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The American Society of Civil Engineers (ASCE) is pleased to offer the following comments on the proposed Waters of the U.S. (WOTUS) rule under the Clean Water Act. The proposed rule, released jointly by the U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (USACE), was published in the Federal Register for comment on February 14, 2019, with the comment period closing on April 15, 2019. This letter contains the comments of ASCE for the record.

Introduction

Founded in 1852, ASCE is the country's oldest civil engineering organization. Representing more than 150,000 civil engineers from private practice, government, industry, and academia, ASCE is dedicated to the advancement of the science and practice of engineering. ASCE members represent the profession that plans, designs, and builds much of the nation's infrastructure. As a result, civil engineers are keenly aware of and often most affected by regulations that either facilitate or impede expeditious, cost efficient, and environmentally effective infrastructure development to support our modern society. The Society's diverse members are directly and materially affected by the proposed changes to federal water jurisdiction under the Clean Water Act (CWA) in their professional practice areas. This proposed rule will have an extensive impact on infrastructure developments across the board.

All infrastructure systems are connected, and although built by individual communities or states, they know no boundaries. ASCE members need detailed technical and physical knowledge locally to ensure projects meet the individual needs of society. Additionally, civil engineers require knowledge at the regional, state, and federal levels to successfully integrate individual projects into the nation's infrastructure systems. At times, the broad goal of developing well-integrated systems of infrastructure can be at odds with the hard science that civil engineers use every day; in such cases, civil engineers look to legislatures, Congress, and the Supreme Court for guidance.

While ASCE supports a WOTUS rulemaking by the agencies to better define federal water jurisdiction under the CWA, we cannot support the proposed rule in its current form. In our comments, ASCE urges review on the proposed rule's definition of ditches, wetlands, and ephemeral streams.

ASCE carefully reviewed the rule, engaged with members, and attended a stakeholder outreach event conducted by the agencies. We are especially thankful for the stakeholder outreach conducted by the EPA and USACE via a webinar on February 14, 2019. After careful staff and member review and consultation, consistent with ASCE Policy Statement 378 on National Wetlands Regulatory Policy, ASCE offers the following comments.

ASCE's National Wetlands Regulatory Policy (PS 378) states the following:

The American Society of Civil Engineers (ASCE) supports the effort of the U.S. Army Corps of Engineers (USACE) and the Environmental Protection Agency's (EPA) to clarify jurisdiction over wetlands under the Clean Water Act. ASCE supports a final rule that:

- Maintains federal jurisdiction over all interstate and navigable waters, their tributaries, and all adjacent wetlands under the pre-2001 U. S. Army Corps of Engineers' (USACE) regulatory program under the Commerce Clause in the U.S. Constitution using an unambiguous test for significant nexus to navigable-in-fact waters;
- Clarifies state jurisdiction under section 404 of the Clean Water Act over isolated, non-navigable intrastate waters and their adjacent wetlands, including vernal pools, playas, and prairie potholes, considering recent Supreme Court decisions and other jurisdiction based on environmental and wildlife considerations under regulations promulgated by the Department of the Interior or the Environmental Protection Agency (EPA); and
- Amends the Clean Water Act to clarify federal jurisdiction over intermittent and ephemeral streams and their adjacent wetlands under section 404 to the USACE, in coordination with the EPA.

ASCE Comments on Definitions in the Proposed Rule

Background

Federal authority to regulate waters within the United States primarily derives from the Commerce Clause, which gives Congress the power to "regulate commerce with foreign nations, and among the several states…" Accordingly, federal laws and regulations regulating waters of the United States cannot cover matters that exceed that constitutional source of authority. Legal challenges to the USACE's and EPA's interpretation of "Waters of the United States" – particularly those which were successful – often followed broader trends in interpreting the Commerce Clause. For a period after its enactment in 1972, courts generally interpreted the Clean Water Act as having a wide jurisdictional reach, but, in recent decades, the Supreme Court has emphasized that "the grant of authority to Congress under the Commerce Clause, though broad, is not unlimited."[1]

[1] Congressional Research Service**,** https://crsreports.congress.gov, R44585

Twice in the last 16 years, the Supreme Court has rejected attempts by EPA and USACE to extend their jurisdiction beyond the CWA. In *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*, 531 U.S. 159 (2001) ("*SWANCC*"), the Supreme Court rejected USACE's assertion of jurisdiction over waters "which are or would be used as habitat" by migratory birds. The Court concluded that the CWA does not reach "non-navigable, isolated, intrastate waters," such as seasonal ponds.

The Court explained that "federal jurisdiction over ponds and mudflats falling within the 'Migratory Bird Rule' would result in a significant impingement of the States' traditional and primary power over land and water use," and it required "a clear indication that Congress intended that result." However, the Court found no clear statement authorizing USACE's expansive view; to the contrary, "Congress chose to 'recognize, preserve, and protect the primary responsibilities and rights of States…to plan the development and use…of land and water resources..."

Most significantly, in *Rapanos*, the Supreme Court rejected the USACE's assertion of authority over intrastate wetlands that are not significantly connected to navigable-in-fact waters [Rapanos et al. v. United States, 547 U.S. 715 (2006)]. The Court's majority consisted of a four-Justice plurality opinion written by Justice Scalia and Justice Kennedy's opinion concurring in the judgment. Pointing to several sources for statutory construction, the plurality concluded that, "on its only plausible interpretation," CWA jurisdiction extends "only [to] those relatively permanent, standing or continuously flowing bodies of water 'forming geographic features' that are described in ordinary parlance as 'streams,…oceans, rivers, [and] lakes,'" and "wetlands with a continuous surface connection to" those waters. Specifically, the plurality based this conclusion on "the only natural definition of the term 'waters,' our prior and subsequent judicial constructions of it, clear evidence from other provisions of the statute, and the Court's canons of construction."

In his concurring opinion, Justice Kennedy also rejected the USACE's broad assertion of authority but on a different ground, stating that the Agencies only have authority over waters that are navigable-in-fact and waters with a "significant nexus" to such navigable waters. On Justice Kennedy's analysis, a water has a "significant nexus" if it "significantly affect[s] the chemical, physical, and biological integrity of" a navigable water. Accordingly, Justice Kennedy rejected jurisdiction over all "wetlands (however remote) possessing a surface-water connection with a continuously flowing stream (however small)." Justice Kennedy explained that the USACE's approach "would permit federal regulation whenever wetlands lie alongside a ditch or drain, however remote and insubstantial, that eventually may flow into traditional navigable waters."

While respecting the Supreme Court's efforts to delineate the reach of federal jurisdiction, it is worth noting that civil engineering is unique because it must consider infrastructure both big and small, from the front door of peoples' homes all the way to global interconnectivity and impact. To ensure civil engineers' decisions serve these two extremes and every level in between, it is critical they follow not only the *rule of law* but the *rules of science*. When it comes to the rules of science, engineers can only seek them out and learn as much as possible

so they can apply them properly when doing their work. Contrarily, when it comes to the rule of law, civil engineers can provide scientific and engineering knowledge to decision-makers when they are developing laws and policies and can provide insightful testimony to courts.

In delineating the part that federal and state governments play in protecting the waters of the United States, the Commerce Clause also implies that federal and state agencies, as well as the local agencies authorized by the states, cooperate in this work. The focus of the federal government should be to ensure that all necessary coordination, data sharing, and information logging between federal, state, and local agencies takes place in a concise, timely manner.

However, waters and watersheds do not recognize state or any other political boundary, causing a natural conflict when trying to satisfy both the idea of states' rights and the way in which all waters naturally interact. Although this is a difficult balance, it can be achieved by rethinking the way in which intergovernmental relationships are organized. In protecting and managing Waters of the United States, the federal government should delegate as much responsibility as is reasonable and acceptable to the states and their subdivisions, but then assume a greater role in guidance and oversight. Rather than being simply a day-to-day regulator, the federal government would fill the much greater role of facilitator, teacher, and counselor to the states, tribal governments, and other political subdivisions. By serving in this capacity, there would be much greater consistency in the management of waters and a flexibility that would recognize the varying needs across our country.

Finally, flexibility and self-determination at the local level are crucial to achieve water quality goals. These goals should be protected and serve as the guiding principal in determination of the Waters of the United States.

Wetlands

Wetlands are important resources. They absorb and slowly drain flood and storm waters, thereby reducing flood risk and improving water quality. Many states have no oversight of wetlands to protect them beyond the CWA. Since the majority of wetlands are typically proposed to be excluded from the definition of WOTUS (i.e., those without a surface connection to a permanent or intermittent stream), not having protection at the state or federal level will cause this valuable natural resource to be at risk of being unprotected, which could then result in increasing the risk of flooding, decreasing water quality, and increasing economic loss. The definition of WOTUS is fundamental to providing oversight of wetlands to maintain and improve water quality and runoff. We recommend that WOTUS include all wetlands as currently defined, rather than "adjacent" wetlands—which was proposed— to provide otherwise absent protection.

Defining wetlands as those waters that are adjacent to and flow directly into another water body via surface connections overlooks the critical importance of connectivity of water. Connectivity needs to be considered in defining wetlands. However, the proposal does recognize connectivity in defining how a wetland fills but omits it in draining wetlands. The proposed definition of intermittent tributaries also considers connectivity. Most wetlands, whether or not they are adjacent, drain to groundwater. That water then flows below the surface to more permanent streams and may also become, at least in part, a source of drinking water. Non-adjacent wetlands,

as defined by the proposal, are not "isolated," as they drain through a non-surface connection. By accounting only for surface water connections, we will lose protection of this valuable resource.

Wetlands are a critical part of the WOTUS. Wetlands protect the coastline from wave impacts, reduce flooding, absorb pollutants, and improve water quality. Wetlands also provide habitat for plants and animals. The loss of wetlands due to lack of federal regulation would likely result in the loss of millions of dollars due to increased flooding, especially for the more common small to moderate floods, and decreased water quality.

Ephemeral Streams

Protection of the Waters of the United States requires the inclusion of all water sources— linking both water quantity and quality throughout the river system. The protection of our headwaters, which include the ephemeral areas, as well as wetlands, is a key component to this system. It is estimated that developing as little as 4 – 10% of a watershed without addressing the deleterious stormwater effects degrades the river environment. In many cases, increases in runoff can be more of a problem than industrial or municipal waste due to non-point source pollution, stream bed erosion and deposition, stream bank erosion, property loss, and flooding. Protection of the ephemeral watershed contributions are key to any actions taken to sustain the quality of our waters.

When considering water quality, the key regulatory authority is the Clean Water Act. Unfortunately, the CWA authority is usually narrowly defined as the pollutant itself, creating a barrier to solutions by not considering flow. For example, removal of total suspended solids from a municipal outfall would not nearly be as effective as reducing streambank erosion through reductions in duration of extreme velocities caused by unmitigated upstream development. The NRC (2009)[2] recommended expanding this focus to water quality and water quantity, but this recommendation has not been acted on.

WOTUS was created because most waterways cross state boundaries. Unfortunately, a state downstream of one that does not protect the waters upstream has a very difficult, expensive, and inefficient task in both dealing with the "problems" from the upstream state, as well as its own.

Ephemeral streams are complex tributaries and should be included in WOTUS. For example, in the southwest, they are the primary driver of sediment movement and contribute significantly to drinking water supplies. In the northeast, ephemeral streams often occur in the form of headwater streams, which contribute to water quality and watershed response to rainfall events. Ephemeral streams are also prevalent in Karst areas. Their importance to water quantity and quality and their connection within a watershed cannot and should not be separated out from other tributary streams.

In the absence of a revised Clean Water Act, the inclusion of all wetlands and ephemeral streams in the WOTUS is needed to enable resilient and more cost-effective approaches to protection of

[2] National Research Council. 2009. Urban Stormwater Management in the United States. Washington, DC: The National Academies Press. https://doi.org/10.17226/12465.

our waters. A balanced solution requires the inclusion of headwaters, wetlands, and ephemeral streams.

Ditches

The proposed rule states that the agencies propose the addition of "ditches" as a category under WOTUS to clearly define which ditches are regulated and which are not. As a basis for the definition of ditches, they are considered "artificial channels used to convey water." The proposed rule notes that ditches may be point sources under the Clean Water Act and that the purpose of this proposed rule is to determine which ditches are covered under the WOTUS definition. Ditches would be WOTUS if they meet the following conditions: navigable water such as a canal, constructed in a tributary if they behave similar to the tributary, constructed in adjacent wetland and behave in similar manner to the tributary.

As the profession that regularly designs and reviews construction of the majority of ditches in operation in the United States, civil engineers are interested in clarity of this definition. ASCE supports the goals of the Clean Water Act, yet we do not want to see an additional regulatory burden imposed on clients, especially municipalities, who use ditches to provide drainage in upland areas, to provide water supplies to cities, etc.

The first item that the proposed rule requested comments on regarding ditches is the "utility and clarity of proposing a separate category of jurisdictional ditches…" ASCE supports this separate category because ditches occupy a unique place in infrastructure systems that are designed by civil engineers. They can behave like streams, including ephemeral streams, but they are constructed features built either in streams, near streams, or upland in order to provide more rapid transport of flows away from protected areas and/or to put streams in places preferable to land development and use.

Historically and in many current construction efforts, ditches are constructed in low-lying locations on construction sites, in farmland, and in cities. They also are constructed in areas where land slopes are conducive to providing that drainage to the local river or stream. Because they are constructed in these topographically-favorable locations, they have often replaced natural streams with constructed passageways for water. In older cities, these streams were diverted into underground piping and the land was filled in on top for building. This is especially true in the older areas of the eastern U.S. where many historic tributaries to streams that were involved in commerce are now underground in pipes and have been shifted to locations underground where the cities found it convenient to put the stream. These streams show up on historical maps but may not show up on modern mapping. These streams often connect to navigable waters and, if they were not in an underground ditch, they would be considered WOTUS.

The EPA requests guidance on what tools can be used to determine whether a ditch was constructed in a former waterbody or was constructed in an upland area. The EPA states "the agencies could consider a ditch that appears to have been constructed in upland to be non-jurisdictional unless there is evidence that the ditch was in fact constructed in a natural waterway prior to the adoption of the 1972 CWA amendments." In many areas, good mapping dates to the

mid-1800s and possibly earlier in the eastern U.S. If streams were put into ditches and can be in a map from the 1800s, does that ditch meet the WOTUS definition? With current GIS software with its hydrologic toolboxes, natural drainage areas can be identified, and old maps are easily accessible. An example of this is the U.S. Geological Survey Topographic Map Explorer, which shows topographic maps that are available in many areas for over 100 years. Lands and streams have since been heavily modified, including moving many of them to ditches, both above ground and below ground where they may or may not be daylighted along certain stream segments before the outfall.

To reiterate, issues of hydrologic connectivity is vital for the health of our waters. The issues related to the hydrologic connectivity of wetlands and ephemeral streams are also related to ditches that drain to jurisdictional waters. In addition, the urbanization of the land has changed the recharge patterns of groundwater with less recharge occurring in general urban areas, although older leaky infrastructure has often reduced the impacts of modification of natural recharge areas. This has resulted in known cases of permanent drops in the water table level and older streams running dry unless refilled by precipitation. These natural drainage systems, which would have met the definition of intermittent or constantly-flowing streams, are now dry by this proposed rule. Therefore, any ditch constructed in this natural drainage way would not meet the WOTUS definition.

Even with extensive use of infiltrating stormwater systems, as urbanization increases, groundwater recharge and historic groundwater levels may never be restored. However, the rate of table water decline may be slowed. This concern will lead to additional tributaries now displaying ephemeral characteristics—a trend that may continue in the future. In addition, ditches have historically been used in streams to straighten them to improve drainage and move floodwaters away from cities, reducing standing or slowly-flowing water. The use of materials, such as concrete in the bottom of these ditches, has removed the interaction of the stream with the shallow groundwater. While the proposed rule states that ditches are included in WOTUS if they transport streams on either side, the rule does not address these systems where the ditch is the entire headwater stream segment.

The proposed rule is not clear as to when ditches that carry streams or former streams are declared WOTUS, and whether drops in groundwater levels and thus in-stream recharge can move a ditch from WOTUS to non-WOTUS, because it has moved from full-flowing to intermittent to ephemeral to precipitation-only. This point also supports the question of establishing boundaries on when historical water features that have been heavily modified would be considered WOTUS. The rule also does not address whether a headwater ditch is in WOTUS if the ditch now replaces a former intermittent stream.

ASCE asserts that the definition must be clarified to address the challenges of existing piped streams, especially in urban areas, because the colloquial definition of ditch implies an open channel above ground. We also are concerned about the potential removal of ditches from WOTUS over time, as stream behavior changes due to land-use changes. The rule addresses some concerns about the addition of a permanent discharge to a ditch, creating a regular flow in a ditch, but it does not address the opposite.

ASCE argues that ditches are an important separate category because of their constructed nature, but the proposed rule is ambiguous. For example, drainage ditches that are constructed to divert upland water around a construction site should not be considered WOTUS unless there is a stream being carried in that diversion ditch that would already fit the definition of WOTUS. Additionally, drainage swales constructed on a site should not be considered WOTUS unless they meet the definition of WOTUS or are used to move a WOTUS stream. However, it is important to recognize that ditches have been used to alter water flow patterns and disrupt historical water systems that would have met the definition of WOTUS when the construction was performed, including driving systems underground for part of the stream network. Of note is the recognition that land development can generally alter the flow pattern, reducing the flows into ditches constructed in streams that were intermittent or permanent now or in the future, thus reducing the flow to ephemeral or precipitation-only.

While EPA is expressing an interest to look historically at water resources by using old maps to establish which waters are WOTUS, the regulation needs to address the ever-changing water systems by identifying whether WOTUS can ever be effectively "delisted." This is especially vital in the ditch regulations.

Conclusion

ASCE recognizes that federal water regulation is not easy. The engineers ASCE represents work daily to ensure our nation's infrastructure is safe and reliable, while also serving as stewards of the environment. We applaud EPA and USACE for the time, expertise, and effort dedicated to this rule making. However, we encourage the agencies to take a hard look at the proposed rule and associated definitions and provide further clarity. We believe that all levels of government must work together to protect the Waters of the United States and the environment. It is only through such collaboration and cooperation that our nation's waters will be protected for generations to come.