

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,

Complainant,

v.

CASCADE NATURAL GAS
CORPORATION,

Respondent.

DOCKET UG-240008

CASCADE NATURAL GAS CORPORATION
DIRECT TESTIMONY OF HART GILCHRIST

March 29, 2024

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Exh. HG-2	Provisional Plant Additions – Major Projects
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I. INTRODUCTION

1 **Q. Please state your name and business address.**

2 A. My name is Hart Gilchrist, and my business address is 8113 West Grandridge Blvd.,
3 Kennewick, WA 99336.

4 **Q. By whom are you employed, for how long, and in what capacity?**

5 A. I am employed by Cascade Natural Gas Corporation (“Cascade” or “Company”), a
6 wholly owned subsidiary of MDU Resources Group, Inc. (“MDU Resources”), as
7 Vice President, Safety, Process Improvement and Operations Systems. In this
8 capacity, I am responsible for safety, technical training, safety management systems,
9 quality control, and implementation and support of operational technology systems.

10 **Q. Please briefly describe your educational background and professional
11 experience.**

12 A. I hold a bachelor’s degree in finance and marketing from the University of Idaho and
13 a Master of Business Administration from Boise State University. I served on the
14 United Way of Treasure Valley Board of Directors, Boise State University College of
15 Business and Economics Advisory Board, College of Western Idaho Foundation
16 Board, American Gas Association Managing Committee, Northwest Gas Association
17 Board, and Boise Chamber of Commerce Advisory Board. I began working for
18 Intermountain Gas in 1994 as an Engineering Technician and have been in my current
19 role since July 2015. Prior to advancing into my current role, I held numerous
20 positions in the operations department.

II. SCOPE AND SUMMARY OF TESTIMONY

1 **Q. What is the purpose of your testimony in this docket?**

2 A. My testimony will address the Company's proposed Work and Asset Management
3 System deployment, GIS upgrade implementation, and other minor provisional plant
4 additions.

5 **Q. Are you sponsoring any exhibits in this proceeding?**

6 A. Yes, I sponsor the following exhibits:

7 Exh. HG-2 Provisional Plant Additions – Major Projects

8 Exh. HG-3 Provisional Plant Additions – Minor Projects

III. WORK AND ASSET MANAGEMENT SYSTEM

9 **Q. Please describe Cascade's Work and Asset Management System.**

10 A. Cascade's Work and Asset Management System is the integrated management
11 software programs of Maximo, LocusView and IQGeo, which streamline and
12 enhance all operational work processes by moving from manual processes into
13 electronic, consistent processes enhancing compliance, record keeping and scheduling
14 of work. Maximo is an integrated software solution that stores assets, work orders,
15 work order tracking information, and maintenance and compliance schedules.
16 LocusView is the high accuracy GPS-based hardware and software that is deployed to
17 the field construction crews to capture the facilities being installed. LocusView then
18 sends completed installation data back to Maximo and GIS, which in turn updates all
19 the Company's other systems (e.g., accounting, customer information). IQGeo is

1 Cascade's field collection system for corrosion and leak survey. Employees capture
2 required compliance data on Cascade's system using this tool, which then updates
3 Maximo. In my testimony I will refer to the integrated systems of Maximo,
4 LocusView, and IQGeo as "Maximo".

5 **Q. Has Cascade started the process of implementing Maximo?**

6 A. Yes. Cascade is in the second phase of a multi-phase implementation of Maximo.
7 The initial phase from 2019 to 2021 focused on implementation of Maximo for
8 maintenance work. This maintenance phase included equipment maintenance and all
9 gas compliance maintenance (e.g., corrosion control, leak survey, atmospheric
10 corrosion survey, patrolling, measurement, and equipment maintenance). The second
11 phase of Maximo implementation is from 2022 to mid-2024 and focuses on gas
12 infrastructure and facility construction. This will cover the full lifecycle of
13 construction, including initiation, design, estimates, planning/scheduling,
14 construction, close out and documentation of construction work. Full implementation
15 of Maximo will enable Cascade to have a fully electronically driven construction
16 process integrated with core systems, thus reducing touchpoints and data entry and
17 streamlining the process in real-time.

18 **Q. Why did Cascade decide to implement Maximo?**

19 A. Cascade is implementing Maximo to move to a modern work asset management
20 system, including mobile solutions, to allow the Company to better manage
21 operations and eliminate paper processes. Maximo provides six primary benefits:

22 1. Align operational business processes across the enterprise.

- 1 2. Replace fragmented and non-integrated operations technology
2 systems/processes with one unified work and asset management system –
3 improving efficiency of implementation and support.
- 4 3. Reduce touch points and redundancy.
- 5 4. Gain enterprise-wide insight into asset tracking, construction, maintenance,
6 compliance, and costs. This includes tracking operation’s Key Performance
7 Indicators.
- 8 5. Drive consistent workflows across the enterprise, improving work product
9 results.
- 10 6. Improve the user experience with consistent field data entry technology,
11 which also lowers training needs and limits confusion and errors.

12 **Q. What are the expected benefits from implementation of Maximo?**

13 A. As noted above, the expected benefits from implementation of Maximo are multi-
14 faceted and touch on all areas of operational efficiency and reliability. This
15 implementation keeps Cascade current with technology available through today’s
16 dynamic database systems. The fully electronic system will improve the overall
17 quality of information being collected in the field and provide a central data
18 repository for information related to all utility maintenance and construction activity.
19 This will improve the safe operation of the system through higher quality gas facility
20 installations, improved maintenance/compliance tracking, and more consistent and
21 real-time reporting.

22 Customers will also benefit from overall enhanced compliance as the
23 Company moves to this fully integrated electronic asset management system, which
24 will provide for more accurate records, automated inspection intervals, and less
25 manual data entry. Customers will also benefit from reduced operational complexity
26 using a more streamlined and efficient work and asset management system, the

1 elimination of multiple methods (paper, spreadsheets, databases) used to manage
2 work, and reliance on a single database repository for all work.

3 **Q. Are there any expected offsetting operating and maintenance (“O&M”) cost**
4 **savings associated with implementation of Maximo?**

5 A. Yes. Cascade anticipates that the greatest opportunities for offsetting O&M costs will
6 come from increased automation of processes and integration of systems. In general,
7 Maximo systems are set up to accurately capture data at the source and integrate
8 information back to the core technology systems. This is anticipated to reduce data
9 entry lag and errors and improve efficiencies by enabling a more streamlined,
10 standardized, and centralized work management.

11 Specifically, Maximo’s front-end systems are designed to provide self-service
12 for construction requests, and this will streamline the request process and potentially
13 reduce the manual labor to process these requests as well as the labor associated with
14 the customer acquisition process for construction related work. The backend system
15 also has integrations designed to reduce data entry, such as inventory relieving and
16 fixed asset accounting integration. These provide the potential for reduced labor costs
17 associated with data processing.

18 The quality control solution in the mobile application will drive improved
19 quality for construction and provide tools to track quality inspections and follow-up.
20 The mobile system improves quality through smart forms, photos, high accuracy GPS
21 data collection, bar code scanning and the ability to track and trace the installed gas
22 facilities. This improves the quality of the installation and the data collection to

1 reduce errors and the potential for gas-related emergencies and incidents. This may
2 reduce costs associated with these kinds of events and provide for the safe delivery of
3 natural gas to Cascade’s customers.

4 Overall, reliance on a single integrated system will streamline nearly every
5 aspect of work and asset management. Moving away from paper will eliminate
6 legibility issues, leading to less re-work and corrections. And automation, such as
7 automated scheduling, will streamline and reduce process. For example, once an asset
8 is installed, it is assigned the appropriate O&M maintenance schedule based on the
9 Pipeline and Hazardous Materials Safety Administration’s (“PHMSA”) pipeline
10 safety code requirements, without having to rely on a manual scheduling process.
11 Cascade has already begun experiencing benefits from Phase 1 of implementation
12 associated with enhanced ability to plan, track, and perform compliance-related
13 maintenance for PHMSA pipeline safety requirements such as measurement,
14 corrosion, and equipment calibrations. And Cascade anticipates additional O&M cost
15 savings associated with full implementation of Maximo due to increased operational
16 efficiency and enhanced compliance. Included in the Provisional Year 2024
17 adjustments discussed in the prefiled direct testimony of Jacob A. Darrington, Exh.
18 JAD-1T, is \$260,000 of anticipated O&M savings related to the implementation of
19 Maximo.

20 **Q. How did Cascade determine that Maximo was an appropriate solution?**

21 A. The Company conducted significant due diligence before selecting Maximo. An
22 exploratory team was formed in 2017 and evaluated the implementation of various

1 work and asset management systems across the gas utility industry.

2 The Company also conferred with OneGas, Northwest Natural Gas, and
3 Atmos Energy to learn best practices for implementing work and asset management
4 systems. This information was used to develop the phased approach and to leverage
5 internal resources to develop expertise to support the system going forward. The
6 strategy has worked thus far through the successful, on time, and on budget
7 implementation of Phase 1.

8 **Q. Did Cascade consider any alternatives to Maximo?**

9 A. Yes. Cascade considered SAP and Oracle as alternatives. Ultimately Maximo (an
10 IBM program) was selected in part because it met all the Company's priorities, is a
11 lower cost solution, integrates well with disparate systems, and is mature and proven
12 compared to other work and asset management systems. In addition, Maximo was
13 determined to be the best choice for Cascade because a sister business unit (WBI
14 Energy) under Cascade's parent company (MDU Resources) had recently
15 implemented Maximo. By utilizing the same system, Cascade was able to leverage
16 some existing experience and gain Enterprise Information Technology synergies with
17 support from the same centralized team.

18 **Q. Has management been kept informed of this project?**

19 A. Yes. Cascade's management approved a business case prior to commencing
20 implementation of Maximo. Additionally, a project executive steering committee was
21 created and has been meeting quarterly to provide implementation updates,
22 discussion, and feedback on the project.

1 **Q. What are the costs associated with implementation of Maximo?**

2 A. The cost of implementing Maximo allocated to Cascade’s Washington jurisdiction is
3 \$6,516,710.22 shown as the following Funding Projects (“FP”) in Exhibit HG-2:

4	1. UG Work Asset Management (FP-101480)	\$5,019,036.51
5	2. Impl Work Asset Mgmt Hardware(FP-317565)	\$140,112.13
6	3. UG LocusView Software (FP-324020)	\$810,507.86
7	4. Maximo Enhancement Software (FP-324029)	\$61,073.29
8	5. IQ Geo Enhancements (FP-324035)	\$87,400.01
9	6. LocusView-Capital Lease	\$398,580.42

10 **Q. Is Cascade seeking cost recovery for implementation of Maximo?**

11 A. Yes, Cascade is seeking cost recovery for the full implementation of Maximo in the
12 amount of \$6,516,710.22.

IV. GIS UPGRADE IMPLEMENTATION

13 **Q. Please describe Cascade’s GIS upgrade implementation.**

14 A. This is a significant software upgrade to the GIS ESRI platform due to substantial
15 changes in the system architecture, tooling, and database organization. ESRI is the
16 platform used by Cascade and is an industry standard software suite. ESRI has moved
17 to an upgraded version of the software to both modernize the platform and to tailor it
18 to the utility industry.

19 **Q. Why does Cascade need to implement a GIS upgrade?**

20 A. This upgrade is required by ESRI for all utilities in the industry who maintain a
21 connected network, as Cascade does. The upgrade is a solution focused on utilities,
22 where the current version requires add-on applications to support utilities.

1 The upgrades are necessary for Cascade to maintain the value of its
2 investment in the ESRI software platform. This upgrade will enable Cascade to
3 consolidate business processes, reduce reliance on third party software, simplify
4 system integrations, improve data quality, and move to a modern technology
5 platform.

6 **Q. Did Cascade consider any alternatives to the GIS upgrade?**

7 A. Not as it relates to this GIS upgrade. Cascade's current ESRI environment is going
8 end-of-life, and it is not a viable option to let the system operate without a necessary
9 upgrade or to be maintained without ESRI support. The only other option would be to
10 switch to another product vendor, which would necessitate a complete GIS system
11 replacement, and would be far more complex and costly.

12 **Q. What is the timeline for implementing the GIS upgrade?**

13 A. Cascade's timeline for implementing the GIS upgrade is a three-year period from
14 January 2022 to January 2025.

15 **Q. What are the expected benefits from the GIS upgrade?**

16 A. Cascade expects operational and, in turn, customer benefits to flow from the GIS
17 upgrade. ESRI GIS is a critical application and tool used by field workers, back-
18 office employees, engineering, operations, and management, and must be kept current
19 for the Company to operate. The upgraded ESRI platform is more standardized with a
20 data model designed with utilities in mind. Tooling is upgraded to leverage 64-bit
21 software architecture and integrations are standardized when delivering system-to-

1 system interfaces. The upgraded ESRI GIS application suite will allow Cascade's
2 employees to continue to properly maintain the gas system, provide accurate
3 information about the system for decision making, analyze gas system data for proper
4 planning, and to allow for safe handling of gas emergencies. Cascade's customers
5 benefit from these essential functions being done effectively through current
6 technology, thus allowing for the safe and reliable delivery of natural gas.

7 **Q. Are there any anticipated offsetting O&M cost savings associated with the GIS**
8 **upgrade?**

9 A. Potential areas of savings include lower software maintenance costs from utility add-
10 on applications, lower technology labor cost to support integrations, databases, and
11 legacy systems (more standardized in technology stack), and improved software
12 tools/data enabling less costs associated with maintenance, emergency response,
13 planning and support. The anticipated annual O&M savings of \$20,000 due to this
14 upgrade have been included in the Provisional Year 2025 O&M adjustments
15 discussed in the direct testimony of Jacob Darrington, Exh. JAD-1T.

16 **Q. What are the costs associated with the GIS upgrade?**

17 A. The costs associated with the GIS upgrade are \$2,616,181.56 over the implementation
18 period.

19 **Q. Is Cascade seeking cost recovery for implementation of the GIS upgrade?**

20 A. Yes, Cascade is seeking cost recovery for implementation of the GIS upgrade in the
21 amount of \$2,616,181.56.

**V. MINOR PROJECT PROVISIONAL ADDITIONS TO PLANT IN SERVICE
– 2024 AND 2025**

1 **Q. Is Cascade also seeking recovery of additions to plant in service for projects less**
2 **than \$1 million?**

3 A. Yes. Exhibit HG-3 of my testimony discusses projects of less than \$1 million that are
4 planned to be placed in service in each of the Provisional Years. The table below
5 summarizes the request for both Specific and Programmatic projects discussed in
6 Exhibit HG-3.

Table 1 – Provisional Additions to Plant in Service 2024-2025 – Minor Projects

Description	WA 2024 Plant Additions	WA 2025 Plant Additions
Total Specific Projects	\$252,509	\$20,571
Total Programmatic Projects	\$0	\$0
Total Provisional Additions to Plant In-Service 2024-2025 - Minor Projects	\$252,509	\$20,571

VI. CONCLUSION

7 **Q. Does this conclude your testimony?**

8 A. Yes, it does.