**OW’s Drinking Water Program – Data Business Needs (Internal/Deliberative)**

Overview of Data Business Needs

* EPA needs accurate, complete, and timely data to meet its statutory oversight responsibilities. Under SDWA, EPA is required to determine that states with primacy have adopted and are implementing adequate procedures for the enforcement of Federal drinking water regulations, including conducting monitoring and collecting data as EPA requires by regulation. This includes both data submitted by drinking water utilities or laboratories to states and data submitted by states to EPA.
* EPA needs quality data to ensure that drinking water rules are being implemented consistently and effectively. EPA requires that states submit violations data to the Agency, along with inventory. In order to perform its oversight function, EPA needs to verify the accuracy and completeness of the submitted information. Currently, without access to a complete data set that includes compliance information, EPA attempts to verify the quality of the violations data manually through state-by-state annual data file reviews. Prior to the pandemic, OGWDW visits approximately 10 states per year in order to cover all primacy agencies in a five-year interval. These visits include reviewing the compliance monitoring data at the state, documenting discrepancies, and identifying corrective actions. Despite these file reviews, the Agency does not have a large enough sample size to derive statistically valid conclusion about a state’s data quality or the data quality in SDWIS.
* This challenge with data access has long been identified by both the IG and GAO as a vulnerability and limitation on EPA’s drinking water oversight responsibilities through multiple engagements. For example:
  + In a 2006 report on LCR, GAO said “EPA’s hands are tied unless states report complete, accurate, and timely data on the results of required monitoring, the status of corrective actions, and the extent of violations. Without such information, EPA cannot provide effective oversight or target limited resources where they are most needed.“
  + The OIG’s 2018 report on Flint recommended that EPA “Establish controls to annually verify that states are monitoring compliance with all Lead and Copper Rule requirements, including accurately identifying tier 1 sampling sites and maintaining continuous corrosion control treatment.”
* Furthermore, the violations-only data EPA receives from the states are not adequate for EPA’s oversight responsibilities or business needs such as responding to congressional inquiries. For example,
  + Issues in cities such as Flint, Pittsburgh, and Newark showed the limitations of the Agency’s receiving violations-only information. EPA needs access to a set of compliance monitoring data to adequately conduct state oversight and to quickly identify and address local and national issues such as lead in drinking water.
  + A deep dive assessment by EPA in 2016 highlighted the importance of EPA access to monitoring data to verify the accuracy of states’ Lead and Copper Rule (LCR) Action Level Exceedances reporting.
  + Last but not least, EPA often needs the compliance monitoring information in order to respond to congressional inquiries related to drinking water quality and violation trend information.
* The Agency has recognized this lack of access to data issue and depended on SDWIS modernization to resolve the problem for over ten years. Agency’s 2010 Drinking Water Strategy and the 2016 Drinking Water Action Plan had goals of increasing access to compliance monitoring data.
* The Agency’s Fiscal Year 2018-2022 Strategic Plan committed to “collaborating with states and tribes to share more complete data from monitoring at public water systems through the Safe Drinking Water Information System (SDWIS). This will allow for better targeting of funding and technical assistance resources and improve data quality while increasing public access to drinking water data.”
* More recently, Congress has also requested EPA actions on this issue in the 2018 America’s Water Infrastructure Act. AWIA requires EPA to develop a Strategic Plan Report to Congress for improving the quality and availability of compliance monitoring data. The report is scheduled to finalize by the end of the year.
* The Agency’s Drinking Water Learning Agenda, as required by the 2018 Evidence Act, is looking at the quality of the drinking water data the Agency receives, including whether violations-only data is adequate for EPA’s mission. Specifically, the Learning Agenda is looking at the question: Does EPA have ready access to data to reliably and accurately measure drinking water compliance?

EPA Drinking Water Program – Data Business Needs by Major Data Types/ Sharing Mechanism

1) States’ required quarterly data submissions to SDWIS Fed, which includes water system inventory, violations, site visits, and event schedule activity, provide support to the activities below. The data submitted to SDWIS Fed is not as complete as information in the state databases.

* Violations and inventory: EPA rulemaking and economic analysis.
* Water System Locations: Emergency preparedness and response efforts.
* Analyze Violation Reporting: Analyze violations data reported to EPA to assess program trends and to assess for under-reporting and other reporting issues.
* Analyze Treatment Technology: for assessing treatment technology efficacy (note that SDWIS does not contain complete information on technologies, as states only need to report 1 technology per system).
* Review site visit data: for identifying compliance challenges among water systems or states based on sanitary survey visits in relation to the applicable drinking water rules.
* Review event schedule activity data: for assessing water system trends and challenges in implementing the PWSS program and complying with the drinking water rules.
* Provide Data to Partners and the Public: for OECA enforcement analysis, for external partners (e.g. source water protection groups, USDA Forest Service and Rural Development) and oversight entities (e.g. GAO) that helps in implementing the PWSS Program and in promoting accountability.

2) Periodic sharing of compliance monitoring data supports:

* **40 CFR 141** authorizes states sharing of compliance monitoring data with EPA for the Six Year Review of National Primary Drinking Water Regulations (June 2020 ICR approves states sharing data for 2012 - 2018).
  + The EPA Drinking Water Program provides states a SDWIS State data export tool that makes it very low level of effort to export monitoring data to a file and submit to EPA.
* **40 CFR 142.17 -142.18** requires states to provide annually, as requested, information required for review of state programs, including review of monitoring determinations (covered under the PWSS Program ICR). For specific systems and for primacy agency program reviews, EPA uses this data to assess if correct violations determinations were made based on drinking water rule requirements. Secondary EPA uses of this data include training / technical assistance prioritization.
  + In the 2000’s, EPA’s Drinking Water Program funded onsite program reviews for one third of the states every year, at a cost of approximately $1M annually – the onsite reviews included assessing states’ monitoring data vs. their compliance determinations.
  + Over the past several years, EPA’s Drinking Water Program has conducted approximately 10 state file reviews per year – the file reviews have included assessing states’ monitoring data vs. their compliance determinations. The SDWIS State data export tool supports EPA Regional Drinking Water Programs access to states’ compliance monitoring data.

In the SDWIS Modernization System – whether the system is developed by an EPA contractor or the system is provided / modified by a COTS vendor – the Drinking Water Program will have continuing needs to access compliance monitoring data for the above existing and emerging uses. Access will need to be efficient for both states and EPA and will need to be timely for emergency oversight needs.

Purpose of the SDWIS Modernization Alternatives Analysis (scoping statement provided to Board)

With SDWIS State nearing the end of its useful life, EPA tasked GDIT in January 2020 to conduct an alternatives analysis for assessing options for developing a long-term replacement for SDWIS State. Following are the main application functions that SDWIS State has provided to states and EPA Regions since the 1990’s, most of which are focused on supporting PWSS program implementation:

* Manage water system inventory information.
* Receive and manage large volumes of system compliance monitoring data.
* Manage rule schedules, determine candidate drinking water rules violations (via the Compliance Determination Subsystem, the legacy version of the Business Rules Engine), and provide capabilities for drinking water rules managers to designate automated candidate violations as official violations.
* Track enforcement and other water system actions.
* Reporting system inventory and violations data to EPA.