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Did sewage spill in your Bay Area neighborhood during the recent storms? Check this map

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8–11 minutes

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San Francisco Public Utilities Commission employees clean a clogged storm drain on Park Presidio Bypass on Jan. 9.

Michaela Vatcheva, Freelance / Special to The Chronicle

Millions of gallons of sewage have overflowed into Bay Area streets and water bodies since the first atmospheric river made landfall on New Year's Eve, inundating local wastewater systems not built to withstand intense storm after storm.

Preliminary reports of just how much sewage spilled — and where these spills occurred — are coming in from around the Bay Area. The Chronicle has mapped the data. While incomplete, readers can begin to get a sense of whether spills occurred in their neighborhood. Past spills may or may not indicate a chronic problem in a neighborhood or region, that could recur in another bout of heavy rain.

The data, from California State Water Resources Control Board, focuses on one type of spill called sanitary sewer overflows (SSOs). These are spills that involve sewage coming up out of a manhole or sewer pipe onto city streets and into streams and creeks — before the sewage would have gone into a wastewater treatment plant.

Public agencies are required to report such spills. From Dec. 26 to Jan. 23, nearly 6 million gallons of wastewater from SSO spills have been reported across the state, including more than 5.5 million gallons from the nine Bay Area counties alone. Of those spills, about 240,000 gallons have been recovered across the state — meaning that the sewage eventually got to the wastewater treatment plant after workers vacuumed it up or took other cleanup measures — including about 150,000 gallons in the Bay Area.

Eileen White, executive officer of the San Francisco Bay Water Board, cautioned that the data is "very preliminary," as agencies have up to 30 days to report the spills, depending on various factors. Most agencies, scrambling to keep up with wastewater flows while also possibly facing power outages and flooding, are making rough estimates to meet draft reporting requirements, White said.

"A lot of times, the numbers turn out to be a lot bigger," White said.

SSOs occur when the manholes or pipes carrying wastewater to wastewater plants are full or clogged, White said. They can also occur when wastewater plants are at full capacity, White said.

"It's like your sink at home. You fill it up, and it's about ready to overflow, so you turn off the water and you let it drain," White said.

SSOs don't include releases of raw or partially treated wastewater from wastewater treatment plants, White said. These releases, which can total up to millions of gallons on their own, occur when facilities are overwhelmed by the inflow of wastewater, when something breaks down at the plant or when a plant loses power, White said. White said some spills of this nature occurred in the Bay Area, though she declined to specify where each occurred or the amount, citing the preliminary nature of the reports.

Most of the SSO spills reported so far are the most severe spills, known as Category 1. A Category 1 spill — the type shown on the above map — means sewage likely reached rivers, streams and ultimately the Bay.

In the coming month, more data will become available about the smaller and less severe Category 2 and 3 spills, because agencies don't have to report these spills immediately, said Mary Cousins, regulatory program manager at Bay Area Clean Water Agencies, which represents 37 Bay Area treatment plants.

Relative to the rest of the state, "the Bay Area has historically had higher rates of sanitary sewer spills," Cousins said, adding that the current situation appeared to be in line with those trends. That's because Bay Area sewer systems are generally older than other systems around the state, Cousins said. The Bay Area was also hit particularly hard during the New Year's Eve storm, which accounts for most of the reported spills.

The higher number of reports seen in Alameda, San Mateo and Contra Costa counties in particular could be due to more spills, more thorough reportingor both, Cousins said.

"Many agencies here feel that they actually do a better job of reporting than other systems around the state do. There's a bias towards reporting even the very smallest incidents," Cousins said.

Close observers may notice that there's only been one reported SSO in San Francisco — on Marina Blvd on Dec. 31 — despite widespread reports of street flooding and backed-up manholes. That's because most of San Francisco's sewage system isn't technically considered a sanitary sewer system, which just carries wastewater. Instead, the city is unique in the Bay Area for largely having a combined sewer system, which carries a mix of stormwater and wastewater.

San Francisco's combined system makes it even more prone to backups and flooding during heavy rainstorms, but information about potential sewage on the city's streets is harder to come across, said Sejal Choksi-Chugh, executive director of Baykeeper, an advocacy group that tracks pollution in the Bay.

"It is a little bit of a black box in San Francisco," Choksi-Chugh said.

Spills from San Francisco's combined sewer system since Dec. 26 have occurred in several locations, according to San Francisco Public Utilities Commission press secretary Joseph Sweiss: Alemany Blvd., a Mission District area near 15th & 17th streets and the Islais Channel area at Marin St. & Indiana streets and Custer & Quint streets.

The city is currently analyzing its data to estimate the volume of stormwater mixed with wastewater that was spilled to report to the state later this month, Sweiss wrote in an email to the Chronicle.

When localized flooding occurs in San Francisco, the water is about 90% stormwater, Sweiss wrote. The amount of sewage, if any, is very low and highly diluted," Sweiss wrote. Even still,

Sweiss advised people to stay away from stormwater, which "can contain harmful pollutants and contaminants picked up from roofs, parking lots, sidewalks, and roadways," Sweiss wrote.

The SFPUC is "proud" of its combined sewer system, which treats stormwater and thus "minimizes pollutants entering San Francisco Bay and the Pacific Ocean," Sweiss wrote. Sweiss noted that San Francisco received more than 11 inches of rain over 10 days, "which is about 50% of our average annual rainfall."

"While we are pursuing every tool possible to prepare for and mitigate the effects of climate change — from capital investments to green infrastructure and more — localized flooding will undoubtedly occur when an extreme, intense, and historic volume of rain greatly exceeds the capacity of any urban wastewater or stormwater system. This is happening all over the Bay Area and state," Sweiss wrote.

With storms to continue through the weekend, the possibility of sewage spills in the Bay Area depends on the intensity of the rains and if there are breaks in between, Cousins said. "What causes the SSOs is very intense rainfall over a short amount of time, rather than just the fact that there is rainfall," Cousins said.

Looking forward, "the only way to correct these problems is through upgrades to pipelines that are in the street," both those operated by public agencies and on private property, Cousins said.

San Francisco has committed $600 million through 2032 to improve its stormwater management system, White noted. Several East Bay agencies, including the East Bay Municipal Utility District, Oakalnd, Alameda and Berkeley, have been ordered to update aging sewage infrastructure under a 2014 consent decree with the U.S. Environmental Protection Agency.

"It's typically not one or two little problems that need to be fixed. It's miles and miles of pipeline that needs to be slowly replaced. It's hundreds of millions to billions of dollars. We need the support of the public and we need their patience as these repairs are made," Cousins said.

Chronicle deputy data editor Yoohyun Jung contributed to this report.

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