useful introduction to the subsequent analyses that go into further detail regarding one or several layers of uncertainty. As shown in the stylized example in Figure II-1, the effects of the change in the jurisdictional status of waters can range from having a minimal and possibly zero impact, to yielding savings in compliance costs and losses in environmental benefits. In some cases, the final rule may result in an increase in net benefits.

Figure II-1: Stylized tree diagram of potential impacts from implementation of the final rule.[1]



In the simplest case, as shown in the rightmost branch in Figure II-1, if an entity (*e.g.*, a development project, manufacturing facility, or state transportation project) impacts a water that would not be considered a "water of the United States" in the baseline regulatory regime, then it is also assumed not to be a "water of the United States" under implementation of the final rule, and hence there would be no changes in the compliance costs incurred by that entity nor in the environmental benefits experienced. Therefore, there is no impact to society in this situation.

At the other extreme, in the leftmost branch of Figure II-1, if an entity impacts a water that would be considered a "water of the United States" in the baseline, and this water is also considered a "water of the United States" under the final rule, then there will also be no change in regulatory requirements, and thus no change in compliance costs or environmental benefits. Again, in this situation there is a zero-net impact to society. Many categories of baseline activities regulated under the CWA sections 303(d), 311, 401, 402, and 404 will likely fall into this type of situation and continue to be regulated by the CWA under the final rule.

The cases of interest are those where an entity directly or indirectly impacts a water that would be considered a "water of the United States" under the baseline regulatory regime but would no longer be considered a "water of the United States" under the final rule. Generally, state governments could take one of three actions in response to implementation of the final rule. First, a state's current regulatory regime under state law may already be as comprehensive, or more comprehensive, than that of the federal government. It is also possible that a state will revise its current laws and regulations to address these waters and continue the actions required by the CWA in the baseline. In either case, state requirements would address any regulatory difference in the wake of implementation of the change in what waters are considered a "water of the United States." This will result in no change in compliance costs to the regulated community and no change in environmental benefits.

It is important to emphasize that any shift in regulatory administration, implementation, and enforcement from the federal government to states represents a transfer in administrative costs for purposes of the economic analysis. If federal and state administrative costs are similar, the net impact should be roughly zero in the long-run. However, there could be significant short-run, and possibly long run, costs to state governments to build, expand, and maintain the necessary regulatory infrastructure. [24] To the extent that a state's cost of implementing an expanded regulatory framework is greater than the previous federal expenses, net benefits could decrease. It is also possible that the state management costs could be borne most directly by state tax payers, although the data necessary to estimate the size and distribution of the tax impacts was not available for use in this analysis. The agencies recognize that this would be more of an issue in some programs than others and is described in more detail in the state response analysis in Section II.A.

Another potential outcome is a federalism scenario, where states that may be more knowledgeable of the local factors that can influence the environmental and economic values of the waterbodies in their jurisdiction can allocate resources more efficiently than the federal government to focus programs on aquatic resources of relatively higher environmental and social value. Depending on whether the newly non-jurisdictional water would be regulated, the compliance costs associated with an activity impacting an individual water resource could increase or decrease accordingly. And in turn, the corresponding environmental benefits could increase or decrease.

[24] As an example of possible costs for states to develop surface water programs, to prepare for NPDES authorization, the state of Alaska created a capacity building plan that increased the full-time equivalents (FTEs) allocated to the program by nearly 50 percent (ADEC, 2008); the state of Idaho anticipated more than doubling the relevant staff (IDEQ, 2017); and the state of Massachusetts estimates that authorization would require over 100 FTE (MassDEP, 2013).

A final scenario is that states would invoke a less comprehensive regulatory regime in response to the change in CWA jurisdictional scope, or not implement any state regulations beyond federal requirements. For example, three states are currently not authorized to implement the NPDES program, and so they would potentially not have the capacity (staff and resources) to regulate discharges to waters that would no longer be jurisdictional where those discharges would not reach jurisdictional waters. These states may opt to not build such a capacity depending on the preferences of their residents and budget constraints, or the fact that they currently have legal requirements to not regulate beyond the CWA. In such cases, unless regulated entities continue to behave as if still regulated (due to fixed costs already incurred, fear of future liability, or goodwill with local citizens), there will likely be avoided costs to the regulated community and forgone benefits to the public. Whether the net effect is positive or negative would depend on whether the resulting cost-savings are greater than the absolute value of the forgone environmental benefits. Regulated entities' potential responses are more thoroughly described in Section II.B.

Overall, the generalized tree diagram here (Figure II-1) provides a systematic and transparent organization of potential outcomes. These diagrams convey that in many cases the potential net effects could be minimal. Quantifying the frequency in which the scenarios in any branches of the tree take place, not to mention the magnitude of any resulting costs and benefits, is extremely difficult. Doing so requires data and well-informed assumptions regarding the current characterization of waters nationwide, the potential changes in "waters of the United States" across the country, and the potential response of state governments and the regulated entities across the various CWA programs and regulated waters. In addition, such a quantitative analysis faces the usual challenges of trying to model, quantify, and monetize the potential costs and benefits.

II.A Potential State Regulator Response

The CWA programs outlined in this section, including the section 303 water quality standards program, the section 311 Oil Spill Prevention program, the section 401 water quality certification program, the section 402 NPDES permit program, and the section 404 permit program for the discharge of dredged or fill material, rely on the definition of "waters of the United States" for program implementation. A recodification of the pre-existing definition of "waters of the United States" will affect these federal programs as implemented at the state or tribal level. Potential effects of this rule, however, will vary based on a state's independent legal authority and programs under its own state law to regulate aquatic resources.

II.A.1 Implementation of the CWA at the State Level

The purpose of this section is to summarize the current status of CWA programs in the states based on the agencies' current understanding and describe how that information is used to characterize the states' potential responses regarding waters that will no longer be jurisdictional under the CWA following a recodification of the pre-existing regulations. The agencies recognize that the federal and state laws and programs can overlap and some states have more stringent requirements than the federal regulations. The way in which these programs are administered and affect sources of water pollution will depend on the requirements or permits issued.

II.A.1.1 CWA Section 401 Water Quality Certification Program

All 50 states, the District of Columbia, and the territories of the United States have 401 certification programs which provide the states authority to approve, disapprove, or conditionally approve federal permits and licenses issued within their state. States vary in their implementation of CWA section 401 authority; some states involve themselves in federal permitting activities and make informed certification decision, while others often waive their certification authority over federal permits and licenses. For purposes of this analysis, the agencies assumed that state approaches to section 401 certification are unlikely to change as a result of this rule.

The authority of states under section 401 corresponds directly to the issuance of federal permits and licenses within the state. Any change in the scope of the "waters of the United States" definition will alter the frequency with which the federal government issues permits and licenses for activities affecting "waters of the United States." In turn, this will affect how often states can exercise their authority under section 401. In other words, by the federal government reducing the jurisdictional scope under the CWA (*e.g.*, fewer section 404 permits issued), it will not issue as many permits, and the states will not issue as many section 401 certifications. This results in states issuing fewer section 401 certifications but is unlikely to change how states approach the section 401 process.

II.A.1.2 CWA Section 402 National Pollutant Discharge Elimination System

The CWA section 402 NPDES permit program is administered by the EPA, unless states have received authorization for the program. Forty-seven states and the U.S. Virgin Islands have authority to administer the NPDES program.[25] States may be approved for all or some of the major components of an NPDES program: biosolids, pretreatment, federal facilities, and general permits and basic municipal and industrial permits. Six states are fully authorized for all components of the NPDES program.[26] Forty-one states have authority over one or more of the NPDES program components, with the EPA administering the other components.[27] Currently, the EPA issues all NPDES permits in the three states that do not have authority for the NPDES program as well as all permits in the District of Columbia, all U.S. Territories (excluding the U.S. Virgin Islands), and on virtually all tribal reservation lands.[28]

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[25] Idaho has been approved to run its own NPDES program, effective July 1, 2018, and will be taking over administration of the program in four phases over four years.

[26] Those states with fully authorized programs are: Arizona, Michigan, Ohio, South Dakota, Utah, and Wisconsin.

[27] Those states that have been authorized to run parts of the NPDES program are: Alabama, Alaska, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Jersey, New York, North Carolina, North Dakota, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Vermont, Virginia, Washington, West Virginia, and Wyoming.

[28] The three states are Massachusetts, New Hampshire, and New Mexico. At present, no tribes have authorization for a tribal NPDES permitting program. Maine is authorized to issue NPDES permits on some tribal lands.

Under state authority and law, states may already regulate state waters that are not considered "waters of the United States" or could use their existing authorities do so in the future. At this time, the agencies do not have sufficient information to determine the extent of these programs. With this final rule changing federal CWA jurisdiction, states may continue issuing permits as they have been for discharges into waters outside the scope of CWA jurisdiction. Alternatively, if the discharge is no longer into a "water of the United States," states may modify existing NPDES permits to recognize that the receiving waterbody of concern is further away from the pollutant discharge point requiring an NPDES permit.

II.A.1.3 CWA Section 404 Dredged and Fill Permit Program

The CWA section 404 permitting program regulates the discharge of dredged or fill material into "waters of the United States" including wetlands. The Corps administers the day-to-day program in tribal reservation lands, the District of Columbia, and all U.S. Territories, as well as in the 48 states that have not assumed the program. To date only New Jersey and Michigan have assumed the section 404 program for those "waters of the United States" within their borders that are assumable,[29] meaning that the EPA has approved their administration of a state dredged and fill program in lieu of the federal section 404 program administered by the Corps. The Corps continues to administer the section 404 permitting program in "waters of the United States" that New Jersey and Michigan are not able to assume under section 404(g)(1).

In addition to the section 404 program, 33 states have some form of dredged and fill permitting programs for state inland waters, which vary in scope and do not necessarily address waters already covered under section 404.[30] The other 17 states rely on the section 401 certification program to address dredged and or fill activities that are permitted by the Corps in inland waters. Those states with a state dredged and fill program may have a greater capacity to administer dredged and fill permitting for "waters of the state," including waters that would not be considered "waters of the United States" based on the changes to CWA jurisdiction in this rule.

Five states that rely on the section 401 certification program for inland waters have state programs that cover coastal or tidal waters. For the purpose of the EA, the agencies have concluded that inland programs are more indicative of a state's capacity to address waters that would no longer be federally jurisdictional under the rule than coastal or tidal programs. Similarly, the agencies recognize that all states

[29] CWA section 404(g) authorizes states, with approval from the EPA, to assume authority to administer the 404 program in some, but not all, "waters of the United States," within their borders. Section 404(g)(1) describes the waters over which the Corps retains administrative authority even after program assumption by a state or tribe.

[30] Thirty-three states have explicit state authority to issue permits for dredged and fill activities in inland waters: California, Connecticut, Delaware, Florida, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Montana, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, Tennessee, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming. The agencies have identified the presence of these programs in state laws and regulations but did not attempt to characterize how the states implement these programs or what effects these programs have on a state's aquatic resources.

have the authority to regulate submerged lands in their state. While some states have used these authorities in part to develop regulatory programs that address a wide scope of dredged and fill activities, others have not, or have focused those programs on areas where federal jurisdiction is unlikely to change following the repeal of the 2015 Rule.[31] As a result, the agencies treated the presence of submerged lands regulatory authority similarly to coastal wetlands permitting programs. The presence of such authority indicates some capacity of the state to permit dredged and fill activities but is not sufficiently indicative of a state's capacity to address waters that would no longer be federally jurisdictional under the final rule.

The agencies also note that the presence of a state program that regulates dredged and fill activities does not necessarily indicate that the state program parallels or regulates waters equivalent to the geographic scope and range of activities regulated under CWA section 404. Section 404 regulates a wide variety of activities that result in the discharge of dredged or fill material from a point source into any water that is a "water of the United States." State dredged and fill programs vary widely in what types of waters and activities they regulate, with states often relying on a range of laws and regulations that are targeted to different waters and activities.[32] While some of these programs may regulate more broadly than the geographical jurisdiction of the CWA, they often do not regulate all types of waters or activities covered by section 404 of the CWA. However, the existence of these state dredged and fill programs serves as an indicator of a state's interest and capacity in regulating dredged and fill activities within waters of their state. As a result, the agencies have made the assumption for purposes of this analysis that the 33 states with existing inland programs, regardless of scope, are likely to have the capacity and interest to regulate waters that are no longer jurisdictional under this final rule.[33]

II.A.1.4 CWA Section 303(c) Water Quality Standards and 303(d) Impaired Waters Listing and Total Maximum Daily Load Program

Currently, all states and 46 tribes have approved or EPA-promulgated federal water quality standards (WQS) under CWA section 303(c). Under CWA section 303(d) and the EPA's implementing regulations, states are required to assemble and evaluate all existing and readily available water quality-related data and information and submit a list of impaired waters to the EPA every two years. For waters identified on a section 303(d) list, states must establish Total Maximum Daily Loads (TMDLs) for all pollutants preventing or expected to prevent attainment of relevant WQS. While several tribes have expressed

[31] Those states that the agencies are aware of having used their authority to regulate navigable waters and submerged lands to establish a comprehensive permit program for a wide scope of surface waters are given credit as having an inland program which regulates dredged and fill activities for the purposes of this analysis.

[32] *See* Appendix A for more details.

[33] Additionally, these state programs may have mitigation and enforcement provisions that differ from those that apply to section 404 permits. The agencies recognize that the mitigation and enforcement abilities of states under these programs may affect a state's capacity to address waters that may no longer be federally jurisdictional under the final rule, including effects on benefits associated with compensatory mitigation. However, the agencies cannot adequately determine a state's ability to require mitigation or enforce the provisions of their state programs and as a result considered only the presence or absence of a state program in this analysis.

interest in obtaining 303(d) treatment as a state (TAS) authority, none have submitted applications for 303(d) TAS to date.

States and tribes may develop standards under state or tribal law for waters that are not "waters of the United States," but they would not be in effect for CWA purposes. States and many authorized tribes already have WQS that do or could apply to waters that are currently outside the scope of CWA jurisdiction. With the change in federal CWA jurisdiction for certain waters under the final rule, such states could apply their WQS as a matter of state law, and authorized tribes could apply their WQS to the extent their authority under tribal law would allow.

II.A.1.5 CWA Section 311 Oil Spill Prevention, Preparedness, and Response

Implementation of the CWA section 311 program cannot be delegated to states or tribes. Thus, the scope of the section 311 programs is tied to the extent of "waters of the United States."[34] Coordination with states or tribes is a part of the program's implementation by EPA Regions. For spill response, the Oil Pollution Act of 1990 (OPA) authorizes the Oil Spill Liability Trust Fund (OSLTF) to reimburse costs of assessing and responding to oil spills in "waters of the United States." Funding from the OSLTF allows for an immediate response to a spill, including containment, countermeasures, cleanup, and disposal activities. The OSLTF is not available to reimburse costs incurred by states or tribes to clean up spills, as well as costs related to business and citizen impacts (*e.g.*, lost wages and damages), for spills to waters not subject to CWA jurisdiction.

Generally, all states have a program that covers at least some of the areas included in section 311. These programs vary from state to state in their requirements, coverage, and process. Additionally, all states have some mechanism, with a large variety of approaches, for oil spill cleanup reimbursement from responsible parties, with 46 states providing for clean-up cost recovery, 45 states allowing for some form of civil penalties, and 34 with trust funds to aid in cleanup. The agencies do not have sufficient information at this time to assess how these state programs and funding mechanisms may be affected by a recodification of the pre-existing definition of "waters of the United States."

II.A.1.6 Waters of the State

Each state has its own definition of "waters of the state," and many states define similar types of areas and aquatic resources as "waters of the state." A few states also reference "waters of the United States" within

[34] 33 U.S.C. 2701(21). While CWA section 311(b) uses the phrase "navigable waters of the United States," EPA and the courts have historically interpreted it to have the same breadth as the phrase "navigable waters" used elsewhere in section 311, and in other sections of the CWA. *See United States v. Texas Pipe Line Co*., 611 F.2d 345, 347 (10th Cir. 1979); *United States v. Ashland Oil & Transp. Co*., 504 F.2d 1317, 1324–25 (6th Cir. 1974). EPA also has historically interpreted ''navigable waters of the United States'' in CWA section 311(b), in the pre-2002 regulations, and in the 2002 rule to have the same meaning as ''navigable waters'' in CWA section 502(7). In 2002, EPA revised its regulatory definition of "navigable waters" in 40 CFR part 112 to make it consistent with the regulatory language of other CWA programs. Oil Pollution Prevention & Response; Non-Transportation-Related Onshore & Offshore Facilities, 67 FR 47042, July 17, 2002; see also 56 FR 54612, October 22, 1991. A district court vacated the rule for failure to comply with the Administrative Procedure Act and reinstated the prior regulatory language. *American Petroleum Ins. v. Johnson*, 541 F. Supp. 2d 165 (D. D.C. 2008).

their definitions of "waters of the state." All state definitions are more inclusive than past and current definitions of "waters of the United States" in at least some way. Most state definitions also include some combination of groundwater and artificial waters. Some states may choose not to regulate all waters within the scope of their definition of "waters of the state," often including exemptions in their regulations for certain types of "waters of the state," for certain industries, or for certain types of permits. Effectively, about half of the states regulate at least some waters beyond the scope of federal CWA requirements.

Most states have a definition of "wetlands" in their state laws and regulations. While these definitions also vary widely in exact language, they all either recite, reference, incorporate, or outline similar factors as the federal regulatory definition of "wetlands." Some are more inclusive than the federal regulatory definition, while others incorporate the exact federal factors of a wetland. Many states have different wetland definitions for tidal, nontidal, coastal, and freshwater wetlands. Isolated waters and wetlands are rarely explicitly included under these definitions but at least 25 states have programs to cover all or some isolated waters, including wetlands. The agencies do not have sufficient information at this time to conclude that only those 25 states cover some or all isolated waters.

II.A.1.7 State Conditions and Requirements

States retain authority under the CWA to determine what kinds of water resources are regulated under state law to protect the interests of the state and their citizens. State environmental agencies and some local governments may use existing state legal authorities to address certain water resources that do not meet the definition of "waters of the United States." As noted above, about half of states regulate at least some waters beyond the scope of federal CWA requirements. There are also some state laws that constrain a state's authority to regulate more broadly than the federal "floor" set by the CWA in various respects. Whether a state actually regulates more broadly is not necessarily controlled by the presence or absence of state determinations that federal standards are sufficient.

Thirteen states have adopted laws that require their state regulations to parallel federal regulations.[35] Some state laws included in this discussion only limit the application of state regulations to certain industries, types of resources, or types of permits and do not address geographic jurisdiction. Thus, five of these states still regulate some waters that are not within the scope of "water of the United States." The remaining eight states do not regulate waters beyond the scope of federal regulation.

Twenty-three states have adopted laws that require extra steps or findings of benefits to impose state regulations beyond federal requirements.[36] The effects of these laws vary widely, depending on their exact requirements and how they are implemented in a given state. Some of these regulations effectively restrict state authority to regulate waters more stringently than federal CWA requirements; other "extra

[35] The 13 states that require their regulations to parallel federal regulations are: Arizona, Colorado, Idaho, Iowa, Kentucky, Minnesota, Mississippi, North Carolina, Oregon, South Dakota, Texas, Virginia, and Wisconsin.

[36] The 23 states that have requirements for extra steps or findings are: Arkansas, Colorado, Florida, Idaho, Indiana, Iowa, Kentucky, Maine, Maryland, Minnesota, Montana, Nevada, New Jersey, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Tennessee, Utah, Virginia, West Virginia, and Wisconsin.

step" laws appear to have no noticeable effect on state regulations that are broader in scope than federal CWA requirements. Eight of these 23 states are also included in the 13 states above that have determined that federal standards are sufficient. Of the 15 states that only have the "extra step" requirements, nine regulate some waters that are not covered by the federal CWA. The other six states with these requirements have not established regulations for waters outside the scope of the CWA.

The remaining twenty-two states and the District of Columbia do not appear to have any laws that address state regulations outside the scope of the CWA. Eleven of these states regulate waters beyond the scope of the CWA, while the other 11 states and the District of Columbia do not.[37]

Some states may adjust their current practices in light of a recodification of the pre-existing definition of "waters of the United States." The agencies are not able to predict what changes might result from the final rule. The agencies are aware that there are currently, and have been in the past, bills before state legislatures to either create or repeal laws that address the scope of state regulation compared to federal requirements. While future legislative changes could affect waters that are not "waters of the United States," the agencies will not speculate on the outcomes of these efforts. Instead the agencies focus in this chapter on the information they have available.

II.A.2 Environmental Federalism

Restoring the pre-existing regulatory text and implementing it consistent with pre-2015 practice reduces the amount of aquatic resources under federal CWA jurisdiction and effectively leaves sole regulatory authority of those non-jurisdictional waters to the states. States can respond to the final rule by maintaining an equivalent level of regulation over those resources or allowing those resources to be managed without permitting and regulation, or in a less complete or less stringent way so that the result is between the two bounding cases. The balance of regulatory authority over environmental resources between centralized and local governments and the result when that balance changes is a question of environmental federalism.

II.A.2.1 Lessons Learned from the Literature

To help the agencies better understand the environmental federalism literature, the EPA commissioned a comprehensive literature review report (Fredriksson, 2018). The report reviews literature on environmental federalism and political economy, focusing on that which is most relevant for a change in federal regulation of waters under the CWA.[38] The author describes several theoretical predictions and

[37] ELI (2013), State Constraints: State-Imposed Limitations on the Authority of Agencies to Regulate Waters Beyond the Scope of the Federal Clean Water Act, available at https://www.eli.org/sites/default/files/eli-pubs/d23-04.pdf. The agencies note that this report has been criticized as inaccurate and recognize its limitations as a definitive resource. *See*, *e.g.*, Comments of the Waters Advocacy Coalition on the Environmental Protection Agency's and U.S. Army Corps of Engineers' Proposed Rule to Define "Waters of the United States" Under the Clean Water Act EPA-HQ-OW-2011-0880 (November 13, 2014) at 7 - 11. Docket ID: EPA–HQ–OW–2011–0880–14568, available at https://www.regulations.gov/document?D=EPA-HQ-OW-2011-0880-14568.

[38] The accuracy and completeness of the Fredriksson (2018) environmental federalism literature review was confirmed by a peer review by three external academics. No changes to the analysis of this rule were made in response to the peer review comments. The results of the peer review may be found in the docket for this final rule: EPA-HQ-OW-2017-0203.

summarizes the literature. In this section "local" governments can be interpreted as non-federal state and local governments.

- *Efficiency of Decentralization*: The seminal paper by Oates and Schwab (1988) suggests that, to the extent benefits and costs are contained within the state jurisdiction, decentralized state policymaking can be more efficient than national policies. Decentralized policymaking has efficiency enhancing properties – state regulators have a better ability and more flexibility to produce the highest returns (benefits less costs) for their citizens. However, their model assumes no transboundary pollution, many jurisdictions, perfectly mobile capital and immobile labor, a homogenous population, perfect information, production costs and benefits that are locally internalized, and welfare maximizing local governments. Some real-world modifications, such as transboundary pollution, fewer mobile firms (imperfect competition) or jurisdictions, transportation costs, different policy instruments, and various political economy pressures, change Oates and Schwab's main result. In general, the theoretical literature argues that decentralization can yield inefficiently weak regulations (Dijkstra and Fredriksson, 2010).[39]

  Local regulators may have superior information regarding local conditions and may therefore implement more efficient regulations (Levinson, 2003). Environmental dimensions may also be closely related to other local issues such as urban planning, favoring a decentralized approach (Sjöberg, 2016). On the other hand, environmental protections may involve economies of scale, which favors a centralized system (Adler, 2005). The central government likely has an advantage in supporting research in environmental science and pollution control technologies (Oates, 2001). Seabright (1996) argues that decentralization reduces policy coordination but raises the accountability of government.

- *Race to the Bottom*: Local jurisdictions may engage in strategic policymaking to attract and retain mobile industry and jobs, raise wages and expand the local tax base. The fear is that such capital (investment) competition could lead to sub-optimally weak environmental regulations under decentralized systems. The literature review finds that most of the results in the empirical literature fail to support a race to the bottom.[40] If a race occurs, it may take more complicated forms. For example, states may respond only to changes in neighboring states with more stringent policies. A state's regulatory stringency is pulled upward by neighbors which already have stricter policies. However, changes in neighbors with weaker regulations have no impact. This asymmetrical result contradicts the race-to-the-bottom hypothesis.

- *Political Economy*: To understand and predict actual policy outcomes, it is critical to take the political pressures on policy into account. The majority political party (in the U.S. Congress or in state capitals), tends to favor the social welfare of its home districts (its constituency) over other

[39] Dijkstra and Fredriksson (2010) limit their review to models in which pollution does not cross jurisdictional boundaries and in which labor and households are immobile between jurisdictions.

[40] *See also* Oates (1997, 2002).

minority districts. Helland (1998) finds evidence that local special interests influence enforcement effort when national policy is delegated to the state level.

Given the literature's findings, states are likely to manage their environmental resources with the benefit of local knowledge and with the welfare of their constituents in mind. A race to the bottom is presumed to be unlikely to occur once states have the sole authority over aquatic resources. Effective regulation of the resources, however, requires the political capital and fiscal resources to do so. As such, the best indication of how states will exercise their authority as the federal government reduces its jurisdiction following this final rule is how they have exercised existing authority in the past and whether the infrastructure to manage the regulatory programs already exists. The agencies collected data on these factors, and the following sections summarize the data sources and how they inform our analysis.

II.A.2.2 State Snapshots

The agencies compiled information on state wetland and surface water programs and regulations to describe the breadth of state authorities and to provide a current picture of federal and state regulatory management of aquatic resources. Information was drawn from multiple state and federal sources, as well as from previous analyses undertaken by independent associations and institutions. Definitions for state and territorial waters, including wetlands, were drawn directly from state laws in online directories of regulatory titles and codes. Information on state and territorial water laws and programs was found through state and territorial agency websites, and information on the various CWA programmatic areas (sections 303, 311, 401, 402, and 404) was drawn from EPA and Corps websites, numerous publications, maps, and from EPA regional staff. These summaries were shared with state and territorial agencies for corrections.

In order to ensure that the economic analysis was as accurate as possible, the agencies reviewed information about CWA-related state laws and programs since publishing the economic analysis for the Step 2 proposal, including some information submitted in response to that proposal. The agencies incorporated the latest and most accurate information of which they have become aware about CWA-related state laws and programs into this final rule analysis. The agencies will continue to review new information about state laws and programs as they consider comments for the Step 2 rulemaking. The State Snapshots are provided in Appendix A of this document.

II.A.2.3 Analysis of State Dredged and Fill Programs

The Association of State Wetland Managers (ASWM) has prepared state wetland program summaries approximately every 10 years starting in the 1980s. The most recent report (ASWM, 2015) relies on information from past state summaries (both by ASWM and the Environmental Law Institute), state and federal reports, websites, and other related resources and compiles this information into draft state summaries. ASWM conducted verification phone calls and correspondence via email with 50 states, attempting to ensure that information for each state summary is up-to-date for the status of state wetland program activities as of December 2014. Information compiled in this report focuses on four core elements. They are: 1) wetland regulation, 2) wetland monitoring and assessment, 3) wetland water quality standards, and 4) voluntary wetland restoration.

Wetland regulation was the element most relevant from this report to anticipating potential state responses to changes to the "waters of the United States" definition. The agencies identified that states take one of three approaches to regulating wetlands: 404 assumption,[41] state-level dredged and fill programs for inland waters in addition to 401 certifications, and primarily relying on 401 certifications.[42]

The agencies found it reasonable to assume that there will be little or no change to the permitting process in New Jersey, one of the two states that has assumed section 404 permitting authority. In Michigan, unless the state legislature passes new legislation, it was reasonable to assume that there will be at least some change to the permit process correlating to the final change in CWA jurisdiction, as the state currently limits its permit program to the jurisdictional scope of the CWA.[43] The other states that have developed their own dredged and fill programs may choose to expand their programs to cover waters that would no longer be considered "waters of the United States" under a recodification of the pre-existing definition. States that rely primarily on 401 certifications to address dredged and fill activities may or may not develop a state-level permitting program for non-jurisdictional waters.

II.A.2.4 State-Imposed Limitations on the Authority of Agencies to Regulate Waters Beyond the Jurisdictional Scope of the Clean Water Act

The agencies collected information from several sources to characterize states' ability to regulate waters beyond the jurisdictional scope of the CWA. The main source is the State Snapshot analysis presented in Appendix A for this rule. Alternate sources of information, including an Environmental Law Institute (ELI) report that "examines [the] limitations imposed by state law that could constrain the ability of state agencies" to regulate water resources in the absence of CWA regulation (ELI, 2013),[44] were also consulted to corroborate and supplement the information in the agencies' State Snapshot analysis. The

[41] Although only two states (Michigan and New Jersey) have assumed the 404 permitting program to date, states and tribes have recently expressed significant interest in assuming the program. *See, e.g.*, Final Report of the Assumable Water Subcommittee (May 2017).

[42] Five of these states issue permits for dredged and fill activities in coastal waters and wetlands. However, the agencies have concluded that inland programs are more indicative of a state's capacity to address waters that may no longer be federally jurisdictional.

[43] Passed in 2013, PA 98 states: "Sec. 30101a. For the purposes of this part, the powers, duties, functions, and responsibilities exercised by the department because of federal approval of Michigan's permit program under section 404(g) and (h) of the federal water pollution control act, 33 USC 1344, apply only to navigable waters and waters of the United States as defined under section 502(7) of the federal water pollution control act, 33 USC 1362, and further refined by federally promulgated rules and court decisions that have the full effect and force of federal law. Determining whether additional regulation is necessary to protect Michigan waters beyond the scope of federal law is the responsibility of the Michigan legislature based on its determination of what is in the best interest of the citizens of this state." The EPA notified Michigan that fourteen of the provisions in PA 98 reduced the geographic or permitting scope of the state program so that it is inconsistent with the CWA.

[44] *See* Appendix I of the ELI report.

agencies recognize that these summaries do not necessarily capture all the complexities of state programs.[45]

II.A.3 State Response Categories

For purposes of this analysis, the agencies assumed that states will have a continuum of different responses to a change in CWA jurisdiction based on legal and other constraints, though the states' responses are difficult to predict. The agencies expect some states could reduce the scope of their programs to align with a change in federal jurisdiction because of these constraints. In states with legal constraints, the agencies would expect both avoided costs and forgone benefits from a change in the definition as certain waters are no longer jurisdictional. That said, the agencies have not seen signs that states have expanded their state programs as a result of the 2015 Rule, although those states that rely heavily on 401 certification of federal permits and where the 2015 Rule was being implemented may have seen an increase in workload. The agencies expect that some states may choose not to change state programs following this final rule, as in many cases state programs may have already evolved in the context of the pre-2015 practice, and states may wait to make any program changes until the agencies have finalized the rule revising definition of "waters of the United States." In states that regulate waters, including wetlands, more broadly than the pre-2015 practice, the agencies would expect little to no direct effect on costs or benefits. Many, if not most, states are likely to fall in between these extremes (see below for more discussion of this point). And while most states have been authorized to administer at least some, if not all, parts of the NPDES program, states that are not authorized (or not authorized for a given part) may have different responses.

II.A.3.1 Regulation of Dredged and Fill Material

The commissioned literature review (Fredriksson, 2018) identified the variables most commonly used in the federalism literature that were useful in anticipating how states could respond to the final rule recodifying the pre-existing definition of "waters of the United States." An available subset of these variables was used to characterize potential state responses regarding dredged or fill permitting and perform sensitivity analyses on the results. The reports on state responses and the data on which they were based indicate that the following variables will likely have the strongest bearing on the way states may respond:[46]

[45] While the ELI report is a readily available summary of potential limitations imposed by state law that could constrain states to regulate waters in the absence of federal regulation, commenters on the then-proposed 2015 Rule have identified numerous shortcomings and inaccuracies of the analysis and results that may limit the degree to which the agencies rely upon it. *See, e.g.*, Comments of the Waters Advocacy Coalition on the Environmental Protection Agency's and U.S. Army Corps of Engineers' Proposed Rule to Define "Waters of the United States" Under the Clean Water Act EPA-HQ-OW-2011-0880 (November 13, 2014) at 7 - 11. Docket ID: EPA–HQ–OW–2011–0880–14568, available at https://www.regulations.gov/document?D=EPA-HQ-OW-2011-0880-14568.

[46] Other factors, such as state enforcement and compliance assistance programs may have some bearing on a comparative analysis, but the factors identified here are believed by the agencies to have the strongest correlation..

- *State-level dredged and fill program:* Thirty-three states have such permitting programs for inland wetlands or other waters. While none of the reports referenced above evaluate the extent of state-level dredged and fill permitting programs, their existence serves as an indication that they are more likely to regulate some wetlands and other waters that will not be subject to the federal section 404 program following this final rule.

- *Regulate waters more broadly than CWA:* Twenty-five states have chosen to regulate waters of the state that are not subject to federal regulation under the CWA.[47] These states either explicitly cover non-federally jurisdictional waters in the text of their regulations or apply their broad regulatory authority in a way that would also capture waters that are no longer considered "waters of the United States."[48] In those states, it is likely that states will continue to regulate or address some wetlands and/or other waters that will not be jurisdictional under the final rule.

- *Legal limitations:* While state legislatures may be able to change applicable legal restrictions, if a state prohibits or requires additional justification for a state rule that imposes requirements beyond a corresponding federal law, those restrictions are a useful indicator that states are unlikely to regulate wetlands and other waters beyond those identified in their existing programs, which were typically developed under a baseline of the pre-2015 practice. Although the State Snapshots presented in Appendix A (and other data sources) document several types of legal provisions, for the purposes of clarity within this analysis, the agencies treated such legal provisions as a binary variable.

The agencies used the criteria noted above to place states in one of three likely response categories, recognizing that any categorization must rely on assumptions given the variation and complexity of state laws and programs (Table II-1).

Table II-1: Dredged/fill categorization criteria

Category	State regulatory indicators	Likely Response
1	State has broad legal limitations on regulating aquatic resources OR does not have a state-level dredged and fill program and exclusively relies on section 401 certification to address dredged and fill activities.	Unlikely to increase state regulatory practices to address changes in federal jurisdiction.[49]
2	Has a state-level dredged and fill program that does not regulate waters of the state more broadly than CWA AND does not have broad legal limitations on regulating aquatic resources.	Likely to continue the state's current permitting practices and may choose to change state programs to provide some regulatory coverage

[47] These numbers were compiled from research that was primarily conducted prior to 2015. While some states clearly regulate more broadly than the 2015 Rule, the agencies cannot at this time determine whether all states that regulated beyond pre-2015 practice also regulate beyond the scope of 2015 Rule.

[48] These states have been determined by the agencies to regulate beyond the CWA based on the findings of studies mentioned in this analysis, as well as independent research conducted by the agencies. For more information regarding the sources these findings were based on, see the State Snapshots in Appendix A.

[49] State agencies retain the option of going to the state legislature to request changes or developing a new independent permitting program.

Table II-1: Dredged/fill categorization criteria		
Category	**State regulatory indicators**	**Likely Response**
		of waters that would no longer be "waters of the United States."
3	Has a state-level dredged and fill program AND regulates "waters of the state" more broadly than CWA.	Likely to continue the state's current dredged/fill permitting practices, which already regulate beyond some areas of pre-2015 practice.

Table II-2 reports the criteria for each state in columns 2 through 4 using '0' to indicate a negative and '1' to indicate the affirmative. Column 5 reports the resulting likely-response category.

Table II-2: Dredged/Fill regulation criteria and likely-response category

State	Has a State dredged and fill program (inland)	Regulates waters more broadly than the CWA requires	Does not have broad legal limitations	Likely-response category
Alabama	0	0	1	1
Alaska	0	0	1	1
Arizona	0	0	0	1
Arkansas	0	0	1	1
California	1	1	1	3
Colorado	0	0	1	1
Connecticut	1	1	1	3
Delaware	1	0	1	2
Florida	1	1	1	3
Georgia	0	0	1	2
Hawaii	1	0	1	2
Idaho	1	0	0	1
Illinois	1	1	1	3
Indiana	1	1	1	3
Iowa	1	0	1	2
Kansas	1	0	1	2
Kentucky	1	0	0	1
Louisiana	0	0	1	1
Maine	1	1	1	3
Maryland	1	1	1	3
Massachusetts	1	1	1	3
Michigan	1	1	1	3
Minnesota	1	1	1	3
Mississippi	0	0	0	1
Missouri	0	0	1	1
Montana	1	0	1	2
Nebraska	0	0	1	1
Nevada	0	0	1	1
New Hampshire	1	1	1	3
New Jersey	1	1	1	3
New Mexico	0	0	1	1
New York	1	1	1	3
North Carolina[1]	1	1	0	2
North Dakota	0	0	1	1

Table II-2: Dredged/Fill regulation criteria and likely-response category

State	Has a State dredged and fill program (inland)	Regulates waters more broadly than the CWA requires	Does not have broad legal limitations	Likely-response category
Ohio	1	1	1	3
Oklahoma	0	0	1	1
Oregon	1	1	1	3
Pennsylvania	1	1	1	3
Rhode Island	1	1	1	3
South Carolina	0	0	1	1
South Dakota	0	0	0	1
Tennessee	1	1	1	3
Texas	0	0	1	1
Utah	1	0	1	2
Vermont	1	1	1	3
Virginia	1	1	1	3
Washington	1	1	1	3
West Virginia	1	1	1	3
Wisconsin[1]	1	1	0	2
Wyoming	1	1	1	3

[1] The existence of a legal limitation on state authority to regulate beyond the scope of the CWA does not always prohibit a state from regulating waters beyond those regulated under the CWA. See Appendix A for additional detail. Rather the existence of these limitations presents an additional factor for states to address. This in turn may make it more difficult for states with such a limitation to readjust their regulation of state waters following the final rule. For purposes of this analysis, any state with such a limitation that has not already expanded its regulation of state waters beyond the scope of the CWA was assumed to not do so under any change to the definition of "waters of the United States," and was accordingly placed in response category 1. Any states that have already expanded their regulatory scope, specifically North Carolina and Wisconsin, were assumed to continue such practices. Thus, for purposes of this analysis, North Carolina and Wisconsin were placed in category 2 to reflect both their current broader scope and the existence of legal limitations that may affect any future attempts to increase regulation of state waters compared to a federal baseline.

II.A.3.2 Categorizing State Responses: Surface Waters Discharge Permitting

Like the study of dredged and fill regulation, a subset of variables that were most informative were used to characterize potential state responses related to regulation of surface waters and perform sensitivity analyses on the results. Reviewing the reports on state responses and the data on which they were based, the following variables likely have the strongest bearing on how states could respond.[50]

- *State authorization*:[51] A critical determinant of potential state responses to a change in "waters of the United States" jurisdiction is whether they are authorized to administer NPDES programs for surface waters under the CWA. At the time the agencies completed this analysis, three states (Massachusetts, New Hampshire, and New Mexico), the District of Columbia, and every U.S. Territory except the U.S. Virgin Islands, were not authorized to administer the section 402 program under the CWA. All remaining states and the U.S. Virgin Islands are authorized to

[50] *See supra* at note 46.

[51] Source: https://www.epa.gov/npdes/npdes-state-program-information.

implement the NPDES program and issue permits. The agencies assumed that states without authorized programs will not regulate additional waters beyond those that are defined as a "waters of the United States" following this final rule.

- *Legal limitations:* If a state prohibits or requires additional justification for a state rule that imposes requirements beyond a corresponding federal law, it was assumed that state would be less likely to create the programs necessary to continue permitting discharge activities under state authority on waters that would no longer be jurisdictional. Although the State Snapshots presented in Appendix A (and other data sources) document several types of legal provisions, for the purposes of this analysis, the agencies treated such legal provisions as a binary variable.

Table II-4 presents a summary of this information for the 50 states plus the District of Columbia. The states (plus the District of Columbia) without NPDES authorization are less experienced in regulating discharges into waters and are unlikely to regulate waters that are not subject to federal jurisdiction. The remaining states can be classified based on the absence of broad legal restrictions. States with both NPDES authorization and an absence of broad legal restrictions can be interpreted as being more likely to continue to regulate waters that would no longer be jurisdictional after the scope of federal jurisdiction changes.[52]

The agencies used the criteria noted above to place states in one of two likely response categories (Table II-3).

Table II-3: Surface water discharge permitting categorization criteria

Category	State regulatory indicators	Likely Response
1	State does not have NPDES authorization OR has broad legal limitations on regulating aquatic resources.	State programs are likely to reduce scope following a narrowing of federal jurisdiction.[53]
2	NPDES-authorized state that ALSO does not have broad legal limitations on regulating aquatic resources.	States are likely to continue their current regulatory practices, which may provide partial regulatory coverage of waters that are no longer "waters of the United States."

Table II-4 reports the criteria for each state in columns 2 through 3 using '0' to indicate a negative and '1' to indicate the affirmative. Column 4 reports the resulting likely-response category.

[52] In the Economic Analysis for the Proposed Revised Definition of "Waters of the United States," the agencies previously considered whether states regulated surface water discharges more broadly than the CWA based on state definitions of "waters of the state." However, the agencies have determined that for the purpose of this analysis the agencies did not currently have enough information to determine whether a state implements their surface water discharge program more broadly than the CWA based solely on their definition of "waters of the state."

[53] Where EPA implements the programs, the scope will change consistent with the federal changes.

Table II-4: Surface water regulation criteria and likely-response category

State	NPDES Authorization	Does not have broad legal limitations	Likely response
Alabama	1	1	2
Alaska	1	1	2
Arizona	1	0	1
Arkansas	1	1	2
California	1	1	2
Colorado	1	1	2
Connecticut	1	1	2
Delaware	1	1	2
District of Columbia	0	1	1
Florida	1	1	2
Georgia	1	1	2
Hawaii	1	1	2
Idaho	1	0	1
Illinois	1	1	2
Indiana	1	1	2
Iowa	1	1	2
Kansas	1	1	2
Kentucky	1	0	1
Louisiana	1	1	2
Maine	1	1	2
Maryland	1	1	2
Massachusetts	0	1	1
Michigan	1	1	2
Minnesota	1	1	2
Mississippi	1	0	1
Missouri	1	1	2
Montana	1	1	2
Nebraska	1	1	2
Nevada	1	1	2
New Hampshire	0	1	1
New Jersey	1	1	2
New Mexico	0	1	1
New York	1	1	2
North Carolina	1	0	1
North Dakota	1	1	2
Ohio	1	1	2
Oklahoma	1	1	2
Oregon	1	1	2
Pennsylvania	1	1	2
Rhode Island	1	1	2
South Carolina	1	1	2
South Dakota	1	0	1
Tennessee	1	1	2
Texas	1	1	2
Utah	1	1	2
Vermont	1	1	2
Virginia	1	1	2
Washington	1	1	2

Table II-4: Surface water regulation criteria and likely-response category			
State	**NPDES Authorization**	**Does not have broad legal limitations**	**Likely response**
West Virginia	1	1	2
Wisconsin	1	0	1
Wyoming	1	1	2

II.A.3.3 Caveats to State Categorization

The potential responses described above are intended to provide insight to whether and how states may regulate waters that would no longer be jurisdictional based on the recodification of the pre-existing definition of "waters of the United States." There are, however, several caveats to that characterization that deserve mention.

- *Stringency limitations:* Some states that currently have legal limitations may remove or modify those limitations following a recodification of the pre-existing definition of "waters of the United States" so that the difference in regulation created by a recodification could be filled either partially or completely by state-level regulation.

- *Trans-boundary benefits:* While it is possible that states operating with better information on the potential benefits and costs would regulate more efficiently for their own constituents, they are also less likely to consider costs or benefits that accrue outside of their borders. This could include cases where waters flow out of the state. Another situation where this is relevant is where non-use benefits accrue to residents of other states.

- *Limited state resources and political influences:* Some states could develop new programs or expand existing ones to address waters that would no longer be jurisdictional based on the recodification of the pre-existing definition of "waters of the United States." Not all states will have the resources to staff and manage the new or expanded programs and may not be able to conduct quality benefit-cost analyses as a result. As the literature review (Fredriksson, 2018) pointed out, decentralized programs are also more likely to be swayed by political influences which could distort the regulatory process in ways that are detrimental to social welfare.

The cumulative direction of these caveats with regards to potentially addressing non-jurisdictional waters and the resulting social welfare impacts is ambiguous. So, rather than bounding the potential effect on one side, they combine to increase the uncertainty surrounding potential state responses. As such, the base case of the categorization of states was based on the current regulatory regime at the state level and sensitivity analyses were used to explore the range of possible state responses on potential benefits and costs of the change in CWA jurisdiction based on the final rule.

II.B Response of Regulated Entities

The generic tree diagram Figure II-1 illustrates potential effects of the final rule on regulated entities (*i.e.*, facilities, permit or plan holders) and affected water resources. The potential responses of regulated entities are likely to vary across CWA programs and depend on the type of permit or regulatory requirement, the industry sector or activity, attributes of the affected waters — notably whether the waters would now fall outside of CWA jurisdiction — the range of likely state responses, as well as industry

standards, recommended practices, and a regulated entity's decision on pollution prevention measures it voluntarily implements.

An entity may decide to continue its current compliance practices, perhaps because compliance mainly entails fixed costs that were already incurred or because reducing current abatement activities is costlier than simply continuing current abatement activities. Fear of future liability and goodwill with local citizens may also be factors. Regardless of the motivation, if an entity voluntarily continues baseline compliance practices, then there will be no change in cost or environmental outcomes, and the net effect will be zero.

In contrast, an entity could decide to reduce its costs by reducing or potentially eliminating any baseline compliance practices. Doing so will result in cost-savings to the regulated entity and foregone environmental benefits to society more broadly. Whether the net effect is positive or negative depends on whether the resulting cost-savings are greater than the absolute value of the forgone environmental benefits.

II.C Data and Analytic Uncertainties

In addition to uncertainty in the response of states and regulated entities to changes in CWA jurisdiction, limitations of the available data affected the agencies' ability to conduct national level analyses regarding the potential effect of the final rule and contributed to uncertainty in results presented in the following sections.

- *High-resolution NHD*: The agencies attempted to use the U.S. Geological Survey's NHD at high resolution and the U.S. Fish and Wildlife Service's (U.S. FWS) NWI to estimate the potential effect of the final rule on certain water types across the country. The datasets represent the best national datasets of the potential location and extent of streams, rivers, lakes, ponds, and wetlands of which the agencies are aware. The high-resolution NHD represents the water drainage network of the United States as mapped at a scale of 1:24,000 or better (1:63,360 or better in Alaska). The data are maintained in partnership with states and other stewards. The NHD is not a regulatory dataset and does not indicate whether streams and other features are jurisdictional for CWA purposes. While the high-resolution NHD is the most comprehensive and most detailed nationally-consistent representation of the hydrographic network, it has been demonstrated to under-represent the upstream-downstream extent of channel networks.[54] It does not map all surface waters and sometimes maps streams that do not exist or no longer exist on the ground (*i.e.*, it has errors of omission and commission). In addition, smaller features would generally not be included in the NHD. The dataset also has positional inaccuracies. At high resolution, 90 percent of well-defined features are within 40 feet of their true geographic position. The NHD does not distinguish intermittent from ephemeral streams at a national level, and a designation of

[54] *See, e.g.,* Fritz, Ken M., *et al.* 2013. "Comparing the Extent and Permanence of Headwater Streams from Two Field Surveys to Values from Hydrographic Databases and Maps. *Journal of the American Water Resources Association* 49(4) 867-882.

perennial, intermittent, or ephemeral in the NHD does not guarantee an accurate depiction of on-the-ground flow conditions. For example, a study comparing the field-verified flow regime (*i.e.*, perennial, intermittent, or ephemeral) of 105 headwater stream reaches in nine mesic forests across the contiguous United States and 178 headwater stream reaches in Oregon to the flow regime documented in various mapping resources found that high resolution NHD misclassified the flow regime 44.8 percent of the time across the mesic forest headwater reaches and 57.9 percent of the time across the Oregon headwater reaches.[55] While the USGS conducted some on-the-ground field inspection 30 to 60 years ago when creating the topographic maps from which the NHD was created, the resulting hydrographic classifications do not necessarily represent current hydrographic conditions. Misclassifications of NHD stream permanence are known to occur among flow regime types, including field-verified perennial streams identified as ephemeral and field-verified ephemeral streams identified as perennial.[56] Misclassifications can occur for a variety of reasons, from changes in land use and/or climate, observational errors, errors in data transcription (from the paper files to digital files), changes in data standards and definitions, inconsistent mapping techniques, differences in source material for creating the original topographic maps, or for cartographic reasons.

A summary of High Resolution NHD mapping by state is presented in Appendix B. For these reasons, the agencies were not able to accurately identify waters that could change jurisdictional status under the final rule using the NHD. Given the nature of the data and these analyses, these limitations would likely result in inaccurate estimation of the potential effects of the final rule on the scope of CWA jurisdiction and therefore render the data unsuited for use in evaluating the effects of this rule.

- *National Wetlands Inventory (NWI)*: The agencies attempted to rely on a combination of the NWI and high-resolution NHD to identify wetlands that may change jurisdictional status under the final rule. Like the NHD, while the NWI is the best national dataset of the potential extent of wetlands across the country of which the agencies are aware, it has limitations. The NWI does not map all wetlands and sometimes maps wetlands that do not exist on the ground. At its best, NWI only approximates the location and boundaries of a Cowardin wetland type (Cowardin *et al.*, 1979). The NWI was not intended or designed for regulatory purposes. NWI uses the Cowardin wetland classification system, which is broader in scope than wetlands that meet the agencies' regulatory definition of wetland. For CWA regulatory purposes, a water must have three specific factors to be classified as a wetland: hydric soils, hydrophytic vegetation, and hydrology. Specifically, the longstanding regulations and the 2015 Rule both define wetlands as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically

[55] *Id.*

[56] *See, e.g., id.*

adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."[57] That definition will not change under the final rule. Also, the wetland boundaries as mapped in NWI do not equate to wetland delineation boundaries per the 1987 Corps wetland delineation manual[58] and its regional supplements. To properly apply the delineation manual for CWA purposes, one must conduct on-the-ground inspection. Wetlands that meet the regulatory definition of "wetland" would also need to meet additional regulatory requirements (such as the conditions for applying the term "adjacent") before they would be considered "waters of the United States." The limitations of the data make it unsuitable for use in evaluating the effects of this rule.

- *Jurisdictional status of certain waters under pre-2015 practice*: In addition to the limitations of the NHD and NWI datasets, the agencies faced the confounding factor of not knowing the current jurisdictional status of certain waters as a category, including:

  - Non-navigable tributaries that are not relatively permanent;
  - Wetlands adjacent to non-navigable tributaries that are not relatively permanent; and
  - Wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary.

  According to the *Rapanos* Guidance, such waters are not categorically jurisdictional. Rather, the agencies must conduct a case-specific significant nexus analysis to determine their jurisdictional status. It was not possible for the agencies to perform a comprehensive national-scale significant nexus analysis for purposes of this EA. As a result, the agencies did not find a reasonable way to identify the universe of federally regulated waters under the pre-2015 practice.

- *Tribal programs:* This analysis does not consider how the 573 federally recognized tribes might react to a change in CWA jurisdiction, nor does it include tribes in its calculations of costs and benefits. Currently, 61 tribes have been found eligible to administer a section 303(c) water quality standards program, and the EPA has approved WQS for 45 of these tribes. The EPA has promulgated federal water quality standards for one additional tribe, and a few tribes have water quality standards that are not current federally approved. Many tribes may lack the capacity to administer a water quality standards program. Other tribes may rely on the federal government for enforcement of water quality standards, particularly for enforcement of non-tribal members. Currently, no tribes have obtained treatment in a manner similar to a state (TAS) status to administer either the section 402 or 404 programs. The agencies (or with a few exceptions for section 402, the state) generally issue section 402 and 404 permits on tribal lands. A few tribes have some type of permitting program for discharges of dredged or fill material into "waters of the tribe." Many tribes may lack the capacity to administer either the 402 or the 404 programs, to create permitting programs for discharges, or to expand permitting programs that currently exist.

[57] 33 CFR 328.3(b) and 40 CFR 232.2.

[58] U.S. Army Corps of Engineers. 1987. Corps of Engineers Wetlands Delineation Manual. Wetlands Research Program Technical Report Y-87-1. Department of the Army, Vicksburg, VA. *Available at* https://el.erdc.dren.mil/elpubs/pdf/wlman87.pdf.

Further, some tribes have stated during tribal consultation and engagement on the Step Two proposed revised definition of "waters of the United States" that they are not interested in seeking TAS for CWA programs like water quality standards and sections 402 and 404 if the federal government reduces the scope of the CWA jurisdiction. In addition, this economic analysis does not account for potential effects related to subsistence fishing, rice growing, or cultural uses of water that are unique to tribes and their reliance on waters that would no longer be considered jurisdictional under the final rule.

- *Other state, tribal, and federal programs*: This analysis does not account for other programs that may address affected resources associated with non-jurisdictional waters. For example, more than one-third of the United States' threatened and endangered species live only in wetlands, and nearly half use wetlands at some point in their lifecycle (U.S. EPA, 2017). Wetlands and other aquatic resources designated as critical habitats will remain subject to the Endangered Species Act (ESA) Section 9(a)(1)(B) which makes it unlawful for any person to "take" any fish or wildlife species listed under the ESA. This provision applies regardless of a water's jurisdictional status under the CWA. Therefore, activities in wetlands and other aquatic resources may require engagement with the U.S. Fish and Wildlife Service or the National Marine Fisheries Service, which could lead to project modification or mitigation requirements.

- *Universe of regulated facilities and activities*: Data on the universe of regulated facilities and activities varies in the level of detail and coverage. For example, data on facilities or activities subject to general permits or facilities with minor status under the section 402 program are limited to the permit information included in the EPA's Integrated Compliance Information System National Pollutant Discharge Elimination System (ICIS-NPDES) database. Some industrial facilities or activities subject to section 402 requirements may be underrepresented in the database if states did not provide relevant permit information. Permit data maintained in the ORM2 database by the Corps under the section 404 program provide high-level characteristics of the projects such as the type of project and permitted impacts in acres or linear feet. However, the affected waters are not always described in a manner sufficient to determine how the changes in the "waters of the United States" definition would have (counterfactually) changed the requirements in previously issued 404 permits without in fact doing additional analyses of jurisdiction.

- *Facility and activity coordinates*: This analysis was limited by the availability and accuracy of geographical coordinates to relate program impacts to streams and wetlands. First, some facilities or activities have missing or invalid coordinates. For permitted 402 dischargers, available coordinates can be those of the facility and not necessarily the outfall. This contributes to potential errors when determining the receiving waterbody. Some impacts, such as oil spills, can potentially affect different waterbodies depending on the location where the spill originates and the size of the spill.

- *Locations of future permitted facilities or activities*: Data on existing facilities and activities may not accurately represent the distribution of future facilities or activities. For example, construction and development activity accounts for an estimated sixteen percent of permitted discharges under the 402 program and the majority of activities covered under the section 404 program. The

location of future construction and development activities can only be estimated at a scale too coarsely to be useful in analyzing the potential effects of this final rule (even if the agencies had accurate maps of affected waters and wetlands).

These data issues limit the agencies' ability to evaluate the 1) exact waters changing jurisdictional status; 2) relationship between these waters and facilities and activities covered under the CWA; and 3) impacts of changes in the level of regulation of jurisdictional and non-jurisdictional waters. With hundreds of thousands of facilities or permitted activities covered under CWA programs, it was not possible to review and analyze characteristics of individual facilities or activities contained in permits to assess how their particular requirements would change under a recodification of the pre-existing "waters of the United States" definition. For these reasons, the agencies relied on updating the 2015 Rule economic analysis for this EA.

III Analysis of the Avoided Costs and Forgone Benefits from Returning to the Pre-2015 Practice

As previously described, rather than addressing a market failure, this final rule addresses an alternative federalism arrangement concerning jurisdiction of the CWA, and this EA assesses the benefits and costs of this action. The agencies examined a similar issue in the 2015 Rule, which increased the CWA jurisdiction, and again in 2017 when the agencies proposed to repeal that 2015 Rule and recodify the prior regulations, the proposal which the agencies are finalizing with this action. This EA adopts and modifies the 2015 methodology as presented in the Stage 1 analysis (which assesses the benefits and costs of a baseline of the 2015 Rule to the pre-2015 practice) in the EA supporting the proposed rule to revise the definition of "waters of the United States." (U.S. EPA and Department of the Army, 2018b).

The 2015 Rule economic analysis[59] relied on the assumption that the change in CWA jurisdiction due to the 2015 Rule affected all CWA programs proportionally for purposes of estimating costs and benefits. The agencies estimated a percentage change in CWA jurisdiction, and then for many programs simply multiplied that percentage change by previously estimated CWA program costs and benefits, adjusting for the change in the program size. While this assumption allowed for the estimation of national benefits and costs of the 2015 Rule, the resulting estimates may have been significantly over-stated. This EA adopts this assumption of proportionality to allow for a comparison with the 2015 Rule and its repeal, but it also updates estimates to 2018 dollars and corrects certain errors in the 2015 analysis.

The following sections first summarize the methodologies used in the economic analyses for the 2015 Rule and this final action, then explain the major concerns the agencies now have with the original methodologies, and finally describe the updated analysis and results.

III.A Summary of the Analyses Used in the 2015 Rule and the 2017 Proposed Repeal

In the economic analysis for the 2015 Rule, the agencies projected an overall increase in the jurisdiction of the CWA by identifying several previously determined non-jurisdictional waters and wetlands and categories of waterbodies that could potentially be considered jurisdictional under the 2015 Rule, dependent on case-specific analysis (*see* Section 4 of the economic analysis for the 2015 Rule for details on the agencies' review of negative approved jurisdictional determinations). This estimate was conducted for purposes of calculating additional costs to regulated entities and benefits associated with the 2015 Rule, rather than an analysis of how the scope of CWA jurisdiction changed. The economic analysis estimated that the 2015 Rule would result in an increase in positive jurisdictional determinations of between 2.84 percent and 4.65 percent in total. The estimated percent increase in jurisdiction over certain categories of waters and certain states, however, was estimated to be larger than this overall average increase. For example, of the existing negative determinations for other waters, the agencies made the following estimates: 17.1 percent of the negative jurisdictional determinations for other waters would

[59] U.S. Environmental Protection Agency and U.S. Department of the Army. 2015. *Economic Analysis of the EPA-Army Clean Water Rule*. Docket ID EPA-HQ-2011-0880-20866. Available at https://www.regulations.gov/document?D=EPA-HQ-OW-2011-0880-20866.

become positive under the 2015 Rule because the aquatic resources would meet the new definition of adjacent waters; 15.7 percent of the other waters could become jurisdictional under category (a)(7) of the 2015 Rule following a significant nexus analysis; and 1.7 percent of the other waters could become jurisdictional under category (a)(8) of the 2015 Rule following a significant nexus analysis. *See* 80 FR 37104-05. Furthermore, the 2015 Rule Economic Analysis suggests there may have been a significant expansion of jurisdiction over tributaries in some states relative to pre-2015 practice. According to the FY13–FY14 Corps ORM2 records for Arizona, 709 of 1,070 total streams (66.3 percent) were non-jurisdictional. For Arkansas, FY13–FY14 ORM2 records identify 116 of 213 total streams (54.5 percent) as non-jurisdictional. In South Dakota, North Dakota, Nevada, New Mexico, and Wyoming, 8.5 percent, 9.2 percent, 13.2 percent, 16.7 percent, and 57.1 percent of streams in the FY13– FY14 ORM2 database, respectively, were identified as non-jurisdictional. The agencies' 2015 Rule Economic Analysis, on the other hand, assumed that 100 percent of these streams would be jurisdictional under the 2015 Rule.

The estimated increase in jurisdiction was anticipated to provide benefits and costs to the nation by increasing the reach of CWA programs covered under sections 303, 311, 401, 402, and 404. The 2.84 percent to 4.65 percent increases in overall CWA jurisdiction were used to then estimate the total costs and benefits of the 2015 Rule. Specifically, the total costs and benefits from the most recent regulatory impact analysis for each of the affected CWA programs were first adjusted to 2014 dollars, then the program sizes were adjusted to reflect sector growth or realized information on the size of the sector, and finally, those estimates were simply multiplied by the estimated 2.84 percent and 4.65 percent increase in CWA jurisdiction to calculate an estimated range of costs and benefits for each CWA program under the 2015 Rule. The costs and benefits across programs were then summed to estimate the nationwide costs and benefits of the 2015 Rule. The economic analysis for the 2017 proposed repeal of the 2015 Rule simply assumed that the previously estimated costs were now avoided costs and the previously estimated benefits were now forgone benefits (and expressed in 2017 dollars).

The one exception to the application of the 2015 Rule methodology laid out above to the 2017 proposed repeal was the wetlands benefits category. According to the 2015 Rule EA wetlands benefits were estimated to accrue as part of the expected increase in mitigation under the CWA section 404 dredged and fill permitting program. Section 404 requires applicants to avoid and minimize impacts to jurisdictional waters. In cases where impacts are unavoidable, it requires that the impacts be mitigated, for example, either through the restoration of aquatic resources or through the enhancement of other existing aquatic resources. Individual permits were assumed to be required to mitigate two acres for every one acre disturbed, although the resulting ecosystem services and values held by society were assumed to be provided on a one to one basis. In other words, this 2-for-1 acres requirement assumed for permits was meant to account for the fact that mitigated wetlands may not be as productive at providing valued ecosystem services as the wetland being developed, on a per acre basis. Half of the expected general permits were assumed to require 2-for-1-acre mitigation, while the other half were assumed to require no mitigation. The overall general permit per acre mitigation ratio was therefore 1-for-1.

However, wetland benefits were determined to be too uncertain to monetize for the 2017 proposal. Instead, wetlands benefits were described qualitatively. (*See* Section 3.1 of the Economic Analysis for the 2017 Proposal.) The Economic Analysis for the 2017 proposal stated:

> "In the case of the forgone benefits of wetland protection the agencies believe the cumulative uncertainty in this context is too large to include quantitative estimates in the main analysis for this proposed rule. However, the agencies are confident that the forgone benefits of wetlands protection are greater than zero" (U.S. EPA, 2017, p. 9).

For further detail about the rationale for omission, see the Economic Analysis for the 2017 proposed rule.

III.B Potential Biases in Analyses Supporting the 2015 Rule and the 2017 Proposed Repeal

Since publication of the final 2015 Rule, the agencies have received information through filings in litigation against the 2015 Rule and comments received in response to the 2017 proposed rulemaking for this final action suggesting that the average estimate of a 2.84 to 4.65 percent increase in CWA jurisdiction may not accurately reflect the potential costs and benefits associated with the repeal of the 2015 Rule and recodification of the pre-existing regulations as implemented consistent with pre-2015 practice. (*see* Section II.C.3 of the Supplemental Notice of Proposed Rulemaking, 83 FR 32227, July 12, 2018).

In contrast, there may be reasons to believe that the estimated costs and benefits of the 2015 Rule were overstated. The assumptions in the 2015 Rule were designed to maximize the estimated costs and benefits of that rule's definition of the "waters of the United States" so as to not understate the potential impact of that rule. As stated in the 2015 Rule economic analysis

> "Note that waters that are currently found to be jurisdictional may also be subject to the expanded set of exclusions included in the final rule. For these and similar reasons, the agencies believe that positive jurisdictional determinations under the final rule will be less than assumed for the purposes of this economic analysis." (U.S. EPA and Department of the Army 2015, p. 8)

If there would be fewer positive jurisdictional determinations made under the 2015 Rule than the estimate of a 2.84 percent overall increase assumption, then it would imply that both the estimated costs and benefits of the 2015 Rule were over-stated.[60]

Since the 2017 proposed repeal used the same assumptions as were in the 2015 Rule (with minor updating), the avoided costs and forgone benefits of that action would also be over-stated for the same reason if there would be fewer positive jurisdictional determinations. In addition, a potentially more important reason, discussed earlier in this economic analysis, may be that state governments would choose to regulate waters at a level consistent with or above that associated with the 2015 Rule. This was explicitly recognized in the 2015 Rule economic analysis.

[60] The EA for this final rule focuses on the 2.84 percent estimate of potential overall increase in jurisdiction, although the same changes in approach would apply to the 4.65 percent potential overall increase estimate from the 2015 Rule economic analysis.

> "This economic analysis does not account for the possibility that some states, as a matter of state law, may be considering a broader set of waters to be subject to a state's implementation of certain CWA programs. Although the extent of a state's CWA jurisdiction may not be smaller than the definition of waters of the U.S., states and tribes may elect to implement their water quality protection programs more broadly, according to a definition of 'waters of the state' or 'waters of the tribe.' Where individual states have elected to regulate waters more broadly, the estimated costs and benefits of this rule would be smaller than presented here (because states may already be asserting jurisdiction over waters for which this analysis presumed jurisdiction was not generally asserted in practice)." (U.S. EPA and Department of the Army, 2015, p. 4)

If states previously regulated waters more broadly than the federal government required, then the costs and benefits of the 2015 Rule and avoided costs and forgone benefits of the 2017 proposal would be potentially overestimated.

Another reason why the cost and benefits of both the 2015 Rule and 2017 proposed repeal may have been overestimated is that both analyses assumed that the 2015 Rule would affect entities regulated under the CWA in direct proportion to the percent change in positive jurisdictional determinations. For example, a 2.84 percent increase in positive jurisdictional determinations implied a 2.84 percent increase in CWA section 402 Concentrated Animal Feeding Operation (CAFO) permits and implementation. In effect, these analyses assumed that CAFO, stormwater construction and other activities currently regulated under the CWA are distributed exactly the same way across both large, navigable waterways as well as along adjacent wetlands, open waters, non-navigable tributaries (including streams and ditches), and other aquatic resources in the 2015 Rule's case-specific categories. Given that the waterbodies subject to these actions are not perennial waters and therefore not well suited to many industrial or agricultural discharge uses, this proportional assumption may not be appropriate. The 2015 analysis explicitly recognized this as well.

> "It is also unlikely that new CAFOs and stormwater-relevant construction would be built on newly jurisdictional waters without decreases in construction or CAFO activities elsewhere." (U.S. EPA and Department of the Army, 2015, p. xi)

The estimated benefits and costs from the 2015 Rule and the 2017 proposal similarly assumed that the percentage increase in costs and benefits of increased positive jurisdictional determinations were equal to the percentage increase in regulated activities. For example, the estimated 2.84 percent increase in CAFO permit and implementation activity was assumed to result in a 2.84 percent of the costs and benefits of the 2003 CAFO rule. It is not clear, *a priori*, whether this assumption would imply an overestimate or underestimate of the costs and benefits in the 2015 Rule and the 2017 proposal. If the marginal benefits of regulating water decline as smaller waterbodies are regulated (which would be a common assumption of a diminishing marginal benefits) then the benefits of the 2015 Rule and 2017 proposal may have been overstated. If the costs of regulating increases as smaller water bodies are regulated (an assumption of increasing marginal costs) then the costs of these two actions would have been underestimated.

III.C Updated Analysis of the Repeal of the 2015 Rule and Recodification of Pre-Existing Regulations

For the reasons stated above, a revision to earlier analyses for this final action was appropriate. However, not all the factors described can be addressed. This analysis used some of the same basic approach as was used for both the 2015 Rule EA and the 2017 proposed rule EA, but it made several important improvements.

III.C.1 Incorporation of State Responses

The 2015 Rule EA and the 2017 proposed rule EA did not account for potential state behavior with respect to regulatory actions in response to a change in CWA jurisdiction. Both analyses implicitly assumed that states always adjust regulatory regimes to match the federal jurisdictional level any time there is a change in federal jurisdiction. States' water quality and dredged and fill programs can work independently and both must therefore be considered. States may be more or less protective in their programs depending on a variety of factors, including their constituents' preferences and the types of resources located within their boundaries.

As described in Sections II.A.2, there are number of possible ways that states could respond to changes in CWA jurisdiction. States may adjust their regulatory programs to match any changes in federal CWA jurisdiction. If CWA jurisdiction is reduced and states followed suit, states and regulated entities would avoid costs and the public would forgo water quality and wetland benefits. At the other extreme, state-level baseline regulations may be broader than the federal requirements. In this case, if CWA jurisdiction is reduced at the federal level, states may simply maintain their broader, baseline regulations. It is also possible that if CWA jurisdiction is reduced at the federal level, a state could choose to revise its current state laws and programs to continue the baseline actions required by the federal government. In the latter two cases, state requirements would fill any regulatory gap in the wake of a change in the definition of "water of the United States." This state "gap-filling" would result in no change in compliance costs to the regulated community and no change in environmental benefits (that is, neither avoided costs nor forgone benefits would occur), suggesting no net impact in the long run. The agencies emphasize, however, that if states make regulatory changes to maintain the previous federal baseline level of CWA jurisdiction then they will likely incur some transition costs in the short run, and some of the cost of implementing programs will be transferred from the federal government to the states. The cost to states could be more or less than the costs to the federal government.

Another potential outcome is a federalism scenario. In this scenario, when requirements imposed by the federal government are altered, state and local governments may be able to find more efficient ways of managing local resources, consistent with the theory of "fiscal federalism."[61] States are more likely to be knowledgeable about which waters their local constituents value and may more efficiently manage them. States can choose to allocate more resources to manage high-valued waters and wetlands and reduce regulation on less valued waters and wetlands. Depending on whether a newly characterized non-jurisdictional water is highly or lowly valued, states may choose to regulate or not regulate it, and the

[61] For example, *see* Oates, W. E. (1999). *An essay on fiscal federalism*. Journal of Economic Literature, 37(3), 1120-1149, or Oates, W. E. (1998). *On the welfare gains from fiscal decentralization*. University of Maryland, Department of Economics.

compliance costs could increase or decrease, respectively. And in turn, the corresponding environmental benefits could increase or decrease. In *either* case, however, net benefits will increase, assuming a state can more efficiently allocate resources towards environmental protection due to local knowledge of amenities and constituent preferences (*see* Section II.A.2 for details).

In short, state responses to a change in the definition of a "water of the United States" fall along a continuum and depend on legal and other constraints. States that have laws defining "waters of the state" to be no broader than "waters of the United States" cannot currently regulate past the federal definition. Cost savings and forgone benefits from these states should be included in the costs and benefits of this final action. In contrast, states that have regulations of waters, including wetlands, that are as broad or broader than the 2015 Rule would not be affected by this final action. Therefore, no cost savings or forgone benefits should be assumed for these. States that fall between these extremes can be evaluated by either including or excluding them from the estimates of cost savings and forgone benefits.

Furthermore, these responses may differ for surface water programs and dredged/fill permit programs. Section II.A.2 discussed how the agencies categorized state regulations of dredged and fill permitting programs and surface waters discharge permitting programs. These categorizations can be used to evaluate possible state responses to a change in the definition of the "waters of the United States." State regulation of dredged and fill activities is assumed to affect the costs and benefits of CWA section 404 permitting and section 404 wetland and stream mitigation. State regulation of surface water discharges is assumed to affect the costs and benefits of CWA section 402 CAFO, stormwater, and pesticide regulation; section 311 compliance; and section 401 administration.

State responses to dredged and fill regulation were classified into one of three categories:

- *Category 1* – States unlikely to increase state dredged and fill permitting practices or do not have inland dredged/fill permitting programs. The costs and benefits from CWA section 404 permitting and wetland mitigation is included in this analysis.

- *Category 2* – States likely to continue the states' current permitting practices and may choose to change state programs to provide partial regulatory coverage of waters that would no longer be "waters of the United States." The costs and benefits from CWA section 404 permitting and wetland mitigation for these states are assessed using a sensitivity analysis by either including or excluding them from the analysis.

- *Category 3* – States likely to continue the states' current dredged/and fill permitting practices, which may already regulate beyond some areas of pre-2015 practice. The costs and benefits from CWA section 404 permitting and wetland mitigation for these states are excluded from this analysis.

State responses to surface water regulation were classified into one of two categories for NPDES-authorized states:

- *Category 1*– States that have broad legal restrictions are likely to reduce the scope of their regulatory coverage following a narrowing of federal jurisdiction. The costs and benefits from CWA sections 402, 311, and 401 are included in this analysis.

- *Category 2* – States that do not have broad legal restrictions are likely to continue their current regulatory practices, which may provide partial regulatory coverage of waters that are no longer "waters of the United States." The costs and benefits from CWA sections 402, 311, and 401 are excluded from this analysis.

The agencies assumed that states without NPDES authorization would not regulate discharges to waters that would no longer be jurisdictional, regardless of the category they would otherwise be placed in, so they were always placed in Category 1.

For dredged and fill programs, states classified as Category 1 are the most *unlikely to increase* their current regulatory practices in response to a federal change in CWA jurisdiction. For surface water programs, states classified as Category 1 are the most *likely to reduce* the scope of their regulatory coverage following a narrowing of federal jurisdiction. Impacts in the Category 1 states for both dredged and fill and surface water programs were always *included* in the estimate of cost savings and forgone benefits. States classified as Category 3 for dredged and fill regulation and as Category 2 for surface water regulation were most *likely to continue* their current regulatory practices to regulate beyond the CWA in response to a change in federal CWA jurisdiction. Impacts from these states were always *excluded* from cost savings and forgone benefits estimates. States classified as Category 2 for dredged and fill regulation fall in between these extremes; they are likely to continue their current regulatory practices but *may increase* their regulatory practices to provide regulatory coverage of some waters that are no longer "waters of the United States." These states were included or excluded from the cost savings and forgone benefits estimates in a sensitivity analysis.

The various combinations of possible state responses are detailed in Table III-1 below. The sensitivity analysis evaluated three scenarios. Scenario 1 is the broadest and includes the cost savings and forgone benefits for all states except those that are *likely to continue* their baseline dredged and fill practices regardless of federal action. Scenario 2 narrows the number of states used in the estimate by *excluding* states that are *likely to continue* both their dredged and fill and surface water practices. Scenario 3 is the most limited in that it only *included* states that are *likely to reduce* baseline their dredged and fill and surface water practices to match the federal level.

Appendix D includes two additional scenarios. Scenario 0 includes all states in the estimate of cost savings and forgone benefits, regardless of the agencies' categorization of the states' regulations. This scenario is included as a comparison to the 2015 Rule and the 2017 proposal analysis. Both of those analyses included all states in the calculations. Scenario 1a excludes states that are *likely to continue* and those that *may continue* baseline dredged and fill practices. This is a potentially plausible scenario, but it produces results similar to Scenario 1 so it was included in Appendix D. Table III-1 describes which categories are included or excluded from each scenario. The number in parentheses represents the number of states in each category.[62]

[62] Hawaii and the District of Columbia were included in the state categorization exercise but were not included in the estimate of avoided costs and forgone benefits due to a lack of data. These states were also excluded from the analyses for the 2015 Rule and 2017 proposal.

Table III-1: Treatment of the effect of state response on costs and benefits in the sensitivity analysis

Category (number of states)	Sensitivity Analysis			Appendix	
	Scenario 1	Scenario 2	Scenario 3	Scenario 0	Scenario 1a
Change in baseline dredged and fill practices (affects Section 404 programs)					
1 - Unlikely to increase (18)	Included	Included	Included	Included	Included
2 - May increase (9)	Included	Included	Excluded	Included	Excluded
3 - Likely continue (23)	Excluded	Excluded	Excluded	Included	Excluded
Change in baseline surface water practices (affects Sections 402, 311, and 401 programs)					
1 - Likely reduce (11)	Included	Included	Included	Included	Included
2 - Likely continue (39)	Included	Excluded	Excluded	Included	Included

The avoided cost and foregone benefit estimates presented in the body of this EA and in Appendix D relied on the assumption of a 2.84 percent decrease in jurisdictional determinations from the 2015 Rule EA. The 2015 Rule also evaluated a potential 4.65 percent change in jurisdictional determinations calculated by assuming a doubling of the number of ORM2 Other Waters (*see* Figure 3 in the 2015 Rule EA; U.S. EPA and Department of the Army, 2015). Scenario 0 results for the 4.65 percent change in jurisdictional determinations are presented for comparison in Appendix E.

III.C.2 Wetland Mitigation Valuations Methods

A re-evaluation of the economic analysis of the 2015 Rule and the 2017 proposed repeal led to the identification of several methodological issues that need to be addressed in future analyses. The method used to value wetland mitigation acres, discussed below, and the fact that the current state regulatory regimes were not considered, discussed above, were particularly of concern as the agencies considered the 2015 EA. These issues are discussed in detail below.

III.C.2.1 The 2015 Rule Wetland Valuation Methodology

The agencies identified several issues with the wetland valuation methodology used to assess the 2015 Rule. First, the implicit baseline did not account for potential wetland development. A developer can mitigate wetland impacts through creating new wetlands, restoring existing wetlands, or preserving other existing wetlands. In the latter case, if the preserved wetlands were not under some risk of future development to begin with, there is no actual change in wetlands from such mitigation. Ideally, the assumed baseline would include a spatially explicit projection of what wetlands would be developed and when, and this would then be compared to a policy scenario with spatially explicit projections of which wetlands are preserved as part of the 404 permit mitigation requirements. Such a task would be difficult to undertake and fraught with uncertainties.

Many other aspects of the wetland valuation methodology implemented to assess the 2015 Rule were also of concern. To value the expected change in wetland acres, the Economic Analysis for the 2015 Rule applied willingness to pay (WTP) values for preserving or expanding wetland acreage from the academic literature to the estimated changes in wetland acres resulting from the 2015 Rule. The application of WTP values from the literature to a new policy setting is known as benefit transfer. The EPA's Guidelines for Preparing Economic Analyses (2010) lays out requirements for performing a valid benefit transfer. The

studies being transferred must first have valid and relevant results. Assuming the results are valid, studies being transferred should have a similar (1) definition of the environmental commodity being valued (including considerations like scale and the presence of substitutes); (2) baseline and extent of environmental changes; and (3) characteristics of affected populations. Many components of the 2015 Rule's EA do not satisfy these requirements. No national level studies concerning WTP for the expansion or preservation of wetland acreage are currently available for the U.S., and the U.S. freshwater (non-coastal) wetlands valuation literature is relatively limited. While there are several wetlands valuation studies in the literature, many are context dependent and not suitable or appropriate for transfer in this analysis. Also, a large portion of the available studies do not use accepted economic valuation methods but instead rely upon estimates of annual value per acre for wetlands (not based on WTP) using net factor income, replacement costs, energy-based analyses, the market value of extracted products, and other methodologies. These studies do not satisfy accepted benefit transfer study selection criteria and were therefore not appropriate to average or to transfer to other locations.

The 2015 Rule EA relied on estimates of WTP for wetland preservation or expansion from ten studies, most of which were state or local level studies. These were used to create a single, national WTP per acre per household values for emergent wetlands and another single, national WTP value for forested/shrub wetlands. Some studies provided multiple WTP estimates. The agencies have since concluded that five of the ten do not satisfy standard unit value benefit transfer study selection criteria. These five studies are described below.

- **Azevedo *et al.* (2000)**: The report describes two stated preference questions given to a random sample of Iowa residents on their WTP for easements to restore land to its natural wetland state. While there is a detailed discussion of the survey instrument, the report only provides two charts plotting the "% of respondents willing to pay x" against stated payment amounts presented in the surveys. Average WTP is assumed to be given by the 50th percentile of the range of stated WTP. No statistics beyond the charts are presented and no parametric estimation was conducted. No summary statistics, standard errors, or confidence intervals are reported, and it is unclear if the report was peer reviewed. Without additional detail on the underlying data and estimation results it is not possible to validate or replicate the results, and so the agencies concluded that it was not appropriate to apply the results of this study to the current context.

- **Dillman *et al.* (1993)**: The report values three types of wetlands in South Carolina: floodplain swamps, bottomland hardwood forests, and pine plantations with scattered hardwood runners. The survey, sent to a random sample of South Carolina residents, informs respondents that the floodplain swamps provide the greatest amount and variety of wetland function, followed by the bottomland forests and pine plantations, respectively (although the ranking of the latter two does not hold across all 14 attributes used to describe the functionality and services of these wetlands). The payment vehicle is a donation to a "wetland preservation fund." Donation payment vehicles are subject to several biases including free riding and a lack of consequentiality which can exacerbate hypothetical bias. The study design does not vary the number of acres protected, telling all respondents that 2,500 acres of wetland would be protected making it difficult to conduct a scope test, at least in terms of quantity of waters impacted. The study tests for differences in WTP for the different types of wetlands using constants for two of the three types but fails to find significant effects despite differences in the provision of ecosystem services.

Finally, the study does not appear to be peer reviewed. Given the issues in study design and lack of peer review, the agencies concluded that it was not appropriate to apply the results of this study to the current context.

- **Johnson and Linder (1986)**: The wetland valuation estimates presented in this paper were derived from a one percent sample of the 1982 licensed resident hunters in South Dakota. Hunters in this region often view wetlands as a recreational resource. The WTP amounts estimated in the paper therefore only apply to hunters in the South Dakota region and are not applicable to the general population. The agencies concluded that it was not appropriate to apply the results of this study to the current context.

- **Lant and Tobin (1989)**: The authors investigated three different drainage basin improvement scenarios but only collected between seven and sixteen responses for each scenario. The estimates presented in this paper were intended as illustrations and not as exact estimates of population WTP. The authors explicitly state that "the comparative case study approach and small samples preclude statistical inference or precise quantitative estimates" which disqualified the study for use in benefit transfer.

- **Roberts and Leitch (1997)**: This paper attempted to value Mud Lake, a managed, lacustrine wetland on the Minnesota-South Dakota border using a random sample of households who live within 30 miles of Mud Lake. The payment card format and voluntary contribution payment vehicle used in the paper are now generally not thought of as appropriate by economists. In addition, the total value estimated in the report appears to be the sum of separately estimated recreational, option, and bequest values. The current literature advocates estimating total value as opposed to summing up separate values. The authors also expressed reservations about their results when they stated "[e]ven though the results of this study are first approximations and rest on some bold assumptions, they should provide useful benchmarks for resource managers and encourage others to develop better estimates." The agencies concluded that it was not appropriate to apply the results of this study to the current context.

Of the original ten studies used in the 2015 Rule analysis, only five clearly satisfied standard benefit transfer selection criteria in EPA's Guidelines for Preparing Economic Analyses (2010). These studies included two focusing on Kentucky (Blomquist and Whitehead, 1998; Whitehead and Blomquist, 1991), one from California (Loomis *et al.*, 1991), one from Nebraska (Poor, 1999)[63], and one from Wisconsin (Mullarkey and Bishop, 1999). These five studies derived their WTP estimates from samples of state residents (although Blomquist and Whitehead also surveyed respondents in nearby population centers

[63] Poor (1999) valued unique Nebraska wetlands that were part of the North American Flyway in the state's Rainwater Basin using a double bounded dichotomous choice response format. A significant portion of the Rainwater Basin is designated as a Wildlife Refuge and attracts thousands of birdwatchers per year. The study design employs a three-way split sample, varying the scope of wetland protection across treatments. Using the split sample design, the authors conduct an external scope test and fail to find significant scope effects. External scope is a high bar and rigorous test of validity that some otherwise well-designed studies do not achieve. It is possible that the failure of the scope test is a result of different preferences across the three sub-samples. For estimation, Poor (1999) combined all three sub-samples and used census weights to ensure representativeness.

outside of Kentucky). Because valid transfers require the transfer and policy cases to have similar affected populations, environmental quality, and extent of changes, the most appropriate geographic scale of transfer for these wetlands valuation study results would be at the state-level, and only to the states in which the primary studies were conducted, or arguably other states with similar populations and wetland resources. These concerns led the agencies to conclude that application of these wetlands valuation studies on a national level would lead to invalid WTP estimates.

Setting aside the validity of the wetland WTP per acre per household value estimates used in the 2015 Rule EA, the way in which the WTP estimates were applied to calculate total national benefit values was also problematic. For the 2015 EA, the two national average wetland WTP per acre per household values, for emergent wetlands and forested/shrub wetlands, were multiplied by the number of acres changed by the 2015 Rule and the assumed number of affected households to arrive at an estimate of total WTP. The number of affected households was represented by two different scenarios. In the first scenario, changes in wetland acres were assumed to only have value to households in the state in which the changed wetlands were located. This was a "state-level approach." The second scenario was labeled a "regional approach" and relied on eight wetland regions defined by the USDA's Economic Research Service and assumed all households within a given multi-state wetland region had a positive WTP for all changes in wetland acreage within their home region.[64] Both scenarios applied the same average WTP for a wetland acre within the state or region, depending on the approach, but this value dropped to zero once outside of the state or region borders.

For the regional approach, EPA used the eight wetland regions identified by the USDA's Economic Research service: Central Plains, Delta and Gulf, Mountain, Midwest, Northeast, Pacific, Prairie Potholes, and Southeast.[65] While it is certainly true that wetlands may provide services that affect households outside of a state's borders, the regional approach applied the national average WTP value for changes in wetland acres thousands of miles away. For example, the regional approach applied the WTP value from residents in Tucson, Arizona, to changes in wetland acres in Boise, Idaho; and from residents in Bozeman, Montana, to changes in wetland acres in Des Moines, Iowa.

The final WTP estimates for the 2015 Rule were calculated using a "blended" method that averaged the state-level and the regional WTP scenarios. There is no clear support for this blending assumption reflected in the benefit transfer literature. In particular, the regional approach that applied household WTP values to wetlands thousands of miles away is inappropriate. Several of the ten non-market valuation studies used in the 2015 Rule EA focused on more local populations around a specific wetland. Others

[64] The regions were USDA/ERS defined regions; *see* the 2015 Rule Final Economic Analysis, fn 25, p. 49 for additional details.

[65] Heimlich, R.E., R. Claassen, K.D. Wiebe, D. Gadsby, and R.M. House. 1998. Wetlands and Agriculture: Private Interests and Public Benefits. AER-765, U.S. Department of Agriculture Economic Research Service, Washington, D.C. Heimlich *et al*. (1998) assigned states to regions as follows: Central Plains (KS, NE, OK), Delta and Gulf (AR, LA, MS, TN, TX), Mountain (AZ, CO, ID, NM, UT, WY) , Midwest (IL, IN, KY, MI, MN, OH), Northeast (CT, DE, MA, MD, ME, NH, NY, PA, RI, VT, WV), Pacific (CA, OR, WA), Prairie Potholes (IA, MT, ND, NE, SD), and Southeast (AL, FL, GA, NC, SC, VA)

even focused on a particular subset of the population (*e.g.*, hunters and fishermen) whose preferences are unlikely to be representative of the population more broadly.

III.C.2.2 Updated Methodology for Wetlands Benefits

It is important to emphasize that the agencies acknowledge that there are benefits to the preservation of wetlands. The final rule will result in certain wetland acres becoming non-jurisdictional under the CWA. Some of these newly non-jurisdictional wetland acres may be disturbed or developed without any corresponding wetland mitigation to offset the losses, particularly in situations where state laws do not maintain the previous levels of regulation. The loss of these wetlands will likely result in the loss of benefits that they would have provided. However, due to the reasons above (failure to account for state governance, reliance on inappropriate studies, and questionable benefit transfer methods), the agencies believe that the methodology used to estimate wetlands benefits from the 2015 Rule is not appropriate. Instead, the agencies have developed a more appropriate methodology to estimate the amount of forgone wetland benefits that could arise as a result of this final rule.

III.C.2.2.1 Steps of Benefit Transfer

As mention above, the EPA's Guidelines for Preparing Economic Analyses (U.S. EPA, 2010) lay out requirements for performing a valid benefit transfer. The first step is to describe the policy case. The second step is to then select study cases for transfer that are applicable to the policy case and produce valid estimates of willingness to pay using accepted and appropriate methods. Once study cases have been selected, the next step is to transfer their values to the policy case. There are several methods of transferring values including unit value transfers, function transfers, meta-analyses, and structural benefit transfer. The appropriate method to use will be dependent on the selected study cases. The final step is to report the results including all key judgements and assumptions used to select the case studies and transfer method used.

III.C.2.2.1.1 Describe the policy case

The final rule includes as "waters of the United States" wetlands adjacent to traditional navigable waters, the territorial seas, interstate waters including interstate wetlands, impoundments of jurisdictional waters, and tributaries of these jurisdictional waters. The final rule also defines adjacent as those wetlands that are bordering, contiguous, or neighboring.

III.C.2.2.1.2 Select study cases and apply explicit selection criteria

The foundation of any benefit transfer is the underlying studies that are being transferred. All available studies should be collected and evaluated against the necessary criteria for inclusion in the benefit transfer. Acceptable studies should be similar to the policy case (1) in their definition of the environmental commodity being valued including scale and the presence of substitutes, (2) the baseline and extent of environmental changes, and (3) the characteristics of the affected populations. Studies must also employ valid and accepted economic theory and econometric techniques.

Because wetlands potentially have significant nonuse values, they are commonly valued using stated preference methods. The complex way in which wetlands provide ecosystem services make them a

particularly challenging commodity for which to elicit accurate preferences and WTP values. Careful selection of studies is crucial to conducting an accurate transfer. [66]

III.C.2.2.1.3 Transfer Values

The simplest way to transfer values is known as a unit value transfer. In this method, a point estimate of WTP from a case study is applied directly to the policy site. The point estimate can be a single value from a study or average of a small number of estimates from a few case studies. Unit value transfers should only be used in cases where the case study and policy sites are very similar. Point estimates are generally a function of several variables (*e.g.*, income, region) and simply transferring them to a new location without accounting and controlling for those difference can lead to inaccurate results.

Instead of using a single value from a case study, function transfers use the estimated function from which the case study's estimated WTP value was generated. Using the estimating function allows the transferred WTP estimate to control for factors that are known to influence WTP. While function transfers can adjust for small differences between the case study and policy area populations, they are still subject to the unit value benefit transfer requirements that the study and policy cases be similar in the type and size of the quality change and the population being evaluated.

Meta-analyses, a third type of benefit transfer approach, combines and synthesizes the results from multiple valuations studies to estimate a new transfer function. Meta-analyses have the advantage of drawing information on WTP from a large number of disparate sources in order to control for a relatively large number of variables that influence WTP. Because meta-analysis controls for the confounding attributes of the underlying studies, it is sometimes possible to make use of a larger number of studies than would be considered for a unit or function transfer. There are several different forms meta-analyses may take, and the form is often determined by the type and amount of information available for use in the meta-analyses. See Johnston *et al.* (2015) for more details on meta-analyses and other transfer methodologies. It is important to recognize that techniques such as meta-analyses cannot correct for all study qualities or the appropriateness of the underlying studies. If the underlying studies do not provide a good match to the resource in question or do not rely on well accepted practices for questionnaire development and/or econometric techniques, those studies should be excluded from meta-analysis. Thus, the agencies carefully vetted wetland valuation studies included in the meta-analysis to support wetland valuation in the analyses presented in Section III.C.2.1.3.1.[67] Moreover, the Moeltner *et al.* (2019)[68] study used in benefit transfer relied on Bayesian Stochastic Search Variable (SCSV) algorithm to test whether combining studies that valued different wetland types (*i.e.*, freshwater and saltwater) is appropriate for benefit transfer applications focused on freshwater wetlands only. As discussed in Moeltner *et al.* (2019),

[66] A number of commenters on the proposal of this rule suggested additional wetlands studies that might be applicable. A review of the suggested studies determined that the vast majority of the studies either were not primary studies, or that they did not rely on accepted economic methods.

[67] The reasons for not including wetland valuation studies in the final meta-data are summarized in a memo provided in the docket for this action (ICF, 2018) *available at* https://www.regulations.gov/document?D=EPA-HQ-OW-2018-0149-0053.

[68] Since the time of the 2019 proposal to revise the definition of "waters of the United States," Moeltner *et al.* (2018) was accepted for publication in the journal Ecological Economics.

the meta-regression model relying on freshwater studies only produced the best estimates for the purpose of this analysis.

III.C.2.2.1.4 Report Results

Information on all studies used in the benefit transfer as well as the full results should be reported. In addition, all assumptions and judgements that were made in the selection of case studies and transfer methodologies should be clearly explained. Any uncertainty in the estimates should be reported and discussed when possible.

III.C.2.2.2 Wetlands Benefits using the 2015 Rule Approach

The 2015 EA reported CWA 404 wetlands benefits of $306.1 million, using a 3 percent discount rate. As described above, this was based on an analysis that did not account for state regulations and used a "blended" estimate of the WTP. In creating a new estimate of the forgone benefits from this final rule, it is important to understand how the 2015 estimate was derived and whether it is a useful point of comparison for our new estimate.

In the 2015 Rule EA, the annual value for wetland preservation is the one-time, per household, per acre willingness to pay for that preservation. This is estimated as the total present value of the stream of wetlands benefits for those acres over a period of 50 years. A one-time, present value payment was used because the rule projected the number of wetland acres that would require compensatory mitigation each and every year. The cost for that mitigation reflected the total, one-time cost per acre to protect and maintain the services provided by those wetland acres into perpetuity. Therefore, the annual benefits were also calculated to reflect the total, one-time present value of the stream of benefits from those acres in that year.

In the 2015 Rule EA, 22 estimates of the per household per acre WTP for wetland improvements were combined from ten studies.[69] The individual study estimates were categorized as applying to either forested wetlands or emergent wetlands. Thirteen estimates from four studies – Lant and Tobin (1989), Blomquist and Whitehead (1998), Dillman *et al*. (1993), and Whitehead and Blomquist (1991) – were used for forested wetlands, and nine estimates from six studies – Johnson and Linder (1986), Loomis *et al*. (1991), Azevedo *et al*. (2000), Roberts and Leitch (1997), Poor (1999), Mullarky and Bishop (1999) – were used for emergent wetlands. WTP was calculated separately for each category by taking the log-average geometric mean of the per-acre WTP values, weighted by the number of respondents in each study. Table III-2 below lists the WTP for forested/shrub wetlands and for emergent wetlands at 7 percent and a 3 percent discount rate, using the same methodology as used in the 2015 Rule EA, but updated to 2018 dollars with the same CPI deflator used in 2015. WTP for forested/shrub wetlands is approximately $0.04 per household per acre at a 7 percent discount rate and $0.06 per household per acre at 3 percent. WTP for emergent wetlands is $0.004 per household per acre at 7 percent and $0.005 per household per acre at 3 percent.

[69] It is important to note that five of the ten studies whose values were transferred in the 2015 Rule EA were found to be inappropriate for use in a unit value transfer and therefore should not have been used (see section III.C.2.1 for details).

Table III-2: WTP per Household per acre ($/HH/acre) (2018$)		
	Forested/Shrub Wetlands	Emergent Wetlands
7% Discount Rate	$0.040	$0.004
3% Discount Rate	$0.056	$0.005

While the WTP per household per acre was assumed to apply nationally in the 2015 Rule EA, the total benefits for each state differed because the number of households and the number of acres affected in each state differed. As described above, a combination of two approaches was used to estimate the state level benefits. The first was a state-level approach which assumed that only residents within a state's boundaries receive benefits from wetland losses offset within that state. The second approach was a regional approach which assumed that all residents within a wetland region benefit from wetland losses offset anywhere in that region. For the final 2015 Rule EA, the agencies used a "blended" approach which was the average of the total state-level and the total regional benefits estimates.

Even though the state-level approach may be overly conservative because wetlands can provide services and benefits to downstream waters beyond a state's boundaries, the regional approach was inappropriate for a benefit transfer exercise because the extent of the market considered in the majority of the original studies was narrower (*e.g.*, state population). The regional approach applied the WTP value for changes in wetland acres thousands of miles away. As such, the agencies used the state-level approach results from the 2015 Rule EA as a point of comparison for this benefit transfer analysis.

Using the state-level approach only and the per household per acre WTP values for forested and emergent wetlands given in Table III-2 above produces wetland benefits of $107.6 million. This is the agencies' best estimate of what the 2015 Rule EA should have reported for wetlands benefits. In a similar fashion, the 2017 proposal EA for this final action should have reported the same range in forgone wetland mitigation benefits. It is important to re-emphasize that this reflects a state-level approach that assumes that all states are affected by the jurisdictional determination.

III.C.2.2.3 Updated and Revised Benefits Transfer

While the state-level approach from the 2015 Rule EA was more appropriate than the blended approach, the agencies believe it was still inappropriate for benefit transfer for two reasons. First, the use of a national level average WTP value did not properly account for state level variation. If the marginal value of wetland mitigation was approximately identical across the country, then the aggregation of the 2017 proposal EA would be as simple as multiplying the national level mean per household per acre value times the affected households and affected acres. This was exactly what was done in the state-level approach. However, it seems unlikely that there would be no regional variation in this WTP value given. Wetland benefits are, in general, a more local commodity. The market for these benefits, including the demographic profiles and cultural aspects, vary widely across the country. In addition, the conditions and quality of the benefits (*e.g.*, the ecosystem services) experienced from this mitigation is heavily dependent on the local climate and topography. Proper benefit transfer requires correcting for these differences across populations living in different areas.

Second, as described above, not all of the studies used in the 2015 Rule EA satisfy standard benefit transfer study selection criteria for a unit transfer, which was effectively what was being done with the

state-level approach. A unit transfer assumes that the WTP at the study site is equal to the WTP at the policy site, so the commodity being valued, and the population must be similar. As detailed above, five of the ten studies used in the 2015 Rule EA did not meet the criteria for a unit transfer. The remaining five might be appropriate. Note that while these five studies were not appropriate for a unit transfer, they might be appropriate for a function transfer, which statistically controls for the variation of the WTP.

A much more defensible approach would be to use an updated set of studies and conduct a function transfer or a meta-regression to allow for state-level variation. The meta-analysis described below meets this criterion and is a more appropriate way to measure the forgone benefits from this action.

III.C.2.2.3.1 Meta Function Transfer

Moeltner *et al*. (2019) performs a meta-analysis of wetland valuation studies to estimate a benefit function for preserving or restoring acres of wetlands. The study is an application of the methodologies developed in Moeltner *et al*. (2007), Moeltner and Rosenberger (2014), and Moeltner (2015). The study performs a Bayesian non-linear meta-regression that ensures the benefits function meets a set of utility theoretic validity criteria. Those criteria are: concavity of the benefits function over wetland acres, sensitivity to scope, a scope elasticity that is not restricted by the functional form of the benefit function, and the adding up condition which ensures dividing a change into smaller increments does not affect the total benefit.

The data for the full meta-regression conducted by Moeltner *et al*. (2019) consist of 38 observations from 17 stated preference studies identified in the 2017 Abt Associates wetlands literature review that contained WTP estimates potentially useful in a meta-analysis. The relevant meta-data for this rule is a subset of 21observations from 11 studies associated with freshwater wetlands. The remaining 17 cases target salt marshes or, more broadly, "coastal wetlands," and are not appropriate study sites for the wetlands considered here. The following discussion focuses on the freshwater wetlands only. Moeltner *et al*. (2019) provides detail on the full dataset. Six of the studies value state-wide changes in wetland area and five focus on wetlands at the sub-state level. Given that the plurality of the observations in the meta-analysis are from studies conducted at the state level, the agencies estimated changes in benefits at the state level, assuming WTP for out of state changes is zero, and aggregate WTP across states *ex post*.

Table III-3: Studies used in the freshwater only meta-regression model in Moeltner *et al*. (2019)

Author	Year	Target Population	Wetland Type	Acres	Payment Frequency	WTP (2017$)
Awondo *et al*.	2011	Maumee Bay State Park OH, visitors	freshwater, unspec.	2,499	Annual	$193
Beran, L.J.	1995	all SC HHs	freshwater, forested	2,500	Lump sum	$36
Beran, L.J.	1995	all SC HHs	freshwater, forested	2,500	Lump sum	$27
Beran, L.J.	1995	all SC HHs	freshwater, forested	2,500	Lump sum	$33
Blomquist & Whitehead	1998	all KY HHs	freshwater	500	Annual	$3
Blomquist & Whitehead	1998	all KY HHs	freshwater, forested	500	Annual	$8
Blomquist & Whitehead	1998	all KY HHs	freshwater, forested	500	Annual	$6
Blomquist & Whitehead	1998	all KY HHs	freshwater, forested	500	Annual	$19
deZoysa	1995	selected MSAs, OH	freshwater, unspec.	3,000	Lump sum	$109
Loomis *et al*.	1991	all CA HHs	freshwater, unspec.	58,000	Annual	$258
Loomis *et al*.	1991	all CA HHs	freshwater, unspec.	40,000	Annual	$426
MacDonald *et al*.	1998	Atlanta region, GA	freshwater, unspec.	330	Annual	$108
Mullarkey & Bishop	1999	all WI HHs	freshwater, forested	110	Lump sum	$64

Table III-3: Studies used in the freshwater only meta-regression model in Moeltner *et al*. (2019)

Author	Year	Target Population	Wetland Type	Acres	Payment Frequency	WTP (2017$)
Newell & Swallow	2013	Two townships, RI	freshwater, forested	29	Lump sum	$9
Newell & Swallow	2013	Two townships, RI	freshwater, forested	45	Lump sum	$12
Newell & Swallow	2013	Two townships, RI	freshwater, forested	60	Lump sum	$16
Poor[1]	1999	all NE HHs	freshwater, unspec.	16,000	Annual	$47
Poor	1999	all NE HHs	freshwater, unspec.	41,000	Annual	$42
Poor	1999	all NE HHs	freshwater, unspec.	66,000	Annual	$47
Whitehead *et al*.	2009	selected counties, MI	freshwater, unspec.	1,125	Lump sum	$73
Whitehead & Blomquist	1991	all KY HHs	freshwater, forested	5,000	Annual	$19

HHs = Households

MSAs = Metropolitan Statistical Areas

[1] This study is included in meta-analysis discussed in Section III.C.2.2 because the dependent variable in the meta-regression model is the total WTP per household and not per acre values

The dependent variable in the meta-regression is the natural log of household WTP for the specified change. Willingness to pay is modeled as a function of "context-defining" and "moderator" variables in the non-linear regression equation. Context-defining variables are those that are policy-relevant including the baseline number of acres, the number of acres preserved or restored, whether those acres are forested wetlands, and whether they were described by the primary study to provide several specific ecosystem services. Moderating variables generally refer to details on how the study was conducted and are generally not as relevant to benefit transfer but are included to avoid omitted variable bias and/or to adjust for the study characteristics (*e.g.*, voluntary payment, a study is not peer-reviewed) to ensure that the meta-regression function used in benefit transfer reflects the best benefit transfer practices and desired study characteristics (*e.g.*, a peer reviewed study and non-voluntary payment such as income tax). The one moderator variable that is important for this benefit transfer exercise is *lumpsum*. Nine of the 21 freshwater WTP observations (from four of the 11 studies) were based on one-time, lump sum payments. The other WTP observations were based on annual payments. Because the agencies were valuing the forgone benefits of wetland mitigation as a one-time payment (as was done in the 2015 rule, described above), the lumpsum variable must be set to one for the benefits transfer.[70] The means, minimums, and maximums of all explanatory variables are reported in Table III-4.

The model specification used to estimate the benefit parameters for transfer (called Model 3c in Moeltner *et al*., 2019) is

$$y_s = X_s\beta + ln\left(\gamma^{-1}\left(exp(\gamma q_{1,s}) - exp(\gamma q_{0,s})\right)\right) + \varepsilon_s$$

[70] This is a change from the analysis done for the Step 2 proposal (U.S. EPA and Department of the Army, 2018). In the EA for the Step 2 proposal, the estimated change in wetland acreages were incorrectly assumed to be a one-time change rather than an annual change as intended in the 2015 Rule. The agencies will correct this error in the Step 2 EA prior to finalizing that rule.

$$\varepsilon_s \sim n(0, \sigma_\varepsilon^2 I_s)$$

where y_s is the natural log of WTP from study s, X_s is a vector of moderator variables from study s, $q_{1,s}$ is the post-policy wetland area, $q_{0,s}$ is the baseline wetland area, β and γ are vectors of estimated parameters, σ_ε^2 is the variance of the error term and I_s is an s-dimensional identity matrix. Moeltner (2018) tested other specifications that allow for unobserved study-level heterogeneity and observation-level heteroskedasticity but found that the model with spherical, idiosyncratic errors performed best.

Table III-4: Meta-regression variable summary from Moeltner *et al*. (2019)

	Description	Mean[1]	Min[1]	Max[1]
lnwtp	log(total wtp in 2017 dollars)	3.56	1.05	6.06
lnyear	log(year of data collection - oldest year +1)	1.57	0.00	2.89
lninc	log(income in 2017 dollars)	10.97	10.64	11.48
sagulf	1 = S-Atlantic/Gulf (AL,GA,SC,LA)	0.19	0.00	1.00
nema	1 = NE/mid-Atlantic,(DE,MD,NJ,PA,RI)	0.14	0.00	1.00
nmw	N/Mid-West (KY,MI,NE,OH,WI)	0.57	0.00	1.00
local	1 = target population at sub-state level	0.33	0.00	1.00
prov	1 = provisioning function affected	0.24	0.00	1.00
reg	1 = regulating function affected	0.52	0.00	1.00
cult	1 = cultural function affected	0.76	0.00	1.00
forest	1 = forested wetland	0.52	0.00	1.00
q0	baseline acres (1000s)	40	0	220
q1	policy acres (1000s)	51	1	220
volunt	1 = payment mechanism = voluntary contribution	0.43	0.00	1.00
lumpsum	1 = payment frequency = lump sum (single payment)	0.43	0.00	1.00
ce	1 = elicitation method = choice experiment	0.14	0.00	1.00
nrev	1 = study was not peer-reviewed	0.24	0.00	1.00
median	1 = wtp estimate = median	0.33	0.00	1.00

[1] Summary statistics are based on the freshwater studies only. See Moeltner *et al*. (2019) for saltwater and combined freshwater and saltwater datasets.

The Bayesian estimation routine provides distributions for each of the estimated parameters and is performed using Gibbs sampling (Train, 2009). An additional feature of the Moeltner (2018) estimation algorithm is that primary studies that do not closely match the policy context can be included and evaluated to determine if they provide useful information to estimating the parameters of the benefits function. The algorithm which evaluates the efficiency of pooling data across different types of studies is called stochastic search variable selection. In Moeltner *et al*.'s (2019) application saltwater wetlands studies were evaluated for inclusion with the more policy-relevant studies of freshwater wetlands. The author found that values from saltwater studies diverge significantly from freshwater studies, so they were not included in this analysis. While that information will not contribute to the benefits function, it is an indication of validity in the primary studies in that somewhat different environmental services were valued differently by respondents to the stated preference surveys.

The posterior means and standard deviations for the parameters of the meta-regression are reported in Table III-5. Based on the estimated distributions of the parameters, the variables *local*, *regulating*, *forested*, *provisioning*, and *lumpsum* are the strongest predictors of WTP with more than 90 percent of

their probability mass on one side of zero. These are followed by variables for year of the study, income of the sample, and the regional variables for northeast/mid-Atlantic and midwest with more than 70 percent of their probability mass on one side of zero.

Table III-5: Meta-regression results from Moeltner *et al*. (2019)

	mean	std.	p(> 0)[1]
Constant	-0.546	3.097	0.430
context-specific			
Lnyear	-0.359	0.667	0.281
Lninc	0.211	0.363	0.723
Sagulf	-0.406	1.743	0.405
Nema	-0.784	1.538	0.295
Nmw	-1.073	1.556	0.244
Local	3.130	0.895	0.999
Prov	-2.273	0.876	0.009
Reg	1.632	0.850	0.970
Cult	-0.317	1.563	0.413
Forest	1.118	0.726	0.937
Moderators			
Volunt	-0.016	1.038	0.495
lumpsum	1.486	0.771	0.968
Υ	0.008	0.007	0.883
σ_ϵ^2	0.474	0.260	1.000

[1]Prob(>0) equals the share of the posterior density to the right of zero.

Using the results of the meta-analysis to estimate a change in benefits for each state resulting from a change in wetland area required the following state-specific variables: change in wetland acres because of CWA jurisdictional changes, average household income, number of households, proportion of change in acres that is forested, and region of the United States. The baseline acres in the primary studies generally referred to an area that was under consideration for restoration or preservation and is a small fraction of total statewide acres. As such, the mean value for baseline acres from the primary studies is used for q_0 which is 10,000 acres to avoid predicting out of sample. The value for q_1 for each state is 10,000 acres plus the expected change in jurisdictional wetland acres for each state. Table III-6 lists the values for each state-specific variable used in the benefit transfer.

Table III-6: State-specific benefit transfer variables

State	Average Income (2016$)[1]	South Atlantic/Gulf	Northeast/Mid-Atlantic	Northern/Mid-West	Proportion of Forested Acres[2]	Change in Wetland Acres[2]
AL	47,221	1	0	0	0.9632	7.3
AK	75,723	0	0	0	0.4291	1.0
AZ	57,100	0	0	0	0.8201	11.1
AR	45,907	1	0	0	0.9676	7.3
CA	66,637	0	0	0	0.2856	37.3
CO	70,566	0	0	0	0.1648	7.7
CT	75,923	0	1	0	0.9141	0.1

Table III-6: State-specific benefit transfer variables

State	Average Income (2016$)[1]	South Atlantic/Gulf	Northeast/Mid-Atlantic	Northern/Mid-West	Proportion of Forested Acres[2]	Change in Wetland Acres[2]
DE	58,046	1	0	0	0.9311	0.1
DC	70,982	1	0	0	0.9425	0.0
FL	51,176	1	0	0	0.6875	28.6
GA	53,527	1	0	0	0.9456	4.1
HI	72,133	0	0	0	0.8991	0.0
ID	56,564	0	0	0	0.2339	0.6
IL	61,386	0	0	1	0.8032	51.9
IN	56,094	0	0	1	0.7774	17.0
IA	59,094	0	0	1	0.5192	2.1
KS	56,810	0	0	1	0.3633	10.4
KY	45,369	1	0	0	0.9157	4.4
LA	42,196	1	0	0	0.6932	1.9
ME	50,856	0	1	0	0.8966	0.1
MD	73,760	1	0	0	0.9210	2.2
MA	72,266	0	1	0	0.9060	0.6
MI	57,091	0	0	1	0.9027	0.1
MN	70,218	0	0	1	0.7107	10.7
MS	41,099	1	0	0	0.9573	0.9
MO	55,016	0	0	1	0.8054	1.3
MT	57,075	0	0	0	0.1435	27.4
NE	59,374	0	0	1	0.1765	9.9
NV	55,431	0	0	0	0.2464	54.9
NH	76,260	0	1	0	0.8448	0.1
NJ	68,468	0	1	0	0.9025	1.5
NM	48,451	0	0	0	0.4369	0.1
NY	61,437	0	1	0	0.8394	44.4
NC	53,764	1	0	0	0.9703	7.0
ND	60,184	0	0	1	0.0156	440.3
OH	53,985	0	0	1	0.7972	88.5
OK	50,943	1	0	0	0.8142	0.7
OR	59,135	0	0	0	0.2044	5.8
PA	60,979	0	1	0	0.8350	17.6
RI	61,528	0	1	0	0.9471	0.1
SC	54,336	1	0	0	0.9384	44.2
SD	57,450	0	0	1	0.0266	50.9
TN	51,344	1	0	0	0.9368	5.8
TX	58,146	1	0	0	0.4585	72.2
UT	67,481	0	0	0	0.1108	11.4
VT	60,837	0	1	0	0.7913	0.4
VA	66,451	1	0	0	0.8946	22.9
WA	70,310	0	0	0	0.4797	1.2
WV	44,354	1	0	0	0.6375	33.0
WI	59,817	0	0	1	0.7921	3.3
WY	57,829	0	0	0	0.2138	2.1

Source: [1] U.S. Census Bureau, Current Population Survey

Table III-6: State-specific benefit transfer variables

State	Average Income (2016$)[1]	South Atlantic/Gulf	Northeast/Mid-Atlantic	Northern/Mid-West	Proportion of Forested Acres[2]	Change in Wetland Acres[2]

[2] U.S. Environmental Protection Agency and U.S. Department of the Army (U.S. EPA and Department of the Army). 2015. Economic Analysis of the EPA-Army Clean Water Rule

Willingness to pay for each state was estimated using the full multi-variate distributions of the estimated parameters, generating a distribution of WTP for each state. Those distributions are summarized in Table III-7. The sum of the mean estimate of forgone benefits using the meta-analysis approach assuming all states incur forgone benefits is $106.0 million, which is surprisingly close to the estimate of $107.6 million using the 2015 approach. This similarity is almost certainly coincidental because the 2015 Rule used a single value transfer approach and the approach here uses a meta-analysis transfer, but it does provide some additional confidence in the results for this rule. Table III-7 also contains the lower 5th and upper 95th percentile WTP estimate for each state with the sum of upper 95th equal to $306.1 million which is the same value reported in the 2015 Economic Analysis using the "blended" approach.[71] Again, this is a coincidence given that the two methods to derive this same numbers are not the same.

Despite the similarity between the unit transfer results from the 2015 Rule EA and the meta-analysis results here, the agencies consider the meta-analysis superior because of the ability to tailor the meta-function to better reflect the policy scenario. In particular, the meta-regression model allowed the agencies to account for the value of independent regressors like affected resource characteristics such as wetland location (*e.g.*, Mid-West or New England or Mid-Atlantic), the number of wetland acres affected, the ecosystem services typically provided by freshwater wetlands, and the extent of the market (*e.g.*, state-level vs. local). Similarly, it allowed the agencies to estimate values assuming moderator variables reflect the best methodological practices for stated preference studies (*e.g.*, use of non-voluntary payment mechanisms) and the agencies' preference for peer reviewed studies. Finally, the meta-regression model developed by Moeltner *et al*. (2019) satisfied fundamental theoretical properties, such as sensitivity to scope and adding-up condition, which might not be captured in the value-based transfer approach.

[71] To be precise, the estimate of the total foregone benefits should be obtained from the full distribution of the meta-analysis rather than summing the state by state estimates. Using the full distribution, the mean estimate of total foregone benefits is $104.9 million. The lower 95th and upper 95th percentile estimates of total foregone benefits are $3.8 million and $300.9 million respectively.

Table III-7: Meta-analysis based transfer results by state

State	Households	Total New Impacted Acres by State	Mean WTP per Household per Acre (2018$)	Mean Benefits (2018$)	Lower 5th per Household per Acre (2018$)	Lower 5th Benefits (2018$)	Upper 95th per Household per Acre (2018$)	Upper 95th Benefits (2018$)
AK	258,058	1.0	$0.0368	$9,503	$0.0010	$263	$0.1150	$29,688
AL	1,883,791	7.2	$0.5017	$945,005	$0.0057	$10,794	$1.3772	$2,594,278
AR	1,147,084	7.2	$0.5076	$582,301	$0.0057	$6,508	$1.3885	$1,592,721
AZ	2,380,990	11.1	$0.6152	$1,464,835	$0.0148	$35,144	$1.9211	$4,574,049
CA	12,577,498	37.3	$1.1366	$14,295,374	$0.0301	$379,182	$3.5040	$44,071,516
CO	1,972,868	7.7	$0.2112	$416,588	$0.0055	$10,768	$0.6453	$1,273,131
CT	1,371,087	0.1	$0.0079	$10,846	$0.0001	$117	$0.0211	$28,894
DE	342,297	0.1	$0.0094	$3,224	$0.0001	$43	$0.0265	$9,080
FL	7,420,802	28.6	$1.2618	$9,363,398	$0.0186	$138,254	$3.6731	$27,257,329
GA	3,585,584	4.1	$0.2731	$979,264	$0.0034	$12,259	$0.7613	$2,729,634
IA	1,221,576	2.1	$0.0316	$38,642	$0.0007	$877	$0.0980	$119,679
ID	579,408	0.6	$0.0170	$9,863	$0.0004	$248	$0.0520	$30,127
IL	4,836,972	51.9	$1.1675	$5,647,319	$0.0235	$113,818	$3.5692	$17,264,361
IN	2,502,154	17.0	$0.3717	$930,026	$0.0073	$18,149	$1.1347	$2,839,175
KS	1,112,096	10.4	$0.1316	$146,335	$0.0030	$3,346	$0.4069	$452,508
KY	1,719,965	4.4	$0.2851	$490,336	$0.0033	$5,711	$0.7875	$1,354,508
LA	1,728,360	1.9	$0.0883	$152,581	$0.0012	$1,988	$0.2530	$437,297
MA	2,547,075	0.6	$0.0317	$80,829	$0.0003	$842	$0.0841	$214,114
MD	2,156,411	2.2	$0.1354	$291,873	$0.0021	$4,432	$0.3892	$839,325
ME	557,219	0.1	$0.0083	$4,635	$0.0001	$39	$0.0215	$11,954
MI	3,872,508	0.1	$0.0039	$15,099	$0.0001	$272	$0.0118	$45,508
MN	2,087,227	10.7	$0.2070	$431,954	$0.0047	$9,895	$0.6404	$1,336,721
MO	2,375,611	1.3	$0.0304	$72,167	$0.0006	$1,368	$0.0923	$219,241
MS	1,115,768	0.9	$0.0622	$69,390	$0.0007	$731	$0.1686	$188,108
MT	409,607	27.4	$0.7281	$298,230	$0.0178	$7,287	$2.2040	$902,761
NC	3,745,155	7.0	$0.4780	$1,790,045	$0.0059	$21,932	$1.3252	$4,962,944
ND	281,192	440.3	$3.9166	$1,101,318	$0.0881	$24,762	$11.9954	$3,373,002
NE	721,130	9.9	$0.1025	$73,901	$0.0024	$1,726	$0.3157	$227,660
NH	518,973	0.1	$0.0077	$4,012	$0.0001	$40	$0.0202	$10,492
NJ	3,214,360	1.5	$0.0798	$256,423	$0.0008	$2,577	$0.2103	$676,004

Table III-7: Meta-analysis based transfer results by state

State	Households	Total New Impacted Acres by State	Mean WTP per Household per Acre (2018$)	Mean Benefits (2018$)	Lower 5th per Household per Acre (2018$)	Lower 5th Benefits (2018$)	Upper 95th per Household per Acre (2018$)	Upper 95th Benefits (2018$)
NM	791,395	0.1	$0.0052	$4,080	$0.0001	$102	$0.0159	$12,594
NV	1,006,250	54.9	$1.5958	$1,605,774	$0.0401	$40,368	$4.8763	$4,906,751
NY	7,317,755	44.4	$2.3811	$17,424,577	$0.0207	$151,460	$6.1131	$44,733,853
OH	4,603,435	88.5	$2.0000	$9,206,862	$0.0377	$173,492	$6.0790	$27,984,124
OK	1,460,450	0.7	$0.0396	$57,838	$0.0005	$784	$0.1129	$164,899
OR	1,518,938	5.8	$0.1620	$246,092	$0.0041	$6,204	$0.4942	$750,590
PA	5,018,904	17.6	$0.9441	$4,738,179	$0.0081	$40,775	$2.4188	$12,139,788
RI	413,600	0.1	$0.0082	$3,403	$0.0001	$34	$0.0218	$9,008
SC	1,801,181	44.2	$2.8759	$5,179,989	$0.0366	$65,851	$8.0425	$14,485,946
SD	322,282	50.9	$0.4580	$147,606	$0.0101	$3,254	$1.4033	$452,256
TN	2,493,552	5.8	$0.3769	$939,901	$0.0046	$11,568	$1.0495	$2,616,909
TX	8,922,933	72.2	$2.3074	$20,588,848	$0.0401	$357,432	$6.8913	$61,490,867
UT	877,692	11.4	$0.2978	$261,417	$0.0075	$6,548	$0.9032	$792,773
VA	3,056,058	22.9	$1.3527	$4,134,033	$0.0200	$60,984	$3.8815	$11,862,239
VT	256,442	0.4	$0.0235	$6,034	$0.0002	$49	$0.0595	$15,265
WA	2,620,076	1.2	$0.0441	$115,640	$0.0012	$3,162	$0.1379	$361,248
WI	2,279,768	3.3	$0.0721	$164,479	$0.0014	$3,294	$0.2206	$502,984
WV	763,831	33.0	$1.3875	$1,059,794	$0.0192	$14,666	$4.0181	$3,069,175
WY	226,879	2.1	$0.0586	$13,290	$0.0015	$334	$0.1787	$40,547
Total	**115,994,247**	**1154.6**		**$105,873,155**		**$1,753,729**		**$306,057,624**
Average			**$0.5885**		**$0.0102**		**$1.7170**	

III.C.3 Disaggregation of Costs and Benefits by State

The most straightforward way to take into account state responses to changes in CWA jurisdiction following this final rule is to estimate benefits and costs at the state level. The emphasis of the economic analysis for the 2015 Rule was national level estimates, although the analysis included a few categories of benefits and costs estimated at the state level, aggregated to and reported at the national level, with the rest of the categories being estimated directly at the national level. [72] The state-level treatment categories were stream mitigation costs, wetlands mitigation costs, and wetlands benefits, though as noted above, the agencies calculated wetlands benefits at the state level. These were the categories for which both the agencies could obtain state level data and for which unit costs or per household benefits were expected to vary geographically. All other categories were nationally estimated and are the focus of the disaggregation to state-level analysis here. This section describes the additional analysis to disaggregate those categories of benefits and costs to the state level. The CWA programs that the 2015 Rule assumed would be affected are discussed below. It is possible that other CWA programs and other statutory programs affected by the definition of "waters of the United States" would be affected by the 2015 Rule and its repeal, but this analysis is limited to those programs addressed in the 2015 analysis.

The CWA section 311 program addresses oil spill prevention and preparedness, reporting obligations and response, and pertains to facilities that produce or store oil products, depending on volume and whether there is a reasonable expectation for an oil discharge in harmful quantities into or upon waters of the United States or adjoining shorelines. The EPA has information on the location by state of the high-risk facilities and those facilities that have been inspected. The EPA also has estimates of the overall number of facilities and the distribution by EPA Region from its latest Paperwork Reduction Act Information Collection Request (ICR) renewal and from Regulatory Impact Analyses (RIAs) related to prior Spill Prevention, Control and Countermeasure (SPCC) rulemakings, each of which was published in the Federal Register and available for public comment. While the ICR and RIA data do not describe the universe of facilities at the state level, the agencies were able to leverage these sources to distribute the estimate of total facilities affected from the 2015 Rule EA to each state.[73] The average number of facilities potentially affected per state is 20, but these range from 1 to 150. Unit costs per facility are not assumed to vary by location, thus costs vary at the state level mainly because of variable activity levels. Therefore, the compliance costs for the section 311 program was disaggregated by state based on the number of facilities in each state.

The CWA section 402 CAFOs permitting program is implemented by states with NPDES permitting authority or by the EPA in the states that have not been authorized. The EPA compiles annual summaries on the implementation status of the NPDES CAFO regulations. The agencies used percentages of total CAFOs with NPDES permits in 2016 to disaggregate to the state-level the national estimates for administrative costs, compliance costs, and benefits from the 2015 Rule EA. The average number of

[72] Benefits and costs for the 311 program, 402 program, and parts of the 404 program are estimated at a national level and then apportioned to each state based on the amount of programmatic activity in each state. Because initial estimates are national in scope, externalities that cross state lines should in theory be included in the apportioned state totals.

[73] These assumptions and additional calculations are reported in the spreadsheet entitled "Revised Step 1 Rule Analysis" found in the docket (See Docket No. of EPA-HQ-OW-2018-0149).

facilities potentially affected per state is about 120, but these range from 0 to nearly 600. Unit costs per facility were not assumed to vary by location, thus costs vary at the state level mainly because of variable activity levels.

The CWA section 402 stormwater permitting program is also implemented by states with NPDES permitting authority, or the EPA in the states that have not been authorized. The national estimates of administrative costs, compliance costs, and benefits in the economic analysis of the 2015 Rule were based on certain construction activities expected to generate stormwater runoff. The EPA does not have detailed and complete information at the state level on construction projects covered by a construction stormwater permit. To apportion the regional goals to the state level, the agencies used data from the U.S. Census on new residential construction starts for 2016.[74] While new non-residential construction starts are not included in the U.S. Census data, total construction generally tracks residential construction reasonably well. The average number of residential construction starts affected in states in 2016 was 3,600, with a range of 100 to 24,000. For purposes of this analysis, administrative and compliance costs and benefits per site were not assumed to vary significantly with location, thus estimates of benefits and costs vary at the state level mainly because of variable activity levels.

While several components of the CWA section 404 permitting program were based on state-level information on wetland acres and stream miles in the economic analysis for the 2015 Rule, permitting costs were reported as a national aggregate. The Corps maintains data on section 404 permits issued; the agencies used the total number of permits in fiscal years 2011 to 2016 to estimate the annual average portion of national permitting activity that occurred in each state. The average percentage potentially affected per state is 2.0 percent, with a range from 0.1 percent to over 10 percent. CWA section 404 permitting costs were not assumed to vary significantly with location, thus estimates of costs vary at the state-level mainly because of variable activity levels. Therefore, the costs and benefits for the section 404 permitting program were disaggregated by state based on the number of sites covered under either an individual or general construction stormwater site permit.

Finally, two categories of costs were apportioned to states, by spreading those costs equally across the states. These two categories are those for which there were no readily available data denoting state differences, and are also two of the categories among the smaller costs at the national level.[75] For CWA section 401 administrative costs, the agencies have applied a weighted average cost, where the cost by level of effort is weighted by an assumed representative distribution of states by level of effort.[76] By using the weighted average cost, the agencies were able to abstract from specific knowledge of the level of effort each state applies to CWA section 401 administration. For CWA section 402 pesticide general permitting costs, the agencies could not identify a source of state-level data on the number of entities

[74] *See* https://www.census.gov/construction/bps/txt/tb2u2016.txt.

[75] Two other cost categories have smaller national costs – CWA section 402 CAFOs Administration and CWA section 402 Stormwater Administration; however, these categories have implementation costs that make their overall impact larger, and the agencies were able to parse the administrative costs by state using the same data as for the implementation costs and benefits.

[76] *See* Section 7 of the 2015 economic analysis for more detail on the costs by level of effort and distribution of states by level of effort for the CWA section 401 Administration program.

covered by a state pesticides general permit. In addition, because these two categories were among the smaller categories, having more refined data was unlikely to have a significant impact on the overall results.

III.C.4 Adjustment of Program Size to 2016 Levels and the Base Year to 2018

In the 2015 Rule EA, the size of the 402 CAFO and 402 Stormwater programs (*e.g.*, number of permits) was adjusted from the year of the underlying analysis to 2014 using the number of sites with NPDES or stormwater permits, respectively, to represent a more accurate size. Then a factor for the percent of jurisdictional determinations expected to change from negative to positive as a consequence of the 2015 Rule was applied. In that analysis the agencies converted to 2014 dollars using the CPI-U index from the Bureau of Labor Statistics. This analysis followed a similar approach, but updated program sizes to 2016 and used the Gross Domestic Product implicit price deflator from the Federal Reserve Bank of St. Louis to convert to 2018 dollars.

III.C.5 Improved Estimate of the High End of the Cost Savings for CWA Section 404 Permit Application

In reviewing the calculations for the economic analysis for the 2015 Rule and 2017 proposal for the adjustments noted above, the agencies discovered an inadvertent error in the formula for the high-end estimate of the CWA section 404 permitting costs. The per-acre variable cost term from the Sunding and Zilberman (2002) study was not multiplied by the number of permits, which resulted in a significant under-estimation of the high-end cost estimate for 404 permitting in the 2015 and 2017 economic analyses. This error has been corrected in this analysis. This category of costs (and benefits) was the only category in which this error occurred.

III.C.6 Results and Discussion

For comparison with the 2015 Rule and the 2017 proposal, the results of this analysis, except for states' response to changes in the definition of "waters of the United States," are reported in Table D-1 in Appendix D. The results in Table D-1 are similar to those of Table 1 of the economic analysis for proposed rule for this final action, although they are not exactly the same. First, they include the forgone benefits from CWA section 404 wetlands mitigation using the meta function transfer (*see* Section III.A.1.9). Second, the CWA section 404 permitting costs high range estimate is significantly larger due to the correction of a previous error (*see* Section III.C.5). Third, the costs and benefits associated with other programs changed slightly (by $0.1 million to $1.0 million) due to adjusting to 2018 prices (*see* Section III.C.4).

Table III-8 to Table III-10 display the results of implementing the several scenarios of state responses described in Section II. The effect of implementing these scenarios reflects what the agencies considered to be a more appropriate method to estimating the effect of repealing the 2015 regulation. The assumptions here were the result of the agencies' re-examination of prior analyses and judgment that this analysis more accurately reflects the avoided costs and forgone benefits of this action. Table III-8 shows the results for Scenario 1, in which states that already have a state-level dredged and fill program and regulate "waters of the state" more broadly than the CWA were excluded from the analysis.

Table III-8: Scenario 1 – Estimates of annual avoided costs and forgone benefits excluding the impact from states that have a state-level dredged and fill program and regulate "waters of the state" more broadly than the CWA

	Annual Avoided Costs (2018$ millions)			Annual Forgone Benefits (2018$ millions)	
	Low	**High**		**Low**	**High**
CWA 402 CAFO Administration	$0.1	$0.1		$3.1	$5.4
CWA 402 CAFO Implementation	$5.0	$5.0			
CWA 402 Stormwater Administration	$0.3	$0.3		$29.3	$37.2
CWA 402 Stormwater Implementation	$29.5	$36.8			
CWA 404 Permit Application	$12.5	$31.4		$36.7	$36.7
CWA 404 Mitigation – Wetlands	$36.5	$54.5			
SUBTOTAL	$84.0	$128.0		$69.1	$79.3
CWA 311 Compliance	$13.4	$13.4		*not quantified*	*not quantified*
CWA 401 Administration	$0.4	$0.4		*not quantified*	*not quantified*
CWA 402 Pesticide General Permit Implementation	$3.5	$3.8		*not quantified*	*not quantified*
CWA 404 Mitigation – Streams	$14.5	$28.8		*not quantified*	*not quantified*
TOTAL	$115.7	$174.4		$69.1	$79.3

These results exclude the costs and benefits for 404 permit applications and wetland mitigation for states classified as response category 3 for regulation of dredged or fill material.

Table D-2 in Appendix D shows a slight variation on Scenario 1, also excluding states that have a state-level dredged and fill program but do not regulate waters of the state more broadly than the CWA and do not have broad legal limitations on regulating aquatic resources. This scenario produced slightly lower but similar values as Scenario 1, as only nine states' responses were assumed to change.

Table III-9 shows Scenario 2, which in addition to excluding states that have a state-level dredged and fill program and regulate "waters of the state" more broadly than the CWA, as in Scenario 1, also excluded NPDES-authorized states that also do not have broad legal limitations on regulating aquatic resources. Scenario 2 shows results that are smaller in magnitude than the Scenario 1 results. Avoided costs in Scenario 2 are approximately 30 to 40 percent of the avoided costs in Scenario 1.

Table III-9: Scenario 2 – Estimates of annual avoided costs and forgone benefits excluding the impact from states that have a state-level dredged and fill program and regulate "waters of the state" more broadly than the CWA and from NPDES-authorized states that also do not have broad legal limitations on regulating aquatic resources

	Annual Avoided Costs (2018$ millions)		Annual Forgone Benefits (2018$ millions)	
	Low	High	Low	High
CWA 402 CAFO Administration	$0.0	$0.0	$0.4	$0.7
CWA 402 CAFO Implementation	$0.7	$0.7		
CWA 402 Stormwater Administration	$0.0	$0.0	$3.8	$4.8
CWA 402 Stormwater Implementation	$3.8	$4.7		
CWA 404 Permit Application	$12.5	$31.4	$36.7	$36.7
CWA 404 Mitigation – Wetlands	$36.5	$54.5		
SUBTOTAL	$53.6	$91.3	$40.9	$42.3
CWA 311 Compliance	$1.9	$1.9	*not quantified*	*not quantified*
CWA 401 Administration	$0.1	$0.1	*not quantified*	*not quantified*
CWA 402 Pesticide General Permit Implementation	$0.7	$0.8	*not quantified*	*not quantified*
CWA 404 Mitigation – Streams	$14.5	$28.8	*not quantified*	*not quantified*
TOTAL	$70.8	$122.9	$40.9	$42.3

These results exclude the costs and benefits for 404 permit applications and wetland mitigation for states classified as response category 3 for regulation of dredged or fill material, and it excludes the costs and benefits for all other categories for states classified as response category 2 for other surface water regulation.

Table III-10 shows Scenario 3, which only includes states likely to reduce their baseline dredged/fill and other surface water permitting practices. This only includes the potential effect of states which have legal restrictions or some other constraint (such as lack of permitting authorization) that limits the ability to regulate above the federal standard. Assuming that only these states would respond to this final action reduces the estimated avoided costs and forgone benefits even further.

Table III-10: Scenario 3 – Estimates of annual avoided costs and forgone benefits only including the impact from states that are likely to reduce their baseline dredged/fill and surface water permitting practices

	Annual Avoided Costs (2018$ millions)		Annual Forgone Benefits (2018$ millions)	
	Low	High	Low	High
CWA 402 CAFO Administration	$0.0	$0.0	$0.4	$0.7
CWA 402 CAFO Implementation	$0.7	$0.7		
CWA 402 Stormwater Administration	$0.0	$0.0	$3.8	$4.8
CWA 402 Stormwater Implementation	$3.8	$4.7		
CWA 404 Permit Application	$8.6	$21.5	$33.0	$33.0
CWA 404 Mitigation – Wetlands	$30.4	$46.4		
SUBTOTAL	**$43.6**	**$73.4**	**$37.2**	**$38.6**

Table III-10: Scenario 3 – Estimates of annual avoided costs and forgone benefits only including the impact from states that are likely to reduce their baseline dredged/fill and surface water permitting practices

	Annual Avoided Costs (2018$ millions)			Annual Forgone Benefits (2018$ millions)	
	Low	High		Low	High
CWA 311 Compliance	$1.9	$1.9		*not quantified*	*not quantified*
CWA 401 Administration	$0.1	$0.1		*not quantified*	*not quantified*
CWA 402 Pesticide General Permit Implementation	$0.7	$0.8		*not quantified*	*not quantified*
CWA 404 Mitigation – Streams	$14.2	$28.2		*not quantified*	*not quantified*
TOTAL	**$60.5**	**$104.3**		**$37.2**	**$38.6**

These results exclude the costs and benefits for 404 permit applications and wetland mitigation for states classified as response category 2 or 3 for regulation of dredged or fill material, and it excludes the costs and benefits for all other categories for states classified as response category 2 for other surface water regulation.

The agencies do not take a position on which of these three federalism scenarios is most likely. Rather, the three scenarios reflect the range of cost savings and foregone benefits that may be experienced by this action. Overall, avoided annual costs savings range from $60.5 to $174.4 million in 2018 dollars and annual forgone benefits range from $37.2 to $79.3 million in 2018 dollars. These values reflect the agencies' estimate of costs and benefits for Executive Order 12866.

The estimated annual cost savings are also used to comply with Executive Order 13771. Because this executive order requires comparing the costs or cost savings of different regulations across agencies and across years, OMB requires an accounting method that is different from that used for Executive Order 12866. For E.O. 13771, agencies are required to adjust all cost estimates in three ways: (1) express all estimates to 2016 dollars using the GDP deflator, (2) calculate the present value as of 2016 rather than the first year of the rule, and (3) assume that the impacts of regulations continue in perpetuity using a 7% discount rate. Using the average of the range of cost savings of $117.45 million in 2018 dollars and (1) deflating back to 2016 dollars using the GDP deflator, and (2) discounting back three years at 7% (assuming the first year of the rule is 2019), the annual cost-saving for E.O. 13771 reporting purposes is $94 million in 2016 dollars. The present value of these cost-savings, assuming they continue in perpetuity and using a 7% discount rate, is $1.34 billion.

III.C.7 Non-Quantified Forgone Benefits and Costs

In this economic analysis, the agencies have attempted to quantify the effects of repealing the 2015 Rule and returning to pre-2015 practice. As noted above and in public comments on the 2017 proposal and 2018 supplemental proposal, there may be other effects that the agencies were unable to quantify. Future changes in ecosystem services will be project-specific and difficult to reasonably predict given the uncertainty around how states will respond to this final rule. As noted above, states may already address waters affected by this rule, thereby reducing forgone benefits and cost savings.

The final rule could have a range of impacts on the ecosystem services provided by aquatic resources, including decline in wildlife habitat quantity and quality, downstream inundation damages, greater drinking water treatment and dredging costs, greater spill response cost and damages, depending on

potential state responses to changes in federal jurisdiction. Potential impacts specific to each CWA program are briefly summarized below.

- Pollutants discharged to surface waters are known to have negative impacts on human health, wildlife habitat, and economic productivity. A change in the scope of CWA jurisdiction could lead to less stringent limits for point sources under section 402 if they discharge to newly non-jurisdictional waterbodies.[77] This could result in reduced protection for aquatic ecosystems and public health and welfare. The value of forgone benefits under section 402 associated with a potential increase in pollutant loadings from point sources depends on the specific pollutants discharged (*e.g.*, toxic vs. conventional), the type of ecosystems services provided by the affected waterbodies (*e.g.*, drinking water source, fishing area, aquatic habitat), presence of substitute sites, and the public value of ecosystem services provided by water resources.

- Compensatory mitigation required under section 404 offsets unavoidable negative impacts on wetlands, streams, and other aquatic resources from dredging and filling projects. The anticipated decrease in the number of section 404 permits or permittee obligations would reduce the required compensatory mitigation, as well as avoidance and minimization of impacts at the project site. As a result, water quality in rivers, streams, and lakes may degrade as a result of pollutant loading from newly non-jurisdictional waters; loss of wetlands and streams without corresponding mitigation; or loss of impact reduction, minimization, and other requirements previously provided under section 404 program. Water quality degradation may adversely affect species habitat, costs of drinking water treatment and reservoir maintenance, as well as human uses of downstream water resources (*e.g.*, fishing). Loss of wetland area may also increase downstream flood risk.

- Oil spills present a risk to ecological and human health. Less stringent regulatory requirements for spill prevention and preparedness may lead to more frequent or larger oil spills and reduce the effectiveness of immediate response actions following a spill (*e.g.*, by delaying the response). Several oil components are toxic to humans. Consequences of an oil discharge include direct costs for cleanup and remediation and environmental damages such as loss of wildlife and habitats. These damages depend on the type of oil, size of the spill, prevailing conditions and spill circumstances, and affected environments. In addition, if spills do not reach waters of the United States, the Oil Spill Liability Trust Fund cannot provide funding to cover removal costs incurred.

[77] Discharges into non-jurisdictional waters may still be regulated if the discharges eventually flow to a jurisdictional water. In such cases, it is possible that discharge limits may become less stringent if the increased distance to a jurisdictional water allows for dissipation of some of the discharge.

IV Regulatory Flexibility Act (RFA) Analysis

The Regulatory Flexibility Act (RFA, 5 U.S.C. et seq., Public Law 96-354), amended by the 1996 Small Business Regulatory Enforcement Fairness Act (SBREFA), requires the agencies to consider the economic impact that a new rule will have on small entities. The purpose of the RFA and SBREFA laws is to ensure that, in developing rules, agencies identify and consider ways to avoid undue impacts on small entities that will be affected by the regulation, whether as small entities that will be subject to regulatory requirements or as small governments that will be responsible for complying with or administering the regulation. While the RFA does not require an agency to minimize a rule's impact on small entities if there are legal, policy, factual, or other reasons for not doing so, it does require that agencies:

- Determine, to the extent feasible, the economic impact on small entities subject to the rule;
- Explore regulatory options for reducing any significant economic impact on a substantial number of such entities; and,
- Explain the ultimate choice of regulatory approach.

For any notice-and-comment rule it promulgates, the agencies must either certify that the rule "will not, if promulgated, have a significant economic impact on a substantial number of small entities" ("SISNOSE") or prepare a Regulatory Flexibility Analysis if the agency cannot make this certification. Small entities include small businesses and small organizations as defined by the Small Business Administration (SBA), and governmental jurisdictions with populations of less than 50,000.

The final rule is not expected to have a significant economic impact on a substantial number of small entities under the RFA. This is a deregulatory action that reduces the jurisdictional scope of the CWA and the burden on entities regulated under the CWA that are affected by this final rule, including small entities. This burden is reduced compared to the 2015 Rule. The agencies have therefore concluded that this action will relieve regulatory burden to small entities.

IV.A Entities Regulated under Clean Water Act Programs

The final rule will affect entities regulated under CWA programs that impact waters whose jurisdictional status will change. The agencies considered these effects because they affect how these entities comply with their CWA requirements. The impact of the final rule on small entities is difficult to assess due to the lack of sufficient geospatial data identifying waters resources that will incur a jurisdictional change and resulting difficulty in identifying regulated activity that may be affected. While the agencies know that small entities may be affected by this final rule, the precise number of affected small entities is unknown. Given what the agencies know about the probability of state actions, the agencies believe the number not to be substantial. The Small Business Administration (SBA) has developed size standards to carry out the purposes of the Small Business Act and are used for defining small entities under the RFA. The agencies reviewed available information on the type of entities that are regulated under the CWA section 311, 402, and 404 programs primarily affected by this final rule, with the purpose of identifying sectors with small entities that may incur impacts. The final rule is expected to result in fewer entities subject to these programs, and a reduced regulatory burden for a portion of the entities that will still be subject to these

programs. This reduction in burden is thought to represent some cost-savings to the unknown number of affected small entities; however, the agencies do not know the precise magnitude of this cost-saving. As a result, the agencies believe that small entities subject to these regulatory programs are unlikely to suffer adverse impacts due to compliance with the regulation.

IV.B Entities Impacted by Changes in Ecosystem Services

Narrowing the scope of federal jurisdiction under the CWA may result in a reduction in the ecosystem services provided by some waters, such as less habitat, increased flood risk, and higher pollutant loads. As a result, both public and private entities that rely on these ecosystem services could be adversely impacted, albeit indirectly. For example, loss of wetlands can increase the risk of property damage due to flooding. To predict if there will be significant impacts to any given sector it is important to assess which sectors may be more impacted by changes in ecosystem services.

Increases in flood risk are likely to be specific to the watersheds where the wetland losses occur and are not expected to impact a specific group or business sector. Habitat loss can have a direct effect on recreational activities such as hunting, fishing, and bird watching, depending on the type of ecosystem and species affected (*e.g.*, NAICS Code: 114210- Hunting and Trapping). Businesses that serve hunters or anglers, localities that collect admission fees or licenses, and non-profit organizations that focus on recreating within or preserving natural habitats are examples of sectors that could be affected by habitat loss, many of which could be categorized as small. Changes in water quality can also impact recreational activities and by extension those businesses and localities that support these activities (*e.g.*, NAICS Code: 423910-Sporting and Recreational Goods and Supplies Merchant Wholesalers). In addition, increased pollutant loadings can lead to higher drinking water treatment costs for localities, and for businesses that require water treatment for their production process. Higher sediment loads can impact downstream communities by increasing the need for dredging to maintain reservoir capacity and for navigation, and by shortening the useful life infrastructure damaged by increased scouring.

Changes in ecosystem services will be project-specific and difficult to reasonably predict given the uncertainty around the magnitude of changes due to the final rule. It is likely that many of these reductions in services will be small, infrequent, and dispersed over wide geographic areas, thereby limiting the significance of the financial impacts on small organizations and governments and small entities within specific business sectors. In addition, states may already address waters that would be affected by a return to pre-2015 practice, thereby reducing forgone benefits and costs savings.

IV.C Entities Affected by Changes in Mitigation Demand

An economic sector that will be indirectly affected by the final rule are mitigation banks and companies that provide restoration services. Mitigations banks are often limited liability companies that have been authorized by a state or federal agency to generate credits that can be used to meet the demand for mitigation, driven by state and federal regulations. Restoration services are businesses that provide the range of services needed for mitigation efforts. There customers can be mitigation banks or permittees that meet their regulatory requirements through on-site or off-site mitigation. Although primarily a business sector, there are mitigation banks owned and managed by non-profit organizations and government entities, such as state transportation departments. Businesses involved in mitigation banking and providing ecological restoration services are not contained within a single economic sector as defined by the North American Industrial Classification System (NAICS). A survey of this restoration sector,

conducted in 2014 showed that many of the businesses involved in this sector fall into five categories: Environmental Consulting (NAICS: 541620); Land Acquisition (NAICS: 237210); Planning, Design, and Engineering (NAICS: 541320, 541330); Site Work (earth moving, planting) (NAICS: 237210, 237990); and Monitoring (BenDor *et al*., 2015).

Impacts to the mitigation banking sector and more broadly to the restoration sector would not be the direct result of these businesses complying with the final rule, rather they would be the indirect result of other entities coming into compliance with the 404 program under the pre-2015 practice interpreting the definition of "waters of the United States." Because fewer waters will be subject to CWA jurisdiction under the pre-existing regulations than under the 2015 Rule, the agencies anticipate that there would be some reduction in demand for mitigation and restoration services under the section 404 permitting program and a corresponding reduction in revenue for the businesses, subject to potential state responses to changes in federal jurisdiction. However, assessing impacts to this sector is problematic, given that this sector lacks an SBA small business definition, and many of the businesses that fall within this sector are also classified under various other NAICs categories. Existing data on 404 permits maintained by the agencies do not identify sufficient ownership and business arrangement information to determine the economic profile of mitigation bank ownership, nor does it identify specific entities involved in performing restoration work. In addition, some states may require mitigation for affected waters no longer covered under the final rule, thereby reducing the future change in mitigation demand.

IV.D Conclusion

Based on the lack of any cost increase for those entities that must comply with regulations under the CWA sections 311, 402, and 404 programs, the agencies believe the impacts to small entities to not be significant. The agencies have sought comment on the potential impact of this regulatory change and have no reason to believe the economic impact to small entities will be significant. Impacts to the mitigation banking sector would not be the direct result of these businesses complying with the final rule, rather they would be the indirect result of other entities coming into compliance with the final rule. Similarly, potential impacts to small localities, organizations, and businesses due to changes in ecosystem services are indirect effects. The agencies certify that this action will not have a significant economic impact on a substantial number of small entities. In making this determination, the impact of concern is any significant adverse economic impact on small entities. An agency may certify that a rule will not have a significant economic impact on a substantial number of small entities if the rule relieves regulatory burden, has no net burden or otherwise has a positive economic effect on the small entities subject to the rule. We have therefore concluded that because this action will relieve regulatory burdens on all affected entities, it will thus also reduce regulatory burden for small entities and therefore will not have an overall significant economic impact on a substantial number of small entities.

V References

Adler, J.H. 2005. Jurisdictional Mismatch in Environmental Federalism. *New York University Environmental Law Journal* 14:130-178

Alaska Department of Environmental Conservation (ADEC). 2008. Alaska Pollutant Discharge Elimination System (APDES) Capacity Building Plan. http://dec.alaska.gov/WATER/npdes/APDESCapacityBuilding.htm

Association of State Wetland Managers (ASWM). 2014. *Idaho State Wetland Program Summary*. Available at: https://www.aswm.org/pdf_lib/state_summaries/idaho_state_wetland_program_summary_111615.pdf

Association of State Wetland Managers (ASWM). 2015. *West Virginia State Wetland Program Summary.* Available at: https://www.aswm.org/pdf_lib/state_summaries/west_virginia_state_wetland_program_summary_083115.pdf

Azevedo, C.D., J.A. Herriges, and C Kling. 2000. "Iowa Wetlands: Perceptions and Values" CARD Staff Reports. 17. http://lib.dr.iastate.edu/card_staffreports/17

BenDor T., T.W. Lester, A. Livengood, A. Davis, L. Yonavjak. 2015. Estimating the Size and Impact of the Ecological Restoration Economy. PLoS ONE 10(6): e0128339. doi:10.1371/journal.pone.0128339

Blomquist, G.C. and J.C. Whitehead. 1998. Resource quality information and validity of willingness to pay in contingent valuation. *Resource and Energy Economics* 20: 179-196.

Bockstael, N., Strand, I., 1987. The effect of common sources of regression error on benefit estimates. *Land Economics* 1, 11-20.

Brander, L., Van Beukering, P., Cesar, H., 2007. The recreational value of coral reefs: A meta-analysis. *Ecological Economics* 63, 209-218.

Chaikumbung, M., Doucouliagos, H., Scarborough, H., 2016. The economic value of wetlands in developing countries: A meta-regression analysis. *Ecological Economics* 124, 164-174.

Cowardin, L. M., V. Carter, F. C. Golet, and E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Fish and Wildlife Service. FWS/OBS-79/31. Washington, DC.

Dijkstra, B. and P.G. Fredriksson. 2010. Regulatory Environmental Federalism. *Annual Review of Resource Economics*, Vol. 2, Issue 1, pp. 319-339.

Dillman, B.L., L.J. Beran, and D.D. Hook. 1993. Nonmarket Valuation of Freshwater Wetlands: The Francis Beidler Forest. South Carolina Water Resources Research Institute, Technical Completion Report GI588/G2045-04.

Environmental Law Institute (ELI). 2013. State Constraints: State-Imposed Limitations on the Authority of Agencies to Regulate Waters Beyond the Scope of the Federal CWA (2013), ELI Project No. 0931-01. Executive Summary.

Fredriksson, P.G., 2018. Environmental Federalism: Lessons Learned from the Literature. Report Prepared for EPA's National Center for Environmental Economics. Washington D.C., U.S. EPA NCEE, February 2018.

Fritz, Ken M., E. Hagenbuch, E. D'Amico, M. Reif, P.J. Wigington Jr., S.G. Leibowitz, R.L. Comeleo, J.L. Ebersole, and T-L Nadeau. 2013. "Comparing the Extent and Permanence of Headwater Streams from Two Field Surveys to Values from Hydrographic Databases and Maps. *Journal of the American Water Resources Association* 49(4) 867-882.

Heimlich, R.E., R. Claassen, K.D. Wiebe, D. Gadsby, and R.M. House. 1998. Wetlands and Agriculture: Private Interests and Public Benefits. AER-765, U.S. Department of Agriculture Economic Research Service, Washington, D.C.

Helland, E. 1998. Environmental Protection in the Federalist System: The Political Economy of NPDES Inspections. *Economic Inquiry* 36:305-19.

ICF. 2018. Notes on inclusion of source studies and data preparation for wetlands meta-data. Memorandum to Todd Doley and Steve Whitlock. December 10, 2018. Available at: https://www.regulations.gov/document?D=EPA-HQ-OW-2018-0149-0053

Idaho Department of Environmental Quality (IDEQ). 2017. Idaho Pollutant Discharge Elimination System Program Description. http://www.deq.idaho.gov/media/60180493/ipdes-program-description-0717.pdf

Johnson, C.W and R. Linder. 1986. An Economic Valuation of South Dakota Wetlands as a Recreation Resource for Resident Hunters. *Landscape Journal*, 5(1), pp. 33-38.

Johnston, R., E. Besedin, R. Stapler, 2017. Enhanced geospatial validity for meta-analysis and environmental benefit transfer: An application to water quality improvements. *Environmental and Resource Economics* 68, 773-795.

Johnston, R., E. Besedin, B. Holland, 2019. Modeling distance decay with valuation meta-analysis. *Environmental and Resource Economics* 72, 657-690.

Levinson A. 2003. Environmental regulatory competition: a status report and some new evidence. *National Tax Journal* 56:91–106.

Lant, C.L. and G.A. Tobin. 1989. The Economic Value of Riparian Corridors in Cornbelt Floodplains: A Research Framework. *Professional Geographer*, 41(3) pp. 337-349.

Londono, L., Johnston, R., 2012. Enhancing the reliability of benefit transfer over heterogeneous sites: A meta-analysis of international coral reef values. Ecological Economics 78, 80-89.

Loomis, J., M. Hanemann, B. Kannimen, T. Wegge. 1991. Willingness to Pay to Protect Wetlands and Reduce Wildlife Contamination from Agricultural Drainage. The Economics and Management of Water and Drainage in Agriculture. Chapter 21, pp411-429.

Massachusetts Department of Environmental Protection (MassDEP). 2013. Report to the General Court of the Commonwealth on the Topic of NPDES Authorization. https://www.mass.gov/files/documents/2016/08/ru/npdesdel.pdf

Moeltner, K. 2015. Optimal Scope and Bayesian Model Search in Benefit Transfer. In: Johnston R., Rolfe J., Rosenberger R., Brouwer R. (eds) Benefit Transfer of Environmental and Resource Values. The Economics of Non-Market Goods and Resources, vol 14. Springer, Dordrecht

Moeltner, K. 2019. Bayesian nonlinear meta regression for benefit transfer. *Journal of Environmental Economics and Management* 93, 44-62.

Moeltner, K., K.J. Boyle, and R.W. Paterson. 2007. Meta-Analysis and Benefit Transfer for Resource Valuation—Addressing Classical Challenges with Bayesian Modeling. *Journal of Environmental Economics and Management* 53(2): 250-269.

Moeltner, K. and R. Woodward, 2009. Meta-functional benefit transfer for wetland valuation: Making the most of small samples. *Environmental and Resource Economics* 42, 89-109.

Moeltner, K. and R. Rosenberger. 2014. Cross-Context Benefit Transfer: A Bayesian Search for Information Pools. *American Journal of Agricultural Economics*, V96.2, pg. 469-488.

Moeltner, K., E. Besedin, B. Holland, and J. Balukas. 2018. Waters of the United States: Upgrading Wetland Valuation via Benefits Transfer. Working Paper.

Moeltner, K., J. Balukas, E. Besedin, B. Holland, 2019. Waters of the United States: Upgrading wetland valuation via benefit transfer. *Ecological Economics*, Volume 164. October 2019.

Mullarkey, D.J. and R.C. Bishop. 1999. Sensitivity to Scope: Evidence from a CVM Study of Wetlands. Working paper presented at the American Agricultural Economics Association Annual Meetings, Nashville, TN.

Oates, W. E. 1998. On the welfare gains from fiscal decentralization. University of Maryland, Department of Economics.

Oates, W. E. 1999. An essay on fiscal federalism. *Journal of Economic Literature*, 37(3), 1120-1149

Oates, W.E. 2001. A Reconsideration of Environmental Federalism. Resources for the Future Discussion Paper 01-54.

Poor, P.J. 1999. The Value of Additional Central Flyway Wetlands: The Case of Nebraska's Rainwater Basin Wetland. Faculty Publication: Agricultural Economics. 112.

Roberts, L.A. and J.A. Leitch. 1997. Economic Valuation of Some Wetland Outputs of Mud Lake, Minnesota-South Dakota. North Dakota State University Agricultural Economics Report NO. 381. http://agecon.lib.umn.edu/ndsu.html

Seabright, P. 1996. Accountability and Decentralisation in Government: an Incomplete Contracts Model. *European Economic Review* 40:61–89.

Sjöberg, E. 2016. An Empirical Study of Federal Law Versus Local Environmental Enforcement. *Journal of Environmental Economics and Management* 76:14-31.

Stapler, R. and R. Johnston. 2009. Meta-analysis, benefit transfer, and methodological covariates: Implication for transfer error. *Environmental and Resource Economics* 42, 227-246.

Sunding D. and D. Zilberman. 2002. "The economics of environmental regulation by licensing: An assessment of recent changes in the wetland permitting process." *Natural Resources Journal*. V. 42, Winter.

Train, K. E. 2009. Discrete Choice Methods with Simulation. Cambridge University Press, New York, NY.

U.S. Army Corps of Engineers. 1987. Corps of Engineers Wetlands Delineation Manual. Wetlands Research Program Technical Report Y-87-1. Department of the Army, Vicksburg, VA. Available at: https://el.erdc.dren.mil/elpubs/pdf/wlman87.pdf

U.S. Army Corps of Engineers and U.S. Environmental Protection Agency. 2007. U.S. Army Corps of Engineers jurisdictional determination form instructional guidebook. Available at: https://usace.contentdm.oclc.org/digital/collection/p16021coll11/id/2321/

U.S. Census Bureau. 2015. Quick Facts. Retrieved from 2011-2015 American Community Survey: https://www.census.gov/quickfacts/fact/table/US/PST045217

U.S. Environmental Protection Agency and U.S. Department of the Army (U.S. EPA and Department of the Army). 2015. Economic Analysis of the EPA-Army Clean Water Rule. Available at https://www.epa.gov/sites/production/files/2015-06/documents/508-final_clean_water_rule_economic_analysis_5-20-15.pdf

U.S. Environmental Protection Agency and U.S. Department of the Army (U.S. EPA and Department of the Army). 2018a. Resource and Programmatic Assessment for the Proposed Revised Definition of "Waters of the United States" Available at regulations.gov for Docket ID No. EPA-HQ-OW-2018-0149 (https://www.regulations.gov/document?D=EPA-HQ-OW-2018-0149-0005).

U.S. Environmental Protection Agency and U.S. Department of the Army (U.S. EPA and Department of the Army). 2018b. Economic Analysis for the Proposed Revised Definition of "Waters of the United States" Available at regulations.gov for Docket ID No. EPA-HQ-OW-2018-0149 (https://www.regulations.gov/document?D=EPA-HQ-OW-2018-0149-0004).

U.S. Environmental Protection Agency (U.S. EPA). 2010. Guidelines for Preparing Economic Analyses. Revised March 2016 Available at: https://www.epa.gov/environmental-economics/guidelines-preparing-economic-analyses

U.S. Environmental Protection Agency (U.S. EPA). 2017. Why are wetlands important? Updated 27 Feb 2017. Available at: https://www.epa.gov/wetlands/why-are-wetlands-important

Vedogbeton, H. and R. Johnston. 2019. Commodity-consistent meta-analysis of wetland values: An illustration for coastal marsh habitat. Working Paper, George Perkins Marsh Institute, Clark University, Worcester, MA.

Whitehead, J.C. and G.C. Blomquist. 1991. Measuring Contingent Values for Wetlands: Effects of Information About Related Environmental Goods. *Water Resources Research*. Vol 27.10, pp 2523-2531.

Appendix A: State by State Program Descriptions

OVERVIEW

States play an important role in managing water resources across the country and implementing Clean Water Act (CWA) programs. This appendix provides a snapshot of the current status of states, including the District of Columbia and the U.S. Territories, regarding CWA programs, definitions of state waters, and the scope of state jurisdiction, as well as additional information on state-level regulations and/or policies that affect waters of the state. The U.S. Environmental Protection Agency (EPA) and the Department of the Army (Army) ("the agencies") compiled this information to describe the breadth of state authorities and to provide a current picture of federal and state regulatory management of water resources.

For the purpose of this snapshot, the agencies compiled information from multiple state and federal sources, as well as from previous analyses undertaken by independent associations and institutions. Information on the various CWA programmatic areas (*e.g.*, 303, 311, 401, 402, and 404) was drawn from agency websites, numerous publications, maps, and from EPA regional staff. The agencies gathered information on state and territorial water laws and programs through state and territorial agency websites.

In determining where states regulate waters that are not federally jurisdictional under the CWA, the Agencies relied primarily on state laws and regulations, identified through publicly available resources. However, some states implement dredge and fill programs in non-federally jurisdictional waters as directed by implementation guidance and policies that may not be available in the databases used. Thus, the Agencies also relied on information contained in the 2013 ELI report. While the Agencies recognize that there have been concerns regarding other findings in the ELI report, to date they are not aware of any critiques of the report's findings regarding the ability of those states identified in the report as being able to regulate discharges of dredged or fill material into waters outside the scope of the Clean Water Act.

Definitions for state and territorial waters, including wetlands, were drawn from online directories of regulatory titles and codes, and thus directly from state laws. Many state definitions of wetlands rely directly or indirectly on the federal regulatory definition of wetlands, as follows:

> "Wetlands are areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."[78]

The agencies are interested in the current status of such regulatory programs in the states because state responses play an important role in understanding the potential effects of jurisdictional changes. Where

[78] 33 CFR 328.3(c) and 40 CFR 232.2.

the 2015 Rule is currently being implemented, the restoration of the pre-existing regulations could have some effect on CWA programs as implemented at the state level.

An earlier draft of these summaries was shared with state and territorial agencies for corrections.[79] In order to ensure that the State Snapshots are as accurate as possible, the agencies have been reviewing information about CWA-related state laws and programs since publishing the State Snapshots as an appendix to the Resource and Programmatic Assessment for the Proposed Revised Definition of "Waters of the United States," including some information submitted in response to that proposal. The agencies have incorporated the latest and most accurate information of which they have become aware about CWA-related state laws and programs into these State Snapshots supporting the final rule, Definition of "Waters of the United States" – Recodification of Pre-existing Rules.

ALABAMA

Definition of Waters of the State:

- All waters of any river, stream, watercourse, pond, lake, coastal, ground or surface water, wholly or partially within the state, natural or artificial. This does not include waters which are entirely confined and retained completely upon the property of a single individual, partnership or corporation unless such waters are used in interstate commerce.[80]

Definition of Wetlands:

- Those areas delineated pursuant to the technical criteria described in the Federal Wetland Delineation Manual that is currently being used by the Corps and/or any updated manual that may be used in the future. Wetlands do not include those areas which exist solely due to man-induced conditions such as roadside ditches or man-made impoundments excepting those areas created as mitigation sites.[81]

- Those areas as defined by the Corps regulations.[82]

Additional State Conditions and Requirements:

- No limitations identified.

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[79] To date, the EPA has received responses to the assessments from twenty-four states and two territories from all regions of the country. Of those responses, twenty-five were from that state or territory department for the environment or natural resources, and one was from the department of public health. These responses can be found in the Step Two Proposed Rule docket at EPA-HQ-OW-2018-0149-0075, available at https://www.regulations.gov/document?D=EPA-HQ-OW-2018-0149-0075.

[80] Ala. Code section 22-22-1(2).

[81] Ala. Admin. Code r. 335-8-1-.02(nnn).

[82] Ala. Admin. Code r. 335-13-1-.03(146).

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 4 in coordination with the state of Alabama.
- Facilities with aboveground storage tanks must register with state, completing a form with location, tanks capacity, substance store and use. State has a spill trust fund, and facilities must comply with state of Alabama Department of Environmental Management code and 40 CFR part 112 to be eligible to access trust fund.[83]
- State code authorizes cost recovery for spills and related damages.[84]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Alabama to administer the NPDES permitting program. The state issues its permits through the Alabama Department of Environmental Management. Alabama has an authorized NPDES permit program, pretreatment program, general permits program, and is authorized to regulate federal facilities. Alabama does not have an authorized biosolids program.[85]
- EPA has issued one NPDES permit for aquaculture in offshore waters.[86]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.

[83] Ala. Admin. Code chapter 335-6-15.

[84] Ala. Code section 22-22-9.

[85] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[86] EPA, Alabama NPDES Permits, available at https://www.epa.gov/npdes-permits/alabama-npdes-permits.

- Has state authority to issue permits for dredged and fill activities in coastal surface waters and wetlands[87] and submerged lands.[88]
- Relies on federal permitting authority and CWA section 401.

ALASKA

Definition of Waters of the State:

- Lakes, bays, sounds, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, straits, passages, canals, the Pacific Ocean, Gulf of Alaska, Bering Sea, and Arctic Ocean, in the territorial limits of the state, and all other bodies of surface or underground water, natural or artificial, public or private, inland or coastal, fresh or salt, which are wholly or partially in or bordering the state or under the jurisdiction of the state.[89]

Definitions of Wetlands:

- *Freshwater wetlands*: environments characterized by rooted vegetation that is partially submerged either continuously or periodically by surface freshwater with less than 0.5 parts per thousand salt content and not exceeding three meters in depth. [90]
- *Saltwater wetlands*: coastal areas along sheltered shorelines characterized by halophilic hydrophytes and macro algae extending from extreme low tide to an area above extreme high tide that is influenced by sea spray or tidally induced water table changes.[91]

Additional State Conditions and Requirements:

- No limitations identified.

303 Water Quality Standards:

- Has EPA-approved WQS.[92]

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[87] Ala. Admin. Code r. 335-8-2-.02. State regulations require mitigation through the creation or restoration of wetlands when there are wetland impacts resulting from an approved project. Ala. Admin. Code r. 335-8-2-.03.

[88] Ala. Admin. Code r. 220-4-.01 *et seq*.

[89] Alaska Stat. section 46.03.900(37).

[90] Alaska Admin. Code tit. 18, section 75.990(44).

[91] Alaska Admin. Code tit. 18, section 75.990(110).

[92] Antidegradation Policy: Alaska has not designated any Tier 3 waters for the state (or Outstanding National Resource Waters). Outstanding National Resource Waters or Tier 3 waters are provided the highest level of protection under the antidegradation policy of the State of Alaska. Alaska Department of Environmental Conservation, Outstanding National Resource Water (2015), available at https://dec.alaska.gov/water/wqsar/Antidegradation/docs/Workshop_notebook/Tier-3-Fact-Sheet-4-20-15_Final.pdf.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 10 in coordination with the state of Alaska.
- Facilities with small aboveground storage tanks are regulated by State Fire Marshal. State regulates facilities with larger storage capacities (>420,000 gallons for refined products; lower for crude oil); state relies on EPA's SPCC regulations for facilities (>1,320 up to 420,000 gallons).[93]
- State code authorizes cost recovery for spills and related damages; state has a spill trust fund.[94]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Alaska to administer the NPDES permitting program. The state issues its permits through the Alaska Department of Environmental Conservation. Alaska has an authorized NPDES permit program, pretreatment program, general permits program, and is authorized to regulate federal facilities. Alaska does not have an authorized biosolids program.[95]
- EPA issues all NPDES permits for federally-owned facilities located in Denali National Park; facilities operating outside State waters (three miles offshore); facilities that have been issued Clean Water Act Section 301(h) waivers; and all permits on tribal lands.[96]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Has state authority to issue permits for dredged and fill activities in submerged lands.[97]
- Relies on federal permitting authority and CWA section 401.

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[93] Alaska Admin. Code tit. 18, chapter 75.

[94] Alaska Stat. sections 46.03.822, 46.03.824, 46.03.758-759, 46.08.005 *et seq*.

[95] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[96] EPA, Alaska NPDES Permits, available at https://www.epa.gov/npdes-permits/alaska-npdes-permits.

[97] Alaska Stat. section 38.05; 11 AAC 61.010 *et seq*.

AMERICAN SAMOA

Definition of Waters of the Territory:

- Waters of the United States as defined in 40 CFR 122.2, as well as those that are located within the jurisdiction of the territory.[98]

Definition of Wetlands:

- Those areas that are inundated or saturated by ground or surface water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include, but are not limited to, swamps, marshes, mangroves, streams, springs, cultivated marshes, and similar areas.[99]

Additional Territory Conditions and Requirements:

- No limitations identified.

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- Territory does not have an aboveground storage tank management or regulatory program and relies on EPA to directly implement federal spill prevention and preparedness regulations.

401 Certification:

- The territory has authority to certify, conditionally certify, waive review or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA issues all NPDES permits within American Samoa.[100]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.

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[98] American Samoa Admin. Code section 24.0201.

[99] *Id.*

[100] EPA, American Samoa NPDES Permits, available at https://www.epa.gov/npdes-permits/american-samoa-npdes-permits.

- Has territory authority to issue permits for dredged and fill activities in coastal surface waters and wetlands.[101]

- Relies on federal permitting authority and CWA section 401.

ARIZONA

Definition of Waters of the State:

- All waters within the jurisdiction of the state including all perennial or intermittent streams, lakes, ponds, impounding reservoirs, marshes, watercourses, waterways, wells, aquifers, springs, irrigation systems, drainage systems, and other bodies or accumulations of surface, underground, natural, artificial, public or private water situated wholly or partly in or bordering on the state.[102]

Definition of Wetlands:

- An area that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions. A wetland includes a swamp, marsh, bog, cienega, tinaja, and similar areas.[103]

Additional State Conditions and Requirements:

- The Governor's Regulatory Review Council is prohibited from approving a state rule that is more stringent than a corresponding federal law unless there is a statutory authority to exceed the requirements of that federal law.[104]

- Arizona Department of Environmental Quality also must ensure that all state laws, rules, standards, permits, variances, and orders are adopted and construed to be consistent with and no more stringent than the corresponding federal law that addresses the same subject matter.[105]

- Department of Environmental Quality is specifically prohibited from adopting any requirement that is more stringent than the point source permitting requirements under the federal CWA.[106]

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[101] American Samoa Admin. Code sections 26.0201 *et seq.*

[102] Ariz. Rev. Stat. section 49-201(41).

[103] Ariz. Admin. Code section 18-11-101(49).

[104] Ariz. Rev. Stat. section 41-1052.

[105] Ariz. Rev. Stat. section 49-104.

[106] Ariz. Rev. Stat. section 49-203.

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 9 in coordination with the state of Arizona.
- Facilities with aboveground storage tanks must register with State Fire Marshal.[107]
- State code authorizes cost recovery for spills and related damages; state has a spill trust fund.[108]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Arizona to administer the NPDES permitting program. The state issues its permits through the Arizona Department of Environmental Quality. Arizona has an authorized NPDES permit program, pretreatment program, general permits program, biosolids program, and is authorized to regulate federal facilities.[109]
- EPA issues all NPDES permits on tribal lands.[110]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.[111]
- Has state authority to issue permits for dredged and fill activities in submerged lands.[112]
- Relies on federal permitting authority and CWA section 401.

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[107] Ariz. Admin. Code sections 4-36-201 *et seq*.

[108] Ariz. Rev. Stat. sections 49-285, 49-262, 49-282.

[109] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[110] EPA, Arizona NPDES Permits, available at https://www.epa.gov/npdes-permits/arizona-tribal-lands-npdes-permits-excluding-navajo-nation.

[111] Arizona Department of Environmental Quality is actively pursuing 404 assumption; plans to submit an assumption application package in March 2019.

[112] Ariz. Rev. Stat sections 37-1101, 1153.

ARKANSAS

Definition of Waters of the State:

- All streams, lakes, marshes, ponds, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private, which are contained within, flow through, or border upon this state or any portion of the state.[113]

Definition of Wetlands:

- An area that has water at or near the surface of the ground at some time during the growing season (wetland hydrology). It contains plants that are adapted to wet habitats (hydrophytic vegetation) and is made up of soils that have developed under wet conditions (hydric soils) or any other definition promulgated by the Commission.[114]

Additional State Conditions and Requirements:

- The Arkansas Pollution Control and Ecology Commission is subject to stringency requirements; prior to promulgating certain rules and regulations that are more stringent than federal requirements the Commission must consider its economic impact on and environmental benefit for the people of Arkansas.[115]

303 Water Quality Standards:

- Has EPA-approved WQS.[116]

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 6 in coordination with the state of Arkansas.
- Facilities with aboveground storage tanks must register tanks with the state and are subject to inspection by the state.[117]

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[113] Ark. Code section 8-4-102(10).

[114] Ark. Code R. 138.00.07-003, available at http://170.94.37.152/REGS/138.00.07-003F-9429.pdf.

[115] ELI, 2013. State Constraints: State-Imposed Limitations on the Authority of Agencies to Regulate Waters Beyond the Scope of the Federal CWA, available at https://www.eli.org/sites/default/files/eli-pubs/d23-04.pdf.

[116] Unless otherwise indicated in Chapter 4: General Standards, or in Appendix A, the general standards outlined in Arkansas's WQS (Regulation No. 2) are applicable to all surface waters of the State at all times. They apply specifically with regard to substances attributed to discharges, nonpoint sources or instream activities as opposed to natural phenomena. Waters may, on occasion, have natural background levels of certain substances outside the limits established by these criteria, in which case these criteria do not apply.

[117] Arkansas Pollution Control and Ecology Commission, 2014. Regulation No. 12, available at https://www.adeq.state.ar.us/regs/files/reg12_final_20140714.pdf.

- State code authorizes cost recovery for spills and related damages; state has a spill trust fund.[118]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Arkansas to administer the NPDES permitting program. The state issues its permits through the Arkansas Department of Environmental Quality. Arkansas has an authorized NPDES permit program, pretreatment program, general permits program, and is authorized to regulate federal facilities. Arkansas does not have an authorized biosolids program.[119]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Has state authority to issue permits for dredged and fill activities in submerged lands.[120]
- Relies on federal permitting authority and CWA section 401.

CALIFORNIA

Definition of Waters of the State:

- Any surface water or groundwater, including saline waters, within boundaries of the State.[121]

Definitions of Wetlands:

- An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.[122]

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[118] Ark. Code sections 8-4-103, 8-7-514, 8-7-509.

[119] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[120] Ark. Code section 22-6-202.

[121] Cal. Wat. Code section 13050(e).

[122] California State Water Resources Control Board, State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (April 2, 2019), available at https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/procedures_conformed.pdf.

- Under the California Coastal Act, wetlands are: lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens.[123]

- The California Coastal Commission provides a further definition of coastal wetlands: land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include types of wetland where vegetation is lacking and soil is poorly developed or absent as a result of frequent drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentration of salts or other substances in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some during each year and their location within, or adjacent to vegetated wetland or deepwater habitats.[124]

Additional State Conditions and Requirements:

- No limitations identified

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 9 in coordination with the state of California.

- Facilities with aboveground storage tanks are regulated by the State Fire Marshal by state code and are required to register tanks. State inspects facilities with total storage capacities above 10,000 gallons. All subject facilities required to comply with EPA's regulation, 40 CFR part 112.[125]

- State code authorizes cost recovery for spills and related damages; state has a spill trust fund.[126]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

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[123] Cal. Prc. Code section 30121.

[124] Cal. Code Regs. tit. 14 section 13577(b)(1).

[125] Cal. Health and Safety Code sections 25270 *et seq*.

[126] Cal. Gov. Code sections 8670.56.5, 8670.66, 8670.67, 8670.46, 8670.48.

402 NPDES Program:

- EPA has approved the state of California to administer the NPDES permitting program. The state issues its permits through the California Environmental Protection Agency. California has an authorized NPDES permit program, pretreatment program, general permits program, and is authorized to regulate federal facilities. California does not have an authorized biosolids program.[127]

- EPA issues all NPDES permits on tribal lands and for any discharges into federal ocean waters.[128]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.

- Has state authority to issue permits for dredged and fill activities in surface waters and wetlands,[129] including isolated waters.[130]

COLORADO

Definition of Waters of the State:

- Any and all surface and subsurface waters which are contained in or flow in or through this state, but does not include waters in sewage systems, waters in treatment works of disposal systems, waters in potable water distribution systems, and all water withdrawn for use until use and treatment have been completed.[131]

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[127] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[128] EPA, NPDES Permits in California, available at https://www.epa.gov/npdes-permits/npdes-permits-california-excluding-tribal-permits.

[129] Cal. Wat. Code sections 13000 *et seq*. (dredging and filling constitutes a discharge of waste to waters of the state); Cal. Prc. Code sections 30000 *et seq*. (protection of coastal wetlands from dredged and fill activities); See also Memorandum from Celeste Cantu, Executive Director, California Environmental Protection Agency to Regional Board Executive Officers (Jun. 2, 2004), available at http://www.swrcb.ca.gov/water_issues/programs/cwa401/docs/isol_waters_guid.pdf; California State Water Resources Control Board, State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (April 2, 2019), available at https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/procedures_conformed.pdf.

[130] Memorandum from Celeste Cantu, Executive Director, California Environmental Protection Agency to Regional Board Executive Officers (Jun. 2, 2004), available at http://www.swrcb.ca.gov/water_issues/programs/cwa401/docs/isol_waters_guid.pdf; ELI, 2013. State Constraints: State-Imposed Limitations on the Authority of Agencies to Regulate Waters Beyond the Scope of the Federal Clean Water Act, available at https://www.eli.org/sites/default/files/eli-pubs/d23-04.pdf. California State Water Resources Control Board, State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (April 2, 2019), available at https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/procedures_conformed.pdf.

[131] Colo. Rev. Stat. section 25-8-103(19).

Definition of Wetlands:

- Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.[132]

Additional State Conditions and Requirements:

- The Colorado Department of Public Health and Environment is prohibited from requiring permits for irrigation flows (or return flows), or permits for various kinds of agricultural waste, except as required by the federal CWA. Where permits are required, their provisions cannot be more stringent than what is required by the federal CWA.[133]

- State imposes limitations regarding water quality provisions with respect to the right to divert and use water.[134]

- The Water Quality Control Commission may adopt rules more stringent than corresponding enforceable federal requirements only if it is demonstrated at a public hearing, and the commission finds, based on sound scientific or technical evidence in the record, that state rules more stringent than the corresponding federal requirements are necessary to protect the public health, beneficial use of water, or the environment of the state. Those findings shall be accompanied by a statement of basis and purpose referring to and evaluating the public health and environmental information and studies contained in the record which form the basis for the commission's conclusion. The existing policies, rules, and regulations of the commission and division shall be applied in conformance with section 25-8-104 and this section.[135]

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 8 in coordination with the state of Colorado.

- State aboveground storage tank regulations apply to tanks with capacities greater than 660 gallons and less than 40,000 gallons; tanks at crude oil production and mining facilities are exempt. Regulations require permits, registration and facility inspection.[136]

- State code authorizes cost recovery for spills and related damages; state has a spill trust fund.[137]

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[132] 5 Code Colo. Regs. 1002-31.5(51).

[133] Colo. Rev. Stat. section 25-8-504.

[134] Colo. Rev. Stat. section 25-8-104.

[135] Colo. Rev. Stat. section 25-8-202(8).

[136] 7 Code Colo. Regs. 1101-14.

[137] Colo. Rev. Stat. sections 34-60-121, 34-60-124.

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Colorado to administer the NPDES permitting program. The state issues its permits through the Colorado Department of Public Health & Environment. Colorado has an authorized NPDES permit program and general permits program. Colorado does not have an authorized biosolids program, pretreatment program, and is not authorized to regulate federal facilities.[138]

- EPA issues all NPDES permits on tribal lands.[139]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.

- Does not have state authority to issue permits for dredged and fill activities in surface waters and wetlands.

- Relies on federal permitting authority and CWA section 401.

THE COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS

Definitions of Waters of the Territory:

- All marine, fresh water bodies, and ground water in the Commonwealth.[140]

- Commonwealth or state waters means all waters, fresh, brackish, or marine, including wetlands, surrounding or within the Commonwealth.[141]

Definition of Wetlands:

- Areas that are inundated or saturated by surface or groundwater with a frequency sufficient to support a prevalence of plant or aquatic life that requires seasonally saturated soil conditions for growth and/or reproduction. Wetlands include swamps, marshes, mangroves, lakes, natural ponds, surface springs, streams, estuaries and similar areas in the Northern Mariana Islands

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[138] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[139] EPA, Colorado NPDES Permits (2017) available at https://www.epa.gov/npdes-permits/colorado-npdes-permits.

[140] NMIAC section 65-130-001.

[141] NMIAC section 65-130-015(l).

archipelago. Wetlands include both wetlands connected to other waters and isolated wetlands. Wetlands do not include those artificial wetlands intentionally created to provide treatment of wastewater or stormwater runoff.[142]

Additional Territory Conditions and Requirements:

- No limitations identified.

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- Territory has prescriptive aboveground storage tank regulations, incorporating the Uniform Fire Code, industry standards, and spill prevention requirements.[143]

401 Certification:

- The territory has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA issues all NPDES permits within the Commonwealth of the Northern Mariana Islands.[144]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Has territory authority to issue permits for dredged and fill activities in coastal surface waters and wetlands.[145]
- Relies on federal permitting authority and CWA section 401.

[142] Commonwealth of the Northern Mariana Islands Admin. Code section 65-130-015(aa).

[143] Commonwealth of the Northern Mariana Islands Admin. Code sections 65-5-001 *et seq*.

[144] EPA, Commonwealth of the Northern Mariana Islands NPDES Permits, available at https://www.epa.gov/npdes-permits/commonwealth-northern-mariana-islands-npdes-permits.

[145] Commonwealth of the Northern Mariana Islands Admin. Code sections 15-10-001 *et seq*.

CONNECTICUT

Definition of Waters of the State:

- All tidal waters, harbors, estuaries, rivers, brooks, watercourses, waterways, wells, springs, lakes, ponds, marshes, drainage systems, and all other surface or underground streams, bodies, or accumulations of water, natural or artificial, public or private, which are contained within, flow through, or border upon this state or any portion thereof.[146]

Definitions of Wetlands:

- The term wetlands refers to freshwater wetlands under the Inland Wetlands and Watercourses Act and refers to tidal wetlands under the Tidal Wetlands Act.

- Tidal Wetlands Act: those areas which border on or lie beneath tidal waters, such as, but not limited to banks, bogs, salt marsh, swamps, meadows, flats, or other low lands subject to tidal action including those areas now or formerly connected to tidal waters, and whose surface is at or below an elevation of one foot above local extreme high water; and upon which may grow or be capable of growing some, but not necessarily all, of the species listed in the statute.[147]

- Inland Wetlands and Watercourses Act: land, including submerged land, not regulated pursuant to sections 22a-28 to 22a-35, inclusive, which consists of any of the soil types designated as poorly drained, very poorly drained, alluvial, and floodplain by the National Cooperative Soils Survey, as may be amended from time to time, of the Natural Resources Conservation Service of the United States Department of Agriculture.[148]

Additional State Conditions and Requirements:

- No limitations identified

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 1 in coordination with the state of Connecticut.

- Connecticut does not have any specific rules governing aboveground storage tanks. Connecticut's Flammable and Combustible Liquids Code adopts by reference the National Fire Protection

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[146] Conn. Gen. Stat. section 22a-423.

[147] Conn. Gen. Stat. section 22a-29.

[148] Conn. Gen. Stat. section 22a-38.

Association standards that govern aboveground storage tank design, installation, upgrade, repair, and closure. The requirements are administered locally.[149]

- State code authorizes cost recovery for spills and related damages; state does not have a spill trust fund covering aboveground storage tanks.[150]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Connecticut to administer the NPDES permitting program. The state issues its permits through the Connecticut Department of Energy and Environmental Protection. Connecticut has an authorized NPDES permit program, pretreatment program, general permits program, and is authorized to regulate federal facilities. Connecticut does not have an authorized biosolids program.[151]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Has state authority to issue permits for dredged and fill activities in surface waters and wetlands,[152] including isolated waters.[153]

DELAWARE

Definition of Waters of the State:

- All water, on the surface and under the ground, wholly or partially within, or bordering the State of Delaware, or within its jurisdiction including but not limited to: (a) Waters which are subject to the ebb and flow of the tide including, but not limited to, estuaries, bays and the Atlantic Ocean; (b) All interstate waters, including interstate wetlands; (c) All other waters of the State, such as lakes, rivers, streams (including intermittent and ephemeral streams), drainage ditches, tax

[149] Conn. Gen. Stat. sections 29-291 *et seq*.

[150] Conn. Gen. Stat. sections 22a-438, 22a-452.

[151] EPA, Connecticut NPDES Permits, available at https://www.epa.gov/npdes-permits/connecticut-npdes-permits.

[152] Conn. Gen. Stat. sections 22a-36 *et seq*., 22a-90 *et seq*., 22a-359 *et seq*.

[153] ELI, 2013. State Constraints: State-Imposed Limitations on the Authority of Agencies to Regulate Waters Beyond the Scope of the Federal Clean Water Act, available at https://www.eli.org/sites/default/files/eli-pubs/d23-04.pdf.

ditches, creeks, mudflats, sandflats, wetlands, sloughs, or natural or impounded ponds; (d) All impoundments of waters otherwise defined as waters of the State under this definition; and (e) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in (a) through (d). Waste and stormwater treatment systems including, but not limited to, treatment ponds or lagoons designed to meet the requirements of the Act (other than cooling ponds which otherwise meet the requirements of subsection (1) of this definition) are not "State waters" or "Waters of the State." [154]

Definitions of Wetlands:

- Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bog and similar areas.[155]

- Under the Delaware Wetlands Act[156] and Wetlands Regulations[157]: Those lands above the mean low water elevation including any bank, marsh, swamp, meadow, flat or other low land subject to tidal action in the State of Delaware along the Delaware Bay and Delaware River, Indian River Bay, Rehoboth Bay, Little and Big Assawoman Bays, the coastal inland waterways, or along any inlet, estuary or tributary waterway or any portion thereof, including those areas which are now or in this century have been connected to tidal waters, whose surface is at or below an elevation of two feet above local mean high water, and upon which may grow or is capable of growing any but not necessarily all of the plants listed in the statute.

Additional State Conditions and Requirements:

- No limitations identified.

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 3 in coordination with the state of Delaware.

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[154] 7-7201 Del. Admin. Code 2.0.

[155] *Id.*

[156] Del. Code tit. 7, section 6601 *et seq*.

[157] 7-7502 Del. Admin. Code 5.0.

- Facilities with aboveground storage tanks greater than 250 gallons must register with state; additional technical requirements and fees apply based on tank size.[158]

- State code authorizes cost recovery for spills and related damages; state does not have a spill trust fund covering aboveground storage tanks.[159]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Delaware to administer the NPDES permitting program. The state issues its permits through the Delaware Department of Natural Resources and Environmental Control. Delaware has an authorized NPDES permit program and general permits program. Delaware does not have an authorized biosolids program, pretreatment program, and is not authorized to regulate federal facilities.[160]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.[161]

- Has state authority to issue permits for dredged and fill activities in surface waters and tidal wetlands.[162]

- Relies on federal permitting authority and CWA section 401.

DISTRICT OF COLUMBIA

Definition of Waters of the District:

- Flowing and still bodies of water, whether artificial or natural, whether underground or on land, so long as in the District of Columbia, but excludes water on private property prevented from

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[158] 7-1352 Del. Admin. Code 1.0 *et seq*.

[159] Del. Code tit. 7, sections 6205, 6207.

[160] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[161] Two state programmatic general permits for impacts associated with piers, docks, mooring piles, boat lifts, breakwaters, etc.

[162] Del. Code tit. 7, sections 7201 *et seq*., 6601 *et seq*. Although the Tidal Wetlands Act refers to "non-tidal wetlands that include 400 or more contiguous acres," this provision has never been instituted or used to regulate any non-tidal wetlands by the State of Delaware. Delaware DNREC, email, March 26, 2018.

reaching underground or land watercourses, and also excludes water in closed collection or distribution systems.[163]

Definition of Wetlands:

- A marsh, swamp or other area periodically inundated by tides or having saturated soil conditions for prolonged periods of time and capable of supporting aquatic vegetation.[164]

Additional District Conditions and Requirements:

- No limitations identified.

District Programs:

- Erosion & Sediment Control[165]
- Stormwater Management[166]
- Construction, Repair and Dredging Program[167]

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- Aboveground storage tanks are primarily regulated by the DC Fire Building Officials and Code Administrators (BOCA) codes administered by the Fire Prevention Branch of DC Fire and Emergency Medical Services. DC does not have authority to regulate aboveground storage tank operations or the release of petroleum products from aboveground storage tanks, and relies on EPA to directly implement federal spill prevention and preparedness regulations.[168]

401 Certification:

- The District has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

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[163] D.C. Code section 8-103.01(26).

[164] *Id.*

[165] D.C. Mun. Regs., tit. 21, sections 540 *et seq*.

[166] D.C. Mun. Regs., tit. 21, sections 516 *et seq*.

[167] D.C. Mun. Regs., tit. 21, section 600.

[168] D.C. Department of Energy & Environment, Underground Storage Tanks, available at https://doee.dc.gov/service/underground-storage-tanks-faqs.

402 NPDES Program:

- EPA issues all NPDES permits in the District of Columbia.[169]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Has authority to issue permits for dredged and fill activities shoreward of the bulkhead line. [170]
- Relies on federal permitting authority and CWA section 401.

FLORIDA

Definitions of Waters of the State:

- Waters include, but are not limited to, rivers, lakes, streams, springs, impoundments, wetlands, and all other waters or bodies of water, including fresh, brackish, saline, tidal, surface, or underground waters. Waters owned entirely by one person other than the state are included only in regard to possible discharge on other property or water. Underground waters include, but are not limited to, all underground waters passing through pores of rock or soils or flowing through in channels, whether manmade or natural. Solely for purposes of s. 403.0885, waters of the state also include navigable waters or waters of the contiguous zone as used in s. 502 of the CWA, as amended, 33 U.S.C. ss. 1251 et seq., as in existence on January 1, 1993, except for those navigable waters seaward of the boundaries of the state set forth in s. 1, Art. II of the State Constitution.[171]
- Any and all water on or beneath the surface of the ground or in the atmosphere, including natural or artificial watercourses, lakes, ponds, or diffused surface water and water percolating, standing, or flowing beneath the surface of the ground, as well as all coastal waters within the jurisdiction of the state.[172]

Definition of Wetlands:

- Those areas that are inundated or saturated by surface water or groundwater at a frequency and a duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils. Soils present in wetlands generally are classified as hydric or alluvial, or possess characteristics that are associated with reducing soil conditions. The prevalent vegetation in wetlands generally consists of facultative or obligate

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[169] EPA, District of Columbia NPDES Permits, available at https://www.epa.gov/npdes-permits/district-columbia-npdes-permits.

[170] D.C. Mun. Regs., tit. 21, section 600.

[171] Fla. Stat. section 403.031(13).

[172] Fla. Stat. section 373.019(22).

hydrophytic macrophytes that are typically adapted to areas having soil conditions described above. These species, due to morphological, physiological, or reproductive adaptations, have the ability to grow, reproduce, or persist in aquatic environments or anaerobic soil conditions. Florida wetlands generally include swamps, marshes, bayheads, bogs, cypress domes and strands, sloughs, wet prairies, riverine swamps and marshes, hydric seepage slopes, tidal marshes, mangrove swamps and other similar areas. Florida wetlands generally do not include longleaf or slash pine flatwoods with an understory dominated by saw palmetto.[173]

Additional State Conditions and Requirements:

- Requires that the state Department of Environmental Protection study the economic and environmental impact of any proposed standards that would be more stringent than federal law.[174]
- For a Florida standard to be a stricter or more stringent standard than one which has been set by federal agencies pursuant to federal law or regulation, the federal standard must be in counterpoise to the state standard.[175]

303 Water Quality Standards:

- Has EPA-approved WQS

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 4 in coordination with the state of Florida.
- Facilities with aboveground storage tanks greater than 550 gallons of oil and hazardous substances are required to register, pay fees, and comply with technical requirements, including secondary containment and inspections.[176]
- State code authorizes cost recovery for spills and related damages; state has a spill trust fund.[177]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

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[173] Fla. Stat. section 373.019(27).

[174] Fla. Stat. section 403.804.

[175] Florida Elec. Power Coordinating Group, Inc. v. Askew, 366 So.2d 1186, 1188 (Fla. Dist. Ct. App., 1st Dist. 1978). ELI, 2013. State Constraints: State-Imposed Limitations on the Authority of Agencies to Regulate Waters Beyond the Scope of the Federal Clean Water Act, available at https://www.eli.org/sites/default/files/eli-pubs/d23-04.pdf.

[176] Fla. Admin. Code chapter 62-762.

[177] Fla. Stat. sections 376.11, 376.12, 376.16, 376.121.

402 NPDES Program:

- EPA has approved the state of Florida to administer the NPDES permitting program. The state issues its permits through the Florida Department of Environmental Protection. Florida has an authorized NPDES permit program, pretreatment program, general permits program, and is authorized to regulate federal facilities. Florida does not have an authorized biosolids program.[178]

- EPA issues all NPDES permits to offshore oil and gas facilities operating in federal waters off the coast of Florida.[179]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.

- Has state authority to issue permits for dredged and fill activities in surface waters and wetlands,[180] including isolated waters.[181]

GEORGIA

Definition of Waters of the State:

- Any and all rivers, streams, creeks, branches, lakes, reservoirs, ponds, drainage systems, springs, wells, and other bodies of surface or subsurface water, natural or artificial, lying within or forming a part of the boundaries of the state, which are not entirely confined and retained completely upon the property of a single individual, partnership, or corporation.[182]

Definition of Wetlands:

- Freshwater Wetlands mean those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps marshes, bogs, and similar areas. (33 CFR 32.93). The ecological parameters for designating wetlands include hydric soils, hydrophytic vegetation, and

[178] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[179] EPA, Florida NPDES Permits (2017) available at https://www.epa.gov/npdes-permits/florida-npdes-permits.

[180] Fla. Stat. section 373.403 *et seq*., 161.011 *et seq*.

[181] Fla. Stat. section 373.414; ELI, 2013. State Constraints: State-Imposed Limitations on the Authority of Agencies to Regulate Waters Beyond the Scope of the Federal Clean Water Act, available at https://www.eli.org/sites/default/files/eli-pubs/d23-04.pdf.

[182] Ga. Code Ann. sections 12-7-3(16), 12-5-22(13).

hydrological conditions that involve a temporary or permanent source of water to cause soil saturation.[183]

Additional State Conditions and Requirements:

- No limitations identified.

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 4 in coordination with the state of Georgia.
- Facilities with aboveground storage tanks exceeding 60 gallons are covered and administered by the State Fire Marshal. Plans for storage installations > 660 gallons must be submitted for review by the State Fire Marshal.[184]
- State code authorizes cost recovery for spills and related damages; state does not have a spill trust fund.[185]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Georgia to administer the NPDES permitting program. The state issues its permits through the Georgia Department of Natural Resources. Georgia has an authorized NPDES permit program, pretreatment program, general permits program, and is authorized to regulate federal facilities. Georgia does not have an authorized biosolids program.[186]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.

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[183] Ga. Comp. R. & Regs. 391-3-16.03(3).

[184] Ga. Code Ann. section 120-3-11.

[185] Ga. Code Ann. 12-5-51, 12-5-51, 12-14-4.

[186] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

- Has state authority to issue permits for dredged and fill activities in coastal surface waters and wetlands, as well as submerged lands.[187]
- Relies on federal permitting authority and CWA section 401.

GUAM

Definition of Waters of the Territory:

- Water shall be construed to include ponds, springs, wells and streams and all other bodies of surface or underground water, natural or artificial, inland or coastal, fresh or salt, public or private.[188]

Definitions of Wetlands:

- Those areas that are inundated by surface or ground water with a frequency sufficient to support and under normal circumstances does or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, mangroves, natural ponds, surface springs, estuaries and similar such areas.[189]
- An area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands typically include swamps, marshes, bogs and similar areas.[190]

Additional Territory Conditions and Requirements:

- No limitations identified.

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- Territory is working on spill prevention legislation (Aboveground Storage of Regulated Substances Act) that intends to cover petroleum oils and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) hazardous substances. Currently, EPA

[187] Ga. Code Ann. sections 12-5-280 *et seq*.

[188] 10 Guam Code Ann. section 46102(b).

[189] 18 Guam Admin. Rules and Regs. section 3504(b).

[190] Guam Water Quality Standards 2001 Revision Section 5105.

Region 9 implements federal spill prevention and preparedness regulations in Guam, and will continue to do so for non-petroleum oils after that Law is enacted.

401 Certification:

- The territory has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA issues all NPDES permits within Guam.[191]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Has territory authority to issue permits for dredged and fill activities in coastal surface waters and wetlands.[192]
- Relies on federal permitting authority and CWA section 401.

HAWAII

Definition of Waters of the State:

- All waters, fresh, brackish, or salt around and within the State, including, but not limited to, coastal waters, streams, rivers, drainage ditches, ponds, reservoirs, canals, ground waters, and lakes; provided that drainage ditches, ponds, and reservoirs required as part of a water pollution control system are excluded.[193]

Definitions of Wetlands:

- Land that is transitional between terrestrial and aquatic ecosystems where the water table is usually at or near the surface or the land is covered by shallow water. A wetland shall have one or more of the following attributes:
  - At least periodically the land supports predominantly hydrophytic vegetation,
  - The substratum is predominantly undrained hydric soil; or

[191] EPA, Guam NPDES Permits, available at https://www.epa.gov/npdes-permits/guam-npdes-permits.

[192] 21 Guam Code Ann. section 63101.

[193] Haw. Rev. Stat. section 342D-1.

  - The substratum is non-soil (gravel or rocks) and is at least periodically saturated with water or covered by shallow water.[194]

- Wetlands may be fresh, brackish, or saline and generally include swamps, marshes, bogs, and associated ponds and pools, mud flats, isolated seasonal ponds, littoral zones of standing water bodies, and alluvial floodplains.[195]

Additional State Conditions and Requirements:

- Hawaii has limitations to regulate low wetland and coastal wetlands as well as the elevated wetlands under "basic water quality criteria applicable to all State waters."[196]

303 Water Quality Standards:

- Has EPA-approved WQS.[197]

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 9 in coordination with the state of Hawaii.
- State does not have specific aboveground storage tank requirements except spill reporting requirements.
- State code authorizes cost recovery for spills and related damages; state does have a spill trust fund.[198]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.[199]

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[194] Haw. Code R. section 11-54-1.

[195] *Id.*

[196] Haw. Code R. section 11-54-4.

[197] In addition, has specific water quality criteria (pH) established for the elevated wetlands. Haw. Code R. section 11-54-5.2(c); Elevated wetlands mean natural freshwater wetlands located above 100 m (330 ft) elevation. Haw. Code R. section 11-54-1. Wetlands are classified (class 1 (include 1a and 1b and class 2) by the Hawaii DOH as "Inland Waters" in Haw. Code R. section 11-54-2 and subject to the "designated uses" protection as specified in section 11-54-3.

[198] Haw. Rev. Stat. sections 128D-2, 5, 6, 8.

[199] Haw. Rev. Stat. section 342D-53.

402 NPDES Program:

- EPA has approved the state of Hawaii to administer the NPDES permitting program. The state issues its permits through the Hawaii Department of Health. Hawaii has an authorized NPDES permit program, pretreatment program, general permits program, and is authorized to regulate federal facilities. Hawaii does not have an authorized biosolids program.[200]
- EPA issues all NPDES permits for any discharges into federal ocean waters in Hawaii.[201]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Has state authority to issue permits for dredged and fill activities in surface waters,[202] as well as coastal surface waters and wetlands.[203]
- Relies on federal permitting authority and CWA section 401.

IDAHO

Definition of Waters of the State:

- All accumulations of water, surface and underground, natural and artificial, public and private or parts thereof, which are wholly or partially within the state, and flow through or border upon the state, except for private waters.[204]

Definition of Wetlands:

- Areas inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.[205]

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[200] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[201] EPA, Hawaii NPDES Permits, available at https://www.epa.gov/npdes-permits/hawaii-npdes-permits.

[202] Haw. Rev. Stat. sections 174C-91 *et seq.*; Haw. Code R. sections 13-169-50 *et seq*.

[203] Haw. Rev. Stat. sections 205A-21 *et seq.*; Haw. Code R. section 15-150.

[204] Idaho Code Ann. section 39-103(18).

[205] Idaho Admin. Code r. 58.01.25.010(01)(110).

Additional State Conditions and Requirements:

- The Idaho Department of Environmental Quality is to ensure surface water quality in Idaho and meet the goals of the CWA, but is prohibited from enacting rules that impose requirements beyond those of the CWA.[206]

- When the Department of Environmental Quality recommends to the Board of Environmental Quality issuance of a rule that is broader in scope or more stringent than federal law or regulations, or proposes to regulate an activity not regulated by the federal government, the rule is subject to an additional statutory requirement. The agency must clearly specify that the proposed rule, or portions of it, are broader in scope or more stringent than federal law or regulations, or regulate an activity not regulated by the federal government, and delineate which portions of the proposed rule trigger this provision.[207]

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 10 in coordination with the state of Idaho.

- State does not regulate aboveground storage tanks, but references EPA's Spill Prevention, Control, and Countermeasure (SPCC) rule and National Fire Prevention Association (NFPA) code. Local fire districts, cities and counties may have aboveground storage tank ordinances.[208]

- State does not have a codified cost recovery program for spills or a spill trust fund.

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- Idaho assumed some program components of the NPDES program on July 1, 2018, and will assume others in the following three years.[209]

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[206] Idaho Code Ann. section 39-3601.

[207] Idaho Code Ann. section 39-107D.

[208] See Idaho DEQ, Storage Tanks in Idaho, available at https://www.deq.idaho.gov/waste-mgmt-remediation/storage-tanks.aspx.

[209] Idaho's schedule to assume NPDES program components is as follows: individual municipal permits and pretreatment on July 1, 2018; individual industrial permits on July 1, 2019; general permits (for aquaculture, pesticide, CAFO, suction dredged, and remediation) on July 1, 2020; and federal facilities, general and individual stormwater permits and biosolids on July 1,

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Has state authority to issue permits for dredged and fill activities in surface waters and wetlands.[210]

ILLINOIS

Definition of Waters of the State:

- All accumulations of water, surface and underground, natural, and artificial, public and private, or parts thereof, which are wholly or partially within, flow through, or border upon this State.[211]

Definition of Wetlands:

- Land that has a predominance of hydric soils (soils that are usually wet and where there is little or no free oxygen) and that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of hydrophytic vegetation (plants typically found in wet habitats) typically adapted for life in saturated soil conditions. Areas which are restored or created as the result of mitigation or planned construction projects and which function as a wetland are included within this definition even if all three wetland parameters are not present.[212]

Additional State Conditions and Requirements:

- No limitations identified

303 Water Quality Standards:

- Has EPA-approved WQS.
- Wetlands are subject to General Use WQS.
- Some anti-degradation policies include wetlands.

2021. EPA, Idaho NPDES Program Authorization, available at https://www.epa.gov/npdes-permits/idaho-npdes-program-authorization.

[210] Idaho Code Ann. sections 42-3801 *et seq.* (regarding stream channels), 58-1301 *et seq.* (regarding lakes). Both programs deal primarily with waters, and can occasionally cover wetlands. ASWM, Idaho State Wetland Program, available at https://www.aswm.org/pdf_lib/state_summaries/idaho_state_wetland_program_summary_111615.pdf.

[211] 415 Ill. Comp. Stat. section 5/3.550.

[212] 20 Ill. Comp. Stat. section 830/1-6(a).

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 5 in coordination with the state of Illinois.
- State program regulates all new tanks over 110 gallons that store flammable substances, requiring permits and registration, secondary containment and site plans. Administered by the State Fire Marshal.[213]
- State code authorizes cost recovery for spills; state has a spill trust fund.[214]

401 Certification:

- The state has authority to certify, conditionally certify, waive review or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Illinois to administer the NPDES permitting program. The state issues its permits through the Illinois Environmental Protection Agency. Illinois has an authorized NPDES permit program, general permits program, and is authorized to regulate federal facilities. Illinois does not have an authorized biosolids program or pretreatment program.[215]
- EPA issues all NPDES permits on tribal lands.[216]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Has state authority to issue permits for dredged and fill activities in surface waters[217] and state funded activities in wetlands,[218] including isolated waters.[219]

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[213] Ill. Admin. Code tit. 41, section 180.20.

[214] 415 Ill. Comp. Stat. sections 5/25c-1, 5/42.

[215] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[216] EPA, Illinois NPDES Permits (2017) available at https://www.epa.gov/npdes-permits/illinois-npdes-permits.

[217] 615 Ill. Comp. Stat. section 5.

[218] 20 Ill. Comp. Stat. section 830.

[219] State Constraints: State-Imposed Limitations on the Authority of Agencies to Regulate Waters Beyond the Scope of the Federal Clean Water Act, available at https://www.eli.org/sites/default/files/eli-pubs/d23-04.pdf.

INDIANA

Definition of Waters of the State:

- (1) The accumulations of water, surface and underground, natural and artificial, public and private; or (2) a part of the accumulations of water; that are wholly or partially within, flow through, or border upon Indiana.
    - The term "waters" does not include: (1) an exempt isolated wetland; (2) a private pond; or (3) an off-stream pond, reservoir, wetland, or other facility built for reduction or control of pollution or cooling of water before discharge.
    - The term includes all waters of the United States, as defined in Section 502(7) of the federal CWA (33 U.S.C. 1362(7)), that are located in Indiana.[220]

Definitions of Wetlands:

- Areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include: (1) swamps; (2) marshes; (3) bogs; and (4) similar areas.[221]

- A state regulated wetland is defined as an isolated wetland located in Indiana that is not an exempt isolated wetland.[222]

Additional State Conditions and Requirements:

- Under Indiana's rulemaking process, the Department of Environmental Management (DEM) and the Water Pollution Control Board must provide notice of a proposed rule in the Indiana Register for each of two required public comment periods. [223]
    - The notice for the first public comment period must describe the subject matter and basic purpose of the proposed rule, including a list all alternatives under consideration.
    - The notice for the second public comment period must identify each element of the proposed rule that imposes a restriction or requirement that is more stringent than a restriction or requirement imposed under federal law, or that applies in a subject area in which federal law does not impose a restriction or requirement.

[220] Ind. Code section 13-11-2-265.

[221] Ind. Code section 13-11-2-265.7.

[222] Ind. Code section 13-11-2-221.5. Exempt isolated wetland is defined at Ind. Code section 13-11-2-74.5.

[223] Ind. Code sections 13-14-9-3, 13-14-9-4.

- State imposes a qualified stringency prohibition; House Bill 1082[224] requires any new state environmental rule that is either more stringent than federal requirements or applies in a subject area where federal law does not impose restrictions or requirements, to be notified to the Indiana legislative branch. Following this the rule cannot take effect until adjournment of a regular session of the General Assembly, providing the opportunity to reject the rule via legislation[225].

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 5 in coordination with the state of Indiana.
- Aboveground storage tanks are regulated by the Indiana Fire Prevention Code, which follows the Uniform Fire Code (NFPA 30 and 30A) and specifies design, installation and permitting requirements. Administered by the State Fire Marshal.[226]
- State code authorizes cost recovery for spills; state has a spill trust fund.[227]

401 Certification:

- The state has authority to certify, conditionally certify, waive review or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Indiana to administer the NPDES permitting program. The state issues its permits through the Indiana Department of Environmental Management. Indiana has an authorized NPDES permit program, general permits program, and is authorized to regulate federal facilities. Indiana does not have an authorized biosolids program or pretreatment program.[228]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.

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[224] Indiana. HB1082, available at https://iga.in.gov/legislative/2016/bills/house/1082#digest-heading.

[225] Council of State Governments Midwest (2017). Policy and Research, available at http://www.csgmidwest.org/policyresearch/qom-0317.aspx

[226] 675 Ind. Admin. Code 22-2.3.

[227] Ind. Code sections 13-24-1-4, 13-30-4-1, 13-25-4-2.

[228] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

- Has state authority to issue permits for dredged and fill activities in surface waters[229] and isolated wetlands.[230]

- Relies on federal permitting authority and CWA section 401.

IOWA

Definition of Waters of the State:

- Any stream, lake, pond, marsh, watercourse, waterway, well, spring, reservoir, aquifer, irrigation system, drainage system, and any other body or accumulation of water, surface or underground, natural or artificial, public or private, which are contained within, flow through or border upon the state or any portion thereof.[231]

Definition of Wetlands:

- An area of two or more acres in a natural condition that is mostly under water or waterlogged during the spring growing season and is characterized by vegetation of hydric soils.[232]

Additional State Conditions and Requirements:

- The Iowa Environmental Protection Commission may not establish an effluent standard for a source that is more stringent than a federal effluent standard under the CWA for such source. However, the Commission may establish a more restrictive effluent limitation for a point source if doing so is necessary to meet WQS and the federal government has not established an effluent standard for that source or class of sources.[233]

- Additionally, NPDES rules adopted by the Commission with respect to concentrated animal feeding operations can be no more stringent than requirements under the federal CWA.[234]

- When the Environmental Protection Commission proposes or adopts rules to implement a "specific federal environmental program," and the rules are more restrictive than the federal program requires, the Commission must: (1) identify in its notice of intended action or adopted rule preamble each rule that is more restrictive than the federal program requires; (2) state the reasons for proposing or adopting the more restrictive requirement; and (3) include with its

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[229] Ind. Code sections 14-28-1, 14-26-2-1 *et seq*.

[230] Ind. Code section 13-18-22-1 *et seq*.

[231] Iowa code 455B.171.

[232] Iowa Code 456B.1.

[233] Iowa Code 455B.173.

[234] Iowa Code 459.311.

reasoning a "financial impact statement" detailing the general impact of the rules on affected parties.[235]

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 7 in coordination with the state of Iowa.
- State requires facilities with aboveground storage tanks greater than 1,100 gallons to register and to receive approval of their plan prior to being placed in service. State has adopted the Uniform Fire Code (NFPA 30 and 30A), which is administered by the State Fire Marshal.[236]
- State code authorizes cost recovery for spills and related damages; state has a spill trust fund.[237]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Iowa to administer the NPDES permitting program. The state issues its permits through the Iowa Department of Natural Resources. Iowa has an authorized NPDES permit program, pretreatment program, general permits program, and is authorized to regulate federal facilities. Iowa does not have an authorized biosolids program.[238]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Has state authority to issue permits for dredged and fill activities in surface waters.[239]
- Relies on federal permitting authority and CWA section 401.

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[235] Iowa Code 455B. 105(3).

[236] Iowa Code sections 101.1 *et seq.*

[237] Iowa Code sections 455B.191, 455B.392, 455B.423, 481A.151.

[238] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[239] Iowa Code section 455B.261 *et seq.*; Iowa Admin. Code r. 567-70.1 *et seq.*, 571-13.1 *et seq.*

KANSAS

Definition of Waters of the State:

- All streams and springs, and all bodies of surface and subsurface waters within the boundaries of the state.[240]

Definition of Wetlands:

- Water bodies meeting the technical definition for jurisdictional wetlands given in the Corps of Engineers Wetlands Delineation Manual, as published in January 1987.[241]

Additional State Conditions and Requirements:

- No limitations identified.

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 7 in coordination with the state of Kansas.
- State requires facilities with aboveground storage tanks to register, pay fees, and obtain operating permits. State has adopted the Uniform Fire Code (NFPA 30 and 30A), which is administered by the State Fire Marshal.[242]
- State code authorizes cost recovery for spills; state has a spill trust fund.[243]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Kansas to administer the NPDES permitting program. The state issues its permits through the Kansas Department of Health and Environment. Kansas has an authorized NPDES permit program, general permits program, and is authorized to regulate

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[240] Kan. Stat. Ann. section 65-161(a)

[241] Kan. Admin. Regs. section 28-16-28b(fff)(3).

[242] Kan. Admin. Regs. sections 28-44-12 *et seq*.

[243] Kan. Stat. Ann. section 65-171.

federal facilities. Kansas does not have an authorized biosolids program or pretreatment program.[244]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Has state authority to issue permits for dredged and fill activities in surface waters.[245]
- Relies on federal permitting authority and CWA section 401.

KENTUCKY

Definition of Waters of the Commonwealth:

- Means and includes any and all rivers, streams, creeks, lakes, ponds, impounding reservoirs, springs, wells, marshes, and all other bodies of surface or underground water, natural or artificial, situated wholly or partly within or bordering upon the Commonwealth or within its jurisdiction.[246]

Definition of Wetlands:

- Defined by 40 C.F.R. 122.2, effective July 1, 2008.[247]

Additional Commonwealth Conditions and Requirements:

- An administrative body may adopt administrative regulations to implement a statute only when the legislature authorizes the adoption of such regulations or when regulations are required by federal law, in which case such regulations may be no more stringent than federal law or regulations.[248]
- Qualified prohibitions allow for a Kentucky administrative body to issue a regulation more stringent than federal law, but this is arguably in conflict with the broader stringency prohibition provision.[249]
  - If a Kentucky administrative body issuing a regulation is (1) not required by federal law to do so, and (2) is required or authorized by state law to issue a regulation governing the subject matter, the regulation must conform to a federal law or regulation governing a subject matter.

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[244] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[245] Kan. Stat. Ann. sections 24-126, 82a-301 et seq.; Kan. Admin. Regs. sections 5-40, 41, 42, 43, 45, 46.

[246] Ky. Rev. Stat. Ann. section 224.1-010(32).

[247] 401 Ky. Admin. Regs. 5:002(177).

[248] Ky. Rev. Stat. section 13A.120.

[249] Ky. Rev. Stat. section 13A.245.

- When enacting a regulation in response to a federal mandate, an administrative body is required to compare its proposed compliance standards with any minimum or uniform standards suggested or contained in the federal mandate. The comparison must contain a written determination as to whether the proposed state regulation will impose stricter requirements or other responsibilities on regulated entities than required by the federal mandate. If so, the comparison analysis must further include a written statement justifying the imposition of stricter standards, requirements, or responsibilities.

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 4 in coordination with the Commonwealth of Kentucky.
- Commonwealth has adopted the Uniform Fire Code (NFPA 30 and 30A) for aboveground storage tanks. Administered by the State Fire Marshal, including permitting requirements.[250]
- Commonwealth code authorizes cost recovery for spills and resource damages; state has a spill trust fund.[251]

401 Certification:

- The Commonwealth has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.
- For general state permits, Kentucky requires an individual water quality certification for otherwise minor impacts to cold water streams.[252]

402 NPDES Program:

- EPA has approved the Commonwealth of Kentucky to administer the NPDES permitting program. The state issues its permits through the Kentucky Department for Environmental Protection. Kentucky has an authorized NPDES permit program, pretreatment program, general

[250] 815 Ky. Admin. Regs. 7:120(3)(7)(i).

[251] Ky. Rev. Stat. sections 224.1-400(15), 224.1-070, 224.46-580, 224.99-010.

[252] ASWM (2014) Section 401 Certification Best Practices in Dredged and Fill Permit Programs, available at https://www.aswm.org/pdf_lib/401_best_practices_summary.pdf.

permits program, and is authorized to regulate federal facilities. Kentucky does not have an authorized biosolids program.[253]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Has Commonwealth authority to issue permits for dredged and fill activity in surface waters.[254]
- Relies on federal permitting authority and CWA section 401.

LOUISIANA

Definition of Waters of the State:

- Both surface and underground waters within the state including all rivers, streams, lakes, estuaries, groundwater, and all other water courses and waters within the confines of the state and all bordering waters and the Gulf of Mexico.[255]

Definition of Wetlands:

- An open water area or an area that is inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions, but specifically excluding fastlands[256] and lands more than five feet above mean sea level which occur within the designated coastal area of the state. Wetlands generally include swamps, marshes, bogs, and similar areas.[257]

Additional State Conditions and Requirements:

- No limitations identified.

303 Water Quality Standards:

- Has EPA-approved WQS.

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[253] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[254] Ky. Rev. Stat. section 151.250.

[255] La. Stat. Ann. section 30:2073(7).

[256] Fastlands are defined as lands surrounded by publicly owned, maintained or otherwise validly existing levees or natural formations that normally prevent activities, not to include the pumping of water for drainage purposes, within the surrounded area from having a direct and significant impact on coastal waters. La. Stat. Ann. section 49:214.23(6).

[257] La. Stat. Ann. section 49:214.2(16).

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 6 in coordination with the state of Louisiana.
- State has adopted the Uniform Fire Code (NFPA 30 and 30A) for aboveground storage tanks. Administered by the State Fire Marshal.[258]
- State has requirements for spill contingency planning and implementation of operating procedures and best management practices similar to SPCC.[259]
- State code authorizes cost recovery for spills and resource damages; state has a spill trust fund with limits tied to Oil Spill Liability Trust Fund coverage.[260]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Louisiana to administer the NPDES permitting program. The state issues its permits through the Louisiana Department of Environmental Quality. Louisiana has an authorized NPDES permit program, pretreatment program, general permits program, and is authorized to regulate federal facilities. Louisiana does not have an authorized biosolids program.[261]
- EPA issues all NPDES permits on all tribal lands.[262]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Has state authority to issue permits for dredged and fill activities in coastal surface waters and wetlands,[263] as well as submerged lands.[264]

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[258] La. Admin. Code tit. 33, chapter 9.

[259] *Id.*

[260] La. Stat. Ann. sections 30:2479, 30:2483, 30:2488, 30:2491.

[261] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[262] EPA, Louisiana NPDES Permits, available at https://www.epa.gov/npdes-permits/louisiana-npdes-permits.

[263] La. Rev. Stat. Ann. sections 49:214.21 *et seq.*

[264] La. Rev. Stat. Ann. sections 41:1701 *et seq.*

- Relies on federal permitting authority and CWA section 401.

MAINE

Definition of Waters of the State:

- Any and all surface and subsurface waters that are contained within, flow through, or under or border upon this State or any portion of the State, including the marginal and high seas, except such waters as are confined and retained completely upon the property of one person and do not drain into or connect with any other waters of the State, but not excluding waters susceptible to use in interstate or foreign commerce, or whose use, degradation or destruction would affect interstate or foreign commerce.[265]

Definitions of Wetlands:

- Freshwater wetlands: freshwater swamps, marshes, bogs and similar areas that are inundated or saturated by surface or groundwater at a frequency and for a duration sufficient to support, and which under normal circumstances do support, a prevalence of wetland vegetation typically adapted for life in saturated soils; and not considered part of a great pond, coastal wetland, river, stream or brook.[266]

- Coastal wetlands: all tidal and subtidal lands; all areas with vegetation present that is tolerant of salt water and occurs primarily in a salt water or estuarine habitat; and any swamp, marsh, bog, beach, flat or other contiguous lowland that is subject to tidal action during the highest tide level for the year in which an activity is proposed as identified in tide tables published by the National Ocean Service. Coastal wetlands may include portions of coastal sand dunes.[267]

Additional State Conditions and Requirements:

- Maine's Department of Environmental Protection must, when feasible, identify any proposed rule that is anticipated to be more stringent than the federal standard, if an applicable federal standard exists. During consideration of a proposed rule, the Department must, when feasible: (1) identify provisions of the proposed rule that it believes would impose a regulatory burden more stringent than the burden imposed by the federal standard, if such a federal standard exists; and (2) justify the difference between the rule and the federal standard.[268]

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[265] Me. Stat. tit. 38, section 361-A(7).

[266] Me. Stat. tit. 38, section 480-B.

[267] *Id.*

[268] Me. Stat. tit. 38, section 341-H(3).

303 Water Quality Standards:

- Has EPA-approved WQS; there are some EPA-issued WQS in place as well.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 1 in coordination with the state of Maine.
- State has adopted the Uniform Fire Code (NFPA 30 and 30A) for aboveground storage tanks. Administered by the State Fire Marshal.[269]
- State has also incorporated federal SPCC requirements by code; failure to follow federal requirements is violation of state code.[270]
- State code authorizes cost recovery for spills and resource damages; state has a spill trust fund.[271]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Maine to administer the NPDES permitting program. The state issues its permits through the Maine Department of Environmental Protection. Maine has an authorized NPDES permit program, pretreatment program, general permits program, and is authorized to regulate federal facilities. Maine does not have an authorized biosolids program.[272]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Has state authority to issue permits for dredged and fill activities in surface waters and wetlands,[273] including isolated waters.[274]

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[269] Me. Stat. tit. 25, section 2482.

[270] *Id*.

[271] Me. Stat. tit. 38, sections 551, 552.

[272] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[273] Me. Stat. tit. 38, sections 480-A *et seq*.

[274] ELI, 2013. State Constraints: State-Imposed Limitations on the Authority of Agencies to Regulate Waters Beyond the Scope of the Federal Clean Water Act, available at https://www.eli.org/sites/default/files/eli-pubs/d23-04.pdf.

MARYLAND

Definition of Waters of the State:

- Both surface and underground waters within the boundaries of the state subject to its jurisdiction; the portion of the Atlantic Ocean within the boundaries of the state (territorial seas); the Chesapeake Bay and its tributaries; all ponds, lakes, rivers, streams, tidal and nontidal wetlands, public ditches, tax ditches, and public drainage systems within the state (does not include public drainage systems designed and used to collect, convey, or dispose of sanitary sewage); and the floodplain of free-flowing waters determined by the department on the basis of the 100 year flood frequency. [275]

Definitions of Wetlands:

- Nontidal wetland: (a) Means an area that is inundated or saturated by surface water or ground water at a frequency and duration sufficient to support and that under normal circumstances does support a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation; (b) Is determined according to the Federal Manual; (c) Does not include tidal wetlands regulated under Environmental Article, Title 16, Annotated Code of Maryland.[276]

- State wetlands: means any land under the navigable waters of the State below the mean high tide, affected by the regular rise and fall of the tide.[277]

Additional State Conditions and Requirements:

- By executive order, each unit of Maryland state government is required to take certain steps when it proposes to adopt a regulation that "provides a standard that is more restrictive or stringent than an applicable standard established under a federal law or regulation which governs the same program or conduct." The agency must: (1) identify the manner in which the proposed regulation is more restrictive than the applicable federal standard; (2) identify the benefit to public health, safety, welfare, or the environment, expected from adopting the standard; (3) in consultation with the Department of Business and Economic Development, identify whether having a more restrictive standard places an additional burden or cost on regulated persons; and (4) justify the need for the standard.[278]

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[275] Md. Code, Env. section 5-101(l).

[276] Md. Code, Env. section 5-901(m).

[277] Md. Code, Env. section 16-101(p).

[278] Md. Exec. Order No. 01.01.1996.03 (1996).

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 3 in coordination with the state of Maryland.
- State requires facilities with aboveground oil storage capacities of 1,000 gallons of used oil or 10,000 gallons or more of virgin oil to obtain oil operations permits and meet specific technical requirements such as secondary containment.[279]
- State has adopted the Uniform Fire Code (NFPA 30 and 30A) for aboveground storage tanks. Administered by the State Fire Marshal.[280]
- State code authorizes cost recovery for spills and resource damages; state has a spill trust fund.[281]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Maryland to administer the NPDES permitting program. The state issues its permits through the Maryland Department of the Environment. Maryland has an authorized NPDES permit program, pretreatment program, general permits program, and is authorized to regulate federal facilities. Maryland does not have an authorized biosolids program.[282]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.[283]

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[279] Md. Code Regs. 26.10.01.

[280] *Id.*

[281] Md. Code, Env. sections 4-408, 4-409, 4-411, 4-417, 4-418.

[282] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[283] Implements a state programmatic general permit pursuant to CWA Section 404(e) for specified activities. The currently operative SPGP is MDSPGP-5 issued September 26, 2016. See http://www.nab.usace.army.mil/Portals/63/docs/Regulatory/MDSPGP-5.pdf.

- Has state authority to issue permits for dredged and fill activities in surface waters and wetlands,[284] including isolated waters.[285]

MASSACHUSETTS

Definition of Waters of the Commonwealth:

- All waters within the jurisdiction of the commonwealth, including, without limitation, rivers, streams, lakes, ponds, springs, impoundments, estuaries, coastal waters, and groundwaters.[286]

Definitions of Wetlands:

- Coastal wetlands: Any bank, marsh, swamp, meadow, flat or other lowland subject to tidal action or coastal storm flowage.[287]

- Freshwater wetlands: Wet meadows, marshes, swamps, bogs, areas where the groundwater, flowing or standing surface water or ice provide a significant part of the supporting substrate for a plant community for at least five months of the year; emergent and submergent plant communities in inland waters; that portion of any bank which touches any inland waters.[288]

Additional Commonwealth Conditions and Requirements:

- No limitations identified.

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 1 in coordination with the Commonwealth of Massachusetts.

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[284] Md. Code, Env. sections 5-501 *et seq*., 5-901 *et seq*., 16-101 *et seq*.

[285] Maryland Department of the Environment, Maryland Wetland Program Plan, available at https://www.epa.gov/sites/production/files/2018-03/documents/maryland_de_complete_final_rev2018_v4.docx_1.pdf; ELI, 2013. State Constraints: State-Imposed Limitations on the Authority of Agencies to Regulate Waters Beyond the Scope of the Federal Clean Water Act, available at https://www.eli.org/sites/default/files/eli-pubs/d23-04.pdf.

[286] Mass. Gen. Laws ch. 21 section 26A.

[287] Mass. Gen. Laws ch. 131 section 40.

[288] *Id*.

- Commonwealth has adopted the Uniform Fire Code (NFPA 30 and 30A) for aboveground storage tanks, which is administered by the State Fire Marshal. Permit, inspection and technical requirements apply to tanks greater than 10,000 gallons in capacity.[289]

- Commonwealth code authorizes cost recovery for spills and resource damages; Commonwealth has a spill trust fund.[290]

401 Certification:

- The Commonwealth has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- Massachusetts is not authorized to run the NPDES program.[291]

- EPA issues all NPDES permits in Massachusetts.[292]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.

- Has Commonwealth authority to issue permits for dredged and fill activities in surface waters and wetlands,[293] including isolated waters.[294]

MICHIGAN

Definition of Waters of the State:

- Groundwater, lakes, including the Great Lakes bordering the state, rivers, streams, and all other water courses and bodies of water within the jurisdiction of the state, including wetlands.[295]

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[289] 527 Mass. Code Regs. 5.00, 9.00

[290] Mass. Gen. Laws ch. 21E sections 5, 11; ch. 21M section 8.

[291] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[292] EPA, Massachusetts NPDES Permits (2017) available at https://www.epa.gov/npdes-permits/massachusetts-npdes-permits.

[293] Mass. Gen. Laws ch. 131, section 40; ch. 130, section 105; ch. 91.

[294] ELI, 2013. State Constraints: State-Imposed Limitations on the Authority of Agencies to Regulate Waters Beyond the Scope of the Federal Clean Water Act, available at https://www.eli.org/sites/default/files/eli-pubs/d23-04.pdf.

[295] Mich. Comp. Laws section 324.3101.

Definition of Wetlands:

- Land characterized by the presence of water at a frequency and duration sufficient to support, and that under normal circumstances does support, wetland vegetation or aquatic life, and is commonly referred to as a bog, swamp, or marsh, and which is any of the following: i) Contiguous to the Great Lakes or Lake St. Clair, an inland lake or pond, or a river or stream; (ii) Not contiguous to the Great Lakes, an inland lake or pond, or a river or stream; and more than 5 acres in size; (iii) Not contiguous to the Great Lakes, an inland lake or pond, or a river or stream; and 5 acres or less in size if the department determines that protection of the area is essential to the preservation of the natural resources of the state from pollution, impairment, or destruction and the department has so notified the owner.[296]

Additional State Conditions and Requirements:

- No limitations identified.

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 5 in coordination with the state of Michigan.
- State has adopted the Uniform Fire Code (NFPA 30 and 30A) for aboveground storage tanks. Administered by the State Fire Marshal. Applications for plan review required for tanks greater than 1,100 gallons in capacity.[297]
- State code authorizes cost recovery for spills and resource damages; state has a spill trust fund.[298]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Michigan to administer the NPDES permitting program. The state issues its permits through the Michigan Department of Environmental Quality. Michigan has an

[296] Mich. Comp. Laws section 324.30301(n).

[297] Mich. Comp. Laws sections 29.1 *et seq*.

[298] Mich. Comp. Laws sections 324.2010, 324.20119, 324.20126a.

authorized NPDES permit program, pretreatment program, general permits program, biosolids program, and is authorized to regulate federal facilities.[299]

- EPA issues all NPDES permits on tribal lands.[300]

404 Dredged and Fill Permitting:

- Michigan has assumed administration of the 404 program (has full state permitting authority).[301] Has state authority to issue permits for dredged and fill activities in isolated waters.[302]

MINNESOTA

Definitions of Waters of the State:

- Definition that applies to CWA programs: All streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, reservoirs, aquifers, irrigation systems, drainage systems and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, which are contained within, flow through, or border upon the state or any portion thereof.[303]

- Definition that applies to state Wetland Conservation Act: Surface or underground waters, except surface waters that are not confined but are spread and diffused over the land. Waters of the state includes boundary and inland waters.[304]

Definition of Wetlands:

- Lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this definition, wetlands must have the following three attributes:
  - (1) have a predominance of hydric soils;

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[299] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[300] EPA, Michigan NPDES, Permits, available at https://www.epa.gov/npdes-permits/michigan-npdes-permits.

[301] EPA, State or Tribal Assumption of the Section 404 Permit Program, available at https://www.epa.gov/cwa-404/state-or-tribal-assumption-section-404-permit-program. For Michigan's assumed Section 404 Program, state statutes provide similar protections and ensure compliance with the CWA by being at least as protective as the CWA (however, Michigan's laws do not use the exact same definitions or exemption language as the CWA).

[302] If over 5 acres, within 500 feet of a stream or lake, 1000 feet of Great Lakes or Lake St. Clair, or essential to preservation of natural resources. Mich. Comp. Laws section 324.30301(n). *See also* ELI, 2013. State Constraints: State-Imposed Limitations on the Authority of Agencies to Regulate Waters Beyond the Scope of the Federal Clean Water Act, available at https://www.eli.org/sites/default/files/eli-pubs/d23-04.pdf.

[303] Minn. Stat. section 115.03-22.

[304] Minn. Stat. section 103G.005-17.

- (2) are inundated or saturated by surface or ground water at a frequency and duration sufficient to support a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions; and
- (3) under normal circumstances support a prevalence of such vegetation.[305]

Additional State Conditions and Requirements:

- 404 Assumption: In the event the state assumes responsibility for the federal 404 permitting program, the rules adopted to establish the program "may not be more restrictive" than the federal 404 program—or more restrictive than state law, if state law is more restrictive than the federal 404 program.[306]
  - The state has not assumed the 404 program. The Minnesota Legislature commissioned a study on the feasibility of 404 Assumption that was completed in 2017.[307]
- Feedlots: State limits NPDES feedlot permitting requirements in that the agency must issue NPDES permits for feedlots only as required by federal law. However, the state also issues state disposal system permits for feedlots which may have additional state-only requirements.[308]

303 Water Quality Standards:

- Has EPA-approved WQS.[309]

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 5 in coordination with the state of Minnesota.
- State has adopted technical requirements for aboveground storage tanks with capacities greater than 1,100 gallons, such as secondary containment, overfill prevention, recordkeeping and release reporting. Facilities with tanks of 1 million gallons or greater are required to obtain operating permits.[310]
- State code authorizes cost recovery for spills and resource damages; state has a spill trust fund.[311]

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[305] Minn. Stat. section 103G.005-19.

[306] Minn. Stat. section 103G.2375.

[307] Minnesota Section 404 Assumption Feasibility Study Report, available at http://www.bwsr.state.mn.us/wetlands/cwa_404/Minn_Section_404_Assumption_Feasibility_Study_Report_Final.pdf

[308] Minn. Stat. section 116.07.

[309] Small number of wetlands are listed, narrative criteria in 305(b) reporting.

[310] Minn. R. 7151.1100.

[311] Minn. Stat. sections 115B.17, 116.155.

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Minnesota to administer the NPDES permitting program. The state issues its permits through the Minnesota Pollution Control Agency. Minnesota has an authorized NPDES permit program, pretreatment program, general permits program, and is authorized to regulate federal facilities. Minnesota does not have an authorized biosolids program.[312]

- EPA issues all NPDES permits on tribal lands.[313]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.

- Has state authority to issue permits for dredged and fill activities in surface waters and wetlands,[314] including isolated waters.[315]

MISSISSIPPI

Definition of Waters of the State:

- All waters within the jurisdiction of this state, including all streams, lakes, ponds, impounding reservoirs, marshes, watercourses, waterways, wells, springs, irrigation systems, drainage systems and all other bodies or accumulations of water, surface and underground, natural or artificial, situated wholly or partly within or bordering upon the state, and such coastal waters as are within the jurisdiction of the state, except lakes, ponds, or other surface waters which are wholly landlocked and privately owned, and which are not regulated under the Federal CWA (33 U.S.C. 1251 et seq.).[316]

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[312] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[313] EPA, Minnesota NPDES Permits (2017) available at https://www.epa.gov/npdes-permits/minnesota-npdes-permits.

[314] Minn. Stat. Ann. section 103G.

[315] Minnesota Board of Water and Soil Resources, 2001-2003 Minnesota Wetland Report, available at https://www.leg.state.mn.us/docs/2005/other/050523.pdf; ELI, 2013. State Constraints: State-Imposed Limitations on the Authority of Agencies to Regulate Waters Beyond the Scope of the Federal Clean Water Act, available at https://www.eli.org/sites/default/files/eli-pubs/d23-04.pdf.

[316] Miss. Code Ann. section 49-17-5(f).

Definition of Wetlands:

- Coastal wetlands: All publicly-owned lands subject to the ebb and flow of the tide; which are below the watermark of ordinary high tide; all publicly-owned accretions above the watermark of ordinary high tide and all publicly-owned submerged water-bottoms below the watermark of ordinary high tide and includes the flora and fauna on the wetlands and in the wetlands.[317]

Additional State Conditions and Requirements:

- The Mississippi Commission on Environmental Quality is prohibited from enacting a rule, regulation, or standard relating to water quality or water discharge standards that exceeds the requirements of federal statutes, regulations, standards, criteria, and guidance relating to water quality or water discharge standards promulgated under the federal Administrative Procedure Act.[318]

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 4 in coordination with the state of Mississippi.
- State has no specific aboveground storage tank regulations; State relies on EPA Region 4 to implement SPCC requirements.
- State code authorizes cost recovery for spills; state does not have a spill trust fund.[319]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Mississippi to administer the NPDES permitting program. The state issues its permits through the Mississippi Department of Environmental Quality. Mississippi has an authorized NPDES permit program, pretreatment program, general permits program, and

[317] Miss. Code Ann. section 49-27-5(a).

[318] Miss. Code Ann. section 49-17-34(2).

[319] Miss. Code Ann. section 49-17-43.

is authorized to regulate federal facilities. Mississippi does not have an authorized biosolids program.[320]

- EPA issues all NPDES permits on tribal lands and to offshore oil and gas facilities operating in federal waters off the coast of Mississippi.[321]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Has state authority to issue permits for dredged and fill activities in coastal wetlands[322] and submerged lands.[323]
- Relies on federal permitting authority and CWA section 401.

MISSOURI

Definition of Waters of the State:

- All water within the jurisdiction of this state, including all rivers, streams, lakes and other bodies of surface and subsurface water lying within or forming a part of the boundaries of the state which are not entirely confined and located completely upon lands owned, leased or otherwise controlled by a single person or by two or more persons jointly or as tenants in common.[324]

Definition of Wetlands:

- Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. This definition is consistent with both the Corps wetlands definition at 33 CFR 328.3(b) and the U.S. EPA wetlands definition at 40 CFR 232.2(r).[325]

Additional State Conditions and Requirements:

- No limitations identified.

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[320] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[321] EPA, Mississippi NPDES Permits, available at https://www.epa.gov/npdes-permits/mississippi-npdes-permits.

[322] Miss. Code Ann. sections 49-27-1 *et seq*.

[323] Miss. Code Ann. sections 29-15-1 *et seq*.

[324] Mo. Rev. Stat. section 644.016(27).

[325] Mo. Code Regs. tit. 10, 20-7.031(1)(FF).

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 7 in coordination with the state of Missouri.
- State has adopted the Uniform Fire Code (NFPA 30 and 30A) for aboveground storage tanks. State code includes financial responsibility requirements for facilities with aboveground storage tanks, except for refineries, pipeline terminals, rail terminals or marine terminals.[326]
- State code authorizes cost recovery for spills; state does have a spill trust fund.[327]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Missouri to administer the NPDES permitting program. The state issues its permits through the Missouri Department of Natural Resources. Missouri has an authorized NPDES permit program, pretreatment program, general permits program, and is authorized to regulate federal facilities. Missouri does not have an authorized biosolids program.[328]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Does not issue state permits for dredged and fill activities in surface waters and wetlands.
- Relies on federal permitting authority and CWA section 401.

[326] Mo. Code Regs. tit. 26, 414.012 *et seq*.

[327] Mo. Rev. Stat. section 260.530, 260.535.

[328] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

MONTANA

Definition of Waters of the State:

- A body of water, irrigation system, or drainage system, either surface or underground. The term does not apply to: (i) ponds or lagoons used solely for treating, transporting, or impounding pollutants; or (ii) irrigation waters or land application disposal waters when the waters are used up within the irrigation or land application disposal system and the waters are not returned to state waters.[329]

Definition of Wetlands:

- Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.[330]

Additional State Conditions and Requirements:

- Montana has qualified stringency prohibitions that apply to rules implementing water quality and public water supply programs. The statutory language, identical for both programs, provides that the Board of Environmental Review may not adopt an implementing rule that is more stringent than the federal regulations or guidelines that address the same circumstances unless the Board makes a written finding— following a public hearing and comment, and based on record evidence—that the more-stringent state requirement: (1) protects public health or the environment of Montana; (2) can mitigate the harm to public health or the environment; and (3) is achievable under current technology.[331]

- The Board of Environmental Review may adopt rules implementing water quality law that are more stringent than corresponding draft or final federal regulations, guidelines, or criteria, only if it makes written findings, based on sound scientific or technical evidence in the record, stating that the stricter state requirements are necessary to protect the public health, beneficial use of water, or the environment of Montana.[332]

303 Water Quality Standards:

- Has EPA-approved WQS.

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[329] Mont. Code Ann. section 75-5-103.

[330] Mont. Admin. R. 17.30.502(12).

[331] Mont. Code Ann. section 75-5-203; 75-6-116.

[332] Mont. Code Ann. section 75-5-309.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 8 in coordination with the state of Montana.
- State has adopted the Uniform Fire Code (NFPA 30 and 30A) for aboveground storage tanks, which may be covered by the Petroleum Tank Release Cleanup Fund provided that they meet minimum design, construction, and installation standards (double-walled and have maximum storage capacities of less than 30,000 gallons).[333]
- State code authorizes cost recovery for spills; state does have a spill trust fund, accessible to facilities with aboveground storage tanks less than 30,000 gallons.[334]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Montana to administer the NPDES permitting program. The state issues its permits through the Montana Department of Environmental Quality. Montana has an authorized NPDES permit program, general permits program, and is authorized to regulate federal facilities. Montana does not have an authorized biosolids or pretreatment program.[335]
- EPA issues all NPDES permits on tribal lands.[336]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Has state authority to issue permits for dredged and fill activities in surface waters.[337]
- Relies on federal permitting authority and CWA section 401.

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[333] Mont. Admin. R. 17.58.326.

[334] Mont. Code Ann. sections 75-5-63, 75-5-635.

[335] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[336] EPA, Montana NPDES Permits (2017) available at https://www.epa.gov/npdes-permits/montana-npdes-permits.

[337] Mont. Code Ann. sections 75-7-101 *et seq*., 75-7-201 *et seq*.

NEBRASKA

Definition of Waters of the State:

- All waters within the jurisdiction of this state, including all streams, lakes, ponds, impounding reservoirs, marshes, wetlands, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, situated wholly or partly within or bordering upon the state.[338]

Definition of Wetlands:

- Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.[339]

Additional State Conditions and Requirements:

- No limitations identified.

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 7 in coordination with the state of Nebraska.
- State has adopted the Uniform Fire Code (NFPA 30 and 30A) for aboveground storage tanks. Installation and replacement of aboveground storage tanks require a permit from the State Fire Marshal.[340]
- State code authorizes cost recovery for spills; state has a spill trust fund for releases from aboveground storage tanks (Petroleum Release Remedial Action Reimbursement Fund).[341]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

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[338] Neb. Rev. Stat. section 81-1502(21).

[339] 117 Neb. Admin. Code, ch. 1, section 082.

[340] 153 Neb. Admin. Code, ch. 17.

[341] Neb. Rev. Stat. sections 81-1508; 126 Nebraska Admin. Code ch. 18.

402 NPDES Program:

- EPA has approved the state of Nebraska to administer the NPDES permitting program. The state issues its permits through the Nebraska Department of Environmental Quality. Nebraska has an authorized NPDES permit program, pretreatment program, general permits program, and is authorized to regulate federal facilities. Nebraska does not have an authorized biosolids program.[342]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Does not have state authority to issue permits for dredged and fill activities in surface waters and wetlands.
- Relies on federal permitting authority and CWA section 401.

NEVADA

Definition of Waters of the State:

- All waters situation wholly or partly within or bordering upon the state, including but not limited to: all streams, lakes, ponds, impounding reservoirs, marshes, water courses, waterways, wells, springs, irrigation systems, and drainage systems; and all bodies or accumulations of water, surface and underground, natural or artificial.[343]

Definition of Wetlands:

- Land having a water table at, near or above the land surface, or land that has been saturated with water for a period of time long enough to promote wetland or aquatic processes indicated by hydric soil, hydrophytic vegetation and other biological activity adapted to a wet environment.[344]

Additional State Conditions and Requirements:

- Nevada's Administrative Procedure Act provides that for purposes of a state agency's notice of intent to adopt a regulation, as well as in a statement to accompany an adopted regulation, the agency must summarize any state provisions that are more stringent than their federal counterparts. Additionally, when a small business impact statement is required, the agency must further explain why the more-stringent state provisions are necessary.[345]

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[342] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[343] Nev. Rev. Stat. section 445A.415.

[344] Nev. Admin. Code section 321.448.

[345] Nev. Rev. Stat. section 233B.0603(1)(a)(9); 233B.0609(6); 233B.066(1)(i).

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 9 in coordination with the state of Nevada.
- State has adopted the Uniform Fire Code (NFPA 30 and 30A) for aboveground storage tanks, administered by the State Fire Marshal. Specific state requirements cover aboveground storage tanks at marinas for tanks less than 12,000 gallons, including registration, fees, and technical requirements for secondary containment and overfill prevention.[346]
- State code authorizes cost recovery for spills and resource damages; state does not have a spill trust fund.[347]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Nevada to administer the NPDES permitting program. The state issues its permits through the Nevada Division of Environmental Protection. Nevada has an authorized NPDES permit program, pretreatment program, general permits program, and is authorized to regulate federal facilities. Nevada does not have an authorized biosolids program.[348]
- EPA issues all NPDES permits on tribal lands.[349]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Has state authority to issue permits for dredged and fill activities in submerged lands.[350]
- Relies on federal permitting authority and CWA section 401.

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[346] Nev. Admin. Code sections 459.9921, 477.323.

[347] Nev. Rev. Stat. section 445A.700, 445C.310.

[348] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[349] EPA, NPDES Wastewater & Stormwater Permits (2017), available at https://www3.epa.gov/region9/water/npdes/permits.html.

[350] Nev. Rev. Stat. sections 322.100 *et seq*.; NAC 322.060

NEW HAMPSHIRE

Definition of Waters of the State:

- Surface waters of the state are perennial and seasonal streams, lakes, ponds, and tidal waters within the jurisdiction of the state, including all streams, lakes, or ponds bordering on the state, marshes, water courses, and other bodies of water, natural or artificial.[351]

- Groundwaters shall mean all areas below the top of the water table, including aquifers, wells and other sources of groundwater.[352]

Definition of Wetlands:

- An area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal conditions does support, a prevalence of vegetation typically adapted for life in saturated soil conditions.[353]

Additional State Conditions and Requirements:

- No limitations identified.

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 1 in coordination with the state of New Hampshire.

- Aboveground storage tanks are regulated by the state Department of Environmental Services and the Fire Marshal's Office; state has adopted the Uniform Fire Code (NFPA 30 and 30A) for aboveground storage tanks. Rules apply to facilities with a single tank with a capacity greater than 660 gallons or facilities with two or more tanks capacity greater than 1,320 gallons. Requirements include registration, construction standards, release detection and prevention, secondary containment, and an SPCC Plan (certified by PE licensed in NH).[354]

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[351] N.H. Rev. Stat. section 485-A:2(XIV).

[352] *Id*. at V. Although groundwaters are not included in the same definition as surface waters for the purposes of what is a water of the state, New Hampshire treats both surface and groundwater as waters of the state in its Water Pollution and Waste Disposal Act. N.H. Rev. Stat. section 485-A:1.

[353] N.H. Rev. Stat. section 482-A:2.

[354] N.H. Code Admin. R. Env-Or 300.

- State code authorizes cost recovery for spills and resource damages; state has a spill trust fund.[355]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- New Hampshire is not authorized to run the NPDES program.[356]
- EPA issues all NPDES permits in New Hampshire.[357]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Has state authority to issue permits for dredged and fill activities in surface waters and wetlands,[358] including isolated waters.[359]

NEW JERSEY

Definition of Waters of the State:

- All surface waters and ground waters in the State.[360]

Definitions of Wetlands:

- Coastal wetland: any bank, marsh, swamp, meadow, flat or other low land subject to tidal action in the State of New Jersey along the Delaware bay and Delaware river, Raritan bay, Barnegat bay, Sandy Hook bay, Shrewsbury river including Navesink river, Shark river, and the coastal inland waterways extending southerly from Manasquan Inlet to Cape May Harbor, or at any inlet, estuary or tributary waterway or any thereof, including those areas now or formerly connected to tidal waters whose surface is at or below an elevation of 1 foot above local extreme high water,

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[355] N.H. Rev. Stat. chapter 146-A.

[356] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[357] EPA, New Hampshire NPDES Permits, available at https://www.epa.gov/npdes-permits/new-hampshire-npdes-permits.

[358] N.H. Rev. Stat. chapter 482-A.

[359] ELI, 2013. State Constraints: State-Imposed Limitations on the Authority of Agencies to Regulate Waters Beyond the Scope of the Federal Clean Water Act, available at https://www.eli.org/sites/default/files/eli-pubs/d23-04.pdf.

[360] N.J. Rev. Stat. section 58:1A-3.

and upon which may grow or is capable of growing some, but not necessarily all, of the listed plants.[361]

- Freshwater wetland: an area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation; provided, however, that the department, in designating a wetland, shall use the 3-parameter approach (i.e. hydrology, soils and vegetation) enumerated in the April 1, 1987 interim-final draft "Wetland Identification and Delineation Manual" developed by the United States Environmental Protection Agency, and any subsequent amendments thereto.[362]

Additional State Conditions and Requirements:

- By executive order issued in 1994, New Jersey agencies adopting a rule or regulation to implement or otherwise comply with federal programs must provide a statement as to whether the rule or regulation contains any standards or requirements which exceed the standards or requirements imposed by federal law. The agency must include a cost-benefit analysis supporting its determination to impose the standards and showing that the standards are achievable under current technology.[363]

- A related requirement in a 2010 executive order prohibits a state agency from proposing a rule that exceeds the requirements of federal law, except when required to do so by state law, or when doing so is necessary to achieve a New Jersey specific public policy goal. Agencies are further required to detail and justify every instance where a proposed rule exceeds the requirements of federal law or regulation.[364]

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 2 in coordination with the state of New Jersey.

[361] N.J. Rev. Stat. section 13:9A-2.

[362] N.J. Rev. Stat. section 13:9B-3.

[363] N.J. Exec. Order No. 27 (Gov. Whitman), Nov. 2, 1994.

[364] N.J. Exec. Order No. 2 (Gov. Christie), Jan. 20, 2010.

- State has established specific requirements for facilities with aboveground storage tanks, including requirements for secondary containment, overfill prevention, and tank integrity, similar to SPCC requirements.[365]

- State has also adopted the Uniform Fire Code (NFPA 30 and 30A) as well as the National Building and Mechanical Code (under BOCA) for aboveground storage tanks.[366]

- State code authorizes cost recovery for spills and resource damages; state has a spill trust fund (New Jersey Spill Compensation and Control Act).[367]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of New Jersey to administer the NPDES permitting program. The state issues its permits through the New Jersey Department of Environmental Protection. New Jersey has an authorized NPDES permit program, pretreatment program, general permits program, and is authorized to regulate federal facilities. New Jersey does not have an authorized biosolids program.[368]

404 Dredged and Fill Permitting:

- New Jersey has assumed the administration of the 404 program (has full state permitting authority).[369]

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[365] N.J. Admin. Code section 7:1E.

[366] *Id.*

[367] N.J. Rev. Stat. section 58:10-23.11.

[368] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[369] EPA, 2018. State or Tribal Assumption of the Section 404 Permit Program, available at https://www.epa.gov/cwa-404/state-or-tribal-assumption-section-404-permit-program. Mitigation is required for all wetland and water impacts permitted under an individual permit as well as for three general permits (hazardous waste cleanup and remediation, landfill closures, and redevelopment of brownfields). See ASWM, New Jersey State Wetland Program Summary, available at https://www.aswm.org/pdf_lib/state_summaries/new_jersey_state_wetland_program_summary_090415.pdf.

- Has state authority to issue permits for dredged and fill activities in coastal surface waters and wetlands,[370] and isolated waters.[371]

NEW MEXICO

Definition of Waters of the State:

- All water, including water situated wholly or partly within or bordering upon the state, whether surface or subsurface, public or private, except private waters that do not combine with other surface or subsurface water.[372]

Definition of Wetlands:

- Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions in New Mexico. Wetlands that are constructed outside of a surface water of the state for the purpose of providing wastewater treatment and that do not impound a surface water of the state are not included in this definition.[373]

Additional State Conditions and Requirements:

- No limitations identified.

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 6 in coordination with the state of New Mexico.

- State has adopted the Uniform Fire Code (NFPA 30 and 30A) for aboveground storage tanks, administered by the State Fire Marshal. State also has specific aboveground storage tanks regulations that apply to tanks that are 1,320 gallons or more, and less than 55,000 gallons. Requirements include registration, design, construction and installation standards, release detection, record-keeping and financial responsibility.[374]

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[370] N.J. Rev. Stat. sections 13:9A-1 *et seq*.

[371] ELI, 2013. State Constraints: State-Imposed Limitations on the Authority of Agencies to Regulate Waters Beyond the Scope of the Federal Clean Water Act, available at https://www.eli.org/sites/default/files/eli-pubs/d23-04.pdf.

[372] N.M. Stat. section 74-6-2.

[373] N.M. Code R. section 20.6.4.7.W(4).

[374] N.M. Code R. section 20.5.

- State code authorizes cost recovery for spills and resource damages; state has a spill trust fund.[375]

401 Certification:

- The state has authority to certify, conditionally certify, waive review or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- New Mexico is not authorized to run the NPDES program.[376]
- EPA issues all NPDES permits in New Mexico.[377]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Does not have state authority to issue permits for dredged and fill activities in surface waters and wetlands.
- Relies on federal permitting authority and CWA section 401.

NEW YORK

Definition of Waters of the State:

- Includes lakes, bays, sounds, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic Ocean within the territorial limits of the state of New York and all other bodies of surface or underground water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters which do not combine or effect a junction with natural surface or underground waters), which are wholly or partially within or bordering the state or within its jurisdiction.[378]

Definitions of Wetlands:

- Freshwater wetlands: lands and waters of the state as shown on the freshwater wetlands map which contain any or all of the following: (a) lands and submerged lands commonly called

[375] N.M. Stat. sections 74-4-7, 74-4-8, 74-4-10.

[376] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[377] EPA, New Mexico NPDES Permits, available at https://www.epa.gov/npdes-permits/new-mexico-npdes-permits.

[378] N.Y. Env. Law section 17-0105(2).

marshes, swamps, sloughs, bogs, and flats supporting aquatic or semi-aquatic vegetation;[379] (b) lands and submerged lands containing remnants of any vegetation that is not aquatic or semi-aquatic that has died because of wet conditions over a sufficiently long period, provided that such wet conditions do not exceed a maximum seasonal water depth of six feet and provided further that such conditions can be expected to persist indefinitely, barring human intervention; (c) lands and waters substantially enclosed by aquatic or semi-aquatic vegetation as set forth in paragraph (a) or by dead vegetation as set forth in paragraph (b) the regulation of which is necessary to protect and preserve the aquatic and semi-aquatic vegetation as set forth in paragraph (a) or by dead vegetation as set forth in paragraph (b) the regulation of which is necessary to protect and preserve the aquatic and semi-aquatic vegetation; and (d) the waters overlying the areas set forth in (a) and (b) and the lands underlying (c).[380]

- Tidal wetlands: shall mean and include the following: (a) those areas which border on or lie beneath tidal waters, such as, but not limited to, banks, bogs, salt marsh, swamps, meadows, flats or other low lands subject to tidal action, including those areas now or formerly connected to tidal waters; (b) all banks, bogs, meadows, flats and tidal marsh subject to such tides, and upon which grow or may grow some or any specific vegetation.[381]

Additional State Conditions and Requirements:

- No limitations identified.

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 2 in coordination with the state of New York.
- State has established specific requirements for facilities with aboveground storage tanks, with a combined storage capacity of more than 1,100 gallons. Technical requirements include tank registration (every five years), secondary containment, comprehensive inspections, and cathodic protection.[382]

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[379] Definition includes descriptions of eight types of vegetation (wetland trees; wetland shrubs; emergent vegetation; rooted, floating-leaved vegetation; free-floating vegetation; wet meadow vegetation; bog mat vegetation; and submergent vegetation).

[380] N.Y. Env. Law section 24-0107(1).

[381] N.Y. Env. Law section 25-0103(1). Definition includes descriptions of ten types of vegetation (salt hay, black grass, saltworts, sea lavender, tall cordgrass, hightide bush, cattails, groundsel, marsh mallow, and low marsh cordgrass).

[382] N.Y. Env. Law sections 17-1001 *et seq*.

- Additional requirements apply to oil storage facilities with capacities of 400,000 gallons or more, including fees, operating licenses, and implementation of a spill prevention plan.[383]

- State code authorizes cost recovery for spills and resource damages; state has a spill trust fund.[384]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of New York to administer the NPDES permitting program. The state issues its permits through the New York Department of Environmental Conservation. New York has an authorized NPDES permit program, general permits program, and is authorized to regulate federal facilities. New York does not have an authorized biosolids or pretreatment program.[385]

- EPA issues all NPDES permits on tribal lands and for some federal facilities.[386]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.

- Has state authority to issue permits for dredged and fill activities in surface waters and wetlands,[387] including isolated waters.[388]

NORTH CAROLINA

Definition of Waters of the State:

- Any stream, river, brook, swamp, lake, sound, tidal estuary, bay, creek, reservoir, waterway, or other body or accumulation of water, whether surface or underground, public or private, or

[383] N.Y. Nav. Law article 12.

[384] N.Y. Nav. Law sections 171, 189.

[385] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[386] EPA, New York NPDES Permits, available at https://www.epa.gov/npdes-permits/new-york-npdes-permits.

[387] N.Y. Env. Law sections 24-0101 *et seq*., 25-0101 *et seq*., 15-0501 *et seq*.

[388] ELI, 2013. State Constraints: State-Imposed Limitations on the Authority of Agencies to Regulate Waters Beyond the Scope of the Federal Clean Water Act, available at https://www.eli.org/sites/default/files/eli-pubs/d23-04.pdf.

natural or artificial, that is contained in, flows through, or borders upon any portion of this State, including any portion of the Atlantic Ocean over which the State has jurisdiction.[389]

Definition of Wetlands:

- Areas that are inundated or saturated by an accumulation of surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas. Wetlands classified as waters of the state are restricted to waters of the United States as defined by 33 CFR 328.3 and 40 CFR 230.3.[390]

Additional State Conditions and Requirements:

- Subject to certain exceptions, North Carolina agencies that implement and enforce environmental laws may not adopt a rule for protection of the environment or natural resources that imposes a more restrictive standard, limitation, or requirement than those imposed by federal law or rule, if a federal law or rule pertaining to the same subject matter has been adopted. The exceptions, which are narrow, include where adoption of a more restrictive rule would be required by a serious and unforeseen threat to the public health, safety, or welfare.[391]

- Wetlands classified as waters of the state are restricted to waters of the United States as defined by 33 CFR 328.3 and 40 CFR 230.3.[392]

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 4 in coordination with the state of North Carolina.

- State regulates aboveground storage tanks at oil terminal facilities only, having a capacity of 21,000 gallons or higher (excluding retail gasoline operations). Facilities are required to register with the state and provide a site plan and description of procedures for the prevention of oil spills.[393]

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[389] N.C. Gen. Stat. 143-212(6).

[390] 15A N.C. Admin. Code 02B.0202.

[391] N.C. Gen. Stat. section 150B-19.3.

[392] 15A N.C. Admin. Code 02B.0202.

[393] N.C. Gen. Stat. sections 143-215.95 *et seq*.

- Aboveground storage tanks are also covered by the NC Carolina Fire Code (following NFPA Standard 30 and 30A), administered by the State Fire Marshal.[394]
- State code authorizes cost recovery for spills and resource damages; state has a spill trust fund.[395]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of North Carolina to administer the NPDES permitting program. The state issues its permits through the North Carolina Department of Environmental Quality. North Carolina has an authorized NPDES permit program, pretreatment program, general permits program, and is authorized to regulate federal facilities. North Carolina does not have an authorized biosolids program.[396]
- EPA issues all NPDES permits on tribal lands.[397]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Has state authority to issue permits for dredged and fill activities in coastal surface waters and wetlands,[398] submerged lands,[399] and isolated waters.[400]

NORTH DAKOTA

Definition of Waters of the State:

- All waters within the limits of the state from the following sources of water supply: waters on the surface of the earth excluding diffused surface waters but including surface waters whether

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[394] NC DEQ, Underground Storage Tank Section, available at http://portal.ncdenr.org/web/wm/ust/otfmain.

[395] N.C. Gen. Stat. sections 143-215.87, 143-215.88, 143-215.88A, 143-215.90, 143-215.93.

[396] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[397] EPA, North Carolina NPDES Permits, available at https://www.epa.gov/npdes-permits/north-carolina-npdes-permits.

[398] N.C. Gen. Stat. sections 113A-100 *et seq*.

[399] N.C. Gen. Stat. section 113-229.

[400] 15A N.C. Admin. Code 2H.1301 *et seq*.

flowing in well-defined channels or flowing through lakes, ponds, or marshes which constitute integral parts of a stream system, or waters in lakes; waters under the surface of the earth whether such waters flow in defined subterranean channels or are diffused percolating underground water; all residual waters resulting from beneficial use, and all waters artificially drained; and all waters, excluding privately owned waters, in areas determined by the state engineer to be noncontributing drainage areas. A noncontributing drainage area is any area that does not contribute natural flowing surface water to a natural stream or watercourse at an average frequency more often than once in three years over the latest 30-year period.[401]

Definition of Wetlands:

- A natural depressional area that is capable of holding shallow, temporary, intermittent, or permanent water. It does not include sheetwater.[402]

Additional State Conditions and Requirements:

- The state department of health may only adopt rules more stringent than federal regulations if, after a public hearing, a written finding is made that federal regulations are not adequate to protect public health and the environment of the state; this law applies to rules adopted pursuant to a number of federal laws including the CWA.[403]

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 8 in coordination with the state of North Dakota.

- State has adopted the Uniform Fire Code (NFPA 30 and 30A) for aboveground storage tanks, administered by the State Fire Marshal. All owners or operators of aboveground petroleum storage tanks are required to register tanks with the state and pay an annual registration fee for each tank.[404]

[401] N.D. Cent. Code section 61-01-01.

[402] N.D. Cent. Code section 61-31-02 (7).

[403] N.D. Cent. Code section 23-01-04.1.

[404] See North Dakota Attorney General, Above Ground Storage of Liquid Fuels, available at https://attorneygeneral.nd.gov/public-safety/above-ground-storage-liquid-fuels.

- State code authorizes cost recovery for spills; state has a spill trust fund (Petroleum Tank Release Compensation Fund; covers registered tanks).[405]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of North Dakota to administer the NPDES permitting program. The state issues its permits through the North Dakota Department of Health. North Dakota has an authorized NPDES permit program, pretreatment program, general permits program, and is authorized to regulate federal facilities. North Dakota does not have an authorized biosolids program.[406]

- EPA issues all NPDES permits on tribal lands.[407]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.

- Has state authority to issue permits for dredged and fill activities in submerged lands.[408]

- Relies on federal permitting authority and CWA section 401.

OHIO

Definition of Waters of the State:

- All streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and other bodies or accumulations of water, surface and underground, natural or artificial, regardless of the depth of the strata in which underground water is located, that are situated wholly or partly within or border upon this state or are within its jurisdiction.[409]

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[405] N.D. Cent. Code, sections 23-20.3-05.1, 23-20.3-09, 23-31-01, 23-37-12.

[406] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[407] EPA, North Dakota NPDES Permits (2017) available at https://www.epa.gov/npdes-permits/north-dakota-npdes-permits.

[408] N.D. Cent. Code chapter 61-03, 61-33; N.D. Admin. Code article 89-10-01-34.

[409] Ohio Rev. Code section 1501.30(A)(6).

Definition of Wetlands:

- Those areas that are inundated or saturated by surface or ground water at a frequency and duration that are sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands includes swamps, marshes, bogs, and similar areas that are delineated in accordance with the 1987 United States army corps of engineers wetland delineation manual and any other procedures and requirements adopted by the United States army corps of engineers for delineating wetlands.[410]

Additional State Conditions and Requirements:

- Prior to adopting any rule relating to environmental protection, state agencies must take steps involving a cost-benefits analysis and technological feasibility of the rule; the agency must submit information to the joint committee on agency rule review.[411]

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 5 in coordination with the state of Ohio.
- State has adopted the Uniform Fire Code (NFPA 30 and 30A) for aboveground storage tanks (as Ohio Fire Code) administered by the State Fire Marshal. Permits are required to install, remove, repair or modify tanks.[412]
- State code authorizes cost recovery for spills; state has a spill trust fund for use by the state to investigate and respond to spills.[413]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Ohio to administer the NPDES permitting program. The state issues its permits through the Ohio Environmental Protection Agency. Ohio has an authorized

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[410] Ohio Rev. Code section 6111.02(P).

[411] Ohio Rev. Code section 121.39.

[412] Ohio Admin. Code 1301:7-7-01 *et seq*.

[413] Ohio Rev. Code sections 3745.12-13.

NPDES permit program, pretreatment program, general permits program, biosolids program, and is authorized to regulate federal facilities.[414]

- EPA issues all NPDES permits on tribal lands.[415]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.[416]
- Has state authority to issue permits for dredged and fill activities in coastal surface waters and wetlands,[417] submerged lands,[418] and isolated wetlands.[419]
- Relies on federal permitting authority and CWA section 401.

OKLAHOMA

Definition of Waters of the State:

- All streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, irrigation systems, drainage systems, storm sewers, and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private, which are contained within, flow through, or border upon this state or any portion thereof, and includes under all circumstances the waters of the United States which are contained within the boundaries of, flow through or border upon the state.[420]

Definition of Wetlands:

- Those lands subject to periodic or seasonal flooding by water as defined under Section 404 of the Clean Water Act and so designated by the State or Federal agency charged with making such determination.[421]

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[414] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[415] EPA, Ohio NPDES Permits, available at https://www.epa.gov/npdes-permits/ohio-npdes-permits.

[416] Ohio has considered assumption in 2012-2013. A 2012 attempt to amend the state statute (Ohio Revised Code) as part of an omnibus bill was never adopted by the legislature. Another attempt in 2013 to add it to the budget bill was removed by amendment prior to passing of the bill.

[417] Ohio Rev. Code section 1506.

[418] *Id.*

[419] Ohio Rev. Code sections 6111.021 *et seq.*

[420] Oklahoma Stat. tit. 27A, section 1-1-201 (20).

[421] Okla. Admin. Code 460:30-1-3.

Additional State Conditions and Requirements:

- Each state environmental agency, prior to adopting rules that are more stringent than federal requirements, must prepare a statement outlining economic impacts and environmental benefits of the rules; the statement must be submitted to the governor and legislature.[422]

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 6 in coordination with the state of Oklahoma.
- State has adopted the Uniform Fire Code (NFPA 30 and 30A) for aboveground storage tanks, administered by the State Fire Marshal.[423]
- Facilities with aboveground petroleum storage tanks (110 gallons or greater at retail, public airports, marinas, and emergency generators or 2100 gallons or greater at fleet and commercial facilities) must register tanks with Oklahoma Corporation Commission, pay fees, and meet technical requirements related to secondary containment, overfill protection, design, security, inspection and release reporting.[424]
- State code authorizes cost recovery for spills; state has a spill trust fund.[425]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Oklahoma to administer the NPDES permitting program. The state issues its permits through the Oklahoma Dept. of Environmental Quality. Oklahoma has an authorized NPDES permit program, pretreatment program, general permits program, biosolids program, and is authorized to regulate federal facilities.[426]

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[422] Oklahoma Stat. tit. 27A, section 1-1-206.

[423] Okla. Admin. Code 165:26-1 *et seq*.

[424] *Id*.

[425] Oklahoma Stat. tit. 27A, section 2-7-129; Okla. Admin. Code 252:205-13-1, 252:205-23-2.

[426] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

- Oklahoma does not have the authority to issue NPDES permits for oil and gas exploration and production related industries and pipeline operations. EPA is the permitting authority for these activities.[427]
- EPA issues permits on all tribal lands.[428]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Does not have state authority to issue permits for dredged and fill activities in surface waters and wetlands.
- Relies on federal permitting authority and CWA section 401.

OREGON

Definition of Waters of the State:

- Lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the state, and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters which do not combine or effect a junction with natural surface or underground waters), which are wholly or partially within or bordering the state or within its jurisdiction.[429]

Definition of Wetlands:

- Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.[430]

Additional State Conditions and Requirements:

- The Oregon Environmental Quality Commission and the Department of Environmental Quality are prohibited from promulgating or enforcing effluent limitations upon nonpoint source

[427] 61 Fed. Reg. 65047-65053 (Dec. 10, 1996), available at https://www.govinfo.gov/content/pkg/FR-1996-12-10/html/96-31274.htm

[428] EPA, Oklahoma NPDES Permits, available at https://www.epa.gov/npdes-permits/oklahoma-npdes-permits.

[429] Or. Rev. Stat. section 468B.005.

[430] Or. Admin. R. 340-055-0010.

discharges of pollutants resulting from forest operations on forestlands, unless required to do so by the federal CWA.[431]

- Oregon's Administrative Procedure Act sets forth the state policy that agencies are to adopt rules that correspond with equivalent federal laws and rules, unless: (1) there is specific statutory direction to the agency that authorizes adoption of the rule; (2) a federal waiver authorizes the adoption of the rule; (3) local or special conditions in the state warrant a different rule; (4) the state rule clarifies federal rules, standards, procedures, or requirements; (5) the state rule achieves the goals of the federal and state law with the least impact on public and private resources; or (6) there is no corresponding federal regulation.[432]

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 10 in coordination with the state of Oregon.
- State has adopted the Uniform Fire Code (NFPA 30 and 30A) for aboveground storage tanks, administered by the State Fire Marshal and local fire departments (OR Fire Code). OR Department of Environmental Quality enforces requirements for facilities with aboveground storage tanks with capacities of 10,000 gal or greater where petroleum oil is received from pipelines or vessels.[433]
- State also has worst case spill contingency plan requirements for oil storage facilities.
- State code authorizes cost recovery for spills and resource damages; state has a spill trust fund (Oil Spillage Control Fund) for use by the state for activities, such as reviewing contingency plans and carrying out cleanup activities.[434]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

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[431] Or. Rev. Stat. section 468B.110(2).

[432] Or. Rev. Stat. section 183.332.

[433] Or. Admin. R. 837-040-0010 *et seq*.

[434] Or. Rev. Stat. sections 468B.45, 468B.310, 468B.320, 468B.455.

402 NPDES Program:

- EPA has approved the state of Oregon to administer the NPDES permitting program. The state issues its permits through the Oregon Department of Environmental Quality. Oregon has an authorized NPDES permit program, pretreatment program, general permits program, and is authorized to regulate federal facilities. Oregon does not have an authorized biosolids program.[435]
- EPA issues permits on all tribal lands and in federal waters off the coast.[436]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Has state authority to issue permits for dredged and fill activities in surface waters and wetlands,[437] including isolated waters.[438]

PENNSYLVANIA

Definition of Waters of the Commonwealth:

- Includes any and all rivers, streams, creeks, rivulets, impoundments, ditches, water courses, storm sewers, lakes, dammed water, ponds, springs and all other bodies or channels of conveyance of surface or underground water, or parts thereof, whether natural or artificial, within or on the boundaries of this Commonwealth.[439]

Definition of Wetlands:

- Areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs and similar areas.[440]

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[435] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[436] EPA, Oregon NPDES Permits, available at https://www.epa.gov/npdes-permits/oregon-npdes-permits.

[437] Or. Rev. Stat. sections 196.800 *et seq*.; Or. Admin. R. 660-015-0010.

[438] ELI, 2013. State Constraints: State-Imposed Limitations on the Authority of Agencies to Regulate Waters Beyond the Scope of the Federal Clean Water Act, available at https://www.eli.org/sites/default/files/eli-pubs/d23-04.pdf.

[439] 35 Pa. Cons. Stat. section 691.1.

[440] *Id*.

Additional Commonwealth Conditions and Requirements:

- Commonwealth agencies may not exceed federal standards unless justified by a compelling and articulable interest or required by Commonwealth law.[441]

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 3 in coordination with the Commonwealth of Pennsylvania.

- Commonwealth has specific requirements for aboveground storage tank with capacities greater than 250 gallons, including registration, permitting, inspections (for tanks >5,000 gallons) and release reporting. Spill prevention response plans are required for facilities with capacities greater than 21,000 gallons. Specific technical requirements for containment, overfill prevention, corrosion protection, leak detection, and inspection/testing. Tanks located at oil production facilities and a food-related facilities are exempted.[442]

- Commonwealth code authorizes cost recovery for taking corrective action in response to spills; Commonwealth has a spill trust fund (Storage Tank Fund) for use by the Commonwealth to operate the underground and aboveground storage tank programs and carrying out spill cleanup activities.[443]

401 Certification:

- The Commonwealth has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the Commonwealth of Pennsylvania to administer the NPDES permitting program. The state issues its permits through the Pennsylvania Department of Environmental Protection. Pennsylvania has an authorized NPDES permit program, general permits program, and is authorized to regulate federal facilities. Pennsylvania does not have an authorized biosolids or pretreatment program.[444]

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[441] Pa. Exec. Order No. 1996-1 (Feb. 6, 1996); 4 Pa. Code section 1.371(5).

[442] P.L. 169, No. 32.

[443] 35 Pa. Cons. Stat. sections 691.8, 691.602.

[444] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

404 Dredged and Fill Permitting:

- Has not assumed the Section 404 program.[445]
- Has Commonwealth authority to issue permits for dredged and fill activities in surface waters and wetlands,[446] including isolated waters.[447]

PUERTO RICO

Definition of Waters of the Territory:

- All coastal waters, surface waters, estuarine waters, ground waters and wetlands as defined in this Regulation.[448]

Definition of Wetlands:

- A natural area saturated by surface or ground water, at an interval or duration sufficient to sustain, and under normal circumstances, does sustain or would sustain vegetation typically adapted to saturated, flooded, or marshy soil conditions, which includes areas such as swamps, marshes, coastal plains (salt flats and mud flats), open bodies of water, salt marshes or similar areas.[449]

Additional Territory Conditions and Requirements:

- No limitations identified.

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- Territory does not have an aboveground storage tank regulatory program and relies on EPA to directly implement federal spill prevention and preparedness regulations.

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[445] Implements a State Programmatic General Permit pursuant to CWA 404(e) for specifically identified activities under Section 404 of the CWA or section 10 of the Rivers and Harbors Act of 1899. The currently operative permit is PASPGP-5 (issued July 2016). 46 Pa. B. 3879; http://www.nap.usace.army.mil/Portals/39/docs/regulatory/spgp/PASPGP-5.pdf?ver=2018-01-12-111748-487.

[446] 32 Pa. Cons. Stat. sections 693.1 *et seq*.

[447] ELI, 2013. State Constraints: State-Imposed Limitations on the Authority of Agencies to Regulate Waters Beyond the Scope of the Federal Clean Water Act, available at https://www.eli.org/sites/default/files/eli-pubs/d23-04.pdf.

[448] Puerto Rico Rule 1301.1.

[449] 12 L.P.R.A. section 5005.

401 Certification:

- The territory has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA issues all NPDES permits within Puerto Rico.[450]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Relies on federal permitting authority and CWA section 401.

RHODE ISLAND

Definition of Waters of the State:

- All surface waters including all waters of the territorial sea; tidewaters; all inland waters of any river, stream, brook, pond, or lake; and wetlands, as well as all groundwaters.[451]

Definitions of Wetlands:

- Freshwater wetlands: Includes, but is not limited to, those areas that are inundated or saturated by surface or groundwater at a frequency and duration to support, and that under normal circumstances do support a prevalence of vegetation adapted for life in saturated soil conditions. Freshwater wetlands includes, but is not limited to: marshes, swamps, bogs, emergent, and submergent plant communities, and for the purposes of this chapter, rivers, streams, ponds, and vernal pools.[452]
- Coastal wetland: Any salt marsh bordering on the tidal waters of this state, whether or not the tidal waters reach the littoral areas through natural or artificial watercourses, and those uplands directly associated and contiguous thereto which are necessary to preserve the integrity of that marsh. Marshes shall include those areas upon which grow one or more of certain species.[453]

Additional State Conditions and Requirements:

- No limitations identified.

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[450] EPA, Puerto Rico NPDES Permits, available at https://www.epa.gov/npdes-permits/puerto-rico-npdes-permits.

[451] R.I. Gen. Laws section 46-12-1.

[452] R.I. Gen. Laws section 2-1-20.

[453] R.I. Gen. Laws section 46-23-6. Definition includes descriptions of seventeen types of vegetation (smooth cordgrass, salt meadow grass, spike grass, black rush, saltworts, sea lavender, saltmarsh bulrushes, hightide bush, tall reed, tall cordgrass, broadleaf cattail, narrowleaf cattail, spike rush, chairmaker's rush, creeping bentgrass, sweet grass, and wild rye).

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 1 in coordination with the state of Rhode Island.
- State has adopted the Uniform Fire Code (NFPA 30 and 30A) for aboveground storage tanks, administered by the State Fire Marshal.
- State also has specific requirements for aboveground storage tanks with a combined storage capacity over 500 gallons, including overfill protection, secondary containment, cathodic protection for tank bottoms, and inspections (routine and for tanks of 10,000 gallons or more, detailed inspections required within 10 years of the tank installation). Spill Prevention and Emergency Plans are required; facilities can use federal SPCC plans to comply.[454]
- State code authorizes cost recovery for spills and resource damages; state has a spill trust fund.[455]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Rhode Island to administer the NPDES permitting program. The state issues its permits through the Rhode Island Department of Environmental Protection. Rhode Island has an authorized NPDES permit program, pretreatment program, general permits program, and is authorized to regulate federal facilities. Rhode Island does not have an authorized biosolids program.[456]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.

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[454] 250 R.I. Code R. 140-25-2.

[455] R.I. Gen. Laws sections 46-12.5.1-6, 46-12.5.1-7, 46-12.7-2.1.

[456] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

- Has state authority to issue permits for dredged and fill activities in surface waters and wetlands,[457] including isolated waters.[458]

SOUTH CAROLINA

Definition of Waters of the State:

- Lakes, bays, sounds, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic Ocean within the territorial limits of the State and all other bodies of surface or underground water, natural or artificial, public or private, inland or coastal, fresh or salt, which are wholly or partially within or bordering the State or within its jurisdiction.[459]

Definition of Wetlands:

- Coastal wetlands: include marshes, mudflats, and shallows and means those areas periodically inundated by saline waters whether or not the saline waters reach the area naturally or through artificial water courses and those areas that are normally characterized by the prevalence of saline water vegetation capable of growth and reproduction. Provided, however, nothing in this definition shall apply to wetland areas that are not an integral part of an estuarine system. Further, until such time as the exact geographic extent of this definition can be scientifically determined, the department shall have the authority to designate its approximate geographic extent.[460]

Additional State Conditions and Requirements:

- No limitations identified.

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 4 in coordination with the state of South Carolina.

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[457] R.I. Gen. Laws sections 2-1-18 *et seq*., 46-23-1 *et seq*.

[458] ELI, 2013. State Constraints: State-Imposed Limitations on the Authority of Agencies to Regulate Waters Beyond the Scope of the Federal Clean Water Act, available at https://www.eli.org/sites/default/files/eli-pubs/d23-04.pdf.

[459] S.C. Code Ann. section 48-1-10(2).

[460] S.C. Code Ann. section 48-39-10(G).

- State has adopted the Uniform Fire Code (NFPA 30 and 30A) for aboveground storage tanks, administered by the State Fire Marshal. Owners must register tanks with the State Fire Marshal's Office for review.[461]

- State code authorizes cost recovery for spills; state does not have a spill trust fund.[462]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of South Carolina to administer the NPDES permitting program. The state issues its permits through the South Carolina Department of Health and Environmental Control. South Carolina has an authorized NPDES permit program, pretreatment program, general permits program, and is authorized to regulate federal facilities. South Carolina does not have an authorized biosolids program.[463]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.

- Has state authority to issue permits for dredged and fill activities in coastal surface waters and wetlands[464] and submerged lands.[465]

- Relies on federal permitting authority and CWA section 401.

SOUTH DAKOTA

Definitions of Waters of the State:

- All waters within the jurisdiction of this state, including all streams, lakes, ponds, impounding reservoirs, marshes, watercourses, waterways, wells, springs, irrigation systems, drainage

[461] S.C. Code Ann. section 39-41-260.

[462] S.C. Code Ann. sections 48-43-560, 48-43-610.

[463] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[464] S.C. Code Ann. sections 8-39-10 *et seq.*

[465] S.C. Code Ann. section 49-1-10; S.C. Code Regs. 19-450.

systems, and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private, situated wholly or partly within or bordering upon the state.[466]

Definition of Wetlands:

- Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions including swamps, marshes, bogs, and similar areas.[467]

Additional State Conditions and Requirements:

- No rule that has been promulgated pursuant to South Dakota's laws regarding environmental protection, mining, oil, gas, and/or water may be more stringent than any corresponding federal law, rule, or regulation.[468]

- Another South Dakota stringency provision governs the rules pertaining to applications for a federal license or permit necessary to conduct an activity which may result in a discharge into waters of the state. It prohibits the Water Management Board from establishing rules for certification that exceed minimum federal requirements.[469]

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 8 in coordination with the state of South Dakota.

- State has adopted the Uniform Fire Code (NFPA 30 and 30A) for aboveground storage tanks, administered by the State Fire Marshal.[470]

- State also has differentiated requirements for aboveground storage tanks for facilities with total capacities of 250,000 gallons or less and facilities with more 250,000 gallons, including secondary containment, overfill protection, cathodic protection, and internal inspections.[471]

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[466] S.D. Codified Laws section 34A-2-2(12).

[467] S.D. Admin. R. 74:51:01:01(53).

[468] S.D. Codified Laws section 1-40-4.1.

[469] S.D. Codified Laws 34A-2-34.

[470] S.D. Codified Laws section 34A-2-100.

[471] *Id.*

- State code authorizes cost recovery for spills; state has a spill trust fund (Petroleum Release Compensation Fund).[472]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of South Dakota to administer the NPDES permitting program. The state issues its permits through the South Dakota Department of Environment and Natural Resources. South Dakota has an authorized NPDES permit program, pretreatment program, general permits program, biosolids program, and is authorized to regulate federal facilities.[473]
- EPA issues all NPDES permits on tribal lands.[474]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Has state authority to issue permits for dredged and fill activities in submerged lands.[475]
- Relies on federal permitting authority and CWA section 401.

TENNESSEE

Definition of Waters of the State:

- Any and all water, public or private, on or beneath the surface of the ground, that are contained within, flow through, or border upon Tennessee or any portion thereof, except those bodies of water confined to and retained within the limits of private property in single ownership that do not combine or effect a junction with natural surface or underground waters.[476]

Definition of Wetlands:

- Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of

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[472] S.D. Codified Laws sections 34A-12-3, 34A-12-12, 34A-2-53.

[473] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[474] EPA, South Dakota NPDES Permits, available at https://www.epa.gov/npdes-permits/south-dakota-npdes-permits.

[475] S.D. Codified Laws section 41-2-18; S.D. Admin. R. 41:04:03:01 *et seq*.

[476] Tenn. Code Ann. section 69-3-103.

vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.[477]

Additional State Conditions and Requirements:

- The government operations committee reviewing an environmental protection or water pollution control rule must recommend to the general assembly termination of any rule that imposes on municipalities or counties environmental requirements or restrictions that are more stringent than federal statutes or rules on the same subject and that result in increased expenditure requirements on municipalities or counties beyond those required to meet the federal requirements – provided that, during the public comment period, the agency was made aware of the issue, and the increased expenditure level was specified. The provision does not apply if the general assembly has appropriated funds to cover the increased expenditures.[478]

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 4 in coordination with the state of Tennessee.
- State has adopted the 2003 edition of the Uniform Fire Code (NFPA 30 and 30A) for aboveground storage tanks, administered by the State Fire Marshal.[479]
- State code authorizes cost recovery for spills; state does not have a spill trust fund related to aboveground storage tanks (one exists for underground storage tanks).[480]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Tennessee to administer the NPDES permitting program. The state issues its permits through the Tennessee Department of Environment and Conservation. Tennessee has an authorized NPDES permit program, pretreatment program, general permits

[477] Tenn. Comp. R. & Regs. 0400-40-07-.03.

[478] Tenn. Code Ann. section 4-5-226(k).

[479] Tenn. Code Ann. sections 50-3-101 *et seq.*

[480] Tenn. Code Ann. sections 68-212-114, 68-216-103.

program, and is authorized to regulate federal facilities. Tennessee does not have an authorized biosolids program.[481]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Has state authority to issue permits for dredged and fill activities in surface waters and wetlands,[482] including isolated waters.[483]

TEXAS

Definition of Waters of the State:

- Groundwater, percolating or otherwise, lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, wetlands, marshes, inlets, canals, the Gulf of Mexico, inside the territorial limits of the state, and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, navigable or non-navigable, and including the beds and banks of all watercourses and bodies of surface water, that are wholly or partially inside or bordering the state or inside the jurisdiction of the state.[484]

Definition of Wetlands:

- An area (including a swamp, marsh, bog, prairie pothole, or similar area) having a predominance of hydric soils that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and that under normal circumstances supports the growth and regeneration of hydrophytic vegetation. The term "hydric soil" means soil that, in its undrained condition, is saturated, flooded, or ponded long enough during a growing season to develop an anaerobic condition that supports the growth and regeneration of hydrophytic vegetation. The term "hydrophytic vegetation" means a plant growing in: water or a substrate that is at least periodically deficient in oxygen during a growing season as a result of excessive water content. The term "wetland" does not include irrigated acreage used as farmland; a man-made wetland of less than one acre; or a man-made wetland where construction or creation commenced on or after August 28, 1989, and that was not constructed with wetland creation as a stated objective, including but not limited to an impoundment made for the purpose of soil and water conservation

[481] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[482] Tenn. Code Ann. section 69-3-108; Tenn. Comp. R. & Regs. 0400-4-7.

[483] ELI, 2013. State Constraints: State-Imposed Limitations on the Authority of Agencies to Regulate Waters Beyond the Scope of the Federal Clean Water Act, available at https://www.eli.org/sites/default/files/eli-pubs/d23-04.pdf.

[484] Tex. Water Code section 26.001(5).

that has been approved or requested by soil and water conservation districts. If this definition of wetland conflicts with the federal definition in any manner, the federal definition prevails.[485]

Additional State Conditions and Requirements:

- The Texas Commission on Environmental Quality is prohibited from entering into a memorandum of agreement or any other form of contract with or among state or federal agencies that would impose requirements on the state with respect to administering the water pollution control permitting program under the CWA that are "other than" or more stringent than those "specifically set forth" in CWA section 402(b). This narrow provision does not, on its face, prohibit Texas Commission on Environmental Quality from enacting regulatory requirements that are more stringent than federal law; rather, it prohibits Texas Commission on Environmental Quality from imposing stricter requirements by way of inter-agency agreements.[486]

303 Water Quality Standards:

- Has EPA-approved WQS.[487]

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 6 in coordination with the state of Texas.
- State has adopted the Uniform Fire Code (NFPA 30 and 30A) for aboveground storage tanks, administered by the State Fire Marshal.[488]
- State also has specific requirements for aboveground storage tanks, including registration, fees, installation notification, reporting, recordkeeping, release reporting and corrective action; tanks located at petrochemical plants, petroleum refineries, electric generating facilities, or bulk facilities are exempted.[489]
- State code authorizes cost recovery for spills and related damages. State no longer has a spill trust fund; the Petroleum Storage Tank Remediation (PSTR) fund ended in 2012.[490]

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[485] 30 Tex. Admin. Code section 307.3(a)(84).

[486] Tex. Water Code section 26.017(5).

[487] 30 Tex. Admin. Code chapter 307.

[488] 30 Tex. Admin. Code chapter 334.

[489] *Id.*

[490] Tex. Nat. Res. Code sections 40.202, 40.251.

401 Certification:

- The state has authority to certify, conditionally certify, waive review or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Texas to administer the NPDES permitting program. The state issues its permits through the Texas Commission on Environmental Quality. Texas has an authorized NPDES permit program, pretreatment program, general permits program, biosolids program, and is authorized to regulate federal facilities.[491]

- Texas is not authorized to issue permits for activities associated with the exploration, development, or production of oil or gas or geothermal resources, including transportation of crude oil or natural gas by pipeline. EPA is the permitting authority for those facilities.[492]

- EPA issues all NPDES permits on tribal lands.[493]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.

- Does not have state authority to issue permits for dredged and fill activities in surface waters and wetlands.

- Relies on federal permitting authority and CWA section 401.

U.S. VIRGIN ISLANDS

Definition of Waters of the Territory:

- All waters within the jurisdiction of the United States Virgin Islands including all harbors, streams, lakes, ponds, impounding reservoirs, marshes, water-courses, water-ways, wells, springs, irrigation systems, drainage systems and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private, situated wholly or partly within or bordering upon the United States Virgin Islands, including the territorial seas, contiguous zones, and oceans.[494]

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[491] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[492] *Id.*

[493] EPA, Texas NPDES Permits, available at https://www.epa.gov/npdes-permits/texas-npdes-permits.

[494] 12 V.I.C. section 182(f).

Definition of Wetlands:

- Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include salt ponds, marshes, swamps, and similar areas.[495]

Additional Territory Conditions and Requirements:

- No limitations identified.

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- Territory does not have an aboveground storage tank regulatory program and relies on EPA to directly implement federal spill prevention and preparedness regulations.

401 Certification:

- The territory has authority to certify, conditionally certify, waive review or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the territory of the Virgin Islands to administer the NPDES permitting program. The territory issues its permits through the Virgin Islands Department of Conservation and Cultural Affairs. The Virgin Islands has an authorized NPDES permit program, general permits program, and is authorized to regulate federal facilities. The Virgin Islands do not have an authorized biosolids or pretreatment program.[496]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Has territory authority to issue permits for dredged and fill activities in coastal surface waters and wetlands.[497]
- Relies on federal permitting authority and CWA section 401.

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[495] Virgin Islands Rules and Regulations Title 12, Chapter 7, Subchapter 186, available at https://www.epa.gov/sites/production/files/2014-12/documents/viwqs.pdf.

[496] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[497] 12 V.I.C. sections 901 *et seq.*

UTAH

Definition of Waters of the State:

- All streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private, which are contained within, flow through, or border upon this state or any portion of the state; does not include bodies of water confined to and retained within the limits of private property, and which do not develop into or constitute a nuisance, a public health hazard, or a menace to fish or wildlife.[498]

Definition of Wetlands:

- Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstance do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.[499]

Additional State Conditions and Requirements:

- The Utah Water Quality Board is prohibited from enacting a rule to administer any program under the federal CWA that is more stringent than the corresponding federal rule, except where specific conditions are satisfied. To enact a more stringent state rule, the Board must: (1) take public comment and hold a hearing; (2) make a written finding based on record evidence that the federal regulations are inadequate to protect public health and the environment in Utah; and (3) issue an accompanying opinion that cites and evaluates the public health and environmental information and studies in the record that form the basis for the Board's conclusion.[500]

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 8 in coordination with the state of Utah.
- State has adopted the Uniform Fire Code (NFPA 30 and 30A) as Utah State Fire Code for aboveground storage tanks, administered by the State Fire Marshal for state-owned tanks and by local fire departments for all other tanks.[501]

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[498] Utah Code section 19-5-102.

[499] Utah Admin. Code r. 317-8-1.5(60)

[500] Utah Code section 19-5-105.

[501] Utah Code section 53-7-106.

- State does not have an authorized cost recovery mechanism for spills; state does not have a spill trust fund for aboveground storage tanks (applies to underground storage tanks only).[502]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Utah to administer the NPDES permitting program. The state issues its permits through the Utah Department of Environmental Quality. Utah has an authorized NPDES permit program, pretreatment program, general permits program, biosolids program, and is authorized to regulate federal facilities.[503]

- EPA issues permits on tribal lands.[504]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.

- Has state authority to issue permits for dredged and fill activities in surface waters.[505]

- Relies on federal permitting authority and CWA section 401.

VERMONT

Definitions of Waters of the State:

- Defined under the Wetlands Protection and Water Resources Management Act: Any and all rivers, streams, brooks, creeks, lakes, ponds or stored water, and groundwaters, excluding municipal and farm water supplies.[506]

- Defined under the Water Pollution Control Act: All rivers, streams, creeks, brooks, reservoirs, ponds, lakes, springs and all bodies of surface waters, artificial or natural, which are contained within, flow through or border upon the state or any portion of it.[507]

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[502] Utah Code section 19-5-115

[503] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[504] EPA, Utah NPDES Permits (2017) available at https://www.epa.gov/npdes-permits/utah-npdes-permits.

[505] Utah Code section 73-3-29.

[506] Vt. Stat. Ann. tit. 10, section 902(3).

[507] Vt. Stat. Ann. tit. 10, section 1251(13).

Definition of Wetlands:

- Those areas of the state that are inundated by surface or groundwater with a frequency sufficient to support significant vegetation or aquatic life that depend on saturated or seasonally saturated soil conditions for growth and reproduction. Such areas include but are not limited to marshes, swamps, sloughs, potholes, fens, river and lake overflows, mud flats, bogs and ponds, but excluding such areas as grow food or crops in connection with farming activities.[508]

Additional State Conditions and Requirements:

- No limitations identified.

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 1 in coordination with the state of Vermont.
- State has adopted the Uniform Fire Code (NFPA 30 and 30A) for aboveground storage tanks, administered by the State Fire Marshal.[509]
- State code authorizes cost recovery for spills and related damages. State has a spill trust fund for aboveground storage tanks (Petroleum Cleanup Fund) covering farm and residential tanks up to $10,000. For bulk storage facilities storing motor fuel or heating oil, the reimbursement ceiling is $990,000.[510]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Vermont to administer the NPDES permitting program. The state issues its permits through Vermont Department of Environmental Conservation. Vermont has an authorized NPDES permit program, pretreatment program, and general permits program.

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[508] Vt. Stat. Ann. tit. 10, section 902(5).

[509] Vt. Stat. Ann. tit. 10, section 1929a, chapter 159.

[510] Vt. Stat. Ann. tit. 10, sections 6612, 6615, 6615d.

Vermont does not have an authorized biosolids program and is not authorized to regulate federal facilities.[511]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Has state authority to issue permits for dredged and fill activities in surface waters and wetlands,[512] including isolated waters.[513]

VIRGINIA

Definition of Waters of the Commonwealth:

- All water, on the surface and under the ground, wholly or partially within or bordering the Commonwealth or within its jurisdiction, including wetlands.[514]

Definition of Wetlands:

- Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas. [515]

Additional Commonwealth Conditions and Requirements:

- Virginia imposes a Commonwealth limitation on sewage systems that may be no more stringent than the CWA. The State Water Control Board may not require the state or any of its political subdivisions to upgrade the level of treatment in a sewage treatment works to a level more stringent than that required by applicable provisions of the federal CWA.[516]
- When the Virginia State Water Control Board proposes a standard or policy to be adopted by regulation under the Water Control Law that contains provisions that are "more restrictive than applicable federal requirements," the Board must provide to the proper standing committee of

[511] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[512] Vt. Stat. Ann., tit. 10, section 6081; Vt. Code R. 12 004 056.

[513] Vt. Code R. 12 004 056; ELI, 2013. State Constraints: State-Imposed Limitations on the Authority of Agencies to Regulate Waters Beyond the Scope of the Federal Clean Water Act, available at https://www.eli.org/sites/default/files/eli-pubs/d23-04.pdf.

[514] Va. Code Ann. section 62.1-44.3.

[515] *Id.*

[516] Va. Code Ann. section 62.1-44.15:1.

each house of the Commonwealth legislature a description of those provisions and the reason why they are needed.[517]

- When the Board adopts WQS, it is required to adopt them "according to applicable federal criteria or standards," unless the Board determines that "an additional or more stringent standard" is necessary to protect public health, aquatic life, or drinking water supplies.[518]

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 3 in coordination with the Commonwealth of Virginia.
- Commonwealth has a comprehensive oil spill prevention and preparedness program administered by the Virginia Department of Environmental Quality; the Virginia Aboveground Storage Tank Program requires registration, notification, and closure of tanks for owners of facilities with aggregate aboveground storage capacity of more than 1,320 gallons of oil or an operator of an individual tank with a storage capacity of more than 660 gallons.
- Facilities with aggregate storage of 25,000 gallons or more of oil are required to develop an Oil Discharge Contingency Plan and comply with pollution prevention standards and procedures (*e.g.*, inventory control, inspections, secondary containment, cathodic protection, training, leak detection and financial responsibility requirements).
- Facilities with 1 million gallons or more must comply with additional prevention standards and have a Groundwater Characterization Study to monitor the groundwater.
- Commonwealth code authorizes cost recovery for spills and related damages. Commonwealth has a spill trust fund (Petroleum Storage Tank Reimbursement Fund) covering releases from underground and aboveground storage tanks.

401 Certification:

- The Commonwealth has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

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[517] Va. Code Ann. section 62.1-44.15(3a), (10).

[518] Va. Code Ann. section 62.1-44.19:7(B).

402 NPDES Program:

- EPA has approved the Commonwealth of Virginia to administer the NPDES permitting program. The state issues its permits through the Virginia Department of Environmental Quality. Virginia has an authorized NPDES permit program, pretreatment program, general permits program, and is authorized to regulate federal facilities. Virginia does not have an authorized biosolids program.[519]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.

- Has Commonwealth authority to issue permits for dredged and fill activities in surface waters and wetlands,[520] including isolated waters.[521]

WASHINGTON

Definition of Waters of the State:

- Lakes, rivers, ponds, streams, inland waters, underground water, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.[522]

Definition of Wetlands:

- Areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990 that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from non-wetland areas created to mitigate conversion of wetlands.[523]

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[519] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[520] Va. Code Ann. sections 28.2-13, 62.1-44.5, 62.1-44.15; 9 Va. Admin. Code sections 25-210-10 *et seq.*

[521] Applies existing Virginia Water Protection (VWP) Permit requirements. Virginia DEQ, email, March 19, 2018. *See also* ELI, 2013. State Constraints: State-Imposed Limitations on the Authority of Agencies to Regulate Waters Beyond the Scope of the Federal Clean Water Act, available at https://www.eli.org/sites/default/files/eli-pubs/d23-04.pdf.

[522] Wash. Rev. Code section 90.48.020.

[523] Wash. Rev. Code section 36.70a.030(23).

Additional State Conditions and Requirements:

- No limitations identified.

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 10 in coordination with the state of Washington.
- State has adopted the Uniform Fire Code (NFPA 30 and 30A) for aboveground storage tanks, administered by local fire departments. If a facility transfers oil to or from a tank vessel, such as a barge or oil tanker, or to or from a pipeline, then it is subject to Washington State's Contingency Planning and Facility Oil Handling Standards regulations.[524]
- State code authorizes cost recovery for spills and related damages. State has a spill trust fund; requires state to pursue funding from responsible party and federal sources (*e.g.*, Oil Spill Liability Trust Fund) before using fund.[525]

401 Certification:

- The state has authority to certify, conditionally certify, waive review or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Washington to administer the NPDES permitting program. The state issues its permits through the Washington Department of Ecology. Washington has an authorized NPDES permit program, pretreatment program, and general permits program. Washington does not have an authorized biosolids program and is not authorized to regulate federal facilities.[526]
- EPA issues permits for federally-owned facilities and for tribal lands.[527]

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[524] Wash. Admin. Code chapters 173-182, 173-180.

[525] Wash. Rev. Code sections 90.56.330, 90.56.360, 90.56.500.

[526] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[527] EPA, Washington NPDES Permits, available at https://www.epa.gov/npdes-permits/washington-npdes-permits.

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Has state authority to issue permits for dredged and fill activities in surface waters[528] and isolated wetlands.[529]

WEST VIRGINIA

Definition of Waters of the State:

- Any and all water on or beneath the surface of the ground, whether percolating, standing, diffused or flowing, wholly or partially within this state, or bordering this state and within its jurisdiction, and includes, without limiting the generality of the foregoing, natural or artificial lakes, rivers, streams, creeks, branches, brooks, ponds (except farm ponds, industrial settling basins and ponds and water treatment facilities), impounding reservoirs, springs, wells, watercourses and wetlands.[530]

Definition of Wetlands:

- Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.[531]

Additional State Conditions and Requirements:

- No legislative rule or program of the state department of environmental protection may be more stringent than any federal rule or program except to the limited extent that the agency first makes a written finding that there exists scientifically supportable evidence for such a rule or program reflecting factors unique to the state.[532]
- With certain exceptions, rules promulgated by the state department of environmental protection may include provisions which are more stringent than federal rules, provided the agency supplies

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[528] Wash. Rev. Code chapters 77.55.

[529] Wash. Rev. Code section 90.48; Washington Department of Ecology, Focus on Regulating Isolated Wetlands, available at https://fortress.wa.gov/ecy/publications/documents/0106020.pdf; ELI, 2013. State Constraints: State-Imposed Limitations on the Authority of Agencies to Regulate Waters Beyond the Scope of the Federal Clean Water Act, available at https://www.eli.org/sites/default/files/eli-pubs/d23-04.pdf.

[530] W.Va. Code section 22-11-3(23).

[531] W.Va. Code R. section 47-10-2.58.

[532] W. Va. Code section 22-5-4.

information that demonstrates that such provisions are reasonably necessary to protect, preserve or enhance the quality of the environment, human health, or safety.[533]

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 3 in coordination with the state of West Virginia.
- State has adopted the Uniform Fire Code (NFPA 30 and 30A) for aboveground storage tanks.[534]
- State also has developed comprehensive aboveground storage tank requirements, including registration, release reporting requirements, submission of a Spill Prevention and Response Plan, inspection of secondary containment by a professional engineer or certified tank inspector, and financial responsibility requirements.[535]
- State code authorizes cost recovery for spills and related damages. State has a spill trust fund for releases from aboveground storage tanks (Protect Our Water Fund).[536]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of West Virginia to administer the NPDES permitting program. The state issues its permits through the West Virginia Department of Environmental Protection. West Virginia has an authorized NPDES permit program, pretreatment program, general permits program, and is authorized to regulate federal facilities. West Virginia does not have an authorized biosolids program.[537]

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[533] W. Va. Code section 22-1-3a.

[534] W. Va. Code sections 22-30, 22-31.

[535] *Id.*

[536] W. Va. Code § 22-11-22, 22-11-25, 22-11-29, 22-19-2.

[537] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Has state authority to issue permits for dredged and fill activities in isolated wetlands.[538]
- Relies on federal permitting authority and CWA section 401.

WISCONSIN

Definition of Waters of the State:

- Those portions of Lake Michigan and Lake Superior within the boundaries of this state, and all lakes, bays, rivers, streams, springs, ponds, well, impounding reservoirs, marshes, watercourses, drainage systems, and other surface water or groundwater, natural or artificial, public or private, within this state or its jurisdiction.[539]

Definition of Wetlands:

- An area where water is at, near or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation and which has soils indicative of wet conditions.[540]

Additional State Conditions and Requirements:

- The Wisconsin Department of Natural Resources is required to comply with and not exceed the requirements of the federal CWA and federal regulations in promulgating pollution discharge elimination rules, as those rules relate to: point source discharges, effluent limitations, municipal monitoring requirements, standards of performance for new sources, toxic effluent standards or prohibitions, and pretreatment standards.[541]
- If the Department of Natural Resources seeks to adopt an environmental quality standard more restrictive than a standard provided under corresponding federal law or regulation, the department

[538] West Virginia Department of Environmental Protection, Application for West Virginia State Waters Permit for Federally Non-Jurisdictional Waters, available at https://dep.wv.gov/WWE/Programs/wqs/Documents/401%20Program/Isolated%20Waters%20Application%20090315.pdf; ELI, 2013. State Constraints: State-Imposed Limitations on the Authority of Agencies to Regulate Waters Beyond the Scope of the Federal Clean Water Act, available at https://www.eli.org/sites/default/files/eli-pubs/d23-04.pdf.

[539] Wis. Stat. Ann. section 281.01(18).

[540] Wis. Stat. Ann. section 23.32(1).

[541] Wis. Stat. Ann. section 283.11(2).

must advise the board why the more restrictive standard is needed to protect public health, safety or the environment.[542]

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 5 in coordination with the state of Wisconsin.
- State has adopted the Uniform Fire Code (NFPA 30 and 30A) for aboveground storage tanks.[543]
- State (Department of Agriculture, Trade and Consumer Protection) regulates all aboveground storage tanks with a capacity of 110 gallons or greater and requires approval of construction plan, registration, permitting, inspections and fees.[544]
- State code authorizes cost recovery for spills and related damages. State has a spill trust fund for releases from aboveground storage tanks (Petroleum Environmental Cleanup Fund Act) that expires on June 30, 2020.[545]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Wisconsin to administer the NPDES permitting program. The state issues its permits through the Wisconsin Department of Natural Resources. Wisconsin has an authorized NPDES permit program, pretreatment program, general permits program, biosolids program, and is authorized to regulate federal facilities.[546]
- EPA issues all NPDES permits on tribal lands.[547]

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[542] Wis. Admin. Code NR section 1.52(3); http://www.ncsl.org/research/environment-and-natural-resources/state-agency-authority-to-adopt-more-stringent-environmental-standards.aspx.

[543] Wis. Admin. Code Comm. chapter 10.

[544] *Id.*

[545] Wis. Stat. Ann. sections 292.98-.99.

[546] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[547] EPA, Wisconsin NPDES Permits, available at https://www.epa.gov/npdes-permits/wisconsin-npdes-permits.

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Has state authority to issue permits for dredged and fill activities in surface waters and wetlands,[548] including isolated waters.[549]

WYOMING

Definition of Waters of the State:

- All surface and groundwater, including waters associated with wetlands, within the state.[550]

Definition of Wetlands:

- Those areas in Wyoming having all three (3) essential characteristics: (A) Hydrophytic vegetation; (B) Hydric soils; and (C) Wetland hydrology.[551]

Additional State Conditions and Requirements:

- No limitations identified.

303 Water Quality Standards:

- Has EPA-approved WQS.

311 Oil Spill Prevention, Preparedness and Response:

- The 311 program is administered by EPA Region 8 in coordination with the state of Wyoming.
- State has adopted the Uniform Fire Code (NFPA 30 and 30A) for aboveground storage tanks, administered by the State Fire Marshal, including plan review.
- State requires notification to Wyoming Department of Environmental Quality for aboveground storage tanks containing gasoline and diesel fuel. State also has specific technical requirements for aboveground storage tanks, including construction, secondary containment, cathodic protection, overfill prevention (additional requirements for tanks > 100,000 gallons), and leak detection; for facilities with tanks of capacities of 100,000 gallons or greater, follow inspection requirements in API Standard 653.

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[548] Wis. Stat. Ann. chs. 30, 31, section 281.36.

[549] ELI, 2013. State Constraints: State-Imposed Limitations on the Authority of Agencies to Regulate Waters Beyond the Scope of the Federal Clean Water Act, available at https://www.eli.org/sites/default/files/eli-pubs/d23-04.pdf.

[550] Wyo. Stat. Ann. section 35-11-103(c)(vi)

[551] Wyo. Stat. Ann. section 35-11-103(c)(x)

- Facilities with storage capacities greater than 1,320 gallons required to have a federal SPCC plan filed with the state.
- State code authorizes cost recovery for spills and related damages. State does not have a spill trust fund.[552]

401 Certification:

- The state has authority to certify, conditionally certify, waive review, or deny certification of federal permits and licenses. Without certification or waiver the federal agency cannot issue the permit or license.

402 NPDES Program:

- EPA has approved the state of Wyoming to administer the NPDES permitting program. The state issues its permits through the Wyoming Department of Environmental Quality. Wyoming has an authorized NPDES permit program, general permits program, and is authorized to regulate federal facilities. Wyoming does not have an authorized biosolids or pretreatment program.[553]
- EPA issues all NPDES permits on tribal lands. [554]

404 Dredged and Fill Permitting:

- Has not assumed the 404 program.
- Has state authority to issue permits for dredged and fill activities in isolated wetlands.[555]
- Relies on federal permitting authority and CWA section 401.

[552] Wyo. Stat. Ann. section 35-11-901, 903.

[553] EPA, State Program Authority, available at https://www.epa.gov/npdes/npdes-state-program-information.

[554] EPA, Wyoming NPDES Permits, available at https://www.epa.gov/npdes-permits/wyoming-npdes-permits.

[555] 020.0011.2 Wyo. Code R. section 2.

Appendix B: Mapped NHD Stream Mileage and NWI Wetland Acreage by State

Table B-1: Mapped NHD-High Resolution Stream Mileage and NWI Wetland Acreage by State. NHD and NWI are not regulatory databases, and the numbers and percentages of streams and wetlands by category do not equate to a quantification of waters that are or are not jurisdictional under implementation of the final rule or under the 2015 Rule. The data are presented to illustrate the incomplete national coverage of the NHD data, particularly with regard to ephemeral streams. Actual on-the-ground flow conditions (i.e., perennial, intermittent, or ephemeral) may differ from the flow classification in NHD.

State	NHD Streams								NWI Wetlands
	Perennial		Intermittent		Ephemeral[1]		Other[2]		
	Miles	% of Total	Miles	% of Total	Miles	% of Total	Miles	% of Total	Acres
AK	666,417	48%	18,624	1%	82	0%	700,893	51%	-
AL	48,075	23%	69,415	33%	0	0%	95,602	45%	4,203,980
AR	20,915	9%	89,091	40%	30	0%	111,599	50%	2,408,523
AZ	4,194	1%	35,305	7%	249,591	51%	202,384	41%	354,060
CA	44,290	7%	85,290	13%	213,359	34%	291,058	46%	3,028,618
CO	32,715	7%	151,915	34%	66,955	15%	197,296	44%	2,002,309
CT[3]	7,593	35%	1,892	9%	-	0%	12,035	56%	310,505
DC[3]	26	19%	6	4%	-	0%	103	76%	319
DE[3]	2,404	26%	1,112	12%	-	0%	5,838	62%	263,327
FL	19,337	12%	8,123	5%	2	0%	127,332	82%	12,183,132
GA[3]	44,081	23%	53,965	28%	-	0%	93,464	49%	6,548,298
HI									
IA	27,730	15%	72,310	39%	2,396	1%	82,259	45%	1,088,441
ID	54,355	30%	96,072	53%	8,551	5%	22,010	12%	1,324,822
IL	26,033	22%	78,490	65%	287	0%	15,676	13%	1,301,283
IN[3,4]	15,030	6%	33,453	13%	-	0%	217,363	82%	1,055,925
KS	19,065	10%	153,419	83%	316	0%	11,687	6%	1,899,863
KY	26,118	26%	59,695	60%	3	0%	13,133	13%	465,603
LA	34,365	25%	59,755	44%	24	0%	41,649	31%	8,028,273
MA[3]	8,519	51%	3,734	23%	-	0%	4,328	26%	695,752
MD[3]	13,399	53%	3,872	15%	-	0%	8,191	32%	814,720

Table B-1: Mapped NHD-High Resolution Stream Mileage and NWI Wetland Acreage by State. NHD and NWI are not regulatory databases, and the numbers and percentages of streams and wetlands by category do not equate to a quantification of waters that are or are not jurisdictional under implementation of the final rule or under the 2015 Rule. The data are presented to illustrate the incomplete national coverage of the NHD data, particularly with regard to ephemeral streams. Actual on-the-ground flow conditions (i.e., perennial, intermittent, or ephemeral) may differ from the flow classification in NHD.

	NHD Streams								NWI Wetlands
	Perennial		Intermittent		Ephemeral[1]		Other[2]		
State	Miles	% of Total	Miles	% of Total	Miles	% of Total	Miles	% of Total	Acres
ME	25,864	50%	13,413	26%	0	0%	12,893	25%	2,548,325
MI[3]	29,251	36%	15,136	18%	-	0%	37,753	46%	7,796,982
MN	26,461	26%	38,028	37%	1	0%	38,269	37%	10,854,648
MO[3]	22,323	12%	141,077	76%	-	0%	21,160	11%	1,386,533
MS[3]	24,376	15%	114,831	70%	-	0%	23,982	15%	3,968,569
MT	49,899	13%	304,329	78%	3,627	1%	32,901	8%	3,227,102
NC[4]	43,069	31%	49,442	35%	1	0%	47,726	34%	4,366,486
ND	5,926	7%	73,640	81%	0	0%	11,165	12%	1,508,999
NE	13,472	11%	98,408	77%	521	0%	15,144	12%	1,314,903
NH	8,281	44%	6,861	37%	3	0%	3,592	19%	310,193
NJ[3]	12,834	54%	1,064	4%	-	0%	10,081	42%	889,188
NM	7,124	3%	60,237	25%	156,822	66%	13,182	6%	363,015
NV	10,741	3%	26,141	8%	267,153	85%	11,487	4%	1,033,171
NY[3]	56,516	57%	20,921	21%	-	0%	21,236	22%	2,207,886
OH	26,905	29%	53,172	58%	9	0%	11,627	13%	538,919
OK	33,924	20%	115,235	69%	482	0%	17,777	11%	1,379,591
OR	77,102	24%	192,672	61%	23,402	7%	22,322	7%	1,895,761
PA[3]	43,800	51%	30,131	35%	-	0%	12,065	14%	544,458
RI[3]	1,224	62%	92	5%	-	0%	647	33%	60,714
SC[3]	25,819	33%	31,934	41%	-	0%	19,731	25%	3,932,560
SD	12,070	7%	135,766	82%	2,809	2%	13,957	8%	2,065,241
TN	68,240	60%	32,065	28%	254	0%	12,984	11%	1,165,666
TX	36,044	7%	346,494	65%	84,783	16%	62,472	12%	4,630,573

Table B-1: Mapped NHD-High Resolution Stream Mileage and NWI Wetland Acreage by State. NHD and NWI are not regulatory databases, and the numbers and percentages of streams and wetlands by category do not equate to a quantification of waters that are or are not jurisdictional under implementation of the final rule or under the 2015 Rule. The data are presented to illustrate the incomplete national coverage of the NHD data, particularly with regard to ephemeral streams. Actual on-the-ground flow conditions (i.e., perennial, intermittent, or ephemeral) may differ from the flow classification in NHD.

	NHD Streams								NWI Wetlands
	Perennial		Intermittent		Ephemeral[1]		Other[2]		
State	Miles	% of Total	Miles	% of Total	Miles	% of Total	Miles	% of Total	Acres
UT	15,117	8%	83,888	45%	71,561	39%	13,927	8%	758,798
VA	36,123	33%	55,846	51%	4	0%	17,581	16%	1,454,954
VT[3]	22,677	86%	11	0%	-	0%	3,757	14%	86,122
WA	69,058	29%	148,082	62%	2,330	1%	21,204	9%	959,626
WI[3]	27,876	32%	42,114	49%	-	0%	16,745	19%	6,868,324
WV	21,230	39%	27,505	50%	11	0%	6,220	11%	57,052
WY	34,404	12%	197,979	69%	35,683	12%	20,774	7%	1,852,425
WA	2,002,413	21%	3,532,050	37%	1,191,051	12%	2,828,260	30%	959,626

Source: Based on analysis of NHD at high resolution and NWI data. See Section II.C for a description of the limitations of the NHD and NWI data in fully characterizing the waters that may be potentially affected by the recodification of the pre-existing definition of "waters of the United States." The numbers and percentages of streams and wetlands by category do not equate to a quantification of waters that will or will not be jurisdictional under the final rule.

[1] The percentages for this category represent the percentages of streams in each state that the NHD at high resolution maps as ephemeral. Zero percent for this category does not mean that the state has no ephemeral streams. Ephemeral streams are not independently mapped in many states. Often ephemeral streams are mapped in the intermittent stream category or are not mapped at all, which results in an overstatement of intermittent streams and an understatement of ephemeral streams. This table is a summary of the available NHD data and is not likely to accurately represent the types of waters in any given state.

[2] Includes unclassified streams, artificial paths, canal, ditches, aqueducts, and other feature without attributes.

[3] NHD has no stream miles mapped as ephemeral for these states. See FN 1 above.

[4] NHD has a high percentage of streams that are not classified as perennial, intermittent, or ephemeral (unclassified streams) for these states.

Appendix C: Leave-one-out Sensitivity Analysis of the Wetland Meta-analysis Model

As discussed in Stapler and Johnston (2009), Londono and Johnston (2012), and Vedogbeton and Johnston (2019), among others, the leave-one-out cross-validation convergence validity test (henceforth LCV test) is a common post-estimation procedure to assess the out-of-sample predictive accuracy of a given meta-regression model (MRM). Within the context of wetland MRMs it has been employed by Brander *et al*. (2007), Chaikumbung *et al*. (2016), and Vedogbeton and Johnston (2019).

The LCV procedure is implemented by dropping the i^{th} observation from the metadata, estimating the MRM, and predicting the outcome for the omitted case by combining the estimated parameters from the "*i*-omitted" model with the known explanatory variable settings for the i^{th} observation. In our Bayesian MRM, this simply means we obtain a posterior predictive distribution of WTP for the i^{th} observation.

This step is repeated for all *n* observations from the original meta-data. One can then inspect the set of *n* predicted WTP estimates with respect to their deviation from their actual counterpart reported in the corresponding source study. This deviation is usually expressed as Absolute Percentage Error (APE), given as

$$APE_i = \left|\frac{\hat{y}_i - y_i}{y_i}\right| \times 100 \qquad (1)$$

where $\hat{y}_i$ and y_i are the predicted posterior mean and actual WTP, respectively, for observation *i*. Typically, the analyst then reports the mean and median APE over all *n* predictions.

There are three technical details in constructing predictions that deserve closer discussion. First, since WTP is usually used in log form in a given MRM, the construction of predictions of actual WTP, in dollars, entails a nonlinear transformation of logged predictions. If the original MRM is specified with a normal error, as is typically the case, predicted WTP in dollars follows a log-normal distribution. As discussed in Bockstael and Strand (1987) and Stapler and Johnston (2009), this raises the question if the standard correction of $\hat{\sigma}^2/2$ should be added to the log-prediction before exponentiating, where $\hat{\sigma}^2$ is the estimated variance of the MRM error. Stapler and Johnston (2009) opt to omit this correction as it increases APEs in their application. This de facto generates a prediction of median WTP, as opposed to mean WTP which would be obtained by adding the variance correction. Vedogbeton and Johnston (2019) also take this approach. Most remaining publications using meta-analysis and a log-linear WTP function do not explicitly discuss this point, but presumably follow Stapler and Johnston (2009) and Vedogbeton and Johnston (2019) in that respect.

In this analysis, we present both versions - predictions of the mean, with (implicit) variance correction, and predictions of the median, without incorporating error effects. Formally:

$$\begin{aligned} \hat{y}_{i,mean,r}|\sigma_r^2 &= exp(x_i'\beta_r + log(\gamma^{-1}(exp(\gamma q_{1,p}) - exp(\gamma q_{0,p}))) + \varepsilon_r) \\ \hat{y}_{i,med,r} &= exp(x_i'\beta_r + log(\gamma^{-1}(exp(\gamma q_{1,p}) - exp(\gamma q_{0,p})))) \end{aligned} \qquad (2)$$

where $\hat{y}_{i,med,r}$ is the mean WTP predicted using the r^{th} draw of coefficient vector β and error variance σ^2 from the original Gibbs Sampler (GS). Consistent with our preferred model specification M3c from Moeltner *et al*. (2019), the error term ε_r is drawn from the normal distribution with mean zero and the estimated variance σ^2, and added to the remainder of the predictive formula before taking exponents. Conversely, median WTP $\hat{y}_{i,med,r}$ uses only draws of the coefficient vector β_r in constructing predictions, but omits the addition of the error term. In both cases we obtain 100,000 predictive values, commensurate with the 100,000 parameter draws generated by the original GS.

The second technical note relates to the treatment of methodological indicators ("moderator variables") in the generation of predictions. The bulk of existing LVC examples proceed along the lines deemed "best case scenario" by Stapler and Johnston (2009), by simply using the original settings of moderators reported for the i^{th} observation. Stapler and Johnston (2009) also present what they label as a more "realistic" approach with respect to actual BT, by using the sample mean of moderators for all *i's* instead of the actual settings. In our case, the only identified moderator variables are *lumpsum* (1=payment stipulated as one-shot) and *volunt* (1=payment stipulated as voluntary contribution). Both of them can fundamentally affect predicted benefits, and both of them would likely be known for a given BT application, so averaging predictions over all possible combinations for these two moderators does not seem meaningful for our context. We thus simply incorporate these two indicators in predictive vector x_i in equation (2), using the case-specific settings.

The third technical note applies to the possible truncation of the posterior distribution of predictions to guard against extreme parameter and error draws, as applied in Moeltner and Woodward (2009) and Moeltner (2019). We report LCV results for both the un-truncated series of predictions, and a version with truncation from above at the 95th percentile.

Results

LCV results for the original meta-data of 21 observations from 11 studies are given in Table 1 for the un-truncated set of predictions. Only 14 of the 21 cases could be individually dropped from the data without causing rank violations for the remaining regressor matrix. Thus, the table includes 14 rows, one for each permissibly omitted observation. The first two columns give the original observation id and study authorship. The remaining columns depict the actual WTP (in 2017 dollars) reported in the source studies, as well as posterior predictive bounds for the 95% Highest Posterior Density Interval (HPDI), along with the posterior mean. This is shown for both predicted mean WTP in the first set of columns, and predicted median WTP in the second set of columns. For both cases, APEs are computed based on the difference between the posterior mean and the actual WTP figure.

Table 1: Leave-one-out results, original data, no truncation

			predicted mean WTP				predicted median WTP			
study	obs. id	actual	low	mean	high	APE	low	mean	high	APE
Bloomquist & Whitehead	1042	7.97	0.05	32.10	92.41	302.78	4.22	24.67	52.33	209.56
Bloomquist & Whitehead	1043	6.25	0.00	17.25	46.31	176.17	3.72	13.42	26.62	114.77
Bloomquist & Whitehead	1044	19.04	0.00	6.35	17.32	66.68	0.77	5.11	10.99	73.17
Newell & Swallow	1141	9.00	0.01	11.84	33.30	31.50	1.58	8.80	18.02	2.28
Newell & Swallow	1142	11.97	0.01	19.82	56.13	65.57	2.32	14.72	29.98	23.00
Newell & Swallow	1143	15.52	0.01	26.77	77.64	72.51	3.51	19.90	40.73	28.23
Loomis et al.	1151	258.19	0.19	685.16	2092.97	165.37	4.23	518.85	1297.51	100.96
Loomis et al.	1152	426.35	0.60	463.41	1964.41	8.69	3.17	330.16	946.68	22.56
Poor	1171	47.15	0.12	17.89	46.35	62.05	2.60	14.36	27.91	69.53
Poor	1172	41.84	0.33	108.22	335.62	158.67	14.55	80.14	162.17	91.56
Poor	1173	47.33	0.97	226.46	607.66	378.45	41.00	176.16	347.46	272.18
Beran	1251	36.08	0.00	49.40	142.29	36.92	5.85	36.31	74.56	0.64
Beran	1252	27.29	0.00	56.10	162.76	105.56	7.48	41.28	84.56	51.27
Beran	1253	32.82	0.00	52.02	147.71	58.50	7.31	38.22	79.18	16.46
mean APE						120.67				76.87
median APE						69.59				60.40

mean = posterior mean
low (high) = lower (upper) bound of 95% highest posterior density interval
actual = WTP reported in source study (2017 dollars)
APE = absolute percentage error

We first note that with the exception of observations 1044 (Blomquist & Whitehead) and 1171 (Poor), all actual values are captured within the corresponding 95% HPDI for both mean and median WTP. APEs for the mean range from under 9 percent to 378 percent, for an average APE of 121 percent and a median APE of close to 70 percent. As expected, APEs generally decrease when error corrections are omitted, as is evident from the last column of the table for median predictions. Here, APE values range from under 1 percent to 272 percent, for a grand average of close to 77 percent and an overall median of 60 percent.

These LCV results for median predictions (which most closely reflect standard practice in the literature) are generally in line with the existing meta-literature. For example, Vedogbeton and Johnston (2019) report a mean APE of 72 percent for their coastal wetland application, and a median of 42%. Similarly, Brander *et al*. (2007) find a mean APE of 74 percent for their wetland meta-analysis. Mean APE figures of 65-80 percent also seem to be the norm in non-wetland meta-applications, such as Johnston *et al*. (2017) and Johnston *et al*. (2019). This consistency with existing contributions is encouraging, especially considering that our sample size is substantially lower than that of all of these other studies.

LCV results for the truncated case are given in Table 2. As expected, dropping extreme predictions at the upper end lowers individual APEs. For mean WTP, these now range between 1.5 percent and 279 percent, with grand mean and median of 81 percent and 63 percent, respectively. For median WTP, individual APEs now span the interval of just over 5 percent to 240 percent, producing a sample mean of 67 percent, and a median of 55 percent.

Table 2: Leave-one-out results, original data, 95% truncation

study	obs. id	actual	predicted mean WTP low	mean	high	APE	predicted median WTP low	mean	high	APE
Bloomquist & Whitehead	1042	7.97	1.21	25.13	64.32	215.33	5.77	22.26	43.02	179.33
Bloomquist & Whitehead	1043	6.25	0.41	14.02	33.89	124.45	4.07	12.44	22.33	99.11
Bloomquist & Whitehead	1044	19.04	0.19	5.13	12.75	73.06	1.03	4.61	9.12	75.77
Newell & Swallow	1141	9.00	0.27	9.13	23.42	1.47	2.23	7.99	15.05	11.24
Newell & Swallow	1142	11.97	0.34	15.29	39.12	27.75	3.73	13.37	25.21	11.71
Newell & Swallow	1143	15.52	0.46	20.66	52.75	33.17	4.97	18.07	34.00	16.48
Loomis et al.	1151	258.19	2.24	506.27	1415.02	96.09	37.72	444.64	1007.74	72.22
Loomis et al.	1152	426.35	1.98	296.13	887.05	30.54	21.14	260.84	647.53	38.82
Poor	1171	47.15	1.03	14.52	34.25	69.20	4.23	13.18	24.11	72.06
Poor	1172	41.84	2.68	82.86	210.59	98.04	20.71	72.72	135.31	73.81
Poor	1173	47.33	13.50	179.44	436.91	279.10	57.01	161.03	295.24	240.22
Beran	1251	36.08	1.23	37.61	96.57	4.23	9.27	32.82	62.30	9.04
Beran	1252	27.29	1.24	42.72	109.42	56.54	10.20	37.32	70.38	36.74
Beran	1253	32.82	1.30	39.61	102.01	20.68	9.39	34.55	65.34	5.26
mean APE						80.69				67.27
median APE						62.87				55.44

mean = posterior mean
low (high) = lower (upper) bound of 95% highest posterior density interval
actual = WTP reported in source study (2017 dollars)
APE = absolute percentage error

Appendix D: Revised Step 1 Analysis – Additional Scenarios

Table D-1: Estimates of annual avoided costs and forgone benefits including the impacts from all states (Scenario 0)

	Annual Avoided Costs (2018$ millions)		Annual Forgone Benefits (2018$ millions)	
	Low	**High**	**Low**	**High**
CWA 402 CAFO Administration	$0.1	$0.1	$3.1	$5.4
CWA 402 CAFO Implementation	$5.0	$5.0		
CWA 402 Stormwater Administration	$0.3	$0.3	$29.3	$37.2
CWA 402 Stormwater Implementation	$29.5	$36.8		
CWA 404 Permit Application	$29.4	$73.4	$106.0	$106.0
CWA 404 Mitigation – Wetlands	$58.9	$164.1		
SUBTOTAL	**$123.2**	**$279.7**	**$138.4**	**$148.6**
CWA 311 Compliance	$13.4	$13.4	*not quantified*	*not quantified*
CWA 401 Administration	$0.4	$0.4	*not quantified*	*not quantified*
CWA 402 Pesticide General Permit Implementation	$3.5	$3.8	*not quantified*	*not quantified*
CWA 404 Mitigation – Streams	$23.6	$47.4	*not quantified*	*not quantified*
TOTAL	**$164.1**	**$344.6**	**$138.4**	**$148.6**

These results include the potential costs and benefits for all categories for all states.

Table D-2: Estimates of annual avoided costs and forgone benefits excluding the impact from states that may or are likely to continue their baseline dredged/fill permitting practices (Scenario 1a)

	Annual Avoided Costs (2018$ millions)		Annual Forgone Benefits (2018$ millions)	
	Low	**High**	**Low**	**High**
CWA 402 CAFO Administration	$0.1	$0.1	$3.1	$5.4
CWA 402 CAFO Implementation	$5.0	$5.0		
CWA 402 Stormwater Administration	$0.3	$0.3	$29.3	$37.2
CWA 402 Stormwater Implementation	$29.5	$36.8		
CWA 404 Permit Application	$8.6	$21.5	$33.0	$33.0
CWA 404 Mitigation – Wetlands	$30.4	$46.4		
SUBTOTAL	**$74.0**	**$110.1**	**$65.4**	**$75.6**
CWA 311 Compliance	$13.4	$13.4	*not quantified*	*not quantified*
CWA 401 Administration	$0.4	$0.4	*not quantified*	*not quantified*
CWA 402 Pesticide General Permit Implementation	$3.5	$3.8	*not quantified*	*not quantified*
CWA 404 Mitigation – Streams	$14.2	$28.2	*not quantified*	*not quantified*
TOTAL	**$105.4**	**$155.9**	**$65.4**	**$75.6**

Appendix E: Revised Step 1 Analysis – Assuming a 4.65% Change in Jurisdictional Determinations

Table E-1: Estimates of annual avoided costs and forgone benefits including the impacts from all states

	Annual Avoided Costs (2018$ millions)			Annual Forgone Benefits (2018$ millions)	
	Low	**High**		**Low**	**High**
CWA 402 CAFO Administration	$0.2	$0.2		$5.1	$8.9
CWA 402 CAFO Implementation	$8.1	$8.1			
CWA 402 Stormwater Administration	$0.5	$0.5		$47.9	$60.8
CWA 402 Stormwater Implementation	$48.3	$60.2			
CWA 404 Permit Application	$48.0	$120.0		$173.4	$173.4
CWA 404 Mitigation – Wetlands	$96.4	$268.5			
SUBTOTAL	**$201.6**	**$457.5**		**$226.5**	**$243.1**
CWA 311 Compliance	$13.4	$13.4		*not quantified*	*not quantified*
CWA 401 Administration	$0.6	$0.6		*not quantified*	*not quantified*
CWA 402 Pesticide General Permit Implementation	$5.7	$6.3		*not quantified*	*not quantified*
CWA 404 Mitigation – Streams	$23.6	$47.4		*not quantified*	*not quantified*
TOTAL	**$244.9**	**$525.2**		**$226.5**	**$243.1**

These results include the potential costs and benefits for all categories for all states.