



**scottmadden**

MANAGEMENT CONSULTANTS

**Smart. Focused. Done Right.®**



# Natural Gas Benchmarking

Overview and Example Report



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**ScottMadden – Who We Are**



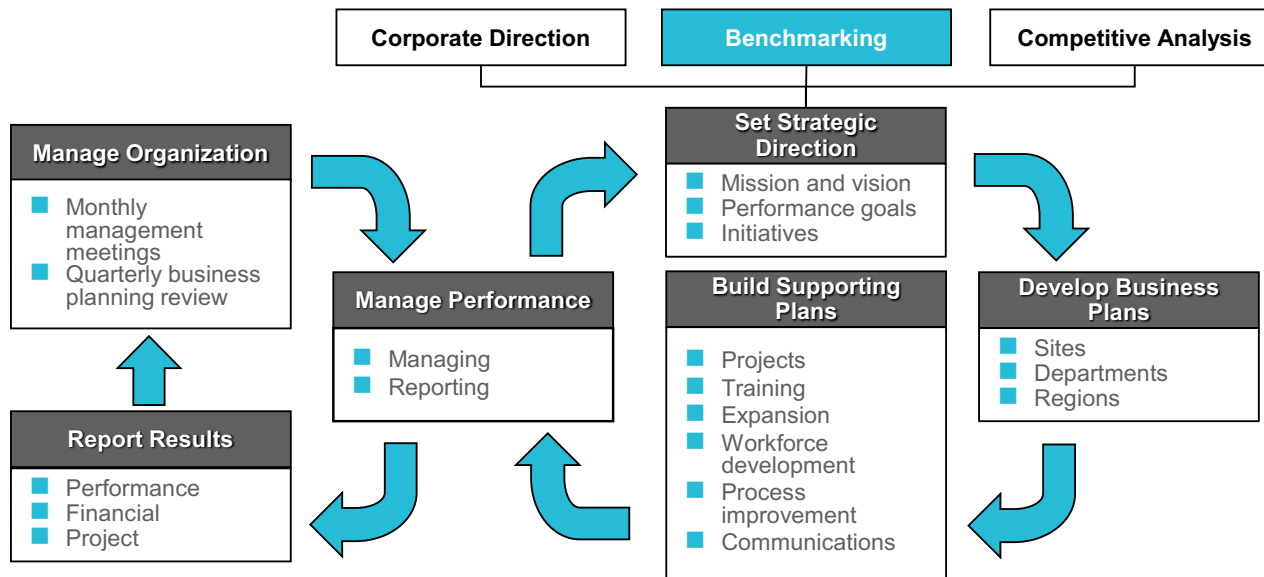
# Why Engage in Benchmarking?



# Why Engage in Benchmarking?

## Energy companies face increasing challenges:

- Aging infrastructure
- Declining return on equity (ROE) and increasing regulatory scrutiny
- Ongoing cost control pressure
- Industry uncertainty
- Growth potential
- Environmental compliance demands
- Aging labor force
- External impacts on business operations



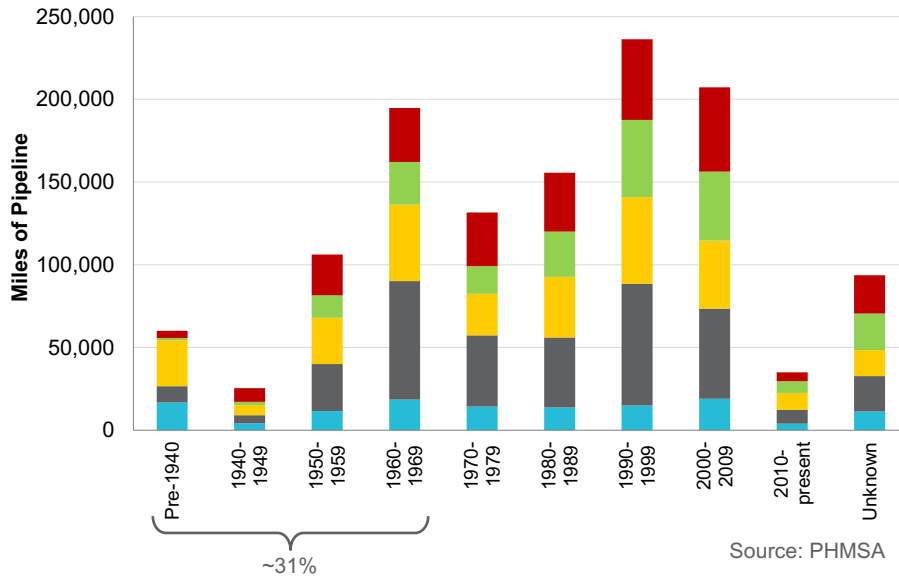
Assessing business performance through benchmarking can help identify performance gaps and improvement opportunities. Benchmarking is a key part of the business management process.

## Benefits:

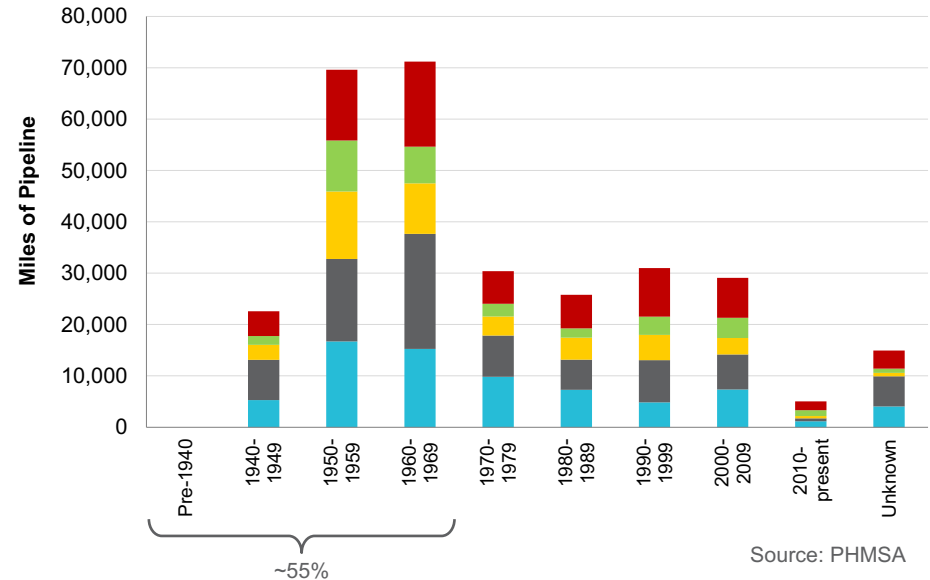
- Provides insight on performance and helps identify improvement opportunities
- Enables companies to set stretch goals and learn from best performers through external objective reviews
- Serves as an integral part of managing the business

# Example Industry Challenge: Aging Infrastructure

**Onshore Gas Distribution Pipeline**  
Construction by Decade and Region (miles)

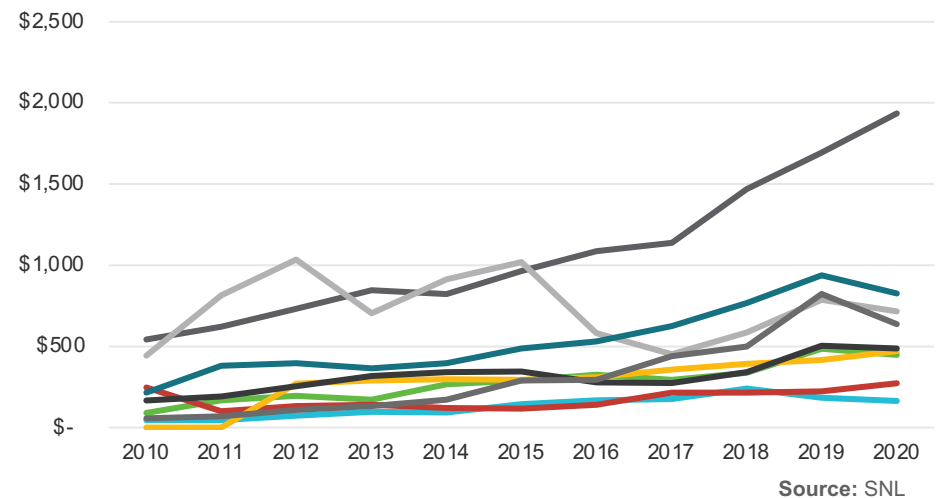


**Onshore Gas Transmission Pipeline**  
Construction by Decade and Region (miles)



- Much of the U.S. pipeline infrastructure is aging; more than a third is 40 years or older.
- Pipeline safety, a top priority for the gas industry, is driving investments to improve system integrity.
- Recent high-profile incidents have highlighted the need for such improvements.
- As a result, capital expenditures among gas utilities have increased significantly.
  - The growth rate in CapEx for this group was 22% higher in 2012 than in 2011.
  - Forecasts indicate this trend continuing in 2013.

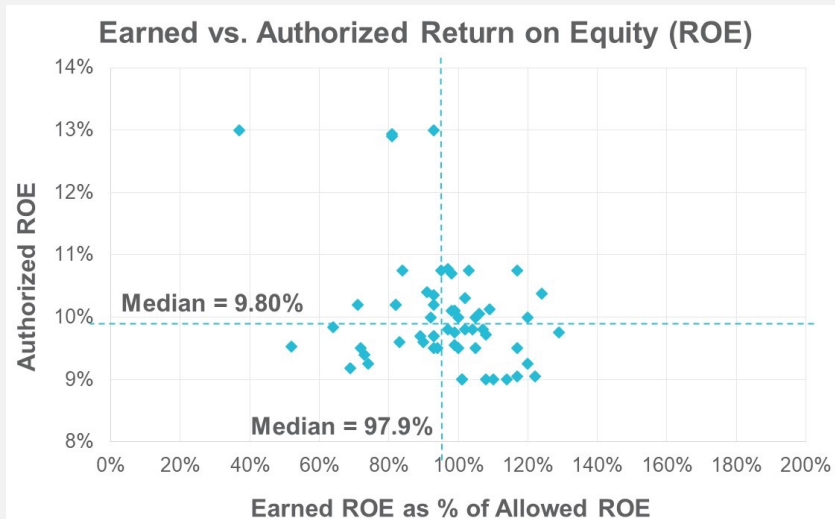
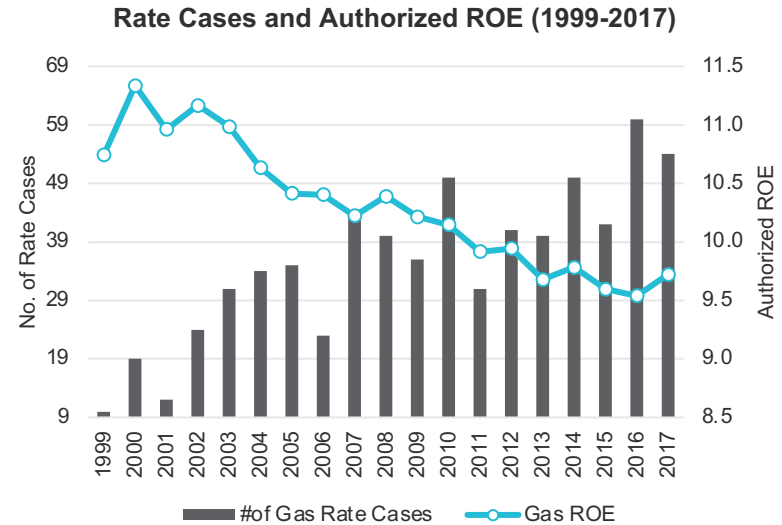
**Annual Capital Expenditures - 9 Publicly-Traded Gas Utilities**



# Example Industry Challenge: Declining ROE

Rate cases have increased consistently since 2000, but authorized ROEs continue to decline.

- In 2017, rate case filings were at the second highest point in 18 years.
- Gas allowed ROEs are just above the lowest point in 18 years. 2017 median authorized ROEs are nearly 200 basis points below those reported in 2000.
- Contributing factors for this trend include:
  - Increased levels of planned capital expenditures for renewal of aging infrastructure
  - Declining natural gas consumption
  - Increasing energy efficiency in homes



Earning authorized returns is challenging.

- Two-thirds of gas utilities' earned ROEs are below what is authorized.
- The median of earned ROE as a percentage of allowed ROE is 97.9%.





# Example Report



# REPORT CONTENTS

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**Potential Improvement Opportunities**

*An example report with  
illustrative data follows*

# Introduction

## Overview

- The objective of this review is to provide high-level financial and operating comparisons that will help the **Company's\*** management identify potential opportunities for improvement.
- While benchmarking can point to good practices and best-of-class results, it is not “the answer.” Instead, the benchmarking process itself provides a platform for dialogue about key management questions:
  - What are the appropriate measures of performance?
  - Where do we stand relative to those measures, and who are the “best”?
  - What are others doing, and what should we be doing to improve?
  - How will we institute those improvement initiatives, and how will we measure success?

## Approach

- A panel of 12 natural gas companies, including the Company, was selected as the benchmarking peer group for comparison purposes.
  - Company size, location, and system characteristics are the primary considerations for peer companies.
- This report is focused on key measures that provide a snapshot of financial and operational performance compared to peers.
  - Financial metrics were obtained from FERC Form 2 reports or annual reports submitted to state commissions.
  - Operational data (e.g., miles of main, number of services, leaks repaired) were obtained from the Department of Transportation’s (DOT) annual operator reports.
- Potential focus areas for improvement can be derived from the benchmarking results.
  - Where applicable, key industry trends, compiled from ScottMadden’s observations and research, provide context to the benchmarking comparison,

# Summary of Initial Observations\*

1. Revenue (net of production) per customer is **above the median and higher than comparable peers**. While customer growth is relatively flat, the Company is keeping pace with the peer companies.
2. The Company is **below the median** in terms of level of investment in its system.
3. Results for operation and maintenance (O&M) expenses are **mixed**.
  - Non-production O&M expense is relatively high on a per mile of main basis but below the median on a per employee basis.
  - Administrative and general (A&G) expense is at the peer median while distribution expenses are high compared to the peer panel.
4. The Company's distribution system is **ranked high** in the peer panel, with its relatively high percentage of older vintage mains and services.

# Overview of Panel Companies

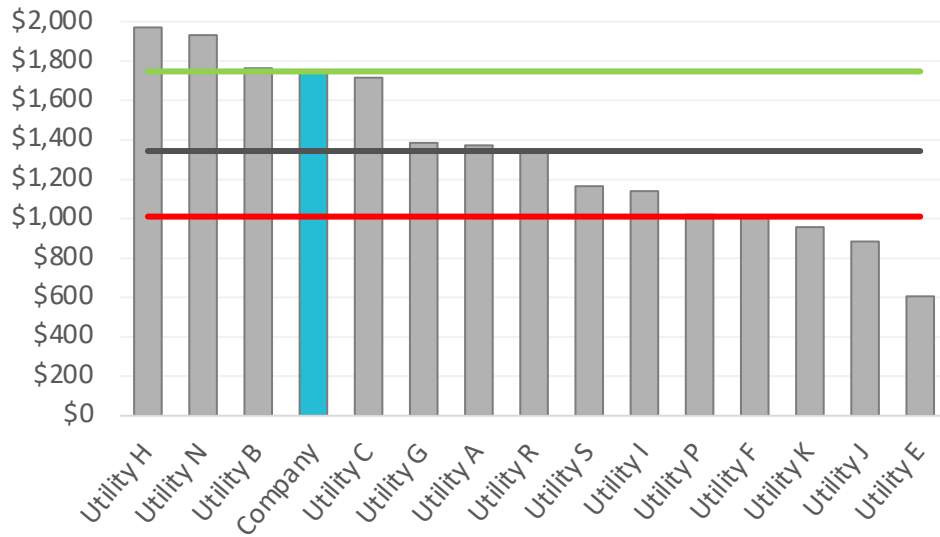
A group of comparable peer utilities was selected based on similarities in scale, region, organizational structure, and other system operational and design characteristics (e.g., multiple opcos under one holding company, whether or not the service territories were contiguous, whether or not they own upstream assets, pipe constructed of one predominant material, etc.) to the degree possible to ensure a like-in-kind basis of comparison for the benchmarking analysis.

Company	Customers	Throughput (Mcf 000s)	Operating Revenue (\$000s)
Utility A	694,391	68,938	644,474
Utility B	1,198,791	70,562	241,798
Utility C	918,283	80,535	1,178,102
Utility D	1,471,249	191,566	1,550,240
Utility E	544,205	48,138	380,935
Utility F	1,048,626	101,729	808,334
Utility G	431,181	12,656	369,353
Utility H	427,483	38,319	480,854
Utility I	1,881,576	210,244	1,064,301
Utility J	426,078	46,644	446,201
Utility K	656,743	79,349	909,192
The Company	686,256	85,644	424,256

NOTE: Customers, throughput, and operating revenue reflect year-end 2019 data.

# Gas Revenue per Customer and Growth

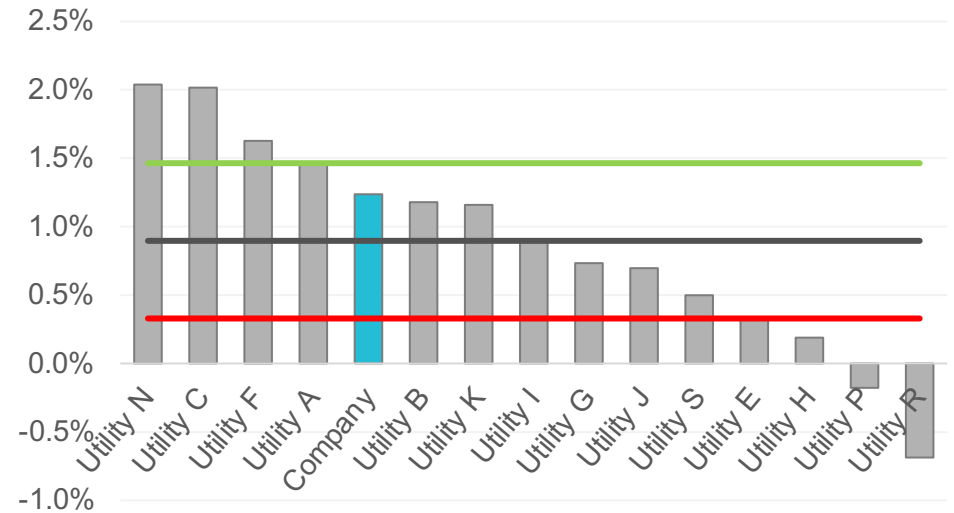
Revenue per Customer



- Revenue net of production reflects what is received for the delivery of gas; commodity costs have been removed from this number.
  - Note: Quartiles and median are based on revenue net of production.
- The Company was at the top quartile compared to peer companies on a revenue net of production per customer basis.

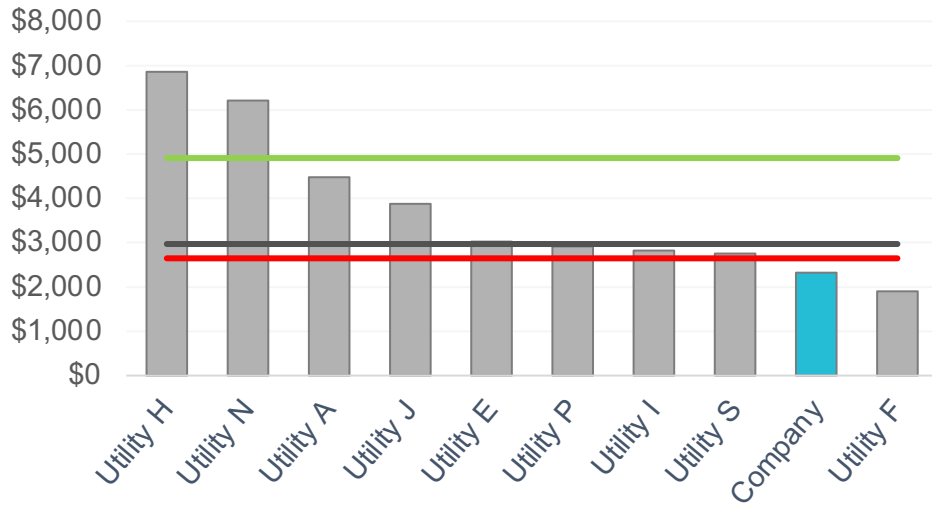
- Overall, growth rates for the panel companies are fairly flat and reflect the challenging economy.
- The customer growth rate for the Company is at the median of the panel (about 0.2%).

Customer Growth – 5 Year CAGR

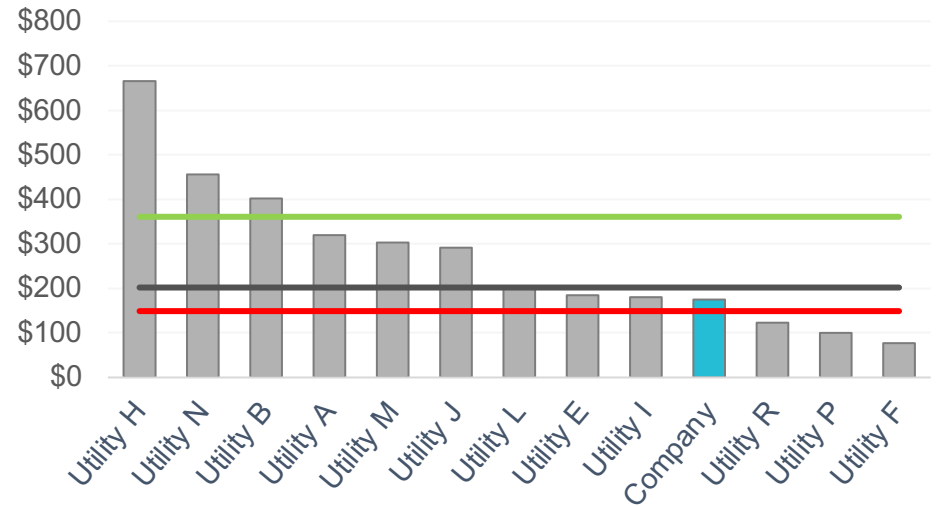


# Net Utility Plant

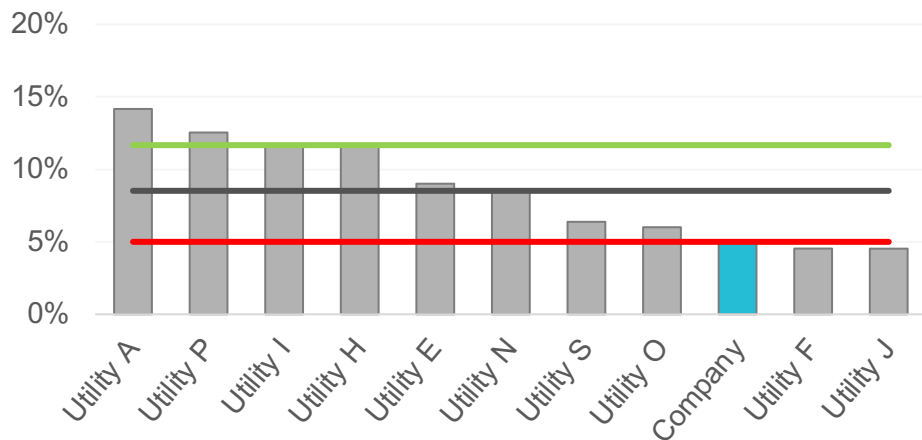
Net Utility Plant per Customer



Net Utility Plant per Mile of Main



Net Gas Utility Plant – 5 Year CAGR

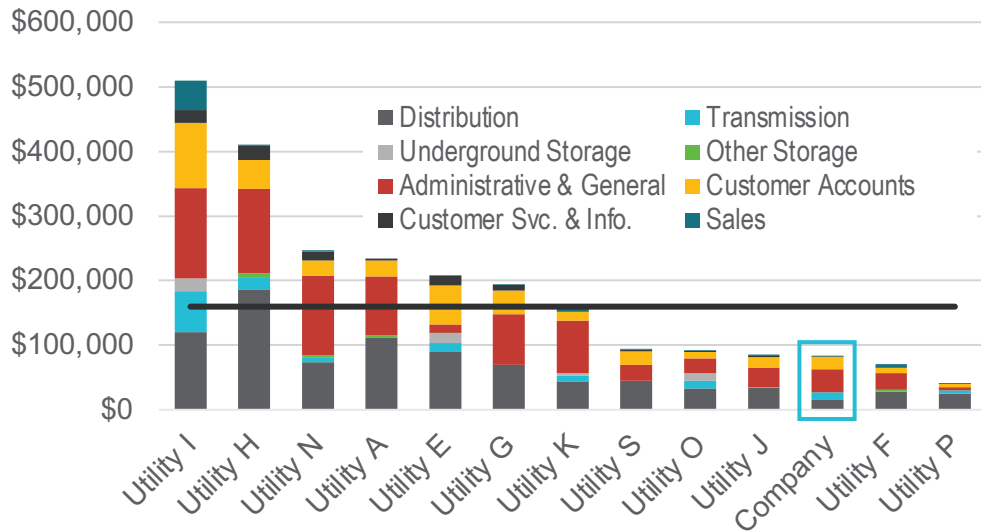


- Net utility plant reflects end-of-year total plant less accumulated depreciation expense.
- The Company was slightly above comparable peers in net plant per mile of main and per customer.
- The Company is just below the median for 5 Year CAGR, which indicates that the company has been investing less in its infrastructure than the peer panel.

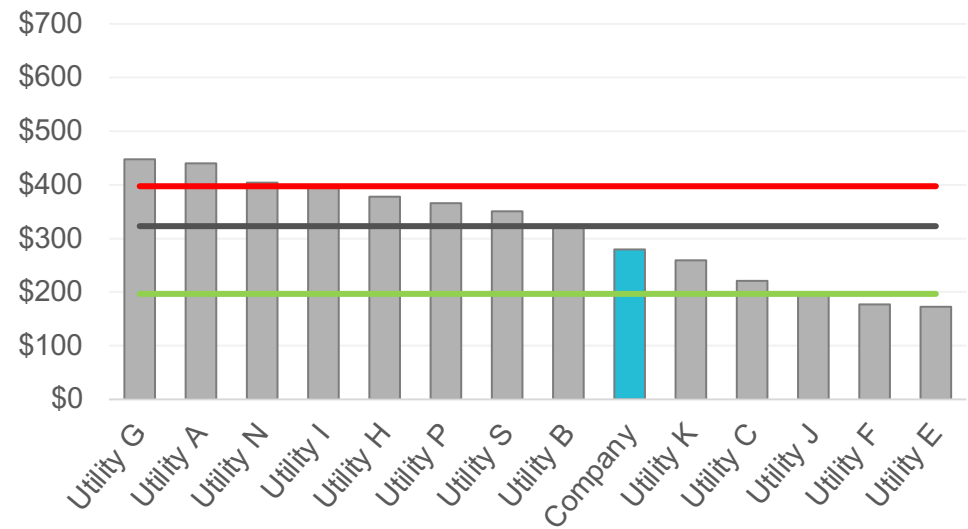


# Total Non-Production O&M

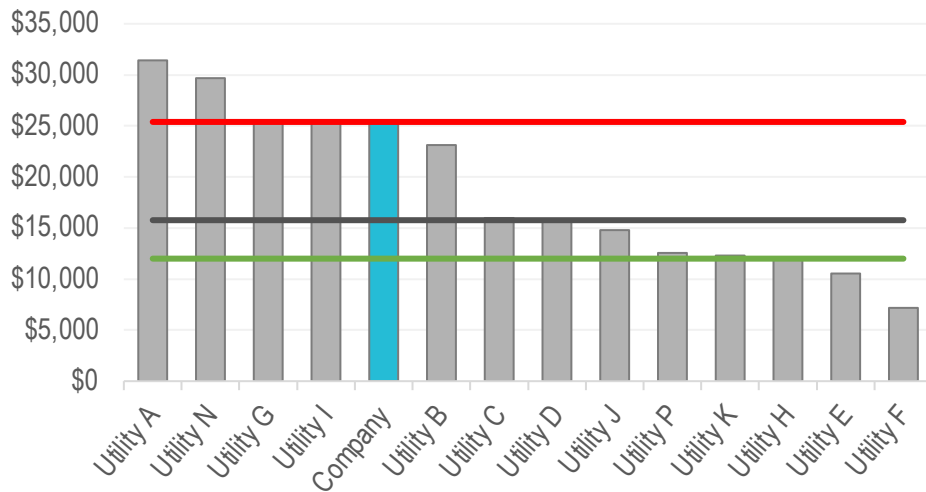
Total Non-Production O&M Expense



Total Non-Production O&M Expense per Customer



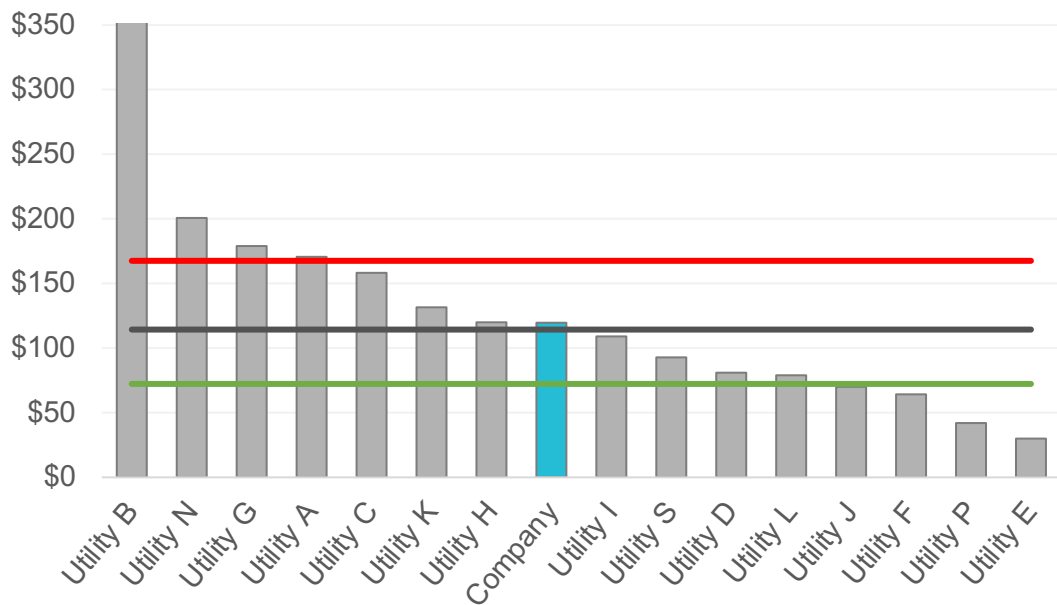
Total Non-Production O&M per Mile of Main



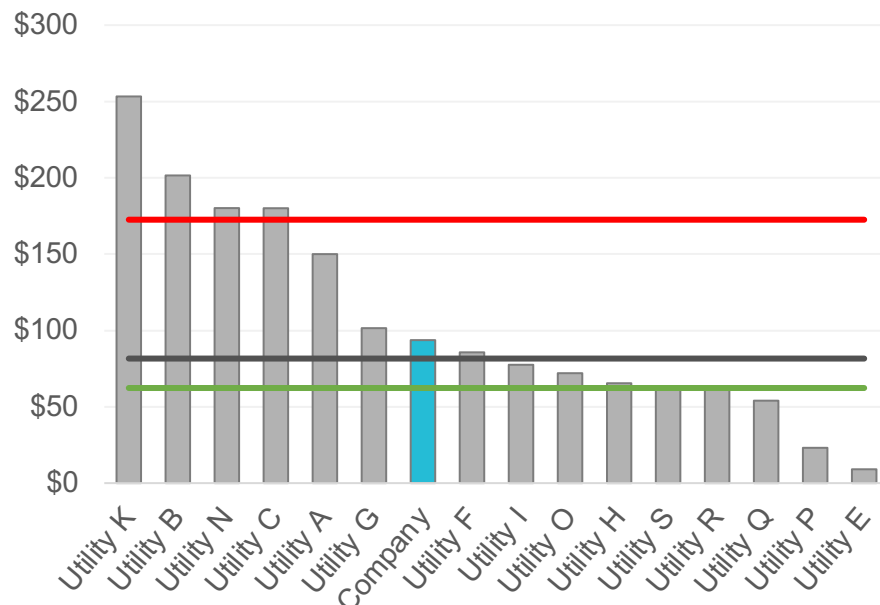
- The Company was above most comparable peers based on total non-production O&M expense per customer. A&G cost appears to be a driver for this metric.
- However, the Company was below most comparable peers on a per mile of main basis.
- The Company was one of the lowest to comparable peers based on total non-production O&M expense per employee.

# A&G O&M

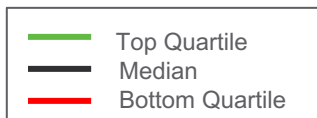
Total A&G Expense per Customer



Total A&G Expense per Employee

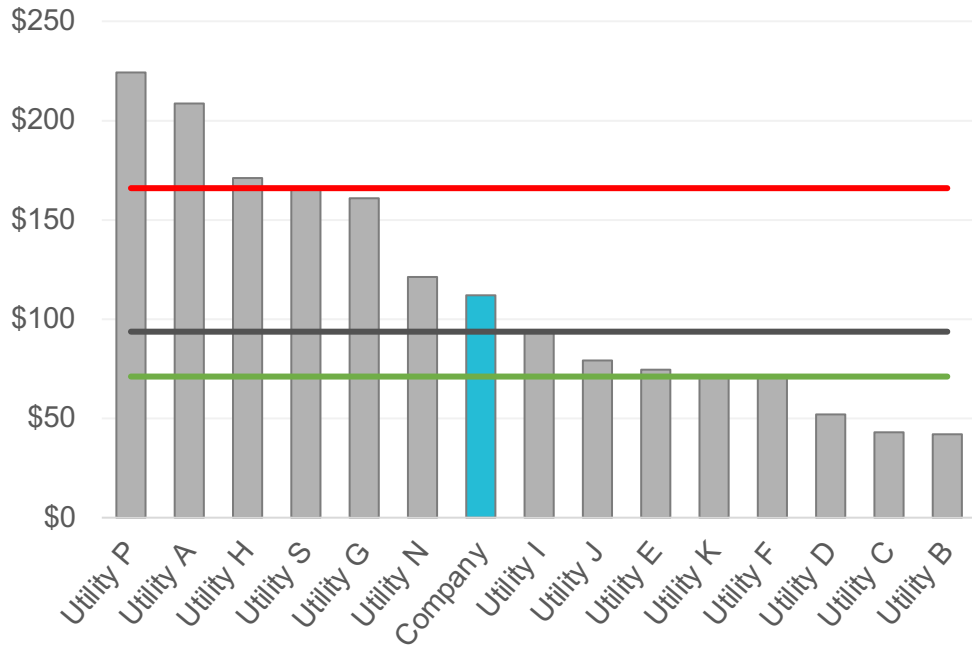


- We provide more detailed analyses of A&G expenses, as this is one of the largest components of total non-production O&M.
- Higher A&G expense per customer for the Company is driven primarily by employee pensions and benefits, outside services, and salaries.
- A&G O&M expense per employee for the Company was above the median and comparable peers.

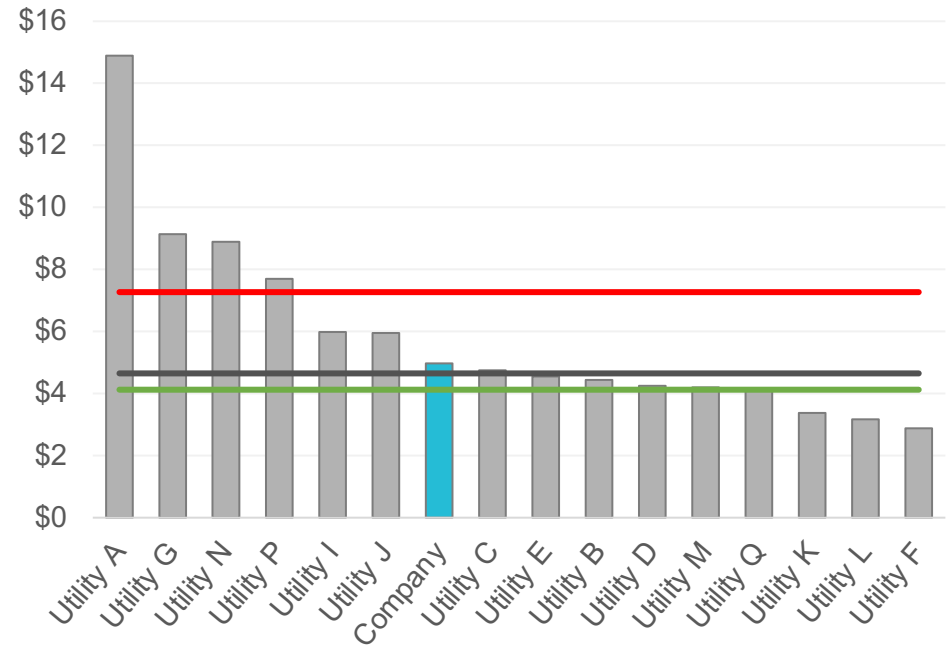


# Distribution O&M

Distribution O&M Expense per Customer



Distribution O&M Expense per Mile of Main

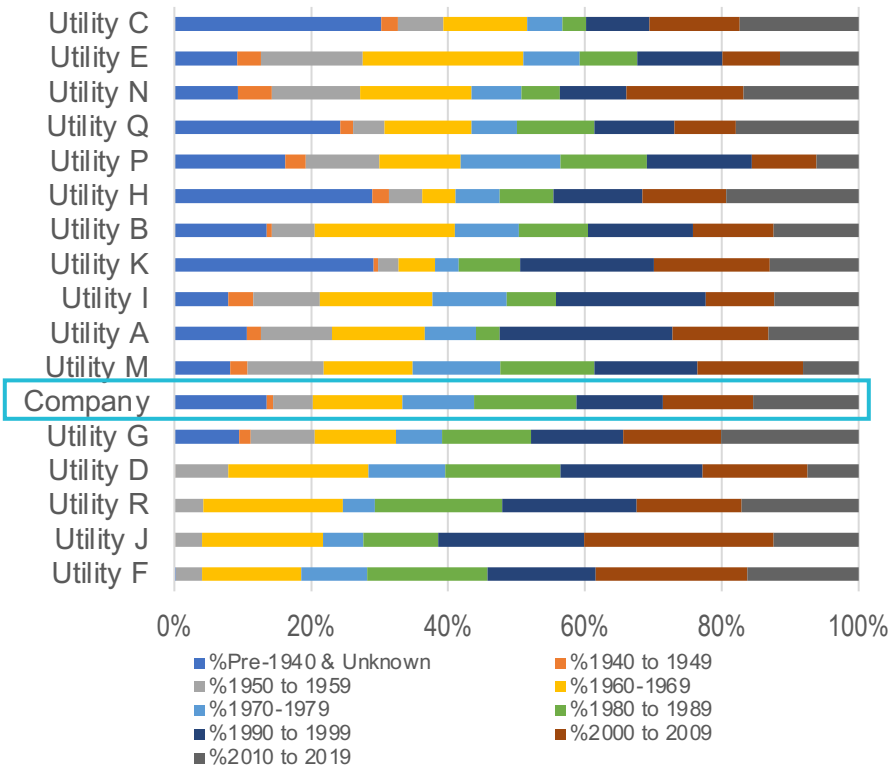


- Distribution is another major component of non-production O&M expense.
- The Company's distribution O&M expense per mile of main and per customer are lower than the majority of the panel, likely because of the Company's high percentage of newer pipe (see following page).



# Composition of Gas Distribution System

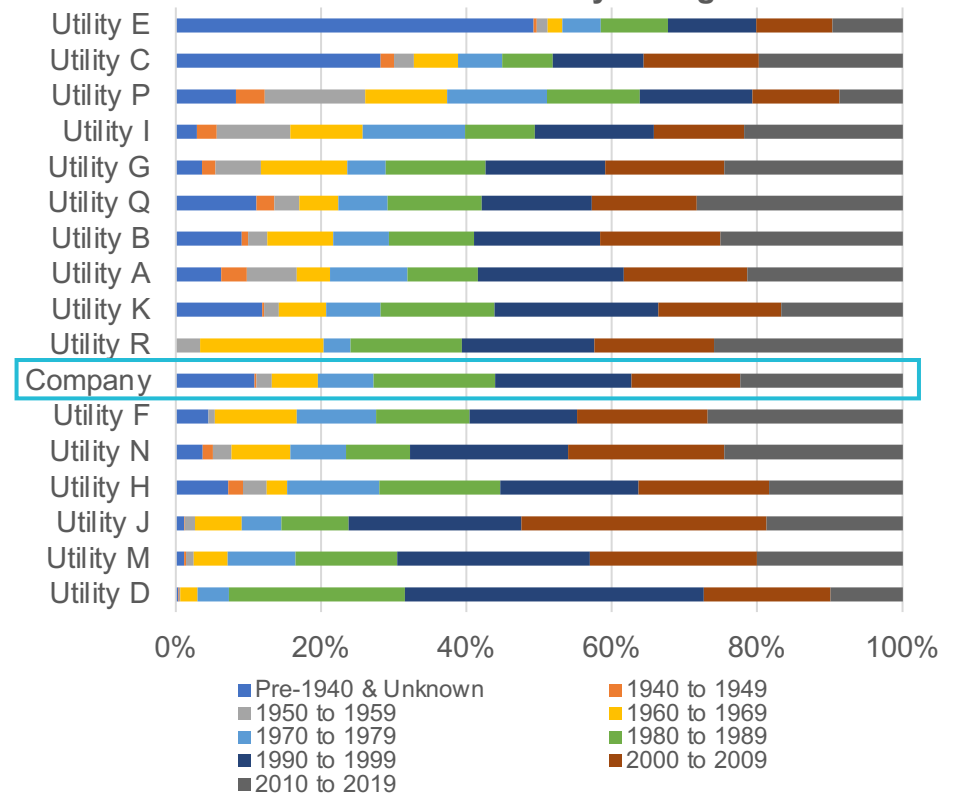
Distribution Mains by Vintage



- The Company has a high percentage of services that were installed prior to 1940 or are of an unknown vintage.
- Like mains, the vintage and composition of services by material are determinants of system performance and maintenance expenses.

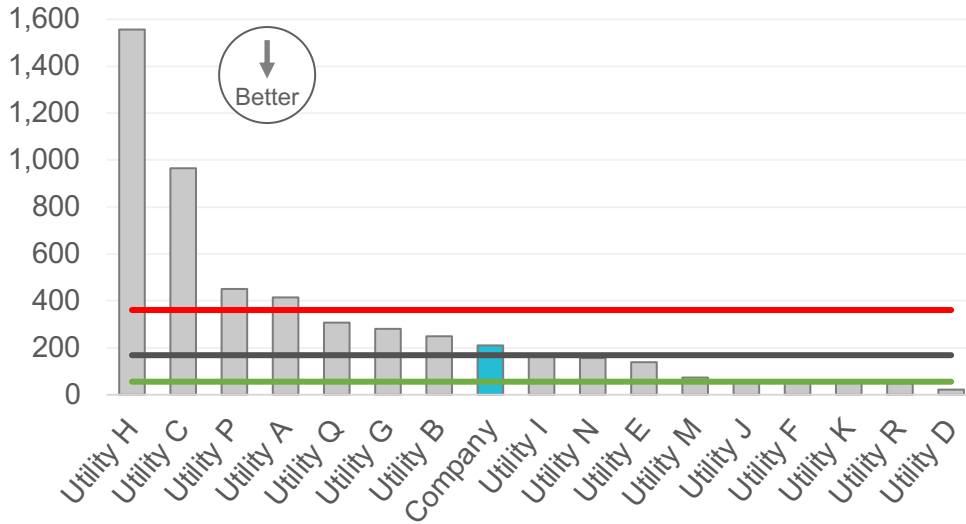
- More than half of the Company's distribution mains were installed prior to 1989, and 33% of the Company's mains were installed prior to 1970.
- The vintage and composition of distribution mains by material type can drive system performance and maintenance expenses (leaks, etc.).

Distribution Services by Vintage

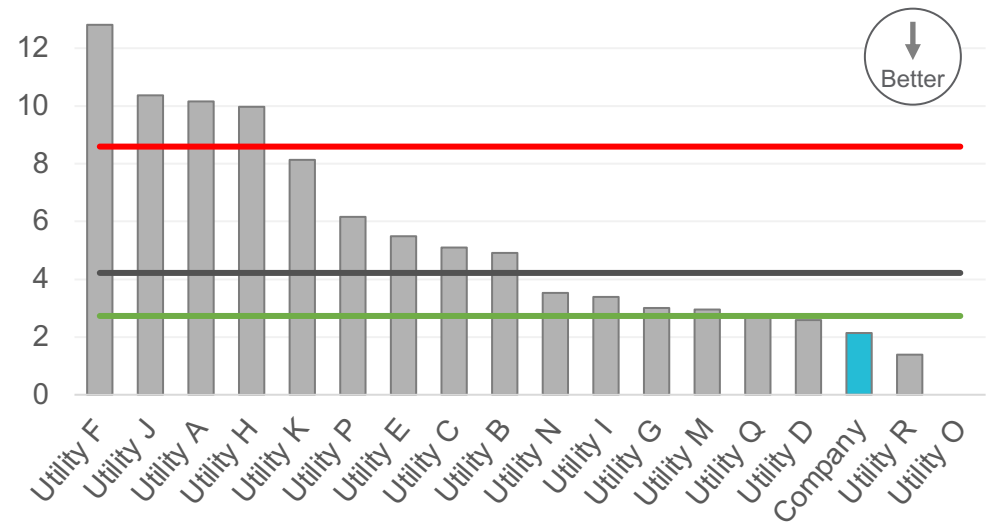


# Main and Service Leaks

Main Leaks per Thousand Miles of Main



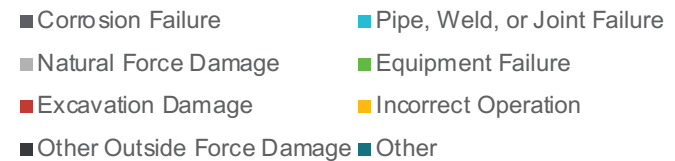
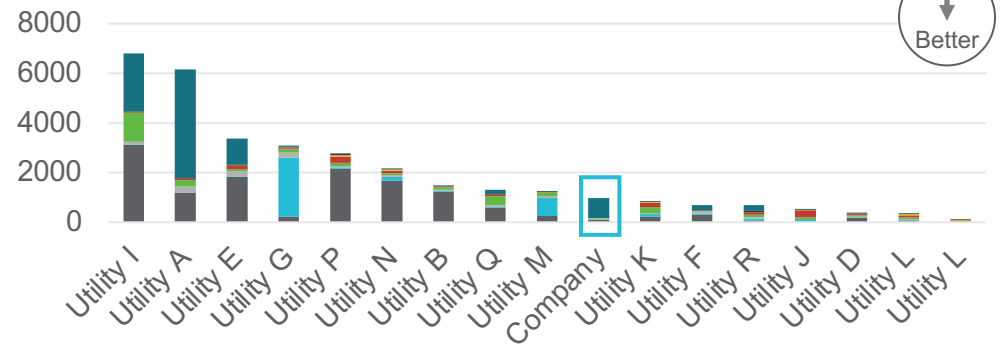
Service Leaks per Thousand Services



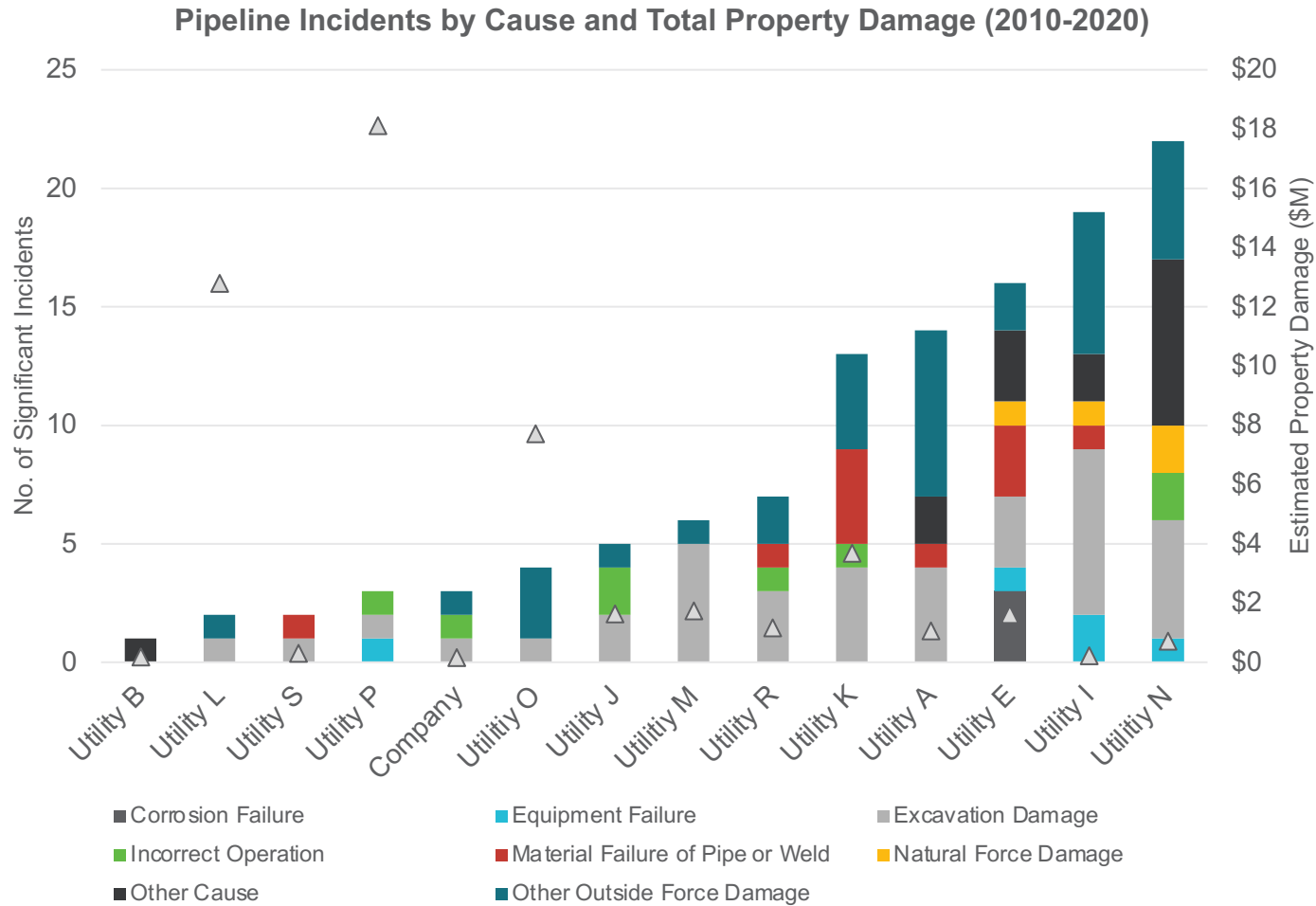
- The Company is close to or below the peer median in each measure related to leaks.
- The Company experienced a comparatively higher number of main leaks compared to service links, and the majority of main leaks resulted from corrosion failures and natural force damage.



Main Leaks by Cause



# Pipeline Incidents by Cause



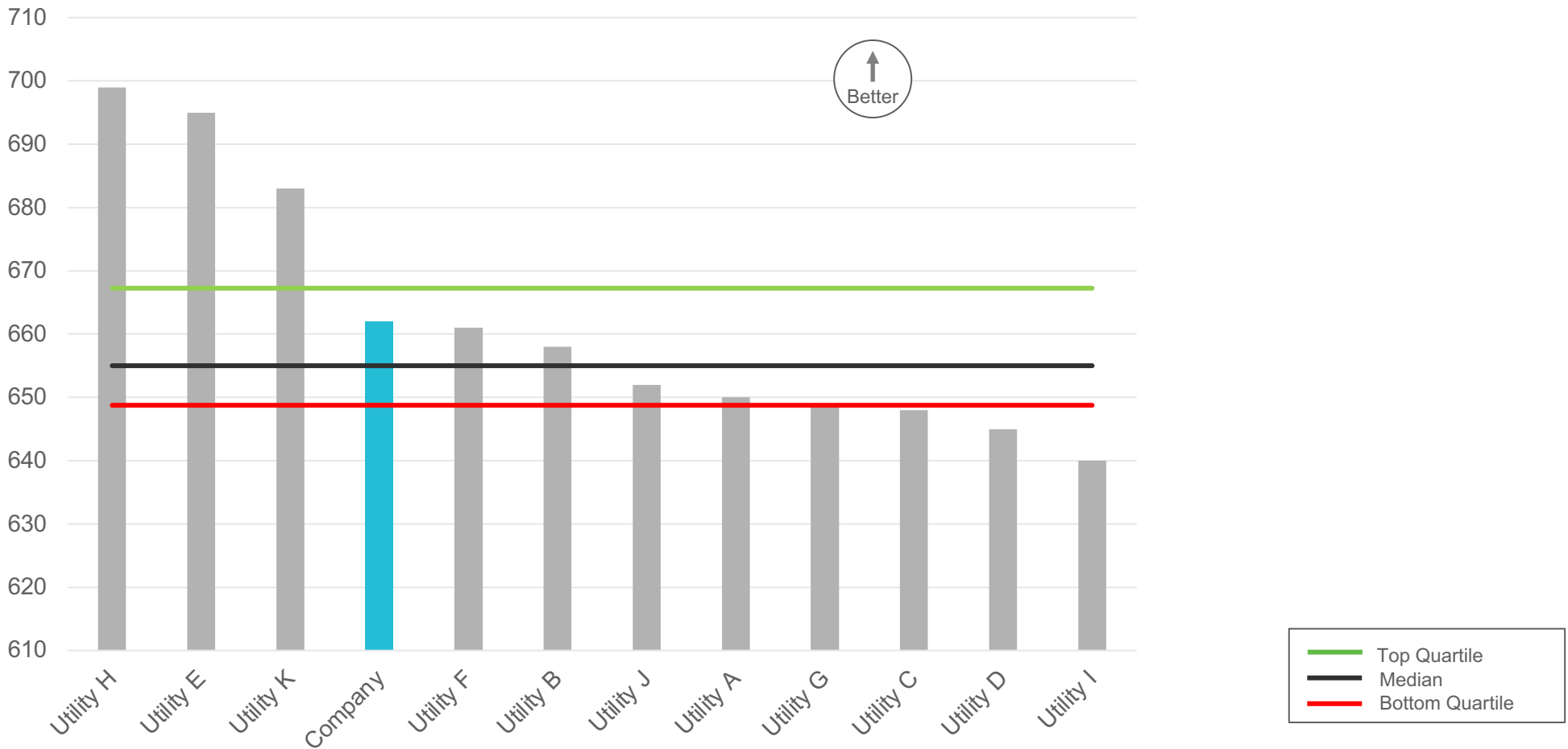
**NOTE:** Significant incidents meet one or more of the following criteria:

- Fatality or injury requiring in-patient hospitalization
- \$50,000 or more in total costs
- Highly-volatile liquid releases of five barrels or more or other liquid releases of 50 barrels or more
- Liquid releases resulting in an unintentional fire or explosion

■ The Company had three significant incidents over the previous 10 years; four peer utilities experienced the same or fewer incidents, while nine peer utilities experienced a higher number of incidents over the same timeframe.

# J.D. Power Customer Satisfaction

J.D. Power Gas Utility Customer Satisfaction Index



■ The Company's customer satisfaction rating is just above the median among the peer panel companies.

# NEXT STEPS

01

**Review results with management and key stakeholders**

02

**Validate opportunities for improvement (e.g., identify gaps with leading practices)**

03

**Identify areas for more detailed assessment**



# ScottMadden – Who We Are



# Who We Are

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We believe that client success is the best measure of our own success.

We listen carefully to our clients' challenges, concerns, and goals so we can personalize our work and focus on the things most important to their success.

We don't solve problems with canned methodologies—we help our clients solve the right problem in the right way.

We do what we say we are going to do with genuine passion, tenacity, and integrity throughout the entire process.

.....

WE DO  
**WHAT IT TAKES**  
**TO GET IT DONE**  
RIGHT

.....

**ScottMadden is a management consulting firm with more than 35 years of deep, hands-on experience.**



# Energy Is Who We Are

ScottMadden is a management consulting firm with more than 35 years of deep, hands-on experience. We deliver a broad array of consulting services—from strategic planning through implementation—across the energy utility ecosystem.

Our energy practice covers the following areas:



**GENERATION**



**RATES &  
REGULATION**



**TRANSMISSION &  
DISTRIBUTION**



**ENERGY  
MARKETS**



**GRID EDGE**



**ENERGY  
CORPORATE  
SERVICES**

# Energy



**Cristin Lyons**  
*Practice Area Leader*

**Our work for you is experience-based, not theoretical.**

## EXPERIENCE

We have been serving the energy industry since 1983. Our industry-leading clients trust us with their most important challenges. They know that we have seen and solved a similar problem. Our consultants have earned this confidence through decades of experience in the field, and they are on the front lines of this changing landscape.

## AREAS OF FOCUS

ScottMadden has worked in every business unit and every department in companies across the energy utility ecosystem. We focus on **Transmission & Distribution**, the **Grid Edge**, **Generation**, **Energy Markets**, **Rates & Regulation**, and **Energy Corporate Services**.

## SERVICES

We have helped our clients develop and implement strategies, improve critical operations, reorganize departments and entire companies, and implement myriad initiatives.

# Our Consulting Approach



**At ScottMadden, we work to earn our clients' trust every day by delivering unparalleled consulting services.**

## CONTENT DEEP

**We know energy** and have worked in every business unit and every department in companies across the energy utility ecosystem for more than 35 years.

## PERSONALIZED

We begin by listening to our clients' situations, challenges, and goals; then we **personalize our work to help them succeed**.

## CONTEXTUAL

We don't solve problems with canned methodologies—we help our clients **solve the right problem in the right way**.

## COLLABORATIVE

We engage our clients like no other firm does, working side by side to **produce results**.

## REAL RESULTS

Our work is practical and can be put into play immediately. We excel at **helping internal stakeholders take ownership** to continue producing results after our work is done .

# Why ScottMadden?

## DEEP EXPERTISE

- More than 35 years in the energy industry gives us unmatched experience.
- Most likely we've seen a similar issue or solved a similar problem.

## PERSONALIZED APPROACH

- Before we begin any project, we sit down and listen to our clients' needs and challenges.
- We engage with our clients like no other firm does, working side by side to create practical, real results.
- We don't employ canned methodologies or cookie-cutter solutions. We work to solve the right problem in the right way.

## PHILOSOPHY

- We are personally invested in every project and measure our success by our clients' success.
- We listen to our clients' needs and put their best interests ahead of our own.
- We work with integrity, tenacity, and a genuine passion for what we do.
- We do what it takes to get it done right.



**More than 35 years later, our very first client is still with us today.**

# Who We Work With

We work with clients across the energy utility ecosystem including electric, gas, and water investor-owned utilities, public power entities, RTOs and ISOs, transmission companies, and non-utility organizations. A sample of our clients is shown below.

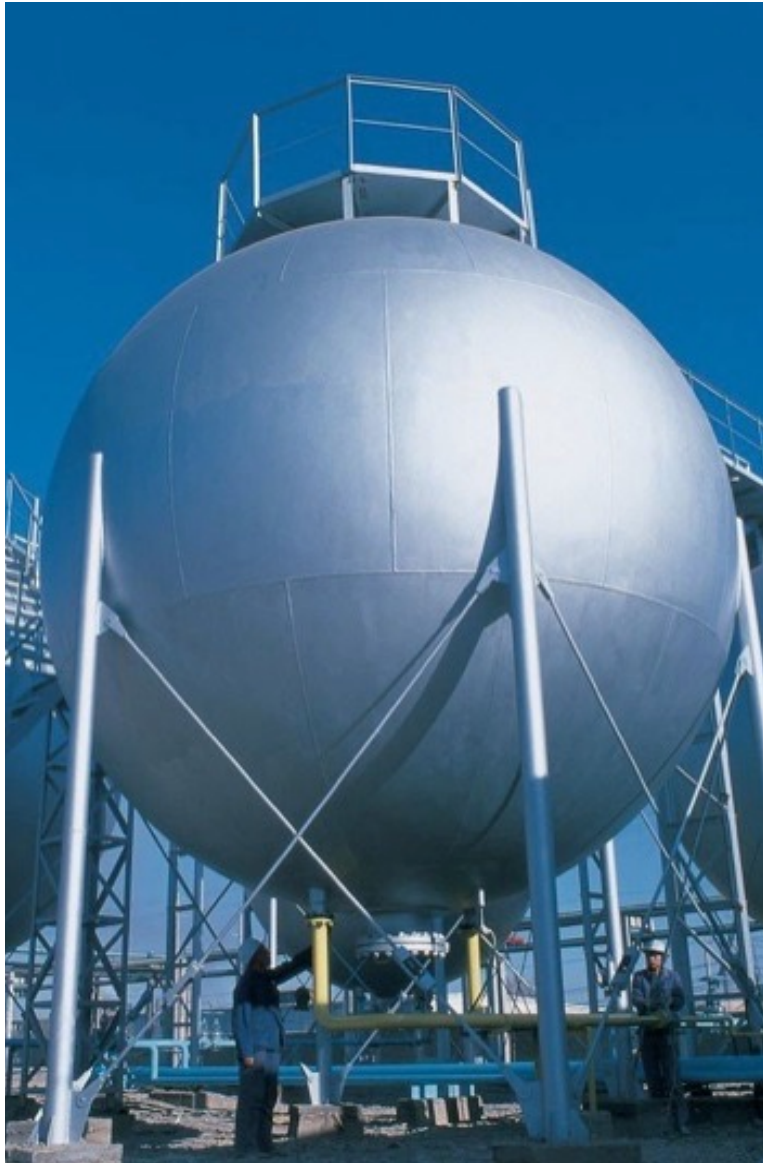


# Who We Work With – Gas

We work with clients across the energy utility ecosystem, including many gas utility organizations. A sample of our clients is shown below.



# Gas



### DIVERSIFIED UTILITY

#### Gas Industry Briefing and Benchmarking Analysis

ScottMadden worked with a diversified utility after a recent acquisition of three local distribution companies (LDCs) to develop an executive primer on the natural gas industry and the business model for a typical LDC. This engagement also involved a detailed benchmarking analysis that compared the acquired LDCs to regional and national peer panels.

### MULTIPLE GAS LDCS

#### Business Process Improvement

ScottMadden managed large multi-team projects to assess LDCs' current state processes, functions, and organizations, and we led teams through developing future state designs and business cases to support implementation. ScottMadden provided the methodology, supported project management, facilitated and performed analysis, offered best practices, supported communications and change management, and helped to develop deliverables. Projects improved business results, service levels, and operating efficiencies, increased employee engagement, and helped develop a new culture of continuous improvement. The project was cited in the client's subsequent Wall Street analyst presentations and annual reports.

### GAS LDC

#### Organization Analysis

ScottMadden conducted an organizational structure analysis for a large gas LDC by comparing current state practices to best practice benchmarks, including spans of control, layers, and cost to manage. The analysis resulted in identification of potential areas of improvement. These opportunities would result in a structure aligned with corporate strategy, efficient decision making, clear accountabilities, increased morale, and the potential for significant savings.

# CONTACT US



**Cristin Lyons**

Partner and  
Energy Practice Leader

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**ScottMadden, Inc.**  
2626 Glenwood Avenue  
Suite 480  
Raleigh, NC 27608

[cmylons@scottmadden.com](mailto:cmylons@scottmadden.com)

**O:** 919-781-4191 **M:** 919-247-1031



**Ed Baker**

Partner

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**ScottMadden, Inc.**  
3495 Piedmont Road  
Building 10, Suite 805  
Atlanta, GA 30305

[edbaker@scottmadden.com](mailto:edbaker@scottmadden.com)

**O:** 404-814-0020 **M:** 678-488-8142