



## EXECUTIVE INSIGHTS

# PFAS and the Current State of Play Among Environmental Services Providers

Per- and polyfluoroalkyl substances, or PFAS, have long been used in consumer products to provide resistance to heat, oil, stains, grease and water. But they became the focus of regulatory scrutiny once it became clear how persistent they are in the environment — a persistence that earned them the moniker “forever chemicals” — and the adverse effects they can have on human health.

Such scrutiny is about to increase even further. Recently proposed federal PFAS regulations are stricter than and will supersede existing state-level regulations, which cannot be less stringent than those at the federal level. They will designate PFAS as hazardous substances and require public drinking water utilities, or water systems, to monitor and treat PFAS levels in addition to compelling responsible parties to remediate any contaminated sites over the long term.

To address those future regulations, an increasing number of customers are proactively developing mitigation strategies. In the meantime, demand for PFAS services — and related spending — is expected to soar.

### A history of limited regulation

In the U.S., regulation of PFAS has been limited up until very recently. They were not included in the Safe Drinking Water Act (SDWA) until 2012, and the Environmental Protection Agency (EPA) only proposed a legal limit to their presence in drinking water in 2023. Before that, the agency limited its actions to issuing nonenforceable health advisories.

Meanwhile, with the help of public pressure and advocacy groups, state and local governments have largely been driving the regulation of PFAS. State regulatory agencies have the authority

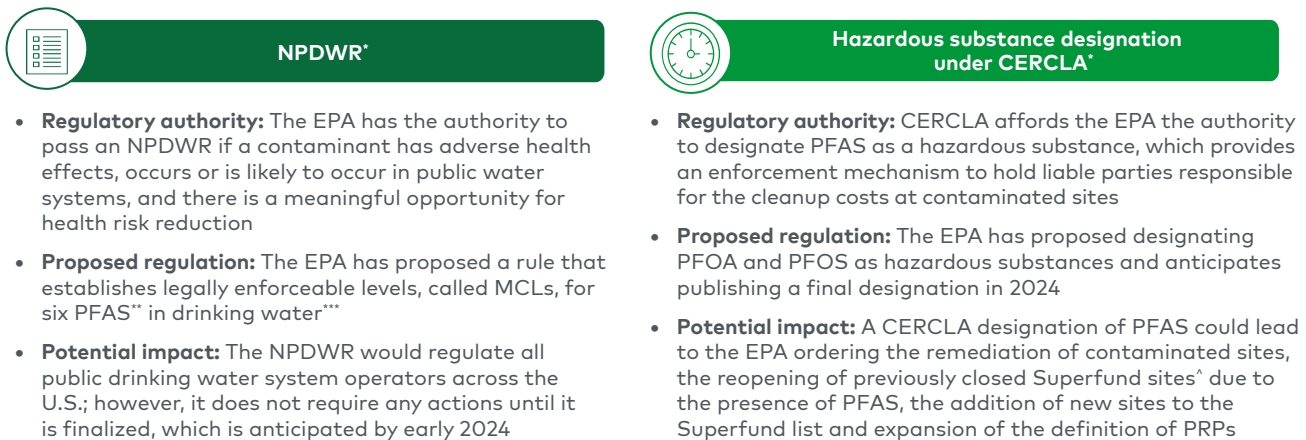
to enforce such regulations – 10 states currently have enforceable PFAS drinking water limits<sup>1</sup> – or to adopt guidance/notification levels, which 13 states have done to date.<sup>2</sup>

But a combination of an improved understanding of the impact of PFAS on human health, a greater level of authority granted to the EPA by way of some recently passed laws together with numerous laws already on the books (e.g., Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), SDWA, National Defense Authorization Act), and increased political and social pressure has prompted the agency to propose stricter regulations.

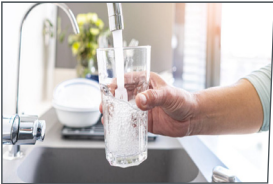
### Two major changes on deck

Upcoming regulations stemming from previously passed laws would require that two core things take place: One, that water systems monitor and treat PFAS levels in drinking water. And two, that parties responsible for contaminated sites would have to remediate the sites in question (see Figure 1).

**Figure 1**  
Overview of upcoming and proposed PFAS regulations



The regulations of PFAS in wastewater facilities and wastewater contributors (e.g., industrial sites) under the Clean Water Act are also expected to be pursued, with enforcement anticipated slightly after drinking water regulations come into effect (e.g., ~3 years from now)



The EPA is also considering flagging PFAS under the RCRA, which would similarly hold liable parties responsible for corrective actions



\*The EPA has the authority to pass the NPDWR under its authority afforded by the SDWA and can designate PFAS as a hazardous substance under its authority afforded by CERCLA  
 \*\*Applicable for PFOS and PFOA  
 \*\*\*The EPA is also proposing health-based, nonenforceable MCLGs for these six PFAS  
 ^Under CERCLA, a Superfund site is a location that has been contaminated by hazardous substances and identified by the EPA for cleanup under the Superfund program  
 Note: PFAS=per- and polyfluoroalkyl substances; NPDWR=National Primary Drinking Water Regulation; EPA=Environmental Protection Agency; MCLs=Maximum Contaminant Laws; CERCLA=Comprehensive Environmental Response, Compensation and Liability Act; PFOA=perfluorooctanoic acid; PFOS=perfluorooctane sulfonate; PRPs=potentially responsible parties; RCRA=Resource Conservation and Recovery Act; SDWA=Safe Drinking Water Act; MCLGs=definition; maximum contaminant level goal EIA=Energy Information Administration  
 Source: EPA; EIA; WilmerHale; L.E.K. research and analysis

Regarding drinking water, the EPA has the authority to pass a National Primary Drinking Water Regulation (NPDWR) if a contaminant has adverse health effects, occurs or is likely to occur in public water systems, and there is a meaningful opportunity for reducing the related health risk. To that end, the EPA has proposed a rule that establishes legally enforceable levels – which are referred to as maximum contaminant levels – for six PFAS in drinking water.

If finalized, the NPDWR would regulate all public drinking water system operators across the U.S. That said, the NPDWR would not require any actions until it is finalized, which is currently anticipated to take place in early 2024.<sup>3</sup> In the meantime, the regulation of PFAS in wastewater facilities and wastewater contributors (e.g., industrial sites) under the Clean Water Act is also expected to be pursued, with enforcement anticipated to take place shortly after drinking water regulations come into effect.

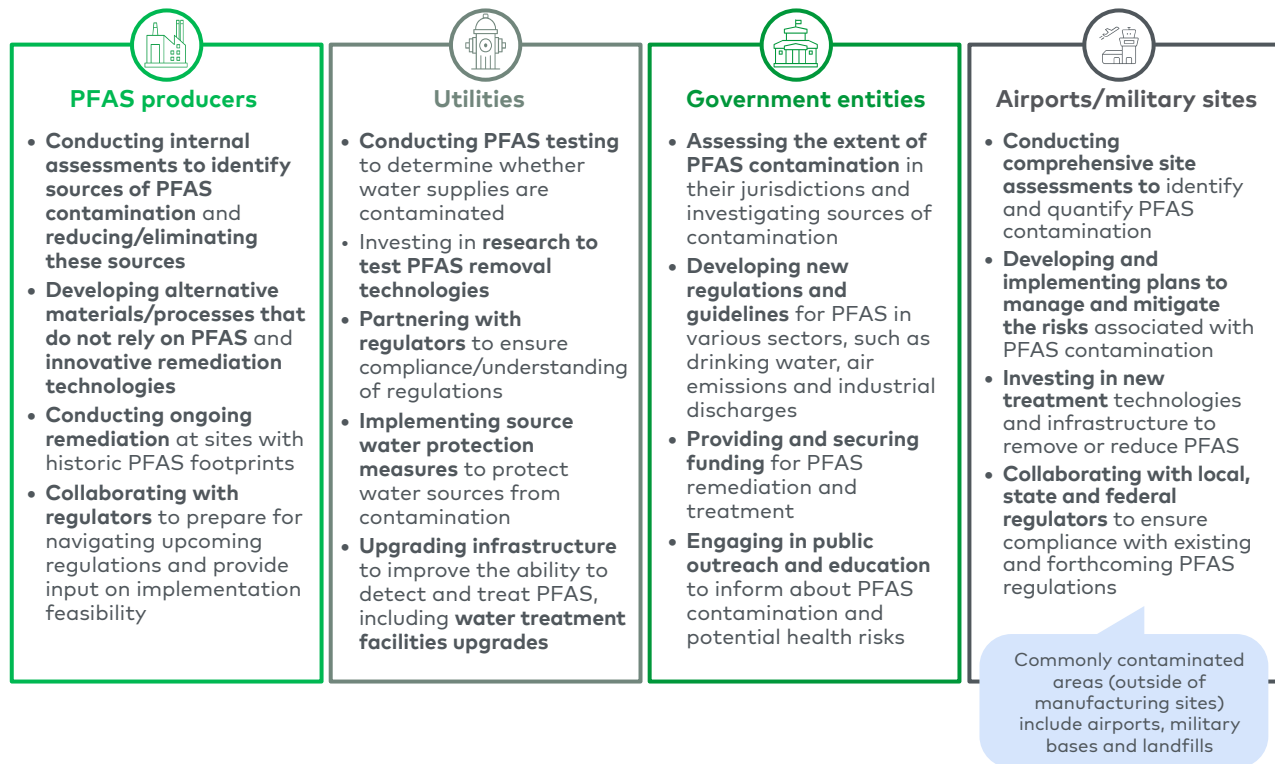
As for contaminated sites, CERCLA gives the EPA the authority to designate PFAS as a hazardous substance – an authority that includes an enforcement mechanism to hold liable parties responsible for the cost of cleaning up contaminated sites. In September 2022, the EPA proposed designating both perfluorooctanoic acid and perfluorooctanesulfonic acid, two of potentially thousands of different PFAS compounds, as hazardous substances. After a series of delays, it expects to take final action on this rule in early 2024.<sup>4</sup>

A CERCLA designation of PFAS could lead to the EPA ordering the remediation of contaminated sites, the reopening of previously closed Superfund sites due to the presence of PFAS, the addition of new sites to the Superfund list and the expansion of the definition of potentially responsible parties. The EPA finalized a rule in October 2023, under the Toxic Substances Control Act, that established reporting requirements for any company that has manufactured or imported PFAS, likely expanding the number of companies and sites that the EPA can target for enforcement actions.<sup>5</sup> The EPA also proposed a rule in February 2024 to amend its regulation under the Resource Conservation and Recovery Act by adding nine PFAS to its list of hazardous constituents, which would also hold liable parties responsible for corrective actions.

### **Preparing for increased PFAS regulations**

Ahead of the expected regulations, various parties – both those that are responsible for PFAS and those that are impacted by them – are proactively developing strategies to address PFAS mitigation (see Figure 2).

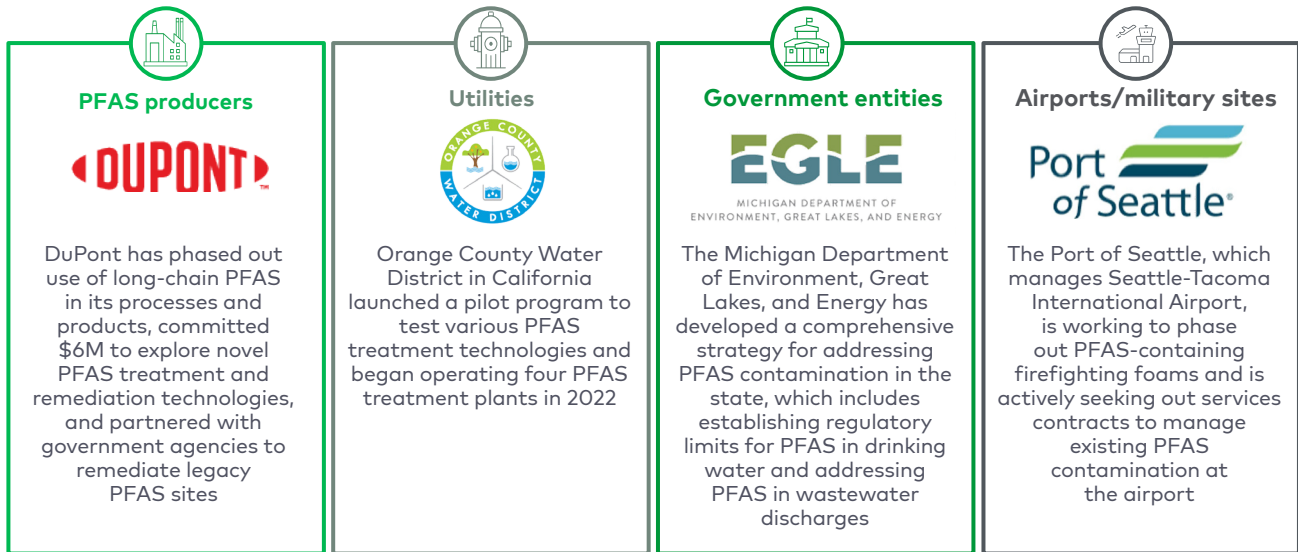
**Figure 2**  
Actions to prepare for upcoming PFAS regulations (1/2)



Note: PFAS=per- and polyfluoroalkyl substances; EPA=Environmental Protection Agency  
 Source: U.S. Government Accountability Office; EPA; Orange County Water District; Michigan Department of Environment, Great Lakes, and Energy; company websites; L.E.K. research and analysis

**PFAS producers**, while they will continue to take whatever legal steps they can to avoid as much liability as possible, are conducting internal assessments to identify sources of PFAS contamination and subsequently reducing them or eliminating them entirely. They are also sourcing and developing alternative materials and processes that do not rely on PFAS along with innovative remediation technologies. And they are conducting ongoing remediation at sites with historic PFAS footprints and collaborating with regulators in order to both prepare for navigating upcoming regulations and provide input on the feasibility of their implementation (see Figure 3).

**Figure 3**  
Actions to prepare for upcoming PFAS regulations (2/2)



Note: PFAS=per- and polyfluoroalkyl substances; EPA=Environmental Protection Agency  
 Source: U.S. Government Accountability Office; EPA; Orange County Water District; Michigan Department of Environment, Great Lakes, and Energy; company websites; L.E.K. research and analysis

DuPont, for example, has phased out the use of long-chain PFAS in its processes and products, committed \$6 million to explore novel PFAS treatment and remediation technologies, and partnered with government agencies to remediate legacy PFAS sites. More recently, 3M agreed to pay at least \$10.3 billion<sup>6</sup> to settle lawsuits over the PFAS contamination of numerous U.S. public drinking water systems.

**Water utilities** are conducting PFAS testing to determine whether water supplies are contaminated while also investing in research to test PFAS removal technologies. Orange County Water District in California, for example, in 2022 launched a pilot program to test various PFAS treatment technologies and began operating four PFAS treatment plants.

Utilities are also partnering with regulators to ensure they understand – and comply with – PFAS regulations. And they are implementing source water protection measures to protect water sources from contamination while upgrading infrastructure, including water facilities, in order to improve their ability to detect and treat PFAS.

**Government entities** such as the Department of Energy, Department of Defense, various military branches and others are meanwhile assessing the extent of PFAS contamination in their jurisdictions as well as investigating sources of contamination. They're also developing

new regulations and guidelines for PFAS in various sectors, among them drinking water, air emissions and industrial discharges. For example, the Michigan Department of Environment, Great Lakes, and Energy has created a comprehensive strategy for addressing PFAS contamination in the state, which includes establishing regulatory limits for PFAS in drinking water and addressing PFAS in wastewater discharges.

In addition, government agencies are providing and securing funding for PFAS remediation and treatment, which at current estimates could easily exceed \$100 billion over the next 10 years. And they are engaging in outreach and education to inform the public about PFAS contamination and any related potential health risks.

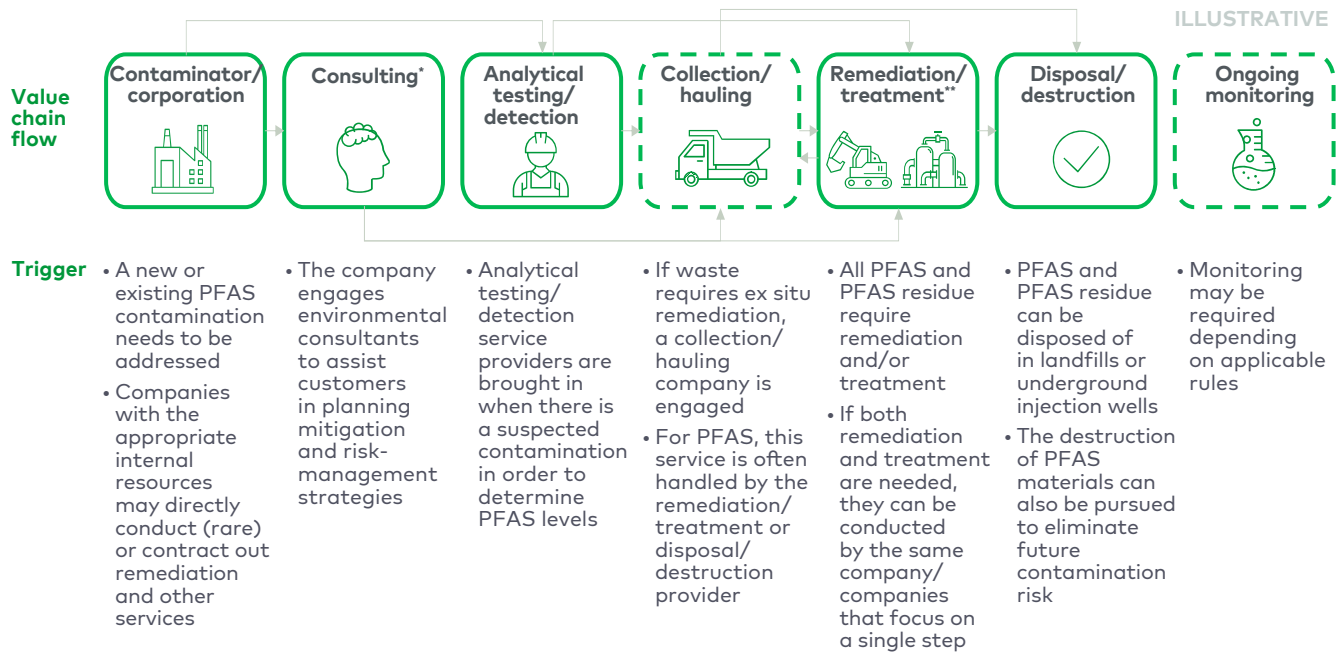
**Airports and military sites** are also conducting comprehensive site assessments to identify and quantify PFAS contamination and developing and implementing plans to manage and mitigate the risks associated with such contamination. Meanwhile, they are investing in new treatment technologies and infrastructure to remove or reduce PFAS and are collaborating with local, state and federal regulators to ensure compliance with both existing and forthcoming PFAS regulations.

One example is the Port of Seattle, which manages Seattle-Tacoma International Airport. It's working to phase out PFAS-containing firefighting foams while actively seeking out services contracts to manage existing PFAS contamination.

### **Demand for PFAS services is picking up**

With federal regulations still pending and various entities formulating strategic responses to deal with PFAS, demand for PFAS-related environmental services — which include everything from analytical testing and PFAS detection services and consulting services to treatment services and those focused on disposal and destruction — is picking up (see Figure 4).

**Figure 4**  
PFAS service value chain



\*The consulting or engineering firm may conduct phase I and phase II site assessment to determine whether remediation is required; consulting firms typically subcontract remediation to construction firms

\*\*Remediation and treatment can occur in situ or ex situ, depending on the type of media and volume of material being remediated/treated; emergency response specialist may be engaged directly by customer if required and is typically awarded the remediation contracts for those sites

Note: PFAS=per- and polyfluoroalkyl substances

Source: L.E.K. research and analysis

## With regulation comes opportunity

When it comes to the regulation and mitigation of PFAS, a massive sea change is quickly approaching, as new regulations will cause the demand for remediation services to rise to unprecedented levels. Indeed, many entities are already developing or outright engaging in strategies to mitigate PFAS and their impact. But while this change will benefit some environmental services providers more than others, there are steps all of them can take to maximize the resulting opportunity.

### About L.E.K. Consulting

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## Endnotes

<sup>1</sup>Saferstates.org, "State Drinking Water Limits." <https://www.saferstates.org/priorities/pfas/>

<sup>2</sup>NCSL.org, "Per- and Polyfluoroalkyl Substances (PFAS) | State Legislation and Federal Action." <https://www.ncsl.org/environment-and-natural-resources/per-and-polyfluoroalkyl-substances>

<sup>3</sup>EPA.gov, "EPA's PFAS Strategic Roadmap: Second Annual Progress Report." <https://www.epa.gov/system/files/documents/2023-12/epas-pfas-strategic-roadmap-dec-2023508v2.pdf>

<sup>4</sup>Ibid.

<sup>5</sup>Federalregister.gov, "Toxic Substances Control Act Reporting and Recordkeeping Requirements for Perfluoroalkyl and Polyfluoroalkyl Substances." <https://www.federalregister.gov/documents/2023/10/11/2023-22094/toxic-substances-control-act-reporting-and-recordkeeping-requirements-for-perfluoroalkyl-and>

<sup>6</sup>APnews.com, "3M reaches \$10.3 billion settlement over contamination of water systems with 'forever chemicals.'" <https://apnews.com/article/pfas-forever-chemicals-3m-drinking-water-81775af23d6aeae63533796b1a1d2cdb>



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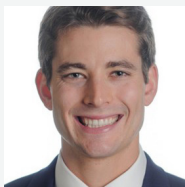
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