

Gas Distribution Infrastructure Replacement

CPUC Backgrounder

March 2026

Summary

Gas utilities operate ongoing programs to replace their gas distribution pipelines. They may replace mains and services together or services only, and they may also replace local regulator stations.

Replacing gas distribution mains and services at the same time is the most common of the three activities and typically costs between \$20,000 and \$50,000 per gas service.

Table 1: Gas Distribution Replacement and Maintenance Costs Per Service¹

Program Type	PG&E	SoCalGas	SDG&E	Southwest Gas	IOU Average
Mains and Services Replacement ²	\$33,682	\$21,136	\$24,694	\$18,289	\$24,450
Service-Only Replacement	\$35,081	\$13,716	\$29,128	\$138,786 ³	\$54,178
Regulator Station Replacement	\$1,224	\$293	Not provided	Not applicable	\$758
<i>Annual Distribution System Maintenance (sum across programs)</i>	\$83	\$27	\$16	\$30	\$39

Utility-provided averages for 2021-2024

Current Replacement Process

- These programs focus on three distribution infrastructure categories:
 - Main pipelines (mains), which run under streets to distribute gas from higher-pressure pipelines to individual services;
 - Service pipelines (services), which connect each residence or business’s gas meter to the nearest main; and
 - Gas distribution regulator stations, which control the pressure drop from higher-pressure pipelines to main pipelines.
- Gas utilities organize their distribution replacement projects into three major program types:
 - Replacing mains, especially those that are made of Aldyl-A plastic or aging steel, and the services connected to them
 - Replacing services only, often one at a time
 - Replacing gas distribution regulator stations.
- Each of the gas utilities reviews its distribution mains, services, and regulator stations periodically and identifies some of the highest-risk sites for replacement.

¹ A service is a gas pipeline segment connecting a meter to a main. A service typically serves one customer, but sometimes more, e.g., an apartment building or shopping center. Thus, “per service” is similar to saying per customer.

² Cost of main and service replacements together, distributed across affected services.

³ See footnote 5.

- After a site is selected, the utility begins planning the work, contacting landowners, and applying for permits. In most cases, work at a site begins one to four years after it is selected, often depending on site-specific factors.

Context

- These activities constitute a major expense reviewed by the California Public Utilities Commission (CPUC) in utilities’ general rate cases.
- Gas distribution infrastructure replacement is receiving increasing attention because electrifying these sites instead of replacing the gas infrastructure may result in cost savings, as identified by California Senate Bill 1221 (Min 2024).

Mains and Services Replacement

- A mains and services replacement site consists of gas distribution mains in a contiguous area such as a cul-de-sac or city block and the services attached to them.
- Construction crews generally drill downward and sideways (without trenching) to access existing main and service pipes, lay new pipe alongside the existing pipe, connect it to the surrounding system at the desired endpoints, and disconnect the old pipe. This process can take several weeks or months.
- Mains and services replacement is conducted by gas utility employees and/or construction contractors with multi-site contracts with the utilities to do work in a given operating district.
- Over the last four years, an average gas distribution pipeline replacement site in the SoCalGas territory, for example, cost about \$320,000 and involved replacing the mains and services supporting fifteen buildings, as shown in the table below.



Connecting old and new pipe as part of mains and services replacement at a site in the Sacramento area

Table 2: Gas Distribution Mains and Services Replacement Summary (Utility-Wide Averages)

Program Category	PG&E	SoCalGas	SDG&E	Southwest Gas	IOU Average (unweighted)
Cost Per Service	\$33,682	\$21,136	\$24,694	\$18,289	\$24,450
Services Per Site	59	15	4	19	24
Sites Per Year	318	771	905	29	
Cost Per Site	\$1,979,784	\$317,746	\$104,806	\$347,491	\$593,266
Cost Per Year	\$628,581,416	\$245,061,399	\$94,875,637	\$10,077,239	
Project Planning Period (years)	2.8	1.1	0.1	not provided	1.3

Utility-provided averages for 2021-2024

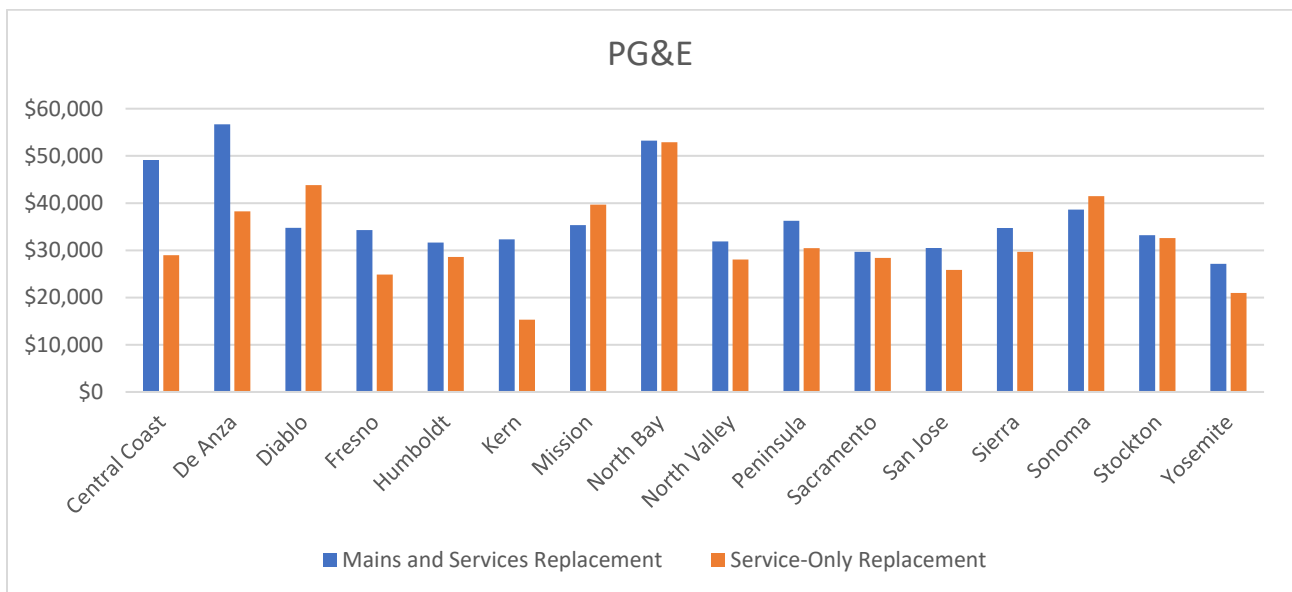
Regulator Station Replacement⁴

- PG&E and SoCalGas/SDG&E together replaced about 27 regulator stations per year in 2021-2024.
- One or more district regulator stations regulate the flow of gas from higher-pressure systems to mains and services that serve a set of customers in the same pressure district.
 - While on average each regulator station serves a thousand customers or more, some regulator stations serve fewer than 50 customers, and some serve five or fewer.
- While less frequent than replacing mains and services, each station replacement project is larger.
- On average, it takes more than two years from identification of a regulator station for replacement to breaking ground.

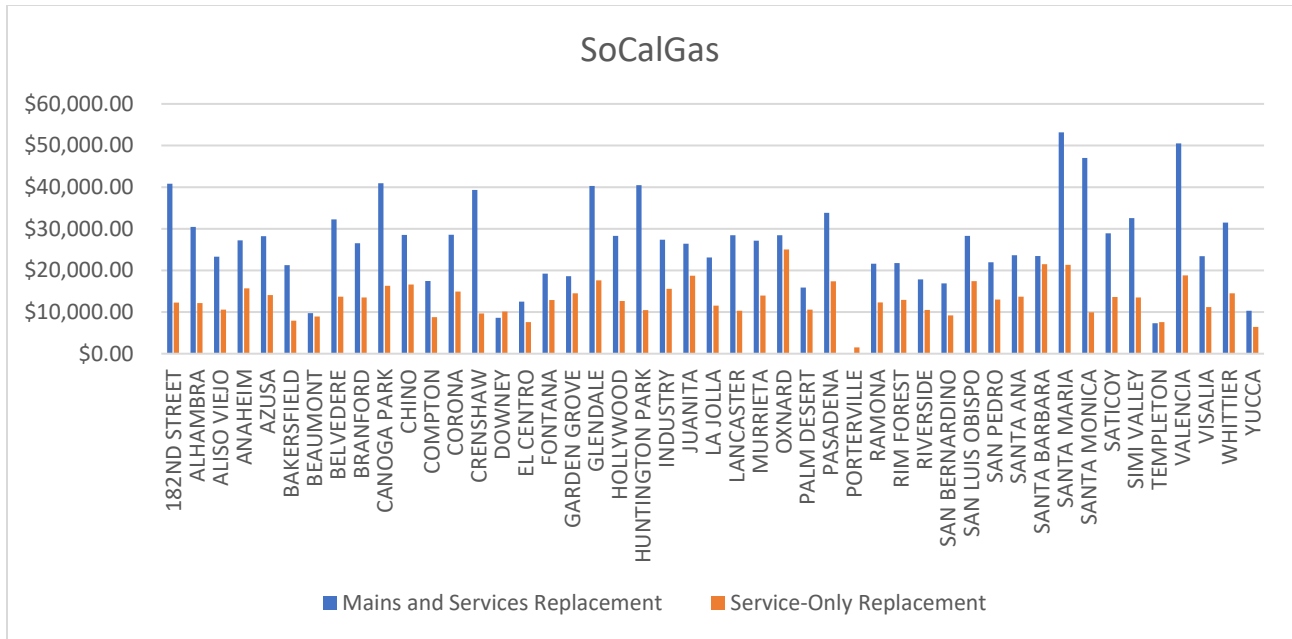
Cost Calculation

- Distribution project costs can be estimated using district averages based on operating districts each utility uses to manage its infrastructure. Costs per mile and typical length of services vary by district.

Main and Service Pipeline Replacement Costs Per Service by District



⁴ This information includes only gas distribution district regulator stations, not other types of regulator stations.



Utility-provided averages for 2021-2024

- Costs for these programs are reported in general rate cases using miles of main or services or the number of regulator stations replaced. The exact costs here will differ from rate cases due to using different years of recorded data and no inflation adjustment.

Table 3: Average Gas Distribution Replacement Costs (per typical utility reporting units)

	PG&E	SoCalGas	SDG&E	Southwest Gas	IOU Average
Mains and Services Replacement (per mile)	\$3,871,135	\$2,505,980	\$2,841,311	\$616,036	\$2,458,616
Service-Only Replacement (per service)	\$35,081	\$13,716	\$29,128	\$138,786 ⁵	\$54,178
Regulator Station Replacement (per station)	\$3,046,801	\$162,392	Not provided	Not applicable	\$1,604,597

- PG&E and SoCalGas/SDG&E each operate gas mains and services replacement programs focused on Aldyl-A plastic, aging steel, and other gas mains and services, as well as replacement programs for services and regulator stations. Southwest Gas has slightly different programs.

⁵ Southwest Gas' service-only replacement focuses on schools, so may entail larger projects than typical residential service replacement conducted by other utilities.

Table 4: Gas Distribution Replacement Program Rate Codes Used in General Rate Cases

<i>Infrastructure Replaced</i>	PG&E	SoCalGas/ SDG&E	Southwest Gas	Unit of Work for Planning Purposes
Mains and Services Replacement	14A (Aldyl-A plastic), 14D (aging steel), 50A (other)	VIPP (Aldyl-A plastic) and BSRP (aging steel) in 277, other (252, 253, 255, 267, 278)	TPRP (plastic) and VSP (aging steel) in 9636 and 9605	Site, aka work order
Service-Only Replacement	50B	256, 257, 258, 260	COYL (customer-owned) Program ⁵	Site, aka work order, usually one service
Regulator Station Replacement	50C	Rebuilds within 265	Not applicable	Regulator station

Additional Information

- Utility-provided 2021-2024 average cost data by region, services per project, internal vs. external/contracted labor costs, maps, and more are available in the cost data and map webpage sections of the CPUC’s *SB 1221 Implementation* webpage, <https://www.cpuc.ca.gov/industries-and-topics/natural-gas/sb-1221-implementation>. This is the main data source for this fact sheet.
- The processes for replacing mains, services, and regulator stations are discussed in further detail in the CPUC staff’s *Gas Distribution Infrastructure Replacement* slides presented at the September 2025 workshop in the Long-Term Gas Planning Proceeding, available at <https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/natural-gas/sb1221/r2409012-workshop-slides.pdf>, starting on slide 81, and linked from the proceeding webpage <https://www.cpuc.ca.gov/industries-and-topics/natural-gas/long-term-gas-planning-rulemaking>.
- Additional infrastructure descriptions and program data for the large gas utilities are provided in the CPUC Energy Division Staff Proposal *Recommendations for SB 1221 California Natural Gas System Mapping*, <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M556/K897/556897432.PDF>, Tables 1 and 2 and pp. 13-22.
- Gas distribution program summaries from each utility are available in the “Program Specific” tab of each of the “Supplemental Data” files linked in the “Data” section on the previous Long Term Gas Planning Proceeding’s webpage, <https://www.cpuc.ca.gov/industries-and-topics/natural-gas/long-term-gas-planning-rulemaking-closed>.