

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Establish Policies, Processes, and Rules to Ensure Safe and Reliable Gas Systems in California and Perform Long-Term Gas System Planning.

Rulemaking 20-01-007
(Filed January 16, 2020)

**SOUTHWEST GAS CORPORATION (U 905 G) RESPONSE TO ADMINISTRATIVE
LAW JUDGES' RULING SEEKING REVISED DATA FROM CALIFORNIA'S GAS
UTILITIES**

Vincent J. Vitatoe
Associate General Counsel
8360 South Durango Drive
Las Vegas, NV 89113
Telephone: (702) 876-7396
Facsimile: (702) 364-3446
Email: vincent.vitatoe@swgas.com

Attorney for Southwest Gas Corporation

Dated: November 4, 2022

1 **BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA**

2 Order Instituting Rulemaking to Establish
3 Policies, Processes, and Rules to Ensure
4 Safe and Reliable Gas Systems in
California and Perform Long-Term Gas
System Planning.

Rulemaking 20-01-007
(Filed January 16, 2020)

5 **SOUTHWEST GAS CORPORATION (U 905 G) RESPONSE TO ADMINISTRATIVE**
6 **LAW JUDGES' RULING SEEKING REVISED DATA FROM CALIFORNIA'S GAS**
7 **UTILITIES**

8 Pursuant to the Administrative Law Judge's September 21, 2022¹ Ruling Seeking Revised
9 Data From California's Gas Utilities (Ruling), Southwest Gas Corporation (Southwest Gas or
10 Company) respectfully submits its data response as set forth herein and attached. Pursuant to
11 Rule 11.6, this response is timely provided pursuant to the Administrative Law Judge's partial
12 granting of a joint motion² to extend time to respond which revised the initial deadline of October
21, 2022 to November 4, 2022.

13 The Ruling seeks revised information as part of the long-term gas planning strategy issues
14 to be addressed in this proceeding. Southwest Gas' responsive information addresses the
15 Ruling's requested information as set forth in the Ruling's Appendix.

16
17 ///

18
19 ///

20
21 ///

22
23 _____
24 1 The Ruling was further clarified by the Administrative Law Judge's ruling, issued October 28, 2022,
addressing the gas utilities' confidentiality claims concerning customer gas consumption and infrastructure
data and an order requiring resubmission of certain data.

25 2 See Southern California Gas Company, San Diego Gas & Electric Company, Pacific Gas & Electric
26 Company and Southwest Gas Corporation's Joint Motion for an Extension of time to Respond to the
Administrative Law Judge's Ruling Seeking Revised Data from California's Gas Utilities filed on October
13, 2022.

1 **I. Information to be Provided: Applicable to All Utilities.**

- 2 1. ***Risk Assessment Methods (New Request)*** – “...provide a description of their
3 distribution pipeline risk and consequence assessment methods, including all
4 input variable definitions, data sources for inputs, equations or descriptions of
5 equations sufficient to recreate them, and output variable definitions. A
6 description of the defining characteristics of distribution pipelines subject to this
7 analysis and of the distribution pipelines not subject to this analysis shall also be
8 provided. Documents provided in other proceedings or data requests may be
9 resubmitted to fulfill this requirement if they include the required information. If
10 the complete document(s) constitute more than 10 pages, the utility shall also
11 provide a one-page summary.

12 Below is a description of the Southwest Gas’ distribution pipeline risk and consequence
13 assessment process. The objective of risk evaluation and ranking is to provide an ongoing
14 process for understanding what factors affect the risk posed by threats to the distribution
15 pipelines and their relative importance. The primary objectives of the evaluation and ranking of
16 distribution pipeline risk are the following:

- 17 • Consider each applicable current and potential threat
- 18 • Consider the likelihood of failure associated with each threat
- 19 • Consider the consequences of such a failure
- 20 • Estimate and rank the risks, that is, determine the relative importance, posed to the
21 pipelines
- 22 • Consider the relevance of threats in one location to other areas

23 For the current leak evaluation and risk ranking process, Southwest Gas conducts an annual
24 leak evaluation and risk ranking primarily using the Leak Evaluation and Risk Assessment
25 process outlined in **Exhibit A-1, Attachment QA1 SWG DIMP Plan Evaluation and Ranking of
26 Risk**. Non-Leaking facilities have threats associated with them which are considered low risk.
27 These are outlined in **Exhibit A-2, Attachment QA1 Non-Leaking Risk Assessment Spreadsheet**.
28 Additionally, **Exhibit A-3, QA1 Leaking Risk Assessment Spreadsheet** is used to calculate risk
29 scores for each segment of pipe that has leaked. Likelihood scores are assigned based on
30 number of leaks experienced in the last six years. Likelihood scores may also be influenced by
31 Corrosion Protection (CP) history for the corrosion threat category or depth of cover for

1 excavation damage. Consequence scores are assigned based on class location and proximity
2 to hospitals, schools, stadiums, and other high-density structures.

3 Input Variable Definitions:

4 Input variable definitions are contained in Section 6.1 of Southwest Gas' DIMP Plan
5 included as **Exhibit A-4, Attachment QA1 Input Variable Definitions**. Other pertinent definitions
6 include:

7 Class Location – An area within the gas system that is based on building type and density
8 or land use that determines the construction design factor.

9 Cathodic Protection (CP) – A process of impressing and maintaining an electrical potential
10 on a facility segment of piping so the electric current tends to flow onto the piping rather
11 than leave it.

12 Data Sources for Inputs:

13 Data sources for inputs are summarized in **Exhibit A-5, Attachment QA1 Data Sources**
14 *for Inputs*.

15 Equations:

16 Risk = Likelihood of a Failure Occurring X Consequence that could be caused by the
17 Failure if it occurs.

18 Defining Characteristics of Distribution Pipelines:

19 A distribution main is defined as a pipeline that does not meet the requirements for a
20 transmission pipeline, beginning at the point where the natural gas enters Southwest Gas
21 pipeline at a supplier tap. All Southwest Gas distribution pipelines are subject to the analysis
22 described above.

23 ///

24 ///

26

1 **2. PHMSA Distribution Pipeline Mileage and Repairs Reports (New Request) –**
2 **“...Provide copies of their ‘Annual Report for 2021 Gas Distribution System’ most**
3 **recently submitted to the federal Pipeline Hazards and Safety Administration in**
4 **compliance with 49 CFR Part 191.”**

5 Please refer to **Exhibit A-6, Attachment QA2 Southwest Gas_2021 PHMSA Annual Report**
6 **California Distribution.**

7 **II. Information to be Provided: Utility-Specific – Southwest Gas Corporation**

8 **1. Corrected Gas System Census Tract Data**

9 Please refer to **Exhibit B-1, “Gas System Census Tract Data-Southwest Gas DR 2”.**

10 **2. Additional Information Relating to Gas System Census Tract Data**

11 Please refer to **Exhibit B-1, “Gas System Census Tract Data-Southwest Gas DR 2”.**

12 **3. Additional Information Relating to Consumption Data by Census Tract**

13 Please refer to **Exhibit B-2, “Consumption Data by Census Tract Southwest Gas DR 2**
14 **11042022”.** Southwest Gas merged the census tract information with its customer data to
15 provide the information requested on the attachment. Southwest Gas discovered that the data
16 is not complete, as the attached data is approximately 16,000 customers less than what has
17 been reported on **Exhibit B-3, Consumption Data by Zip Code-Southwest Gas DR 2 11042022**
18 **spreadsheet.** Southwest Gas performed a test of the Census Bureau website by uploading
19 some of the addresses to try to retrieve the census tract information. Although, some addresses
20 matched, many still did not match.

21 Southwest Gas would need additional time to investigate this further in order to try to match
22 the two spreadsheets. The additional time needed is unknown as Southwest Gas is unsure of
23 the results it will get from the Census Bureau website to determine the missing addresses, given
24 that confirming each missing address would likely be a manual process. The timeline is also
25 affected with the upcoming holiday season and vacations. Southwest Gas roughly estimates
26 that it would need at least to the end of January 2023 to either provide confirmed data or provide

1 the Commission with an updated time frame necessary if a manual process were, in fact,
2 needed to confirm the missing addresses.

3 4. *Corrected Consumption Data by Zip Code*

4 Please refer to **Exhibit B-3**, "*Consumption Data by Zip Code-Southwest Gas DR 2 1042022*".

5 5. *Additional Information Relating to Consumption Data by Zip Code*

6 Southwest Gas does not have any company use. As reported in the Company's Annual GO
7 112F Report, in 2021, an estimated 1.362 MMcf was lost or unaccounted for due to line breaks.

8 6. *Corrected Gas System Summary Statistics*

9 Please refer to **Exhibit B-4**, "*Gas System Summary Statistics-Southwest Gas DR 2*
10 *11042022*".

11 7. *Corrected Supplemental Data*

12 Please refer to **Exhibit B-5**, "*Supplemental Data Southwest Gas DR 2 11042022*".

13 DATED this 4th day of November, 2022.

14 Respectfully submitted,
15 SOUTHWEST GAS CORPORATION



16 _____
17 Vincent J. Vitatoe
18 Associate General Counsel
19 8360 South Durango Drive
20 Las Vegas, Nevada 89113
21 Telephone: (702) 876-7396
22 Facsimile: (702) 346-3446
23 Email: vincent.vitatoe@swgas.com
24 *Attorney for Southwest Gas Corporation*
25
26

Exhibit A-1



OPERATIONS MANUAL

© 2022 Southwest Gas Corporation

Prepared by: System Integrity
Approved by: Jerry Schmitz
Issue Date: 03/31/22
Effective Date: 04/30/22
Superseded Date: 01/31/22

7. EVALUATION AND RANKING OF RISK

7.1 OBJECTIVE

7.1.1 The objective of risk evaluation and ranking is to provide an ongoing process for understanding what factors affect the risk posed by threats to the distribution pipelines and their relative importance. The primary objectives of the evaluation and ranking of distribution pipeline risk are:

- Consider each applicable current and potential threat
- Consider the likelihood of failure associated with each threat
- Consider the potential consequences of such a failure
- Estimate and rank the risks (i.e., determine the relative importance) posed to the pipelines
- Consider the relevance of threats in one location to other areas

7.1.2 For the current leak evaluation and risk ranking process, the Company conducts an annual leak evaluation and risk ranking primarily using the Leak Evaluation and Risk Assessment processes outlined below. Other Risk Assessment processes are discussed in [sections 7.5, 7.6 and 7.7](#). Non-leaking facilities have threats associated with them which are considered low risk. (See [DIMP Risk Assessment/Non-leaking spreadsheet](#)). Non-leaking facilities are monitored through ongoing operations and maintenance activities.

The [Leaking Risk Assessment spreadsheet](#) is used to calculate risk scores for each segment of pipe that has leaked. Likelihood scores are assigned based on number of leaks experienced in the last six years. It may also be influenced by CP history for the corrosion threat category or depth of cover for excavation damage. Consequence scores are assigned based on class location and proximity to hospitals, schools, stadiums, and other high-density structures.

The [Non-Leaking Risk Assessment spreadsheet](#) contains baseline values by material type for facilities that have not experienced leaks. Likelihood scores are completed by incorporating engineering judgement and knowledge of historic practices and frequency of failure of each threat for the various material types. Consequence scores are assigned in the same manner as for the Leaking Risk Assessment described above.

7.1.3 The Leak Evaluation and Risk Assessments will be completed on or before July 31st of each year.



OPERATIONS MANUAL

© 2022 Southwest Gas Corporation

Prepared by: System Integrity
Approved by: Jerry Schmitz
Issue Date: 03/31/22
Effective Date: 04/30/22
Superseded Date: 01/31/22

7.2 LEAK EVALUATION

7.2.1 The first step in this process is titled the Leak Evaluation, which entails a review of all maps on which a leak occurred during the previous calendar year. Disregard the following leaks:

- Leaks resulting from Excavation Damage, leaks identified on the riser, and leaks at or above the stopcock.
- Leaks that are located where the segment has been replaced, abandoned, or component repaired and there are no other leaks on the subject pipe segment for the previous six (6) years. (For example, in 2018 the leaks for 2017 and 2011-2016 are reviewed).
 - The six (6) year lookback allows the Company to review two leak survey cycles and provides a relevant snapshot into performance of the segment being evaluated.
- Leaks that are in a segment area already scheduled for replacement due to Franchise, system improvement, or EVPP replacement project within the current year; use of this criteria requires the engineer to monitor related leakage data and ensure that this pipe is replaced as scheduled

7.2.2 During the Leak Evaluation process, segments are identified for Risk Assessment. Review of each segment being evaluated to see if leaks have occurred within the last 6 years and add that information on the map(s) for each segment. Segments may be chosen by geographical area (i.e., tiles or atlases), areas with similar maintenance histories (such as CP history), same vintage, same pipe type (main or service), same pipe size, same material, or those installed in one work order or work request. Engineering judgement may be used in the determination of segmentation by other common system attributes.

Additionally, if a segment has a business district, school, hospital or stadium in the area being evaluated and meets the requirements for assessment, the area segments within 100-feet on all adjacent sides of the business district, school, hospital or stadium will be assessed as a separate segment, when applicable, giving higher weighting to the consequence scores.



OPERATIONS MANUAL

© 2022 Southwest Gas Corporation

Prepared by: System Integrity
Approved by: Jerry Schmitz
Issue Date: 03/31/22
Effective Date: 04/30/22
Superseded Date: 01/31/22

7.3 RISK ASSESSMENT AND VALIDATION

The annual Risk Assessment will be completed as follows:

Step 1:

For each segment, use the Leaking Risk Assessment spreadsheet or equivalent to perform a Risk Assessment. Enter information in the spreadsheet form to uniquely identify the segment being assessed.

In addition to the eight primary threat categories, the spreadsheet also incorporates a Leak Risk I and Leak Risk II category. Leak Risk I brings leak severity (grade) and leak rate into the risk calculation. Leak Risk II brings population density (class location) and leak rate into the risk calculation. Age of facility is also considered in the risk calculation.

The Aggregate Values contained in the Leaking Risk Assessment spreadsheet averages the assigned scores for all categories for a given segment and produces an overall risk score.

Step 2:

Follow directions in the spreadsheet to select an applicable score for each segment, given its characteristics utilizing the [Leaking Risk Assessment spreadsheet](#).

Step 3:

Save the Leaking Risk Assessment spreadsheet for every segment that is assessed.

Step 4:

Complete above steps for each segment identified in the Leak Evaluation process.

Step 5:

DIMP Key Contacts will validate the results of the risk ranking by asking the following question upon completion of the Risk Assessments.

- (1) Do the results and the operations and maintenance records focus on the same facilities or groups of facilities?
- (2) Do the results agree with the experiences of the Company's SME(s)?

If the answer is no, consult the System Integrity DIMP Manager.



OPERATIONS MANUAL

© 2022 Southwest Gas Corporation

Prepared by: System Integrity
Approved by: Jerry Schmitz
Issue Date: 03/31/22
Effective Date: 04/30/22
Superseded Date: 01/31/22

7.4 RISK ASSESSMENT RESPONSIBILITIES

- 7.4.1 The DIMP Team will review the risk factors annually and update the risk factors as needed. This review happens during the annual DIMP meeting and changes are documented in the meeting notes.
- Risk factors included in Risk Assessment are Threat Categories (outlined in [Section 6.1](#)) and any additional risk factors deemed significant by the DIMP Team
 - The risk factors are those included in the [Leaking Risk Assessment spreadsheet](#) and Non-Leaking Risk Assessment spreadsheet for the current pipe risk assessment
- 7.4.2 The DIMP Team will consider available information relating to the distribution system's design, installation, operation, maintenance and environmental factors when reviewing risk factors.
- 7.4.3 The same risk factors are used throughout the Company for Risk Assessments.
- 7.4.4 DIMP Key Contacts, validate the risk rankings to determine if the results accurately reflect what is known about the distribution pipeline and the current and/or potential threats experienced.

7.5 SYSTEM INTEGRITY REVIEW

- 7.5.1 System Integrity will review annual leak data and conduct a leak analysis to determine if additional or accelerated actions (A/As) require implementation.
- 7.5.2 System Integrity will review material investigations to determine if measures to address risk require implementation.

7.6 RISK ASSESSMENT PROCESS – EXCAVATION DAMAGE THREAT

- 7.6.1 Southwest considers excavation damage a high-risk threat. Relative risk ranking for the excavation damage threat is outlined in the Operations Manual Damage Prevention Program (DPP).
- 7.6.2 The process includes an analysis of the number of Excavation Damages/1,000 Tickets by the damage causes contained in the Damage Cause Database (DCD). The DPP outlines various actions to prevent or mitigate excavation damages. Additional actions may be taken based upon the risk analysis.



OPERATIONS MANUAL

© 2022 Southwest Gas Corporation

Prepared by: System Integrity
Approved by: Jerry Schmitz
Issue Date: 03/31/22
Effective Date: 04/30/22
Superseded Date: 01/31/22

7.7 RISK ASSESSMENT PROCESS - OTHER

- 7.7.1 Risk assessment outside the Risk Assessment process is also considered. Use of the DIMP Threat Checklist provides a means for assessing risks of newly discovered threats to the distribution pipelines that may not have been included in the Leak Evaluations and Risk Assessments steps in the Risk Assessment process due to timing, uniqueness or localization of the threat.

Exhibit A-2

**2020 DIMP Risk Assessment
Non-Leaking Pipe**

RISK FACTORS

Corrosion Failure		<i>Consequence</i>		
		Low (1)	Medium (2)	High (3)
Likelihood	Low (1)	1	2	3
	Medium (2)	2	4	6
	High (3)	3	6	9

Natural Forces		<i>Consequence</i>		
		Low (1)	Medium (2)	High (3)
Likelihood	Low (1)	1	2	3
	Medium (2)	2	4	6
	High (3)	3	6	9

Excavation Damage		<i>Consequence</i>		
		Low (1)	Medium (2)	High (3)
Likelihood	Low (1)	1	2	3
	Medium (2)	2	4	6
	High (3)	3	6	9

Other Outside Force		<i>Consequence</i>		
		Low (1)	Medium (2)	High (3)
Likelihood	Low (1)	1	2	3
	Medium (2)	2	4	6
	High (3)	3	6	9

Pipe, Weld or Joint		<i>Consequence</i>		
		Low (1)	Medium (2)	High (3)
Likelihood	Low (1)	1	2	3
	Medium (2)	2	4	6
	High (3)	3	6	9

	Non-leaking pipe values			
	Pre-1970s Steel (60 psig or less)	1970s and newer Steel (60 psig or less)	Pre-1970s Steel (>60 psig)	1970s and newer Steel (>60 psig)
Consequence	2	2	3	3
Likelihood	1	1	1	1
Risk Value	2	2	3	3

	Non-leaking pipe values													
	Pre-1970s Steel (60 psig or less)	1970s and newer Steel (60 psig or less)	Pre-1970s Steel (>60 psig)	1970s and newer Steel (>60 psig)	TW PVC	STD PVC	Aldyl A	MDPE	Plexco HD	M7000	M8000	PE 8100	GDB50	
Consequence	2	2	3	3	2	2	2	2	2	2	2	2	2	2
Likelihood	1	1	1	1	1	1	2	1	1	1	2	1	1	1
Risk Value	2	2	3	3	2	2	4	2	2	2	4	2	2	2

	Non-leaking pipe values													
	Pre-1970s Steel (60 psig or less)	1970s and newer Steel (60 psig or less)	Pre-1970s Steel (>60 psig)	1970s and newer Steel (>60 psig)	TW PVC	STD PVC	Aldyl A	MDPE	Plexco HD	M7000	M8000	PE 8100	GDB50	
Consequence	2	2	3	3	2	2	2	2	2	2	2	2	2	2
Likelihood	1	1	1	1	2	2	2	1	1	1	3	3	3	3
Risk Value	2	2	3	3	4	4	4	2	2	2	6	6	6	6

	Non-leaking pipe values													
	Pre-1970s Steel (60 psig or less)	1970s and newer Steel (60 psig or less)	Pre-1970s Steel (>60 psig)	1970s and newer Steel (>60 psig)	TW PVC	STD PVC	Aldyl A	MDPE	Plexco HD	M7000	M8000	PE 8100	GDB50	
Consequence	2	2	3	3	2	2	2	2	2	2	2	2	2	2
Likelihood	1	1	1	1	2	2	1	1	1	1	1	1	1	1
Risk Value	2	2	3	3	4	4	2	2	2	2	2	2	2	2

	Non-leaking pipe values													
	Pre-1970s Steel (60 psig or less)	1970s and newer Steel (60 psig or less)	Pre-1970s Steel (>60 psig)	1970s and newer Steel (>60 psig)	TW PVC	STD PVC	Aldyl A	MDPE	Plexco HD	M7000	M8000	PE 8100	GDB50	
Consequence	2	2	3	3	2	2	2	2	2	2	2	2	2	2
Likelihood	2	1	2	1	2	2	1	1	2	2	2	1	1	1
Risk Value	4	2	6	3	4	4	2	2	4	4	4	2	2	2

**2020 DIMP Risk Assessment
Non-Leaking Pipe**

Equipment Failure		<i>Consequence</i>		
		Low (1)	Medium (2)	High (3)
Likelihood	Low (1)	1	2	3
	Medium (2)	2	4	6
	High (3)	3	6	9

		Non-leaking pipe values												
		Pre-1970s Steel (60 psig or less)	1970s and newer Steel (60 psig or less)	Pre-1970s Steel (>60 psig)	1970s and newer Steel (>60 psig)	TW PVC	STD PVC	Aldyl A	MDPE	Plexco HD	M7000	M8000	PE 8100	GDB50
Consequence		2	2	3	3	2	2	2	2	2	2	2	2	2
Likelihood		1	1	1	1	1	1	1	1	1	1	1	1	1
Risk Value		2	2	3	3	2	2	2	2	2	2	2	2	2

Incorrect Operation		<i>Consequence</i>		
		Low (1)	Medium (2)	High (3)
Likelihood	Low (1)	1	2	3
	Medium (2)	2	4	6
	High (3)	3	6	9

		Non-leaking pipe values												
		Pre-1970s Steel (60 psig or less)	1970s and newer Steel (60 psig or less)	Pre-1970s Steel (>60 psig)	1970s and newer Steel (>60 psig)	TW PVC	STD PVC	Aldyl A	MDPE	Plexco HD	M7000	M8000	PE 8100	GDB50
Consequence		2	2	3	3	2	2	2	2	2	2	2	2	2
Likelihood		1	1	2	1	1	1	2	1	2	1	2	1	1
Risk Value		2	2	6	3	2	2	4	2	4	2	4	2	2

Leak Risk I		<i>Consequence</i>		
		Low (1)	Medium (2)	High (3)
Likelihood	Low (1)	1	2	3
	Medium (2)	2	4	6
	High (3)	3	6	9

		Non-leaking pipe values												
		Pre-1970s Steel (60 psig or less)	1970s and newer Steel (60 psig or less)	Pre-1970s Steel (>60 psig)	1970s and newer Steel (>60 psig)	TW PVC	STD PVC	Aldyl A	MDPE	Plexco HD	M7000	M8000	PE 8100	GDB50
Consequence		2	2	2	2	2	2	2	3	3	3	3	3	3
Likelihood		1	1	1	1	2	2	2	1	1	1	1	1	1
Risk Value		2	2	2	2	4	4	4	3	3	3	3	3	3

Leak Risk II		<i>Consequence</i>		
		Low (1)	Medium (2)	High (3)
Likelihood	Low (1)	1	2	3
	Medium (2)	2	4	6
	High (3)	3	6	9

		Non-leaking pipe values												
		Pre-1970s Steel (60 psig or less)	1970s and newer Steel (60 psig or less)	Pre-1970s Steel (>60 psig)	1970s and newer Steel (>60 psig)	TW PVC	STD PVC	Aldyl A	MDPE	Plexco HD	M7000	M8000	PE 8100	GDB50
Consequence		2	2	3	3	2	2	2	2	2	2	2	2	2
Likelihood		1	1	1	1	2	2	2	1	1	1	1	1	1
Risk Value		2	2	3	3	4	4	4	2	2	2	2	2	2

Age of Facilities		<i>Consequence</i>		
		Low (1)	Medium (2)	High (3)
Likelihood	Low (1)	1	2	3
	Medium (2)	2	4	6
	High (3)	3	6	9

		Non-leaking pipe values												
		Pre-1970s Steel (60 psig or less)	1970s and newer Steel (60 psig or less)	Pre-1970s Steel (>60 psig)	1970s and newer Steel (>60 psig)	TW PVC	STD PVC	Aldyl A	MDPE	Plexco HD	M7000	M8000	PE 8100	GDB50
Consequence		2	2	3	3	2	2	2	2	2	2	2	2	2
Likelihood		3	1	3	1	3	3	2	2	2	3	2	1	1
Risk Value		6	2	9	3	6	6	4	4	4	6	4	2	2

**2020 DIMP Risk Assessment
Non-Leaking Pipe**

Aggregate Value		Consequence		
		Low (1)	Medium (2)	High (3)
Likelihood	Low (1)	1	2	3
	Medium (2)	2	4	6
	High (3)	3	6	9

Aggregate Value	Non-leaking pipe values													
	Pre-1970s Steel (60 psig or less)	1970s and newer Steel (60 psig or less)	Pre-1970s Steel (>60 psig)	1970s and newer Steel (>60 psig)	TW PVC	STD PVC	Aldyl A	MDPE	Plexco HD	M7000	M8000	PE 8100	GDB50	
Consequence	2.0	2.0	2.9	2.9	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	
Likelihood	1.3	1.0	1.4	1.0	1.8	1.8	1.7	1.1	1.3	1.3	1.7	1.2	1.2	
Risk Value	2.6	2.0	4.1	2.9	3.6	3.6	3.3	2.3	2.8	2.8	3.5	2.6	2.6	

Low risk < 4

Medium risk 4-6

High risk >6

Exhibit A-3

RISK FACTORS

Corrosion Failure		Consequence		
		Low (1)	Medium (2)	High (3)
Likelihood	Low (1)	1	2	3
	Medium (2)	2	4	6
	High (3)	3	6	9

	Pre-1970s Steel (60 psig or less)	1970s and newer Steel (60 psig or less)	Pre-1970s Steel (>60 psig)	1970s and newer Steel (>60 psig)
Consequence	2	2	3	3
Likelihood	1	1	1	1
Risk Value	2	2	3	3

Consequence is determined by Class Location and Operating Pressure of the segment.
 -Class 1 and 2 are Low Consequence.
 -Class 3 with no hospitals, schools, stadiums or other high density structures are Medium Consequence.
 -Class 4 or hospitals, schools, stadiums, or all pipelines operating at > 60-psig are High Consequence.
Likelihood is determined by C.P. history, coating, and condition of pipe.
 -Segments where C.P. has been present and is adequate, and wrap and condition of pipe are good are Low Risk.
 -Segments where C.P. was not always present and reads indicate a good C.P. history after the segment was protected, or wrap or condition of pipe are fair are Medium Risk.
 -Segments where C.P. was not present and reads indicate difficulty protecting the system, or 100-millivolt shift, or wrap or condition are poor are a High Risk.

Natural Forces		Consequence		
		Low (1)	Medium (2)	High (3)
Likelihood	Low (1)	1	2	3
	Medium (2)	2	4	6
	High (3)	3	6	9

	Pre-1970s Steel (60 psig or less)	1970s and newer Steel (60 psig or less)	Pre-1970s Steel (>60 psig)	1970s and newer Steel (>60 psig)	TW PVC	STD PVC	Aldyl A	MDPE	Plexco HD	M7000	M8000	PE 8100	GDB50
Consequence	2	2	3	3	2	2	2	2	2	2	2	2	2
Likelihood	1	1	1	1	1	1	2	1	1	1	2	1	1
Risk Value	2	2	3	3	2	2	4	2	2	2	4	2	2

Consequence is determined by Class Location and Operating Pressure for the segment; note: plastic pipe at 60-psig or less.
 -Class 1 and 2 are Low Consequence.
 -Class 3 with no hospitals, schools, stadiums or other high density structures are Medium Consequence.
 -Class 4 or hospitals, schools, stadiums, or all pipelines operating at > 60-psig are High Consequence.
Likelihood is determined based on possibility of damage due to natural forces.
 -Segments where there are no Natural Forces leaks in last six years are Low Risk.
 -Segments where there are one Natural Force leak in last six years are Medium Risk.
 -Segments where there are two or more Natural Force leaks in the last six years are High Risk.

Potential for Excavation Damage		Consequence		
		Low (1)	Medium (2)	High (3)
Likelihood	Low (1)	1	2	3
	Medium (2)	2	4	6
	High (3)	3	6	9

	Pre-1970s Steel (60 psig or less)	1970s and newer Steel (60 psig or less)	Pre-1970s Steel (>60 psig)	1970s and newer Steel (>60 psig)	TW PVC	STD PVC	Aldyl A	MDPE	Plexco HD	M7000	M8000	PE 8100	GDB50
Consequence	2	2	3	3	2	2	2	2	2	2	2	2	2
Likelihood	1	1	1	1	2	2	2	1	1	1	3	3	3
Risk Value	2	2	3	3	4	4	4	2	2	2	6	6	6

Consequence is determined by Class Location and Operating Pressure for the segment; note: plastic pipe at 60-psig or less.
 -Class 1 and 2 are Low Consequence.
 -Class 3 with no hospitals, schools, stadiums or other high density structures are Medium Consequence.
 -Class 4 or hospitals, schools, stadiums, or all pipelines operating at > 60-psig are High Consequence.
Likelihood is determined based on possibility of excavation damage and the piping cover.
 -Segments where there are no Excavation Damage leaks in last six years and ≥ 24 inches cover are Low Risk.
 -Segments where there are one Excavation Damage leaks in last six years and ≥ 24 inches cover are Medium Risk.
 -Segments where there are two or more Excavation Damage leaks in the last six years or < 24 inches cover are High Risk.

Other Outside Force Damage		Consequence		
		Low (1)	Medium (2)	High (3)
Likelihood	Low (1)	1	2	3
	Medium (2)	2	4	6
	High (3)	3	6	9

	Pre-1970s Steel (60 psig or less)	1970s and newer Steel (60 psig or less)	Pre-1970s Steel (>60 psig)	1970s and newer Steel (>60 psig)	TW PVC	STD PVC	Aldyl A	MDPE	Plexco HD	M7000	M8000	PE 8100	GDB50
Consequence	2	2	3	3	2	2	2	2	2	2	2	2	2
Likelihood	1	1	1	1	2	2	1	1	1	1	1	1	1
Risk Value	2	2	3	3	4	4	2	2	2	2	2	2	2

Consequence is determined by Class Location and Operating Pressure for the segment; note: plastic pipe at 60-psig or less.
 -Class 1 and 2 are Low Consequence.
 -Class 3 with no hospitals, schools, stadiums or other high density structures are Medium Consequence.
 -Class 4 or hospitals, schools, stadiums, or all pipelines operating at > 60-psig are High Consequence.
Likelihood is determined based on possibility of Other Outside Force Damage leaks.
 -Segments where there are no Other Outside Force Damage leaks in last six years are Low Risk.
 -Segments where there are one Other Outside Force Damage leaks in last six years are Medium Risk.
 -Segments where there are two or more Other Outside Force Damage leaks in the last six years are High Risk.

Pipe, Weld, or Joint Failure		Consequence		
		Low (1)	Medium (2)	High (3)
Likelihood	Low (1)	1	2	3
	Medium (2)	2	4	6
	High (3)	3	6	9

	Pre-1970s Steel (60 psig or less)	1970s and newer Steel (60 psig or less)	Pre-1970s Steel (>60 psig)	1970s and newer Steel (>60 psig)	TW PVC	STD PVC	Aldyl A	MDPE	Plexco HD	M7000	M8000	PE 8100	GDB50
Consequence	2	2	3	3	2	2	2	2	2	2	2	2	2
Likelihood	2	1	2	1	2	2	1	1	2	2	2	1	1
Risk Value	4	2	6	3	4	4	2	2	4	4	4	2	2

Consequence is determined by Class Location and Operating Pressure for the segment; note: plastic pipe at 60-psig or less.
 -Class 1 and 2 are Low Consequence.
 -Class 3 with no hospitals, schools, stadiums or other high density structures are Medium Consequence.
 -Class 4 or hospitals, schools, stadiums, or all pipelines operating at > 60-psig are High Consequence.
Likelihood is determined based on possibility of Pipe, Weld, or Joint Failure leaks or NCDP.
 -Segments where there are no Pipe, Weld, or Joint Failure leaks in last six years or no NCDP are Low Risk.
 -Segments where there are one Pipe, Weld, or Joint Failure leaks in last six years are Medium Risk.
 -Segments where there are two or more Pipe, Weld, or Joint Failure leaks in the last six years or NCDP are High Risk.

Equipment Failure		Consequence		
		Low (1)	Medium (2)	High (3)
Likelihood	Low (1)	1	2	3
	Medium (2)	2	4	6
	High (3)	3	6	9

	Pre-1970s Steel (60 psig or less)	1970s and newer Steel (60 psig or less)	Pre-1970s Steel (>60 psig)	1970s and newer Steel (>60 psig)	TW PVC	STD PVC	Aldyl A	MDPE	Plexco HD	M7000	M8000	PE 8100	GDB50
Consequence	2	2	3	3	2	2	2	2	2	2	2	2	2
Likelihood	1	1	1	1	1	1	1	1	1	1	1	1	1
Risk Value	2	2	3	3	2	2	2	2	2	2	2	2	2

Consequence is determined by Class Location and Operating Pressure for the segment; note: plastic pipe at 60-psig or less.
 -Class 1 and 2 are Low Consequence.
 -Class 3 with no hospitals, schools, stadiums or other high density structures are Medium Consequence.
 -Class 4 or hospitals, schools, stadiums, or all pipelines operating at > 60-psig are High Consequence.
Likelihood is determined based on possibility of Equipment Failure leaks or overpressure incidents.
 -Segments where there are no Equipment Failure leaks and no overpressure incidents in last six years are Low Risk.
 -Segments where there are one Equipment Failure leaks and no overpressure incidents in last six years are Medium Risk.
 -Segments where there are two or more Equipment Failure leaks or an overpressure incidents in the last six years are High Risk.

**2020 DIMP Risk Assessment
Leaking Pipe**

Incorrect Operation		<i>Consequence</i>		
		Low (1)	Medium (2)	High (3)
Likelihood	Low (1)	1	2	3
	Medium (2)	2	4	6
	High (3)	3	6	9

	Pre-1970s Steel (60 psig or less)	1970s and newer Steel (60 psig or less)	Pre-1970s Steel (>60 psig)	1970s and newer Steel (>60 psig)	TW PVC	STD PVC	Aldyl A	MDPE	Plexco HD	M7000	M8000	PE 8100	GDB50
Consequence	2	2	3	3	2	2	2	2	2	2	2	2	2
Likelihood	1	1	2	1	1	1	2	1	2	1	2	1	1
Risk Value	2	2	6	3	2	2	4	2	4	2	4	2	2

Consequence is determined by Class Location and Operating Pressure for the segment; note: plastic pipe at 60-psig or less.
 -Class 1 and 2 are Low Consequence.
 -Class 3 with no hospitals, schools, stadiums or other high density structures are Medium Consequence.
 -Class 4 or hospitals, schools, stadiums, or all pipelines operating at > 60-psig are High Consequence.
Likelihood is determined based on possibility of Incorrect Operation leaks.
 -Segments where there are no Incorrect Operation in last six years are Low Risk.
 -Segments where there are one Incorrect Operation in last six years are Medium Risk.
 -Segments where there are two or more Incorrect Operation leaks in the last six years are High Risk.

Leak Risk I		<i>Consequence</i>		
		Low (1)	Medium (2)	High (3)
Likelihood	Low (1)	1	2	3
	Medium (2)	2	4	6
	High (3)	3	6	9

	Pre-1970s Steel (60 psig or less)	1970s and newer Steel (60 psig or less)	Pre-1970s Steel (>60 psig)	1970s and newer Steel (>60 psig)	TW PVC	STD PVC	Aldyl A	MDPE	Plexco HD	M7000	M8000	PE 8100	GDB50
Consequence	2	2	2	2	2	2	2	3	3	3	3	3	3
Likelihood	1	1	1	1	2	2	2	1	1	1	1	1	1
Risk Value	2	2	2	2	4	4	4	3	3	3	3	3	3

Consequence is determined by grade of actual leak(s) being assessed.
 -There is no Low Consequence in this category.
 -Grade 2 and Grade 3 is Medium Consequence.
 -Grade 1 is High Consequence.
Likelihood is determined by Leak Rate (Leaks per Mile).
 -Segments where Leak Rate ≤.5 are Low Risk.
 -Segments where Leak Rate >.5 and ≤1.0 are Medium Risk.
 -Segments where Leak Rate > 1.0 are High Risk.

Leak Risk II		<i>Consequence</i>		
		Low (1)	Medium (2)	High (3)
Likelihood	Low (1)	1	2	3
	Medium (2)	2	4	6
	High (3)	3	6	9

	Pre-1970s Steel (60 psig or less)	1970s and newer Steel (60 psig or less)	Pre-1970s Steel (>60 psig)	1970s and newer Steel (>60 psig)	TW PVC	STD PVC	Aldyl A	MDPE	Plexco HD	M7000	M8000	PE 8100	GDB50
Consequence	2	2	3	3	2	2	2	2	2	2	2	2	2
Likelihood	1	1	1	1	2	2	2	1	1	1	1	1	1
Risk Value	2	2	3	3	4	4	4	2	2	2	2	2	2

Consequence is determined by Class Location and Operating Pressure for the segment; note: plastic pipe at 60-psig or less.
 -Class 1 and 2 are Low Consequence.
 -Class 3 with no hospitals, schools, stadiums or other high density structures are Medium Consequence.
 -Class 4 or hospitals, schools, stadiums, or all pipelines operating at > 60-psig are High Consequence.
Likelihood is determined based on Leak Rate.
 -Segments where Leak Rate ≤.5 are Low Risk.
 -Segments where Leak Rate >.5 and ≤1.0 are Medium Risk.
 -Segments where Leak Rate > 1.0 are High Risk.

Age of Facilities		<i>Consequence</i>		
		Low (1)	Medium (2)	High (3)
Likelihood	Low (1)	1	2	3
	Medium (2)	2	4	6
	High (3)	3	6	9

	Pre-1970s Steel (60 psig or less)	1970s and newer Steel (60 psig or less)	Pre-1970s Steel (>60 psig)	1970s and newer Steel (>60 psig)	TW PVC	STD PVC	Aldyl A	MDPE	Plexco HD	M7000	M8000	PE 8100	GDB50
Consequence	2	2	3	3	2	2	2	2	2	2	2	2	2
Likelihood	3	1	3	1	3	3	2	2	2	3	2	1	1
Risk Value	6	2	9	3	6	6	4	4	4	6	4	2	2

Consequence is determined by Class Location and Operating Pressure for the segment; note: plastic pipe at 60-psig or less.
 -Class 1 and 2 are Low Consequence.
 -Class 3 with no hospitals, schools, stadiums or other high density structures are Medium Consequence.
 -Class 4 or hospitals, schools, stadiums, or all pipelines operating at > 60-psig are High Consequence.
Likelihood is determined based on Age (Plastic or Steel).
 PLASTIC PIPE age determination for Likelihood:
 -Age ≤ 20 years is Low Risk.
 -Age > 20 and ≤ 40 years is Medium Risk.
 -Age > 40 years is High Risk.
 STEEL PIPE:
 -Installation date > 1970 is Low Risk.
 -Installation date between 1950 and 1970 is Medium Risk.
 -Installation date < 1950 is High Risk.

Aggregate Value		<i>Consequence</i>		
		Low (1)	Medium (2)	High (3)
Likelihood	Low (1)	1	2	3
	Medium (2)	2	4	6
	High (3)	3	6	9

	Pre-1970s Steel (60 psig or less)	1970s and newer Steel (60 psig or less)	Pre-1970s Steel (>60 psig)	1970s and newer Steel (>60 psig)	TW PVC	STD PVC	Aldyl A	MDPE	Plexco HD	M7000	M8000	PE 8100	GDB50
Consequence	2.0	2.0	2.9	2.9	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1
Likelihood	1.3	1.0	1.4	1.0	1.8	1.8	1.7	1.1	1.3	1.3	1.7	1.2	1.2
Risk Value	2.6	2.0	4.1	2.9	3.6	3.6	3.3	2.3	2.8	2.8	3.5	2.6	2.6

Low risk < 4
Medium risk 4-6
High risk >6

Exhibit A-4



OPERATIONS MANUAL

© 2022 Southwest Gas Corporation

Prepared by: System Integrity
Approved by: Jerry Schmitz
Issue Date: 03/31/22
Effective Date: 04/30/22
Superseded Date: 01/31/22

6. THREAT IDENTIFICATION

The Company continually evaluates pipeline conditions to identify threats. The Company follows established criteria for identifying existing threats, including determining if they are localized or system-wide in scope, and conducts periodic evaluations of internal and external data sources to determine any new or potential threats to consider.

Threats as described in the following sections are considered and incorporated in the risk associated to company facilities. The Risk Assessment takes these threats into consideration.

Refer to the Distribution Leak Cause Definitions Reference Guide (Form 266.0) and the Aboveground Leaks Reference Guide (Form 266.1) for information about Leak Cause determination.

6.1 THREAT CATEGORIES

6.1.1 Corrosion Failure

The corrosion threat includes both internal and external corrosion caused by galvanic, bacterial, chemical, stray current or other corrosive action.

6.1.2 Natural Force Damage

This threat is the result of outside forces attributable to causes not involving humans such as: earth movements, earthquakes, landslides, subsidence, lightning, heavy rains/floods, heavy snow, washouts, flotation, mudslides, scouring, temperature, frost heave, frozen components, high winds or similar natural causes. This includes Palo Verde worms, gophers and tree roots.

6.1.3 Excavation Damage

The excavation damage threat can occur whenever the Company, its contractors or entities unrelated to the Company fail to protect the Company's distribution pipelines during excavation activities. The threat includes damage caused by earth moving or other equipment, tools or vehicles (used in excavation).

Examples include hand digging with shovel or digging with backhoe to expose distribution pipelines, lines hit during boring operations and improper backfill methods.



OPERATIONS MANUAL

© 2022 Southwest Gas Corporation

Prepared by: System Integrity
Approved by: Jerry Schmitz
Issue Date: 03/31/22
Effective Date: 04/30/22
Superseded Date: 01/31/22

6.1.4 Other Outside Force Damage

This threat includes fire or explosion (manmade or natural), electrical faults and vehicle damage (non-excavating). Examples include meter set or regulator station struck by vehicle and deliberate or willful acts such as vandalism.

6.1.5 Pipe, Weld, or Joint Failure

Components in the distribution pipelines may be susceptible to leaks, ruptures or other failures from defects in the material of the pipe, components or joints including mechanical fittings due to faulty manufacturing procedures, poor construction/installation practices or in-service stresses such as vibration, fatigue and environmental cracking. Failure of originally sound material from force applied during construction that caused a dent, gouge, excessive stress, etc., on steel or plastic components is included in this threat. In addition, faulty wrinkle bends, faulty field welds and damage sustained in transportation to the construction or fabrication site are included.

6.1.6 Equipment Failure

This threat includes the malfunction of control/relief equipment including valves, regulators, or other instrumentation; stripped threads or broken pipe couplings on nipples, valves, or mechanical couplings; seal failures on gaskets, O-rings, seal/pump packing where gasket, O-ring or seal/packing must be replaced.

6.1.7 Incorrect Operation

This threat may occur during installation, operations, maintenance or repair activities. This threat includes inadequate procedures or safety practices, failure to follow correct procedures, incorrect operations, unintentional product ignition during welding or maintenance, human error, employee fatigue and lack of expertise.

Laboratory Services and the DIMP Key Contacts will review the prior year's records in the Material Investigation (MI) application with a leak cause of Incorrect Operation. The results of the review and any applicable mitigative actions will be documented in annual reports to the Manager/Engineering Staff responsible for the DIMP Program.



OPERATIONS MANUAL

© 2022 Southwest Gas Corporation

Prepared by: System Integrity
Approved by: Jerry Schmitz
Issue Date: 03/31/22
Effective Date: 04/30/22
Superseded Date: 01/31/22

6.1.8 Other Cause

This threat category can include threats that upon discovery cannot be immediately classified or are unknown to the Company. All Other threats will eventually be reclassified into a specific category.

6.2 ADDITIONAL THREAT CONSIDERATIONS

6.2.1 The Company will periodically review data from internal sources and external sources such as those listed below and through the provisions contained in the Periodic Evaluation and Improvement section, to determine if additional potential threats are to be considered in the Plan. In addition, using the DIMP Threat Checklist, additional threats may be identified on an on-going basis, including those requiring immediate remediation.

6.2.2 Potential threats may include those, which are not currently evident based on reasonably available data. Consideration of other potential threats could entail the collection of additional data so that the existence of these threats can be determined. A listing of currently known distribution pipeline threats is maintained by System Integrity.

6.2.3 External sources of data include, but are not limited to:

- a. Membership or participation in local, regional or national trade associations, including workshops, meetings and other forums
- b. Networking with peer companies
- c. Manufacturers of gas carrying materials
- d. Relevant regulatory agencies
- e. Gas distribution pipeline journals and magazines
- f. PHMSA Advisory Bulletins
- g. National Transportation and Safety Board (NTSB) Reports Recommendations applicable to natural gas pipelines
- h. Reports from applicable one-call centers
- i. Plastic Piping Data Committee (PPDC) Report from the American Gas Association (AGA)

Exhibit A-5

Table 2: DIMP Records Summary

Record	Record Type	Applicable Standard, Policy, Procedure or Guideline	Extent of Missing Records	Location of Records	Key Contact
Geographical Information System (GIS)	Electronic	Operations Manual: Posting Standards Procedure	Black Mountain acquisition	Divisions and Company Servers	Divisions Key Contact
Wall Maps / Plats	Paper	Operations Manual: As-Built Drawings Procedure, Construction Drawings Procedure, Posting Standards Procedure	Unknown	Divisions	Divisions Key Contact
As-Built records	Paper and Electronic	Operations Manual: As-Built Drawings Procedure	Unknown	Divisions and Company Servers	Divisions Key Contact
Gas Service Records	Paper and Electronic	Operations Manual: As-Built Drawings Procedure	Unknown	Divisions and Company Servers	Divisions Key Contact
Leakage, Maintenance, and Abandonment Report, Form 230.0 (LMR) records	Paper and Electronic	Operations Manual: various maintenance procedures	Unknown	Divisions and Company Servers	Divisions Key Contact
Pressure Recorder Data	Paper and Electronic	Operations Manual: Pressure Monitoring/Recording Procedure	Unknown	Divisions and Company Servers	Divisions Key Contact
MAOP Files	Paper and Electronic	Operations Manual: Main and Service Design	Unknown	Divisions and Company Servers	Divisions Key Contact
Gas Leak Repair Records	Paper and Electronic	Operations Manual: Leak Investigation Procedure, Pipe Joining Plastic Procedure, Steel Welding Procedure	Unknown	Divisions and Company Servers	Divisions Key Contact
Gas Leak Survey Records	Paper and Electronic	Operations Manual: Leak Survey Procedure	Unknown	Divisions and Company Servers	Divisions Key Contact
Main & Service Condition Reports	Paper and Electronic	Operations Manual	None	Divisions and Company Servers	Divisions Key Contact
CP Maintenance Records (Rectifiers, Bonds, Casings, Isolated Steel, and Pipe-to-Soil inspections), Inspection and Monitoring	Paper and Electronic	Operations Manual: Corrosion Control Policy, Corrosion Control Section I Procedure, Corrosion Control Section II Procedure	None	Divisions and Company Servers	Divisions Key Contact
Patrol Records, Inspection and Monitoring	Paper and Electronic	Operations Manual: Procedure - Patrolling	None	Divisions	Divisions Key Contact
Valve Maintenance Records, Inspection and Monitoring	Paper and Electronic	Operations Manual: Valves Procedure	None	Divisions and Company Servers	Divisions Key Contact
Regulator Station Maintenance Records, Inspection and Monitoring	Paper and Electronic	Operations Manual: Pressure Regulation Policy and Procedure	None	Divisions and Company Servers	Divisions Key Contact
Liquid Removal Records	Paper and Electronic	Operations Manual: Purging Procedure	None	Divisions and Company Servers	Divisions Key Contact


Table 2: DIMP Records Summary

Record	Record Type	Applicable Standard, Policy, Procedure or Guideline	Extent of Missing Records	Location of Records	Key Contact
Odor Level Monitoring	Electronic	Operations Manual: Odorant Policy	None	Divisions and Company Servers	Divisions Key Contact
Material Failure Reports	Paper and Electronic	Operations Manual: Material Investigation Procedure	None	Divisions and Engineering Project and Support Staff	Divisions Key Contact
Material Investigation Database	Electronic	Operations Manual: Material Investigation Procedure	None	Engineering Project and Support Staff	Engineering Project and Support Staff
Environmental Factor: Areas subject to earthquake and fault lines	Paper and Electronic	Operations Manual: DIMP Plan	None	Divisions	Divisions Key Contact
Environmental Factor: Areas subject to flood	Paper and Electronic	Operations Manual: DIMP Plan	None	Divisions	Divisions Key Contact
Environmental Factor: Areas subject to landslide / subsidence	Paper and Electronic	Operations Manual: DIMP Plan	None	Divisions	Divisions Key Contact
Environmental Factor: Population Density Records	Paper and Electronic	Operations Manual: DIMP Plan	None	Divisions	Divisions Key Contact
Requests to Locate Gas Facilities: IrthNET application	Paper and Electronic	Operations Manual: Line Locating Procedure	None	Divisions and Company Servers	Divisions Key Contact
Form 101.0: Third Party Damage Claims	Paper and Electronic	SP 176.0 Billable Damages - Line Breaks and Company Gas-Related Facilities	None	Divisions and Company Servers	Divisions Key Contact
DOT/PHMSA Incident Reports	Paper and Electronic	Emergency Plan Manual	None	Divisions and Company Servers	Engineering Staff
Leak Analysis Spreadsheets	Electronic	Operations Manual: DIMP Plan	None	Engineering Staff Company Server	Engineering Staff
DIMP Team Annual Meeting documentation	Electronic	Operations Manual: DIMP Plan, Distribution Pipeline Integrity Policy	None	Engineering Staff Company Server	Engineering Staff
Public Awareness Manager (PAM) application	Electronic	Operations Manual: Public Education Program	None	Company Servers	Corporate Communications
Damage Cause Database (DCD)	Electronic	Operations Manual: Damage Prevention Program, DCD User Guide	None	Company Server	Engineering Staff
CPUC Quarterly Incident Report	Electronic	California Public Utilities Commission General Order 112-E	None	On Company Servers within the DCD	Engineering Staff

Table 2: DIMP Records Summary

Record	Record Type	Applicable Standard, Policy, Procedure or Guideline	Extent of Missing Records	Location of Records	Key Contact
QA/QC records	Electronic	Operations Manual: Quality Assurance/Quality Control Policy, Corrosion Control Quality Control Program Procedure, Measurement and Control Quality Control Procedure, Construction Evaluation Program Procedure, Leak Survey Quality Control Requirements Procedure, Line Locate Quality Control Requirements Procedure, Pipeline Contractor Quality Control Requirements Procedure, MSA Riser Inspection Survey Quality Control Procedure	None	Company Servers	Divisions Key Contact
Incident Debriefings and Critiques	Electronic	Emergency Plan	None	Divisions	Divisions Key Contact
Cross Bore Application (CBA) application/database	Electronic	Operations Manual: DIMP Plan	None	Company Servers	Gas Operations Support Staff
Annual Pipeline Integrity Assessment Summary Reports	Electronic	Operations Manual: Distribution Pipeline Integrity Procedure	None	Company Servers	Engineering Staff
Distribution Pipeline Integrity (DPI) application	Electronic	Operations Manual: Distribution Pipeline Integrity Procedure	None	Company Servers	Divisions Key Contact
Learning Management System (LMS)	Electronic	Operator Qualification Plan, LMS Quick Reference Guide	None	Company Servers	Divisions Key Contact
Drug and Alcohol Plan compliance records	Paper and Electronic	DOT PHMSA Anti-Drug and Alcohol Misuse Prevention Plan	None	Company Servers, Human Resources Department and Eng. Staff	Human Resources and Eng. Staff Contact
Operations Manual Policies and Procedures	Electronic	Operations Manual	None	Gas Operations Support Staff, Engineering Staff and Corporate Communications	Gas Operations Support Staff, Engineering Staff and Corporate Communications
Emergency Plan	Electronic	Emergency Plan	None	Gas Operations Support Staff and Company Servers	Gas Operations Support Staff
Material Specifications Manual	Electronic	Material Specifications Manual	None	Engineering Staff and Company Servers	Engineering Staff
Materials Management Information System (MMIS)	Electronic	Material Specifications Manual	None	Inventory Management	Inventory Management
OSIsoft's PI application: SCADA records	Electronic	Operations Manual: Gas Control Department Procedure	None	Company Servers	Engineering Staff
Relief Valve Capacity Review	Paper and Electronic	Operations Manual: Pressure regulation Policy	None	Divisions and Company Servers	Divisions Key Contact
Leak Analysis Data System	Electronic	Operations Manual	None	Company Servers	Engineering Staff
Nonconforming Driscopipe (NCDP) Data Repository	Electronic	Operations Manual	None	Company Servers	Engineering Staff

Exhibit A-6

 U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration	ANNUAL REPORT FOR CALENDAR YEAR 2021 GAS DISTRIBUTION SYSTEM	Initial Date Submitted:	03/14/2022
		Report Submission Type	SUPPLEMENTAL
		Date Submitted:	03/15/2022

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2137-0629. Public reporting for this collection of information is estimated to be approximately 16 hours per response, including the time for reviewing instructions, gathering the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, PHMSA, Office of Pipeline Safety (PHP-30) 1200 New Jersey Avenue, SE, Washington, D.C. 20590.

Important: Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the PHMSA Pipeline Safety Community Web Page at <http://www.phmsa.dot.gov/pipeline/library/forms>.

PART A - OPERATOR INFORMATION	(DOT use only)	20221096-46370
--------------------------------------	----------------	-----------------------

1. Name of Operator	SOUTHWEST GAS CORP
2. LOCATION OF OFFICE (WHERE ADDITIONAL INFORMATION MAY BE OBTAINED)	
2a. Street Address	8350 S. Durango Drive
2b. City and County	Las Vegas Clark
2c. State	NV
2d. Zip Code	89113
3. OPERATOR'S 5 DIGIT IDENTIFICATION NUMBER	18536
4. HEADQUARTERS NAME & ADDRESS	
4a. Street Address	8350 S. Durango Drive
4b. City and County	LAS VEGAS
4c. State	NV
4d. Zip Code	89113
5. STATE IN WHICH SYSTEM OPERATES	CA
6. THIS REPORT PERTAINS TO THE FOLLOWING COMMODITY GROUP (Select Commodity Group based on the predominant gas carried and complete the report for that Commodity Group. File a separate report for each Commodity Group included in this OPID.)	
Natural Gas	
7. THIS REPORT PERTAINS TO THE FOLLOWING TYPE OF OPERATOR (Select Type of Operator based on the structure of the company included in this OPID for which this report is being submitted.):	
Privately Owned	

PART B - SYSTEM DESCRIPTION

1.GENERAL	STEEL				PLASTIC	CAST/ WROUGHT IRON	DUCTILE IRON	COPPE R	OTHER	RECONDIT ION ED CAST IRON	SYSTEM TOTAL
	UNPROTECTED		CATHODICALLY PROTECTED								
	BARE	COATED	BARE	COATED							
MILES OF MAIN	0	0	0	526.150	2694.202	0	0	0	0	0	3220.352
NO. OF SERVICES				8302	175271	0	0	0	0	0	183573

2.MILES OF MAINS IN SYSTEM AT END OF YEAR							
MATERIAL	UNKNOWN	2" OR LESS	OVER 2" THRU 4"	OVER 4" THRU 8"	OVER 8" THRU 12"	OVER 12"	SYSTEM TOTALS
STEEL	0	135.789	195.644	167.405	20.543	6.769	526.15
DUCTILE IRON	0	0	0	0	0	0	0
COPPER	0	0	0	0	0	0	0
CAST/WROUGHT IRON	0	0	0	0	0	0	0
PLASTIC PVC	0	0.031	0	0	0	0	0.031
PLASTIC PE	0	2274.631	364.380	55.160	0	0	2694.171
PLASTIC ABS	0	0	0	0	0	0	0
PLASTIC OTHER	0	0	0	0	0	0	0
OTHER	0	0	0	0	0	0	0
RECONDITIONED CAST IRON	0	0	0	0	0	0	0
TOTAL	0	2410.451	560.024	222.565	20.543	6.769	3220.352
Describe Other Material:							
3.NUMBER OF SERVICES IN SYSTEM AT END OF YEAR					AVERAGE SERVICE LENGTH: 74		
MATERIAL	UNKNOWN	1" OR LESS	OVER 1" THRU 2"	OVER 2" THRU 4"	OVER 4" THRU 8"	OVER 8"	SYSTEM TOTALS
STEEL	0	8250	34	13	5	0	8302
DUCTILE IRON	0	0	0	0	0	0	0
COPPER	0	0	0	0	0	0	0
CAST/WROUGHT IRON	0	0	0	0	0	0	0
PLASTIC PVC	0	0	0	0	0	0	0
PLASTIC PE	0	173721	1533	17	0	0	175271
PLASTIC ABS	0	0	0	0	0	0	0
PLASTIC OTHER	0	0	0	0	0	0	0
OTHER	0	0	0	0	0	0	0
RECONDITIONED CAST IRON	0	0	0	0	0	0	0
TOTAL	0	181971	1567	30	5	0	183573
Describe Other Material:							
4.MILES OF MAIN AND NUMBER OF SERVICES BY DECADE OF INSTALLATION							

	UNKNOWN	PRE-1940	1940-1949	1950-1959	1960-1969	1970-1979	1980-1989	1990-1999	2000-2009	2010-2019	2020-2029	TOTAL
MILES OF MAIN	97.870	0	.005	98.011	66.608	236.754	467.783	602.499	1001.543	545.459	103.820	3220.352
NUMBER OF SERVICES	7141	0	0	29	463	7418	32310	35219	66835	26059	8099	183573

PART C - TOTAL LEAKS AND HAZARDOUS LEAKS ELIMINATED/REPAIRED DURING THE YEAR

CAUSE OF LEAK	MAINS		SERVICES	
	TOTAL	HAZARDOUS	TOTAL	HAZARDOUS
CORROSION FAILURE	2	0	2	1
NATURAL FORCE DAMAGE	2	1	6	3
EXCAVATION DAMAGE	9	9	95	94
OTHER OUTSIDE FORCE DAMAGE	1	1	28	22
PIPE, WELD OR JOINT FAILURE	5	1	67	4
EQUIPMENT FAILURE	7	2	385	7
INCORRECT OPERATIONS	16	3	8	6
OTHER CAUSE	0	0	0	0

NUMBER OF KNOWN SYSTEM LEAKS AT END OF YEAR SCHEDULED FOR REPAIR : 5
NUMBER OF HAZARDOUS LEAKS INVOLVING A MECHANICAL JOINT FAILURE : 10

PART D - EXCAVATION DAMAGE

PART E - EXCESS FLOW VALUE (EFV) AND SERVICE VALVE DATA

1. TOTAL NUMBER OF EXCAVATION DAMAGES BY APPARENT ROOT CAUSE: 117

a. One-Call Notification Practices Not Sufficient: 50

b. Locating Practices Not Sufficient: 20

c. Excavation Practices Not Sufficient: 40

d. Other: 7

Total Number Of Services with EFV Installed During Year: 4371

Estimated Number Of Services with EFV In the System At End Of Year: 42890

* Total Number of Manual Service Line Shut-off Valves Installed During Year: 23

* Estimated Number of Services with Manual Service Line Shut-off Valves Installed in the System at End of Year: 73

**These questions were added to the report in 2017.*

2. NUMBER OF EXCAVATION TICKETS : 47221

PART F - LEAKS ON FEDERAL LAND

PART G-PERCENT OF UNACCOUNTED FOR GAS

TOTAL NUMBER OF LEAKS ON FEDERAL LAND REPAIRED OR SCHEDULED TO REPAIR: 0

UNACCOUNTED FOR GAS AS A PERCENT OF TOTAL CONSUMPTION FOR THE 12 MONTHS ENDING JUNE 30 OF THE REPORTING YEAR.

[(PURCHASED GAS + PRODUCED GAS) MINUS (CUSTOMER USE + COMPANY USE + APPROPRIATE ADJUSTMENTS)] DIVIDED BY (CUSTOMER USE + COMPANY USE + APPROPRIATE ADJUSTMENTS) TIMES 100 EQUALS PERCENT UNACCOUNTED FOR.

FOR YEAR ENDING 6/30: -1.05%

PART H - ADDITIONAL INFORMATION

--	--

PART I - PREPARER

Daren S. Turner, Administrator/Compliance (Preparer's Name and Title)	(702) 830-6138 _____ (Area Code and Telephone Number)
daren.turner@swgas.com (Preparer's email address)	_____ (Area Code and Facsimile Number)

Exhibit B-1

Southwest Gas Corporation

Gas System Census Tract Data

Data Request Instructions: Provide a CSV or Excel spreadsheet file with each census tract in a row. Omit spaces within responses (e.g., Apple Valley becomes "AppleValley"). Unless otherwise noted, each data item refers to what is within the census tract.

Column Name	TractID	City	County	ZipCode	ClimateZone	TransmZone	HCA	MCA
Column Description	Census tract ID #	City	County	Zip Code	Climate Zone	Gas transmission zone (SoCalGas) or gas transmission district (PG&E) or transmission zip code	Overlaps a High Consequence Area?	Overlaps a Moderate Consequence Area?
Units or Comments	Numeric	Text	Text	Numeric	Numeric. As used for gas billing purposes	Text	"Yes" or "No" - This refers to a federal Pipeline and Hazardous Materials Safety Administration (PHMSA) definition of populated areas near transmission pipelines, where accidents would have higher human consequences.	"Yes" or "No" - This refers to a federal Pipeline and Hazardous Materials Safety Administration (PHMSA) definition of moderately populated areas or four-lane roads near transmission pipelines.

Provide the Requested Information	Provide the Requested Information	Provide the requested information, if Southwest Gas conducts hydraulic modeling of its system in California.	Provide the requested information. Load is gas supplied to customers. Customer location is known and can be mapped to census tracts. Please see the Census Bureau as necessary for census tract maps.		Provide the average annual gas demand change from 2015 to 2020 (as a percentage) for Southwest Gas' Northern California; Southern California; and South Lake Tahoe areas.			
Services	LargeCustomers	DemandNodes	TotalLoad	PeakLoad	LoadChange	PressureDist	OpDist (new column)	DistAvCost (New Column)
Number of Services	Number of large volume customers (customers that can receive more than 40,000 cubic feet/hour of gas)	Number of demand nodes as represented in Synergi hydraulic model	Average annual daily gas consumption in 2021	Peak hourly gas consumption in 2021	Annual gas demand change from 2015 to 2020	Number of pressure districts	Division (PG&E), Operating District (SoCalGas), Construction and Operations Center serving the census tract (SDG&E), or Jurisdiction (SW Gas).	Average cost per mile to replace distribution pipeline in the OpDistrict as defined above.
Count. Services typically serve one customer each.	Count	Count	Hundreds of cubic feet per day (ccfd). Base on billing data plus company use and lost/unaccounted for gas, i.e., all gas use.	Hundreds of cubic feet per hour (ccfh). Base on all gas use which is metered hourly; exclude use not metered hourly.	Percent	Count	Numeric or Text	\$/mi. Since average is calculated across the OpDistrict, many tracts will have the same value.

LowerConsqMains	LowConsqMains	UnkRiskMain (new column)	HighestRiskServices	HighRiskServices	UpperRiskServices	LowerRiskServices	LowRiskServices	HighestConsqServices	HighConsqServices
Miles with calculated probability of serious safety incident given leak, or consequence of failure, in second lowest quartile of distribution main pipelines systemwide	Miles with calculated probability of serious safety incident given leak, or consequence of failure, in lowest quartile of distribution main pipelines systemwide	Miles of main distribution pipeline with uncalculated risk.	Miles with calculated probability of leak per year, or risk of failure, in highest 5 percent of distribution service pipelines systemwide	Miles with calculated probability of leak per year, or risk of failure, in highest quartile of distribution service pipelines systemwide	Miles with calculated probability of leak per year, or risk of failure, in second highest quartile of distribution service pipelines systemwide	Miles with calculated probability of leak per year, or risk of failure, in second lowest quartile of distribution service pipelines systemwide	Miles with calculated probability of leak per year, or risk of failure, in lowest quartile of distribution service pipelines systemwide	Miles with calculated probability of serious safety incident given leak, or consequence of failure, in highest 5 percent of distribution service pipelines systemwide	Miles with calculated probability of serious safety incident given leak, or consequence of failure, in highest quartile of distribution service pipelines systemwide
Miles	Miles	Miles	Miles. Utility-defined approach reflected in utilities' Distribution Integrity Management Program plans.	Miles	Miles	Miles	Miles	Miles. Utility-defined approach reflected in utilities' Distribution Integrity Management Program plans.	Miles

				Identify the census tracts where the leaks are located and provide this information in the spreadsheet.		Identify the census tracts where the 33 leaks were found and repaired and provide this information in the spreadsheet.	Identify the census tracts where the 72 leaks were found and repaired and provide this information in the spreadsheet.		
AvMainPressure	AvMainYear	AvServiceYear	AvSurvey	AvMainLeaks	AvServiceLeaks	HistAvMainHazLeaks	HistAvServiceHazLeaks	RetiredMain	RetiredService
Set pressure, averaged across distribution main pipeline	Year pipeline was installed, averaged across distribution main pipeline miles	Year pipeline was installed, averaged across distribution service pipeline miles	Date of most recent leak survey, averaged across distribution main and service pipeline miles	Main leaks identified in leak surveys, excluding repaired or removed leaks, averaged across distribution main pipeline miles	Service leaks identified in leak surveys, excluding repaired or removed leaks, averaged across distribution service pipeline miles	Main hazardous leaks (grade 1) repaired in 2015-2020, averaged across distribution main pipeline miles	Service hazardous leaks (grade 1) repaired in 2015-2020, averaged across distribution service pipeline miles	Miles of distribution main pipeline retired/abandoned since 2010	Miles of service pipeline retired/abandoned since 2010
Psi	Year. Define segments with unknown year as installed in earliest known year for their material type.	Year. Define segments with unknown year as installed in earliest known year for their material type.	Date	Leaks/mile	Leaks/mile	Leaks/mile. Other comparison period can be used upon utility request.	Leaks/mile. Other comparison period can be used upon utility request.	Miles	Miles

Notes						Provided Zip Code where transmission is present. Southwest Gas only has 630' of transmission in its California system.	Southwest Gas does not have any HCAs in its California System.	Southwest Gas does not have any MCAs in its California System.
	10700	NEEDLES	SANBERNARDINO	92363	15	Not Applicable	No	No
	25100	NEEDLES	SANBERNARDINO	92363	15	Not Applicable	No	No
	9119	HESPERIA	SANBERNARDINO	92344	14	Not Applicable	No	No
	9124	ADELANTO	SANBERNARDINO	92301	14	Not Applicable	No	No
	9125	ADELANTO	SANBERNARDINO	92301	14	Not Applicable	No	No
	9126	ADELANTO	SANBERNARDINO	92301	14	92394	No	No
	9127	VICTORVILLE	SANBERNARDINO	92392	14	Not Applicable	No	No
	9128	VICTORVILLE	SANBERNARDINO	92392	14	Not Applicable	No	No
	9129	ADELANTO	SANBERNARDINO	92301	14	Not Applicable	No	No
	9130	ADELANTO	SANBERNARDINO	92301	14	Not Applicable	No	No
	9131	ADELANTO	SANBERNARDINO	92301	14	Not Applicable	No	No
	9132	ADELANTO	SANBERNARDINO	92301	14	Not Applicable	No	No
	9133	ADELANTO	SANBERNARDINO	92301	14	Not Applicable	No	No
	9134	ADELANTO	SANBERNARDINO	92301	14	Not Applicable	No	No
	9135	VICTORVILLE	SANBERNARDINO	92392	14	Not Applicable	No	No
	9136	VICTORVILLE	SANBERNARDINO	92392	14	Not Applicable	No	No
	9137	VICTORVILLE	SANBERNARDINO	92392	14	Not Applicable	No	No
	9138	VICTORVILLE	SANBERNARDINO	92392	14	Not Applicable	No	No
	9139	VICTORVILLE	SANBERNARDINO	92392	14	Not Applicable	No	No
	9300	BARSTOW	SANBERNARDINO	92311	14	Not Applicable	No	No
	9400	BARSTOW	SANBERNARDINO	92311	14	Not Applicable	No	No
	9501	BARSTOW	SANBERNARDINO	92311	14	Not Applicable	No	No
	9502	BARSTOW	SANBERNARDINO	92311	14	Not Applicable	No	No
	9708	APPLEVALLEY;LUCERNEVALLEY	SANBERNARDINO	92308	14	Not Applicable	No	No
	9709	APPLEVALLEY	SANBERNARDINO	92308	14	Not Applicable	No	No
	9712	APPLEVALLEY	SANBERNARDINO	92307	14	Not Applicable	No	No
	9713	APPLEVALLEY	SANBERNARDINO	92307	14	Not Applicable	No	No
	9714	APPLEVALLEY	SANBERNARDINO	92307	14	Not Applicable	No	No
	9717	APPLEVALLEY	SANBERNARDINO	92307	14	Not Applicable	No	No
	9718	APPLEVALLEY	SANBERNARDINO	92308	14	Not Applicable	No	No
	9719	APPLEVALLEY	SANBERNARDINO	92308	14	Not Applicable	No	No
	9720	APPLEVALLEY	SANBERNARDINO	92308	14	Not Applicable	No	No
	9721	APPLEVALLEY	SANBERNARDINO	92307	14	Not Applicable	No	No
	9722	APPLEVALLEY	SANBERNARDINO	92307	14	Not Applicable	No	No
	9723	APPLEVALLEY	SANBERNARDINO	92307	14	Not Applicable	No	No
	9724	APPLEVALLEY	SANBERNARDINO	92307	14	Not Applicable	No	No
	9725	APPLEVALLEY	SANBERNARDINO	92308	14	Not Applicable	No	No
	9726	APPLEVALLEY	SANBERNARDINO	92307	14	Not Applicable	No	No
	9727	APPLEVALLEY	SANBERNARDINO	92307	14	Not Applicable	No	No
	9800	VICTORVILLE	SANBERNARDINO	92395	14	Not Applicable	No	No
	9906	VICTORVILLE	SANBERNARDINO	92392	14	Not Applicable	No	No
	9908	VICTORVILLE	SANBERNARDINO	92392	14	Not Applicable	No	No
	9910	VICTORVILLE	SANBERNARDINO	92392	14	Not Applicable	No	No
	9911	VICTORVILLE	SANBERNARDINO	92392	14	Not Applicable	No	No
	9912	VICTORVILLE	SANBERNARDINO	92395	14	Not Applicable	No	No
	9913	VICTORVILLE	SANBERNARDINO	92395	14	Not Applicable	No	No
	9914	VICTORVILLE	SANBERNARDINO	92392	14	Not Applicable	No	No
	9915	VICTORVILLE	SANBERNARDINO	92394	14	Not Applicable	No	No

Provided number of customers per census tract.	Southwest Gas does not have any customers in its California service area that use 40,000 or more cf/h	Provided	Provided	Not Available - Southwest Gas does not have hourly metered consumption data. Meters are read monthly.	Provided the percent of load change in each District from 2015 to 2020.	Provided - Reported total number of system pressures, not Ops Sys Names. Example: All 60 psig systems in an area would be counted as one, regardless of number of systems being fed. All high pressure is considered as 1 per area that has high pressure.	District 11-Barstow; District 12-Victorville; District 13-Big Bear; District 14-North Lake Tahoe; District 15-Truckee; District 16-South Lake Tahoe; District 19-Needles	Southwest Gas is unable to estimate average cost for its Needles District, as that area has not had any distribution main replacements for several years.
1249	0	310	558.52	Not Available	0.15%	4	19	N/A
728	0	168	360.79	Not Available	0.15%	5	19	N/A
620	0	209	753.23	Not Available	19.48%	4	12	\$ 458,674
1248	0	174	1,743.78	Not Available	19.48%	1	12	\$ 458,674
1600	0	214	1,804.98	Not Available	19.48%	1	12	\$ 458,674
1876	0	396	2,437.72	Not Available	19.48%	6	12	\$ 458,674
2069	0	239	2,349.09	Not Available	19.48%	2	12	\$ 458,674
1508	0	238	2,173.42	Not Available	19.48%	3	12	\$ 458,674
1838	0	240	4,822.28	Not Available	19.48%	3	12	\$ 458,674
1239	0	152	1,389.87	Not Available	19.48%	1	12	\$ 458,674
791	0	183	1,141.41	Not Available	19.48%	1	12	\$ 458,674
608	0	160	10,452.10	Not Available	19.48%	2	12	\$ 458,674
1347	0	217	8,215.05	Not Available	19.48%	3	12	\$ 458,674
37	0	18	2,587.84	Not Available	19.48%	8	12	\$ 458,674
1434	0	205	1,905.06	Not Available	19.48%	5	12	\$ 458,674
1484	0	154	1,716.48	Not Available	19.48%	2	12	\$ 458,674
1181	0	197	1,192.30	Not Available	19.48%	3	12	\$ 458,674
1502	0	208	2,105.98	Not Available	19.48%	2	12	\$ 458,674
1516	0	187	1,854.21	Not Available	19.48%	3	12	\$ 458,674
456	0	100	437.10	Not Available	13.34%	1	11	\$ 458,674
1216	0	290	2,590.16	Not Available	13.34%	6	11	\$ 458,674
1269	0	223	1,712.47	Not Available	13.34%	3	11	\$ 458,674
1070	0	200	1,813.93	Not Available	13.34%	2	11	\$ 458,674
629	0	238	670.29	Not Available	19.48%	10	12	\$ 458,674
1980	0	580	2,268.69	Not Available	19.48%	2	12	\$ 458,674
2067	0	514	2,784.58	Not Available	19.48%	4	12	\$ 458,674
2312	0	505	2,636.84	Not Available	19.48%	3	12	\$ 458,674
1321	0	396	2,089.65	Not Available	19.48%	2	12	\$ 458,674
1419	0	450	2,015.49	Not Available	19.48%	1	12	\$ 458,674
2594	0	378	3,416.29	Not Available	19.48%	3	12	\$ 458,674
809	0	248	1,333.76	Not Available	19.48%	5	12	\$ 458,674
477	0	155	592.63	Not Available	19.48%	2	12	\$ 458,674
1533	0	327	2,075.03	Not Available	19.48%	3	12	\$ 458,674
1026	0	394	1,507.08	Not Available	19.48%	2	12	\$ 458,674
1939	0	627	2,812.82	Not Available	19.48%	1	12	\$ 458,674
1453	0	447	2,086.35	Not Available	19.48%	2	12	\$ 458,674
1817	0	371	3,719.89	Not Available	19.48%	3	12	\$ 458,674
1145	0	330	1,482.45	Not Available	19.48%	2	12	\$ 458,674
944	0	235	1,395.97	Not Available	19.48%	2	12	\$ 458,674
1419	0	343	2,534.94	Not Available	19.48%	5	12	\$ 458,674
1562	0	223	1,691.76	Not Available	19.48%	1	12	\$ 458,674
1580	0	254	1,642.16	Not Available	19.48%	2	12	\$ 458,674
1560	0	383	2,080.59	Not Available	19.48%	3	12	\$ 458,674
1946	0	316	2,379.90	Not Available	19.48%	2	12	\$ 458,674
1575	0	278	2,451.22	Not Available	19.48%	4	12	\$ 458,674
1869	0	427	3,455.64	Not Available	19.48%	3	12	\$ 458,674
555	0	213	2,680.27	Not Available	19.48%	4	12	\$ 458,674
880	0	127	1,025.80	Not Available	19.48%	4	12	\$ 458,674

The current systemwide highest maximum allowable operating pressure on high pressure mains for each district is as follows: Needles-200 psig; North Lake Tahoe and Truckee-240 psig; South Lake Tahoe-119 psig; Barstow-861 psig; Victorville-936 psig; and Big Bear-395 psig.				Southwest Gas does not have any main or service distribution pipe with unknown pressure.						
5.002	23.247	0.000	13.365	0.000	35.687	5.794	0.133	0.000	0.000	
9.716	13.479	0.000	7.415	0.000	20.650	9.960	0.000	0.000	0.000	
0.005	28.138	0.000	14.308	0.000	35.877	6.334	0.240	0.000	0.000	
0.000	13.197	0.000	10.241	0.000	21.379	2.058	0.000	0.000	0.000	
0.000	16.618	0.000	13.682	0.000	28.133	2.167	0.000	0.000	0.000	
3.743	30.213	0.000	21.931	0.000	45.528	6.348	4.011	0.000	0.000	
0.000	22.233	0.000	16.717	0.000	35.719	3.231	0.000	0.000	0.000	
1.633	25.744	0.000	15.364	0.000	34.702	5.710	2.329	0.000	0.000	
0.208	26.849	0.000	16.522	0.000	36.127	6.447	1.005	0.000	0.000	
0.000	12.866	0.000	10.490	0.000	22.007	1.349	0.000	0.000	0.000	
0.000	11.775	0.000	11.320	0.000	20.196	2.898	0.000	0.000	0.000	
2.451	15.702	0.037	8.025	0.000	17.629	6.620	1.967	0.000	0.000	
0.014	23.620	0.000	12.442	0.000	27.406	8.456	0.213	0.000	0.000	
11.625	2.087	0.008	1.134	0.000	3.084	9.435	2.335	0.000	0.000	
2.824	20.014	0.000	13.378	0.000	30.786	2.083	3.346	0.000	0.000	
0.486	17.313	0.000	11.990	0.000	27.131	2.083	0.574	0.000	0.000	
0.753	12.370	0.000	9.896	0.000	21.707	0.546	0.765	0.000	0.000	
0.000	15.395	0.000	13.177	0.000	27.188	1.385	0.000	0.000	0.000	
1.592	18.989	0.000	12.919	0.000	28.302	2.288	2.910	0.000	0.000	
0.000	13.719	0.000	8.150	0.000	15.596	6.274	0.000	0.000	0.000	
1.311	16.558	0.269	15.149	0.000	29.870	3.417	0.000	0.000	0.000	
0.113	14.165	0.000	14.592	0.000	26.191	2.678	0.000	0.000	0.000	
1.318	13.004	0.112	13.570	0.000	23.760	4.245	0.000	0.000	0.000	
10.754	26.129	0.000	13.738	0.000	33.830	14.532	1.774	0.485	0.000	
2.378	33.381	0.000	32.670	0.000	63.187	4.311	0.931	0.000	0.000	
1.543	38.519	0.000	33.211	0.000	63.362	8.391	1.006	0.513	0.000	
4.931	40.662	0.000	38.009	0.000	73.782	4.930	2.887	2.003	0.000	
1.179	28.954	0.000	25.691	0.000	49.597	5.048	1.179	0.000	0.000	
0.000	26.364	0.000	24.857	0.000	47.866	3.297	0.058	0.000	0.000	
0.028	25.246	0.000	19.063	0.000	40.750	3.587	0.000	0.000	0.000	
4.825	24.701	0.000	13.805	0.000	33.655	4.893	2.248	2.534	0.000	
0.020	7.233	0.000	7.615	0.000	14.408	0.452	0.007	0.000	0.000	
1.520	21.465	0.000	24.086	0.000	44.089	1.991	0.991	0.000	0.000	
2.726	23.176	0.011	20.796	0.000	38.981	6.857	0.872	0.000	0.000	
0.000	41.471	0.000	39.425	0.000	75.863	5.033	0.000	0.000	0.000	
0.981	28.777	0.000	25.784	0.000	50.809	4.313	0.420	0.000	0.000	
5.111	29.297	0.000	27.593	0.000	54.315	4.245	3.442	0.000	0.000	
0.292	18.646	0.000	20.044	0.000	36.775	1.922	0.285	0.000	0.000	
0.904	13.675	0.000	15.151	0.000	27.082	1.744	0.904	0.000	0.000	
0.713	18.572	0.000	16.675	0.000	31.129	3.887	0.945	0.000	0.000	
0.000	14.625	0.000	14.371	0.000	27.817	1.179	0.000	0.000	0.000	
0.000	16.724	0.000	14.425	0.000	29.406	1.743	0.000	0.000	0.000	
1.705	25.027	0.000	20.573	0.000	40.402	5.285	1.618	0.000	0.000	
0.000	24.647	0.000	20.007	0.000	41.673	2.980	0.000	0.000	0.000	
0.284	17.232	0.000	17.286	0.000	32.462	2.057	0.283	0.000	0.000	
0.000	29.590	0.000	26.789	0.000	53.854	2.414	0.111	0.000	0.000	
1.652	13.237	0.000	7.153	0.000	18.509	1.911	1.622	0.000	0.000	
1.753	11.719	0.006	10.081	0.000	20.908	2.191	0.459	0.000	0.000	

Southwest Gas does not have any main or service distribution pipe with unknown diameter..	Projects that have been completed, but not yet posted in the Company's GIS system are not included in the data as it cannot be reported by Census Tract until it is posted.	Projects that have been completed, but not yet posted in the Company's GIS system are not included in the data as it cannot be reported by Census Tract until it is posted.	Projects that have been completed, but not yet posted in the Company's GIS system are not included in the data as it cannot be reported by Census Tract until it is posted.	Projects that have been completed, but not yet posted in the Company's GIS system are not included in the data as it cannot be reported by Census Tract until it is posted.	Projects that have been completed, but not yet posted in the Company's GIS system are not included in the data as it cannot be reported by Census Tract until it is posted.	Projects that have been completed, but not yet posted in the Company's GIS system are not included in the data as it cannot be reported by Census Tract until it is posted.	Southwest Gas does not have any NCP Steel in its California system.	Southwest Gas does not have any copper in its California system.	Southwest Gas does not have any wrought iron in its California system.	Southwest Gas does not have any main or service distribution pipe with unknown material..
0.000	0.000	0.000	0.000	0.000	36.469	5.145	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	20.889	9.720	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	42.445	0.006	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	23.437	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	30.300	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	52.107	3.795	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	37.766	1.184	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	41.099	1.642	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	43.366	0.213	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	23.356	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	23.095	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	23.725	2.492	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	36.057	0.018	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	3.215	11.639	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	33.385	2.831	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	29.296	0.493	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	22.265	0.753	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	28.572	0.001	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	31.904	1.595	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	12.093	9.776	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	29.298	3.989	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	25.187	3.683	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	25.674	2.331	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	37.765	12.856	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	65.835	2.594	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	67.302	5.970	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	77.101	6.501	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	46.474	9.350	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	51.197	0.025	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	43.388	0.949	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	37.454	5.877	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	14.846	0.022	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	44.006	3.065	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	40.471	6.238	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	75.931	4.966	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	53.711	1.831	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	56.706	5.295	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	37.324	1.658	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	26.049	3.681	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	31.776	4.185	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	28.996	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	31.149	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	44.945	2.360	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	44.166	0.488	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	33.153	1.650	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	51.606	4.774	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	19.973	2.069	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	21.569	1.989	0.000	0.000	0.000	0.000

<p>Projects that have been completed, but not yet posted in the Company's GIS system are not included in the data as it cannot be reported by Census Track until it is posted.</p>	<p>Not Applicable - Southwest Gas utilizes a three-tiered Risk/Consequence categorization scale (1-3 scale), thus is reporting under HighRiskMains (Likelihood is greater than 2.0), LowerRiskMains (Likelihood is 1.0-2.0), and LowRiskMains (Likelihood is less than 1.0)</p>	<p>Likelihood is greater than 2.0 (per Southwest Gas's Risk/Consequence ranking system).</p>	<p>Not Applicable - Southwest Gas utilizes a three-tiered Risk/Consequence categorization scale (1-3 scale), thus is reporting under HighRiskMains (Likelihood is greater than 2.0), LowerRiskMains (Likelihood is 1.0-2.0), and LowRiskMains (Likelihood is less than 1.0)</p>	<p>Likelihood 1.0-2.0 (per Southwest Gas's Risk/Consequence ranking system).</p>	<p>Provided - Likelihood less than 1.0 (per Southwest Gas's Risk/Consequence ranking system).</p>	<p>Not Applicable - Southwest Gas utilizes a three-tiered Risk/Consequence categorization scale (1-3 scale), thus is reporting under HighRiskMains (Likelihood is greater than 2.0), LowerRiskMains (Likelihood is 1.0-2.0), and LowRiskMains (Likelihood is less than 1.0)</p>	<p>Consequence is greater than 2.0 (per Southwest Gas's Risk/Consequence ranking system).</p>	<p>Not Applicable - Southwest Gas utilizes a three-tiered Risk/Consequence categorization scale (1-3 scale), thus is reporting under HighRiskMains (Likelihood is greater than 2.0), LowerRiskMains (Likelihood is 1.0-2.0), and LowRiskMains (Likelihood is less than 1.0)</p>
0.000	Not Applicable	0.000	Not Applicable	26.249	0.000	Not Applicable	28.249	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	23.195	0.000	Not Applicable	23.195	Not Applicable
0.034	Not Applicable	0.000	Not Applicable	28.143	0.000	Not Applicable	28.143	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	13.197	0.000	Not Applicable	13.197	Not Applicable
0.001	Not Applicable	0.000	Not Applicable	16.618	0.000	Not Applicable	16.618	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	33.955	0.000	Not Applicable	33.955	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	22.233	0.000	Not Applicable	22.233	Not Applicable
0.005	Not Applicable	0.000	Not Applicable	27.377	0.000	Not Applicable	27.377	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	27.058	0.000	Not Applicable	27.058	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	12.866	0.000	Not Applicable	12.866	Not Applicable
0.015	Not Applicable	0.000	Not Applicable	11.775	0.000	Not Applicable	11.775	Not Applicable
0.016	Not Applicable	0.000	Not Applicable	18.154	0.000	Not Applicable	18.154	Not Applicable
0.030	Not Applicable	0.000	Not Applicable	23.633	0.000	Not Applicable	23.633	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	13.712	0.000	Not Applicable	13.712	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	22.838	0.000	Not Applicable	22.838	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	17.799	0.000	Not Applicable	17.799	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	13.122	0.000	Not Applicable	13.122	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	15.395	0.000	Not Applicable	15.395	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	20.580	0.000	Not Applicable	20.580	Not Applicable
1.327	Not Applicable	0.000	Not Applicable	13.719	0.000	Not Applicable	13.719	Not Applicable
0.451	Not Applicable	0.000	Not Applicable	17.869	0.000	Not Applicable	17.869	Not Applicable
0.146	Not Applicable	0.000	Not Applicable	14.278	0.000	Not Applicable	14.278	Not Applicable
0.144	Not Applicable	0.000	Not Applicable	14.323	0.000	Not Applicable	14.323	Not Applicable
5.709	Not Applicable	0.000	Not Applicable	36.883	0.000	Not Applicable	36.883	Not Applicable
0.008	Not Applicable	0.000	Not Applicable	35.759	0.000	Not Applicable	35.759	Not Applicable
0.060	Not Applicable	0.000	Not Applicable	40.061	0.000	Not Applicable	40.061	Not Applicable
0.013	Not Applicable	0.000	Not Applicable	45.593	0.000	Not Applicable	45.593	Not Applicable
0.014	Not Applicable	0.000	Not Applicable	30.133	0.000	Not Applicable	30.133	Not Applicable
0.034	Not Applicable	0.000	Not Applicable	26.364	0.000	Not Applicable	26.364	Not Applicable
0.021	Not Applicable	0.000	Not Applicable	25.274	0.000	Not Applicable	25.274	Not Applicable
0.014	Not Applicable	0.000	Not Applicable	29.526	0.000	Not Applicable	29.526	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	7.253	0.000	Not Applicable	7.253	Not Applicable
0.012	Not Applicable	0.000	Not Applicable	22.985	0.000	Not Applicable	22.985	Not Applicable
0.026	Not Applicable	0.000	Not Applicable	25.902	0.000	Not Applicable	25.902	Not Applicable
0.023	Not Applicable	0.000	Not Applicable	41.471	0.000	Not Applicable	41.471	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	29.758	0.000	Not Applicable	29.758	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	34.408	0.000	Not Applicable	34.408	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	18.939	0.000	Not Applicable	18.939	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	14.579	0.000	Not Applicable	14.579	Not Applicable
0.912	Not Applicable	0.000	Not Applicable	19.286	0.000	Not Applicable	19.286	Not Applicable
0.007	Not Applicable	0.000	Not Applicable	14.625	0.000	Not Applicable	14.625	Not Applicable
0.007	Not Applicable	0.000	Not Applicable	16.724	0.000	Not Applicable	16.724	Not Applicable
0.002	Not Applicable	0.000	Not Applicable	26.731	0.000	Not Applicable	26.731	Not Applicable
0.027	Not Applicable	0.000	Not Applicable	24.647	0.000	Not Applicable	24.647	Not Applicable
0.042	Not Applicable	0.000	Not Applicable	17.516	0.000	Not Applicable	17.516	Not Applicable
0.689	Not Applicable	0.000	Not Applicable	29.590	0.000	Not Applicable	29.590	Not Applicable
0.002	Not Applicable	0.000	Not Applicable	14.889	0.000	Not Applicable	14.889	Not Applicable
0.006	Not Applicable	0.000	Not Applicable	13.472	0.000	Not Applicable	13.472	Not Applicable

Not Applicable - Southwest Gas includes Distribution mains and services together.	Not Applicable - Southwest Gas includes Distribution mains and services together.	Not Applicable - Southwest Gas includes Distribution mains and services together.	Southwest Gas considers risk on pipe by pipe material, not based on the main/service designation. There are no services with unknown risk.	Provided	Not Available by Census Tract	Provided	Not Available by Census Tract	Weighted Average Risk 0-9 scale.	Not Available - Southwest Gas includes Distribution mains and services together.
Not Applicable	Not Applicable	Not Applicable	0.000	1.2	Not Available	2.196	Not Available	2.729	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.3	Not Available	2.354	Not Available	3.132	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.4	Not Available	2.100	Not Available	2.892	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.4	Not Available	2.100	Not Available	2.935	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.5	Not Available	2.100	Not Available	3.125	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.4	Not Available	2.153	Not Available	2.961	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.3	Not Available	2.097	Not Available	2.862	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.3	Not Available	2.131	Not Available	2.739	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.3	Not Available	2.104	Not Available	2.826	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.5	Not Available	2.100	Not Available	3.106	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.4	Not Available	2.100	Not Available	2.971	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.3	Not Available	2.152	Not Available	2.887	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.5	Not Available	2.100	Not Available	3.149	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.3	Not Available	2.727	Not Available	3.528	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.3	Not Available	2.174	Not Available	2.866	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.2	Not Available	2.112	Not Available	2.607	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.5	Not Available	2.126	Not Available	3.088	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.3	Not Available	2.100	Not Available	2.862	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.3	Not Available	2.138	Not Available	2.741	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.3	Not Available	2.055	Not Available	2.650	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.4	Not Available	2.131	Not Available	2.963	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.3	Not Available	2.091	Not Available	2.772	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.3	Not Available	2.138	Not Available	2.731	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.3	Not Available	2.266	Not Available	3.077	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.5	Not Available	2.127	Not Available	3.108	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.4	Not Available	2.111	Not Available	3.007	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.4	Not Available	2.145	Not Available	3.074	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.4	Not Available	2.102	Not Available	2.880	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.4	Not Available	2.100	Not Available	2.942	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.3	Not Available	2.098	Not Available	2.859	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.3	Not Available	2.187	Not Available	2.906	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.4	Not Available	2.101	Not Available	3.035	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.4	Not Available	2.122	Not Available	2.907	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.3	Not Available	2.139	Not Available	2.854	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.4	Not Available	2.094	Not Available	2.916	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.4	Not Available	2.113	Not Available	3.031	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.4	Not Available	2.166	Not Available	2.977	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.4	Not Available	2.102	Not Available	2.918	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.4	Not Available	2.115	Not Available	2.970	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.3	Not Available	2.106	Not Available	2.760	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.7	Not Available	2.100	Not Available	3.445	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.7	Not Available	2.100	Not Available	3.455	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.4	Not Available	2.127	Not Available	3.031	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.5	Not Available	2.099	Not Available	3.147	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.3	Not Available	2.103	Not Available	2.716	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.3	Not Available	2.091	Not Available	2.852	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.4	Not Available	2.158	Not Available	2.945	Not Applicable
Not Applicable	Not Applicable	Not Applicable	0.000	1.3	Not Available	2.159	Not Available	2.838	Not Applicable

Averaged distribution pipeline pressures			Southwest Gas uses year only, not month and day, and its DOT leak survey is performed on a 3-year cycle. All of the system was leak surveyed between 2019 and 2021. An average year is being provided. Business Districts are leak surveyed every year, but that has not been factored into this date.	Provided	Provided	Provided - Southwest Gas repaired a total of 40 hazardous (Grade 1) main leaks (not including excavation damages) in its California System in 2015-2020.	Provided - Southwest Gas repaired a total of 125 (not including excavation damages) hazardous (Grade 1) service leaks in its California System in 2015-2020.	Not Available - Southwest Gas does not track pipe that has been abandoned and not replaced.	Not Available - Southwest Gas does not track pipe that has been abandoned and not replaced.
81	2012	2012	2020	0.000	0.025	0.000	0.012	Not Available	Not Available
117	2013	2013	2020	0.000	0.022	0.000	0.022	Not Available	Not Available
55	2001	2002	2020	0.000	0.000	0.000	0.000	Not Available	Not Available
55	2000	2000	2020	0.000	0.000	0.000	0.000	Not Available	Not Available
55	1998	1999	2020	0.000	0.012	0.000	0.012	Not Available	Not Available
47.5	1998	2000	2020	0.005	0.008	0.000	0.008	Not Available	Not Available
47.5	1998	2001	2020	0.000	0.010	0.000	0.010	Not Available	Not Available
55	2004	2004	2020	0.000	0.000	0.000	0.000	Not Available	Not Available
55	2003	2004	2020	0.000	0.000	0.000	0.000	Not Available	Not Available
55	1998	1998	2020	0.000	0.016	0.000	0.016	Not Available	Not Available
55	1997	1995	2020	0.071	0.118	0.028	0.074	Not Available	Not Available
55	1999	1999	2020	0.046	0.000	0.000	0.000	Not Available	Not Available
55	1996	1998	2020	0.000	0.027	0.000	0.027	Not Available	Not Available
47.5	1974	2005	2020	0.000	0.000	0.000	0.000	Not Available	Not Available
55	2004	2004	2020	0.000	0.000	0.000	0.000	Not Available	Not Available
55	2005	2005	2020	0.000	0.014	0.000	0.014	Not Available	Not Available
55	1997	1997	2020	0.000	0.000	0.000	0.000	Not Available	Not Available
55	2002	2003	2020	0.022	0.013	0.000	0.013	Not Available	Not Available
55	2002	2005	2020	0.000	0.000	0.000	0.000	Not Available	Not Available
40	1959	1995	2020	0.000	0.061	0.000	0.020	Not Available	Not Available
45	1991	1991	2020	0.159	0.032	0.009	0.032	Not Available	Not Available
40	1996	2000	2020	0.058	0.057	0.000	0.011	Not Available	Not Available
40	2001	2000	2020	0.023	0.037	0.012	0.024	Not Available	Not Available
47.5	1964	1999	2020	0.018	0.012	0.000	0.012	Not Available	Not Available
40	1988	1990	2020	0.009	0.015	0.000	0.005	Not Available	Not Available
40	1992	1996	2020	0.050	0.020	0.000	0.020	Not Available	Not Available
45	1995	1994	2020	0.007	0.004	0.000	0.000	Not Available	Not Available
40	1988	1996	2020	0.006	0.006	0.000	0.000	Not Available	Not Available
40	1993	1994	2020	0.019	0.000	0.006	0.000	Not Available	Not Available
55	2001	2004	2020	0.000	0.009	0.000	0.009	Not Available	Not Available
47.5	1996	1998	2020	0.011	0.036	0.006	0.036	Not Available	Not Available
40	1998	1991	2020	0.023	0.000	0.000	0.000	Not Available	Not Available
40	1997	1994	2020	0.015	0.028	0.000	0.007	Not Available	Not Available
40	1996	1999	2020	0.019	0.016	0.000	0.008	Not Available	Not Available
40	1993	1993	2020	0.004	0.004	0.000	0.000	Not Available	Not Available
40	1991	1991	2020	0.011	0.006	0.000	0.006	Not Available	Not Available
47.5	1996	1995	2020	0.000	0.006	0.000	0.000	Not Available	Not Available
40	1999	1999	2020	0.053	0.017	0.000	0.017	Not Available	Not Available
40	1986	1993	2020	0.011	0.022	0.000	0.022	Not Available	Not Available
47.5	1993	1996	2020	0.060	0.050	0.017	0.050	Not Available	Not Available
55	1990	1991	2020	0.034	0.012	0.034	0.012	Not Available	Not Available
55	1988	1988	2020	0.060	0.035	0.010	0.023	Not Available	Not Available
47.5	1995	1993	2020	0.044	0.000	0.000	0.000	Not Available	Not Available
47.5	1993	1994	2020	0.000	0.000	0.000	0.000	Not Available	Not Available
40	2006	2002	2020	0.048	0.039	0.029	0.019	Not Available	Not Available
40	1998	1994	2020	0.045	0.025	0.000	0.025	Not Available	Not Available
47.5	2000	1997	2020	0.056	0.070	0.011	0.023	Not Available	Not Available
47.5	1998	2003	2020	0.000	0.000	0.000	0.000	Not Available	Not Available

<i>Not Available - Southwest Gas does not have estimates for the miles of new distribution main that will need to be installed in 2023 through 2026.</i>	<i>Not Available - Southwest Gas does not have estimates for the miles of new service that will need to be installed in 2023 through 2026.</i>	<i>Count of Essential Valves within Census Tract is listed in this column. Southwest Gas has Essential and Non-essential valves. An Essential Valve is a valve that is installed, required or used for the safe or emergency operation of a distribution or transmission line. A non-essential valve is a valve that is verified to exist in the distribution or transmission line, but is not installed, required or used for the safe or emergency operation of the pipeline. Southwest Gas added a column to the end of this sheet to list the number of non-essential valves within each census tract.</i>			<i>Southwest Gas provided an average number of customers per reg station within a census tract by calculating the number of customers in each census tract divided by the number of reg stations in the census tract.</i>		<i>Not Available - Southwest Gas does not know at this time how many regulator stations my be replaced, relocated, or to be newly constructon in 2023 through 2026.</i>	<i>Not Available - Southwest Gas does not know at this time how many regulator stations my be replaced, relocated, or to be newly constructon after 2026.</i>
Not Available	Not Available	15	2	Medium	417;417;417	2011;2012;2013	Not Available	Not Available
Not Available	Not Available	4	2	Medium	364;364	2012;2013	Not Available	Not Available
Not Available	Not Available	0	0	Medium	748	2003	Not Available	Not Available
Not Available	Not Available	5	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	4	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	11	14	High;Medium	418;418;418;418;418	1992;1993;1999;2016;2017	Not Available	Not Available
Not Available	Not Available	6	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	10	13	Medium	784;784	2013;20118	Not Available	Not Available
Not Available	Not Available	8	1	Medium	964;964	1991;2014	Not Available	Not Available
Not Available	Not Available	4	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	4	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	7	5	Medium	481;481	2002;2004	Not Available	Not Available
Not Available	Not Available	3	0	Medium	1473	2020	Not Available	Not Available
Not Available	Not Available	14	12	High;Medium	11;11;11;11	1993;1998;2007;2008	Not Available	Not Available
Not Available	Not Available	9	4	High;Medium	492;492;492	1991;1992;2020	Not Available	Not Available
Not Available	Not Available	7	2	Medium	1550	2012	Not Available	Not Available
Not Available	Not Available	2	1	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	5	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	12	5	Medium	1582	1998	Not Available	Not Available
Not Available	Not Available	2	0	Medium	486	2012	Not Available	Not Available
Not Available	Not Available	12	18	Medium	1835	1999	Not Available	Not Available
Not Available	Not Available	9	4	Medium	1695	1998	Not Available	Not Available
Not Available	Not Available	8	4	Medium	714;714	1998;1999	Not Available	Not Available
Not Available	Not Available	18	15	High;Medium	82;82;82;82;82;82	1987;1990;1993;1996;1997;2008;2013	Not Available	Not Available
Not Available	Not Available	14	1	Medium	1105;1105	2011;2013	Not Available	Not Available
Not Available	Not Available	9	3	Medium	2526	1997	Not Available	Not Available
Not Available	Not Available	20	12	Medium	603;603;603;603	1989;1994;2001;2010	Not Available	Not Available
Not Available	Not Available	14	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	15	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	9	3	Medium	2775	1992	Not Available	Not Available
Not Available	Not Available	28	13	Medium	176;176;176;176;176	1989;2000;2011;2013;2018	Not Available	Not Available
Not Available	Not Available	5	2	Medium	606	2003	Not Available	Not Available
Not Available	Not Available	16	4	Medium	978;978	2003;2006	Not Available	Not Available
Not Available	Not Available	7	9	Medium	662	1998	Not Available	Not Available
Not Available	Not Available	15	0	Medium	1965	2006	Not Available	Not Available
Not Available	Not Available	20	1	Medium	1464	9724	Not Available	Not Available
Not Available	Not Available	19	3	Medium	957	1999	Not Available	Not Available
Not Available	Not Available	6	4	Medium	1346	2000	Not Available	Not Available
Not Available	Not Available	2	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	8	6	Medium	868	2002	Not Available	Not Available
Not Available	Not Available	12	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	23	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	12	4	Medium	822;822	2010;2012	Not Available	Not Available
Not Available	Not Available	12	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	13	0	Medium	2016	1999	Not Available	Not Available
Not Available	Not Available	12	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	9	3	Medium	1761	2015	Not Available	Not Available
Not Available	Not Available	11	10	Medium	323;323;323	1988;2016;2020	Not Available	Not Available

	9916	VICTORVILLE	SANBERNARDINO	92394	14	Not Applicable	No	No
	9917	VICTORVILLE	SANBERNARDINO	92392	14	Not Applicable	No	No
	9918	VICTORVILLE	SANBERNARDINO	92394	14	Not Applicable	No	No
	10009	HESPERIA;VICTORVILLE	SANBERNARDINO	92344	14	Not Applicable	No	No
	10010	HESPERIA	SANBERNARDINO	92345	14	Not Applicable	No	No
	10011	HESPERIA	SANBERNARDINO	92345	14	Not Applicable	No	No
	10012	HESPERIA	SANBERNARDINO	92345	14	Not Applicable	No	No
	10014	HESPERIA	SANBERNARDINO	92345	14	Not Applicable	No	No
	10015	HESPERIA	SANBERNARDINO	92345	14	Not Applicable	No	No
	10016	HESPERIA	SANBERNARDINO	92345	14	Not Applicable	No	No
	10019	HESPERIA	SANBERNARDINO	92345	14	Not Applicable	No	No
	10021	HESPERIA	SANBERNARDINO	92345	14	Not Applicable	No	No
	10022	HESPERIA	SANBERNARDINO	92345	14	Not Applicable	No	No
	10023	HESPERIA	SANBERNARDINO	92344	14	Not Applicable	No	No
	10024	HESPERIA	SANBERNARDINO	92345	14	Not Applicable	No	No
	10027	VICTORVILLE	SANBERNARDINO	92395	14	Not Applicable	No	No
	10028	HESPERIA	SANBERNARDINO	92345	14	Not Applicable	No	No
	10029	APPLEVALLEY	SANBERNARDINO	92308	14	Not Applicable	No	No
	10030	HESPERIA	SANBERNARDINO	92345	14	Not Applicable	No	No
	10031	HESPERIA	SANBERNARDINO	92344	14	Not Applicable	No	No
	10032	HESPERIA	SANBERNARDINO	92345	14	Not Applicable	No	No
	10033	HESPERIA	SANBERNARDINO	92345	14	Not Applicable	No	No
	10034	HESPERIA	SANBERNARDINO	92344	14	Not Applicable	No	No
	10035	VICTORVILLE	SANBERNARDINO	92395	14	Not Applicable	No	No
	10036	VICTORVILLE	SANBERNARDINO	92395	14	Not Applicable	No	No
	10037	VICTORVILLE	SANBERNARDINO	92395	14	Not Applicable	No	No
	10038	VICTORVILLE	SANBERNARDINO	92395	14	Not Applicable	No	No
	10039	HESPERIA	SANBERNARDINO	92345	14	Not Applicable	No	No
	10040	VICTORVILLE	SANBERNARDINO	92395	14	Not Applicable	No	No
	10041	HESPERIA	SANBERNARDINO	92344	14	Not Applicable	No	No
	10042	HESPERIA	SANBERNARDINO	92344	14	Not Applicable	No	No
	10300	BARSTOW;DAGGETT	SANBERNARDINO	92311	14	Not Applicable	No	No
	10424	LUCERNEVALLEY	SANBERNARDINO	92356	14	Not Applicable	No	No
	10805	HESPERIA	SANBERNARDINO	92345	14	Not Applicable	No	No
	11203	BIGBEARCITY;BIGBEARLAKE	SANBERNARDINO	92314	16	Not Applicable	No	No
	11204	BIGBEARCITY;BIGBEARLAKE	SANBERNARDINO	92314	16	Not Applicable	No	No
	11205	BIGBEARLAKE	SANBERNARDINO	92315	16	Not Applicable	No	No
	11206	BIGBEARLAKE	SANBERNARDINO	92315	16	Not Applicable	No	No
	11300	BIGBEARCITY;BIGBEARLAKE;FAWNSKIN	SANBERNARDINO	92314	16	Not Applicable	No	No
	11404	BIGBEARCITY	SANBERNARDINO	92314	16	Not Applicable	No	No
	11405	BIGBEARCITY	SANBERNARDINO	92314	16	Not Applicable	No	No
	11406	BIGBEARCITY	SANBERNARDINO	92314	16	Not Applicable	No	No
	11407	BIGBEARCITY	SANBERNARDINO	92314	16	Not Applicable	No	No
	11408	BIGBEARCITY	SANBERNARDINO	92314	16	Not Applicable	No	No
	11500	BIGBEARLAKE	SANBERNARDINO	92315	16	Not Applicable	No	No
	11601	HELENDALE	SANBERNARDINO	92342	14	Not Applicable	No	No
	11602	ADELANTO	SANBERNARDINO	92301	14	92347	No	No
	11700	APPLEVALLEY;BARSTOW;HELENDALE;OROGRANDE	SANBERNARDINO	92307	14	Not Applicable	No	No
	11801	BARSTOW	SANBERNARDINO	92311	14	Not Applicable	No	No
	11802	BARSTOW	SANBERNARDINO	92311	14	Not Applicable	No	No
	11900	BARSTOW;DAGGETT;HINKLEY;YERMO	SANBERNARDINO	92311	14	Not Applicable	No	No
	12001	BARSTOW	SANBERNARDINO	92311	14	Not Applicable	No	No
	12002	BARSTOW	SANBERNARDINO	92311	14	Not Applicable	No	No
	12101	APPLEVALLEY;VICTORVILLE	SANBERNARDINO	92307	14	92307	No	No
	12103	LUCERNEVALLEY	SANBERNARDINO	92356	14	Not Applicable	No	No
	12105	APPLEVALLEY	SANBERNARDINO	92307	14	92307	No	No
	12106	BARSTOW	SANBERNARDINO	92311	14	Not Applicable	No	No
	980200	VICTORVILLE	SANBERNARDINO	92394	14	Not Applicable	No	No
	1205	TRUCKEE	NEVADA	96161	16	Not Applicable	No	No
	1207	TRUCKEE	NEVADA	96161	16	Not Applicable	No	No
	1208	TRUCKEE	NEVADA	96161	16	Not Applicable	No	No
	1209	TRUCKEE	NEVADA	96161	16	Not Applicable	No	No
	1210	TRUCKEE	NEVADA	96161	16	Not Applicable	No	No
	1211	TRUCKEE	NEVADA	96161	16	Not Applicable	No	No
	20104	TAHOECITY	PLACER	96145	16	Not Applicable	No	No
	20105	TAHOECITY	PLACER	96145	16	Not Applicable	No	No
	20106	KINGSBEACH	PLACER	96143	16	Not Applicable	No	No

1641	0	327	1,853.35	Not Available	19.48%	2	12	\$	458,674
1022	0	161	2,485.65	Not Available	19.48%	3	12	\$	458,674
862	0	159	1,204.36	Not Available	19.48%	3	12	\$	458,674
1337	0	200	2,197.70	Not Available	19.48%	3	12	\$	458,674
1830	0	542	2,560.12	Not Available	19.48%	2	12	\$	458,674
1287	0	316	1,715.12	Not Available	19.48%	2	12	\$	458,674
1720	0	471	2,085.60	Not Available	19.48%	4	12	\$	458,674
1269	0	198	1,417.60	Not Available	19.48%	1	12	\$	458,674
1636	0	495	2,282.36	Not Available	19.48%	1	12	\$	458,674
1507	0	317	2,180.56	Not Available	19.48%	2	12	\$	458,674
1576	0	400	2,329.85	Not Available	19.48%	4	12	\$	458,674
2185	0	550	2,372.53	Not Available	19.48%	2	12	\$	458,674
1515	0	359	1,458.19	Not Available	19.48%	3	12	\$	458,674
1901	0	354	2,142.14	Not Available	19.48%	3	12	\$	458,674
1694	0	414	1,832.58	Not Available	19.48%	5	12	\$	458,674
1645	0	227	2,346.62	Not Available	19.48%	2	12	\$	458,674
1399	0	378	5,082.51	Not Available	19.48%	2	12	\$	458,674
1259	0	318	1,296.96	Not Available	19.48%	2	12	\$	458,674
890	0	265	1,145.94	Not Available	19.48%	3	12	\$	458,674
1418	0	229	1,753.76	Not Available	19.48%	3	12	\$	458,674
1509	0	380	1,790.53	Not Available	19.48%	2	12	\$	458,674
346	0	118	787.74	Not Available	19.48%	1	12	\$	458,674
810	0	295	1,812.58	Not Available	19.48%	4	12	\$	458,674
939	0	274	1,022.59	Not Available	19.48%	2	12	\$	458,674
1075	0	219	3,066.51	Not Available	19.48%	2	12	\$	458,674
1948	0	498	6,139.41	Not Available	19.48%	2	12	\$	458,674
1347	0	230	2,455.39	Not Available	19.48%	1	12	\$	458,674
1152	0	165	1,892.85	Not Available	19.48%	5	12	\$	458,674
779	0	114	1,147.80	Not Available	19.48%	1	12	\$	458,674
1696	0	288	2,278.64	Not Available	19.48%	4	12	\$	458,674
1241	0	245	2,113.73	Not Available	19.48%	1	12	\$	458,674
37	0	19	145.85	Not Available	13.34%	10	11	\$	458,674
8	0	3	4.01	Not Available	19.48%	9	12	\$	458,674
2	0	2	19.14	Not Available	19.48%	2	12	\$	458,674
2254	0	488	6,610.03	Not Available	15.27%	2	13	\$	458,674
2980	0	575	4,612.73	Not Available	15.27%	1	13	\$	458,674
1437	0	400	4,585.75	Not Available	15.27%	3	13	\$	458,674
2289	0	448	4,231.66	Not Available	15.27%	3	13	\$	458,674
1692	0	375	2,545.72	Not Available	15.27%	16	13	\$	458,674
2027	0	470	3,710.11	Not Available	15.27%	5	13	\$	458,674
2828	0	536	3,940.87	Not Available	15.27%	2	13	\$	458,674
1824	0	289	2,692.70	Not Available	15.27%	2	13	\$	458,674
1827	0	286	2,577.18	Not Available	15.27%	1	13	\$	458,674
1977	0	223	2,087.63	Not Available	15.27%	1	13	\$	458,674
55	0	29	215.52	Not Available	15.27%	1	13	\$	458,674
2683	0	416	3,142.87	Not Available	19.48%	5	12	\$	458,674
355	0	91	1,858.37	Not Available	19.48%	7	12	\$	458,674
213	0	84	1,095.81	Not Available	19.48%	10	12	\$	458,674
1474	0	566	2,287.02	Not Available	13.34%	5	11	\$	458,674
817	0	163	1,021.19	Not Available	13.34%	5	11	\$	458,674
796	0	225	918.94	Not Available	13.34%	6	11	\$	458,674
1743	0	370	2,403.98	Not Available	13.34%	3	11	\$	458,674
1657	0	247	2,372.32	Not Available	13.34%	4	11	\$	458,674
1922	0	573	4,232.15	Not Available	19.48%	7	12	\$	458,674
483	0	240	533.33	Not Available	19.48%	15	12	\$	458,674
222	0	98	267.67	Not Available	19.48%	3	12	\$	458,674
347	0	137	721.98	Not Available	13.34%	16	11	\$	458,674
10	0	10	1,843.04	Not Available	19.48%	5	12	\$	458,674
2011	0	325	6,598.38	Not Available	26.86%	2	15	\$	1,056,000
2786	0	454	6,365.56	Not Available	26.86%	2	15	\$	1,056,000
2224	0	150	3,921.47	Not Available	26.86%	1	15	\$	1,056,000
2084	0	388	5,671.11	Not Available	26.86%	2	15	\$	1,056,000
2873	0	208	5,565.75	Not Available	26.86%	1	15	\$	1,056,000
1165	0	139	2,615.74	Not Available	26.86%	2	15	\$	1,056,000
2004	0	530	4,053.97	Not Available	16.05%	2	14	\$	1,056,000
1866	0	602	3,284.44	Not Available	16.05%	2	14	\$	1,056,000
1823	0	475	3,276.29	Not Available	16.05%	2	14	\$	1,056,000

1.216	23.466	0.000	21.606	0.000	44.296	0.805	1.186	0.000	0.000
0.511	13.016	0.000	10.150	0.000	20.750	2.426	0.500	0.000	0.000
0.503	11.893	0.000	8.624	0.000	18.888	1.629	0.503	0.000	0.000
0.000	26.387	0.000	15.089	0.000	35.081	6.342	0.053	0.000	0.000
0.129	37.969	0.000	33.084	0.000	66.360	4.694	0.129	0.000	0.000
1.761	24.536	0.000	23.405	0.000	45.125	2.844	1.733	0.000	0.000
0.056	36.383	0.000	34.119	0.000	64.317	6.240	0.000	0.000	0.000
0.000	17.909	0.000	19.604	0.000	33.618	3.894	0.000	0.000	0.000
0.000	27.799	0.000	27.683	0.000	53.021	2.461	0.000	0.000	0.000
0.000	23.010	0.000	21.967	0.000	42.935	2.042	0.000	0.000	0.000
1.186	35.914	0.000	30.668	0.000	59.756	6.861	1.151	0.000	0.000
1.031	32.242	0.000	38.077	0.000	66.804	4.453	0.093	0.000	0.000
3.707	22.100	0.000	24.671	0.000	44.208	4.736	1.535	0.000	0.000
1.158	26.828	0.000	28.207	0.000	52.660	3.189	0.344	0.000	0.000
2.466	29.390	0.000	29.670	0.000	55.505	4.980	1.041	0.000	0.000
0.586	16.337	0.000	19.333	0.000	32.450	2.948	0.858	0.000	0.000
2.277	29.432	0.087	26.909	0.000	52.711	3.720	2.273	0.000	0.000
1.547	21.497	0.000	23.503	0.000	41.336	4.978	0.233	0.000	0.000
0.174	19.089	0.000	17.873	0.000	35.378	1.758	0.000	0.000	0.000
1.805	16.403	0.000	13.290	0.000	28.440	3.036	0.023	0.000	0.000
1.338	21.523	0.000	23.112	0.000	42.502	3.025	0.445	0.000	0.000
0.000	6.608	0.000	5.655	0.000	12.042	0.222	0.000	0.000	0.000
0.014	42.981	0.000	23.224	0.000	53.323	11.158	1.738	0.000	0.000
1.004	15.206	0.000	15.523	0.000	29.993	0.736	1.004	0.000	0.000
1.260	18.011	0.000	10.641	0.000	26.174	2.479	1.259	0.000	0.000
3.679	33.436	0.006	24.271	0.000	49.873	7.934	3.562	0.024	0.000
0.000	15.383	0.000	13.293	0.000	28.577	0.100	0.000	0.000	0.000
0.824	10.761	0.000	13.484	0.000	22.609	1.471	0.990	0.000	0.000
0.000	6.144	0.000	8.747	0.000	13.385	0.997	0.508	0.000	0.000
0.502	27.968	0.000	19.138	0.000	42.837	3.091	1.680	0.000	0.000
0.000	26.366	0.000	15.589	0.000	36.204	5.751	0.000	0.000	0.000
1.651	2.989	0.073	0.937	0.000	3.963	1.685	0.003	0.000	0.000
0.053	0.001	0.000	0.266	0.000	0.320	0.000	0.000	0.000	0.000
0.021	0.172	0.000	0.042	0.000	0.236	0.000	0.000	0.000	0.000
2.563	30.414	0.000	32.192	0.000	56.450	4.847	3.872	0.000	0.000
0.000	27.714	0.000	36.954	0.000	59.458	5.209	0.000	0.000	0.000
1.656	18.895	0.000	19.377	0.000	33.067	2.914	3.947	0.000	0.000
0.812	23.041	0.000	31.886	0.000	50.865	4.813	0.061	0.000	0.000
20.935	21.843	0.000	24.483	0.000	44.996	3.340	18.926	0.000	0.000
6.010	24.628	0.003	23.506	0.000	44.984	3.421	5.741	0.000	0.000
0.875	28.632	0.000	34.936	0.000	58.601	4.549	1.293	0.000	0.000
2.304	16.100	0.000	21.897	0.000	35.665	2.345	2.290	0.000	0.000
0.000	18.824	0.000	18.631	0.000	33.887	3.560	0.007	0.000	0.000
0.000	18.252	0.000	20.492	0.000	36.690	2.054	0.000	0.000	0.000
0.000	1.645	0.000	1.021	0.000	2.346	0.321	0.000	0.000	0.000
3.651	29.819	0.000	32.924	0.000	59.004	7.390	0.000	0.000	0.000
20.049	11.159	0.019	5.948	0.000	13.140	15.860	0.006	1.399	6.769
3.010	12.524	0.010	5.135	0.000	16.056	4.623	0.000	0.000	0.000
4.497	37.738	0.324	22.483	0.000	54.132	10.460	0.449	0.000	0.000
0.040	15.711	0.000	12.424	0.000	24.289	3.636	0.249	0.000	0.000
2.231	34.703	0.305	14.509	0.000	39.967	11.782	0.000	0.000	0.000
1.938	23.128	0.060	20.840	0.000	41.034	4.931	0.000	0.000	0.000
4.536	18.652	0.153	21.454	0.000	37.632	7.145	0.018	0.000	0.000
1.063	52.293	0.000	34.772	0.000	72.970	11.451	3.707	0.000	0.000
9.144	21.342	0.002	10.528	0.000	29.651	5.325	6.039	0.000	0.000
2.986	7.682	0.000	4.255	0.000	11.267	0.671	2.985	0.000	0.000
12.275	20.973	0.000	8.113	0.000	21.666	9.689	10.006	0.000	0.000
2.795	2.300	0.000	0.618	0.000	0.292	3.368	2.053	0.000	0.000
3.040	44.595	0.000	42.789	0.000	71.341	15.934	3.150	0.000	0.000
5.197	40.866	0.000	32.372	0.000	59.657	11.572	6.193	1.013	0.000
0.000	27.361	0.000	37.941	0.000	57.753	5.823	1.725	0.000	0.000
0.848	28.468	0.000	23.279	0.000	39.954	7.099	5.542	0.000	0.000
0.000	32.536	0.000	47.145	0.000	69.316	8.439	1.926	0.000	0.000
0.157	16.939	0.000	18.697	0.000	30.985	2.573	2.237	0.000	0.000
2.685	22.004	0.005	20.302	0.000	41.640	0.690	2.666	0.000	0.000
3.959	25.376	0.038	28.824	0.000	52.905	1.379	3.856	0.057	0.000
7.467	23.821	0.002	20.833	0.000	41.087	2.217	5.988	2.831	0.000

0.000	0.000	0.000	0.000	44.882	1.405	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	23.112	0.564	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	19.683	1.339	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	41.477	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	68.629	2.554	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	46.008	3.694	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	67.877	2.681	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	34.180	3.332	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	53.489	1.993	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	43.840	1.137	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	63.697	4.072	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	70.307	1.043	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	46.754	3.724	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	55.029	1.164	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	59.055	2.470	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	33.869	2.387	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	54.797	3.908	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	44.471	2.077	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	35.591	1.546	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	29.280	2.219	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	44.550	1.423	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	11.034	1.230	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	66.203	0.017	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	30.729	1.004	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	28.351	1.560	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	57.650	3.742	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	28.677	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	22.900	2.170	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	14.369	0.521	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	47.106	0.502	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	41.955	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	2.216	3.434	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.208	0.112	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.209	0.027	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	61.757	3.412	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	62.111	2.557	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	37.575	2.353	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	52.626	3.113	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	42.736	24.526	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	47.182	6.964	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	59.747	4.695	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	34.971	5.329	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	35.503	1.951	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	38.744	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	2.298	0.369	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	60.243	6.152	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	17.107	20.068	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	12.633	8.046	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	58.507	6.534	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	27.010	1.164	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	35.976	15.773	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	43.786	2.179	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	39.031	5.765	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	80.639	7.518	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	30.393	10.622	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	11.898	3.099	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	21.223	20.138	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.954	4.760	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	87.292	3.133	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	72.638	5.797	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	65.301	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	48.141	4.454	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	79.681	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	35.634	0.160	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	39.737	5.259	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	49.954	8.244	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	39.343	12.779	0.000	0.000	0.000	0.000

0.005	Not Applicable	0.000	Not Applicable	24.682	0.000	Not Applicable	24.682	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	13.526	0.000	Not Applicable	13.526	Not Applicable
0.003	Not Applicable	0.000	Not Applicable	12.397	0.000	Not Applicable	12.397	Not Applicable
0.008	Not Applicable	0.000	Not Applicable	26.387	0.000	Not Applicable	26.387	Not Applicable
0.014	Not Applicable	0.000	Not Applicable	38.099	0.000	Not Applicable	38.099	Not Applicable
0.003	Not Applicable	0.000	Not Applicable	26.297	0.000	Not Applicable	26.297	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	36.439	0.000	Not Applicable	36.439	Not Applicable
0.056	Not Applicable	0.000	Not Applicable	17.909	0.000	Not Applicable	17.909	Not Applicable
0.001	Not Applicable	0.000	Not Applicable	27.799	0.000	Not Applicable	27.799	Not Applicable
0.009	Not Applicable	0.000	Not Applicable	23.010	0.000	Not Applicable	23.010	Not Applicable
0.001	Not Applicable	0.000	Not Applicable	37.100	0.000	Not Applicable	37.100	Not Applicable
0.062	Not Applicable	0.000	Not Applicable	33.273	0.000	Not Applicable	33.273	Not Applicable
0.002	Not Applicable	0.000	Not Applicable	25.807	0.000	Not Applicable	25.807	Not Applicable
0.005	Not Applicable	0.000	Not Applicable	27.986	0.000	Not Applicable	27.986	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	31.855	0.000	Not Applicable	31.855	Not Applicable
0.006	Not Applicable	0.000	Not Applicable	16.923	0.000	Not Applicable	16.923	Not Applicable
0.038	Not Applicable	0.000	Not Applicable	31.709	0.000	Not Applicable	31.709	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	23.044	0.000	Not Applicable	23.044	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	19.264	0.000	Not Applicable	19.264	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	18.209	0.000	Not Applicable	18.209	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	22.861	0.000	Not Applicable	22.861	Not Applicable
0.015	Not Applicable	0.000	Not Applicable	6.608	0.000	Not Applicable	6.608	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	42.996	0.000	Not Applicable	42.996	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	16.210	0.000	Not Applicable	16.210	Not Applicable
0.009	Not Applicable	0.000	Not Applicable	19.270	0.000	Not Applicable	19.270	Not Applicable
0.238	Not Applicable	0.000	Not Applicable	37.115	0.000	Not Applicable	37.115	Not Applicable
0.024	Not Applicable	0.000	Not Applicable	15.383	0.000	Not Applicable	15.383	Not Applicable
0.009	Not Applicable	0.000	Not Applicable	11.585	0.000	Not Applicable	11.585	Not Applicable
0.055	Not Applicable	0.000	Not Applicable	6.144	0.000	Not Applicable	6.144	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	28.470	0.000	Not Applicable	28.470	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	26.366	0.000	Not Applicable	26.366	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	4.640	0.000	Not Applicable	4.640	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	0.054	0.000	Not Applicable	0.054	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	0.193	0.000	Not Applicable	0.193	Not Applicable
0.058	Not Applicable	0.000	Not Applicable	32.977	0.000	Not Applicable	32.977	Not Applicable
0.086	Not Applicable	0.000	Not Applicable	27.714	0.000	Not Applicable	27.714	Not Applicable
0.188	Not Applicable	0.000	Not Applicable	20.550	0.000	Not Applicable	20.550	Not Applicable
0.221	Not Applicable	0.000	Not Applicable	23.853	0.000	Not Applicable	23.853	Not Applicable
0.061	Not Applicable	0.000	Not Applicable	42.778	0.000	Not Applicable	42.778	Not Applicable
0.089	Not Applicable	0.000	Not Applicable	30.638	0.000	Not Applicable	30.638	Not Applicable
0.061	Not Applicable	0.000	Not Applicable	29.506	0.000	Not Applicable	29.506	Not Applicable
0.040	Not Applicable	0.000	Not Applicable	18.404	0.000	Not Applicable	18.404	Not Applicable
0.045	Not Applicable	0.000	Not Applicable	18.824	0.000	Not Applicable	18.824	Not Applicable
0.048	Not Applicable	0.000	Not Applicable	18.252	0.000	Not Applicable	18.252	Not Applicable
0.112	Not Applicable	0.000	Not Applicable	1.645	0.000	Not Applicable	1.645	Not Applicable
0.128	Not Applicable	0.000	Not Applicable	33.470	0.000	Not Applicable	33.470	Not Applicable
0.002	Not Applicable	0.000	Not Applicable	31.208	0.000	Not Applicable	31.208	Not Applicable
0.183	Not Applicable	0.000	Not Applicable	15.534	0.000	Not Applicable	15.534	Not Applicable
0.209	Not Applicable	0.000	Not Applicable	42.235	0.000	Not Applicable	42.235	Not Applicable
0.014	Not Applicable	0.000	Not Applicable	15.750	0.000	Not Applicable	15.750	Not Applicable
0.604	Not Applicable	0.000	Not Applicable	36.934	0.000	Not Applicable	36.934	Not Applicable
0.221	Not Applicable	0.000	Not Applicable	25.066	0.000	Not Applicable	25.066	Not Applicable
0.028	Not Applicable	0.000	Not Applicable	23.188	0.000	Not Applicable	23.188	Not Applicable
0.007	Not Applicable	0.000	Not Applicable	53.356	0.000	Not Applicable	53.356	Not Applicable
3.006	Not Applicable	0.000	Not Applicable	30.486	0.000	Not Applicable	30.486	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	10.668	0.000	Not Applicable	10.668	Not Applicable
5.056	Not Applicable	0.000	Not Applicable	33.248	0.000	Not Applicable	33.248	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	5.095	0.000	Not Applicable	5.095	Not Applicable
0.040	Not Applicable	0.000	Not Applicable	90.442	0.000	Not Applicable	90.442	Not Applicable
0.134	Not Applicable	0.000	Not Applicable	78.437	0.000	Not Applicable	77.820	Not Applicable
0.099	Not Applicable	0.000	Not Applicable	65.366	0.000	Not Applicable	65.366	Not Applicable
0.209	Not Applicable	0.000	Not Applicable	52.620	0.000	Not Applicable	48.995	Not Applicable
0.043	Not Applicable	0.000	Not Applicable	79.585	0.000	Not Applicable	79.585	Not Applicable
0.039	Not Applicable	0.000	Not Applicable	35.815	0.000	Not Applicable	35.805	Not Applicable
0.230	Not Applicable	0.000	Not Applicable	45.003	0.000	Not Applicable	42.421	Not Applicable
0.330	Not Applicable	0.000	Not Applicable	58.184	0.000	Not Applicable	53.882	Not Applicable
0.672	Not Applicable	0.000	Not Applicable	52.153	0.000	Not Applicable	46.822	Not Applicable

40	2002	1998	2020	0.014	0.000	0.007	0.000	Not Available	Not Available
47.5	1997	1999	2020	0.062	0.049	0.025	0.033	Not Available	Not Available
47.5	1997	1995	2020	0.000	0.000	0.000	0.000	Not Available	Not Available
55	1997	1999	2020	0.000	0.011	0.000	0.011	Not Available	Not Available
40	1993	1994	2020	0.013	0.015	0.004	0.010	Not Available	Not Available
40	1995	1994	2020	0.019	0.007	0.000	0.007	Not Available	Not Available
47.5	1991	1993	2020	0.023	0.005	0.000	0.000	Not Available	Not Available
40	1991	1997	2020	0.000	0.017	0.000	0.009	Not Available	Not Available
40	1994	1993	2020	0.012	0.000	0.000	0.000	Not Available	Not Available
47.5	1994	1992	2020	0.022	0.015	0.000	0.000	Not Available	Not Available
40	1995	1995	2020	0.000	0.016	0.000	0.000	Not Available	Not Available
40	1992	1991	2020	0.020	0.009	0.000	0.004	Not Available	Not Available
47.5	1991	1995	2020	0.000	0.007	0.000	0.007	Not Available	Not Available
47.5	1993	1993	2020	0.006	0.018	0.006	0.018	Not Available	Not Available
40	1990	1993	2020	0.005	0.000	0.000	0.000	Not Available	Not Available
40	2003	1994	2020	0.000	0.017	0.000	0.000	Not Available	Not Available
40	1996	1993	2020	0.011	0.006	0.000	0.006	Not Available	Not Available
40	1992	1993	2020	0.000	0.007	0.000	0.007	Not Available	Not Available
47.5	1995	1996	2020	0.017	0.019	0.000	0.009	Not Available	Not Available
47.5	1999	2000	2020	0.009	0.000	0.000	0.000	Not Available	Not Available
40	1999	1995	2020	0.036	0.014	0.007	0.007	Not Available	Not Available
40	1990	1994	2020	0.126	0.088	0.000	0.059	Not Available	Not Available
55	2003	2003	2020	0.019	0.007	0.000	0.000	Not Available	Not Available
40	1995	1990	2020	0.021	0.011	0.000	0.000	Not Available	Not Available
40	2000	2000	2020	0.017	0.063	0.000	0.063	Not Available	Not Available
40	1995	1997	2020	0.013	0.014	0.000	0.007	Not Available	Not Available
40	1993	1994	2020	0.011	0.000	0.000	0.000	Not Available	Not Available
47.5	2005	1995	2020	0.000	0.025	0.000	0.025	Not Available	Not Available
40	2010	1992	2020	0.000	0.000	0.000	0.000	Not Available	Not Available
55	2002	2001	2020	0.000	0.009	0.000	0.009	Not Available	Not Available
55	2004	2005	2020	0.019	0.000	0.000	0.000	Not Available	Not Available
47.5	1973	1994	2020	0.000	0.000	0.000	0.000	Not Available	Not Available
55	1983	1988	2020	0.000	0.000	0.000	0.000	Not Available	Not Available
55	1997	1998	2020	0.000	0.000	0.000	0.000	Not Available	Not Available
40	2001	1996	2020	0.000	0.005	0.000	0.000	Not Available	Not Available
40	2003	1994	2020	0.000	0.000	0.000	0.000	Not Available	Not Available
40	2004	1997	2020	0.000	0.017	0.000	0.009	Not Available	Not Available
40	2000	1995	2020	0.000	0.000	0.000	0.000	Not Available	Not Available
47.5	1985	1994	2020	0.004	0.007	0.004	0.007	Not Available	Not Available
47.5	1996	1998	2020	0.022	0.007	0.011	0.000	Not Available	Not Available
40	2001	1995	2020	0.011	0.000	0.006	0.000	Not Available	Not Available
40	1998	1994	2020	0.018	0.000	0.000	0.000	Not Available	Not Available
40	1994	1996	2020	0.009	0.009	0.000	0.009	Not Available	Not Available
40	1991	1995	2020	0.000	0.000	0.000	0.000	Not Available	Not Available
40	1986	2001	2020	0.000	0.000	0.000	0.000	Not Available	Not Available
47.5	1990	1994	2020	0.020	0.010	0.000	0.010	Not Available	Not Available
40	1982	2001	2020	0.011	0.000	0.000	0.000	Not Available	Not Available
48	1983	1993	2020	0.011	0.032	0.000	0.000	Not Available	Not Available
47.5	1995	1995	2020	0.012	0.007	0.000	0.007	Not Available	Not Available
47.5	1998	2004	2020	0.042	0.013	0.000	0.013	Not Available	Not Available
47.5	1983	1996	2020	0.005	0.011	0.005	0.011	Not Available	Not Available
40	1992	1994	2020	0.027	0.008	0.007	0.008	Not Available	Not Available
47.5	1991	1998	2020	0.014	0.023	0.000	0.023	Not Available	Not Available
47.5	1996	1996	2020	0.022	0.029	0.000	0.014	Not Available	Not Available
47.5	1973	2003	2020	0.016	0.000	0.000	0.000	Not Available	Not Available
40	1991	1999	2020	0.000	0.039	0.000	0.039	Not Available	Not Available
57.5	1964	1998	2020	0.015	0.021	0.005	0.021	Not Available	Not Available
55	1990	1992	2020	0.000	0.270	0.000	0.000	Not Available	Not Available
60	1999	2000	2020	0.003	0.012	0.000	0.004	Not Available	Not Available
60	2000	2002	2020	0.004	0.005	0.000	0.005	Not Available	Not Available
60	2000	2002	2020	0.006	0.004	0.000	0.004	Not Available	Not Available
60	1999	2003	2020	0.000	0.014	0.000	0.014	Not Available	Not Available
60	1998	2001	2020	0.005	0.007	0.000	0.004	Not Available	Not Available
60	2000	2001	2020	0.000	0.000	0.000	0.000	Not Available	Not Available
43	2004	1995	2020	0.007	0.016	0.000	0.008	Not Available	Not Available
43	2001	1993	2020	0.011	0.017	0.006	0.012	Not Available	Not Available
43	1999	1995	2020	0.016	0.008	0.011	0.008	Not Available	Not Available

Not Available	Not Available	13	5	Medium	1918	2010	Not Available	Not Available
Not Available	Not Available	8	2	Medium	2022	2011	Not Available	Not Available
Not Available	Not Available	5	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	9	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	15	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	12	5	Medium	926;926	1997;2009	Not Available	Not Available
Not Available	Not Available	6	3	Medium	1874	2000	Not Available	Not Available
Not Available	Not Available	5	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	12	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	4	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	8	10	Medium	1004;4004	1998;2002	Not Available	Not Available
Not Available	Not Available	10	4	Medium	2219	1980	Not Available	Not Available
Not Available	Not Available	9	7	Medium	508;508;508	1993;2001;2011	Not Available	Not Available
Not Available	Not Available	11	3	Medium	1913	1998	Not Available	Not Available
Not Available	Not Available	8	5	High;Medium	586;586;586	1980;2012;2021	Not Available	Not Available
Not Available	Not Available	10	3	Medium	832;832	1992;1993	Not Available	Not Available
Not Available	Not Available	11	2	Medium	800;800	1997;2009	Not Available	Not Available
Not Available	Not Available	6	3	Medium	1277	1997	Not Available	Not Available
Not Available	Not Available	11	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	9	4	Medium	760;760	2007;2017	Not Available	Not Available
Not Available	Not Available	9	4	Medium	2069	1997	Not Available	Not Available
Not Available	Not Available	3	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	1	0	Medium	864	1999	Not Available	Not Available
Not Available	Not Available	10	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	16	5	Medium	820;820	1999;2001	Not Available	Not Available
Not Available	Not Available	24	9	Medium	1509;1509	1990;2005	Not Available	Not Available
Not Available	Not Available	8	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	7	2	Medium	1150	1994	Not Available	Not Available
Not Available	Not Available	0	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	6	0	Medium	1759	2017	Not Available	Not Available
Not Available	Not Available	2	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	1	7	Medium	7;7;7;7	1995;1999;2000;2013	Not Available	Not Available
Not Available	Not Available	2	0	Medium	2;2;2;2;2	1975;1990;1991;1998;1999;2003	Not Available	Not Available
Not Available	Not Available	0	0	Medium	2	1998	Not Available	Not Available
Not Available	Not Available	23	6	Medium	1325	2001	Not Available	Not Available
Not Available	Not Available	7	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	11	0	Medium	1826	2002	Not Available	Not Available
Not Available	Not Available	7	0	Medium	2501	1994	Not Available	Not Available
Not Available	Not Available	21	23	High;Medium	33;133;133;133;133;133;133;133	1965;1976;1991;1994;1995;1997;1999;2001;2019	Not Available	Not Available
Not Available	Not Available	12	6	High;Medium	510;510;510;510	1989;1994;1999;2018	Not Available	Not Available
Not Available	Not Available	15	3	Medium	2896	2001	Not Available	Not Available
Not Available	Not Available	15	4	Medium	1945	2001	Not Available	Not Available
Not Available	Not Available	9	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	4	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	0	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	10	14	Medium	481;481;481;481;481	1993;1998;2000;2001;2010	Not Available	Not Available
Not Available	Not Available	5	4	High;Medium	193;193	1993;2018	Not Available	Not Available
Not Available	Not Available	5	10	High;Medium	49;49;49;49;49	1995;1997;2000;2010;2011	Not Available	Not Available
Not Available	Not Available	10	10	Medium	419;419;419;419	1998;1999;2002;2005	Not Available	Not Available
Not Available	Not Available	3	2	Medium	972	2005	Not Available	Not Available
Not Available	Not Available	3	4	Medium	210;210;210;210;210	1998;1999;2000;2011	Not Available	Not Available
Not Available	Not Available	10	3	Medium	2171	1994	Not Available	Not Available
Not Available	Not Available	11	13	Medium	624;624;624	1951;1998;2001	Not Available	Not Available
Not Available	Not Available	12	10	High;Medium	413;413;413;413	2001;2003;2013;2014	Not Available	Not Available
Not Available	Not Available	10	11	High;Medium	40;40;40;40;40;40;40;40;40;40	1983;1990;1991;1993;1994;1998;1999;2003;2014	Not Available	Not Available
Not Available	Not Available	1	2	High;Medium	230	2014	Not Available	Not Available
Not Available	Not Available	14	10	High;Medium	40;40;40;40;40;40;40;40;40;40	1991;1992;1994;1995;1999;2001;2006;2014	Not Available	Not Available
Not Available	Not Available	7	7	None	3;3;3;3	1998;2002;2004;2018	Not Available	Not Available
Not Available	Not Available	6	0	Medium	2090	2013	Not Available	Not Available
Not Available	Not Available	25	6	Medium	2090; 2090	1996;2018	Not Available	Not Available
Not Available	Not Available	3	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	19	2	Medium	2090	2004	Not Available	Not Available
Not Available	Not Available	5	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	5	0	Medium	2090	2017	Not Available	Not Available
Not Available	Not Available	5	1	Medium	1583	1993	Not Available	Not Available
Not Available	Not Available	11	2	Medium	1584; 1583	1995;2007	Not Available	Not Available
Not Available	Not Available	15	3	Medium	1583	1800	Not Available	Not Available

	20107	KINGSBEACH	PLACER	96143	16	Not Applicable	No	No
	22011	TAHOECITY	PLACER	96145	16	Not Applicable	No	No
	22014	TAHOECITY	PLACER	96146	16	Not Applicable	No	No
	22100	TAHOECITY	PLACER	96145	16	Not Applicable	No	No
	22200	TAHOECITY	PLACER	96145	16	Not Applicable	No	No
	22300	TAHOECITY	PLACER	96145	16	Not Applicable	No	No
	30201	SOUTHLAKETAHOE	ELDORADO	96150	16	Not Applicable	No	No
	30202	SOUTHLAKETAHOE	ELDORADO	96150	16	Not Applicable	No	No
	30301	SOUTHLAKETAHOE	ELDORADO	96150	16	Not Applicable	No	No
	30302	SOUTHLAKETAHOE	ELDORADO	96150	16	Not Applicable	No	No
	30402	SOUTHLAKETAHOE	ELDORADO	96150	16	Not Applicable	No	No
	30403	SOUTHLAKETAHOE	ELDORADO	96150	16	Not Applicable	No	No
	30404	SOUTHLAKETAHOE	ELDORADO	96150	16	Not Applicable	No	No
	30502	SOUTHLAKETAHOE	ELDORADO	96150	16	Not Applicable	No	No
	30504	SOUTHLAKETAHOE	ELDORADO	96150	16	Not Applicable	No	No
	30506	SOUTHLAKETAHOE	ELDORADO	96150	16	Not Applicable	No	No
	30507	SOUTHLAKETAHOE	ELDORADO	96150	16	Not Applicable	No	No
	31601	SOUTHLAKETAHOE	ELDORADO	96150	16	Not Applicable	No	No
	31602	SOUTHLAKETAHOE	ELDORADO	96150	16	Not Applicable	No	No
	32001	TAHOMA	ELDORADO	96142	16	Not Applicable	No	No
	32002	TAHOMA	ELDORADO	96142	16	Not Applicable	No	No

1855	0	462	2,785.99	Not Available	16.05%	2	14	\$	1,056,000
3340	0	606	14,076.62	Not Available	16.05%	3	14	\$	1,056,000
77	0	24	550.89	Not Available	16.05%	1	14	\$	1,056,000
1241	0	327	2,551.74	Not Available	16.05%	2	14	\$	1,056,000
1249	0	365	3,148.35	Not Available	16.05%	2	14	\$	1,056,000
1472	0	448	2,977.08	Not Available	16.05%	2	14	\$	1,056,000
1651	0	275	6,712.21	Not Available	10.96%	3	16	\$	1,056,000
1207	0	205	2,445.55	Not Available	10.96%	3	16	\$	1,056,000
1539	0	276	2,541.72	Not Available	10.96%	2	16	\$	1,056,000
2154	0	339	3,970.24	Not Available	10.96%	3	16	\$	1,056,000
2559	0	369	6,182.33	Not Available	10.96%	3	16	\$	1,056,000
1913	0	193	3,694.84	Not Available	10.96%	3	16	\$	1,056,000
1545	0	176	2,982.37	Not Available	10.96%	3	16	\$	1,056,000
2011	0	597	4,386.19	Not Available	10.96%	2	16	\$	1,056,000
2150	0	714	4,894.11	Not Available	10.96%	3	16	\$	1,056,000
670	0	189	1,392.18	Not Available	10.96%	1	16	\$	1,056,000
1397	0	512	3,277.44	Not Available	10.96%	1	16	\$	1,056,000
1181	0	240	7,572.12	Not Available	10.96%	2	16	\$	1,056,000
1352	0	266	2,912.58	Not Available	10.96%	2	16	\$	1,056,000
1130	0	162	1,551.52	Not Available	16.05%	1	14	\$	1,056,000
8	0	3	9.29	Not Available	16.05%	1	14	\$	1,056,000

3.029	16.242	0.000	17.912	0.000	31.645	2.564	0.409	2.565	0.000
7.169	71.263	0.001	54.702	0.000	97.522	20.150	11.598	3.865	0.000
0.000	3.322	0.000	1.103	0.000	2.063	2.362	0.000	0.000	0.000
2.926	19.553	0.000	20.296	0.000	35.975	0.947	5.853	0.000	0.000
2.887	35.500	0.000	16.218	0.000	48.455	0.890	5.260	0.000	0.000
1.543	21.485	0.000	23.111	0.000	40.703	0.017	5.420	0.000	0.000
2.626	17.142	0.002	13.635	0.000	25.869	1.231	6.154	0.152	0.000
2.447	11.953	0.000	9.061	0.000	19.018	1.253	1.755	1.436	0.000
0.127	11.400	0.000	11.897	0.000	21.155	1.102	1.167	0.000	0.000
0.765	16.580	0.000	16.710	0.000	31.813	0.886	1.356	0.000	0.000
0.245	24.183	0.000	17.939	0.000	34.855	3.776	3.736	0.000	0.000
0.224	14.218	0.000	14.076	0.000	24.310	2.816	1.392	0.000	0.000
0.145	13.874	0.000	12.651	0.000	21.606	1.552	3.512	0.000	0.000
0.000	39.340	0.000	24.297	0.000	56.124	4.656	2.856	0.000	0.000
0.644	33.518	0.004	22.996	0.000	50.767	0.765	5.629	0.000	0.000
0.000	13.009	0.000	8.288	0.000	16.700	4.564	0.032	0.000	0.000
0.000	24.147	0.000	15.970	0.000	35.446	2.565	2.107	0.000	0.000
2.024	12.474	0.017	8.861	0.000	18.041	1.874	2.682	0.780	0.000
1.039	13.387	0.000	9.280	0.000	21.049	1.476	0.298	0.884	0.000
0.000	13.817	0.000	14.202	0.000	26.743	1.166	0.110	0.000	0.000
0.000	0.067	0.000	0.060	0.000	0.127	0.000	0.000	0.000	0.000

0.000	0.000	0.000	0.000	30.673	6.510	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	120.931	12.204	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	4.425	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	38.694	4.081	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	50.627	3.978	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	44.036	2.104	0.000	0.000	0.000	0.000
0.000	0.000	0.066	0.123	8.657	24.560	0.000	0.000	0.000	0.000
0.000	0.000	0.066	0.000	7.363	16.032	0.000	0.000	0.000	0.000
0.000	0.001	0.118	0.000	4.565	18.740	0.000	0.000	0.000	0.000
0.000	0.000	0.366	0.022	8.712	24.956	0.000	0.000	0.000	0.000
0.000	0.000	0.631	0.366	17.353	24.017	0.000	0.000	0.000	0.000
0.000	0.000	0.298	0.148	6.898	21.174	0.000	0.000	0.000	0.000
0.000	0.000	0.369	0.165	3.478	22.658	0.000	0.000	0.000	0.000
0.000	0.000	0.105	0.013	59.221	4.298	0.000	0.000	0.000	0.000
0.000	0.000	1.744	0.162	40.620	14.635	0.000	0.000	0.000	0.000
0.000	0.000	0.105	0.000	20.919	0.272	0.000	0.000	0.000	0.000
0.000	0.000	0.521	0.001	38.066	1.530	0.000	0.000	0.000	0.000
0.000	0.000	0.104	0.035	8.710	14.527	0.000	0.000	0.000	0.000
0.000	0.000	0.181	0.225	9.746	13.555	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	28.019	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.127	0.000	0.000	0.000	0.000	0.000

0.252	Not Applicable	0.000	Not Applicable	37.240	0.000	Not Applicable	33.747	Not Applicable
0.242	Not Applicable	0.000	Not Applicable	133.199	0.000	Not Applicable	128.135	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	4.424	0.000	Not Applicable	4.424	Not Applicable
0.158	Not Applicable	0.000	Not Applicable	42.751	0.000	Not Applicable	41.595	Not Applicable
0.161	Not Applicable	0.000	Not Applicable	54.628	0.000	Not Applicable	53.531	Not Applicable
0.124	Not Applicable	0.000	Not Applicable	46.138	0.000	Not Applicable	45.569	Not Applicable
19.975	Not Applicable	0.000	Not Applicable	33.420	0.000	Not Applicable	11.279	Not Applicable
10.662	Not Applicable	0.000	Not Applicable	23.454	0.000	Not Applicable	9.822	Not Applicable
15.609	Not Applicable	0.000	Not Applicable	23.524	0.000	Not Applicable	4.752	Not Applicable
19.760	Not Applicable	0.000	Not Applicable	33.991	0.000	Not Applicable	9.417	Not Applicable
15.136	Not Applicable	0.000	Not Applicable	42.387	0.000	Not Applicable	17.625	Not Applicable
19.571	Not Applicable	0.000	Not Applicable	28.514	0.000	Not Applicable	7.117	Not Applicable
19.527	Not Applicable	0.000	Not Applicable	26.644	0.000	Not Applicable	3.602	Not Applicable
2.067	Not Applicable	0.000	Not Applicable	63.645	0.000	Not Applicable	59.221	Not Applicable
6.019	Not Applicable	0.000	Not Applicable	57.121	0.000	Not Applicable	41.250	Not Applicable
0.447	Not Applicable	0.000	Not Applicable	21.297	0.000	Not Applicable	20.919	Not Applicable
1.073	Not Applicable	0.000	Not Applicable	40.123	0.000	Not Applicable	38.086	Not Applicable
11.652	Not Applicable	0.000	Not Applicable	23.455	0.000	Not Applicable	10.825	Not Applicable
8.012	Not Applicable	0.000	Not Applicable	23.625	0.000	Not Applicable	10.709	Not Applicable
0.013	Not Applicable	0.000	Not Applicable	28.015	0.000	Not Applicable	28.015	Not Applicable
0.000	Not Applicable	0.000	Not Applicable	0.124	0.000	Not Applicable	0.124	Not Applicable

43	1998	1997	2020	0.000	0.000	0.000	0.000	Not Available	Not Available
52	2002	2004	2020	0.000	0.009	0.000	0.006	Not Available	Not Available
60	2003	2004	2020	0.000	0.000	0.000	0.000	Not Available	Not Available
43	2003	1998	2020	0.007	0.008	0.000	0.000	Not Available	Not Available
43	2012	1998	2020	0.004	0.021	0.004	0.010	Not Available	Not Available
43	2004	1999	2020	0.000	0.029	0.000	0.014	Not Available	Not Available
48	1975	1980	2020	0.000	0.037	0.000	0.024	Not Available	Not Available
48	1978	1984	2020	0.000	0.018	0.000	0.018	Not Available	Not Available
35	1971	1977	2020	0.000	0.000	0.000	0.000	Not Available	Not Available
48	1974	1981	2020	0.000	0.010	0.000	0.010	Not Available	Not Available
48	1983	1989	2020	0.020	0.000	0.000	0.000	Not Available	Not Available
48	1968	1983	2020	0.012	0.012	0.000	0.012	Not Available	Not Available
48	1967	1975	2020	0.012	0.013	0.012	0.013	Not Available	Not Available
48	2003	2004	2020	0.013	0.034	0.008	0.021	Not Available	Not Available
48	1987	1998	2020	0.010	0.000	0.000	0.000	Not Available	Not Available
60	2003	2003	2020	0.000	0.000	0.000	0.000	Not Available	Not Available
60	2004	2005	2020	0.000	0.021	0.000	0.021	Not Available	Not Available
35	1979	1981	2020	0.046	0.019	0.023	0.000	Not Available	Not Available
35	1984	1990	2020	0.208	0.018	0.023	0.018	Not Available	Not Available
43	1996	1998	2020	0.000	0.012	0.000	0.012	Not Available	Not Available
60	1996	2005	2020	0.000	0.000	0.000	0.000	Not Available	Not Available

Not Available	Not Available	11	3	Medium	1583	1999	Not Available	Not Available
Not Available	Not Available	17	2	Medium	2090; 2090; 2090	2013;2014;2017	Not Available	Not Available
Not Available	Not Available	0	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	7	1	High	1583	2015	Not Available	Not Available
Not Available	Not Available	8	2	Medium	1583	2018	Not Available	Not Available
Not Available	Not Available	13	0	Medium	1583	2013	Not Available	Not Available
Not Available	Not Available	14	3	Medium	2301	2010	Not Available	Not Available
Not Available	Not Available	3	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	3	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	5	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	10	1	Medium	2300; 2301	1999;2016	Not Available	Not Available
Not Available	Not Available	3	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	5	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	8	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	19	1	Medium	5290; 2301	2010;2010	Not Available	Not Available
Not Available	Not Available	5	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	8	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	9	4	Medium	2301; 2300; 2300	1974;2003;2016	Not Available	Not Available
Not Available	Not Available	2	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	0	0	None	0	Not Applicable	Not Available	Not Available
Not Available	Not Available	0	0	None	0	Not Applicable	Not Available	Not Available

Exhibit B-2

	A	B	C	D	E	F	G
1	Southwest Gas Corporation						
2	Consumption Data by Census Tract						
3							
4	Data Request Instructions: Provide a CSV spreadsheet file entitled "Consumption Data by Census Tract - [Utility Name].csv" with each census tract in a row, with the following data for each census tract in columns reflecting the gas consumption of the consumers in the category shown in the order stated. Base this response on billing data, or company data in the case of company use, for annual consumption in 2021.						
5							
6	Column Name	CensusTract	CARELoad	CoreResLoad	CoreCommLoad	CoreIndLoad	CoreNGVLoad
7	Customer Category Description	Census Tract ID #	Core California Alternative Rates for Energy (CARE) residential	Core residential excluding CARE	Core commercial	Core industrial	Core NGV
8		900	0.000	0.181	0.000	0.000	0.000
9		1205	123.581	3861.386	1357.638	1255.770	0.000
10		1207	280.688	4071.978	2012.896	0.000	0.000
11		1208	45.932	3761.893	113.647	0.000	0.000
12		1209	58.948	2299.055	3313.107	0.000	0.000
13		1210	38.937	5114.663	412.153	0.000	0.000
14		1211	34.082	1877.332	704.326	0.000	0.000
15		9119	143.471	604.293	5.468	0.000	0.000
16		9124	873.970	584.863	284.945	0.000	0.000
17		9125	964.773	800.474	39.707	0.000	0.000
18		9126	955.348	991.011	166.863	324.496	0.000
19		9127	1171.277	1076.293	101.482	0.000	0.000
20		9128	745.690	874.830	552.901	0.000	0.000
21		9129	1062.422	841.638	101.384	2816.838	0.000
22		9130	810.775	578.986	0.104	0.000	0.000
23		9131	633.973	391.340	116.101	0.000	0.000
24		9132	364.847	227.192	7215.268	2641.748	0.000
25		9133	821.510	518.589	6237.871	637.077	0.000
26		9134	8.863	15.830	12.175	2550.970	0.000
27		9135	690.671	978.712	235.674	0.000	0.000
28		9136	918.384	761.633	35.693	0.000	0.000
29		9137	556.745	632.786	2.767	0.000	0.000
30		9138	758.104	909.049	438.830	0.000	0.000
31		9139	839.967	988.493	25.751	0.000	0.000
32		9300	129.597	260.460	47.047	0.000	0.000
33		9400	463.271	359.049	1152.655	615.184	0.000
34		9501	568.279	530.244	613.942	0.000	0.000
35		9502	522.175	541.036	750.715	0.000	0.000
36		9708	222.356	398.962	48.973	0.000	0.000
37		9709	1011.570	1085.636	171.326	0.000	0.000
38		9712	1034.260	938.178	799.973	12.167	0.000
39		9713	1026.805	1319.208	290.827	0.000	0.000
40		9714	587.164	877.321	625.164	0.000	0.000
41		9717	530.762	1357.945	126.786	0.000	0.000
42		9718	689.293	1868.603	858.395	0.000	0.000
43		9719	283.014	641.729	409.019	0.000	0.000
44		9720	272.649	272.912	47.071	0.000	0.000
45		9721	877.110	912.181	280.164	0.000	0.000
46		9722	412.934	953.019	141.129	0.000	0.000
47		9723	681.795	2018.521	112.501	0.000	0.000
48		9724	520.548	1563.227	2.573	0.000	0.000
49		9725	609.238	2134.792	975.860	0.000	0.000
50		9726	588.545	756.926	136.975	0.000	0.000
51		9727	818.819	494.836	82.315	0.000	0.000
52		9800	656.836	498.959	982.107	0.000	396.896
53		9906	839.562	802.011	50.186	0.000	0.000
54		9908	717.553	777.945	146.666	0.000	0.000
55		9910	700.384	875.636	504.567	0.000	0.000
56		9911	1058.468	1257.285	64.142	0.000	0.000
57		9912	934.701	752.877	763.455	0.000	0.000
58		9913	956.742	875.205	1530.616	92.784	0.000
59		9914	390.685	344.416	1015.181	0.000	929.986
60		9915	479.104	436.096	110.600	0.000	0.000
61		9916	917.984	846.334	89.033	0.000	0.000
62		9917	718.123	585.619	1181.907	0.000	0.000
63		9918	570.899	439.616	193.849	0.000	0.000
64		10009	462.688	694.510	1040.507	0.000	0.000
65		10010	1032.937	1067.397	459.789	0.000	0.000
66		10011	752.868	662.934	299.315	0.000	0.000
67		10012	700.734	1040.381	338.093	6.389	0.000
68		10014	767.562	521.929	128.107	0.000	0.000
69		10015	820.740	942.663	518.956	0.000	0.000
70		10016	846.096	921.704	412.666	0.000	0.000
71		10019	752.186	995.532	578.211	0.000	3.926
72		10021	828.225	1453.726	89.375	0.000	0.000
73		10022	608.145	847.858	0.677	0.000	0.000
74		10023	815.162	1326.858	0.000	0.000	0.000
75		10024	552.156	1194.052	86.367	0.000	0.000
76		10027	564.408	1604.493	177.723	0.000	0.000
77		10028	581.359	715.375	747.907	62.414	2975.458
78		10029	556.118	718.959	21.888	0.000	0.000
79		10030	431.904	604.071	109.962	0.000	0.000
80		10031	674.137	947.970	131.652	0.000	0.000
81		10032	776.211	872.477	141.838	0.000	0.000
82		10033	350.671	163.874	273.195	0.000	0.000
83		10034	170.260	986.929	417.310	238.077	0.000
84		10035	498.271	500.047	24.274	0.000	0.000
85		10036	572.389	623.060	1869.770	0.000	1.290

	P	Q	R	S	T	U	V	W
1								
2								
3								
4								
5								
6	NCLoad	OtherLoad	Customers	CARECust	CoreResCust	CoreCommCust	CoreIndCust	CoreNGVCust
7	Noncore subtotal	Other subtotal (Other wholesale plus company use)	Number of customers served	Number of customers: Core CARE residential	Number of customers: Core residential excluding CARE	Number of customers: Core commercial	Number of customers: Core industrial	Number of customers: Core NGV
8	0.000	0.000	2	0	2	0	0	0
9	0.000	0.000	1861	59	1678	123	1	0
10	0.000	0.000	2466	180	2113	173	0	0
11	0.000	0.000	2042	21	1991	30	0	0
12	0.000	0.000	1794	36	1485	273	0	0
13	0.000	0.000	2623	18	2591	14	0	0
14	0.000	0.000	1062	25	896	141	0	0
15	0.000	0.000	635	114	519	2	0	0
16	0.000	0.000	1164	658	485	21	0	0
17	0.000	0.000	1471	779	687	4	0	0
18	0.000	0.000	1872	847	997	26	2	0
19	0.000	0.000	1901	952	938	10	0	0
20	0.000	0.000	1437	612	799	26	0	0
21	0.000	0.000	1773	924	825	23	1	0
22	0.000	0.000	1180	665	514	1	0	0
23	0.000	0.000	1391	771	561	59	0	0
24	0.000	0.000	804	419	300	79	3	0
25	0.000	0.000	1303	712	537	42	12	0
26	0.000	0.000	36	9	21	4	2	0
27	0.000	0.000	1386	524	860	2	0	0
28	0.000	0.000	1431	724	704	2	0	0
29	0.000	0.000	1076	487	588	1	0	0
30	0.000	0.000	1456	608	840	8	0	0
31	0.000	0.000	1412	613	795	4	0	0
32	0.000	0.000	386	121	246	19	0	0
33	0.000	0.000	1249	541	465	242	1	0
34	0.000	0.000	1302	576	612	114	0	0
35	0.000	0.000	1167	493	586	88	0	0
36	0.000	0.000	579	204	369	6	0	0
37	0.000	0.000	2022	920	1054	47	0	0
38	0.000	0.000	2047	932	918	195	2	0
39	0.000	0.000	2201	908	1238	55	0	0
40	0.000	0.000	1292	478	746	68	0	0
41	0.000	0.000	1428	397	1004	27	0	0
42	0.000	0.000	2561	688	1796	77	0	0
43	0.000	0.000	787	245	498	44	0	0
44	0.000	0.000	533	250	269	14	0	0
45	0.000	0.000	1716	809	842	64	0	0
46	0.000	0.000	1127	317	705	105	0	0
47	0.000	0.000	1826	459	1356	11	0	0
48	0.000	0.000	1366	353	1011	2	0	0
49	0.000	0.000	1776	413	1300	63	0	0
50	0.000	0.000	1200	475	640	85	0	0
51	0.000	0.000	1367	776	534	57	0	0
52	0.000	0.000	1339	659	571	107	0	1
53	0.000	0.000	1463	709	743	11	0	0
54	0.000	0.000	1451	652	775	24	0	0
55	0.000	0.000	1462	590	796	76	0	0
56	0.000	0.000	1830	802	1019	9	0	0
57	0.000	0.000	1718	879	735	102	0	0
58	0.000	0.000	1969	880	825	262	1	0
59	0.000	0.000	1333	483	549	300	0	1
60	0.000	0.000	883	403	473	6	0	0
61	0.000	0.000	1725	837	843	45	0	0
62	0.000	0.000	1396	700	641	55	0	0
63	0.000	0.000	970	523	420	27	0	0
64	0.000	0.000	1332	426	836	70	0	0
65	0.000	0.000	2077	890	1076	111	0	0
66	0.000	0.000	1603	722	732	148	0	0
67	0.000	0.000	1614	592	901	119	2	0
68	0.000	0.000	1348	737	564	47	0	0
69	0.000	0.000	1738	771	890	77	0	0
70	0.000	0.000	1765	761	955	48	0	0
71	0.000	0.000	1687	640	894	152	0	1
72	0.000	0.000	2082	714	1349	18	0	0
73	0.000	0.000	1411	558	849	2	0	0
74	0.000	0.000	1797	669	1127	0	0	0
75	0.000	0.000	1641	495	1127	19	0	0
76	0.000	0.000	1502	367	1121	14	0	0
77	0.000	0.000	1351	492	664	190	4	1
78	0.000	0.000	1191	507	680	4	0	0
79	0.000	0.000	865	319	515	31	0	0
80	0.000	0.000	1283	503	754	26	0	0
81	0.000	0.000	1830	835	975	20	0	0
82	0.000	0.000	769	456	226	87	0	0
83	0.000	0.000	788	100	624	61	3	0
84	0.000	0.000	1006	458	510	38	0	0
85	0.000	0.000	1339	534	698	106	0	1

	AF
1	
2	
3	
4	
5	
6	OtherCust
7	Number of customers: Other subtotal
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0
16	0
17	0
18	0
19	0
20	0
21	0
22	0
23	0
24	0
25	0
26	0
27	0
28	0
29	0
30	0
31	0
32	0
33	0
34	0
35	0
36	0
37	0
38	0
39	0
40	0
41	0
42	0
43	0
44	0
45	0
46	0
47	0
48	0
49	0
50	0
51	0
52	0
53	0
54	0
55	0
56	0
57	0
58	0
59	0
60	0
61	0
62	0
63	0
64	0
65	0
66	0
67	0
68	0
69	0
70	0
71	0
72	0
73	0
74	0
75	0
76	0
77	0
78	0
79	0
80	0
81	0
82	0
83	0
84	0
85	0

	A	B	C	D	E	F	G
86		10037	1085.121	1169.526	1205.364	183.290	0.000
87		10038	733.090	703.586	664.784	0.000	0.000
88		10039	425.326	1047.071	420.452	0.000	0.000
89		10040	208.397	886.773	52.633	0.000	0.000
90		10041	748.786	1334.951	194.384	0.000	0.000
91		10042	585.712	1021.373	506.641	0.000	0.000
92		10300	4.556	11.351	129.940	0.000	0.000
93		10424	1.003	3.003	0.000	0.000	0.000
94		10700	96.849	263.789	197.877	0.000	0.000
95		10805	0.000	0.000	19.137	0.000	0.000
96		11203	231.627	4016.326	1881.833	480.247	0.000
97		11204	213.153	4078.359	321.219	0.000	0.000
98		11205	284.945	1636.499	2664.307	0.000	0.000
99		11206	165.293	3255.912	810.458	0.000	0.000
100		11300	261.005	2028.153	256.562	0.000	0.000
101		11404	619.729	2112.299	978.079	0.000	0.000
102		11405	356.529	3443.762	140.581	0.000	0.000
103		11406	517.912	1952.616	222.167	0.000	0.000
104		11407	556.901	1737.860	282.414	0.000	0.000
105		11408	397.227	1668.953	21.449	0.000	0.000
106		11500	23.003	44.088	148.427	0.000	0.000
107		11601	714.296	2235.219	191.592	0.000	0.000
108		11602	88.115	140.167	398.123	0.000	0.000
109		11700	65.249	85.907	206.526	738.101	0.000
110		11801	414.397	874.622	997.748	0.000	0.000
111		11802	327.753	353.767	293.690	44.786	0.000
112		11900	191.449	495.767	231.570	0.000	0.000
113		12001	586.329	1126.868	690.784	0.000	0.000
114		12002	643.732	773.373	764.027	0.000	0.000
115		12101	693.888	1787.529	1291.466	0.230	0.000
116		12103	160.753	224.605	147.967	0.000	0.000
117		12105	37.477	202.384	27.805	0.000	0.000
118		12106	84.101	132.858	505.019	0.000	0.000
119		20104	92.027	3432.529	529.414	0.000	0.000
120		20105	68.510	3008.932	206.959	0.000	0.000
121		20106	100.238	2413.644	762.411	0.000	0.000
122		20107	234.332	1963.373	588.282	0.000	0.000
123		22011	40.737	9065.685	4970.197	0.000	0.000
124		22014	0.000	98.619	51.699	0.000	400.575
125		22100	50.997	2301.219	199.526	0.000	0.000
126		22200	55.162	1693.142	1400.044	0.000	0.000
127		22300	57.389	2633.079	285.945	0.000	0.000
128		25100	17.959	149.088	193.740	0.000	0.000
129		30201	351.825	2241.685	4118.696	0.000	0.000
130		30202	335.307	1507.671	602.573	0.000	0.000
131		30301	506.866	1655.318	379.537	0.000	0.000
132		30302	384.321	2894.882	691.036	0.000	0.000
133		30402	560.052	2142.712	3067.019	412.455	0.000
134		30403	155.770	3271.290	267.784	0.000	0.000
135		30404	312.134	1800.559	869.636	0.000	0.038
136		30502	230.633	3270.666	884.888	0.000	0.000
137		30504	401.485	4437.827	54.795	0.000	0.000
138		30506	116.762	1241.630	33.786	0.000	0.000
139		30507	201.400	2734.652	341.386	0.000	0.000
140		31601	223.466	1053.000	6295.433	0.000	0.000
141		31602	176.688	1858.271	877.622	0.000	0.000
142		32001	54.436	1443.737	53.351	0.000	0.000
143		32002	0.000	5.688	3.600	0.000	0.000
144		980200	0.000	0.000	384.416	0.000	122.230

	P	Q	R	S	T	U	V	W
86	2496.107	0.000	2531	989	1191	347	3	0
87	353.926	0.000	1258	583	640	35	0	0
88	0.000	0.000	1052	278	760	14	0	0
89	0.000	0.000	766	128	628	10	0	0
90	0.000	0.000	1587	533	1025	28	0	0
91	0.000	0.000	1154	403	732	19	0	0
92	0.000	0.000	31	6	20	4	0	0
93	0.000	0.000	6	1	5	0	0	0
94	0.000	0.000	1054	268	717	69	0	0
95	0.000	0.000	2	0	0	2	0	0
96	0.000	0.000	2422	109	2071	241	1	0
97	0.000	0.000	2887	107	2750	30	0	0
98	0.000	0.000	1581	188	1087	306	0	0
99	0.000	0.000	2254	96	2090	68	0	0
100	0.000	0.000	1610	131	1435	44	0	0
101	0.000	0.000	1848	355	1472	21	0	0
102	0.000	0.000	2689	182	2464	43	0	0
103	0.000	0.000	1759	295	1389	75	0	0
104	0.000	0.000	1664	306	1347	11	0	0
105	0.000	0.000	1807	247	1557	3	0	0
106	0.000	0.000	46	13	28	5	0	0
107	0.000	0.000	2565	583	1939	41	0	0
108	1231.195	0.000	285	94	169	19	0	0
109	0.000	0.000	179	58	95	23	1	0
110	0.000	0.000	1368	399	911	57	0	0
111	0.000	0.000	794	327	435	30	1	0
112	0.000	0.000	686	176	483	26	0	0
113	0.000	0.000	1922	616	1216	90	0	0
114	188.921	0.000	1522	612	845	61	0	0
115	459.041	0.000	2188	603	1370	213	1	0
116	0.000	0.000	428	162	230	36	0	0
117	0.000	0.000	203	33	166	4	0	0
118	0.000	0.000	276	84	156	36	0	0
119	0.000	0.000	1787	48	1648	91	0	0
120	0.000	0.000	1708	37	1636	33	0	0
121	0.000	0.000	1649	58	1470	120	0	1
122	0.000	0.000	1629	174	1304	151	0	0
123	0.000	0.000	2993	20	2825	148	0	0
124	0.000	0.000	66	0	63	2	1	0
125	0.000	0.000	1114	28	1063	23	0	0
126	0.000	0.000	1070	28	862	180	0	0
127	0.000	0.000	1363	28	1291	43	0	0
128	0.000	0.000	662	45	569	48	0	0
129	0.000	0.000	1466	166	1089	211	0	0
130	0.000	0.000	1033	200	796	37	0	0
131	0.000	0.000	1331	262	982	87	0	0
132	0.000	0.000	1911	201	1574	136	0	0
133	0.000	0.000	2009	400	1286	321	1	0
134	0.000	0.000	1752	70	1617	65	0	0
135	0.000	0.000	1389	165	1033	189	0	1
136	0.000	0.000	1869	118	1708	43	0	0
137	0.000	0.000	2023	160	1861	2	0	0
138	0.000	0.000	627	51	572	4	0	0
139	0.000	0.000	1308	83	1202	23	0	0
140	0.000	0.000	1019	146	685	187	0	0
141	0.000	0.000	1179	110	988	81	0	0
142	0.000	0.000	1033	33	986	14	0	0
143	0.000	0.000	5	0	3	2	0	0
144	1336.392	0.000	9	0	0	6	0	1

	X	Y	Z	AA	AB	AC	AD	AE
86	1	0	0	0	0	0	2530	1
87	0	0	0	0	1	0	1258	0
88	0	0	0	0	0	0	1052	0
89	0	0	0	0	0	0	766	0
90	0	0	0	0	0	0	1586	0
91	0	0	0	0	0	0	1154	0
92	0	0	0	0	0	0	30	0
93	0	0	0	0	0	0	6	0
94	0	0	0	0	0	0	1054	0
95	0	0	0	0	0	0	2	0
96	0	0	0	0	0	0	2422	0
97	0	0	0	0	0	0	2887	0
98	0	0	0	0	0	0	1581	0
99	0	0	0	0	0	0	2254	0
100	0	0	0	0	0	0	1610	0
101	0	0	0	0	0	0	1848	0
102	0	0	0	0	0	0	2689	0
103	0	0	0	0	0	0	1759	0
104	0	0	0	0	0	0	1664	0
105	0	0	0	0	0	0	1807	0
106	0	0	0	0	0	0	46	0
107	0	0	0	0	0	0	2563	0
108	2	0	0	0	0	0	282	2
109	0	0	0	0	0	0	177	0
110	0	0	0	0	0	0	1367	0
111	0	0	0	0	0	0	793	0
112	0	0	0	0	0	0	685	0
113	0	0	0	0	0	0	1922	0
114	1	0	0	0	0	0	1518	1
115	1	0	0	0	0	0	2187	1
116	0	0	0	0	0	0	428	0
117	0	0	0	0	0	0	203	0
118	0	0	0	0	0	0	276	0
119	0	0	0	0	0	0	1787	0
120	0	0	0	0	0	0	1706	0
121	0	0	0	0	0	0	1648	1
122	0	0	0	0	0	0	1629	0
123	0	0	0	0	0	0	2993	0
124	0	0	0	0	0	0	65	1
125	0	0	0	0	0	0	1114	0
126	0	0	0	0	0	0	1070	0
127	0	0	0	0	0	0	1362	0
128	0	0	0	0	0	0	662	0
129	0	0	0	0	0	0	1466	0
130	0	0	0	0	0	0	1033	0
131	0	0	0	0	0	0	1331	0
132	0	0	0	0	0	0	1911	0
133	0	0	0	0	0	0	2008	0
134	0	0	0	0	0	0	1752	0
135	0	0	0	0	0	0	1387	1
136	0	0	0	0	0	0	1869	0
137	0	0	0	0	0	0	2023	0
138	0	0	0	0	0	0	627	0
139	0	0	0	0	0	0	1308	0
140	0	0	0	0	0	0	1018	0
141	0	0	0	0	0	0	1179	0
142	0	0	0	0	0	0	1033	0
143	0	0	0	0	0	0	5	0
144	2	0	0	0	0	0	6	3

	AF
86	0
87	1
88	0
89	0
90	0
91	0
92	0
93	0
94	0
95	0
96	0
97	0
98	0
99	0
100	0
101	0
102	0
103	0
104	0
105	0
106	0
107	0
108	0
109	0
110	0
111	0
112	0
113	0
114	0
115	0
116	0
117	0
118	0
119	0
120	0
121	0
122	0
123	0
124	0
125	0
126	0
127	0
128	0
129	0
130	0
131	0
132	0
133	0
134	0
135	0
136	0
137	0
138	0
139	0
140	0
141	0
142	0
143	0
144	0

Exhibit B-3

WhLoad	CoLoad	CoreLoad	NCLoad	OtherLoad	Customers	CARECust	CoreResCust	CoreCommCust	CoreIndCust	CoreNGVCust	NCCommCust
Other wholesale (delivered to other utilities/wholesale including international)	Company use	Core subtotal	Noncore subtotal	Other subtotal (Other wholesale plus company use)	Number of customers served	Number of customers: Core CARE residential	Number of customers: Core residential excluding CARE	Number of customers: Core commercial	Number of customers: Core industrial	Number of customers: Core NGV	Number of customers: Noncore commercial
Southwest Gas does not have any customers in this category.											
0.00	0.00	22,082.10	0.00	0.00	9,929	5,333	4,323	253	20	0	0
0.00	0.00	17,159.36	795.21	0.00	13,728	4,677	8,353	696	1	0	1
0.00	0.00	17,254.14	0.00	0.00	14,207	5,118	8,603	484	2	0	0
0.00	0.00	14,721.13	450.59	0.00	11,555	4,363	6,445	744	2	0	1
0.00	0.00	10,159.61	893.15	0.00	7,769	1,178	6,424	166	0	0	0
0.00	0.00	16,113.83	0.00	0.00	10,845	586	9,558	700	1	0	0
0.00	0.00	210.48	0.00	0.00	143	34	95	14	0	0	0
0.00	0.00	847.64	0.00	0.00	734	58	650	26	0	0	0
0.00	0.00	2,586.24	0.00	0.00	2,851	662	2,132	57	0	0	0
0.00	0.00	7,220.36	0.00	0.00	5,318	1,610	3,653	54	1	0	0
0.00	0.00	32,086.11	0.00	0.00	27,365	11,122	15,012	1,221	8	2	0
0.00	0.00	117.70	194.49	0.00	87	20	57	9	0	0	0
0.00	0.00	1,173.61	0.00	0.00	686	247	374	65	0	0	0
0.00	0.00	992.09	0.00	0.00	1,850	342	1,388	120	0	0	0
0.00	0.00	1,039.14	0.00	0.00	172	60	98	13	1	0	0
0.00	0.00	2,034.21	0.00	0.00	2,718	417	2,292	9	0	0	0
0.00	0.00	30,286.37	0.00	0.00	19,825	8,031	11,214	579	0	1	0
0.00	0.00	14,019.85	2,078.57	0.00	10,401	5,008	5,217	171	2	1	2
0.00	0.00	19,875.92	4,112.70	0.00	14,110	5,924	7,099	1,080	4	2	1
0.00	0.00	344.93	2,287.01	0.00	336	115	195	24	0	0	2
0.00	0.00	2,902.67	0.00	0.00	1,426	34	1,361	31	0	0	0
0.00	0.00	1,888.47	0.00	0.00	1,221	20	1,163	38	0	0	0
0.00	0.00	1,013.73	0.00	0.00	1,309	44	1,242	23	0	0	0
0.00	0.00	1,481.32	0.00	0.00	2,816	227	2,421	168	0	0	0
0.00	0.00	4,731.69	0.00	0.00	4,818	127	4,382	309	0	0	0
0.00	0.00	15.13	0.00	0.00	10	2	8	0	0	0	0
0.00	0.00	1,699.04	0.00	0.00	730	31	579	119	0	1	0
0.00	0.00	52,774.41	0.00	0.00	20,655	2,334	16,824	1,495	1	1	0
0.00	0.00	45,511.08	0.00	0.00	16,075	381	14,744	948	1	1	0

Exhibit B-4

MCA	Services	LargeCustomers	DemandNodes	TotalLoad	PeakLoad	LoadChange	PressureDist
Overlaps a Moderate Consequence Area?	Number of Services	Number of large volume customers (customers that can receive more than 40,000 cubic feet/hour of gas)	Number of demand nodes as represented in Synergi hydraulic model	Average annual daily gas consumption in 2021	Peak hourly gas consumption in 2021	Annual gas demand change from 2015 to 2020	Number of pressure districts
Not Applicable	191228	0	40329	357844.7205	Not Available	23.9256	433
Not Applicable	1406.088235	0	296.5367647	2631.21118	Not Available	0.175923529	3.183823529
Not Applicable	1462.5	0	274.5	2273.665753	Not Available	0.1948	2
Not Applicable	673.4345624	0	153.0565499	1982.833531	Not Available	0.040874964	2.635175532
Not Applicable	2	0	2	4.005479452	Not Available	0.0015	1
Not Applicable	3340	0	714	14076.61918	Not Available	0.2686	16

OpDist (new column)	DistAvCost (New Column)	HiPressMains	MedPressMains	HiPressServices	MedPressServices	PressureUnk (new column)	Diam2OrLess
Division (PG&E), Operating District (SoCalGas), Construction and Operations Center serving the census tract (SDG&E), or Jurisdiction (SW Gas).	Average cost per mile to replace distribution pipeline in the OpDistrict as defined above.	Miles of high pressure (above 60 pounds per square inch (psi)) distribution main pipeline	Miles of medium pressure (60 psi or below) distribution main pipeline	Miles of high pressure (above 60 psi) distribution service pipelines	Miles of medim pressure (60 psi or below) distribution service pipeline	Miles of main or service distribution pipeline with unknown pressure.	Miles of distribution main and service pipeline with diameter 2" or less
1738	79382096	271.1186237	2931.963238	1.553787879	2520.95675	0	4917.579709
12.77941176	592403.7015	1.993519292	21.55855322	0.011424911	18.53644669	0	36.15867433
12	458674	0.992458671	21.40335437	0	17.00129755	0	35.22974133
1.588984028	248991.1537	3.28093767	10.78913264	0.047693965	10.12914007	0	17.78457386
11	458674	0	0.00094697	0	0.042234848	0	0.127156133
19	1056000	20.93481824	71.26287385	0.324026568	54.70225847	0	97.52189965

Diam2to4	Diam4to8	Diam8to12	DiamOver12	DiamUnk (new column)	EarlyAldylA	LaterAldylA	UnkDateAldylA
Miles of distribution main and service pipeline with diameter over 2" through 4"	Miles of distribution main and service pipeline with diameter over 4" through 8"	Miles of distribution main and service pipeline with diameter over 8" through 12"	Miles of distribution main and service pipeline with diameter over 12"	Miles of main or service distribution pipeline with unknown diameter.	Miles of distribution main and service pipeline made of Aldyl-A plastic installed in 1965-1972	Miles of distribution main and service pipeline made of Aldyl-A plastic installed in 1973-1985	Miles of distribution main and service pipeline made of Aldyl-A plastic with unknown manufacturer or installation year
559.7269326	220.9748558	20.54171179	6.769318182	0	0.000757576	4.674431818	1.257765152
4.11563921	1.624815116	0.151041998	0.049774398	0	5.57041E-06	0.034370822	0.009248273
3.210239241	0.811642721	0	0	0	0	0	0
3.455054297	2.519888036	0.567664454	0.578326248	0	6.47223E-05	0.171471083	0.044118858
0	0	0	0	0	0	0	0
20.1500828	18.92628193	3.865	6.769318182	0	0.000757576	1.744327	0.365680682

NAPlastic	CPSteel	NCPSteel	Copper	Iron	MaterialUnk (new column)	Oldest	HighestRiskMains
Miles of distribution main and service pipeline made of non-Aldyl-A plastic (polyethylene)	Miles of distribution main and service pipeline made of steel with cathodic protection	Miles of distribution main and service pipeline made of steel without cathodic protection	Miles of distribution service pipeline made of copper.	Miles of distribution main and service pipeline made of wrought iron.	Miles of main or service distribution pipeline with unknown material.	Miles of distribution main and service pipeline older than 1941 or with unknown installation date	Miles with calculated probability of leak per year, or risk of failure, in highest 5 percent of distribution main pipelines systemwide
5074.288619	645.4905165	0	0	0	0	173.0789421	Not Applicable
37.31094573	4.746253798	0	0	0	0	1.27263928	Not Applicable
37.3891023	2.555239043	0	0	0	0	0.018560606	Not Applicable
20.80378355	5.941754685	0	0	0	0	4.052833807	Not Applicable
0.127156133	0	0	0	0	0	0	Not Applicable
120.9306946	24.9559646	0	0	0	0	19.97469678	Not Applicable

HighRiskMains	UpperRiskMains	LowerRiskMains	LowRiskMains	HighestConsqMains	HighConsqMains	UpperConsqMains	LowerConsqMains
Miles with calculated probability of leak per year, or risk of failure, in highest quartile of distribution main pipelines systemwide	Miles with calculated probability of leak per year, or risk of failure, in second highest quartile of distribution main pipelines systemwide	Miles with calculated probability of leak per year, or risk of failure, in second lowest quartile of distribution main pipelines systemwide	Miles with calculated probability of leak per year, or risk of failure, in lowest quartile of distribution main pipelines systemwide	Miles with calculated probability of serious incident given leak, or consequence of failure, in highest 5 percent of distribution main pipelines systemwide	Miles with calculated probability of serious safety incident given leak, or consequence of failure, in highest quartile of distribution main pipelines systemwide	Miles with calculated probability of serious safety incident given leak, or consequence of failure, in second highest quartile of distribution main pipelines systemwide	Miles with calculated probability of serious safety incident given leak, or consequence of failure, in second lowest quartile of distribution main pipelines systemwide
0	Not Applicable	3806.770521	0	Not Applicable	3584.255078	Not Applicable	224.5154429
0	Not Applicable	27.99095972	0	Not Applicable	26.35481675	Not Applicable	1.650848845
0	Not Applicable	25.54055236	0	Not Applicable	23.74333183	Not Applicable	0
0	Not Applicable	17.78408482	0	Not Applicable	17.68070865	Not Applicable	5.125990224
0	Not Applicable	0.053909958	0	Not Applicable	0.053909958	Not Applicable	0
0	Not Applicable	133.1988924	0	Not Applicable	128.1353897	Not Applicable	24.76133955

HighConsqServices	UpperConsqServices	LowerConsqServices	LowConsqServices	UnkRiskService (new	AvMainRisk	AvServiceRisk	AvMainConsq
Miles with calculated probability of serious safety incident given leak, or consequence of failure, in highest quartile of distribution service pipelines systemwide	Miles with calculated probability of serious safety incident given leak, or consequence of failure, in second highest quartile of distribution service pipelines systemwide	Miles with calculated probability of serious safety incident given leak, or consequence of failure, in second lowest quartile of distribution service pipelines systemwide	Miles with calculated probability of serious safety incident given leak, or consequence of failure, in lowest quartile of distribution service pipelines systemwide	Miles of service distribution pipeline with uncalculated risk. (Put all service mileage here if risk calculations are not conducted for services.)	Calculated probability of leak per year, or risk of failure, averaged across distribution main pipeline miles	Calculated probability of leak per year, or risk of failure, averaged across distribution service pipeline miles	Calculated probability of serious safety incident given leak, or consequence of failure, averaged across distribution main pipeline miles
Not Applicable	Not Applicable	Not Applicable	Not Applicable	0	183.8548835	Not Available	290.4916694
Not Applicable	Not Applicable	Not Applicable	Not Applicable	0	1.351874143	Not Available	2.135968157
Not Applicable	Not Applicable	Not Applicable	Not Applicable	0	1.350536542	Not Available	2.113130558
Not Applicable	Not Applicable	Not Applicable	Not Applicable	0	0.099972818	Not Available	0.083650198
Not Applicable	Not Applicable	Not Applicable	Not Applicable	0	1.142305695	Not Available	2.017344522
Not Applicable	Not Applicable	Not Applicable	Not Applicable	0	1.674929903	Not Available	2.726529925

AvServiceConsq	AvMainRiskScore	AvServiceRiskScore	AvMainPressure	AvMainYear	AvServiceYear	AvSurvey	AvMainLeaks
Calculated probability of serious safety incident given leak, or consequence of failure, averaged across distribution service pipeline miles	Risk score averaged across distribution main pipeline miles	Risk score averaged across distribution service pipeline miles	Set pressure, averaged across distribution main pipeline	Year pipeline was installed, averaged across distribution main pipeline miles	Year pipeline was installed, averaged across distribution service pipeline miles	Date of most recent leak survey, averaged across distribution main and service pipeline miles	Main leaks identified in leak surveys, excluding repaired or removed leaks, averaged across distribution main pipeline miles
Not Available	394.3821727	Not Applicable	6458.594	271201.5652	271524.4322	274720	2.124594639
Not Available	2.899868917	Not Applicable	47.48966176	1994.129156	1996.503178	2020	0.015622019
Not Available	2.902165771	Not Applicable	47.5	1996.16241	1996.36737	2020	0.007030772
Not Available	0.213470858	Not Applicable	9.463329434	9.784412904	5.920658807	0	0.028033204
Not Available	2.4	Not Applicable	35	1959.083063	1975	2020	0
Not Available	3.528355896	Not Applicable	116.924	2012.673	2012.923	2020	0.207951725

AvServiceLeaks	HistAvMainHazLeaks	HistAvServiceHazLeaks	RetiredMain	RetiredService	PlanGRReplaceMains	PlanGRReplaceServices	EstGRReplaceMains
Service leaks identified in leak surveys, excluding repaired or removed leaks, averaged across distribution service pipeline miles	Main hazardous leaks (grade 1) repaired in 2015-2020, averaged across distribution main pipeline miles	Service hazardous leaks (grade 1) repaired in 2015-2020, averaged across distribution service pipeline miles	Miles of distribution main pipeline retired/abandoned since 2010	Miles of service pipeline retired/abandoned since 2010	Miles of distribution main pipeline planned for replacement in 2023 through 2026	Miles of service pipeline planned for replacement or relocation in 2023 through 2026	Estimated miles of additional distribution main pipeline planned for replacement in 2023 through 2026
2.186062981	0.335167914	1.291250917	Not Available	Not Available	Not Available	Not Available	Not Available
0.016073993	0.00246447	0.009494492	Not Available	Not Available	Not Available	Not Available	Not Available
0.009555206	0	0.006836238	Not Available	Not Available	Not Available	Not Available	Not Available
0.028266654	0.006202889	0.012826306	Not Available	Not Available	Not Available	Not Available	Not Available
0	0	0	Not Available	Not Available	Not Available	Not Available	Not Available
0.269502828	0.034188429	0.073616219	Not Available	Not Available	Not Available	Not Available	Not Available

EstGRCReplaceServices	GRCReplaceMains2030	GRCReplaceServices2030	GRCReplaceMainsPrograms	GRCReplaceServicesPrograms	RecentMains	RecentServices	PlannedMains
Estimated miles of additional service pipeline planned for replacement in 2023 through 2026	Miles of distribution main pipeline planned for replacement in 2027 through 2030	Miles of service pipeline planned for replacement or relocation in 2027 through 2030	Miles of distribution main pipeline identified for replacement after 2030	Miles of service pipeline identified for replacement after 2030	Miles of distribution main pipeline built since 2010	Miles of service pipeline built since 2010	Miles of new planned distribution main pipeline planned for 2023-2026
Not Available	Not Available	Not Available	Not Available	Not Available	577.4532419	344.9602244	Not Available
Not Available	Not Available	Not Available	Not Available	Not Available	4.24597972	2.536472238	Not Available
Not Available	Not Available	Not Available	Not Available	Not Available	2.77974869	1.984692756	Not Available
Not Available	Not Available	Not Available	Not Available	Not Available	4.560630082	2.509413936	Not Available
Not Available	Not Available	Not Available	Not Available	Not Available	0	0	Not Available
Not Available	Not Available	Not Available	Not Available	Not Available	29.54600164	21.05974644	Not Available

PlannedServices	MainValves	HiBranches	RegStationType	RegStationCustomers	RegStationAge	RegStationGRC	RegStationReplacement
Miles of new planned service pipeline planned for 2023-2026	Number of valves on distribution main pipelines	Number of high pressure (60 psi or above) distribution line branching points	Presence of regulator station in census tract and whether it is a high-pressure regulator station (reduces pressure to pressure above 60 psi), medium- pressure (pressure of 1 through 60 psi) or low-	Number of customers served by the regulator station(s) in the census tract if any such stations	Ages of regulator stations in the census tract	Number of regulator stations in the census tract identified for replacement, relocation, or to be newly constructed in 2023-2026	Number of regulator stations identified in regulator station replacement program for replacement, relocation, or to be newly constructed
Not Available	1230	436	Not Applicable	75317	101672	Not Available	Not Available
Not Available	9.044117647	3.205882353	Not Applicable	827.6593407	2163.234043	Not Available	Not Available
Not Available	9	2	Not Applicable	230	2001	Not Available	Not Available
Not Available	5.763561561	4.352344951	Not Applicable	919.3215394	1115.190265	Not Available	Not Available
Not Available	0	0	Not Applicable	0	1800	Not Available	Not Available
Not Available	28	23	Not Applicable	2896	9724	Not Available	Not Available

TransmMiles	TransmWallLoss	AvTransmDiam	AvTIMPScore	CompressorStn	SmallTransmInfr	LargeTransmInfr	NonEssentialValves
Transmission pipeline total mileage	Number of transmission pipeline anomalies with predicted metal wall loss of greater than 40 percent or other anomalies utility considers equally concerning	Diameter of transmission pipeline, averaged across transmission pipeline miles	Risk score of transmission pipeline, averaged across transmission pipeline miles	Name of compressor station serving the area	Name(s) of station, regulator, regulator set, valve, and/or valve set connected to transmission, other than included at facilities in "LargeTransmInfr" below	Name(s) of underground gas storage field, compressor station, gas terminal, or wholesale gas receipt point	Number of non-essential valves in each census tract.
0.119318161	Not Applicable	24	Not Applicable	Not Applicable	Not Applicable	Not Applicable	309
0.000877339	Not Applicable	6	Not Applicable	Not Applicable	Not Applicable	Not Applicable	2.272058824
0	Not Applicable	7	Not Applicable	Not Applicable	Not Applicable	Not Applicable	1
0.006939565	Not Applicable	2.449489743	Not Applicable	Not Applicable	Not Applicable	Not Applicable	2.956714472
0	Not Applicable	2	Not Applicable	Not Applicable	Not Applicable	Not Applicable	0
0.074621212	Not Applicable	8	Not Applicable	Not Applicable	Not Applicable	Not Applicable	17

Southwest Gas Corporation

Consumption Data by Census Tract Summary

Data Request Instructions: Provide an Excel spreadsheet file with summary statistics about items 1, 2 and 3 above. Title the file "Gas System Summary Statistics – [Utility Name].xlsx," with tabs titled "Gas System Census Tract Data," "Consumption Data by Census Tract," and "Consumption Data by Zip Code." In the tab "Gas System Census Tract Data," provide column headings matching the column headings used in item 1. Gas System Census Tract Data. Provide rows showing the total, average, median, standard deviation, minimum, and maximum, of the rows (census tracts) which were provided in item 1. These are summary statistics for the census tract data. Similarly, in the tab "Consumption Data by Census Tract," use column headings shown in item 2. Consumption Data by Census Tract, and provide rows showing the total, average, median, standard deviation, minimum, and maximum, of the rows (census tracts) which were provided in item 2. These are consumption data summary statistics by census tract. Finally, in the tab "Consumption Data by Zip Code," use column headings shown in item 3. Consumption Data by Zip Code, and provide rows showing the total, average, median, standard deviation, minimum, and maximum, of the rows (zip codes) which were provided in item 3. These are consumption data summary statistics by zip code.

Column Name	CensusTract	CARELoad	CoreResLoad	CoreCommLoad	CoreIndLoad	CoreNGVLoad	NCCommLoad
Customer Category Description	Census Tract ID #	Core California Alternative Rates for Energy (CARE) residential	Core residential excluding CARE	Core commercial	Core industrial	Core NGV	Noncore commercial
Total	Not Applicable	64061.611	179114.296	90638.852	13113.022	4830.400	5711.655
Average	Not Applicable	467.603	1307.404	661.597	95.715	35.258	41.691
Median	Not Applicable	498.271	938.178	282.414	0.000	0.000	0.000
Standard Deviation	Not Applicable	318.781	1243.925	1162.516	415.773	268.557	263.893
Minimum	Not Applicable	0.000	0.000	0.000	0.000	0.000	0.000
Maximum	Not Applicable	1171.277	9065.685	7215.268	2816.838	2975.458	2496.107

Southwest Gas Corporation

Consumption Data by Zip Code Summary

Data Request Instructions: Provide an Excel spreadsheet file with summary statistics about items 1, 2 and 3 above. Title the file "Gas System Summary Statistics – [Utility Name].xlsx," with tabs titled "Gas System Census Tract Data," "Consumption Data by Census Tract," and "Consumption Data by Zip Code." In the tab "Gas System Census Tract Data," provide column headings matching the column headings used in item 1. Gas System Census Tract Data. Provide rows showing the total, average, median, standard deviation, minimum, and maximum, of the rows (census tracts) which were provided in item 1. These are summary statistics for the census tract data. Similarly, in the tab "Consumption Data by Census Tract," use column headings shown in item 2. Consumption Data by Census Tract, and provide rows showing the total, average, median, standard deviation, minimum, and maximum, of the rows (census tracts) which were provided in item 2. These are consumption data summary statistics by census tract. Finally, in the tab "Consumption Data by Zip Code," use column headings shown in item 3. Consumption Data by Zip Code, and provide rows showing the total, average, median, standard deviation, minimum, and maximum, of the rows (zip codes) which were provided in item 3. These are consumption data summary statistics by zip code.

Column Name	ZipCode	CARELoad	CoreResLoad	CoreCommLoad	CoreIndLoad	CoreNGVLoad	NCCommLoad
Customer Category Description	Zip Code	Core California Alternative Rates for Energy (CARE) residential	Core residential excluding CARE	Core commercial	Core industrial	Core NGV	Noncore commercial
Total	Not Applicable	60,570.55	150,103.87	93,348.76	13,176.47	5,142.69	9,724.08
Average	Not Applicable	2,088.64	5,176.00	3,218.92	454.36	177.33	335.31
Median	Not Applicable	543.04	2,538.53	681.84	-	-	-
Standard Deviation	Not Applicable	2,800.84	7,355.21	4,735.10	1,248.01	619.28	910.47
Minimum	Not Applicable	2.27	12.86	-	-	-	-
Maximum	Not Applicable	10,430.31	29,314.77	19,483.83	6,445.20	3,291.65	4,112.70

OtherLoad	Customers	CARECust	CoreResCust	CoreCommCust	CoreIndCust	CoreNGVCust	NCCommCust
Other subtotal (Other wholesale plus company use)	Number of customers served	Number of customers: Core CARE residential	Number of customers: Core residential excluding CARE	Number of customers: Core commercial	Number of customers: Core industrial	Number of customers: Core NGV	Number of customers: Noncore commercial
-	203,689.00	58,105.00	135,906.00	9,616.00	44.00	9.00	7.00
-	7,023.76	2,003.62	4,686.41	331.59	1.52	0.31	0.24
-	2,851.00	381.00	2,421.00	120.00	-	-	-
-	7,402.71	2,866.54	4,859.12	414.73	3.86	0.59	0.57
-	10.00	2.00	8.00	-	-	-	-
-	27,365.00	11,122.00	16,824.00	1,495.00	20.00	2.00	2.00

NCIndCust	NCTRefCust	NCEORCust	NCEGCust	WhCust	CoreCust	NCCust	OtherCust
Number of customers: Noncore industrial (including refinery)	Number of customers: Noncore refinery	Number of customers: Noncore enhanced oil recovery	Number of customers: Noncore electric generation (EG)	Number of customers: Other wholesale (delivered to other utilities/wholesale including international)	Number of customers: Core subtotal	Number of customers: Noncore subtotal	Number of customers: Other subtotal
-	-	-	2.00	-	203,680.00	9.00	-
-	-	-	0.07	-	7,023.45	0.31	-
-	-	-	-	-	2,851.00	-	-
-	-	-	0.25	-	7,402.68	0.59	-
-	-	-	-	-	10.00	-	-
-	-	-	1.00	-	27,365.00	2.00	-

Exhibit B-5

Southwest Gas Corporation			
Distribution Costs and Plans			
Provide an Excel spreadsheet file containing information about utility-wide general rate case (GRC) approved programs and customer data entitled "Supplemental Data - [Utility Name].csv" with the following three tabs of information: "Distribution Costs and Plans," "Program Specific," and "Customer Data." a. For the tab "Distribution Costs and Plans" base all information on that submitted or, if approved information is available, as approved, in the most recent GRC for which an application has been submitted (identified as "Most recent GRC proceeding" in the spreadsheet). For the years covered by the most recent GRC proceeding, starting with the test year. For averages, average across these years. Using the format below, provide the requested information in the empty cells:			
GRC Distribution Pipeline General Costs and Plans Information	Response	Notes	DR 2 Requested Revisions
Distribution Costs and Plans GRC MAT Code (view row)			New row
Most Recent GRC proceeding name	Application of Southwest Gas Corporation (U 905 G) for Authority to Increase Rates and Charges for Natural Gas Service in California, Effective January 1, 2021		
Most Recent GRC proceeding number	Application 19-08-015		
Most Recent GRC proceeding years covered, starting with test year	Test Year 2021, Attrition Years 2022-2025		
Open or Upcoming GRC proceeding name if any	Not Available		
Open or Upcoming GRC proceeding number if any	Not Available		
Open or Upcoming GRC proceeding years covered, starting with test year	Not Available		
Total distribution main miles owned by the utility	3220.352		
Total distribution service miles owned by the utility	2545.466		
Average length of service pipeline (miles per service)	72.6213	Average of Divisions' Averaged length	
Total distribution main pipeline miles to be replaced per year	Not Available	Southwest Gas cannot provide as requested. The GRC provides a total cost allowable over the Rate Case period.	2019 - 21.77 2020 - 33.01 2021 - 31.85
Total distribution service pipeline miles to be replaced per year	Not Available	Southwest Gas cannot provide as requested. The GRC provides a total cost allowable over the Rate Case period.	2019 - 36.49 2020 - 35.39 2021 - 23.64
Total distribution main pipeline miles to be added per year	Not Available	Southwest Gas cannot provide the requested data as it does not know how many miles of main will be required to meet the needs of new customers coming on to the system.	2019 - 6.93 2020 - 4.33 2021 - 11.80
Total distribution service pipeline miles to be added per year	Not Available	Southwest Gas cannot provide the requested data as it does not know how many miles of service will be required to meet the needs of new customers coming on to the system.	2019 - 12.66 2020 - 11.56 2021 - 16.89
Number of new regulator stations to be built during GRC period	Not Available	Regulator Stations were not addressed in the Southwest Gas 2021-2025 GRC. It is unknown how many new stations will be installed during the program years.	2019 - 0 2020 - 3 2021 - 2
Number of regulator stations to be replaced during GRC period	Not Available	Regulator Stations were not addressed in the Southwest Gas 2021-2025 GRC. It is unknown how many stations will be replaced during the program years.	2019 - 3 2020 - 2 2021 - 3
Number of regulator stations to be repaired/upgraded during GRC period	Not Available	Regulator Stations were not addressed in the Southwest Gas 2021-2025 GRC. It is unknown how many stations will require upgrading or repair during the program years.	2019 - 20 2020 - 29 2021 - 11
Average cost per mile to replace distribution pipeline (mains and services)	\$ 458,674	These are approximate costs and are only reflective of Southwest Gas' Southern California Division, as the GRC programs were only approved for that service area. - Assumption made - all costs are for PE pipelines.	Describe how diameter does or does not affect average cost per mile to replace distribution pipeline. Include the factors contributing to pipeline costs and whether purchasing pipeline itself constitutes more than 10 percent of cost to replace distribution pipeline. The cost to install distribution pipeline will increase as the pipe size is increase due to
Average cost per mile to replace distribution main pipeline	\$ 458,674		
Average cost per mile to replace distribution service pipeline	\$ 458,674		
Average cost per mile to replace distribution main pipeline with diameter of 2" or less	\$ 395,419		
Average cost per mile to replace distribution main pipeline with diameter over 2" through 4"	\$ 565,963		
Average cost per mile to replace distribution main pipeline with diameter over 4" through 8"	\$ 587,558		
Average cost per mile to replace distribution main pipeline with diameter over 8" through 12"	Not Available	Southwest Gas is not able to provide this cost as it did not have any projects in its Southern California Division that included main pipelines with diameter over 8" through 12" in the 2021 test year.	
Average cost per mile to replace distribution pipeline with diameter over 12"	Not Available	Southwest Gas is not able to provide this cost as it did not have any projects in its Southern California Division that included main pipelines with diameter over 12" in the 2021 test year.	
Average cost per mile to install new distribution main pipeline	\$ 377,890	These are approximate costs and are only reflective of Southwest Gas' Southern California	
Average cost per mile to install new distribution service pipeline	\$ 377,890		

Average cost of new regulator station or regulator station replacement	\$ 64,419	Division, as the GRC programs were only approved for that service area.
Average cost of regulator station repair/upgrade (excluding whole station replacement)	Not Available	Southwest Gas is not able to provide the cost as requested as its maintenance and repair data is allocated and tracked differently than capital projects and cannot be broken out to determine the average costs.
Total gas distribution system costs per year	\$ 47,871,769	These are approximate costs and are only reflective of Southwest Gas' Southern California Division, as the GRC programs were only approved for that service area.
Total gas distribution system costs per distribution mains and services pipeline miles per year	\$ 11,049.93	

Southwest Gas Corporation										
Program Specific										
<p>Data Request Instructions: Provide an Excel spreadsheet file containing information about utility-wide general rate case (GRC) approved programs and customer data entitled "Supplemental Data - [Utility Name].csv" with the following three tabs of information: "Distribution Costs and Plans," "Program Specific," and "Customer Data." b. For the tab "Program-Specific," use one column for each program affecting distribution pipelines or regulator stations, e.g., the Plastic Pipe Replacement Program. In the first column, provide information aggregated across all distribution pipeline programs, i.e., including all distribution pipelines, for all cells not greyed out. In the "Program Goal" row, provide a brief description of the focus of the program. In the "Main Program Data Source" row, provide a description of the primary means of collecting data used to prioritize pipelines for replacement in that program, e.g., leak surveys. In "Total Pipeline Miles Subject to Program," include all miles potentially eligible for replacement under the program (i.e., subject to leak surveys or made of relevant materials). For "Calculated probability of leak per year, or risk of failure," "Consequences of Failure or Calculated Probability of Serious Safety Incident Given Leak" and "Risk Score," provide the values at the thresholds indicated, i.e., enter the minimum possible risk of failure, maximum possible risk of failure, the minimum risk of failure calculated for any pipeline segment in the utility's system, or the risk of failure that 25 percent of the utility's pipeline miles are at or below (25th percentile), the average risk of failure across the utility's distribution pipelines, etc. To find the "minimum possible" and "maximum possible," use the theoretical extremes for each data input used in the calculation. Risk scores are the product of probability of leak per year (LoCalGas terminology) or risk of failure (P&ID terminology) and likelihood of serious incident given leak (LoCalGas terminology). In the "Aspects Contributing to Risk of Failure" row, provide text stating these aspects and their data sources, such as pipeline age (utility data), population density (census data), etc. Include both main and service distribution pipelines. For regulator station programs, provide counts of stations instead of miles and exclude these programs from the "Pipeline Program Total" column. Define programs as reflected in the most recent GRC proceeding. Using the format below, provide the requested information in the empty cells.</p>										
<p>GRC Distribution System Plans and Risks Information by Replacement Program</p>										
Program Information:	Program Name:	Pipeline Program Total	Targeted Pipe Replacement Program - M7000	Targeted Pipe Replacement Program - pre-1961 High Pressure Distribution Steel	Targeted Pipe Replacement Program - pre-1961 Distribution Steel	Meter Protection Program	School CO2X Program	Notes	DR 2 Requested Data	Explain Difference in the types of pipelines covered by the two programs highlighted in blue. (Pre-1961 Replacements of HP-Distribution Steel)
			<p>Targeted Pipeline Replacement Program: Proactive program to replace aging pipeline infrastructure before leaks occur. This program is specific to the Company's Southern California service territory.</p> <p>Reduce potential pipe leaks, mitigate safety concerns, and modernize distribution pipe facilities to current industry safety standards, enhancing recordkeeping and documentation regarding pipeline construction practices, material selection, material and pipeline testing, as well as improve pipe quality and performance standards of new facilities.</p>	<p>Targeted Pipeline Replacement Program: Proactive program to replace aging pipeline infrastructure before leaks occur. This program is specific to the Company's Southern California service territory.</p> <p>Reduce potential pipe leaks, mitigate safety concerns, and modernize distribution pipe facilities to current industry safety standards, enhancing recordkeeping and documentation regarding pipeline construction practices, material selection, material and pipeline testing, as well as improve pipe quality and performance standards of new facilities.</p>	<p>Targeted Pipeline Replacement Program: Proactive program to replace aging pipeline infrastructure before leaks occur. This program is specific to the Company's Southern California service territory.</p> <p>Reduce potential pipe leaks, mitigate safety concerns, and modernize distribution pipe facilities to current industry safety standards, enhancing recordkeeping and documentation regarding pipeline construction practices, material selection, material and pipeline testing, as well as improve pipe quality and performance standards of new facilities.</p>	<p>Comprehensive program to protect the Company's meter sets from damage due to snow and ice loading. The installation of a meter shed proactively serves to prevent snow and ice loading from damaging SWS facilities.</p>	<p>Program to prioritize and replace all known School CO2X.</p>			
	Program Goal		Projects could take an average of 1-2 Years once they are placed on the replacement schedule to when they are Construction Complete.	Projects could take an average of 1-2 Years once they are placed on the replacement schedule to when they are Construction Complete.	Projects could take an average of 1-2 Years once they are placed on the replacement schedule to when they are Construction Complete.	Projects could take an average of 1-2 Years once they are placed on the replacement schedule to when they are Construction Complete.	Projects could take an average of 1-2 Years once they are placed on the replacement schedule to when they are Construction Complete.			
	Main Program Data Source		ESRI Mapping System	ESRI Mapping System	ESRI Mapping System	Project Horizon, My Data, Leak Survey Data, and ESRI Mapping System	MyData			
	Materials of Pipelines Covered by Program		Driscopipe 7000 distribution plastic pipelines 1974-1980	Pre-1961 vintage distribution steel pipelines 1974-1960	Pre-1961 vintage distribution steel pipelines 1974-1960	Not Applicable	Not Applicable			
	Pages of Pipelines Covered by Program		Both	Both	Both	Not Applicable	Not Applicable			
	Program Includes Meters, Services, or Both?									
Program Forecasts	Pipelines Miles with Known Locations to be Replaced by Program During Years Covered by Most Recent GRC, Per Year	44.53	Replacement mileage can vary year-over-year due to municipality, permitting, material, and resources constraints, but we tentatively anticipate approximately 34.79 miles of M7000 Main to be replaced per year.	Replacement mileage can vary year-over-year due to municipality, permitting, material, and resources constraints, but we tentatively anticipate approximately 8.7 miles of Pre-1961 Distribution Steel Main to be replaced per year.	Replacement mileage can vary year-over-year due to municipality, permitting, material, and resources constraints, but we tentatively anticipate approximately 1.04 miles of High Pressure Pre-1961 Distribution Steel Main to be replaced per year.	Not Applicable	Not Applicable			
	Pipelines Miles with Locations YES to be Determined to be Replaced by Program During Years Covered by Most Recent GRC, Per Year	0	0	0	0	Not Applicable	Not Applicable			
	Total Pipeline Miles or Count of Regulator Stations to be Replaced by Program During Years Covered by Most Recent GRC, Per Year	44.53	Replacement mileage can vary year-over-year due to municipality, permitting, material, and resources constraints, but we tentatively anticipate approximately 34.79 miles of M7000 Main to be replaced per year.	Replacement mileage can vary year-over-year due to municipality, permitting, material, and resources constraints, but we tentatively anticipate approximately 8.7 miles of Pre-1961 Distribution Steel Main to be replaced per year.	Replacement mileage can vary year-over-year due to municipality, permitting, material, and resources constraints, but we tentatively anticipate approximately 1.04 miles of High Pressure Pre-1961 Distribution Steel Main to be replaced per year.	Not Applicable	Not Applicable			Eight Reg Stations were replaced between 2018 and 2021: 2019 - 3 2020 - 2 2021 - 3
	Total Pipeline Miles to be Replaced by Program for Program Completion, if applicable	222.65	Replacement mileage can vary year-over-year due to municipality, permitting, material, and resources constraints, but we tentatively anticipate approximately 174 miles of M7000 Main to be replaced during the GRC period 2023-2025.	Replacement mileage can vary year-over-year due to municipality, permitting, material, and resources constraints, but we tentatively anticipate approximately 43.1 miles of Pre-1961 Distribution Steel Pipeline during the GRC period 2023-2025.	Replacement mileage can vary year-over-year due to municipality, permitting, material, and resources constraints, but we tentatively anticipate approximately 5.2 miles of Pre-1961 High Pressure Distribution Steel Pipeline during the GRC period 2023-2025.	Not Applicable	Not Applicable			2019 - 58.26 2020 - 68.4 2021 - 55.49
	Total Pipeline Miles Subject to Program	521.485	399.685	46.142	84.658	No mileage associated with this program	Unknown, as this program is replacing school underground houseines and is a voluntary program.	GRC end year is 2025, these programs could be extended to exceed this date.		
	Expected Year of Program Completion Per Utility's Goals, if applicable	2025	2025	2025	2025	2025	2025			
Calculated Probability of Leak per Year, or Risk of Failure	Minimum Possible					Not Applicable	Not Applicable			
	Maximum Possible					Not Applicable	Not Applicable			
	25th Percentile					Not Applicable	Not Applicable			
	50th Percentile					Not Applicable	Not Applicable			
	75th Percentile					Not Applicable	Not Applicable			
Calculated Probability of Serious Safety Incident Given Leak	Minimum Possible					Not Applicable	Not Applicable			
	Maximum Possible					Not Applicable	Not Applicable			
	Average					Not Applicable	Not Applicable			
	25th Percentile					Not Applicable	Not Applicable			
	50th Percentile					Not Applicable	Not Applicable			
	75th Percentile					Not Applicable	Not Applicable			
or Consequence of Failure	Average		Weighted average likelihood consequence score for this material is 1.3	Weighted average likelihood consequence score for this material is 1.4	Weighted average likelihood consequence score for this material is 1.3	Not Applicable	Not Applicable			
	25th Percentile		Weighted average consequence score for this material is 2.1	Weighted average consequence score for this material is 2	Weighted average consequence score for this material is 2	Not Applicable	Not Applicable			
	Maximum					Not Applicable	Not Applicable			
	Minimum Possible Risk Score		2.8	4.1	2.6	Not Applicable	Not Applicable			
	Maximum Possible Risk Score		2.8	4.1	2.6	Not Applicable	Not Applicable			
	Minimum Risk Score					Not Applicable	Not Applicable			
	25th Percentile Risk Score					Not Applicable	Not Applicable			
	Average Risk Score		2.928	4.1	2.6	Not Applicable	Not Applicable			
	75th Percentile Risk Score					Not Applicable	Not Applicable			
	50th Percentile Risk Score					Not Applicable	Not Applicable			
	Maximum Risk Score		4	4.1	3.8	Not Applicable	Not Applicable			
	Risk Score Value at Which Prioritized in Most Recent GRC		Prioritized based on pipe material and leak history not risk score	Prioritized based on pipe material and leak history not risk score	Prioritized based on pipe material and leak history not risk score	Not Applicable	Not Applicable			
	Risk Score Value at Which Immediate Action Taken, if Any		5.3	5.5	5.5	Not Applicable	Not Applicable			
Risk Scoring Discussion and Further Information	Aspects Contributing to Risk of Failure		Aspects contributing to likelihood are: CP History, coating, condition of pipe, possibility of damage due to Natural Forces, Excavation Damage (as well as Excavation Damage History), depth of cover, Other Outside Force, Pipe, Weld or Joint Failure, NCDP, Equipment Failure or overpressure incidents, incorrect operation, leak rate (leaks per mile), and age of pipe.	Aspects contributing to likelihood are: CP History, coating, condition of pipe, possibility of damage due to Natural Forces, Excavation Damage (as well as Excavation Damage History), depth of cover, Other Outside Force, Pipe, Weld or Joint Failure, NCDP, Equipment Failure or overpressure incidents, incorrect operation, leak rate (leaks per mile), and age of pipe.	Aspects contributing to likelihood are: CP History, coating, condition of pipe, possibility of damage due to Natural Forces, Excavation Damage (as well as Excavation Damage History), depth of cover, Other Outside Force, Pipe, Weld or Joint Failure, NCDP, Equipment Failure or overpressure incidents, incorrect operation, leak rate (leaks per mile), and age of pipe.	Not Applicable	Not Applicable			
	Aspects Contributing to Consequences of Failure		Evaluation and Ranking of Risk (Risk Assessment) is completed for all leaking pipe segments, each year, no later than July 31st. Projects that score 4.5 or higher are replaced by the end of the following year after risk assessment.	Evaluation and Ranking of Risk (Risk Assessment) is completed for all leaking pipe segments, each year, no later than July 31st. Projects that score 4.5 or higher are replaced by the end of the following year after risk assessment.	Evaluation and Ranking of Risk (Risk Assessment) is completed for all leaking pipe segments, each year, no later than July 31st. Projects that score 4.5 or higher are replaced by the end of the following year after risk assessment.	Not Applicable	Not Applicable			
	Discussion of Risk Scoring Approach					Not Applicable	Not Applicable			
	Staff Contact Name and Email		Valerie Ontiveroz, Regulatory Manager, valerie.ontiveroz@swgas.com			Not Applicable	Not Applicable			

Southwest Gas Corporation
Customer Data

Data Request Instructions: Provide an Excel spreadsheet file containing information about utility-wide general rate case (GRC) approved programs and customer data entitled "Supplemental Data - [Utility Name].csv" with the following three tabs of information: "Distribution Costs and Plans," "Program Specific," and "Customer Data." c. For the tab titled "Customer Data," report the requested data for 2021. Use the systemwide peak hour in 2021 as the basis of all "during peak hour" amounts in this section. "Metered hourly" refers to having meters that record hourly usage. Using the format below, provide the requested information in the empty cells.

Customer Data									
	Responses	Notes							
Total customers	203,689								
Average annual daily core consumption (MMcfd)	32.23								
Average annual daily noncore consumption (MMcfd)	1.08								
Average annual daily wholesale consumption (MMcfd)	0	Southwest Gas does not have any customers in this category.							
Average annual daily company use and lost/unaccounted for gas (MMcfd)	1.07								
Systemwide peak hour (date and hour)	Not Available	Southwest Gas does not have systemwide peak hour data.							
Average annual daily core consumption metered hourly (MMcfd)	Not Available	Southwest Gas does not have hourly metered data.							
Average annual daily noncore consumption metered hourly (MMcfd)	Not Available	Southwest Gas does not have hourly metered data.							
Average annual daily company use and lost/unaccounted for gas metered hourly (MMcfd)	Not Available	Southwest Gas does not have hourly metered data.							
Average annual daily wholesale consumption metered hourly (MMcfd)	0	Southwest Gas does not have any customers in this category.							
Core consumption during peak hour, for core metered hourly (MMcfh)	Not Available	Southwest Gas does not have hourly metered data.							
Noncore consumption during peak hour, for noncore metered hourly (MMcfh)	Not Available	Southwest Gas does not have hourly metered data.							
Wholesale consumption during peak hour, for wholesale metered hourly (MMcfh)	Not Available	Southwest Gas does not have hourly metered data.							
Company use and lost/unaccounted for gas during peak hour, for wholesale metered hourly (MMcfh)	Not Available	Southwest Gas does not have hourly metered data.							
Estimated core consumption during peak hour, for core not metered hourly (MMcfh)	Not Available	As peak hourly data is not available, Southwest Gas cannot provide this information.							
Estimated noncore consumption during peak hour, for noncore not metered hourly (MMcfh)	Not Available	As peak hourly data is not available, Southwest Gas cannot provide this information.							
Estimated wholesale consumption during peak hour, for other not metered hourly (MMcfh)	Not Available	As peak hourly data is not available, Southwest Gas cannot provide this information.							
Estimated other consumption during peak hour, for other not metered hourly (MMcfh)	Not Available	As peak hourly data is not available, Southwest Gas cannot provide this information.							

DR 2 Request - All Rows: Confirm that the responses provided refer to only California customers and if not, correct them to reflect all and only California customers.

Corrected data