

Written Testimony for the Record by

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**Challenges Achieving Adequate and Sustainable Drinking Water and
Sanitation Services in Indian Country**

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OVERVIEW

This testimony is based on years of field experience implementing capacity development and operator certification services nationally on behalf of the Inter Tribal Council of Arizona, Inc. (ITCA). ITCA is an inter-tribal consortium of 21 federally recognized Indian Tribes with lands in Arizona, California, Nevada, Utah, and New Mexico. ITCA is governed by the highest elected tribal officials from each Member Tribe, including tribal chairpersons, presidents, and governors. More information about ITCA and its National Tribal Water Systems Program is provided at the end of this written testimony.

Hundreds of millions of taxpayers' dollars are spent annually on infrastructure construction to improve access to safe drinking water and adequate sanitation in Indian Country. However, infrastructure construction alone cannot solve water access problems. Infrastructure construction must be balanced with building the managerial, financial, and technical capacity for operations and maintenance of the infrastructure investments. This testimony provides insights and recommendations on the needs for managerial, financial, and technical capacity development in Indian Country.

INTRODUCTION

There are 574 federally-recognized Indian tribes and 326 Indian reservations¹ in the U.S. Census data shows the 2019 (pre-pandemic) national poverty rate was 12.3%, while the American Indian / Alaska Native (AI/AN) poverty rate was 23.0% and was the highest poverty rate of any race group¹. However, AI/AN poverty rates are much worse at the local level, as poverty rates for individual Indian reservations are frequently reported exceeding 35%². According to National Vital Statistics, the AI/AN population has substantially higher mortality than other race populations in the U.S.³. The Indian Health Service (IHS) reported in 2019 that AI/AN people have long experienced disproportionate disease burden and explained that this is “*perhaps because of inadequate education, disproportionate poverty, discrimination in the delivery of health services, and cultural differences.*”⁴ For years, dire warnings have largely gone ignored regarding severe underfunding and under resourcing of critical societal systems (such as housing, education, healthcare, and public works) for AI/AN communities.

Proper sanitation services are the cornerstone to modern public health in preventing disease and death caused by pathogenic organisms. In-home plumbing with running water and sanitation services has greatly improved public health with reliable access to safe drinking water for consumption and hygiene practices. Inadequate access to safe drinking water and sanitation leads to health problems. A study⁵ of Alaska Natives showed direct correlation between pressurized, in-home water services and reduced transmission of diseases, such as pneumonia, influenza, skin

¹ U.S. Census, ACS, 2019, Table ID: S1701

² [C. Graf, High Country News, May 12, 2022] and [Pew Research Center, FactTank-News in the Numbers, 2014]

³ National Vital Statistics Report, Volume 70, No. 12, Nov. 9, 2021

⁴ <https://www.ihs.gov/newsroom/factsheets/disparities/>

⁵ Hennessy, et. al., AJP, Nov. 2008

or soft tissue infection, and respiratory infection. In its fiscal year 2023 budget justification to Congress, IHS observed that *“individuals who live in homes without adequate sanitation facilities are at a higher risk for gastrointestinal disease, respiratory disease and other chronic diseases.* This was demonstrated during the COVID-19 pandemic, during which, AI/AN people had the highest rates of any race / ethnic group in the U.S.

The rural, poverty-stricken conditions of most AI/AN communities commonly result in under-resourced drinking water and wastewater facilities / systems. According to Indian Health Service (IHS) and Infrastructure Task Force reports⁶, 12.8% of AI/AN homes were without safe drinking water and/or sanitation during the time period 2000-2014. This was 21 times greater than the 0.6% “lack of access” rate of for non-AI/AN homes in 2010. Averaged over the past six years of data reported to Congress by IHS (2015-2020), 36% of AI/AN homes need some form of sanitary facility improvement, 22% of AI/AN homes are without access to **adequate** sanitation facilities, and 3.5% of AI/AN homes are without access to safe water supply system and/or sewage disposal system. In its most recent Sanitation Deficiency Levels fiscal year report to Congress (Fiscal Year 2020, released August 22, 2023), IHS states the term *“Adequate or Adequacy implies that the sanitation facilities serving an eligible AI/AN home comply with all applicable Federal, State, and local health and environmental laws and regulations and good public health practices.”*

On the frontend of the water industry, public drinking water systems are regulated under the federal Safe Drinking Water Act (SDWA), as implemented by the U.S. Environmental

⁶ Multiple sources located on the federal Infrastructure Task Force website <https://www.epa.gov/tribal/federal-infrastructure-task-force-improve-access-safe-drinking-water-and-basic-sanitation>; on the IHS reports to Congress webpage: <https://www.ihs.gov/newsroom/reportstocongress/>; and on the IHS budget justifications webpage: <https://www.ihs.gov/BudgetFormulation/congressionaljustifications/>

Protection Agency (USEPA). According to the USEPA SDWIS⁷ database, there are 1,044 “Tribal” public water systems that supply drinking water to customers on tribal lands and 80% (836/1044) are listed with ownership type as “Native American” (as opposed to private, public/private, local, or federal ownership). Most Tribal public water systems (90.1%) are classified as small or very small systems serving 3,300 or fewer customers. Over the 20-year time period of 2003 to 2022, 58% of tribal public water systems had at least one violation of the SDWA during any given year, and this was 2.0 times the national average of 29%⁸. Newer USEPA data averaged from the 10 year period 2013-2022, identifies the following revelations on SDWA violation disparities. Tribal public water systems have: 1.9 times more instances of any violations (61% of tribal systems versus 32% non-tribal systems); 2.4 times more instances of health-based violations (14% of tribal systems versus 6% of non-tribal systems); over 3 times more instances of priority / serious violations (9.5% of tribal systems versus 3% of non-tribal systems); and over 2 times more instances of monitoring and reporting violations (54% of tribal systems versus 24% of non-tribal systems). Please refer to the detailed disparity graphs in **Exhibit 1**.

On the backend of the water industry, sewer infrastructure that collects, treats, and disposes of domestic, municipal, commercial, and industrial wastewater is regulated to protect environmental quality and public health through various local and federal laws. The federal Clean Water Act (CWA) provides protections of some surface water bodies—rivers, lakes, oceans, and [sometimes] wetlands—from pollution discharged at discrete point locations, such as from wastewater treatment facilities, through a permit program known as the National Pollution

⁷ U.S. EPA Safe Drinking Water Information System (SDWIS), queried September 10, 2023

⁸ Multiple USEPA data sources, SDWIS, and the Enforcement and Compliance History Online (ECHO)

Discharge Elimination Systems (NPDES). According to USEPA data⁹, there are approximately 2,320 wastewater facilities on tribal lands. During the nine year period 2014-2022, tribal wastewater facilities with NPDES permits had 2.1 times more instances of regulatory violations (36%, as compared to 17% nationwide).

Federal agencies annually spend hundreds of millions of taxpayers' dollars on infrastructure construction as an attempt to improve AI/AN access to safe drinking water and adequate sanitation. However, infrastructure construction alone is incapable of solving the AI/AN water access issues. To meaningfully address tribal safe drinking water and sanitation needs, infrastructure construction must be balanced with building the managerial, financial and technical capacity to adequately operate and maintain the infrastructure investments. A 2011 USEPA Office of Policy report succinctly describes its findings in the following excerpt: *“Adequate O&M [operations and maintenance] of tribal systems is essential to both ensure that the infrastructure funded by EPA is maintained over its projected design life, and to maintain SDWA compliance. ...If existing infrastructure degrades due to inadequate O&M, homes previously provided access to drinking water or basic sanitation could no longer have access.”*

OBSERVATIONS

The National Tribal Water Systems (TWS) Program at the Inter Tribal Council of Arizona (ITCA)ⁱⁱ is a tribally-led water and wastewater workforce capacity-building program that provides technical assistance, training, and operator certification services to tribal water utilities located throughout USEPA regions 5 through 10. Over the past 30 years, water and wastewater utilities

⁹ Enforcement and Compliance History Online (ECHO)

from approximately 200 tribal nations have participated in the capacity development and operator certification services of the ITCA Program. As the Director of the TWS Program for nearly 14 years, I offer the following observations with regards to challenges in achieving adequate and sustainable drinking water and sanitation in Indian Country.

Tribal Water Utility Management and Governance

The ITCA – TWS Program used the water industry’s Ten Attributes of Effective Utility Management (EUM) methodology for small systems to create an adaption called the Tribal Utility Tune-Up Workshop. Since 2017, such workshops have been individually conducted for 38 small tribal utilities located across six EPA regions. Utility self-assessments conducted during the workshops identify EUM attributes that need focused attention for improvement and serve as a direct pathway for strategic technical assistance. Common barriers to implementing management efforts are reported by the Effective Utility Management Steering Committee in a document titled *Findings and Recommendations for a Water Utility Sector Management Strategy* (2007). The document identified the following challenges and barriers, which I have directly observed in Indian Country: (a) difficulty generating and sustaining support of a governing body, which is often comprised of elected officials; (b) turnover of elected officials/leaders; (c) lack of asset management and planning; and (d) lack of financial viability. For context, it is important to point out that tribal communities and tribal water utilities often have the difficult task of getting in front of and short-circuiting the crisis-to-crisis modality. Due to existing historical and socioeconomic circumstances, many tribes function within the existing backdrop of working on long-term crisis recovery endeavors to save and maintain their community and cultural existence. Thus, limited

resources and competing priorities can cause risk management of shorter-term decision making to be “placed on the back burner”.

Tribal communities have varying governmental structures and the establishment and administration of tribal water utilities within the tribal government structure can often be challenging. For example, some tribal water utilities are created as a department of the tribal government itself, while some tribal water utilities function as independent tribal business enterprises or as joint ventures with other entities (such as non-tribal or tribal economic enterprises). I have observed cases where, over time, the same tribal water utility goes through cycles of governance transition from one governance structure to another, and then back again. Such changes severely disrupt the community’s drinking water and sanitation services. Operator of tribal water utilities consistently report their frustration over the lack of support and understanding by policy/decision-makers. Without sufficient support by local governing body or a functional utility governance structure, even the most capable certified tribal operators would be crippled in their abilities to sustainably maintain water and sanitation services, protect public health, or achieve and maintain regulatory compliance.

Small water utilities are often overseen by the facility operators themselves or by operators that are promoted to utility management positions. However, for many utilities, there are no clear career pathways for utility management. According to a 2011 USEPA report¹⁰, small water systems are often overseen by part-time managers or individuals who are inexperienced, unqualified, or who are otherwise undereducated/unskilled. It is for this reason that in 2013, ITCA followed standards for certification bodies (ISO IEC 17024) and created the Tribal Utility

¹⁰ *National Characteristics Drinking Water Systems Serving 10,000 or Fewer People*, USEPA, 2011

Management Certification, which is a professional credential for personnel of tribal water utilities that are entering into the field of water utility management. This professional credential could serve an important role, much like the way federal agencies use operator certification as a benchmark tool for gauging utility capacity scoring for infrastructure funding.

Financial Viability of Sustainable Operations & Maintenance

Financial management of water utilities requires a relatively sophisticated skillset and capacity to operate a business model that ensures sustainability for providing ongoing services to the community. The community's public health and economic welfare depends on it. The water industry typically prescribes that utilities function as businesses whereby, customers pay service user fees through rates that are set and periodically adjusted so that the cost of the water / sewer services (the cost of delivering safe and reliable water / sanitation services for the user) are distributed across the utility's customer base. The cost of service involves revenues and expenditures that must be managed through a multitude of variables that include, but are not limited to: supply and demand, demographics, fixed and variable costs of operations and maintenance, infrastructure asset life-cycle (asset management, preventative maintenance, replacement, and capital improvement), workforce and administration, water loss and efficiencies, and regulatory compliance. In addition, the process of setting rates involves public relations and a sensitivity to local community needs and circumstances. However, scales of economy cause this business model to fail when the cost of water service is distributed across a small customer base that has limited means to pay for such services. This is particularly true for small water utilities that are geographically isolated.

Most, if not all water utilities aspire to achieve financial viability when it comes to sustainability providing safe and reliable drinking water and sanitation services for their communities. Some, but far too few, tribal water utilities achieve that goal. Many small tribal water utilities are actively working on building the numerous prerequisite components of sustainable operations and maintenance (such as, asset inventories, preventative maintenance, installation of meters to measure water use and flows, and conducting rate studies). In addition, there are numerous technical assistance service providers hard at work (and sometimes crossing paths or potentially duplicating services) to provide small tribal water utilities with assistance on these prerequisite components. Despite these efforts, many small tribal water utilities are fundamentally unable to achieve financial viability due to scales of economy that result in shortfalls in utility revenues. What this means is that their utility finances are insufficient to sustainably meet the operations and maintenance costs. For some small tribal water utilities, such shortfalls can sometimes be subsidized by their tribe's general funds, particularly for tribes with successful gaming enterprises. However, such internal subsidization is short-term in nature, as small tribal water utility managers must justify and defend their funding goals to their Tribal Councils, who face competing fiscal priorities for limited resources. In times of austerity, it can be next to impossible for small tribal utilities that are dependent on internal tribal subsidy to justify competitive salaries for utility operators and replacement of worn-out assets, or to defend the existence and continuation of reserve accounts for planned future capital improvement projects.

For decades, the need for operations and maintenance (O&M) funding alternatives for small tribal water utilities has continuously been expressed to Congress by all levels of stakeholders, including the Tribal Infrastructure Task Force and federal agencies such as the IHS. Likewise, such O&M funding needs have continuously been labeled as non-fundable. The Low

Income Household Water Assistance Program (LIHWAP) implemented by the U.S. Department of Health & Human Services, Administration for Children & Families has become a successful and important program. However, the LIHWAP process of administration and its goals are not aligned with the overarching problems of the small tribal water utilities that have financial viability shortfalls in sustainably covering O&M costs. In addition, there are a handful of cases where operations and maintenance costs for public drinking water systems appear to be federally funded under U.S. Bureau of Reclamation construction projects for regional Rural Water Supply Systems. It has been observed that some tribal community beneficiaries of Rural Water Supply projects have the perception that safe and reliable drinking water is free. Such perceptions are in stark contrast to the current realities of most small tribal water utilities and creates a dynamic of potential inequality.

Workforce Barriers and Professional Credentialing Complications

Many federal agencies, including USEPA and U.S. Department of Homeland Security, consider water and wastewater personnel as Essential Critical Infrastructure Workers that work to protect their communities, while ensuring continuity of functions critical to public health and safety, as well as economic and national security. Water and wastewater operators and utilities personnel are on the front lines of protecting public health because it is their job to reliably supply drinking water and sanitation services that meet public health requirements and standards. Unfortunately, workforce trends for the water industry are well documented as showing an impending workforce gap across the entire water industry. The workforce gap is further widened by the fact that small water utilities suffer from significant turnover in personnel and declining career interest in the water utility industry. Factors contributing to this problem include low wages,

lack of support by decision makers, little to no understanding by the general populace of the vital importance of water utility professions, lack of resources for operations and maintenance, and worker safety risks. Most rural, small tribal water utilities frequently lose workers looking to transition to bigger utilities that may offer more growth opportunities and higher salaries. Because of the small, rural nature and socioeconomic circumstances of many tribal communities, their water utility workforce is often too few in number, overworked, under paid, inadequately trained, and resources-starved. Furthermore, some operators of very small tribal water utilities sometimes operate more than one utility and quite often additionally have a multitude of other non-water utility jobs duties for their community. A groundbreaking study¹¹ published in 2016, demonstrated a strong statistical correlation between utility size, labor market education, and compliance with the SDWA: *“The relationship between compliance and availability of human capital is especially acute in smaller utilities, where limited organizational capacity means that organizations may struggle to attract and retain talented labor. [Smaller] Utility success in these economically and/or socially challenged regions may require specialized workforce strategies.”*

Drinking water and wastewater operators are public health professionals. Professional credentialing is needed for standardized verification that an individual is qualified for the job tasks. Therefore, primacy agencies prescribe that water and wastewater operators earn a professional credential (certification or license) that verifies the operator possesses the required knowledge, skills, and abilities. However, significant national challenges exist within the water professionals credentialing sector. A 2018 Brookings report¹² describes a pervasive problem that permeates the entire U.S. water utilities workforce: *“Difficulties defining needed skills and creating portable,*

¹¹ Switzer *et al.*, JAWWA 2016. 108.0093

¹² *Renewing the Water Workforce*, Brookings Institute, 2018

versatile credentials is an ongoing frustration across the sector, and pathways to developing such knowledge and skills are unclear, especially from region to region.” A 2018 GAO report¹³ succinctly described the U.S. water operator credentialing arena as follows: *“For drinking water operators, regulations under the SDWA establish minimum standards for certifications. Each state must implement a water operator certification program that meets the requirements of these guidelines. The Clean Water Act does not have similar minimum requirements for wastewater operators, and certification standards are established by the states. Accordingly, there is no single standard national certification. Even though there has been an industry effort to harmonize the certification requirements across states for both drinking water and wastewater operators, reciprocity of certification between different states remains limited.”* The situation is additionally challenging for Indian reservations whose boundaries don’t correspond with state boundaries and USEPA-approved tribal operator certification programs must establish reciprocity with numerous states in service area juxtaposition.

The USEPA delegates SDWA primary enforcement responsibility (“primacy”) to local jurisdictions such as states and tribes. Some states have adopted safe drinking water regulations that are more stringent than the federal minimum baseline SDWA rules and regulations. With rare exception, the USEPA is the primacy agency on federal trust lands (such as Indian reservations), where the federal minimum baseline rules and regulations are enforced. In 2017, an industry-wide effort characterized the job competencies that are necessary for drinking water operators. That work resulted in standardized certification exams that measure the industry-wide common level competencies of drinking water operators. However, the industry-wide standardized certification exams do not cover safe drinking water laws and regulations because such laws and regulations

¹³ Water and Wastewater Workforce Report, GAO-18-102

widely vary at the local/regional level. In response to this situation, some credentialing agencies are requiring assessment of an individual's knowledge of the applicable safe drinking water rules and regulations as a required condition for earning operator certification. Thus, utility personnel operating water systems on Indian reservation land, face the added challenges of determining what regulations are applicable and what operator certification programs are jurisdictionally appropriate. It is for this reason that ITCA – TWS developed the innovative operator certification Federal Regulatory Exam Modules¹⁴.

RECOMMENDATIONS

Based on the observations described above, the following recommendations may be offered. The recommendations are arranged in three general categories.

Improved Coordination

- More than a decade ago, the Tribal Infrastructure Task Force recommended improved coordination amongst stakeholders and technical assistance providers. In the spirit of that recommendation, the IHS initiated and facilitated periodic technical assistance providers (TAP) coordination meetings on a local / regional geographic basis. These TAP coordination meetings were successful in coordination of technical assistance services and

¹⁴ In response to the new industry-wide standardized water operator certification exams, the National Tribal Operator Certification Program at the Inter Tribal Council of Arizona developed baseline Federal Regulations (FedReg) Exam Modules to balance these industry changes with local self-determination goals. The FedReg Exam Modules are designed to supplement the industry-wide standardized water operator certification exams and serve as credentialing assessments of an operator's knowledge of and skills working with the federal baseline safe drinking water regulations that are enforced on federal trust tribal lands.

to this day, continue to be conducted in a few geographic areas. However, there are areas or regions of Indian Country where TAP meetings are not being conducted and could benefit from doing so.

- In addition, there appears to be a lack of coordination between federal agencies and stakeholders on the subject of O&M funding, particularly with regard to regional Rural Water Supply Systems and the needs of small tribal water utilities throughout Indian Country.
- The Tribal Infrastructure Task Force should return to conducting periodic, publicly-accessible meetings and resume discussions on access to safe and adequate drinking water and sanitation services.

Parity for Tribally-led Cap-Dev/Op-Cert

- States enjoy the ability to use a percentage of their federally appropriated State Revolving Funds (SRFs) for direct support of their state Capacity Development and Operator Certification (Cap-Dev & Op-Cert) Programs. Tribally-led programs for Cap-Dev & Op-Cert Programs do not have such funding. Instead, Cap-Dev & Op-Cert services for Indian Country are either competitively outsourced to federal contractors or are created by tribal organizations using highly competitive technical assistance and training grants (mostly short-term grants from non-EPA federal agencies). In both cases, the contact and grant competition, management, reporting burdens are, in combination, quite burdensome and

contribute to the overall problems that are intended to be solved. In fact the very few tribally-led (by tribes, for tribes) training and technical assistance programs that exist find their services in direct competition with federal agencies and federal contractors for services being provided for the same tribal communities. A funding mechanism in parity with the states is needed for tribally-led (by tribes, for tribes) organizations for Cap-Dev & Op-Cert Programs.

- The USEPA regions have varied or divergent approaches to water and wastewater operator certification matters on federal trust tribal lands. In addition, USEPA guidance on wastewater operator certification on federal trust tribal lands does not currently exist. The USEPA needs to engage in periodic meetings with the two existing tribally-led (by tribes, for tribes) Cap-Dev & Op-Cert Programs for ongoing dialog and strategic planning for future program improvements.

Bolstering O&M with Strategic Support

- Create a federal funding program to provide revolving O&M grants for small tribal drinking water and wastewater utilities that have implemented all possible components of sustainable operations and maintenance, but whose scales of economy (community size, community geographic isolation, and low household income) causes a financial viability shortfall gap. The revolving O&M grant would need to have flexibilities to allow for dovetail adjustments relative to LIHWAP funding that may or may not be available to the small tribal water utility's community at any given time during the grant.

Thank you for this opportunity to submit testimony. It is hoped that this testimony provided useful insight into the challenges that many small tribal water utilities face regarding financial viability, utility management, operations and maintenance, workforce development, and operator certification.

ⁱ Indian reservations – Currently, 574 Indian tribes are federally-recognized as separate sovereigns “by virtue of their government-to-government relationship with the United States” (Federal Register, January 12, 2023). However, not all federally-recognized tribes have a land base and those with a land base have varying land title designations. According to the Bureau of Indian Affairs (BIA), there are 326 federal Indian reservations (reservations, pueblos, rancherias, missions, villages, communities, etc.). A federal Indian reservation is land to which the federal government holds title in trust on behalf of the federally-recognized tribe for resettling its peoples that were forcibly removed from their homelands by the federal government or as remnants of original homelands. Federal Indian reservations are established through treaties, acts of Congress, presidential executive orders, federal court decisions or other federal administrative actions.

ⁱⁱ ITCA – TWS Program – The Inter Tribal Association of Arizona (ITAA) is an association of 21 tribal governments established in 1952 to provide a united voice for tribes located in the State of Arizona to address common issues. In 1975, ITAA formed a non-profit corporation—the Inter Tribal Council of Arizona, Inc. (ITCA). The mission of ITCA is “to provide Member Tribes with the means for action on matters that affect them collectively and individually, to promote tribal sovereignty, and to strengthen tribal governments.” The ITCA Tribal Water Systems (TWS) Program is a tribally-led water and wastewater workforce capacity-building program. Since 1983, the TWS Program at ITCA has performed the critical function—by tribes and for tribes—of empowering tribal water and wastewater operators by ensuring they have the knowledge, skills, and abilities necessary to provide adequate and reliable drinking water and sanitation services to tribal communities in a sustainable manner. In 2008, the ITCA – TWS Program was the first in the nation to be approved by the USEPA as a tribal drinking water operator certification authority and is now the largest tribal organization offering USEPA-approved water operator certification services. The ITCA – TWS Program was reaffirmed as a certification authority in 75 Federal Register 48329, August 2010. In January 2020, the ITCA – TWS Program received two prestigious awards—2019 Certification Program Award and the 2019 Outstanding Certification Officer Award. ITCA tribal operator certifications are recognized and accepted through reciprocity arrangements with other states. The uniqueness of the ITCA – TWS Program is it directly meets tribal needs and is held accountable by the tribes themselves through the TWS Program Advisory Committee and the National Tribal Operator Working Group. For decades, ITCA has provided monthly operator certification training/exam services. Following the majority of the training courses, ITCA staff administers and proctors the national standardized operator certification examinations. The ITCA Program maintains a database that tracks and administratively manages over 4,000 tribal operator certifications. The ITCA website features a portal that provides public access to tribal operator certification information from the ITCA database. Since 2013, the ITCA Program provides tribal personnel with access to the national certification exams through computer-based testing at over 300 nationwide testing centers.

EXHIBIT 1 – Disparity Trends in Violations of the Safe Drinking Water Act, 2013-2023

Source: USEPA Enforcement and Compliance History Online trends dashboard for Drinking Water, accessed September 2023

Selected State(s) = set to Tribal & EPA Regional Primacy Agencies, all tribes

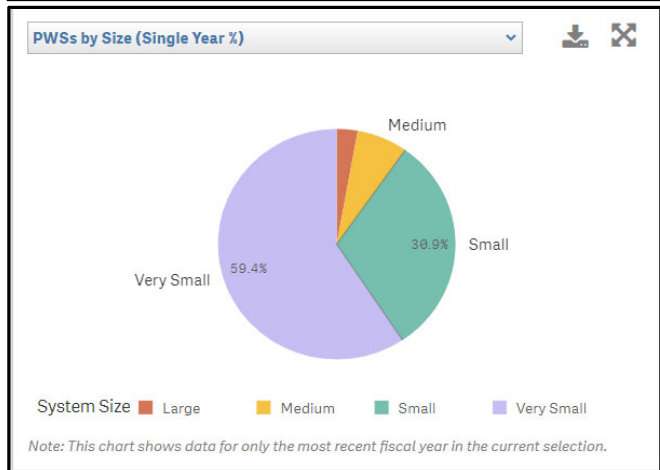
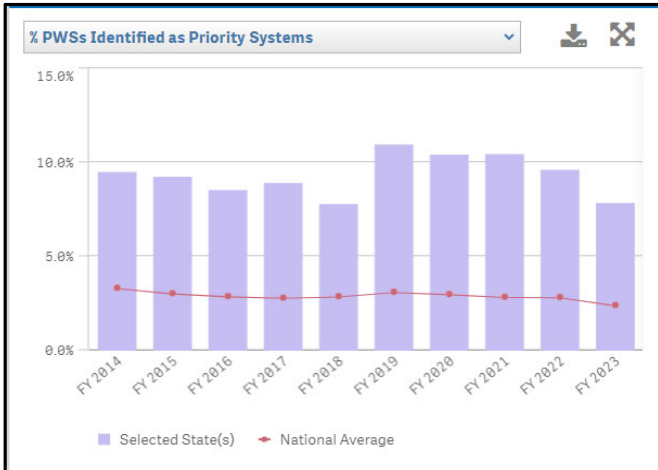
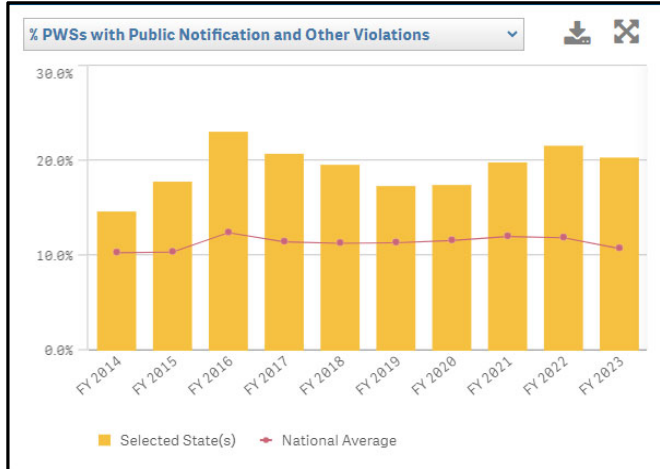
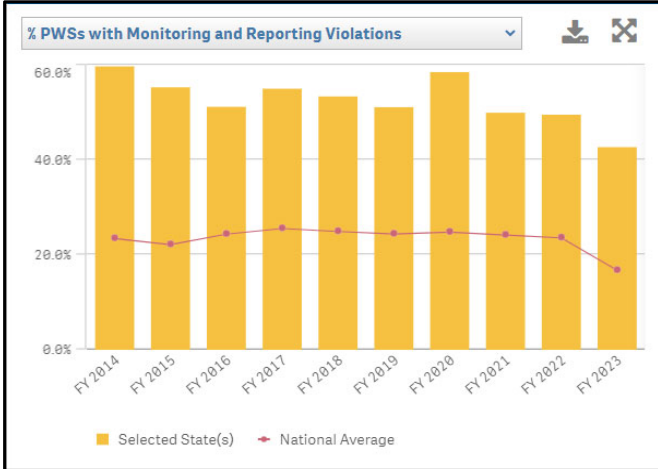
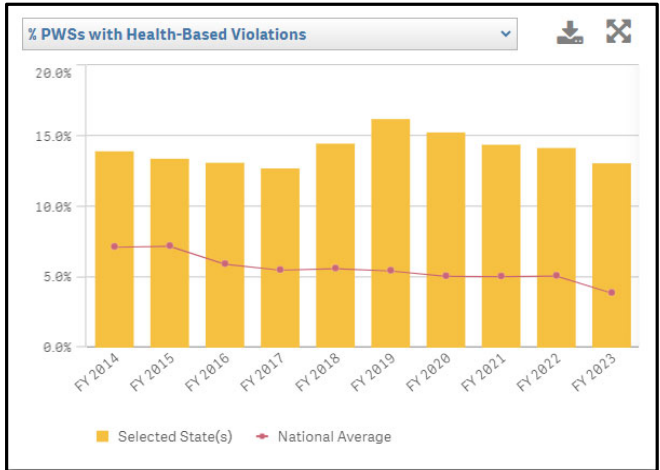
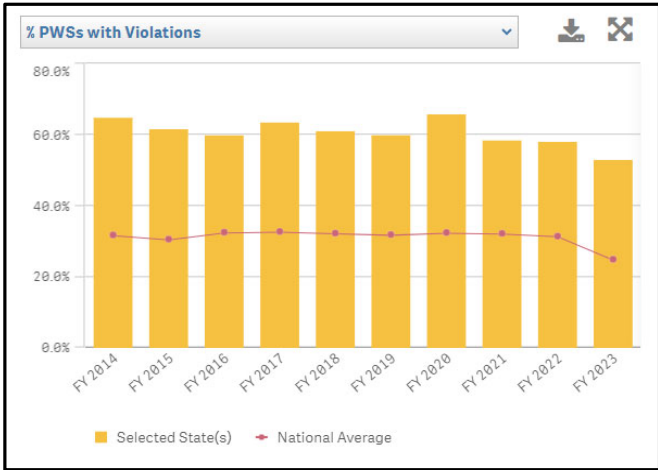


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Selected State(s) = set to Tribal & EPA Regional Primacy Agencies, all tribes

Tribal Public Water Systems (PWS) Violations of SDWA											
Federal Fiscal Year	No. of Total PWSs	PWSs with Violations	Health-Based Violations	Priority PWSs / Serious Violations	Monitoring & Reporting Violations	Public Notice Violations	PWSs with Enforcement		Return to Compliance		
		[%]	[%]	[%]	[%]	[%]	Informal Action	Formal Action	Priority PWSs	all PWSs	
		[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]
2023	in progress										
1 2022	1,057	58.2	14.2	9.6	49.7	21.7	10.7	0.1	10.8	14.9	
1 2021	1,040	58.6	14.4	10.5	50.1	19.9	16.2	1.3	13.8	14.0	
1 2020	1,033	65.9	15.3	10.5	58.7	17.5	13.0	0.7	21.3	20.5	
1 2019	1,028	60.0	16.2	11.0	51.3	17.4	12.6	1.6	13.3	13.4	
1 2018	1,048	61.2	14.5	7.8	53.5	19.7	11.4	0.7	20.7	13.9	
1 2017	1,028	63.6	12.7	8.9	55.2	20.8	21.3	1.2	15.2	14.8	
1 2016	1,050	60.0	13.1	8.6	51.3	23.1	8.5	0.2	20.0	13.9	
1 2015	1,035	61.7	13.4	9.3	55.5	17.9	12.0	1.5	18.8	15.8	
1 2014	1,039	65.0	14.0	9.5	59.9	14.7	13.9	0.4	17.2	18.0	
1 2013	1,048	59.8	13.2	9.4	53.3	14.3	20.3	1.7	49.0	25.2	
10	running average	61.4	14.1	9.5	53.9	18.7	14.0	0.9	20.0	16.4	

Nationwide Public Water Systems (PWS) Violations of SDWA											
Federal Fiscal Year	No. of Total PWSs	PWSs with Violations	Health-Based Violations	Priority PWSs / Serious Violations	Monitoring & Reporting Violations	Public Notice Violations	PWSs with Enforcement		Return to Compliance		
		[%]	[%]	[%]	[%]	[%]	Informal Action	Formal Action	Priority PWSs	all PWSs	
		[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]
2023	in progress										
1 2022	152,856	31.4	5.1	2.8	23.7	12.0	17.8	1.7	23.0	12.2	
1 2021	148,086	32.2	5.1	2.9	24.3	12.1	17.5	1.6	25.1	12.4	
1 2020	149,095	32.4	5.1	3.0	24.9	11.7	17.7	1.8	26.1	12.6	
1 2019	151,191	31.9	5.5	3.1	24.5	11.4	18.6	2.1	24.0	13.3	
1 2018	151,841	32.2	5.6	2.9	25.0	11.4	18.7	2.2	25.3	13.7	
1 2017	152,688	32.7	5.5	2.8	25.6	11.5	19.3	2.0	23.3	14.1	
1 2016	153,237	32.5	5.9	2.9	24.5	12.5	19.6	2.4	28.5	14.1	
1 2015	156,565	30.6	7.2	3.0	22.3	10.4	19.2	2.5	30.2	14.2	
1 2014	155,284	31.7	7.2	3.3	23.6	10.4	19.6	2.3	27.9	15.1	
1 2013	156,968	31.3	7.0	3.3	22.7	10.7	20.2	2.4	38.0	15.2	
10	running average:	31.9	5.9	3.0	24.1	11.4	18.8	2.1	27.1	13.7	

Running Averages										
	PWSs with Violations	Health-Based Violations	Priority PWSs / Serious Violations	Monitoring & Reporting Violations	Public Notice Violations	PWSs with Enforcement		Return to Compliance		
	[%]	[%]	[%]	[%]	[%]	Informal Action	Formal Action	Priority PWSs	all PWSs	
	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]	
Nationwide	31.9	5.9	3.0	24.1	11.4	18.8	2.1	27.1	13.7	
Tribal	61.4	14.1	9.5	53.9	18.7	14.0	0.9	20.0	16.4	
difference	29.5	8.2	6.5	29.7	7.3	-4.8	-1.2	-7.1	2.8	
% difference	0.5	0.6	0.7	0.6	0.4	-0.3	-1.2	-0.4	0.2	
comparison ratio	1.9	2.4	3.2	2.2	1.6	0.7	0.4	0.7	1.2	