NW Natural®

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November 25, 2025 NWN OPUC Advice No. 25-25

VIA ELECTRONIC FILING

Public Utility Commission of Oregon
Attn: Filing Center
201 High Street SE, Suite 100
Post Office Box 1088
Salem, Oregon 97308-1088

Re: UG 527 - NEW Schedule 123 - Alternative Rate Mechanism

Northwest Natural Gas Company, dba NW Natural ("NW Natural" or the "Company"), files herewith revisions to its Tariff P.U.C. Or. 25[1], stated to become effective on October 31, 2026.

Original Sheet 123-1	Schedule 123	Adjustment for Alternative Rate Mechanism
Original Sheet 123-2	Schedule 123	Adjustment for Alternative Rate Mechanism (continued)

Purpose

The purpose of NW Natural's application for an alternative rate mechanism ("ARM") is to recover the costs of a limited subset of capital additions through a new base rate tariff, Schedule 123. Importantly, the ARM includes offsets to these capital additions, including retirements and updating accumulated depreciation, to ensure a balanced approach to ratemaking for the mechanism. Schedule 123 will be set to zero and/or cancelled after these capital additions are included in the Company's next general rate case. NW Natural is not seeking to recover any additional operations and maintenance ("O&M") expense through Schedule 123.

Enclosed with this application are the following testimony and exhibits:

- Policy and Revenue Requirement, Zachary D. Kravitz and Kyle T. Walker (NW Natural/100-102); and

[1] 1 Tariff P.U.C. Or. 25 originated November 1, 2012 with docket UG 221; Order No. 12-408 as supplemented by Order No. 12-437 and was filed in accordance with ORS 767.205 and OAR 860-022-0005.

- Capital Additions, Daniel B. Kizer, Joe S. Karney, Wayne K. Pipes, and Brian E. Fellon (NW Natural/200-203).

Please note, the filing contains some confidential information that represents business-sensitive, non-public information. Confidential Information will be provided subject to General Protective Order No. 23-132

The Company waives paper service in this proceeding.

Proposed Changes

The effect of the new temporary adjustment proposed in the filing is to increase the Company's annual revenues by $15,588,937 or 1.4%.

The monthly bill of the average residential customer served under Rate Schedule 2 using 54 therms will increase $1.39. The monthly increase for the average commercial Rate Schedule 3 customer using about 274 therms is $5.33, the average industrial Rate Schedule 31 firm sales customer using 5,121 therms will see a monthly increase of about $25.78, and the average industrial Rate Schedule 32 firm sales customer using about 21,769 therms will see a monthly increase of about $71.13.

In compliance with OAR 860-022-0025, the Company states that the number of customers affected by the proposed change in this filing is 643,664 residential customers, 62,783 commercial customers, and 815 industrial customers.

Conclusion

NW Natural respectfully requests the Commission approve the enclosed tariff proposals effective October 31, 2026.

In accordance with ORS 757.205, copies of this letter and the filing made herewith are available in the Company's main office in Portland, Oregon and on its website at www.nwnatural.com. Per discussion with Staff, no hardcopies will be provided to the Commission.

Please address correspondence on this matter to me with copies to the following:

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OSB # 201722

Sincerely,

NW NATURAL

/s/ Zachary Kravitz

Zachary Kravitz
Vice President, Rates & Regulatory Affairs

Enclosures

(N)

SCHEDULE 123
ADJUSTMENT FOR ALTERNATIVE RATE MECHANISM

PURPOSE:
The purpose of this Schedule is to reflect the rate effects of the Company's Alternative Rate Mechanism pursuant to the final Commission Order regarding this tariff in docket UG 527.

DESCRIPTION:
The rate adjustments reflected in this Schedule reflect the rate effects included in base rates associated with the Company's Alternative Rate Mechanism.

The adjustment to Customer rates for the inclusion of the Alternative Rate Mechanism will occur until the Company's next general rate case with Commission approval.

This rate adjustment first became effective commencing October 31, 2026.

APPLICABLE:
To all Customers taking service under the following Rate Schedules of this Tariff of which this Schedule 123 is a part:

Rate Schedule 2	Rate Schedule 31
Rate Schedule 3	Rate Schedule 32
Rate Schedule 27	Rate Schedule 33

(continue to Sheet 123-2)

(N)

(N)

SCHEDULE 123
ADJUSTMENT FOR ALTERNATIVE RATE MECHANISM
(continued)

RATE ADJUSTMENTS:
The Total Adjustment amounts shown below are included in the Base Rate reflected in the above-listed Rate Schedules. NO ADDITIONAL ADJUSTMENT TO RATES IS REQUIRED.

Rate Schedule/Class	Block	Adjustment		Rate Schedule/Class	Block	Adjustment
2		$0.02592		31 CSF	Block 1	$0.00730
					Block 2	$0.00666
03 CSF		$0.01944		31 CTF	Block 1	$0.00737
03 ISF		$0.00884			Block 2	$0.00674
27		$0.09425		31 ISF	Block 1	$0.00535
					Block 2	$0.00483
				31 ITF	Block 1	$0.00798
					Block 2	$0.00722
				32 CSI	Block 1	$0.00326
32 CSF	Block 1	$0.00497			Block 2	$0.00276
	Block 2	$0.00420			Block 3	$0.00191
	Block 3	$0.00291			Block 4	$0.00106
	Block 4	$0.00162			Block 5	$0.00055
	Block 5	$0.00069			Block 6	$0.00018
	Block 6	$0.00025		32 ISI	Block 1	$0.00275
32 ISF	Block 1	$0.00357			Block 2	$0.00233
	Block 2	$0.00301			Block 3	$0.00161
	Block 3	$0.00208			Block 4	$0.00089
	Block 4	$0.00116			Block 5	$0.00046
	Block 5	$0.00051			Block 6	$0.00015
	Block 6	$0.00019		32 CTI	Block 1	$0.00208
32 CTF	Block 1	$0.00337			Block 2	$0.00177
	Block 2	$0.00287			Block 3	$0.00125
	Block 3	$0.00202			Block 4	$0.00073
	Block 4	$0.00118			Block 5	$0.00042
	Block 5	$0.00067			Block 6	$0.00021
	Block 6	$0.00034		32 ITI	Block 1	$0.00226
32 ITF	Block 1	$0.00277			Block 2	$0.00192
	Block 2	$0.00236			Block 3	$0.00136
	Block 3	$0.00166			Block 4	$0.00079
	Block 4	$0.00097			Block 5	$0.00045
	Block 5	$0.00055			Block 6	$0.00023
	Block 6	$0.00028		33		$0.00000

(N)

BEFORE THE

PUBLIC UTILITY COMMISSION OF OREGON

UG 527

NW Natural

Direct Testimony of Zachary D. Kravitz and Kyle T. Walker

POLICY AND REVENUE REQUIREMENT EXHIBIT 100

REDACTED

November 25, 2025

EXHIBIT 100 – DIRECT TESTIMONY – POLICY AND REVENUE REQUIREMENT

Table of Contents

I. INTRODUCTION AND SUMMARY

Q. Please state your names, positions with Northwest Natural Gas Company dba NW Natural ("NW Natural" or "the Company") and summarize your educational background and business experience.

A. My name is Zachary D. Kravitz. I am the Vice President of Regulatory Affairs and Resource Planning for NW Natural. I joined NW Natural's Legal Department in 2014 as Associate Regulatory Counsel. In 2018, I joined the Rates and Regulatory Affairs Department in the position of Director of Rates & Regulatory Affairs, and later Senior Director. Prior to joining NW Natural, I worked in the energy and utility practice at the law firms of Chester, Wilcox & Saxbe, LLC and Taft, Stettinius & Hollister, LLP in Columbus, Ohio. Before that, I worked at the Ohio Attorney General's Office in the Labor Relations Division. I received a Bachelor of Arts degree in English and Government from the University of Texas at Austin and a Juris Doctor degree from the University of Florida.

My name is Kyle T. Walker. My current position is Senior Manager of Rates and Regulatory Affairs. I received a Bachelor of Science Degree in Business Administration with an emphasis in Finance from Oregon State University and a Master of Business Administration from Willamette University. In addition, I received an accounting certificate from the University of Washington, and I am a licensed certified public accountant in the State of Oregon. Prior to my employment with NW Natural, I held positions at the Bonneville Power Administration ("BPA"), including Risk Analyst, Derivative Accountant, Internal

Auditor and Finance Analyst. Prior to BPA, I was a Credit Manager for Wells Fargo. In February 2015, I started at NW Natural as a Rates/Regulatory Analyst and was later promoted to Manager and Senior Manager of Rates and Regulatory Affairs. In my current role, I am responsible for regulatory reporting, revenue requirement, rate design, rate spread, and other regulatory duties as assigned.

Q. What is the purpose of your testimony?

A. The purpose of our testimony is to introduce NW Natural's request for an alternative rate mechanism ("ARM") that is limited to a subset of capital additions that will enter service prior to the rate effective date in this proceeding of October 31, 2026. Specifically, NW Natural is seeking cost recovery of long-planned capital additions of at least $1 million (referred to as "discrete" projects), NW Natural's investments in information, technology & services ("IT&S") modernization, and public works projects required by jurisdictions in which we operate. While IT&S and public works capital expenditures include discrete projects over $1 million, for purposes of the testimony in this proceeding, the discrete IT&S and public works projects will be discussed with their respective category of capital expenditures. NW Natural is not including revenue-generating customer growth-related capital additions in the ARM.

Importantly, the ARM also includes offsets to the capital additions, including retirements and updating accumulated depreciation, to ensure a balanced approach to ratemaking for the mechanism. The net of the capital additions and offsets results in an increase to NW Natural's revenues of $15.6 million or

approximately 1.4 percent.[1] NW Natural is seeking to recover these costs through a new base rate ARM tariff (Schedule 123) that will be set to zero and/or cancelled after these costs are included in the Company's next general rate case. NW Natural underscores that it is not seeking to recover any additional operations and maintenance ("O&M") expense, property taxes, revenue taxes, cost of capital, or other expenses.

Q. Please summarize your testimony.

A. First, our testimony provides the background and regulatory context for the ARM. Specifically, this section discusses Oregon's transition to multi-year rate plans that are required under the recently passed House Bill ("HB") 3179, as well as NW Natural's advocacy for multi-year rate plans in its recent general cases. During this transition to multi-year rate plans, NW Natural is seeking an ARM to recover a limited amount of capital additions that are needed for the continued safety and reliability of NW Natural's system. The ARM will help ensure the financial health of the Company while having a limited rate impact on customers (1.4 percent increase to revenue requirement).

Second, our testimony describes the structure of the ARM. The ARM is designed to recover a limited amount of investments in discrete projects, IT&S modernization, and public works projects, as noted above. All of these investments will be placed in service prior to the ARM's October 31, 2026 rate effective date. Also, this section of testimony discusses how the ARM is a

[1] See NW Natural/101, Kravitz-Walker.

balanced mechanism that includes offsets to the capital additions, including retirements and updating accumulated depreciation.

Finally, our testimony describes energy equity and affordability considerations in developing the ARM. These considerations limited the overall size of NW Natural's rate request and caused NW Natural to re-evaluate its Bill Discount Program ("BDP"). NW Natural's re-evaluation of its BDP found that the natural gas energy burden for BDP-qualified customers remains less than 2 percent after taking into consideration the ARM. NW Natural's 2024 Energy Burden Assessment ("EBA") found that household natural gas energy burden at 2 percent or less would be an affordable, feasible, and meaningful threshold for NW Natural customers.

II. BACKGROUND AND REGULATORY CONTEXT

Q. Please describe how the regulatory framework for general rate cases in Oregon is fundamentally changing.

A. In the past, general rate cases typically used a single forward test year to determine rates. However, with the passage of HB 3179 on July 17, 2025, the Commission is now directed "to establish rules requiring an electric or natural gas company to establish a multiyear rate plan for rate revisions that subject an electric or natural gas company's return on equity to review or modification [i.e., a general rate case]." Accordingly, NW Natural, along with the other electric and natural gas companies in Oregon, will be required to file multi-year rate plans after the rulemaking is completed.

Q. What is the status of the rulemaking?

A. Since HB 3179 was passed approximately four months ago, the multi-year rate plan rulemaking is in the early phases of implementation.

Q. Had NW Natural advocated for multi-year rate plans prior to the passage of HB 3179?

A. Yes. In its 2024 general rate case, docket UG 490,[2] NW Natural stated that it anticipated proposing a multi-year rate plan in an upcoming general rate proceeding, citing several benefits to customers. These benefits include smoothing out rate impacts that would otherwise occur between general rate cases. When a utility does not file annual rate cases, the difference between the costs that are recovered in rates and the utility's actual costs will increase with time, leading to larger rate increases. In addition, multi-year rate plans should reduce the administrative strain of general rate cases on the Commission, rate case intervenors and the utility.

Q. How did the Commission address multi-year rate plans in docket UG 490?

A. The Commission directed Staff to conduct at least one workshop on the issue of multi-year rate plans and "submit and present a report at a public meeting in 2025 that addresses the types of multi-year rate plans available, how other jurisdictions have implemented multi-year rate plans, the likely resource commitment and timeline required to effectively implement multi-year rate plans, and any concerns

[2] *In the Matter of Northwest Natural Gas Co., dba NW Natural, Request for a General Rate Revision*, Docket No. UG 490, Direct Testimony of Justin B. Palfreyman and Zachary D. Kravitz, Exhibit NW Natural/100, Palfreyman-Kravitz/33-34 (Dec. 29, 2023).

raised by stakeholders."[3] Due to this ongoing process, NW Natural did not file a multi-year rate plan for its 2025 general rate case.[4]

Q. In addition to providing for multi-year rate plans, does HB 3179 limit the timing of general rate case filings?

A. Yes. Section 4(1) of HB 3179 states that general rate increases cannot take effect within 18 months from the effective date of the electric or natural gas company's last general rate case. Section 4 of HB 3179, however, is a temporary measure that will be repealed by Section 5 of that bill on the earlier of January 2, 2027, or upon the Commission adopting multi-year rate plan rules per Section 7 of HB 3179 (see above). In addition, Section 3(7) of HB 3179 prohibits any rate increase between November 1 and March 31 of each year.

Given that NW Natural's last general rate case took effect on October 31, 2025, the combined effect of Section 4(1) and Section 3(7) of HB 3179 is that the rate effective date of the Company's next general rate case can be no earlier than April 1, 2027. However, Section 4(2) of HB 3179 specifically allows utilities to seek a deferral to address the delay in cost recovery caused by the required gap between general rate cases.

[3] *In the Matter of Northwest Natural Gas Co., dba NW Natural, Request for a General Rate Revision*, Docket No. UG 490, Order No. 24-359 at 50 (Oct. 25, 2024).

[4] *In the Matter of Northwest Natural Gas Co., dba NW Natural, Request for a General Rate Revision,* Docket No. UG 520, Direct Testimony of Justin B. Palfreyman and Zachary D. Kravitz, Exhibit NW Natural/100, Palfreyman-Kravitz/17-19 (Dec. 30, 2024).

Q. Given this context, please explain why the Company is filing the ARM at this time.

A. NW Natural is seeking an ARM to recover the cost of long-planned discrete investments, public works projects, and IT&S projects that will enter service by October 31, 2026 (the rate effective date of this proceeding). The Company is making its filing now due to HB 3179's prohibition on residential rate increases from November 1 to March 31 each year (see above),[5] and extension of the rate suspension period to 11 months in total.[6] As explained above, NW Natural had contemplated recovering these investments through a multi-year rate plan as part of its 2025 general rate case, docket UG 520. However, to be responsive to Commission process and stakeholder concerns, the Company decided to file a traditional rate case in 2025. By deciding to not file a multi-year rate plan in 2025, NW Natural did not intend to forgo or delay recovery of its investments that it needs to make in 2026. After HB 3179 was passed, NW Natural decided to file an ARM to recover a portion of these investments.

[5] HB 3179, section 3(7).

[6] HB 3179, section 8.

Q. Did NW Natural consider instead filing a general rate case with a rate effective date of April 1, 2027, combined with a deferral to address the gap between general rate cases?

A. Yes. NW Natural considered filing a traditional general rate case with a rate effective date of April 1, 2027, consistent with HB 3179.[7] As explained above, such a filing would have been combined with a deferral to address the delay in cost recovery, which is also permitted by HB 3179.[8] However, there are several drawbacks with pursuing this approach for both customers and the Company compared with the ARM that the Company is proposing with this filing. For customers, the ARM, with a limited number of capital expenditures and no increases to O&M, is much more limited than a general rate case, reducing the overall amount of costs for which the Company is seeking recovery. In addition, filing a general rate case with a deferral until such time rates could be implemented would create a significant deferral balance that would also need to be recovered, which would be additive to the rate change.

Q. Does the ARM have any other advantages?

A. Yes. Similar to a multi-year rate plan, the ARM has the advantage of smoothing out rate impacts that would otherwise occur between general rate cases. If NW Natural did not use the ARM and had instead waited to file a general rate case, there would be a larger one-time rate increase for customers to manage. Using

[7] HB 3179, section 4(1).

[8] HB 3179, section 4(2).

the ARM as an interim measure during Oregon's transition to multi-year rate plans helps to mitigate this rate pressure. At the same time, the ARM is much simpler than a general rate case because it is focused on a limited number of capital additions, promoting administrative efficiency.

Q. How does the ARM support the financial health of NW Natural?

A. As explained in more detail below and in the accompanying testimony, the investments covered by the ARM are either long-planned investments that are necessary for ongoing system reliability or are projects that NW Natural must perform, such as public works projects where the Company must take actions to mitigate the impact of state or local government's infrastructure projects on its system. In addition, investments in IT&S are necessary for the Company to operate, but have short depreciable lives and result in a significant under-recovery without timely cost recovery.

NW Natural cannot simply choose to forgo these investments – they are essential for the safe and reliable service to our customers. While NW Natural welcomes the change to multi-year rate plans, it needs the ARM to serve as a bridge so that it can continue to make these necessary investments while preserving its financial health by continuing to have an opportunity to earn a reasonable return.

Q. How does the ARM support credit risk and how would the Company's Rating Agencies view the importance of the ARM?

A. Maintaining strong investment grade credit ratings is critically important to the Company and its ability to access cost effective debt markets. Rating Agencies place a significant amount of their rating determinations on the regulatory environments that utilities operate in. While Oregon's Regulatory Research Associates rating was recently downgraded, both S&P and Moody's have given positive credit to the Company in its ratings for its ability to work constructively with regulators and to Oregon for its supportive mechanisms like the PGA, decoupling and forward test years. They have also highlighted credit support for the multi-year rate cases in Washington. We view the ARM as another supportive mechanism that will allow the company to mitigate regulatory lag and continue to maintain positive support from rating agencies for its regulatory environment. The following is a quote from the Company's June 2025 ratings report issued by S&P.

> "The company benefits from stable and supportive regulatory environments in both jurisdictions in which it operates, with purchased gas adjustments and environmental cost recovery, decoupling, and a forward-looking test year in Oregon and multiyear rate case fillings in Washington. We view these mechanisms as supportive of its financial measures, allowing the company to mitigate regulatory lag."[9]

Overall we believe the rating agencies will view the ARM as credit supportive. In a time where financial markets are showing some volatility, it is

[9] See NW Natural/102, Kravitz-Walker/5.

critically important for the Company to maintain its high investment grade credit levels to ensure adequate access to liquidity.

III. DESCRIPTION OF THE ARM

A. Structure of the ARM

Q. Please briefly describe the structure of the ARM.

A. NW Natural is proposing to establish a new base rate ARM tariff (Schedule 123) that would recover the three distinct categories of the Company's capital additions (discrete, IT&S, and public works) that will be placed in-service by October 30, 2026. The Company will either cancel Schedule 123 or set it to zero after these costs are included through the Company's next general rate case. Table 1 below shows the total Oregon allocated capital expenditures in each category that NW Natural proposes to include in the ARM.

Table 1 - Capital Expenditures by Category

	Additions
Discrete	$ 81,363,746
IT&S	$ 29,266,853
Public Works	$ 29,478,201
Total	**$ 140,108,800**

Q. Does the proposed ARM include all of NW Natural's capital investments that will be placed in service before October 31, 2026?

A. No. NW Natural is seeking to recover a limited amount of capital investments that will enter service between the rate effective date of its last general rate case—October 31, 2025—and the rate effective date of the ARM proceeding—October 31, 2026. These investments total $140.1 million. However, during this period,

NW Natural plans to invest **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]** to ensure safe and reliable service to its customers, meaning that it is not seeking to recover **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]** million of investments in this proceeding. NW Natural limited the amount of capital it is seeking to recover in this proceeding to balance the interests of customers and the Company and keep the requested increase in the Company's revenue requirement to a modest 1.4 percent ($15.6 million).

Q. Please further explain how the scope of the ARM is different from a general rate case.

A. The ARM seeks cost recovery of a limited amount of capital additions, as explained above, and includes depreciation expense, and retirements commensurate with the capital additions. Furthermore, the Company is using its current cost of capital, franchise fees, and uncollectible expense for gross up calculations within the revenue requirement proposal. In contrast, a general rate case reviews all costs, including all capital investments, incremental operation and maintenance expenses, property taxes, revenue taxes, return on equity, cost of debt, and other expenses or miscellaneous credits.

Q. Please explain how capital additions are modeled in the ARM revenue requirement.

A. Capital additions are projected through the budgeting process, assigning a monthly dollar estimate, including construction overhead, for each FERC account where additions will enter service. These additions are incorporated into gross plant in

the month they are scheduled to begin operating. Any asset that is shared between Oregon and Washington is allocated using the same methodology and factors as the Company's last general rate case, docket UG 520.

Q. Please explain how depreciation expense is modeled in the ARM.

A. Depreciation expense is derived by taking the average gross plant balance between the current month and the previous month, multiplied by the depreciation rate for the applicable FERC account. The purpose of using an average of the gross plant balance between the current and prior month is to capture half the addition in the month it goes into service, consistent with the Company's current plant accounting practice. The Company uses the same depreciation rates that were derived from Order No. 25-344 in docket UM 2363, the Company's most recent depreciation study.

Q. Please explain how retirements are modeled in the ARM.

A. Retirements are forecasted using historical trends in addition to any known large retirement due to a specific project or asset. Because the ARM only captures a subset of the Company's forecasted investments for the next year, the trended retirements have been prorated based on the ARM additions (excluding cloud-based software) compared to the entire additions the Company expects to go into service from November 2025 through October 2026. For cloud-based software (FERC 303.7), retirements are based on contract life – once the contract ends, the asset is retired. Retirements reduce both gross plant and accumulated

depreciation during the month assets are expected to be retired. Retirements directly reduce depreciation expense because of the reduction in gross plant.

Q. How are IT&S investments modeled in the ARM?

A. The Company includes the full October 2025 gross plant and accumulated depreciation balance for FERC accounts 303.1, 303.7, and 391.2, allowing pre-November 2025 assets to continue depreciating and lowering rate base until the ARM's rate effective date. The purpose of this methodology is to balance cost recovery and customer impact.

Q. How are non-IT&S investments modeled in the ARM?

A. Starting November 1, 2025, discrete and public works projects are modeled as incremental additions. This approach calculates accumulated depreciation only from these new additions—not from investments made before November 1, 2025. Because the Company has chosen to pursue only a portion of the investments planned between November 2025 and October 2026, this method—along with the method for IT&S investments noted above—creates a balanced outcome for both the Company and its customers.

Q. How is the Company calculating its plant balances that are being used in the revenue requirement calculation for the proposed revenue increase?

A. After modeling the investments for depreciation, described above, the Company then takes the difference between net utility plant in service from October 31, 2025 and October 31, 2026. This approach captures the additions, accumulated depreciation, and retirements up to the rate effective date of the ARM.

Table 2 - Plant Balances

($ in 000s)	2025 Balance (10/31/2025)	2026 Balance (10/31/26)	Δ from 2025
Gross Plant	242,947	354,846	111,900
Accumulated Depreciation	(86,643)	(87,308)	(665)
Net Plant	156,304	267,539	111,235

Q. What is the Company's approach to depreciation expense as it is used in the revenue requirement calculation?

A. The Company is taking the difference in annualized depreciation expense at October 31, 2025, and October 31, 2026, for the incremental depreciation expense included within the ARM's revenue requirement calculation.[10] This incorporates the modeling methodologies for IT&S investments, as well as discrete and public works projects, as described above.

Table 3 - Depreciation Expense

($ in 000s)	2025 Balance (10/31/2025)	2026 Balance (10/31/26)	Δ from 2025
Depreciation Expense	$26,655	$32,003	$5,348

Q. Are there any offsetting factors included within the revenue requirement calculation to help balance cost recovery and customer rate impacts?

A. Yes. The Company included depreciation of current (pre-November 2025) IT&S capital investments for FERC accounts 303.1, 303.7, and 391.2, further reducing

[10] Annualized expense is derived by taking the last month's expense in the period and multiplying it by 12 for an annual expense amount.

the return on rate base. In addition, a prorated retirements forecast has been included in the modeling to reduce gross plant, which has a direct impact on reducing depreciation expense. The Company also has reduced operating and maintenance expense by $60 thousand to remove the cost currently included in customer rates for the lease expense of The Dalles Resource Center. Further, the Company reduced rate base by the accumulated deferred income taxes generated from the new additions included within the ARM. Table 4 below summarizes the offsetting factors.

Table 4 - Offsetting Factors

Offsetting Factor ($ in 000s)	Amount	Revenue Requirement Impact
Accumulated Depreciation of IT&S	($28,047)	($2,565)
Prorated Retirements Forecast	($28,209)	($4,098)
O&M Savings - The Dalles Resource Center	($61)	($62)
Accumulated Deferred Income Taxes	($1,484)	($136)
	Total Impact	**($7,381)**

Q. What cost of capital, capital structure, and gross-up values were used in the revenue requirements calculation?

A. The cost of capital, capital structure, and gross-up values applied in the revenue requirements calculation match those approved in docket UG 520, which was the Company's most recent general rate case. Gross-up factors include franchise fees, uncollectible expenses, and the Public Utility Commission of Oregon fee.

Q. What is the proposed load forecast and rate spread for the requested $15.6 million revenue increase?

A. NW Natural proposes a load forecast and rate spread consistent with the outcome of docket UG 520, as reflected in Order No. 25-420.

B. Overview of ARM Projects

Q. Please describe the discrete projects that NW Natural is seeking to include in the ARM.

A. As described in the Direct Testimony of Daniel B. Kizer, Joe S. Karney, Wayne K. Pipes, and Brian E. Fellon (NW Natural/200, "Capital Additions Testimony"), NW Natural is seeking to recover long-planned discrete projects of at least $1 million that will enter service prior to the rate effective date in this proceeding – October 31, 2026. These are projects that impact all aspects of the Company's organization, including distribution system and storage facility projects, and resource center facility projects. Significant projects include the Company's Meter Modernization Program, compressor replacement at Mist, and The Dalles Resource Center, all of which were discussed in the Company's last general rate case. The Capital Additions Testimony discusses each discrete project of at least $1 million. While IT&S and public works capital expenditures include discrete projects of at least $1 million, for purposes of the testimony in this proceeding, the discrete IT&S and public works projects will be discussed with their respective category of capital expenditures.

Q. Please describe the IT&S investments that NW Natural is seeking to include in the ARM.

A. As described in the Capital Additions Testimony (NW Natural/200, Section III), NW Natural is seeking to recover its IT&S investments made between the rate effective date of its last general rate case, October 31, 2025, and the rate effective date of this proceeding, October 31, 2026. NW Natural has been embarking on multiyear modernization of its IT&S resources, and timely recovery of NW Natural's IT&S investments is necessary because the depreciable life of such investments is very short compared to most other utility assets that have a much longer life.

Q. Please describe the public works projects that NW Natural is including in the ARM.

A. As described in the Capital Additions Testimony (NW Natural/200, Section IV), public works projects include discrete projects, as well as NW Natural's forecast of public works projects that it will complete each year. This forecast is based on NW Natural's historical experience that jurisdictions across its service territory will require the Company to support jurisdictional infrastructure projects throughout the year. Public works projects are completed in response to state or local governments initiating an infrastructure project, such as widening and/or reconstruction of a roadway, replacement of a bridge, or replacement or the installation of new public agency utility lines. These infrastructure projects can conflict with NW Natural's existing system, requiring the Company to take action

to mitigate this conflict in a restricted timeframe, such as by re-locating a section of pipeline.

IV. ENERGY EQUITY AND AFFORDABILITY

Q. Did NW Natural consider energy equity and affordability when deciding to file the ARM?

A. Yes. As discussed above, NW Natural sought to balance customers' interests and the Company's financial health when designing the proposed ARM. The Company's BDP and the general affordability of its service factored into that analysis and contributed to NW Natural's conclusion that the overall 1.4 percent revenue requirement increase associated with the ARM is reasonable and would not compromise energy equity and affordability.

Q. Please briefly summarize NW Natural's BDP.

A. NW Natural offers its BDP to residential customers whose income is 60 percent or less of the state median. The BDP offers four tiers of discounts ranging from 15 percent to 85 percent depending on household income. Currently, 79.9 percent of NW Natural's income-eligible customers are enrolled in the program. Customers who have received energy assistance or weatherization services within the last two years are automatically enrolled in the BDP. NW Natural also works with community partners throughout its service territory, such as community action agencies, school systems, housing networks, places of worship, food banks, culturally specific organizations, and healthcare networks, to increase enrollment in its BDP. Finally, for customers facing significant arrears in the highest tier of the

Bill Discount program, the Arrearage Management Program offers bill forgiveness to prevent disconnections and stabilize the household.

Q. Does the current design of the BDP remain effective in reducing energy burden for income-eligible customers?

A. Yes. The Company's EBA, completed in the summer of 2024, found that household natural gas energy burden at 2 percent (or below) would be an affordable, feasible, and meaningful threshold for NW Natural customers. Table 5, below, shows household natural gas energy burden rates below 2 percent for each tier after discounts have been applied—evidence that the program is bringing energy burden rates to an affordable level for eligible customers.

Table 5 - NW Natural Bill Discount Effectiveness Targeting 2 Percent Energy Burden

Assuming family of 4	Tier 3 Example	Tier 2 Example	Tier 1 Example	Tier 0 Example
NW Natural bill discount tier	15%	30%	50%	85%
average annual usage	651	651	651	651
annual bill	$1,038.88	$1,038.88	$1,038.88	$1,038.88
Mid point of income for the tier	$64,590	$46,135	$27,681	$9,227
Existing				
NW Natural bill discount	$155.83	$311.66	$519.44	$883.04
annual bill after bill discount	$883.04	$727.21	$519.44	$155.83
Annual Bill as a % of income before discount	1.6%	2.3%	3.8%	11.3%
Annual Bill as a % of income after discount	**1.4%**	**1.6%**	**1.9%**	**1.7%**
ARM increase - illustrative	1.6%			
annual bill	$1,055.50	$1,055.50	$1,055.50	$1,055.50
NW Natural bill discount	$158.32	$316.65	$527.75	$897.17
annual bill after bill discount	$897.17	$738.85	$527.75	$158.32
Annual Bill as a % of income before discount	1.6%	2.3%	3.8%	11.4%
Annual Bill as a % of income after discount	**1.4%**	**1.6%**	**1.9%**	**1.7%**

Q. In addition to the BDP, are there other programs that assist income-eligible customers?

A. Yes. In addition to the BDP, eligible customers can participate in Oregon Low-Income Gas Assistance ("OLGA") and/or the Low-Income Home Energy Assistance Program ("LIHEAP"), which provided an average benefit of $546 and $454, respectively, in the 2023-2024 program year. OLGA provided over $3.7 million in direct support last year, while the Oregon Low-income Energy Efficiency program ("OLIEE") funded over $3.4 million in weatherization upgrades to improve efficiency in customer homes.[11] As mentioned briefly above, customers eligible to participate in Tier 0 of the BDP are also eligible to receive arrearage relief through NW Natural's residential Arrearage Management Program ("AMP"). The AMP was recently launched on April 1, 2025, and through October 2025 has provided $324,490 in arrearage relief to 1,047 customers. Additionally, the Company's last general rate case included a stipulation, approved by the Commission, that NW Natural would increase OLGA funding in the event that LIHEAP funding was cut or eliminated. We remain vigilant monitoring the status of LIHEAP funding so that we can rapidly trigger this provision, if necessary. Collectively, these programs and the BDP represent a layered approach to reducing energy burden.

Q. Does this conclude your Direct Testimony?

A. Yes, it does.

[11] Please note that the 2024-2025 program year ended on September 30, 2025, and final numbers are still being confirmed for OLGA, LIHEAP and OLIEE. These final numbers can be provided during the pendency of this UG 527 docket.

BEFORE THE

PUBLIC UTILITY COMMISSION OF OREGON

UG 527

NW Natural

Exhibits of Zachary D. Kravitz and Kyle T. Walker

POLICY AND REVENUE REQUIREMENT EXHIBITS 101 – 102

November 25, 2025

EXHIBITS 101 – 102 – POLICY AND REVENUE REQUIREMENT

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BEFORE THE

PUBLIC UTILITY COMMISSION OF OREGON

UG 527

NW Natural

Exhibit of Zachary D. Kravitz and Kyle T. Walker

POLICY AND REVENUE REQUIREMENT EXHIBIT 101

November 25, 2025

NW Natural
UG 527 Exhibit 101
Revenue Requirement
($000)

Line No.		Revenue Requirement
	Operating Revenues	
1	**Sale of Gas**	$0
2	**Transportation**	$0
3	**Decoupling**	$0
4	**WARM**	$0
5	**Miscellaneous Revenues**	$0
6	**Total Operating Revenues**	$0
	Operating Revenue Deductions	
7	**Gas Purchased**	$0
8	**Uncollectible Accrual**	$0
9	**Other Operating & Maintenance Expenses**	($61)
10	**Total Operating & Maintenance Expense**	($61)
11	**Federal Income Tax**	($1,550)
12	**State Excise**	($607)
13	**Property Taxes**	$0
14	**Other Taxes**	$98
15	**Depreciation & Amortization**	5,348
16	**Total Operating Revenue Deductions**	$3,229
17	**Net Operating Revenues**	($3,229)
	Average Rate Base	
18	**Utility Plant in Service**	$111,900
19	**Accumulated Depreciation**	($665)
20	**Net Utility Plant**	$111,235
21	**Aid in Advance of Construction**	$0
22	**Customer Deposits**	$0
23	**Gas Inventory**	$0
24	**Leasehold Improvements**	$0
25	**Materials & Supplies**	$0
26	**EDIT Adjustments to Rate Base**	$0
27	**Accumulated Deferred Income Taxes**	($1,484)
28	**Cash Working Capital**	$0
29	**Total Rate Base**	$109,751
30	**Interest Coordination**	$2,601
31	**Total Revenue Requirement**	**$15,589**

NW Natural
Test Year Twelve Months Ended EOP October 31, 2026
Incremental Revenue Requirement Allocation by Rate Schedule:
Combined Revenue Requirement Effects - UG 527 PROPOSED
UG 527 NW Natural Proposed Rates Effective October 31, 2026

UG 527 Revenue Requirement Combined Impacts (Proposed)
Impacts of UG 527 Revenue Requirement items at Present UG 520 Rates

				Revenue Requirement	Total: Rev. Req. Items			Combined Revenue Requirement Effects		
				Base Rate Adjustment						
Line No.	Rate Schedule	Margin Revenue at Present Rates	Total Revenue at Present Rates	Margin Increase ($) (1)	Margin Increase ($)	Margin Revenue at New Rates	Total Revenue at New Rates	Margin Revenue Increase (%)	Total Revenue (In)(De)crease (%)	Average Bill (In)(De)crease (%)
		A	B	C	E	G = A+E	H = B+E+F	I	J	K
1	02R	$ 433,303,685	$ 668,436,921	$ 10,793,574	$ 10,793,574	$ 444,097,259	$ 679,230,495	2.5%	1.6%	1.6%
2	02R - *SF*	$ 387,097,555	$ 596,259,646	$ 9,603,809	$ 9,603,809	$ 396,701,365	$ 605,863,455	2.5%	1.6%	1.6%
3	02R - *MF*	$ 46,206,129	$ 72,177,275	$ 1,189,765	$ 1,189,765	$ 47,395,895	$ 73,367,040	2.6%	1.6%	1.7%
4	03C	$ 157,963,824	$ 265,950,031	$ 3,821,187	$ 3,821,187	$ 161,785,011	$ 269,771,218	2.4%	1.4%	1.5%
5	03I	$ 2,726,628	$ 5,528,928	$ 46,148	$ 46,148	$ 2,772,776	$ 5,575,076	1.7%	0.8%	0.8%
6	27R	$ 895,097	$ 1,379,520	$ 87,059	$ 87,059	$ 982,156	$ 1,466,579	9.7%	6.3%	6.4%
7	31CSF	$ 11,024,889	$ 23,979,923	$ 166,369	$ 166,369	$ 11,191,258	$ 24,146,292	1.5%	0.7%	0.8%
8	31CTF	$ 1,155,883	$ 1,381,110	$ 17,433	$ 17,433	$ 1,173,316	$ 1,398,543	1.5%	1.3%	1.3%
9	31ISF	$ 3,519,782	$ 9,254,983	$ 53,117	$ 53,117	$ 3,572,900	$ 9,308,101	1.5%	0.6%	0.6%
10	31ITF	$ 99,725	$ 106,182	$ 1,687	$ 1,687	$ 101,412	$ 107,869	1.7%	1.6%	1.3%
11	32CSF	$ 15,567,268	$ 42,353,156	$ 233,381	$ 233,381	$ 15,800,648	$ 42,586,537	1.5%	0.6%	0.6%
12	32ISF	$ 4,285,205	$ 16,534,119	$ 64,295	$ 64,295	$ 4,349,501	$ 16,598,415	1.5%	0.4%	0.5%
13	32CTF	$ 1,098,700	$ 1,573,189	$ 16,472	$ 16,472	$ 1,115,172	$ 1,589,661	1.5%	1.0%	1.2%
14	32ITF	$ 7,372,354	$ 11,182,722	$ 110,501	$ 110,501	$ 7,482,855	$ 11,293,223	1.5%	1.0%	1.0%
15	32CSI	$ 2,759,405	$ 13,173,404	$ 41,401	$ 41,401	$ 2,800,806	$ 13,214,805	1.5%	0.3%	0.4%
16	32ISI	$ 2,876,080	$ 15,658,761	$ 43,101	$ 43,101	$ 2,919,181	$ 15,701,862	1.5%	0.3%	0.3%
17	32CTI	$ 563,908	$ 1,071,606	$ 8,454	$ 8,454	$ 572,361	$ 1,080,060	1.5%	0.8%	0.7%
18	32ITI	$ 5,634,192	$ 7,575,175	$ 84,791	$ 84,791	$ 5,718,983	$ 7,659,966	1.5%	1.1%	0.8%
19	33T	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	0.0%	0.0%	0.0%
	Total (3)	**$ 650,846,625**	**$ 1,085,139,731** (4)	**$ 15,588,970** (5)	**$ 15,588,970** (5)	**$ 666,435,595**	**$ 1,100,728,702** (4)	**2.4%**	**1.4%**	(6)

NOTE **(1):** Revenue Requirement spread based on UG 520 Second Stipulation methodology.
NOTE **(2):** Plant excess deferred income taxes (EDIT) amortization credit spread to all rate schedules based on the revenue requirement rate spread noted above.
NOTE **(3):** 02R indicates the entire Residential rate class. Below it are the two Residential sub-classes that make-up the class-wide total. They are as follow:
(1) 02R - SF: Residential Single-Family; and (2) 02R - MF : Residential Multi-Family.
NOTE **(4):** Total Revenues only includes margin (with miscellaneous revenues) and gas costs. It excludes temporaries associated with PGA filings. Therefore, for RS 31 and RS 32 rate classes, it is possible for margin revenues to exceed total revenues for new rates when rate case and PGA effects are combined.
NOTE **(5):** The margin revenue increase is based on volumetric billing rates rounded to the fifth decimal as necessitated by the Company's tariff. Therefore, there may be a small discrepancy with the indicated revenue requirement.
NOTE **(6)**: The average customer bill percentage impact figure calculation excludes pipeline capacity charges for RS 31 and RS 32 rate classes, and thus the bill rate impacts for these schedules are overstated.
In addition to the revenue requirement items, average bill increase or decrease can be impacted by changes in expected use per customer between current and new rates. NW Natural is not collecting CPP compliance revenues from EITE customers and therefore these revenues are not included in the above table. EITE customers are responsible for thier own CPP compliance.

BEFORE THE

PUBLIC UTILITY COMMISSION OF OREGON

UG 527

NW Natural

Exhibit of Zachary D. Kravitz and Kyle T. Walker

POLICY AND REVENUE REQUIREMENT EXHIBIT 102

November 25, 2025

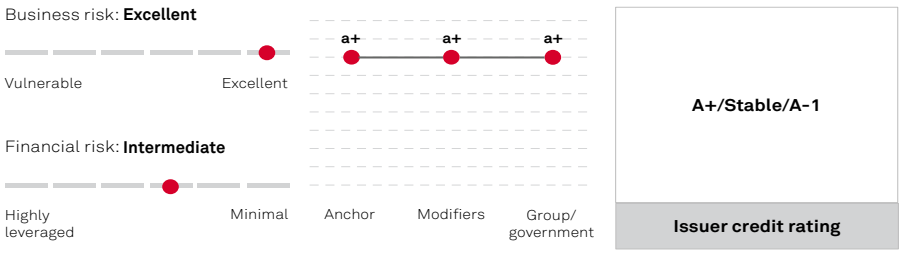
S&P Global
Ratings

RatingsDirect®

Northwest Natural Gas Co.

June 25, 2025

Ratings Score Snapshot



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Credit Highlights

Overview

Key strengths	Key risks
Low-risk natural gas distribution operations with limited unregulated storage operations.	Limited geographic and regulatory diversity.
Effective management of regulatory risks with operations under the credit-supportive regulatory frameworks in Washington and Oregon.	Decarbonization initiatives that pressure future growth.
Insulating measures that we assess as sufficient to rate the company above its parent's group credit profile.	Continued negative discretionary cash flow over the next few years, indicating external funding needs.

We continue to monitor the ongoing Oregon rate case proceedings. On June 23, 2025, Northwest Natural Gas Co. (NWNG), and certain parties filed a stipulation in the company's 2024 rate case filing for a revenue increase of $21.3 million (about 35% of the company's original request). The stipulation is based on a modestly improved return on equity (ROE) of 9.5% and maintaining the 50% equity structure. While the stipulated revenue increase appears modest, it is in line with our base-case expectations, and we believe it will continue to support credit quality. We expect the stipulation, subject to approval by the Public Utility Commission of Oregon (OPUC), will be in effect by year-end 2025. We also believe items not addressed in the

stipulation, will be subject to ongoing litigation process. This current filing follows a $95 million rate case order based on a settlement that was approved in late 2024. We assessed this previous rate case order as supportive of credit quality and expect that the company will continue to effectively manage regulatory risk.

We view the insulating measures in place as sufficient to rate NWNG two-notches above the 'a-' group credit profile on parent Northwest Natural Holding Co. (NWNH). Our analysis incorporates our 'a+' stand-alone credit profile (SACP) on NWNG and the cumulative value of the insulating and regulatory measures in place. NWNG has the following insulating measures:

- NWNG's financial performance and funding prospects are independent from those of NWNH.
- NWNG issues its own debt and has its own credit facility.
- NWNG is regulated by the Oregon and Washington regulatory commissions.
- NWNG has dividend restrictions. It must maintain 45% equity before distributing any dividends upstream if its secured issue-level ratings are below 'A-', maintain 46% equity if its secured issue-level ratings are below 'BBB'. No dividends are allowed if its equity falls below 44% or the secured issue-level ratings drop below 'BBB-'.
- NWNG's board of directors is highly independent with eight independent directors on a board of 10.
- Independent directors on NWNG's board have effective influence on decisions, and their votes are required for a voluntary bankruptcy filing.
- NWNG is unlikely to be drawn or forced into a NWNH bankruptcy due to absence of cross-default provisions.
- An independent third party holds the "golden share" vote required to file for a bankruptcy filing.

Outlook

The stable rating outlook on NWNG reflects our base-case assumption that the company will generate sufficient cash flow to maintain appropriate consolidated financial measures for the current rating, including funds from operations (FFO) to debt of 15%-17% through 2027. The stable outlook also reflects our expectation of continued strong operating performance and effective management of regulatory risk.

Downside scenario

We could lower our rating on NWNG over the next 24 months if:

- The company's consolidated financial performance consistently weakens such that FFO to debt falls below 15%; or
- The company's business risk increases. This could reflect higher risks due to decarbonization mandates and potential gas bans, a weakening of the company's effective management of regulatory risk, or an inability to consistently earn its authorized ROE.

Upside scenario

We could raise our rating on NWNG over the next 12-24 months if the company's financial performance improves such that FFO to debt is consistently above 21%, with no increase to business risk.

Our Base-Case Scenario

Assumptions

- Modest customer growth and continued use of regulatory mechanisms.
- Continued negative discretionary cash flow through 2027.
- Annual capital spending averaging about $350 million through 2027.
- Annual dividends averaging about $85 million.
- All debt maturities refinanced.

Northwest Natural Gas Co.--Forecast summary

Period ending	Dec-31-2021	Dec-31-2022	Dec-31-2023	Dec-31-2024	Dec-31-2025	Dec-31-2026	Dec-31-2027
(Mil. $)	2021a	2022a	2023a	2024a	2025e	2026f	2027f
Adjusted ratios							
Debt/EBITDA (x)	4.8	4.8	4.9	4.8	4.5-5.0	4.5-5.0	4.0-4.5
FFO/debt (%)	15.3	16.9	14.0	14.6	15-17	15-17	15-17
FFO cash interest coverage (x)	5.4	5.6	4.1	4.8	4.5-5.0	4.5-5.0	4.5-5.0

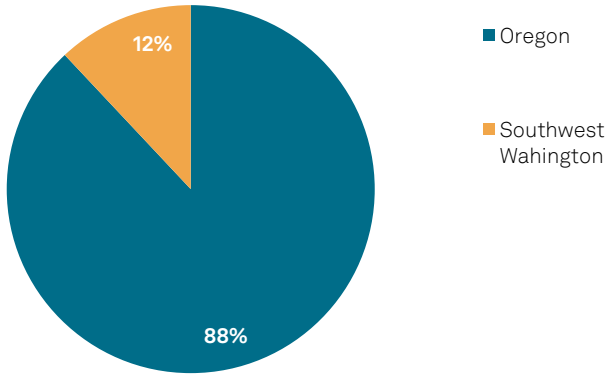
*All figures adjusted by S&P Global Ratings, unless stated as reported. a--Actual. e--Estimate. f--Forecast. FFO--Funds from operations to debt.

Company Description

NWNG operates as a regulated natural gas distribution company, providing natural gas service to approximately 805,000 residential, commercial, and industrial customers in Oregon and Southwest Washington through 14,400 miles of pipeline systems. Residential customers generate 65% of its margin, 24% from commercial customers, and 6% from industrial customers.

Northwest Natural Gas Co.'s customers by geographic area

As of Dec. 31, 2024.



Source: Company filings.

Peer Comparison

Northwest Natural Gas Co.--Peer Comparisons

	Northwest Natural Gas Co.	ONE Gas Inc.	Atmos Energy Corp.	Piedmont Natural Gas Co. Inc.
Foreign currency issuer credit rating	A+/Stable/A-1	A-/Stable/A-2	A-/Stable/A-2	BBB+/Stable/A-2
Local currency issuer credit rating	A+/Stable/A-1	A-/Stable/A-2	A-/Stable/A-2	BBB+/Stable/A-2
Period	Annual	Annual	Annual	Annual
Period ending	2024-12-31	2024-12-31	2024-09-30	2024-12-31
Mil.	$	$	$	$
Revenue	1,100	2,040	4,151	1,729
EBITDA	341	673	2,070	902
Funds from operations (FFO)	239	550	1,714	670
Interest	69	140	213	194
Cash interest paid	63	144	341	184
Operating cash flow (OCF)	232	337	1,736	652
Capital expenditure	354	695	2,922	1,017
Free operating cash flow (FOCF)	(122)	(357)	(1,187)	(365)
Discretionary cash flow (DCF)	(196)	(508)	(1,680)	(475)
Cash and short-term investments	20	58	307	2
Gross available cash	20	58	307	2
Debt	1,635	2,844	7,743	4,704
Equity	1,324	3,105	12,158	4,354
EBITDA margin (%)	30.9	33.0	49.9	52.2
Return on capital (%)	6.9	6.9	7.6	7.9
EBITDA interest coverage (x)	4.9	4.8	9.7	4.6

Northwest Natural Gas Co.--Peer Comparisons				
FFO cash interest coverage (x)	4.8	4.8	6.0	4.6
Debt/EBITDA (x)	4.8	4.2	3.7	5.2
FFO/debt (%)	14.6	19.3	22.1	14.2
OCF/debt (%)	14.2	11.9	22.4	13.9
FOCF/debt (%)	(7.4)	(12.6)	(15.3)	(7.8)
DCF/debt (%)	(12.0)	(17.9)	(21.7)	(10.1)

Business Risk

We assess NWNG's business risk based on its low-risk regulated gas distribution operations accounting for about 95% of consolidated operating revenue, residential-focused customer base, and effective management of regulatory risks.

The company benefits from stable and supportive regulatory environments in both jurisdictions in which it operates, with purchased gas adjustments and environmental cost recovery, decoupling, and a forward-looking test year in Oregon and multiyear rate case fillings in Washington. We view these mechanisms as supportive of its financial measures, allowing the company to mitigate regulatory lag. In addition, 90% of the margin is generated from residential and commercial customers, providing a stable margin profile.

Northwest Natural Gas Co.'s natural gas distribution by segment

As of Dec. 31, 2024

Source: Company filings.

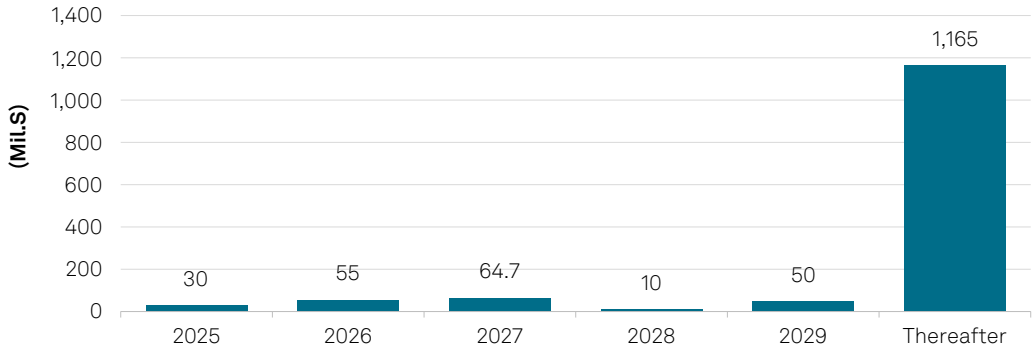
Financial Risk

Under our base case, we assess NWNG using our low-volatility table, reflecting the low-risk nature of its natural gas distribution operations and effective management of regulatory risk. NWNG's 2024 stand-alone FFO to debt was 14.6%, and we expect it to strengthen modestly over our forecast period but remain in the middle of the range for its financial risk profile category. Specifically, we project FFO-to-debt in the range of 15%-17% through 2027. Our assumptions include the 2024 and 2025 Oregon rate case increases, annual capital spending averaging about

$350 million, and annual dividends averaging about $85 million through 2027. We expect a majority of the capital spending to fund replacing and improving system reliability.

Debt maturities

Northwest Natural Gas Co.'s debt maturity schedule
As of Dec. 31, 2024



Source: Company filings.

Northwest Natural Gas Co.--Financial Summary

Period ending	Dec-31-2019	Dec-31-2020	Dec-31-2021	Dec-31-2022	Dec-31-2023	Dec-31-2024
Reporting period	2019a	2020a	2021a	2022a	2023a	2024a
Display currency (mil.)	$	$	$	$	$	$
Revenues	740	759	843	1,014	1,159	1,100
EBITDA	245	257	286	292	316	341
Funds from operations (FFO)	202	207	211	236	218	239
Interest expense	41	44	49	52	66	69
Cash interest paid	40	44	48	51	70	63
Operating cash flow (OCF)	191	148	143	146	283	232
Capital expenditure	221	274	280	319	291	354
Free operating cash flow (FOCF)	(31)	(126)	(137)	(173)	(8)	(122)
Discretionary cash flow (DCF)	(84)	(182)	(193)	(236)	(100)	(196)
Cash and short-term investments	6	10	12	13	20	20
Gross available cash	6	10	12	13	20	20
Debt	1,066	1,353	1,379	1,397	1,553	1,635
Common equity	822	835	978	1,191	1,233	1,324
Adjusted ratios						
EBITDA margin (%)	33.0	33.9	33.9	28.8	27.2	30.9
Return on capital (%)	8.3	7.4	7.5	7.2	7.6	6.9
EBITDA interest coverage (x)	5.9	5.9	5.9	5.6	4.8	4.9
FFO cash interest coverage (x)	6.0	5.7	5.4	5.6	4.1	4.8
Debt/EBITDA (x)	4.4	5.3	4.8	4.8	4.9	4.8

Northwest Natural Gas Co.--Financial Summary

FFO/debt (%)	18.9	15.3	15.3	16.9	14.0	14.6
OCF/debt (%)	17.9	10.9	10.3	10.5	18.2	14.2
FOCF/debt (%)	(2.9)	(9.3)	(9.9)	(12.4)	(0.5)	(7.4)
DCF/debt (%)	(7.9)	(13.4)	(14.0)	(16.9)	(6.4)	(12.0)

Reconciliation Of Northwest Natural Gas Co. Reported Amounts With S&P Global Adjusted Amounts (Mil. $)

	Debt	Shareholder Equity	Revenue	EBITDA	Operating income	Interest expense	S&PGR adjusted EBITDA	Operating cash flow	Dividends	Capital expenditure
Financial year	Dec-31-2024									
Company reported amounts	1,502	1,324	1,100	330	190	63	341	231	73	354
Cash taxes paid	-	-	-	-	-	-	(39)	-	-	-
Cash interest paid	-	-	-	-	-	-	(57)	-	-	-
Lease liabilities	77	-	-	-	-	-	-	-	-	-
Operating leases	-	-	-	8	6	6	(6)	2	-	-
Postretirement benefit obligations/ deferred compensation	113	-	-	-	-	-	-	-	-	-
Accessible cash and liquid investments	(20)	-	-	-	-	-	-	-	-	-
Share-based compensation expense	-	-	-	3	-	-	-	-	-	-
Nonoperating income (expense)	-	-	-	-	2	-	-	-	-	-
Debt: Debt serviced by third parties	(38)	-	-	-	-	-	-	-	-	-
Total adjustments	133	-	-	10	8	6	(102)	2	-	-
S&P Global Ratings adjusted	**Debt**	**Equity**	**Revenue**	**EBITDA**	**EBIT**	**Interest expense**	**Funds from Operations**	**Operating cash flow**	**Dividends**	**Capital expenditure**
	1,635	1,324	1,100	341	197	69	239	232	73	354

Liquidity

As of March 31, 2025, we assess NWNG's liquidity as adequate, with sources covering uses by more than 1.1x over the coming 12 months, even if forecast consolidated EBITDA declines 10%. We believe the predictable regulatory framework for NWNG provides a manageable level of cash flow stability even in times of economic stress, supporting our use of slightly lower thresholds to

assess liquidity. In addition, NWNG can absorb high-impact, low-probability events, reflecting that the company maintains about $400 million in committed credit facilities through 2027. It also reflects our belief that the company can lower its high capital spending (averaging about $350 million annually through 2027) during stressful periods, indicating a limited need for refinancing under such conditions. Furthermore, our assessment reflects the company's generally prudent risk management and sound relationships with its banking group (which includes over four well-established banks).

Overall, we believe that the company can withstand adverse market circumstances over the next 12 months, with sufficient liquidity to meet its obligations. The company has no big long-term debt maturity coming due, and we expect it to proactively address this maturity well in advance of its scheduled due date.

Principal liquidity sources

- Cash and cash equivalents of about $81.8 million as of March 31, 2025;
- Credit facility availability of about $400 million; and
- Cash FFO estimated of about $280 million.

Principal liquidity uses

- Debt maturities of about $30 million;
- Capital expenditure of about $360 million; and
- Dividend payments of about $80 million

Environmental, Social, And Governance

ESG factors have no material influence on our credit rating analysis of NWNG.

Group Influence

Under our group rating methodology, we consider NWNH as the parent of the group with a GCP of 'a-'. We assess NWNG as a core subsidiary of NWNH because we view the utility as integral to the group's identity, highly unlikely to be sold, and having a strong commitment from NWNH's senior management, given the company's emphasis on maintaining its strategic focus on regulated gas distribution operations.

That said, our issuer credit rating on NWNG is two notches above the parent's GCP. Because NWNG is operationally separate from NWNH and there are certain regulatory restrictions in place, which we view the utility as having sufficient insulating measures that allow NWNG to be rated up to two notches above the NWNH's GCP. These regulatory protections include dividend restrictions, a highly independent board, and an independent third party that is the holder of the "golden share" whose vote is required to file for bankruptcy.

Issue Ratings--Subordination Risk Analysis

Capital structure

The short-term rating on NWNG is 'A-1' based on our 'A+' issuer credit rating on the company.

Analytical conclusions

We rate the company's medium-term notes program 'A+', equal to its issuer credit rating, because we view any debt issued under this program as debt issued by a qualifying investment-grade utility.

Issue Ratings--Recovery Analysis

Key analytical factors

NWNG's first-mortgage bonds benefit from a first-priority lien on substantially all of the utility's real property, owned or subsequently acquired. Collateral coverage of more than 1.5x supports a recovery rating of '1+' and an issue rating one notch above the issuer credit rating.

Rating Component Scores	
Foreign currency issuer credit rating	**A+/Stable/A-1**
Local currency issuer credit rating	**A+/Stable/A-1**
Business risk	**Excellent**
Country risk	Very Low
Industry risk	Very Low
Competitive position	Strong
Financial risk	**Intermediate**
Cash flow/leverage	Intermediate
Anchor	**a+**
Diversification/portfolio effect	Neutral (no impact)
Capital structure	Neutral (no impact)
Financial policy	Neutral (no impact)
Liquidity	Adequate (no impact)
Management and governance	Neutral (no impact)
Comparable rating analysis	Neutral (no impact)
Stand-alone credit profile	**a+**
Group credit profile	**a-**
Entity status within group	**Insulated (Same as SACP)**

Related Criteria

- Criteria | Corporates | General: Sector-Specific Corporate Methodology, April 4, 2024
- Criteria | Corporates | General: Corporate Methodology, Jan. 7, 2024
- Criteria | Corporates | General: Methodology: Management And Governance Credit Factors For Corporate Entities, Jan. 7, 2024
- General Criteria: Environmental, Social, And Governance Principles In Credit Ratings, Oct. 10, 2021
- General Criteria: Group Rating Methodology, July 1, 2019

- Criteria | Corporates | General: Corporate Methodology: Ratios And Adjustments, April 1, 2019
- Criteria | Corporates | General: Reflecting Subordination Risk In Corporate Issue Ratings, March 28, 2018
- General Criteria: Methodology For Linking Long-Term And Short-Term Ratings, April 7, 2017
- Criteria | Corporates | General: Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers, Dec. 16, 2014
- General Criteria: Methodology: Industry Risk, Nov. 19, 2013
- General Criteria: Country Risk Assessment Methodology And Assumptions, Nov. 19, 2013
- Criteria | Corporates | Utilities: Collateral Coverage And Issue Notching Rules For '1+' And '1' Recovery Ratings On Senior Bonds Secured By Utility Real Property, Feb. 14, 2013
- General Criteria: Principles Of Credit Ratings, Feb. 16, 2011

Ratings Detail (as of June 24, 2025)*

Northwest Natural Gas Co.	
Issuer Credit Rating	A+/Stable/A-1
Commercial Paper	
Local Currency	A-1
Senior Secured	AA-
Issuer Credit Ratings History	
19-Apr-2024	A+/Stable/A-1
09-Oct-2023	A+/Negative/A-1
25-Jan-2010	A+/Stable/A-1
Related Entities	
Northwest Natural Holding Co.	
Issuer Credit Rating	A-/Stable/A-2
Commercial Paper	
Local Currency	A-2
Junior Subordinated	BBB

*Unless otherwise noted, all ratings in this report are global scale ratings. S&P Global Ratings' credit ratings on the global scale are comparable across countries. S&P Global Ratings' credit ratings on a national scale are relative to obligors or obligations within that specific country. Issue and debt ratings could include debt guaranteed by another entity, and rated debt that an entity guarantees.

BEFORE THE

PUBLIC UTILITY COMMISSION OF OREGON

UG 527

NW Natural

Direct Testimony of Daniel B. Kizer, Joe S. Karney, Wayne K. Pipes, and Brian E. Fellon

CAPITAL ADDITIONS
EXHIBIT 200

November 25, 2025

EXHIBIT 200 – DIRECT TESTIMONY – CAPITAL ADDITIONS

Table of Contents

I. INTRODUCTION AND SUMMARY

Q. Please state your names and positions with Northwest Natural Gas Company dba NW Natural ("NW Natural" or "the Company").

A. My name is Daniel B. Kizer. I am the Engineering Senior Director at NW Natural.

My name is Joe S. Karney. I am the Vice President of Engineering and Utility Operations and Chief Engineer.

My name is Wayne K. Pipes. I am the Director of Facilities, Security and Emergency Management for NW Natural.

My name is Brian E. Fellon. I am the Vice President, Chief Information Officer & Chief Information Security Officer.

Our qualifications are included at the end of this testimony.

Q. What is the purpose of your testimony?

A. The purpose of our testimony is to describe the capital additions that NW Natural is seeking to recover through the ARM. Specifically, NW Natural is seeking to recover the following categories of capital additions that will enter service prior to the rate effective date of this proceeding—October 31, 2026:

1. Discrete Capital Additions

NW Natural is seeking to recover long-planned capital additions of at least $1 million ("discrete capital additions"). Mr. Kizer is sponsoring NW Natural's testimony for discrete distribution and storage projects that are necessary to preserve the safety and reliability of the Company's system, as well as projects to mitigate landslide risk on the Coos County Pipeline (Section II (A-C)). Mr.

Karney is sponsoring NW Natural's testimony on the Company's ongoing meter modernization program ("MMP") investments (Section II (D)). Mr. Pipes is sponsoring NW Natural's testimony on The Dalles Resource Center ("RC") (Section II (E)).

2. Information, Technology & Services ("IT&S") Modernization Projects

NW Natural is seeking to recover its IT&S investments that will enter service prior to the rate effective date of this proceeding. Timely recovery of NW Natural's IT&S investments is necessary because the depreciable life of such investments is very short compared to most other utility assets that have a much longer life. Mr. Fellon is sponsoring NW Natural's testimony on IT&S modernization projects (Section III).

3. Public Works Projects

NW Natural is seeking to recover the costs of public works projects, which are projects the Company must complete in response to state or local governments initiating an infrastructure project, such as improving a public roadway or replacing public agency utility lines. Mr. Kizer is sponsoring NW Natural's testimony for public works projects (Section IV).

Q. How is the remainder of your testimony organized?

A. The remainder of our testimony is organized by category—discrete capital additions, IT&S modernization, and public works projects. Each category has its own separate section that first lists the capital additions that will be discussed and then explains the capital additions within that section. While IT&S and public works

categories include discrete projects over $1 million, for purposes of the testimony in this proceeding, the discrete IT&S and public works projects will be discussed with their respective categories of capital expenditures. Finally, as stated above, our witness qualifications are included in the last section of our testimony.

II. DISCRETE CAPITAL ADDITIONS

Q. Please identify the discrete capital additions that are included for recovery in this proceeding.

A. NW Natural is seeking to recover the following discrete capital additions:

A. Distribution System Projects

- Perrydale Regional Station Weld Repairs Project;
- Wauna Shallow Pipe Replacement Project; and
- Aurora Line Heater Project;

B. Storage System Projects

- Mist GC600 Turbine Compressor Replacement Project;
- Mist Main Power Feeder Replacement Project;
- Mist Well Separator Replacement Program;
- Portland LNG Electrical Distribution Upgrades Project; and
- Newport LNG Molecular Sieve Vessel Repair and Upgrades Project.

C. Coos County Pipeline Landslide Mitigation Projects

- Mile 98 Relocation;
- Coquille River Relocation; and

- High Risk Slide Areas

D. Ongoing MMP Investments

- Encoder Receiver Transmitters ("ERT") Replacement; and
- Periodic Cause for Change ("PCC") Meter Replacement.

E. The Dalles Resource Center ("RC").

Each of these capital additions is discussed in this section of testimony.

A. Distribution System Projects

1. Perrydale Regional Station Weld Repairs Project

Q. Please describe the Perrydale Regional Station Weld Repairs Project.

A. The Perrydale Regional Station Weld Repairs Project involves removing four defective welds that were made when the pipeline was originally installed in 1964. These four welds were identified during a recent construction project as having failed radiographic (x-ray) inspection. The x-rays revealed incomplete penetration and arc burns, both indicators of weld failure. These deficiencies are consistent with aging infrastructure and outdated welding practices. The risk presented by the defective welds must be mitigated. Some of the defective welds are located on the single feed north to McMinnville, and the remaining defective welds are located on the feed south to Perrydale. Due to the importance of both of these pipelines, immediate corrective action is required.

As part of this project, NW Natural will also replace the affected sections of pipe with new pipe sections to eliminate the single valve between two pipelines that have different Maximum Allowable Operating Pressures ("MAOPs"). Single

valves between MAOPs have been identified as a Distribution Integrity Risk that is an Accelerated Action under NW Natural's Distribution Integrity Management Program ("DIMP").

Q. What is the status of the Perrydale Regional Station Weld Repairs Project?

A. The project began in mid-October 2025 and is scheduled to be completed in December 2025.

Q. What is the estimated total cost of the Perrydale Regional Station Weld Repairs Project?

A. The total cost to complete the Perrydale Regional Station Weld Repairs Project is expected to be approximately $1.3 million.

2. Wauna Shallow Pipe Replacement Project

Q. Please describe the Wauna Shallow Pipe Replacement Project.

A. The Wauna Shallow Pipe Replacement Project will install approximately 60 feet of new 8'' Class E pipe at adequate depth in the Highway 30 ditch crossing. Currently, the 8" Class E transmission main has insufficient depth of cover on the western side of Highway 30 where it crosses an Oregon Department of Transportation ("ODOT") drainage ditch. The shallow depth of cover of only 17'' represents an inherent safety and reliability risk for this transmission main lateral, especially given the high operating pressure of the line. In addition, ODOT regularly clears debris from its ditches as part of regular maintenance, which could continue to remove cover over the gas pipeline over time.

Also, this project involves installing a new district regulator at the connection of the 8" replacement lateral with the 12" P39 North Coast Feeder. This new regulator will assist in mitigating icing issues at the Wauna meter set and will result in this lateral classification being changed from Transmission to High-Pressure distribution and subject to DIMP requirements.

Q. What is the status of the Wauna Shallow Pipe Replacement Project?

A. The project is scheduled to be completed in the summer of 2026.

Q. What is the estimated total cost of the Wauna Shallow Pipe Replacement Project?

A. The total cost to complete the Wauna Shallow Pipe Replacement Project is expected to be approximately $1.1 million.

3. Aurora Line Heater

Q. Please describe the Aurora Line Heater Project.

A. The line heater at Aurora Airport Regional Station was originally installed in 2003, is at the end of life, and needs to be replaced. This line heater is responsible for pre-heating natural gas prior to regulation, where the gas undergoes a drop in temperature due to the Joule-Thomson effect. Without pre-heating, gas flow post-regulation at this station can cause ice to form on downstream piping, potentially causing equipment damage.

The current burner management system for this heater has difficulty staying lit due to wind effects, and the water bath tank has internal corrosion, meaning that it is at end of life. In addition, the heater is no longer supported by the manufacturer,

and parts are difficult or impossible to acquire. This project will modernize the station by installing a new, lower-emission, high-efficiency line heater. The scope of work includes procuring a temporary easement for work, which is on the Aurora Airport property, replacing the heater unit and associated foundation components, as well as replacing the electrical equipment to support heater operations. Finally, new fencing will be installed to protect the site.

Q. Please describe any alternatives to the Aurora Line Heater Project.

A. The project team evaluated replacing only the burner management system on the line heater as an alternative, as this alternative has been chosen for other line heater replacement projects. However, this alternative was not selected for this project due to the line heater lacking the appropriate fittings and equipment to tie the electronic ignition in the burner assembly and fittings into the outlet temperature probe. In addition, the corrosion evident in the internal water bath tank shows that this heater is at end of life and must be replaced.

Q. What is the status of the Aurora Line Heater Project?

A. This project is in the design phase, with estimated completion in August 2026.

Q. What is the estimated total cost of the Aurora Line Heater Project?

A. The total cost to complete the Aurora Line Heater Project is expected to be approximately $1.0 million.

B. Major Storage Facility Projects

1. Background of the Company's Storage Facilities

Q. Please identify the Company's storage facilities.

A. The Company has three storage facilities: Portland LNG, Newport LNG and Mist.

Q. Please describe the Company's Portland LNG facility.

A. The Portland LNG facility is a peak shaving facility located in Portland, Oregon, and consists of a 600,000 dekatherm ("Dth") capacity storage tank, liquefaction facilities capable of processing about 2,150 Dth/day, and vaporization capacity of up to 130,800 Dth/day. This facility was constructed by Chicago Bridge and Iron and commissioned in 1969.

Q. Please describe the Company's Newport LNG facility.

A. The Newport LNG facility is a peak shaving facility located in Newport, Oregon, and consists of a 1,000,000 Dth capacity storage tank, liquefaction facilities capable of processing about 5,500 Dth/day, and vaporization capacity of up to 100,000 Dth/day.[1] This facility was constructed by Chicago Bridge and Iron and commissioned in 1977.

Q. Please describe the Mist Storage Facility.

A. NW Natural's Mist Storage Facility, located in Mist, Oregon, began operations in 1989. It features a natural gas storage field consisting of seven different

[1] Because the Company's pipeline system limits Newport to serving the central coast and Salem market areas, the full 100,000 Dth/day vaporization rate is not achievable. Instead, 78,000 Dth/day is the effective limit on vaporization at Newport.

underground reservoirs, 21 injection/withdrawal wells, transmission lines, an operational hub called Miller Station,[2] and other related facilities. In all, the Mist Storage Facility is a 17.5 billion cubic feet ("Bcf") facility with 13.1 Bcf used to provide gas storage for core customers.

2. GC600 Turbine Compressor Replacement Project

Q. Please describe the Mist GC600 Turbine Compressor Replacement Project.

A. This project replaces the existing GC600 turbine compressor at Mist with a new turbine driven compressor of approximately 7,700 horsepower ("HP"). The replacement work will include installing foundations for the new turbine compressor packages and associated oil coolers, gas coolers, gas scrubbers, piping and valves, intake filters, exhaust silencers, electrical distribution and control panels, and other associated minor items.

Q. Is the Mist GC600 Turbine Compressor Replacement Project related to another project that NW Natural recently completed?

A. Yes. The Mist GC600 Turbine Compressor Replacement Project is related to the Mist GC500 Turbine Compressor Replacement Project. The Mist GC500 Turbine Compressor Replacement Project replaced the GC500 unit with a Solar Turbine ("Solar") Taurus 60, a new turbine driven compressor of approximately 7,700 HP.

[2] Miller Station, with peak certificated injection and withdrawal capacities of 335 million standard cubic feet per day ("MMscfd") and 515 MMscfd, respectively, is the compressor station within the Mist Storage Facility that contains the operations and controls facility as well as the process equipment for conveying natural gas between the wells and utility pipelines, including the natural gas compression and dehydration systems.

As stated above, the replacement for the GC600 unit will be an additional turbine driven compressor unit of approximately 7,700 HP.

NW Natural completed the Mist GC500 Turbine Compressor Replacement Project in October 2025, and it is currently recovering the cost of that project in rates. The Company replaced the GC500 unit first because it was older and had more operating hours than the GC600 unit. During the 2026 injection season, the Company will replace the GC600 unit. The replacement compressor for the GC600 unit is scheduled to enter service in October 2026.

Q. Did the Company include both the GC500 and GC600 Turbine Compressor Replacement Projects in its last rate case (UG 520)?

A. Yes. The Company included both the GC500 and GC600 Turbine Compressor Replacement Projects in UG 520. While the GC500 Turbine Compressor Replacement Project entered service in October 2025 and was included in rates, the GC600 Turbine Compressor Replacement Project was not completed by the rate effective date of October 31, 2025, and was removed pursuant to the First Partial Stipulation.[3] As stated above, NW Natural anticipates that the GC600 Turbine Compressor Replacement Project will be completed in October 2026. Therefore, the remaining subsection of this testimony describes NW Natural's reasons for replacing the GC600 unit, alternatives NW Natural considered, and why it selected replacing the GC600 unit with an additional 7,700 HP turbine driven

[3] The Commission approved and adopted the First Partial Stipulation in Order No. 25-420 (Oct. 24, 2025).

compressor. This analysis has not changed from NW Natural's previous general rate case (UG 520).

Q. Why is NW Natural replacing the GC600 unit?

A. Like the GC500 unit, the GC600 unit, installed in 2001-2002 and having over 48,000 hours of operation, has exceeded its useful life expectancy. The existing GC600 unit and the replacement for the GC500 compressor unit perform the bulk of the compressive work for withdrawal and injection activities when they are available for operation. The GC600 unit also is used in connection with the Company's interstate storage; about one-third of its costs are allocated to core utility service and the other two-thirds of its costs are allocated to interstate storage.

Q. How has the GC600 unit performed in recent years?

A. The GC600 unit has experienced several turbine engine failures dating back to the 2018-2019 withdrawal season. A combustion chamber failure was found during an outage inspection in April 2019, resulting in the GC600 being taken out-of-service for 16 months. In order to meet operational needs during this time, a leased turbine from Fortis BC was needed. Additionally, the GC600 unit had to be taken out of operation several times to address cracked vanes, failed combustion air seals, bleed valve failures, and oil leaks.

Q. What caused those failures and outages?

A. NW Natural has performed multiple studies on the GC500 and GC600 turbine compressors dating back to an engineering assessment that NW Natural

completed in June 2016, which identified a number of needed improvements to improve Mist's reliability. The Company also completed a study of the compressor units in June 2020 ("2020 AECOM Compressor Study") and a focused turbine compressor study in December 2022 ("2022 Burns and McDonnell Turbine Compressor Study" or "2022 Turbine Compressor Study").

The 2020 AECOM Compressor Study and the 2022 Burns and McDonnell Turbine Compressor Study found that the issues with the compressor units were caused by age, outdated and unsupported systems, mechanical fatigue, and frequent starts and stops due to the size of the GC500 and GC600 units. The 2020 AECOM Compressor Study recommended modifying the GC500 turbine compressor and purchasing the leased Fortis BC turbine to be used as a cold spare for the GC600 turbine compressor. However, Fortis BC did not want to sell the unit to NW Natural. Even if Fortis BC were willing to sell the unit to NW Natural, the leased Fortis BC turbine would have needed to be upgraded to reflect guidance from the original equipment manufacturer ("OEM") contained in service bulletins.

Q. Did the Company initially follow the recommendations in the 2020 AECOM Compressor study?

A. Yes. Initially, the Company intended to repair, rather than replace, the compressors based on the recommendations in the 2020 AECOM Compressor Study. However, the GC500 and the GC600 continued to have frequent failures after repair and maintenance had been performed on the turbine compressors.

Q. What typically happens when the GC600 unit fails?

A. The GC600 typically experiences lengthy outages when it fails because replacement parts or repairs are not readily available. Failures commonly require the return of the turbine compressor core to the Maintenance Repair and Overhaul Center ("MROC") in Houston, Texas, for repair, and the process takes three to six months or more before the compressor can be returned to service. The MROC and the OEM also do not carry substantial inventory to support the GC600 turbine series specifically. Parts are commonly made to order as needed, resulting in long lead times for parts and components. The make-to-order strategy can extend outages past two years, as seen with other operators of the same series turbines found on NW Natural's GC600 compressors. Due to the uniqueness of the GC600 and make-to-order strategy, an existing supply chain does not exist. The OEM does not offer any cores or core exchange program for the specific turbine configuration used at NW Natural, so during repair times there is no replacement compression at Miller Station.

For example, the absence of a core exchange program from the OEM became apparent in April 2019 when a combustion chamber failure was discovered and the necessary repair process resulted in a 16-month period where the GC600 was out of service. After the combustion chamber failure was discovered, to ensure operational continuity for two heating seasons (April 2019 to August 2020), NW Natural leased a turbine from Fortis BC during this time, as

mentioned above. Without the leased turbine from Fortis BC, Mist would have operated with a 49 percent reduction in capacity during this entire 16-month period.

Q. Does the Company anticipate that the GC600 turbine compressor unit would continue to experience failures and outages without corrective action?

A. Yes. The GC600 unit currently has over 48,000 hours of operation and has been in service for over 23 years. If it were not replaced, frequent failures and outages of the GC600 unit would continue because many of the major core components are original and OEM support for the GC600 continues to diminish, as explained above.

Q. What did the 2022 Turbine Compressor Study conclude?

A. The 2022 Turbine Compressor Study recommended replacing the end-of-life GC500 and GC600 units all together. As explained above, replacing these end-of-life units addresses concerns related to other major components of the turbines, the increasing frequency of outages, and a diminishing lack of OEM support.

Q. Has NW Natural's service territory recently experienced severe winter weather that highlights the importance of reliable operations at the Mist Storage Facility?

A. Yes. In mid-January 2024, NW Natural's service territory experienced severe winter weather, highlighting the importance of reliable operations at the Mist Storage Facility. On January 13, 2024, as temperatures dropped to 15°F in the Portland area, NW Natural delivered 9 million therms of natural gas to homes and businesses throughout our service territory, virtually matching the Company's

previous record set in December 2022 for a single gas day, and approximately doubling our average daily winter send out. NW Natural delivered approximately 8 million therms of natural gas for each of the following three days. In addition to matching a single gas day delivery record and sustaining high volumes of natural gas delivery to our customers, NW Natural also broke previous Mist Storage Facility send out records for five consecutive days and delivered over 4.5 million therms (421 MMscfd) of stored natural gas on January 13, 2024. During these types of cold weather events, the importance of the Mist Storage Facility cannot be overstated. It is absolutely crucial to ensuring that NW Natural can provide safe and reliable service to our customers throughout the winter months.

Q. What would be the impact on NW Natural customers if the GC600 unit were to fail during such cold weather events?

A. During cold weather events, such as those the Company and its customers experienced in January 2024, NW Natural has estimated that the loss of the GC600 unit would lead to a loss of gas service to approximately 200,000 customers (25 percent of our current customer count). Once NW Natural loses gas pressure to a customer, gas restoration is a three-step process, with the third step of restoration only possible when system gas pressure is assured. The January 2024 cold weather would have caused repeated, daily low-pressure outages in our distribution system and loss of service due to lack of pressure. It is estimated that the recent, January 2024 cold weather would have prohibited the

start of service restoration for six days, should NW Natural have experienced failure of the GC600 unit at the beginning of the cold weather event.

The estimated time and resources required to complete service restoration for 200,000 customers, once weather warmed and system pressures were stabilized, is beyond any scale the Company has experienced. In December 2020, however, NW Natural experienced a smaller system outage. In that situation, after a Williams gate station was damaged by a motor vehicle in White Salmon, Washington in December 2020, NW Natural lost service to nearly 5,600 customers in White Salmon and in Hood River and Odell, Oregon, and the restoration process took nearly one week with the mutual assistance of staff from neighboring utilities.

Q. Does the Mist GC600 Turbine Compressors Replacement Project address the long-term viability of the GC600 unit?

A. Yes. In conjunction with the already completed GC500 Mist Turbine Compressor Reliability Project, it increases the reliability of the Mist Storage Facility.

Q. Did the Company assess alternatives to the Mist GC600 Turbine Compressor Replacement Project?

A. Yes. The Company considered a variety of options, including Solar turbine options and the 2020 AECOM Compressor Study's recommendation of modifying the GC500 turbine compressor package, installing the repaired original GC600 gas generator, and purchasing an identical GC600 Gas Generator with upgrades to the latest service bulletins to be used as a cold spare. The lack of available space for an expansion and the wide range of operating pressures and flows drove

careful consideration of all the design cases and space requirements for each alternative. NW Natural immediately disqualified replacing the GC500 and/or GC600 with reciprocating compressors due to the lack of market availability of the needed unit size of reciprocating engines. The Company also disqualified using other turbine manufacturers, such as Vericor, who offers lower horsepower one-off turbine packages that would have put the Company in the same predicament that it is trying to fix now, or Baker Hughes/GE, which offers well supported turbine package solutions in a much higher horsepower range that would have been oversized for NW Natural's needs.

Q. What Solar turbine options did the Company consider?

A. Solar originally suggested a Taurus 60 with a single compressor unit to replace both the GC500 and GC600 units, but the maximum flow rate offered by a single compressor unit would have been below the flow rate required for multiple design cases and it would not have been able to achieve the necessary minimum flow rate.

The next option Solar turbine considered was a Taurus 70 with a singular compressor unit. The Taurus 70 solution faced similar constraints to that of the Taurus 60 when using a single compressor unit. Though the maximum flowrates could be met, it would have been oversized for the needed applications. Specifically, multiple minimum flow rate scenarios would not have been covered in the full range of design cases needed and would have required a new compressor building or an extension to the existing building.

Solar then proposed a tandem option using two compressors attached to a single gas turbine. This allowed the two compressors to operate in parallel or series greatly expanding the operational range and meeting the full range of design case requirements. NW Natural selected this option. As stated above, one new compressor has already replaced the GC500 unit.

Q. What is the status of the project?

A. NW Natural has ordered the long-lead time items for the GC600 Replacement Project, including the new turbine compressor, seal gas conditioning racks, gas cooler, and filter separator. Mobilization and preconstruction are scheduled for March 2026, with construction commencing in April 2026 and finishing in August 2026. Commissioning will begin in September 2026 and conclude in early October 2026.

Q. What is the estimated total cost of the Mist GC600 Turbine Compressors Replacement Project?

A. The GC600 Replacement Project is currently a 33 percent utility asset. The total utility cost of the Mist GC600 Turbine Replacement Project is expected to be approximately $12.5 million, which is approximately $11.1 million on an Oregon-allocated basis.

3. Mist Main Power Feed Replacement Project

Q. Please describe the Mist Main Power Feed Replacement Project.

A. Miller Station is currently fed from a substation with above-ground 12.5 kilovolt ("kV") power lines that run along the State Highway 202 to NW Natural's meter.

From there, a NW Natural-owned 12.5kV powerline is fed up to Miller Station. The conductors are end-of-life, use above-ground junction boxes, and have been damaged and repaired twice. For this project, the electric utility will construct a new substation located along the mainline near an existing electrical vault. The substation will connect Miller Station directly with the 115kV lines from Bonneville Power Administration, thus bypassing the 12.5kV lines that run along the highway. The 12.5kV power lines that run along the highway are susceptible to outages during wind and ice storms. NW Natural initiated and requested this work to improve reliability and resiliency of the Company's winter operations. NW Natural will enter into a capital lease of the substation.

Q. What is the status of the Mist Main Power Feed Replacement Project?

A. The project is currently in the Assess phase and the Company expects to complete the Mist Main Power Feed Replacement Project by October 2026.

Q. What is the estimated total cost of the Mist Main Power Feed Replacement Project?

A. The estimated total cost of the utility-allocated portion of the Mist Main Power Feed Replacement Project is approximately $4.4 million, which is approximately $3.9 million on an Oregon-allocated basis.

4. Mist Well Separator Replacements Program

Q. Please describe the Mist Well Separator Replacement Program.

A. The Mist Well Separator Replacement Program will replace five series of Mist Well Separators (21 Mist Well Separators in total) over a five-year period (2026-2030).

The first series of Mist Well Separators is scheduled to be replaced by October 2026, and this is the project for which the Company is seeking cost recovery in this proceeding.

Q. Please describe the function of the Mist Well Separators.

A. At the Mist Storage Facility, the primary function of a well separator is to remove liquids and solids from the natural gas stream withdrawn from the corresponding reservoir's well head. Because the reservoirs have a sandstone formation with water, the withdrawal process can produce liquids and solids. The Company reused many existing production well separators when the Company first began to use Mist for gas storage when the gas withdrawal rate requirements were lower.

Today, however, the Company withdraws gas from the underground reservoir at higher flow rates—and at lower inventory levels during times of peak demand—requiring separators with more flow capacity to adequately remove liquids and solids that are produced during these higher withdrawal flow rates. The produced liquids bring up sands, and during higher withdrawal flow rates, the inadequately sized and designed separators can scour and erode the insides of steel equipment when velocities are high and then become solids deposits in pipelines at pipeline low points when flow rates decrease. Properly sized separators with the correct technology will protect downstream equipment from damage caused by liquids, solids, and slugging of either liquids or solids. This protection is essential for reliable operations and compliance at the central compressor station, Miller Station.

Q. How did NW Natural determine that the existing Mist Well Separators needed to be replaced?

A. In 2021, NW Natural identified increased liquid loading conditions resulting from reworked wells and a greater utilization of the Mist Storage Facility at lower inventory levels with higher flow rates. These conditions posed risks to site deliverability and compliance concerns with the Pipeline and Hazardous Safety Admiration's ("PHSMA") requirement of protecting compressors from liquids. To address these new process conditions, NW Natural conducted a 2021 Miller Station Filtration Engineering Assessment in collaboration with Harris Group. The assessment identified scopes of work recommended for mitigating immediate risks to deliverability and compliance. It also highlighted areas for further investigation of the 21 Mist Well Separators to ensure long-term reliability.

In 2022, NW Natural identified new risks associated with the 21 Mist Well Separators. Inspections were performed in accordance with American Petroleum Institute ("API") recommendations, revealing there was wall loss to many of the separators across the field. Separators with significant wall loss that exceeded the corrosion allowance were immediately removed from service. NW Natural successfully remediated immediate reliability and safety risks through these corrective actions. Additionally, given the process conditions that cause wall loss in the separators, the internals—such as mesh screens—have most likely worn away, even if only minimal wall loss was observed. This wear of the internals of

the separators further reduces its ability to remove liquids and sands from the natural gas stream.

In 2023, NW Natural incorporated the wall loss observed in the well separators, as recommendations outlined in the original Harris Group study into its Burns & McDonnell 15-Year Facility Assessment. This 2023 assessment led to a dedicated 2024 Burns & McDonnell Well Separator Study. This study produced a Basis of Design report that included sizing recommendations to mitigate the wall loss issue discovered in 2022, justification for new technology selection to manage updated liquid process conditions, and a recommended replacement schedule to ensure long-term reliability. As stated above, NW Natural plans to replace the five series of Mist Well Separators over a five-year period (2026-2030).

Q. What is the current status of the Mist Well Separator Replacement Program?

A. The Company expects to complete replacement of the first series of separators by October 2026.

Q. What is the estimated total cost of the Mist Well Separator Replacement Program?

A. The total utility cost to replace the first series of Mist Well Separators is expected to be approximately $1.2 million, or $ 1 million on an Oregon-allocated basis.

5. Portland LNG Electrical Distribution Upgrades Project

Q. Please describe the function of the Portland LNG electrical distribution system.

A. The Portland LNG electrical distribution system consists of the electrical supply to

the Portland LNG facility, including switchgear, circuit breakers, motor control center equipment and an electrical transformer. This system provides power to the plant from the electric utility to run critical motor loads, including boil-off compression to manage tank pressure, and the LNG pumps and vaporizers blowers to deliver liquefied natural gas to the vaporization system for customer use.

Q. Please describe the Portland LNG Electrical Distribution Upgrades Project.

A. A third-party engineering load study found that operating both LNG pumps P-1 and P-2 and all three vaporizers (H-5, H-6 and H-7) simultaneously would result in a load of 1270A, which exceeds the Motor Control Center current rating of 1200A, risking a 480V electrical outage. The incoming switchgear that provides utility power is sized for 1000kVA, which is undersized for the full load condition. As a result, the Portland LNG facility is unable to run at full capacity, and vaporization capacity has been temporarily reduced from 133,920 Dth/day to 100,440 Dth/day.

This project will update the 480V electrical distribution system at the Portland LNG facility, replacing the existing 1000kVA transformer and motor control center with a new 1500kVA transformer, manual transfer switch and incoming 480V switchgear. The new electrical infrastructure will allow the plant to return to its full vaporization capabilities of 133,920 Dth/day.

Q. What is the status of the project?

A. The Company expects to complete the Portland LNG Electrical Distribution Upgrades Project by May 2026.

Q. What is the estimated total cost of the Portland LNG Electrical Distribution Upgrades Project?

A. The total cost of the Portland LNG Electrical Distribution Upgrades Project is expected to be approximately $3.9 million, or $3.5 million on an Oregon-allocated basis.

6. Newport LNG Molecular Sieve Vessel Repair and Upgrades Project

Q. Please describe the function of the Newport LNG Molecular Sieve Vessels.

A. The molecular sieve vessels are part of the gas pretreatment process, and their function is to scrub out impurities such as water, CO_2, and gas odorants from the natural gas flow stream before the gas is cryogenically cooled by the cold box equipment for storage in the LNG plant storage tank. If these impurities are not removed prior to the gas liquefaction process, they risk fouling or freezing within the heat exchangers in the cold box and thus shutting down or damaging the liquefaction process.

Q. Please describe the Newport LNG Molecular Sieve Vessels Repair and Upgrades Project.

A. The Company has experienced small amounts of CO_2 slipping by the molecular sieves for several years. Upon the completion of a routine molecular sieve media change, the Company recognized the CO_2 removal rate had dropped and the heat leakage rate to the outer shell of the vessels had increased. NW Natural consulted owners' engineers and a consulting engineering firm, as well as a molecular sieve vendor, to perform a root cause analysis and develop a return to service plan. After

inspecting the vessels, the Company was advised that the vessel internal insulation had reached the end of its useful life, and had failed, pulling back from the wall of the vessels and thereby allowing process gas to bypass contact with the molecular sieve media.

To address this failure, the dehydration and CO_2 removal vessels need to be modified to repair the internal insulation failure and implement a design change to eliminate the ability for process gas to bypass the molecular sieve media. This project will remove the vessels from service, and a pressure vessel contractor will install internal steel liners and new insulation in the vessel. These modifications are designed to enhance the high-temperature regeneration performance and ensure that process gas cannot bypass the molecular sieve media.

Q. What is the timing of the Newport LNG Molecular Sieve Vessels Repair and Upgrades Project?

A. The Company expects to complete the Newport LNG Molecular Sieve Vessels Repair and Upgrades Project by May 2026.

Q. What is the estimated total cost of the Newport LNG Molecular Sieve Vessels Repair and Upgrades Project?

A. The total cost of the Newport LNG Molecular Sieve Vessels Repair and Upgrades Project is expected to be approximately $3 million, or $2.7 million on an Oregon-allocated basis.

C. Coos County Pipeline

1. Background of the Coos County Pipeline

Q. Please describe the Coos County Pipeline.

A. The Coos County Pipeline is an approximately 77-mile pipeline that routes natural gas from the Williams pipeline near Roseburg to the south coast. The Coos County Pipeline is currently owned by Coos County, which built it to increase economic development in the area. Coos County relies on the pipeline as the single source of natural gas delivery to the area.

Q. Please explain how NW Natural serves its customers in Coos County.

A. In 2001, NW Natural and Coos County entered into a transportation service agreement ("TSA") under which NW Natural agreed to construct distribution facilities that would connect customers to natural gas when the Coos County Pipeline was completed.

NW Natural provides gas service to its Coos County customers by transporting gas through the Williams pipeline, purchasing gas transportation services from Coos County on the Coos County Pipeline through the TSA, and then delivering gas on NW Natural's distribution system to customers. NW Natural currently has 2,307 Coos County customers served by the Coos County Pipeline, of which 1,793 are residential customers, 502 are commercial customers, and nine are industrial sales service customers. In addition, there are three transportation customers. The forest products industry is the largest consumer of natural gas in the region, accounting for about 80.5 percent of industrial throughput and about

39.5 percent of all Coos County Pipeline throughput for the 12 months ending March 2025.

Q. Does NW Natural currently operate and maintain the Coos County Pipeline on behalf of its owner, Coos County?

A. Yes. In January 2005, NW Natural exercised its option under the TSA to assume responsibility for operating and maintaining the Coos County Pipeline as Coos County's contractor under a separate service agreement. Under the agreement, NW Natural's obligations include supervisory, administrative, technical, and other services as may be required to be performed relative to operating and maintaining the Coos County Pipeline. Importantly, however, Coos County remains the owner of the Coos County Pipeline and it is currently Coos County's responsibility to make necessary capital investments in the pipeline. Both Coos County and NW Natural are currently seeking to change this arrangement so that the Company can assume ownership of the Coos County Pipeline.

Q. Has NW Natural recently made a filing with the Public Utility Commission of Oregon ("Commission") to facilitate its acquisition of the Coos County Pipeline?

A. Yes. In docket ADV 1789, NW Natural proposed removing a separate charge that Coos County customers pay to use the Coos County Pipeline as part of a larger plan for NW Natural to purchase the pipeline for the nominal sum of one dollar. Coos County has submitted a letter of support to the Commission endorsing this plan and the Company currently is awaiting the Commission's decision on the

filing.[4] NW Natural's investments in the Coos County Pipeline, described below, are dependent on the Company acquiring the pipeline.

Q. Why does Coos County want to sell the Coos County Pipeline to NW Natural?

A. Coos County does not have the financial ability to mitigate the landslide risk for the Coos County Pipeline.[5] In 2021, NW Natural commissioned a study to identify landslide areas near the Coos County Pipeline. In that study, thirteen areas were identified as high risk sites where an increase in monitoring practices may be required to sufficiently address the safety risk depending on conditions. Currently, three areas have been identified as requiring remediation to address landslide risks. The Company is currently monitoring identified landslide risk areas, with more frequent monitoring of the higher risk areas. The Company has design plans to address one of these slide areas (Mile 98 Relocation Project). The Company has had initial design discussions on the second location (Coquille River), but has not formally submitted a design proposal to relocate the pipe in this slide area. The third location, the Lookingglass slide, which was two separate slides in the 2021 study, can be mitigated without the need for additional capital spending and, therefore, is outside the scope of this proceeding. Two separate slides merging into one highlight a limitation with the 2021 point-in-time study. Specifically, it is

[4] See NW Natural/201, Kizer-Karney-Pipes-Fellon, for a copy of this letter.

[5] NW Natural/201, Kizer-Karney-Pipes-Fellon, Coos County Letter.

hard to accurately predict future landslide safety risks due to severe storms that can heighten the risk at certain areas or expose new areas to landslide risk.

Q. Please explain how a storm in March 2025 increased landslide risk.

A. In March 2025, heavy rains in southwest Oregon caused widespread damage due to flooding, landslides, mudslides, sinkholes, and rockfalls resulting in a Level 3 regional emergency response activation from the Oregon Department of Emergency Management. In Coos County, heavier than normal rainfall caused the Coos and Coquille River watersheds to flood, resulted in damage at approximately 90 sites on county roads, and required the Coos County Sheriff's Office to deploy search and rescue operations to protect life and safety. Due to the severity of the damage from the storm, the Federal Emergency Management Agency (FEMA) declared a presidential disaster on July 22, 2025, which made available federal disaster assistance. Landslides related to this storm have resulted in higher risk of failure at multiples points along the Coos County Pipeline and therefore have made landslide mitigation work more urgent. NW Natural notes that it will seek to leverage any federal or state funds that Coos County secures to offset the cost of landslide mitigation projects.

2. Mile 98 Relocation Project

Q. Please describe the Mile 98 Relocation Project.

A. The Mile 98 slide area has been identified as the highest risk location on the Coos County Pipeline. This segment of 12" transmission pipeline traverses down a sloping hillside within a Bonneville Power Administration right-of-way. As part of

landslide mitigation, Coos County—as the current owner of the pipeline—approved NW Natural's request to hire a geotechnical engineering consulting firm to assess this slide area and recommend a long-term remediation solution. This geotechnical analysis showed that the pipe is currently located at a depth where land movement is causing strain on the pipe. To resolve this issue, the Mile 98 Project will install approximately 2,200 feet of 12" transmission pipe via horizontal directional drilling (HDD) technology at a deeper location where stable soils are located.

Q. What is the status of the Mile 98 Relocation Project?

A. As explained above, Coos County is not able to finance this project. If NW Natural's filing is approved in ADV 1789, the Company will assume ownership of the Coos County Pipeline and plans to complete this project by October 2026. The design of the Mile 98 pipeline relocation project, funded by Coos County, is 90 percent complete. To mitigate the risk for the upcoming winter, NW Natural routinely monitors the 12" transmission pipe along the Mile 98 project area and the Company's geotechnical consultant has recently performed a pipe strain analysis. This strain analysis shows that while the pipe is still at high-risk, the strain is not to the level where there is an imminent threat of damage to the pipe. Due to the high potential of impact to the Mile 98 project area from winter rains NW Natural anticipates that interim measures will be required to reduce strain on the 12" transmission main until the Mile 98 relocation work can occur.

Q. What is the estimated total cost of the Mile 98 Relocation Project?

A. The total cost to complete the Mile 98 Project is expected to be approximately $4 million.

3. Coquille River Project

Q. Please describe the Coquille River Project.

A. This section of the Coos County 4" transmission pipeline is currently adjacent to the Coquille River, which first started showing signs of erosion in 2020 that the County addressed at that time with the installation of a sheet pile wall in the area that was eroding. Continued erosion in the area prompted Coos County to further expand the scope of the sheet pile wall and more sections of the wall were installed in December of 2021. NW Natural notes that it was notified of this project as the pipeline operator, but that it was not involved in this project.

In the summer of 2022, the newly installed section of the sheet pile wall began to fail resulting in land movement that was causing stress on the 4" lateral. To temporarily mitigate the risk of pipeline failure, approximately 400 feet of the 4" pipeline was relocated to an above ground location away from the failed sheet piling.

The Coquille River Project will install approximately 3,000 feet of 4" transmission main via HDD technology at a deeper location and on a new footline outside of the Coquille riverbank erosion area. The project will likely require environmental permitting approvals for the project work along the Coquille River riparian area. The project will remove the temporary above ground pipe and

replace it with a pipeline located in stable location. Environmental permitting conditions may require the removal of the failed sheet piling and restoration of the riparian area.

Q. What is the status of the Coquille River Project?

A. Similar to the Mile 98 Project, Coos County is not able to finance this project. If NW Natural's filing is approved in ADV 1789, the Company will assume ownership of the Coos County Pipeline and plans to complete this project by October 2026. The Company has not performed any pipeline relocation design work on this project. To mitigate ongoing risk, the area with the above-ground pipe is being monitored weekly by Coos Bay field crews, unless field crews are unable to access the area when it is flooded during river high flow conditions.

Q. What is the estimated total cost of the Coquille River Project?

A. The total cost to complete the Coquille River Project is expected to be approximately $4 million.

4. High Risk Slide Areas

Q. Please describe the actions that NW Natural is planning in other areas that have been identified as high risk.

A. As stated above, NW Natural commissioned a study in 2021 to identify landslide areas near the Coos County Pipeline. This report identified a total of 13 high risk sites along the Coos County Pipeline. Two of these sites are being addressed by the projects described above—the 98 Mile slide and the Coquille River slide. In addition, as stated above, it currently appears that the Lookingglass slide (which

was two separate slides in the 2021 study) can be mitigated without the need for additional capital spending and, therefore, is outside the scope of this proceeding.[6] This leaves nine other sites that have been identified as high risk. Based on past history, NW Natural believes at least one of the remaining nine high risk sites will require remediation beyond monitoring. Therefore, NW Natural is seeking to recover the cost of such a remediation project in this proceeding.

Q. What is the status of the actions that NW Natural is planning to undertake?

A. As stated above, the scope of the remediation in the high risk slide areas are unknown at this time. However, based on past history, NW Natural believes that at least one of the remaining nine high risk sites will require remediation.

Q. What is the estimated total cost of this project?

A. The pipeline remediation projects for the high risk slide areas are unknown at this time. Given the number of additional high risk sites, the Company is assigning a budgetary figure of $4.2 million because, as stated above, NW Natural believes that at least one of the remaining nine high risk sites will require remediation.

D. Ongoing Meter Modernization Program ("MMP") Investments

1. Background of the MMP

Q. Has the MMP been a part of previous NW Natural general rate cases?

A. Yes. The MMP has been a part of NW Natural's previous two general rate cases (UG 490 and UG 520). Taken together, these cases resulted in the Commission

[6] Mitigating the Lookingglass slide will, however, require additional O&M spending.

approving stipulations that authorized NW Natural to recover the costs of all MMP capital investments made prior to October 31, 2025 (i.e., the rate effective date of NW Natural's last general rate case—UG 520).[7] In this proceeding, NW Natural is seeking to recover MMP capital investments made between October 31, 2025 and October 31, 2026 (the rate effective date in this proceeding). NW Natural continues to implement the MMP in accordance with its four-year plan (2024-2027).

Q. Please describe the four primary components of the MMP.

A. The four primary components of the MMP are:

1. **Encoder Receiver Transmitters ("ERT") Replacement**: ERTs are communication devices attached to the Company's meters. ERTs transmit a radio frequency signal to NW Natural's trucks that are dispatched across NW Natural's service territory, enabling remote meter reads. Due to ERTs in the Company's service territory reaching the end of their approximately 20-year battery life, a replacement program was needed for approximately 500,000 ERTs on a system basis over the duration of the program (2024 through 2027). NW Natural is continuing to utilize its current technology (500G ERTs) that it adopted in 2019.

[7] *See In the Matter of Northwest Natural Gas Co., dba NW Natural, Request for a General Rate Revision*, Docket No. UG 490, Order No. 24-359 (Oct. 25, 2024); *In the Matter of Northwest Natural Gas Co., dba NW Natural, Request for a General Rate Revision*, Docket No. UG 520, Order No. 25-240 (Oct. 24, 2025).

2. **Periodic Cause for Change ("PCC") Meter Replacement**: Within the population of the 500,000 ERTs, on a system basis, there has been a subset of meters (approximately 121,000) that are also eligible for meter replacement as PCC meters. PCC meters are meter families that have been tested and are determined to run fast (i.e., reading at 102 percent of the actual metered volume or more). These meters, along with the aging ERTs attached to them (see above), are being replaced throughout the duration of the program (2024 through 2027).

NW Natural notes that this subset of meters has grown from approximately 90,000 to 121,000, which has led to further cost reductions under the MMP. NW Natural originally estimated costs would be reduced by $10 million over the life of the MMP by ensuring that a single visit to a customer's premises resolves both ERT and PCC meter issues. However, due to the increased overlap between ERT and PCC meter replacements, these cost reductions are now projected to be approximately $12 million.

3. **Field Collection System ("FCS") replacement with Temetra:** The current meter reading software in use, FCS, is being retired by the vendor, Itron Inc., meaning that it will not be supported beginning in late 2028. As part of the MMP, the Company will migrate from its existing metering software to its replacement, Temetra. The use of Temetra will ensure meter reading functionality in 2028 and beyond and allow cellular backhaul as a communications method for collecting meter reads. NW Natural currently

expects to complete the FCS replacement in July 2027 and, therefore, is not seeking cost recovery for the replacement in this proceeding.

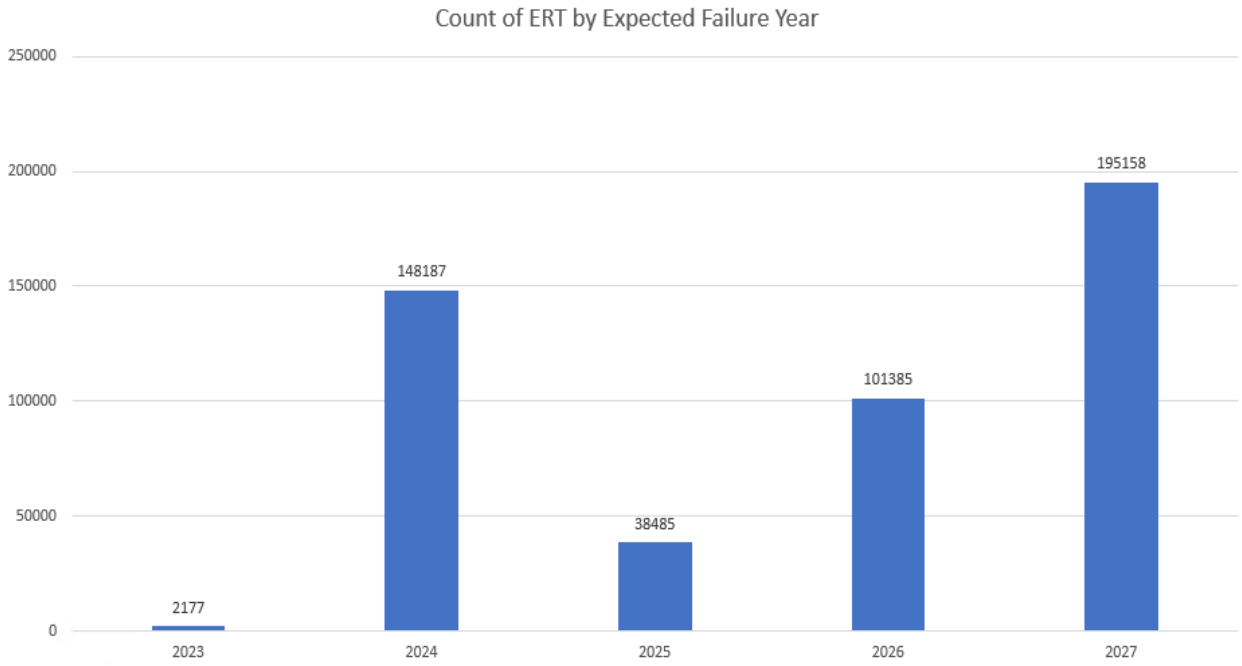
4. **Introducing new metering technologies:** NW Natural has purchased and installed various different meters throughout its history, and in 2024, the Company added ultrasonic residential meters to its meter complement. The key reasons for adding ultrasonic meters include: meter diversification and preparing for an eventual transition away from mechanical meters; safety related benefits such as automatic shutoff capability; alerts/alarms related to high flow and high temperature; and reduction of ERT purchasing needs due to ultrasonic meters not requiring separate ERTs. As explained below, NW Natural is replacing a portion of its PCC meters with ultrasonic meters.

2. ERT and PCC Meter Replacement

Q. How many ERTs are being replaced by NW Natural in the MMP?

A. As shown in Figure 1 below, there are a significant amount of ERTs across the Company's service territory entering their 18th year post-installation during the course of the MMP (2024-2027).

Figure 1



NW Natural is replacing these ERTs in-line with its replacement criteria.

Q. What is NW Natural's ERT replacement criteria?

A. Due to the risk of malfunction, NW Natural needs to be proactive about ERT change-outs and begin installations of ERT replacements during the 18th year of an ERT's lifespan, as they begin to start failing in meaningful quantities after 17.5 years. Additionally, to optimize ERT replacement on a geographic basis, NW Natural is replacing ERTs strategically in geographically organized batches across its service territory rather than responding to individual ERT failures as they occur.

Q. Why did NW Natural select Itron 500G AMR ERTs to replace end-of-life ERTs?

A. NW Natural has been using the 500G AMR ERTs since 2019, which are capable of storing 40 days of hourly data and more interval data. The Company selected this technology as the least cost option and because it allows NW Natural to maintain its billing functionality.

Q. Is NW Natural on-schedule in replacing ERTs?

A. Yes. To date, NW Natural has replaced 151,536 ERTs in its Oregon service territory over the course of the MMP. By the rate effective date in this proceeding (October 31, 2026), NW Natural plans to replace an additional 90,000 ERTs in its Oregon service territory.

Q. Is NW Natural optimizing ERT and PCC meter replacement?

A. Yes. As stated above, by combining ERT and PCC meter replacement into a single program—the MMP—NW Natural is able to create operational efficiencies, resulting in lower costs for customers. These operational efficiencies are created by ensuring that NW Natural visits the customer premises only once to change both the ERT and the PCC meter. Reducing visits to customer premises reduces costs. NW Natural estimates the reduced costs over the life of the program to be approximately $12 million, which is a $2 million increase in cost reduction from NW Natural's original estimate due to the increased overlap between ERT and PCC meter replacement as explained above.

Q. How many PCC meters did the Company identify across its service territory that it must replace?

A. At this point, the Company's meter sampling program has identified approximately 121,000 PCC meters with ERT exchange overlap. 109,000 of those ERTs are in Oregon. The Company is on track to complete these replacements over the course of the MMP.

Q. How does NW Natural test the accuracy of its meters and identify PCC meters?

A. NW Natural has a Meter Sampling Program to evaluate the accuracy of its in-service diaphragm meters. Each in-service meter is part of a group of meters, referred to as a "family." NW Natural aims to group meters into "families" based on several criteria, one of which is performance records. Meter families allow NW Natural to pull a random sampling of similarly performing meters to assess a group of similar meters more efficiently.

NW Natural typically groups meter families based on manufacture date or date placed in service. For example, for all meter sets prior to 2020, a family is created based on manufacturer, meter size, meter type, and installation year. For all meters from 2020 onward, a family is created based on the manufacturer, meter size, meter type and meter manufacture date, to better align with manufacturer warranties. NW Natural can modify these families based on performance of certain meters to ensure similarly performing meters are in the same family. Similarly, some families have sub-families according to additional criteria. Sub-families

permit NW Natural to remove underperforming meters without affecting the performance of the larger family.

Q. Is NW Natural on-schedule in replacing PCC meters?

A. Yes. To date, NW Natural has replaced approximately half of the PCC meters in its Oregon service territory over the course of the MMP. By the rate effective date in this proceeding (October 31, 2026), NW Natural plans to replace approximately 68 percent of the remaining PCC meters in its Oregon service territory.

Q. Please provide an update on the rollout of ultrasonic meters.

A. NW Natural continues to install ultrasonics in its PCC meter exchanges. All of the Company's field technicians and meter-shop personnel have been trained on the new meter's operational functions. NW Natural has incorporated the ultrasonics' new alerts and features into its diagnostic processes and the roll out of this new meter type has been successful to date. With the additional population of PCC meters identified with ERT overlap, the meter complement for PCC meters exchanges used for the MMP will be approximately 36,000 mechanical meters and 84,000 ultrasonic meters.

Q. Is NW Natural on-schedule in rolling out ultrasonic meters?

A. Yes. In Oregon, NW Natural has rolled out 33,700 ultrasonic meters for PCC meter replacement since the MMP began in 2024. In Oregon, NW Natural plans to install an additional 33,696 ultrasonic meters for PCC replacement by the rate effective date (October 31, 2026).

Q. Is the MMP still within its original budget?

A. Yes, the MMP is still within its original budget.

3. MMP Cost Recovery

Q. What cost recovery is NW Natural requesting for the MMP in this rate case?

A. The Company is requesting recovery of $14.9 million, on an Oregon-allocated basis, of MMP investment between October 31, 2025 and the rate effective date of this proceeding—October 31, 2026.

Q. Has the Company filed a deferral application for the MMP?

A. Yes. The Company filed a deferral application on January 2, 2024, docketed as UM 2311, for the one-time operations and maintenance ("O&M") expense incurred for the limited duration of the MMP. The Company also filed a request to reauthorize deferred accounting treatment on January 28, 2025. The Commission approved both the deferral and the reauthorization in Order No. 25-203.

Q. Is NW Natural seeking to recover any portion of the deferral in this proceeding?

A. No. NW Natural is not seeking to recover any O&M costs in this proceeding.

E. The Dalles RC

1. Background

Q. Did NW Natural previously seek cost recovery for The Dalles RC in NW Natural's 2025 general rate case (docket UG 520)?

A. Yes. However, as part of the First Partial Stipulation in docket UG 520, NW Natural agreed to remove projects that would be in-service after October 30, 2025, and the

Company removed The Dalles RC, which is currently scheduled to go into service in October 2026. As part of the First Partial Stipulation, NW Natural also agreed to remove from docket UG 520 its request to recover land acquisition costs for The Dalles RC, although the land purchase was completed in September 2025. The Commission approved and adopted the First Partial Stipulation in docket UG 520, Order No. 25-420.

Q. Prior to your discussion of The Dalles RC , please provide an update on the Company's Facilities roadmap.

A. In 2008, NW Natural developed a facilities strategy as a flexible roadmap to guide the Company's facilities decisions and investments. Work at NW Natural's facilities has been ongoing since then and is nearing completion. The planned relocation of The Dalles RC scheduled for 2026, followed by the Coos Bay and Albany Yard enhancement projects in 2028 and 2029, respectively, are the last large projects currently remaining on the roadmap. A few smaller projects will be completed by 2030.

2. The Dalles RC Project

Q. Please provide an overview of the existing resource center in The Dalles and the operations there.

A. NW Natural operates a resource center in The Dalles, which is essential for supporting the delivery of safe and reliable service across Hood River and Wasco Counties in Oregon, as well as Klickitat and Skamania Counties in Washington. NW Natural currently leases this property, and the lease expires at the end of 2026.

The leased area is one-half acre and includes a prefabricated steel building. The building consists of a single-story 65-foot by 40-foot garage, a 19-foot by 40-foot ground-floor office, and a 19-foot by 40-foot mezzanine office above the ground floor, totaling about 4,100 square feet. The site also features a microwave tower. Ten employees work from this site, representing Customer Field Services, Construction, Emergency Response, and Community Affairs.

The services provided out of this location include customer field services, construction, transmission maintenance, leakage inspection, system operations, and field engineering. The facility also provides materials and equipment storage.

Q. Why is The Dalles RC Project necessary?

A. The Dalles RC Project is necessary for several reasons. First, as mentioned above, the lease on the current facility's location is expiring in December 2026. NW Natural's standard procedure in these situations is to evaluate whether the Company could potentially extend the lease or if other alternatives, such as relocation, should be considered. This evaluation occurred during the period 2020-2022, and concluded that the best path forward identified was relocation. Relocation is necessary because the size of the current, one-half-acre site has become wholly inadequate, and the daily operations at this location have simply outgrown the site. NW Natural determined that approximately 2.5 acres are needed for efficient ongoing and future operational functionality.

Second, the office building lacks current standard NW Natural functionality. It does not have a conference room, a write-up room, a drying room, or changing

room and showers, and the kitchen is inadequate. The existing site is too small to support current operational needs like a vehicle fueling system, pipe storage, truck scale, truck and equipment wash system, and a decant system. The site lacks and cannot accommodate sufficient indoor covered storage for Company tools and materials, or enclosed parking for specialty equipment to protect it from the environment. The site also lacks space to accommodate adequately sized storage bins for rocks and sand. NW Natural must relocate to a new site because it cannot overcome size constraints in the existing facility to adequately provide for these functional operational improvements.

Third, a seismic assessment of the metal building was completed in 2016 by KPFF Engineering (NW Natural/202, Kizer-Karney-Pipes-Fellon) and concluded that the building does not meet current life-safety building codes, raising concerns about employee safety and the ability to operate after a seismic event. Additionally, the lack of onsite fueling could hinder NW Natural's response capabilities during a major natural disaster.

In sum, The Dalles RC Project is necessary because the current lease is expiring, the existing site lacks seismic resiliency, and the buildings and site are too small to accommodate required operations functionality, as well as to enhance efficiency and employee safety.

Q. What alternatives did the Company consider before selecting the land for the new The Dalles RC?

A. The Company's broker, Cushman & Wakefield, conducted an extensive two-year search and evaluated several properties, and the site of the new The Dalles RC was the only available property that met the Company's requirements for an adequately sized space in an appropriately zoned area. The new property is large enough to accommodate the Company's new purpose-built building and necessary equipment and vehicle storage. The property was also desirable because it was the lowest cost and carried lower risk for zoning approval. The Cushman and Wakefield Report is provided as NW Natural/203, Kizer-Karney-Pipes-Fellon.

Q. What steps did the Company take after selecting the new The Dalles RC site?

A. The Company enlisted the help of various consultants to conduct due diligence on the potential new site that included site design; civil and geotechnical engineering; environmental evaluation; construction estimating; planning, zoning, and construction evaluation; and engagement with The Dalles Planning Department. The Company determined based on its due diligence that the new site would meet current requirements for a resource center.

Q. How is The Dalles RC Project important to the Company's business continuity planning?

A. The Dalles RC is the Company's only facility in the Columbia Gorge. The resource center is essential to the Company's ability to perform basic utility functions and

serves as a center for Company regional emergency response. The Dalles RC Project will increase Company emergency response readiness by providing a new facility that will be operational following a major seismic event. Additionally, NW Natural will install a fueling station that will be available for Company use during emergencies that could impact retail fueling stations.

Q. Please describe the scope of The Dalles RC Project on the new site.

A. The Company will construct and move into a new facility on the newly purchased site. The new facility will include an office building and warehouse that will be designed to be operational following a significant seismic event. The office building will include offices, a write-up room, a non-commercial galley, locker rooms with showers, a drying room, and a data room. The Company will utilize the warehouse to store the various tools and equipment necessary to support operations at The Dalles RC. The Company will construct the building with necessary features like HVAC, plumbing, and mechanical systems and furniture.

The new facility will provide various yard support infrastructure, including a covered pipe storage shed, enclosed specialty equipment storage garage attached to the pipe storage building, a spoils and decant system shed, a fuel tank within a fueling canopy, and a truck wash room that includes a Landa unit for separating oil from water. The Dalles RC Project will also involve basic general site improvements like landscaping, yard lighting, parking area striping and bollard installation, fencing, and motorized driveway gates.

Q. Please explain why the Company needs the various outbuildings and equipment at The Dalles RC.

A. The functionality of The Dalles RC aligns with the functionality of NW Natural's resource centers across its service territory to support Company operations, safety, and resiliency objectives, as described below.

Q. Why is the covered pipe storage needed?

A. There is no existing covered storage space at The Dalles RC for pipes and special equipment. Because the Company's pipes require protection from ultraviolet ("UV") light, the Company has had to use tarps to provide UV protection, which may increase the risk of injury to NW Natural personnel when removing and tarping polyethylene pipe.

Q. How will the Company use the specialty equipment garage?

A. During freezing weather, critical equipment has been stored in the mechanic garage area at night and then removed in the morning to allow mechanics to utilize the garage. The specialty equipment garage will provide heated storage space and a permanent home for temperature-sensitive equipment, such as the vacuum truck and vapor extraction unit.

Q. What is the timing associated with The Dalles RC Project?

A. The Company purchased the new property in September 2025 and has recently commenced construction. Under the construction schedule, concrete foundations will be installed in February 2026 with structural steel being installed in April and May 2026 leading to the completion of the exterior shell in June 2026. Interiors

and finishing will be complete and The Dalles RC will be placed into service by October 2026.

Q. What will the Company do to maintain service between the time it vacates the existing facility and when it starts utilizing the new The Dalles RC?

A. The Company will continue to occupy its existing facilities until the new The Dalles RC is completed. The lease at the existing property expires on December 31, 2026.

Q. Please describe the Company's proposal for cost recovery for The Dalles RC Project.

A. The Company is seeking to include $15.4 million, inclusive of the land and resource center, as an addition to rate base, or $11.7 million on an Oregon-allocated basis. The allocation is based on the number of customers served by The Dalles RC in Oregon versus Washington. The Company is also proposing to remove the current lease expense of the current resource center in The Dalles, totaling $60 thousand in this proceeding.

III. IT&S MODERNIZATION PROJECTS

Q. Please explain the IT&S projects that NW Natural seeks to recover in this proceeding.

A. As explained in the Direct Testimony of Zachary D. Kravitz and Kyle T. Walker (NW Natural/100, Kravitz-Walker), the Company is seeking to recover its IT&S investments made between the rate effective date of its last general rate case (October 31, 2025) and the rate effective date of this proceeding (October 31,

2026). Timely recovery of NW Natural's IT&S investments is necessary because the depreciable life of such investments is very short compared to most other utility assets that have a much longer life. NW Natural is not seeking to recover any additional IT&S O&M in this proceeding.

Q. How do the projects you detail in your testimony align with the Company's overarching strategic goals and cloud-based strategy?

A. Each project detailed in testimony supports the Company's goal of reducing complexity through a current, secure, and compliant system. These projects ensure the safety, reliability and resiliency of NW Natural's operations, enhance operational security, and help streamline NW Natural's portfolio of IT&S solutions using off-the-shelf tools that are effective and vendor-supported. By keeping software and equipment at supported levels, NW Natural can continue to receive critical system and security patches, take advantage of the latest technology features, and maintain license compliance as defined by support agreements.

Q. Please list the IT&S projects that NW Natural will discuss in testimony.

A. The following major IT&S projects are discussed in testimony:

A. Application Lifecycle Management Projects

- Esri Utility Network Replatform Project; and
- the Clevest Update Project;

B. Network Tower Stability Project

C. Data, Reporting and Analytics ("DRA") Program

D. Network Tech Refresh Projects

A. Application Lifecycle Management Projects

1. Esri Utility Network Replatform Project

Q. Please provide some context for the Esri Utility Network ("UN") Replatform Project and how this project fits into the Company's field and web mapping program.

A. The Esri UN Replatform Project is part of the Company's ongoing effort to consolidate and update the field and web mapping systems. This Esri UN Replatform Project transitions several interrelated, end-of-life applications involved in managing the Company's detailed geospatial data to modern, supported platforms. As context, geospatial data is used to model the Company's pipeline infrastructure and support a range of Company operations, such as ensuring system integrity, modeling gas flows, tracking customer assets, and assigning field workers. While the geospatial data is used directly by certain NW Natural teams (such as Pipeline Integrity and Geographical Information Systems ["GIS"] teams), the data is also integrated into other applications to allow non-GIS personnel to see NW Natural's pipeline infrastructure and apply map-based updates.

Currently, NW Natural uses software from Esri, a global provider of geospatial software, to manage the Company's geospatial data. This software includes both Esri's ArcMap, which allows NW Natural to create, edit, and analyze geospatial data, as well as Esri's Geometric Network, which models the Company's geospatial network. Together, this system serves as a digital twin of the NW Natural gas infrastructure, representing the location, status, material, and

other characteristics of assets to support the safe operation and maintenance of the system. This network models how gas moves through the system, which not only allows the Company to reliably identify and locate assets, but also enhances operational integrity by identifying potential gaps and risks in the system's operations. Additionally, the network supports emergency response procedures, such as by identifying valves to isolate an area in case of system damage (also known as valve isolation tracing).

Q. Please describe the Esri UN Replatform Project.

A. The Esri UN Replatform Project involves four related product transitions: **First,** this project will replace the outdated Esri ArcMap software, which handles viewing, editing, analyzing, sharing, and managing geospatial data, with new Esri software called ArcGIS Pro. **Second,** this project will migrate the geospatial data model from Esri's Geometric Network to Esri's new geospatial modeling tool, known as the Utility Network (UN). **Third,** this project will replace Schneider Electric's ArcFM software with equivalent functionality in the new Esri software—eliminating ArcFM from the Company's product suite. NW Natural's Corrosion Protection team currently uses Schneider Electric's ArcFM Viewer to trace cathodic protection needs. With the transition to the new Esri system, the Company will no longer need to maintain the separate ArcFM software. **Fourth,** this project will update the Esri server backbone, known as "ArcGIS Enterprise," to allow the geospatial data in Esri UN to integrate with the Company's other IT&S systems, such as Customer Order Management and Pipeline Locating.

Q. Why is the Esri UN Replatform Project necessary?

A. The ESRI UN Replatform Project is necessary because NW Natural's current geospatial data systems, including Esri Geometric Network, Esri ArcMap, and the underlying ArcGIS Enterprise server, are all nearing end-of-life and must be replaced or updated. The ArcGIS Enterprise server reaches end of support in August 2026. ArcMap is currently in a "mature support" phase, without patches or updates being provided, and even this support ends on March 1, 2028, for utility customers (other customers' support terminates March 1, 2026). Transitioning to ArcGIS Pro impacts the modeling network as well, as Esri's Geometric Network is not compatible with ArcGIS Pro. This consolidated Esri UN Replatform Project is therefore designed to allow NW Natural to migrate this integrated set of field and web mapping applications by July 2026.

Q. Did NW Natural consider alternatives to the Esri UN Replatform Project?

A. Yes, NW Natural considered two primary alternatives to the Esri UN Replatform Project. **First,** NW Natural considered a two-phase approach, whereby the Company would postpone the ArcMap-to-ArcGIS Pro replacement until closer to the 2028 end-of-service deadline, while proceeding with transitioning the network connectivity model to Esri's UN platform. This alternative was not selected because it would (a) result in higher overall project costs by requiring two different workstreams; and (b) complicate implementation because the data migrated to the UN platform would need to be kept as "read-only" to avoid data incompatibilities between the ArcMap and UN systems.

Second, NW Natural considered postponing both the ArcMap and Esri Geometric Network transitions until closer to the 2028 end-of-service deadline. This alternative was not selected because (a) NW Natural would still need to pursue a separate ArcGIS Enterprise update and (b) without the updates to the other Esri software, NW Natural would not be able to migrate and terminate Schneider Electric's ArcFM software—necessitating further updates to maintain that software, which is end-of-life. Updating ArcFM independently would likely cost between $750,000 and $1.3 million, depending on the available system integrators—further increasing overall project costs. Given the inevitability of transitioning the Esri products and the current limited support for these software systems, NW Natural determined not to further delay replatforming to the Esri UN and ArcGIS Pro systems.

Q. Are there any other factors that contribute to the timing of the Esri UN Replatform Project?

A. Yes. The timing of this project is also impacted by the broader market for system integrators. Esri is the dominant player in the field and web mapping space for utilities. All utilities will need to have transitioned away from Esri's Geometric Network by March 1, 2028. Competition for quality, affordable system integrators will become increasingly challenging the longer the Company waits to put this project in service. Thus, delaying this project would undermine NW Natural's ability to retain a high-quality and cost-effective system integrator.

Moreover, retaining a reliable system integrator is particularly important for a project with this degree of operational consequence. NW Natural geospatial data is both highly technical and foundational to the Company's safety, security, and emergency response functions. It is therefore particularly important that the Company accomplishes this transition in a timely, deliberate manner with quality support.

Q. Were there other alternatives that NW Natural rejected as not viable?

A. Yes. The Company determined that adopting an alternative geospatial data network solution from IQGeo, an existing NW Natural technology provider, was not viable. IQGeo's network offering is new to the market and unproven in the gas utility industry. While IQGeo works effectively as a data-viewer application, editing, managing, and maintaining detailed geospatial and network data is a far more complex task with crucial safety and reliability implications. Thus, NW Natural determined that adopting IQGeo's network option was too great an operational risk to be a viable alternative at this time.

Q. In addition to ensuring the reliability of the Company's geospatial data systems, are there other benefits to the Esri UN Replatform Project?

A. Yes. In addition to offering a more reliable system through required lifecycle management, the ESRI UN Replatform Project will allow the Company to securely publish and share up-to-date geospatial information internally and externally, such as with local jurisdictions that use this information for project planning purposes.

This tool replaces previously static, PDF maps that could not be readily updated to reflect the Company's dynamic system.

Q. What is the status of the Esri UN Replatform Project?

A. NW Natural conducted a request for proposals ("RFP") and selected a System Integrator, known as SSP Innovations, to facilitate this work in April 2025. The Esri UN Replatform project is in the Execution phase, and the Company plans to place this project in service in July 2026.

Q. What cost recovery is NW Natural requesting for the Esri UN Replatform Project in this case?

A. NW Natural seeks to recover its capital investment of $13.6 million on a system-wide basis, or $12.0 million on an Oregon-allocated basis.

2. The Clevest Update Project

Q. Please describe the Clevest Update Project and how this project fits into the Company's broader application lifecycle management program.

A. The Clevest Update Project involves updating NW Natural's mobile workforce management software from version 7.3 to version 8.3. The Clevest software is essential for scheduling, dispatching, and completing the majority of the Company's fieldwork, which ranges from emergency response to routine maintenance tasks. This project is part of the Company's broader application lifecycle management program, in that it seeks to implement a routine platform update as part of ensuring the security and reliability of the Company's IT&S software systems.

Q. Why is the Clevest Update Project necessary?

A. Updating Clevest is essential to mitigate the risks of technical failures in NW Natural's critical system used for scheduling, dispatching, and completing fieldwork. Like other software products, Clevest requires periodic updates from the vendor to address bug fixes, incorporate product improvements, and maintain support services. The standard support for the Company's current version of Clevest ended on December 31, 2024; extended support, which includes fixing security vulnerabilities or errors, will end on December 31, 2026. Operating on an unsupported platform could jeopardize NW Natural's operations if a software defect were to arise that requires vendor support for resolution or the application of critical fixes, including security updates. Therefore, updating Clevest now is crucial to ensure the efficient and secure operation of this vital system. Additionally, the Clevest Update Project will allow for better coordination among resources, including a new calendar view for more efficient work scheduling. This improvement is particularly beneficial for managing tasks for work groups that currently rely on spreadsheets and multiple SharePoint sites for their work forecast and capacity management. Specific improvements include:

- Enhanced nearby order functionality and filtering will provide work groups with increased visibility of tasks that need to be completed and their locations.
- The "Targeted Nearby Orders" search will allow preconfigured search criteria to be created for different scenarios when the field is looking for

specific types of work. For work groups that self-assign their work, these features will enable faster identification and assignment of work.

- Adding the "Special Indicators" functionality to Clevest will provide a crucial pipe inspection job code that allows field personnel and dispatchers a way to quickly identify high-priority work.
- Mobile platform enhancements will allow employees to self-assign work from the mobile platform, and to more efficiently complete time tickets at the end of shifts. These enhancements will also enable automatic resending of system messages that initially fail to send, reducing the number of queued work orders and preventing potential delays in information flow between systems.

Q. What is the status of the Clevest Update project?

A. The Clevest Update Project planning phase started in the third quarter of 2025 and the project will be placed in service in the second quarter of 2026.

Q. What cost recovery is NW Natural requesting for the project in this case?

A. NW Natural seeks to recover its capital investment of $2.2 million on a system-wide basis, or $1.9 million on an Oregon-allocated basis.

B. Network Tower Stability Project

Q. Please provide context for the Network Tower Stability Project.

A. NW Natural relies on Network towers to transmit information over long distances, and has employed this technology for decades as a reliable, non-wires information transmission alternative. This information is used as part of the Company's

SCADA and Emergency Voice Radio systems, among other functions. NW Natural currently has 24 Network towers, most of which were built decades ago—the oldest was installed in 1957. Many of these towers are in remote locations, and the Company has not previously conducted a comprehensive site assessment of these assets.

Q. Please describe the Network Tower Stability Project.

A. NW Natural has engaged GP&A Telecommunications Engineers to conduct on-site surveys, maps, and health assessments of the existing 24 Network towers. This work produced detailed analysis and recommendations for each site, which then was used to create a multi-year network stability strategy that was completed earlier this year.

In the next year, NW Natural will address urgent safety concerns that have been identified. NW Natural is seeking to recover the cost of those safety investments that will enter service prior to October 31, 2026 in this proceeding.

Between 2027-2031, the Company will replace, relocate, and/or expand existing towers to address any gaps in transmission coverage. Those later projects are outside the scope of this proceeding.

Q. Why is the Network Tower Stability Project necessary?

A. The Network Tower Stability Project is necessary because ensuring the reliability of the network information transmission network is crucial to system reliability and emergency preparedness. Non-wires information transmission is particularly crucial in emergency situations, such as “man down” scenarios, cellular

communications outages, and other emergency response demands. These towers also host the antennae for the Company's voice radio communications system. The Company is aware of five towers with degraded functionality due to tree and vegetation growth, meaning that those areas currently lack reliable voice radio functionality, telemetry data reporting, and back-up SCADA transmission. Restoring full communications and information transmission in these areas is critical.

Q. What is the status of the Network Tower Stability Project?

A. The Company completed the initial assessment phase of this project earlier this year. Urgent safety projects are scheduled to be completed by October 2026. NW Natural is seeking to recover the cost of these projects in this proceeding. Additional tower replacements, relocations, and/or expansions, as well as any residual safety work, will be placed in service incrementally thereafter, with the full Network Tower Stability Project expected to be complete by the end of 2031. Those additional projects are outside the scope of this proceeding.

Q. What cost recovery is NW Natural requesting for the Network Tower Stability Project in this case?

A. NW Natural seeks to recover its capital investment for those portions of this project that will be placed in service before October 31, 2026, which consists of $1.3 million on a system-wide basis, or $1.1 million on an Oregon-allocated basis.

C. DRA Program

Q. Please describe the DRA Program.

A. The DRA Program is an ongoing initiative to support the Company's data-driven decision-making. This set of tools allows the Company to develop analytics and publish reports for a range of critical business purposes, including safety, compliance, damage prevention, valve maintenance, and emergency tracking. Developing analytics and producing reports relies on carefully assessing the specific requirements, identifying the underlying data, structuring the associated reporting, testing the reporting and analysis process, and then producing the reports and any required visualizations for the end users. End users range from internal departments to government entities. Taken together, this DRA process requires developing and testing connections between different parts of the Company's systems to provide useful, clear, and reliable reports and analysis.

Q. How does the DRA Program relate to the Company's essential operations and provision of service?

A. The DRA Program is central to the Company's operations and effective decision-making, as it is the means by which NW Natural understands and manages its overall operations and performance. For instance, effective data analytics allow the Company to track and report on emergency response times, call volumes, and areas affected, thereby allowing the Company to allocate resources more effectively. Similarly, data analytics are necessary to provide comprehensive damage prevention reports to state regulators, identify risk areas, and guide future

investments. Effective decision-making, analysis, and reporting needs are met through individual use cases, which are developed and placed in service separately as each is completed.

Q. Are there viable alternatives to the DRA Program?

A. No. To be clear, reporting and analytics play a critical role across the Company, including regulatory compliance, operational efficiency, financial management, customer service, safety, and emergency response. In the absence of the DRA Program and its ability to leverage the Company's consolidated data warehouse through the Power BI software, NW Natural would have to rely on labor-intensive, ad-hoc, Excel-based reporting to meet regulatory reporting requirements and data analysis needs. This alternative is not viable because a manual alternative is both more error-prone and too slow to meet compliance deadlines.

Q. Are there other benefits of the DRA Program's centralized data and analytics approach?

A. Yes. A centralized DRA Program provides a consistent and scalable approach to reporting. Unlike decentralized methods, which often rely on siloed data sources and manual processes, a centralized DRA Program ensures data integrity, avoids duplicated efforts, and enables faster, more reliable insights from Company data. A centralized data warehouse also supports governance, security, and compliance by maintaining a single source of facts across the organization.

Q. What is the status of the DRA Program?

A. The DRA Program is active and ongoing. New reports and use cases are placed in service as they are produced, tracked quarterly.

Q. What cost recovery is NW Natural requesting for the DRA Program in this case?

A. NW Natural seeks to recover its capital investment for those portions of this project that will be placed in service between October 31, 2025 and October 31, 2026, which is $6.6 million on a system-wide basis, or $5.8 million on an Oregon-allocated basis.

D. Network Tech Refresh Projects

Q. Please describe the Network Tech Refresh projects.

A. Network equipment requires routine replacement of end-of-life hardware and software to mitigate the risk of non-compliance, failure rates, and compromised security. The network equipment in the Company's data centers, gas storage plants, and building facilities have undergone these improvements. Projects are listed below, as well as the associated request for cost recovery.

- Network Tech Refresh Data Center 2023 - Lifecycle replacements to expand capacity and improve resiliency of core networking infrastructure at data centers. NW Natural seeks to recover its capital investment of $1.9 million on a system-wide basis, or $1.7 million on an Oregon-allocated basis in this proceeding.

- Network Tech Refresh Operational Technology (OT) 2024 – Lifecycle replacements for the SCADA operational technology network. NW Natural seeks to recover its capital investment of $1.6 million on a system-wide basis, or $1.4 million on an Oregon-allocated basis in this proceeding.
- Network Tech Refresh Voice Radio – Replacement of the end-of-life analog radio system to a digital radio repeater system; replacement of all Company radios with new digital radios. NW Natural seeks to recover its capital investment of $1.2 million on a system-wide basis, or $1 million on an Oregon-allocated basis in this proceeding.
- Network Plants IT Refresh 2025 – Replacement of end-of-life network equipment in the Company's gas storage and LNG plants. NW Natural seeks to recover its $1.2 million capital investment on a system-wide basis, or $1 million on an Oregon-allocated basis in this proceeding.
- PC & Peripherals 2024 Tech Refresh -- Scheduled replacement of field laptops, desktops, office laptops, tablets and associated peripherals. NW Natural seeks to recover its $1.7 million capital investment on a system-wide basis, or $1.5 million on an Oregon-allocated basis in this proceeding.

IV. PUBLIC WORKS PROJECTS

Q. What are public works projects?

A. Public works projects are completed in response to state or local governments initiating an infrastructure project, such as widening and/or reconstruction of a roadway, replacement of a bridge, replacement or the installation of new public

agency utility lines. These infrastructure projects can conflict with NW Natural's existing system, requiring the Company to take action to mitigate this conflict, such as re-locating a section of pipeline.

Q. What public works projects are NW Natural seeking to recover in this proceeding?

A. NW Natural is seeking to recover two major public works projects—the W. 11th and Crow Rd. Pipe Relocation Project and the Keizer Verda Lane Grading Project. In addition, the Company is seeking to recover several smaller public works projects where a jurisdiction has already notified the Company of a conflict between that jurisdiction's infrastructure project and NW Natural's existing system, as well as its forecasted public works projects that the Company expects to complete by the rate effective date of this proceeding, October 31, 2026.

A. W. 11th and Crow Rd. Pipe Relocation Project

Q. Please describe the W. 11th and Crow Rd. Pipe Relocation Project.

A. NW Natural must re-locate and lower two sections of 12" Class D transmission main in Eugene along Crow Road to resolve a conflict with a City of Eugene public works project. Specifically, the City of Eugene will be constructing two large fish friendly culverts, storm, water and wastewater improvements on West 11th and Crow Road. The City of Eugene's project conflicts with two sections of NW Natural's existing 12" Class D Transmission main, requiring the Company to re-locate and lower those sections.

Q. What is the status of the W. 11th and Crow Rd. Pipe Relocation Project?

A. NW Natural plans to perform the re-location and lowering of the transmission main during the summer of 2026 when conditions are dry.

Q. What is the estimated total cost of the W. 11th and Crow Rd. Pipe Relocation Project?

A. The total cost to complete the W. 11th and Crow Rd. Pipe Relocation Project is expected to be approximately $3.0 million.

B. Keizer Verda Lane Grading Project

Q. Please describe the Keizer Verda Lane Grading Project.

A. Due to the City of Keizer planning extensive improvements along Verda Lane between Dearborn Avenue and Alder Drive, NW Natural must replace 1,200 feet of existing 2”(W) Class B main with 1,200 feet of 6”(P) main, as well as reconnect ten services and four lateral mains. The City of Keizer’s grading plans will install a new storm main line, bioswales, sidewalks, and repave the street.

Q. What is the status of the Keizer Verda Lane Grading Project?

A. NW Natural plans to begin this project in February 2026 and complete the project in March 2026.

Q. What is the estimated total cost of the Keizer Verda Lane Grading Project?

A. The total cost to complete the Keizer Verda Lane Grading Project is expected to be approximately $1.1 million.

C. Smaller Public Works Projects

Q. Please describe the smaller public works projects that NW Natural is seeking to recover in this proceeding.

A. NW Natural is seeking to recover numerous smaller public works projects where a jurisdiction has already notified the Company of a conflict between that jurisdiction's infrastructure project and NW Natural's existing system.

In addition, NW Natural is also seeking to recover its broader forecasted public works projects. For such projects, NW Natural relies on a historical baseline. The Company forecasts an expected level of public works into the budget ($16.1 million for this proceeding), because the Company has the historical experience to be certain that jurisdictions across its service territory will require NW Natural to support jurisdictional infrastructure projects. Overall, NW Natural has budgeted $36.7 million in 2026 for public works projects in Oregon. This amount is less than the 2025 Oregon public works budget of $46.33 million. Also, over the first nine months of 2025, actual Oregon public works expenditures are $33.95 million, which indicates that actual spending over the course of 2025 is reflecting the budgeted amounts. NW Natural notes that public works projects have increased in recent years, but it appears that there is a downward trend for 2026.

V. WITNESS QUALIFICATIONS

Q. Mr. Kizer, please describe your background and employment experience.

A. I graduated from Oregon State University with a Bachelor of Science in Civil Engineering, and I am a registered Professional Engineer in the State of Oregon. Before being promoted to my current position at NW Natural in June 2021, I was an Engineering Manager for the Company beginning January 2018. Prior to holding that position, I was a Field Engineer for the Company beginning May 2012. Before joining NW Natural, I worked as a Project Manager at Westech Engineering, Inc. from 1993 until 2012.

Q. Mr. Karney, please describe your background and employment experience.

A. I graduated from the University of Illinois at Urbana-Champaign with a Bachelor of Science in Mechanical Engineering, and I am a registered Professional Engineer in the State of Oregon. Before being promoted to my current position at NW Natural in April 2023, I was the Senior Director of Operations and Field Services. In that role I was responsible for the internal construction, contract construction, customer field services, emergency response, pressure regulation, operation, and maintenance of the distribution system. Prior to holding that role, I served as the Engineering Senior Director and Chief Engineer for NW Natural. In that role, I was responsible for design, construction, operation, and maintenance of the gas distribution system and utility storage plants, and operations support services including work management functions, mapping and compliance. Prior to holding that role, I served as the Engineering Director. I have also previously served as

the Senior Manager of Code Compliance for the Company, managed the regulatory compliance department, and represented the Company during safety audits performed by the Commission. I also reviewed and ensured Company compliance with pending regulatory changes from the United States Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA). Previously, I managed the Company's Construction and System Operations groups. I started my career at the Company with the Integrity Management group and worked on the development and implementation of the Transmission Integrity Management Program (TIMP) and the Distribution Integrity Management Program (DIMP). Before joining NW Natural, I worked as an Integrity Management Engineer for Colonial Pipeline Company for four years.

Q. Mr. Pipes, please describe your background and employment experience.

A. I have over 40 years of Facilities Management and Construction experience. I have been employed at NW Natural since 2014. Prior to assuming my current position at NW Natural, I worked for New Seasons for a year as Director of Design, Construction, and Facilities Management. I also worked for Knowledge Universe for 15 years as Vice President of Facilities and Development, and for Red Lion Hotels for 17 years as Senior Director of Facilities Management.

Q. Mr. Fellon, please describe your background and employment experience.

A. I hold a bachelor's degree in Business Administration from the University of Washington and a Master of Business Administration from Seattle University. I have more than 25 years of experience in information technology, and nearly 20

years of information technology leadership at management and executive levels. I joined NW Natural in my current role in 2024. Prior to joining NW Natural, I was Director of Information Technology, Application Services, at Puget Sound Energy in Bellevue, Washington for eight years, and prior to that I held a variety of technical and technology leadership roles in consulting, aerospace, and the retail sectors.

Q. Does this conclude your Direct Testimony?

A. Yes.

BEFORE THE

PUBLIC UTILITY COMMISSION OF OREGON

UG 527

NW Natural

Exhibits of Daniel B. Kizer, Joe S. Karney, Wayne K. Pipes, and Brian E. Fellon

CAPITAL ADDITIONS
EXHIBITS 201 – 203

November 25, 2025

EXHIBITS 201 – 203 – CAPITAL ADDITIONS

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CAPITAL ADDITIONS
EXHIBIT 201

November 25, 2025

BOARD OF COMMISSIONERS
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(541) 396-7535
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JOHN SWEET **DREW FARMER** **ROD TAYLOR**

September 29, 2025

The Honorable Letha Tawney, Chair
The Honorable Les Perkins, Commissioner
The Honorable Karin Power, Commissioner
Oregon Public Utility Commission
201 High Street SE, Suite 100
Salem, OR 97301-3398

Re. Coos County Pipeline

Dear Chair Tawney and Commissioners Perkins and Power,

On behalf of Coos County, we are writing to express our strong support for NW Natural's filing to eliminate the separate charge for Coos County customers for natural gas service, as well as our jointly developed plan for NW Natural to assume ownership of the Coos County Natural Gas Pipeline ("Pipeline").

The Pipeline, owned by Coos County, is essential to the provision of safe, reliable energy to our County. It is also critical to the economic health of our region. Without it, Coos County would lose natural gas service to both the industries and the residents that depend on it each and every day. Forest products is the largest industry that requires natural gas service. That industry has re-invested over $100 million in Coos County in just the last two years. Technology improvements in wood processing are also dependent on reliable natural gas. In addition, health care, education, and small local businesses including restaurants, shops, and recreation centers, as well as approximately 1,900 residential customers, depend on safe and reliable natural gas service for space heating, water heating, and cooking.

However, as described in NW Natural's filing, the Pipeline is subject to landslide risk that must be mitigated to ensure that Coos County's businesses and residents continue to receive safe and reliable natural gas service. Unfortunately, Coos County, as the owner of the Pipeline, does not have the financial ability to make these critical investments. As a rural county, our population is relatively small (approximately 62,800 residents) and a higher proportion of our population lives in poverty (16%) compared to national and state averages (11% and 12% respectively). In addition, the Coos County median household income of $60,313 is substantially lower than both the national median ($78,538) and the state median ($80,426).

Coos County has had limited success in securing external funding for Pipeline investments. We have received approximately $1.45 million in federal American Rescue Plan Act funding to offset the cost of landslide mitigation work in the Coquille River area. However, this funding, while extremely helpful, is not nearly enough to complete all necessary landslide mitigation work. Aside from American Rescue Plan Act funding, Coos County has been unable to secure any other external funding for the Pipeline.

For these reasons, we ask the Commission to approve NW Natural's filing. By doing so, the Commission will ensure that Coos County businesses and residents pay the same amount as any other NW Natural customer, placing us on equal footing as the more urban areas of the state. It will also help facilitate the sale of the Pipeline to NW Natural for the nominal sum of one dollar in order to ensure that critical investments in safety can be made as quickly as possible. We appreciate your consideration of this important matter and welcome the opportunity to discuss it further. Should the Commission or its staff have any questions or wish to meet to review the proposed request from NW Natural, we would be pleased to make ourselves available at your convenience.

Thank you for your continued commitment to ensuring equitable and reliable energy service across all of Oregon.

Sincerely,

John W. Sweet
Chairman

Drew Farmer
Commissioner

Rod Taylor
Commissioner

BEFORE THE

PUBLIC UTILITY COMMISSION OF OREGON

UG 527

NW Natural

Exhibit of Daniel B. Kizer, Joe S. Karney, Wayne K. Pipes, and Brian E. Fellon

CAPITAL ADDITIONS
EXHIBIT 202

November 25, 2025

ASCE 41-13 Tier 1 Seismic Evaluation of

NW Natural – The Dalles Service Center

1125 Bargeway Road
The Dalles, OR 97058

August 5, 2016
KPFF Project No. 1600122

NW Natural – The Dalles Service Center
ASCE 41-13 Tier 1 Seismic Evaluation

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Introduction

This report is to summarize the findings of our seismic evaluation of the NW Natural The Dalles Service Center located at 1125 Bargeway Road, The Dalles, OR. The evaluation was performed using the procedures of ASCE 41-13 "Seismic Evaluation and Retrofit of Existing Buildings." Please note that this evaluation only relates to the seismic performance of the structure. It does not address issues related to gravity framing.

Scope and Intent

KPFF Consulting Engineers was contracted to perform a Tier 1 seismic evaluation of the NW Natural The Dalles Service Center located in The Dalles, Oregon. This evaluation is based on a site visit that was completed on May 3, 2016, and upon the procedures of ASCE 41-13 "Seismic Evaluation and Retrofit of Existing Buildings." The intent of the evaluation is to determine if the structure meets the acceptance criteria of the Basic Performance Objective for Existing Buildings (BPOE). For this evaluation, the building was considered a Risk Category II building (i.e. a standard building occupancy) as defined by the International Building Code and the Oregon Structural Specialty Code. Therefore, the BPOE requires meeting the Life Safety Structural Performance level at the BSE-1E seismic hazard level, and the Life Safety Nonstructural Performance level also at the BSE-1E seismic hazard level. The City of Portland, chapter 24.85, stipulates that the BSE-1E seismic hazard level shall not be taken as less than 75 percent of the BSE-1N seismic hazard level. This City of Portland requirement is being applied to all NW Natural evaluations as to provide a consistent evaluation process across all locations. Life Safety, BSE-1E, and BSE-1N are defined as follows:

- Life Safety is a structural performance level in which a structure has significantly damaged components but retains a margin against the onset of partial or total collapse. It is possible that the structure will be damaged to the extent that it is not practical to repair and re-occupy the building.

- BSE-1E is a seismic hazard level that represents an earthquake that has a probability of exceedance of 20% in a 50 year period. This can also be thought of as an earthquake that is not expected to be exceeded in a 225 year return period.

- BSE-1N is two thirds of a seismic hazard level that represents an earthquake that has a probability of exceedance of 2% in a 50 year period multiplied by a risk coefficient. This can also be thought of as two thirds of the ground acceleration of an earthquake that is not expected to be exceeded in a 2,475 year return period.

Site and Building Data

The NW Natural The Dalles Service Center is an existing pre-engineered and prefabricated steel building, located at 1125 Bargeway Road, in The Dalles, Oregon. The original construction date is unknown. The overall building measures approximately 84 feet in the

northeast-southwest direction by 40 feet in the northwest-southeast direction. It consists of a single story 65-foot by 40-foot garage, a 19-foot by 40-foot ground floor office, and a 19-foot by 40-foot mezzanine office (above the ground floor office). The combined building is approximately 4,100 square feet.

The roof structure consists of corrugated metal roofing that spans between cold-formed metal joists. The joists span between transverse steel frames, and the frames are bolted to the slab/foundation. The lateral force resisting system in the northeast-southwest direction consists of metal roof decking and diagonal roof bracing, which transfer load to the transverse frames via bolted connections, and bolted connections transfer the load from the frames into wall diagonal bracing, and these diagonals are bolted to the base of the frames that are bolted to the slab/foundation. The lateral force resisting system in the northwest-southeast direction consists of metal roof decking and diagonal roof bracing, which transfer load to the transvers frames, and the frames are bolted to the slab/foundation.

List of Criteria Used for Analysis

A geotechnical investigation was not performed for this evaluation. It was assumed that classification of the soils at the site as Site Class D and the following ground motions were used for the analysis:

Parameter	Value	Comments
$S_{X1,\ BSE\text{-}1E}$	0.157 g	Design spectral response acceleration parameter at 1 second for the BSE-1E seismic hazard level.
$S_{XS,\ BSE\text{-}1N}$	0.458 g	Design short-period (0.2 seconds) spectral response acceleration parameter for the BSE-1N seismic hazard Level.
T	0.217 s	Building fundamental period, as defined in Section 4.5.2.4.
S_a	0.343 g	Response spectral acceleration parameter. S_a = minimum($S_{X1,\ BSE\text{-}1E}$ / T, 0.75$S_{XS,\ BSE\text{-}1N}$)

The Level of Seismicity for the structure is therefore considered to be “High” as defined by Section 2.5 of ASCE 41. Please reference the full summary of the evaluation assumptions listed in the appendix.

Findings

The building was evaluated using the Tier 1 checklists, including the “Life Safety Non-structural Checklist,” as required in Section 4.4 of ASCE 41-13. The building in its existing condition does not meet the requirements of the Basic Performance Objective for Existing Buildings (i.e. Life Safety structural performance at three-quarters of BSE-1N seismic hazard level, as amended by the City of Portland Chapter 24.85). The following table summarizes the deficiencies that were identified for the building per the Tier 1 checklists. Reference Appendix A for the summary data sheet and completed checklists.

Structural Deficiencies

No.	Item	Tier 1 Ref.	Comments
1	n/a	n/a	n/a

Note: There were no identified structural noncompliant items. However, the following list of structural unknowns may contain noncompliant items if evaluation was possible.

Structural Unknowns

No.	Item	Tier 1 Ref.	Comments
1	Load Path	A.2.1.1	It is unclear how the mezzanine attaches to the steel frames or if it is self-supported/braced. The metal building alone appears to have a complete load path.
2	Mezzanines	A.2.1.3	It is not clear how the mezzanine is laterally braced. The mezzanine connections to the main steel frame were not exposed to view, and the building structure drawings were not available for review.
3	Liquefaction	A.6.1.1	A geotechnical report was not available for review. However, the Oregon Department of Geology and Mineral Industries (DOGAMI) Statewide Geohazards Viewer does provide information on site hazards. Per DOGAMI's Hazard Viewer, this building site has a "low" earthquake liquefaction hazard.
4	Slope Failure	A.6.1.2	A geotechnical report was not available for review. However, the Oregon Department of Geology and Mineral Industries (DOGAMI) Statewide Geohazards Viewer does provide information on site hazards. Per DOGAMI's Hazard Viewer, this building site has a "high" landslide hazard.
5	Surface Fault Rupture	A.6.1.3	A geotechnical report was not available for review. However, the Oregon Department of Geology and Mineral Industries (DOGAMI) Statewide Geohazards Viewer does provide information on site hazards. Per DOGAMI's Hazard Viewer, there are no identified active faults located within several miles of the site.
6	Ties Between Foundation Elements	A.6.2.3	Without structural drawings, it is not known if foundation ties between columns are present.
7	Brace Axial Stress Check	A.3.3.1.2	Without structural drawings, and the lack of access inside the northern part of the exterior walls, the quantity of diagonal rod bracing bays is not known.
8	Moment-Resisting Connections	A.3.1.3.4	Without structural drawings that describe the frame details, it is not possible to perform this check.

No.	Item	Tier 1 Ref.	Comments
9	Compact Members	A.3.1.3.8	Without structural drawings that describe the frame details, it is not possible to determine the frame member section properties.

Nonstructural Deficiencies

No.	Item	Tier 1 Ref.	Comments
1	Shut-Off Valves	A.7.13.3	A natural gas shut-off valve was not identified.
2	Flexible Couplings	A.7.15.4	Hazardous material piping (natural gas) does not appear to have flexible couplings (all rigid steel).
3	Tall Narrow Contents	A.7.11.2	Not all cabinets/refrigerators/storage racks/etc. are anchored.
4	Fall-Prone Contents	A.7.11.3	Heavy items on storage racks do not appear to be braced to the racks.

Note: Not all nonstructural checklist items were able to be identified. The following list of nonstructural unknowns may contain noncompliant items if evaluation was possible.

Nonstructural Unknowns

No.	Item	Tier 1 Ref.	Comments
1	Suspended Gypsum Board	A.7.2.3	The ceiling attachments were not viewable.
2	Overhead Glazing	A.7.4.8	The type of glazing is not known.
3	Stair Details	A.7.10.2	The stair details were not accessible to view, and structural drawings were not available for review; therefore the condition is not known.

Conceptual Seismic Upgrade Work

No explicit structural deficiencies are identified in the Tier 1 Checklists as noted in the Structural Deficiencies table previously shown in this report. However, there are structural unknowns that may contain noncompliant items if evaluation was possible. These unknowns may be identified as compliant or noncompliant if more extensive investigation, beyond that of a Tier 1 checklist, was performed.

Nonstructural deficiencies are identified in the Tier 1 Checklists, and are listed in the Nonstructural Deficiencies table previously shown in this report. There are also nonstructural unknowns that may contain noncompliant items if evaluation was possible. These unknowns

may be identified as compliant or noncompliant if more extensive investigation, beyond that of a Tier 1 checklist, was performed. The following is a list of potential solutions to mitigate the identified deficiencies:

1. Shut-Off Valves: Identify the shut-off valves for natural gas. Add shut-off valve if one is not present.
2. Flexible Couplings: Add flexible couplings to natural gas piping.
3. Tall Narrow Contents: Anchor cabinets/refrigerators/storage racks/etc. that are taller than 6 feet and with a height-to-depth ratio greater than 3-to-1.

No explicit structural deficiencies are identified in the Tier 1 Checklists; however, as previously noted, several structural unknowns may contain noncompliant items if more extensive investigation was performed. Based on our experience with seismic upgrades of similar buildings, the probable cost of an upgrade of this type related to direct structural costs would be approximately $25 - $30 per square foot. This does not include costs associated with nonstructural deficiencies, soft costs, impacts to architectural or M/E/P systems, business interruption, geotechnical ground improvement, etc. It is assumed that an M/E/P designer or contractor would address costs associated with the identified nonstructural deficiencies.

Summary

This ASCE 41-13 Tier 1 seismic evaluation was prepared for the NW Natural – The Dalles Service Center. It was found that the aforementioned building, in its current state, does not achieve the desired seismic performance objective for Life Safety Structural Performance at the BSE-1E seismic hazard or 0.75 x BSE-1N seismic hazard as amended by the City of Portland's Chapter 24.85. It also does not achieve the desired seismic performance objective for Life Safety Nonstructural Performance at the same seismic hazard as stated above.

Since there are no identified structural deficiencies, yet several unknowns, further investigation should be completed to determine compliance of the identified unknowns. If the unknowns were to identify structural deficiencies, in the event of a significant seismic event, it is expected that the building will be damaged, possibly to the point where repair and re-occupancy of the building is not possible. The threat to the life safety of the building occupants, under the seismic hazards and performance objectives mentioned in this report, is higher than it would be compared to a building constructed to modern building codes. Most of the nonstructural seismic upgrade work would relate to bracing and/or restraint of nonstructural components and contents. The nonstructural unknowns should also be further investigated. It is our opinion that conventional seismic upgrade work could be employed to reduce/mitigate this seismic risk.

Appendix

ASCE 41-13 Summary Data Sheet and Checklists

Appendix C: Summary Data Sheet

BUILDING DATA

Building Name: NW Natural - The Dalles Service Center — Date: May 3, 2016

Building Address: 1125 Bargeway Road, The Dalles, OR 97058

Latitude: 45.610616 — Longitude: -121.19476 — By: IKE

Year Built: Unknown — Year(s) Remodeled: Unknown — Original Design Code: Unknown

Area (sf): 4,100 — Length (ft): 84 (NE-SW) — Width (ft): 40 (NW-SE)

No. of Stories: 1 (plus mezzanine) — Story Height: 24 ft — Total Height: 24 ft

USE ☐ Industrial ☑ Office ☐ Warehouse ☐ Hospital ☐ Residential ☐ Educational ☑ Other: Service Center/Garage

CONSTRUCTION DATA

Gravity Load Structural System: Structural steel

Exterior Transverse Walls: Corrugated metal panels — Openings? Yes

Exterior Longitudinal Walls: Corrugated metal panels — Openings? Yes

Roof Materials/Framing: Corrugated metals panels over light gauge metal joists supported by structural steel frames

Intermediate Floors/Framing: Mezzanine - plywood sheathing over wood framing

Ground Floor: Concrete slab on grade

Columns: Structural steel — Foundation: Spread footings

General Condition of Structure: Good (structural steel appears to be in good condition)

Levels Below Grade? No

Special Features and Comments: None

LATERAL-FORCE-RESISTING SYSTEM

	Longitudinal	Transverse
System:	Rod bracing	Rod bracing
Vertical Elements:	Steel columns	Steel columns
Diaphragms:	Rod bracing	Rod bracing
Connections:	Rod bracing bolted to steel columns at top and bottom	Rod bracing bolted to steel columns at top and bottom

EVALUATION DATA

BSE-1N Spectral Response Accelerations: S_{Ds}= 0.458 — S_{D1}= 0.290

Soil Factors: Class= Site Class D

BSE-1E Spectral Response Accelerations: S_{XS}= 0.258 — S_{X1}= 0.157

Level of Seismicity: High — Performance Level: Life Safety

Building Period: T= 0.217 seconds

Spectral Acceleration: S_a= min($S_{X1,\ BSE\text{-}1E}$ / T = 0.724, $S_{X1,\ BSE\text{-}1N}$ = 0.343) = 0.343

Modification Factor: $C_mC_1C_2$= 1.0 (1-story S3) — Building Weight: W= 107 kips

Pseudo Lateral Force: $V = C_mC_1C_2S_aW$= 37 kips

BUILDING CLASSIFICATION: S3

REQUIRED TIER 1 CHECKLISTS

	Yes	No
Basic Configuration Checklist	☑	☐
Building Type **S3** Structural Checklist	☑	☐
Nonstructural Component Checklist	☑	☐

FURTHER EVALUATION REQUIREMENT: n/a

ASCE 41-13 Tier 1 Checklists

FIRM:	KPFF Consulting Engineers
PROJECT NAME:	NW Natural - The Dalles Service Center
SEISMICITY LEVEL:	High
PROJECT NUMBER:	1600122
COMPLETED BY:	IKE
DATE COMPLETED:	May 3, 2016
REVIEWED BY:	IKE
REVIEW DATE:	August 5, 2016

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

16.1 Basic Checklist

Very Low Seismicity

Structural Components

RATING				DESCRIPTION	COMMENTS
C ☐	NC ☐	N/A ☐	U ☒	LOAD PATH: The structure shall contain a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation. (Commentary: Sec. A.2.1.1. Tier 2: Sec. 5.4.1.1)	Unclear how the mezzanine attaches to the steel frames. The metal building alone appears to have a complete load path: metal roof decking and roof diagonal rod bracing, diagonal rod bracing in the N-S direction and moment frames in the E-W direction.
C ☐	NC ☐	N/A ☒	U ☐	WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections shall have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.5.3.7. (Commentary: Sec. A.5.1.1. Tier 2: Sec. 5.7.1.1)	There are no concrete or masonry walls.

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

Project Name NW Natural - The Dalles Service Center
Project Number 1600122

16.1.2LS Life Safety Basic Configuration Checklist

Low Seismicity

Building System

General

RATING				DESCRIPTION	COMMENTS
C ☐	NC ☐	N/A ☐	U ☒	LOAD PATH: The structure shall contain a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation. (Commentary: Sec. A.2.1.1. Tier 2: Sec. 5.4.1.1)	Unclear how the mezzanine attaches to the steel frames. The metal building alone appears to have a complete load path: metal roof decking and roof diagonal rod bracing, diagonal rod bracing in the N-S direction and moment frames in the E-W direction.
C ☐	NC ☐	N/A ☒	U ☐	ADJACENT BUILDINGS: The clear distance between the building being evaluated and any adjacent building is greater than 4% of the height of the shorter building. This statement need not apply for the following building types: W1, W1A, and W2. (Commentary: Sec. A.2.1.2. Tier 2: Sec. 5.4.1.2)	There are no immediately adjacent buildings.
C ☐	NC ☐	N/A ☐	U ☒	MEZZANINES: Interior mezzanine levels are braced independently from the main structure or are anchored to the seismic-force-resisting elements of the main structure. (Commentary: Sec. A.2.1.3. Tier 2: Sec. 5.4.1.3)	The mezzanine connections to the main steel frame were not exposed to view, and building structure drawings were not available for review. It is not clear how the mezzanine is laterally braced.

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

Project Name NW Natural - The Dalles Service Center
Project Number 1600122

Building Configuration

RATING				DESCRIPTION	COMMENTS
C ☐	NC ☐	N/A ☒	U ☐	WEAK STORY: The sum of the shear strengths of the seismic-force-resisting system in any story in each direction is not less than 80% of the strength in the adjacent story above. (Commentary: Sec. A2.2.2. Tier 2: Sec. 5.4.2.1)	This is a one-story building (with the exception of the mezzanine).
C ☐	NC ☐	N/A ☒	U ☐	SOFT STORY: The stiffness of the seismic-force-resisting system in any story is not less than 70% of the seismic-force-resisting system stiffness in an adjacent story above or less than 80% of the average seismic-force-resisting system stiffness of the three stories above. (Commentary: Sec. A.2.2.3. Tier 2: Sec. 5.4.2.2)	This is a one-story building (with the exception of the mezzanine).
C ☒	NC ☐	N/A ☐	U ☐	VERTICAL IRREGULARITIES: All vertical elements in the seismic-force-resisting system are continuous to the foundation. (Commentary: Sec. A.2.2.4. Tier 2: Sec. 5.4.2.3)	The steel frames are continuous to the foundation.
C ☒	NC ☐	N/A ☐	U ☐	GEOMETRY: There are no changes in the net horizontal dimension of the seismic-force-resisting system of more than 30% in a story relative to adjacent stories, excluding one-story penthouses and mezzanines. (Commentary: Sec. A.2.2.5. Tier 2: Sec. 5.4.2.4)	This is a one-story building, and the steel frames appear to be symmetric.

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☒	☐	MASS: There is no change in effective mass more than 50% from one story to the next. Light roofs, penthouses, and mezzanines need not be considered. (Commentary: Sec. A.2.2.6. Tier 2: Sec. 5.4.2.5)	This is a one-story building (with the exception of the mezzanine).
☒	☐	☐	☐	TORSION: The estimated distance between the story center of mass and the story center of rigidity is less than 20% of the building width in either plan dimension. (Commentary: Sec. A.2.2.7. Tier 2: Sec. 5.4.2.6)	

Moderate Seismicity

Geologic Site Hazards

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☐	☒	LIQUEFACTION: Liquefaction-susceptible, saturated, loose granular soils that could jeopardize the building's seismic performance shall not exist in the foundation soils at depths within 50 ft under the building. (Commentary: Sec. A.6.1.1. Tier 2: 5.4.3.1)	A geotechnical report was not available for review.
☐	☐	☐	☒	SLOPE FAILURE: The building site is sufficiently remote from potential earthquake-induced slope failures or rockfalls to be unaffected by such failures or is capable of accommodating any predicted movements without failure. (Commentary: Sec. A.6.1.2. Tier 2: 5.4.3.1)	A geotechnical report was not available for review.

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☐	☒	SURFACE FAULT RUPTURE: Surface fault rupture and surface displacement at the building site are not anticipated. (Commentary: Sec. A.6.1.3. Tier 2: 5.4.3.1)	A geotechnical report was not available for report.

High Seismicity

Foundation Configuration

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☒	☐	☐	☐	OVERTURNING: The ratio of the least horizontal dimension of the seismic-force-resisting system at the foundation level to the building height (base/height) is greater than $0.6S_a$. (Commentary: Sec. A.6.2.1. Tier 2: Sec. 5.4.3.3)	
C	NC	N/A	U		
☐	☐	☐	☒	TIES BETWEEN FOUNDATION ELEMENTS: The foundation has ties adequate to resist seismic forces where footings, piles, and piers are not restrained by beams, slabs, or soils classified as Site Class A, B, or C. (Commentary: Sec. A.6.2.2. Tier 2: Sec. 5.4.3.4)	Without structural drawings, it is not known if foundation ties are present between column footings.

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

ASCE 41-13 Tier 1 Checklists

FIRM:	KPFF Consulting Engineers
PROJECT NAME:	NW Natural - The Dalles Service Center
SEISMICITY LEVEL:	High
PROJECT NUMBER:	1600122
COMPLETED BY:	IKE
DATE COMPLETED:	May 3, 2016
REVIEWED BY:	IKE
REVIEW DATE:	August 5, 2016

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

Project Name NW Natural - The Dalles Service Center
Project Number 1600122

16.6LS Life Safety Structural Checklist for Building Type S3: Steel Light Frames

Low and Moderate Seismicity

Seismic-Force-Resisting System

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☐	☒	BRACE AXIAL STRESS CHECK: The axial stress in the diagonals, calculated using the Quick Check procedure of Section 4.5.3.4, is less than $0.50F_y$. (Commentary: Sec. A.3.3.1.2. Tier 2: Sec. 5.5.4.1)	Without structural drawings and visible access to the north end of the building, the quantity of diagonal rod bracing bays is not known. The steel grade for the rod bracing is also unknown.

Connections

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☒	☐	☐	☐	TRANSFER TO STEEL FRAMES: Diaphragms are connected for transfer of seismic forces to the steel frames. (Commentary: Sec. A.5.2.2. Tier 2: Sec. 5.7.2)	Roof diaphragm rod bracing is connected to the frame columns.
☒	☐	☐	☐	STEEL COLUMNS: The columns in seismic-force-resisting frames are anchored to the building foundation. (Commentary: Sec. A.5.3.1. Tier 2: Sec. 5.7.3.1)	The columns are bolted to the concrete slab/foundation.

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

High Seismicity

Seismic-Force-Resisting System

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☐	☒	MOMENT-RESISTING CONNECTIONS: All moment connections are able to develop the elastic moment (F_yS) of the adjoining members. (Commentary: Sec. A.3.1.3.4. Tier 2: Sec. 5.5.2.2.1)	Without structural drawings that describe the frame details, it is not possible to perform this calculation.
☐	☐	☐	☒	COMPACT MEMBERS: All frame elements shall meet compact section requirements set forth by AISC 360, Table B4.1. (Commentary: Sec. A.3.1.3.8. Tier 2: Sec. 5.5.2.2.4)	Without structural drawings that describe the frame details, it is not possible to determine section properties.
☒	☐	☐	☐	OTHER DIAPHRAGMS: The diaphragm does not consist of a system other than wood, metal deck, concrete, or horizontal bracing. (Commentary: Sec. A.4.7.1. Tier 2: Sec. 5.6.5)	The roof diaphragm has horizontal/diagonal bracing.

Connections

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☒	☐	☐	☐	ROOF PANELS: Metal, plastic, or cementitious roof panels are positively attached to the roof framing to resist seismic forces. (Commentary: Sec. A.5.5.1. Tier 2: Sec. 5.7.5)	The roof panels appear to be fastened to the roof framing.

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☒	☐	☐	☐	WALL PANELS: Metal, fiberglass, or cementitious wall panels are positively attached to the framing and foundation to resist seismic forces. (Commentary: Sec. A.5.5.2. Tier 2: Sec. 5.7.5)	The wall panels are fastened to the wall framing, the framing to the main moment frames, and the main frames to the foundation.

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

ASCE 41-13 Tier 1 Checklists

FIRM:	KPFF Consulting Engineers
PROJECT NAME:	NW Natural - The Dalles Service Center
SEISMICITY LEVEL:	High
PROJECT NUMBER:	1600122
COMPLETED BY:	IKE
DATE COMPLETED:	May 3, 2016
REVIEWED BY:	IKE
REVIEW DATE:	August 5, 2016

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

16.17 Nonstructural Checklist

The Performance Level is designated LS for Life Safety or PR for Position Retention. The level of seismicity is designated as "not required" or by L, M, or H, for Low, Moderate, and High.

All Seismicity Levels

Life Safety Systems

RATING				DESCRIPTION	COMMENTS
C ☐	NC ☐	N/A ☒	U ☐	LS-LMH; PR-LMH. FIRE SUPPRESSION PIPING: Fire suppression piping is anchored and braced in accordance with NFPA-13. (Commentary: Sec. A.7.13.1. Tier 2: Sec. 13.7.4)	The building does not contain fire sprinklers.
C ☐	NC ☐	N/A ☒	U ☐	LS-LMH; PR-LMH. FLEXIBLE COUPLINGS: Fire suppression piping has flexible couplings in accordance with NFPA-13. (Commentary: Sec. A.7.13.2. Tier 2: Sec. 13.7.4)	The building does not contain fire sprinklers.
C ☒	NC ☐	N/A ☐	U ☐	LS-LMH; PR-LMH. EMERGENCY POWER: Equipment used to power or control life safety systems is anchored or braced. (Commentary: Sec. A.7.12.1. Tier 2: Sec. 13.7.7)	The generator is anchored to a concrete slab.
C ☐	NC ☐	N/A ☒	U ☐	LS-LMH; PR-LMH. STAIR AND SMOKE DUCTS: Stair pressurization and smoke control ducts are braced and have flexible connections at seismic joints. (Commentary: Sec. A.7.14.1. Tier 2: Sec. 13.7.6)	The building does not contain seismic joints.

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☒	☐	LS-MH; PR-MH. SPRINKLER CEILING CLEARANCE: Penetrations through panelized ceilings for fire suppression devices provide clearances in accordance with NFPA-13. (Commentary: Sec. A.7.13.3. Tier 2: Sec. 13.7.4)	The building does not contain fire sprinklers.
C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-LMH. EMERGENCY LIGHTING: Emergency and egress lighting equipment is anchored or braced. (Commentary: Sec. A.7.3.1. Tier 2: Sec. 13.7.9)	This check is not required for the Life Safety Performance Level.

Hazardous Materials

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☒	☐	LS-LMH; PR-LMH. HAZARDOUS MATERIAL EQUIPMENT: Equipment mounted on vibration isolators and containing hazardous material is equipped with restraints or snubbers. (Commentary: Sec. A.7.12.2. Tier 2: 13.7.1)	This type of equipment, mounted on isolators, does not appear to occur in this building.
C	NC	N/A	U		
☐	☐	☒	☐	LS-LMH; PR-LMH. HAZARDOUS MATERIAL STORAGE: Breakable containers that hold hazardous material, including gas cylinders, are restrained by latched doors, shelf lips, wires, or other methods. (Commentary: Sec. A.7.15.1. Tier 2: Sec. 13.8.4)	There do not appear to be "breakable" containers that hold hazardous materials.

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☒	☐	☐	☐	LS-MH; PR-MH. HAZARDOUS MATERIAL DISTRIBUTION: Piping or ductwork conveying hazardous materials is braced or otherwise protected from damage that would allow hazardous material release. (Commentary: Sec. A.7.13.4. Tier 2: Sec. 13.7.3 and 13.7.5)	Gas piping appears to be braced to the building.
☐	☒	☐	☐	LS-MH; PR-MH. SHUT-OFF VALVES: Piping containing hazardous material, including natural gas, has shut-off valves or other devices to limit spills or leaks. (Commentary: Sec. A.7.13.3. Tier 2: Sec. 13.7.3 and 13.7.5)	A natural shut-off valve was not identified.
☐	☒	☐	☐	LS-LMH; PR-LMH. FLEXIBLE COUPLINGS: Hazardous material ductwork and piping, including natural gas piping, has flexible couplings. (Commentary: Sec. A.7.15.4, Tier 2: Sec.13.7.3 and 13.7.5)	Couplings all appear to be rigid steel.
☐	☐	☒	☐	LS-MH; PR-MH. PIPING OR DUCTS CROSSING SEISMIC JOINTS: Piping or ductwork carrying hazardous material that either crosses seismic joints or isolation planes or is connected to independent structures has couplings or other details to accommodate the relative seismic displacements. (Commentary: Sec. A.7.13.6. Tier 2: Sec.13.7.3, 13.7.5, and 13.7.6)	There are no seismic joints.

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

Partitions

RATING				DESCRIPTION	COMMENTS
C ☐	NC ☐	N/A ☒	U ☐	LS-LMH; PR-LMH. UNREINFORCED MASONRY: Unreinforced masonry or hollow-clay tile partitions are braced at a spacing of at most 10 ft in Low or Moderate Seismicity, or at most 6 ft in High Seismicity. (Commentary: Sec. A.7.1.1. Tier 2: Sec. 13.6.2)	There are no masonry walls.
C ☐	NC ☐	N/A ☒	U ☐	LS-LMH; PR-LMH. HEAVY PARTITIONS SUPPORTED BY CEILINGS: The tops of masonry or hollow-clay tile partitions are not laterally supported by an integrated ceiling system. (Commentary: Sec. A.7.2.1. Tier 2: Sec. 13.6.2)	There are no heavy partitions supported by ceilings.
C ☐	NC ☐	N/A ☒	U ☐	LS-MH; PR-MH. DRIFT: Rigid cementitious partitions are detailed to accommodate the following drift ratios: in steel moment frame, concrete moment frame, and wood frame buildings, 0.02; in other buildings, 0.005. (Commentary A.7.1.2 Tier 2: Sec. 13.6.2)	There are no rigid cementitious partitions.
C ☐	NC ☐	N/A ☒	U ☐	LS-not required; PR-MH. LIGHT PARTITIONS SUPPORTED BY CEILINGS: The tops of gypsum board partitions are not laterally supported by an integrated ceiling system. (Commentary: Sec. A.7.2.1. Tier 2: Sec. 13.6.2)	This check is not required for the Life Safety Performance Level.

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-MH. STRUCTURAL SEPARATIONS: Partitions that cross structural separations have seismic or control joints. (Commentary: Sec. A.7.1.3. Tier 2. Sec. 13.6.2)	This check is not required for the Life Safety Performance Level.
C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-MH. TOPS: The tops of ceiling-high framed or panelized partitions have lateral bracing to the structure at a spacing equal to or less than 6 ft. (Commentary: Sec. A.7.1.4. Tier 2. Sec. 13.6.2)	This check is not required for the Life Safety Performance Level.

Ceilings

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☒	☐	LS-MH; PR-LMH. SUSPENDED LATH AND PLASTER: Suspended lath and plaster ceilings have attachments that resist seismic forces for every 12 ft^2 of area. (Commentary: Sec. A.7.2.3. Tier 2: Sec. 13.6.4)	There are no lath and plaster ceilings.
C	NC	N/A	U		
☐	☐	☐	☒	LS-MH; PR-LMH. SUSPENDED GYPSUM BOARD: Suspended gypsum board ceilings have attachments that resist seismic forces for every 12 ft^2 of area. (Commentary: Sec. A.7.2.3. Tier 2: Sec. 13.6.4)	This was not viewable for gypsum board ceilings.

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-MH. INTEGRATED CEILINGS: Integrated suspended ceilings with continuous areas greater than 144 ft^2, and ceilings of smaller areas that are not surrounded by restraining partitions, are laterally restrained at a spacing no greater than 12 ft with members attached to the structure above. Each restraint location has a minimum of four diagonal wires and compression struts, or diagonal members capable of resisting compression. (Commentary: Sec. A.7.2.2. Tier 2: Sec. 13.6.4)	This check is not required for the Life Safety Performance Level.
C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-MH. EDGE CLEARANCE: The free edges of integrated suspended ceilings with continuous areas greater than 144 ft^2 have clearances from the enclosing wall or partition of at least the following: in Moderate Seismicity, 1/2 in.; in High Seismicity, 3/4 in. (Commentary: Sec. A.7.2.4. Tier 2: Sec. 13.6.4)	This check is not required for the Life Safety Performance Level.
C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-MH. CONTINUITY ACROSS STRUCTURE JOINTS: The ceiling system does not cross any seismic joint and is not attached to multiple independent structures. (Commentary: Sec. A.7.2.5. Tier 2: Sec. 13.6.4)	This check is not required for the Life Safety Performance Level.
C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-H. EDGE SUPPORT: The free edges of integrated suspended ceilings with continuous areas greater than 144 ft^2 are supported by closure angles or channels not less than 2 in. wide. (Commentary: Sec. A.7.2.6. Tier 2: Sec. 13.6.4)	This check is not required for the Life Safety Performance Level.

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-H. SEISMIC JOINTS: Acoustical tile or lay-in panel ceilings have seismic separation joints such that each continuous portion of the ceiling is no more than 2500 ft^2 and has a ratio of long-to-short dimension no more than 4-to-1. (Commentary: Sec. A.7.2.7. Tier 2: 13.6.4)	This check is not required for the Life Safety Performance Level.

Light Fixtures

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☒	☐	LS-MH; PR-MH. INDEPENDENT SUPPORT: Light fixtures that weigh more per square foot than the ceiling they penetrate are supported independent of the grid ceiling suspension system by a minimum of two wires at diagonally opposite corners of each fixture. (Commentary: Sec. A.7.3.2. Tier 2: Sec. 13.6.4 and 13.7.9)	Grid ceilings do not occur. Light fixtures are connected directly to the gypsum board ceilings.
C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-H. PENDANT SUPPORTS: Light fixtures on pendant supports are attached at a spacing equal to or less than 6 ft and, if rigidly supported, are free to move with the structure to which they are attached without damaging adjoining components. (Commentary: A.7.3.3. Tier 2: Sec. 13.7.9)	This check is not required for the Life Safety Performance Level.
C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-H. LENS COVERS: Lens covers on light fixtures are attached with safety devices. (Commentary: Sec. A.7.3.4. Tier 2: Sec. 13.7.9)	This check is not required for the Life Safety Performance Level.

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Project Name NW Natural - The Dalles Service Center
Project Number 1600122

Cladding and Glazing

RATING				DESCRIPTION	COMMENTS
C ☐	NC ☐	N/A ☒	U ☐	LS-MH; PR-MH. CLADDING ANCHORS: Cladding components weighing more than 10 lb/ft^2 are mechanically anchored to the structure at a spacing equal to or less than the following: for Life Safety in Moderate Seismicity, 6 ft; for Life Safety in High Seismicity and for Position Retention in any seismicity, 4 ft. (Commentary: Sec. A.7.4.1. Tier 2: Sec. 13.6.1)	The building does not have this type of cladding.
C ☐	NC ☐	N/A ☒	U ☐	LS-MH; PR-MH. CLADDING ISOLATION: For steel or concrete moment frame buildings, panel connections are detailed to accommodate a story drift ratio of at least the following: for Life Safety in Moderate Seismicity, 0.01; for Life Safety in High Seismicity and for Position Retention in any seismicity, 0.02. (Commentary: Sec. A.7.4.3. Tier 2: Section 13.6.1)	All walls are metal siding and are "hard-fastened" directly to the structural frame.
C ☐	NC ☐	N/A ☒	U ☐	LS-MH; PR-MH. MULTI-STORY PANELS: For multi-story panels attached at more than one floor level, panel connections are detailed to accommodate a story drift ratio of at least the following: for Life Safety in Moderate Seismicity, 0.01; for Life Safety in High Seismicity and for Position Retention in any seismicty, 0.02. (Commentary: Sec. A.7.4.4. Tier 2: Sec. 13.6.1)	There are no multi-story panels.
C ☐	NC ☐	N/A ☒	U ☐	LS-MH; PR-MH. PANEL CONNECTIONS: Cladding panels are anchored out-of-plane with a minimum number of connections for each wall panel, as follows: for Life Safety in Moderate Seismicity, 2 connections; for Life Safety in High Seismicity and for Position Retention in any seismicity, 4 connections. (Commentary: Sec. A.7.4.5. Tier 2: Sec. 13.6.1.4)	There are no cladding panels.

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☒	☐	☐	☐	LS-MH; PR-MH. BEARING CONNECTIONS: Where bearing connections are used, there is a minimum of two bearing connections for each cladding panel. (Commentary: Sec. A.7.4.6. Tier 2: Sec. 13.6.1.4)	The metal siding are fastened directly to the wall framing at several locations.
☐	☐	☒	☐	LS-MH; PR-MH. INSERTS: Where concrete cladding components use inserts, the inserts have positive anchorage or are anchored to reinforcing steel. (Commentary: Sec. A.7.4.7. Tier 2: Sec. 13.6.1.4)	There are no concrete cladding components.
☐	☐	☐	☒	LS-MH; PR-MH. OVERHEAD GLAZING: Glazing panes of any size in curtain walls and individual interior or exterior panes over 16 ft^2 in area are laminated annealed or laminated heat-strengthened glass and are detailed to remain in the frame when cracked. (Commentary: Sec. A.7.4.8: Tier 2: Sec. 13.6.1.5)	The type of glazing is not known.

Masonry Veneer

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☒	☐	LS-LMH; PR-LMH. TIES: Masonry veneer is connected to the backup with corrosion-resistant ties. There is a minimum of one tie for every 2-2/3 ft^2, and the ties have spacing no greater than the following: for Life Safety in Low or Moderate Seismicity, 36 in.; for Life Safety in High Seismicity and for Position Retention in any seismicity, 24 in. (Commentary: Sec. A.7.5.1. Tier 2: Sec. 13.6.1.2)	There is no masonry veneer.

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C	NC	N/A	U		
☐	☐	☒	☐	LS-LMH; PR-LMH. SHELF ANGLES: Masonry veneer is supported by shelf angles or other elements at each floor above the ground floor. (Commentary: Sec. A.7.5.2. Tier 2: Sec. 13.6.1.2)	There is no masonry veneer.
C	NC	N/A	U		
☐	☐	☒	☐	LS-LMH; PR-LMH. WEAKENED PLANES: Masonry veneer is anchored to the backup adjacent to weakened planes, such as at the locations of flashing. (Commentary: Sec. A.7.5.3. Tier 2: Sec. 13.6.1.2)	There is no masonry veneer.
C	NC	N/A	U		
☐	☐	☒	☐	LS-LMH; PR-LMH. UNREINFORCED MASONRY BACKUP: There is no unreinforced masonry backup. (Commentary: Sec. A.7.7.2. Tier 2: Section 13.6.1.1 and 13.6.1.2)	There is no unreinforced masonry.
C	NC	N/A	U		
☐	☐	☒	☐	LS-MH; PR-MH. STUD TRACKS: For veneer with metal stud backup, stud tracks are fastened to the structure at a spacing equal to or less than 24 in. on center. (Commentary: Sec. A.7.6.1. Tier 2: Section 13.6.1.1 and 13.6.1.2)	There is no masonry veneer.

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C	NC	N/A	U		
☐	☐	☒	☐	LS-MH; PR-MH. ANCHORAGE: For veneer with concrete block or masonry backup, the backup is positively anchored to the structure at a horizontal spacing equal to or less than 4 ft along the floors and roof. (Commentary: Sec. A.7.7.1. Tier 2: Section 13.6.1.1 and 13.6.1.2)	There is no masonry veneer.
C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-MH. WEEP HOLES: In veneer anchored to stud walls, the veneer has functioning weep holes and base flashing. (Commentary: Sec. A.7.5.6. Tier 2: Section 13.6.1.2)	This check is not required for the Life Safety Performance Level.
C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-MH. OPENINGS: For veneer with metal stud backup, steel studs frame window and door openings. (Commentary: Sec. A.7.6.2. Tier 2: Sec. 13.6.1.1 and 13.6.1.2)	This check is not required for the Life Safety Performance Level.

Parapets, Cornices, Ornamentation, and Appendages

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☒	☐	LS-LMH; PR-LMH. URM PARAPETS OR CORNICES: Laterally unsupported unreinforced masonry parapets or cornices have height-to-thickness ratios no greater than the following: for Life Safety in Low or Moderate Seismicity, 2.5; for Life Safety in High Seismicity and for Position Retention in any seismicity, 1.5. (Commentary: Sec. A.7.8.1. Tier 2: Sec. 13.6.5)	There are no URM parapets.

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C	NC	N/A	U		
☐	☐	☒	☐	LS-LMH; PR-LMH. CANOPIES: Canopies at building exits are anchored to the structure at a spacing no greater than the following: for Life Safety in Low or Moderate Seismicity, 10 ft; for Life Safety in High Seismicity and for Position Retention in any seismicity, 6 ft. (Commentary: Sec. A.7.8.2. Tier 2: Sec. 13.6.6)	There are no canopies.
☐	☐	☒	☐	LS-MH; PR-LMH. CONCRETE PARAPETS: Concrete parapets with height-to-thickness ratios greater than 2.5 have vertical reinforcement. (Commentary: Sec. A.7.8.3. Tier 2: Sec. 13.6.5)	There are no concrete parapets.
☒	☐	☐	☐	LS-MH; PR-LMH. APPENDAGES: Cornices, parapets, signs, and other ornamentation or appendages that extend above the highest point of anchorage to the structure or cantilever from components are reinforced and anchored to the structural system at a spacing equal to or less than 6 ft. This checklist item does not apply to parapets or cornices covered by other checklist items. (Commentary: Sec. A.7.8.4. Tier 2: Sec. 13.6.6)	Where these items occur, they are anchored.

Masonry Chimneys

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☒	☐	LS-LMH; PR-LMH. URM CHIMNEYS: Unreinforced masonry chimneys extend above the roof surface no more than the following: for Life Safety in Low or Moderate Seismicity, 3 times the least dimension of the chimney; for Life Safety in High Seismicity and for Position Retention in any seismicity, 2 times the least dimension of the chimney. (Commentary: Sec. A.7.9.1. Tier 2: 13.6.7)	There are no URM chimneys.

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☒	☐	LS-LMH; PR-LMH. ANCHORAGE: Masonry chimneys are anchored at each floor level, at the topmost ceiling level, and at the roof. (Commentary: Sec. A.7.9.2. Tier 2: 13.6.7)	There are no masonry chimneys.

Stairs

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☒	☐	LS-LMH; PR-LMH. STAIR ENCLOSURES: Hollow-clay tile or unreinforced masonry walls around stair enclosures are restrained out-of-plane and have height-to-thickness ratios not greater than the following: for Life Safety in Low or Moderate Seismicity, 15-to-1; for Life Safety in High Seismicity and for Position Retention in any seismicity, 12-to-1. (Commentary: Sec. A.7.10.1. Tier 2: Sec. 13.6.2 and 13.6.8)	These types of stair enclosures do not occur in this building.
C	NC	N/A	U		
☐	☐	☐	☒	LS-LMH; PR-LMH. STAIR DETAILS: In moment frame structures, the connection between the stairs and the structure does not rely on shallow anchors in concrete. Alternatively, the stair details are capable of accommodating the drift calculated using the Quick Check procedure of Section 4.5.3.1 without including any lateral stiffness contribution from the stairs. (Commentary: Sec. A.7.10.2. Tier 2: 13.6.8)	The stair details were not accessible to view, and structural drawings were not available for review; therefore, the condition is not known.

Contents and Furnishings

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☒	☐	LS-MH; PR-MH. INDUSTRIAL STORAGE RACKS: Industrial storage racks or pallet racks more than 12 ft high meet the requirements of ANSI/MH 16.1 as modified by ASCE 7 Chapter 15. (Commentary: Sec. A.7.11.1. Tier 2: Sec. 13.8.1)	There did not appear to be any storage racks more than 12 feet tall.

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C	NC	N/A	U		
☐	☒	☐	☐	LS-H; PR-MH. TALL NARROW CONTENTS: Contents more than 6 ft high with a height-to-depth or height-to-width ratio greater than 3-to-1 are anchored to the structure or to each other. (Commentary: Sec. A.7.11.2. Tier 2: Sec. 13.8.2)	Not all cabinets/refrigerators/storage racks/etc. are anchored.
C	NC	N/A	U		
☐	☒	☐	☐	LS-H; PR-H. FALL-PRONE CONTENTS: Equipment, stored items, or other contents weighing more than 20 lb whose center of mass is more than 4 ft above the adjacent floor level are braced or otherwise restrained. (Commentary: Sec. A.7.11.3. Tier 2: Sec. 13.8.2)	Heavy items on storage racks do not appear to be braced or anchored to the racks.
C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-MH. ACCESS FLOORS: Access floors more than 9 in. high are braced. (Commentary: Sec. A.7.11.4. Tier 2: Sec. 13.8.3)	This check is not required for the Life Safety Performance Level.
C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-MH. EQUIPMENT ON ACCESS FLOORS: Equipment and other contents supported by access floor systems are anchored or braced to the structure independent of the access floor. (Commentary: Sec. A.7.11.5. Tier 2: Sec. 13.7.7 and 13.8.3)	This check is not required for the Life Safety Performance Level.

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C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-H. SUSPENDED CONTENTS: Items suspended without lateral bracing are free to swing from or move with the structure from which they are suspended without damaging themselves or adjoining components. (Commentary. A.7.11.6. Tier 2: Sec. 13.8.2)	This check is not required for the Life Safety Performance Level.

Mechanical and Electrical Equipment

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☒	☐	☐	☐	LS-H; PR-H. FALL-PRONE EQUIPMENT: Equipment weighing more than 20 lb whose center of mass is more than 4 ft above the adjacent floor level, and which is not in-line equipment, is braced. (Commentary: A.7.12.4. Tier 2: 13.7.1 and 13.7.7)	Suspended equipment appears to be braced.
C	NC	N/A	U		
☒	☐	☐	☐	LS-H; PR-H. IN-LINE EQUIPMENT: Equipment installed in-line with a duct or piping system, with an operating weight more than 75 lb, is supported and laterally braced independent of the duct or piping system. (Commentary: Sec. A.7.12.5. Tier 2: Sec. 13.7.1)	Suspended equipment appears to be braced.
C	NC	N/A	U		
☒	☐	☐	☐	LS-H; PR-MH. TALL NARROW EQUIPMENT: Equipment more than 6 ft high with a height-to-depth or height-to-width ratio greater than 3-to-1 is anchored to the floor slab or adjacent structural walls. (Commentary: Sec. A.7.12.6. Tier 2: Sec. 13.7.1 and 13.7.7)	Tall narrow equipment appears to be anchored.

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-MH. MECHANICAL DOORS: Mechanically operated doors are detailed to operate at a story drift ratio of 0.01. (Commentary: Sec. A.7.12.7. Tier 2: Sec. 13.6.9)	This check is not required for the Life Safety Performance Level.
C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-H. SUSPENDED EQUIPMENT: Equipment suspended without lateral bracing is free to swing from or move with the structure from which it is suspended without damaging itself or adjoining components. (Commentary: Sec. A.7.12.8. Tier 2: Sec. 13.7.1 and 13.7.7)	This check is not required for the Life Safety Performance Level.
C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-H. VIBRATION ISOLATORS: Equipment mounted on vibration isolators is equipped with horizontal restraints or snubbers and with vertical restraints to resist overturning. (Commentary: Sec. A.7.12.9. Tier 2: Sec. 13.7.1)	This check is not required for the Life Safety Performance Level.
C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-H. HEAVY EQUIPMENT: Floor-supported or platform-supported equipment weighing more than 400 lb is anchored to the structure. (Commentary: Sec. A.7.12.10. Tier 2: 13.7.1 and 13.7.7)	This check is not required for the Life Safety Performance Level.

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-H. ELECTRICAL EQUIPMENT: Electrical equipment is laterally braced to the structure. (Commentary: Sec. A.7.12.11. Tier 2: 13.7.7)	This check is not required for the Life Safety Performance Level.
☐	☐	☒	☐	LS-not required; PR-H. CONDUIT COUPLINGS: Conduit greater than 2.5 in. trade size that is attached to panels, cabinets, or other equipment and is subject to relative seismic displacement has flexible couplings or connections. (Commentary: Sec. A.7.12.12. Tier 2: 13.7.8)	This check is not required for the Life Safety Performance Level.

Piping

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-H. FLEXIBLE COUPLINGS: Fluid and gas piping has flexible couplings. (Commentary: Sec. A.7.13.2. Tier 2: Sec. 13.7.3 and 13.7.5)	This check is not required for the Life Safety Performance Level.
☐	☐	☒	☐	LS-not required; PR-H. FLUID AND GAS PIPING: Fluid and gas piping is anchored and braced to the structure to limit spills or leaks. (Commentary: Sec. A.7.13.4. Tier 2: Sec. 13.7.3 and 13.7.5)	This check is not required for the Life Safety Performance Level.

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-H. C-CLAMPS: One-sided C-clamps that support piping larger than 2.5 in. in diameter are restrained. (Commentary: Sec. A.7.13.5. Tier 2: Sec. 13.7.3 and 13.7.5)	This check is not required for the Life Safety Performance Level.
☐	☐	☒	☐	LS-not required; PR-H. PIPING CROSSING SEISMIC JOINTS: Piping that crosses seismic joints or isolation planes or is connected to independent structures has couplings or other details to accommodate the relative seismic displacements. (Commentary: Sec. A7.13.6. Tier 2: Sec.13.7.3 and Sec. 13.7.5)	This check is not required for the Life Safety Performance Level.

Ducts

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-H. DUCT BRACING: Rectangular ductwork larger than 6 ft^2 in cross-sectional area and round ducts larger than 28 in. in diameter are braced. The maximum spacing of transverse bracing does not exceed 30 ft. The maximum spacing of longitudinal bracing does not exceed 60 ft. (Commentary: Sec. A.7.14.2. Tier 2: Sec. 13.7.6)	This check is not required for the Life Safety Performance Level.
☐	☐	☒	☐	LS-not required; PR-H. DUCT SUPPORT: Ducts are not supported by piping or electrical conduit. (Commentary: Sec. A.7.14.3. Tier 2: Sec. 13.7.6)	This check is not required for the Life Safety Performance Level.

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-H. DUCTS CROSSING SEISMIC JOINTS: Ducts that cross seismic joints or isolation planes or are connected to independent structures have couplings or other details to accommodate the relative seismic displacements. (Commentary: Sec. A.7.14.5. Tier 2: Sec. 13.7.6)	This check is not required for the Life Safety Performance Level.

Elevators

RATING				DESCRIPTION	COMMENTS
C	NC	N/A	U		
☐	☐	☒	☐	LS-H; PR-H. RETAINER GUARDS: Sheaves and drums have cable retainer guards. (Commentary: Sec. A.7.16.1. Tier 2: 13.8.6)	There are no elevators.
C	NC	N/A	U		
☐	☐	☒	☐	LS-H; PR-H. RETAINER PLATE: A retainer plate is present at the top and bottom of both car and counterweight. (Commentary: Sec. A.7.16.2. Tier 2: 13.8.6)	There are no elevators.
C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-H. ELEVATOR EQUIPMENT: Equipment, piping, and other components that are part of the elevator system are anchored. (Commentary: Sec. A.7.16.3. Tier 2: 13.8.6)	This check is not required for the Life Safety Performance Level.

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-H. SEISMIC SWITCH: Elevators capable of operating at speeds of 150 ft/min or faster are equipped with seismic switches that meet the requirements of ASME A17.1 or have trigger levels set to 20% of the acceleration of gravity at the base of the structure and 50% of the acceleration of gravity in other locations. (Commentary: Sec. A.7.16.4. Tier 2: 13.8.6)	This check is not required for the Life Safety Performance Level.
☐	☐	☒	☐	LS-not required; PR-H. SHAFT WALLS: Elevator shaft walls are anchored and reinforced to prevent toppling into the shaft during strong shaking. (Commentary: Sec. A.7.16.5. Tier 2: 13.8.6)	This check is not required for the Life Safety Performance Level.
☐	☐	☒	☐	LS-not required; PR-H. COUNTERWEIGHT RAILS: All counterweight rails and divider beams are sized in accordance with ASME A17.1. (Commentary: Sec. A.7.16.6. Tier 2: 13.8.6)	This check is not required for the Life Safety Performance Level.
☐	☐	☒	☐	LS-not required; PR-H. BRACKETS: The brackets that tie the car rails and the counterweight rail to the structure are sized in accordance with ASME A17.1. (Commentary: Sec. A.7.16.7. Tier 2: 13.8.6)	This check is not required for the Life Safety Performance Level.

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-H. SPREADER BRACKET: Spreader brackets are not used to resist seismic forces. (Commentary: Sec. A.7.16.8. Tier 2: 13.8.6)	This check is not required for the Life Safety Performance Level.
C	NC	N/A	U		
☐	☐	☒	☐	LS-not required; PR-H. GO-SLOW ELEVATORS: The building has a go-slow elevator system. (Commentary: Sec. A.7.16.9. Tier 2: 13.8.6)	This check is not required for the Life Safety Performance Level.

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

BEFORE THE

PUBLIC UTILITY COMMISSION OF OREGON

UG 527

NW Natural

Exhibit of Daniel B. Kizer, Joe S. Karney, Wayne K. Pipes, and Brian E. Fellon

CAPITAL ADDITIONS
EXHIBIT 203

November 25, 2025

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Executive Managing Director

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NW Natural Land Acquisition and Negotiation Summary – The Dalles, OR

Objective: Cushman & Wakefield was engaged to identify and secure a land site or existing structure for purchase. The ideal site needed to be a strategically located, approximately (2) two to four (4) acre parcel of commercially or industrially zoned land with easy access to transportation links, ensuring both optimal value and cost efficiency. We completed this search over a period of multiple years, unable to find a structure which (1) existed and (2) was financially feasible to develop into the building NW Natural needed.

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1. Site Selection Process:

Our team followed our typical site selection process below; however, what was unique about this requirement was the limited availability of inventory, both in existing structures that could be converted and available land.

- *Defining Requirements*: Established key criteria, including site size, zoning, accessibility, infrastructure availability, and future expansion potential.
- *Market Research*: Assessed available properties, market conditions, recent sales, and comparable transactions to determine the best options. In this particular instance there were so few options being marketed that we actively called all sites that we felt could potentially meet NW Natural's need to identify off-market opportunities.
- *Property Shortlisting*: Identified top candidates based on cost, location, entitlement feasibility, and development readiness. There were very few sites, and most were non-conforming uses, or sites that use to be alternative uses. For example, we evaluated converting a movie theater for this use and it proved to be problematic and cost prohibitive. Suffice to say all rocks were uncovered.
- *Due Diligence*: Conducted site visits, environmental assessments, and legal compliance reviews to mitigate risks before advancing negotiations. Additionally, evaluated construction costs of reconfigurations versus the cost of new construction.

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2. Negotiation Strategy & Execution:

After a five year search for an existing facility that could be converted, we identified land at the Port of The Dalles which met the needs of NW Natural most efficiently; however, we initially began negotiating on sites 8 & 9, which contained attributes provided them a higher value for other users. Additionally, after our due diligence, it was determined that a significant amount of the lots was not developable, due to both slope as well as wetlands.

As a result, our negotiation strategy to pay only for the portion of the lots that NW Natural could develop and build on. Additionally, the Port preferred to have NW natural relocate to lots 4 & 5. NW Natural fit well on lots 4 & 5, and the attributes that made lots 8 & 9 a higher value for the Port did not impact NW Natural. However, lots 4 & 5 were larger so our team negotiated that we would pay for only the size of developable land we would have purchased on lots 8 & 9.

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3. Cost Savings Summary:

Our team's negotiation strategy was implemented to achieve optimal results and used two primary strategies:

1: Only pay on the useable land, not the land in entirety

2: Develop on the most cost affordable land (size and price) that fit NW Natural's need.

Originally, the Port placed NW Natural on lots 8 and 9, which had an asking price of $1,276,691.33. However, the Port later determined that these sites, despite their excellent views of the Columbia River Gorge, were not well-suited for industrial use. As a result, they instead offered lots 4, 5, and 6, stating that lots 8 and 9 were no longer an option.

Lots 4 and 5 were significantly larger (6.4 acres compared to 2.7 acres), with a combined asking price of $2,310,000—substantially more than the original lots. Despite this, we successfully negotiated for NW Natural to pay only for the usable area of lots 4 and 5.

After evaluating these lots, NW Natural not only secured the agreement to pay only for the usable portion but also negotiated an additional $75,000 credit from the Port. This resulted in a final purchase price of $999,999.00, making it the most cost-effective land option.

It is important to note that after evaluating multiple existing buildings and other sites in the area over a period of five (5) years, these were the only sites that would be suitable for this facility. The concern from the community was that NW Natural would have to look outside the Dalles, which from a business perspective did not serve customers as well, and from a real estate perspective would have been more costly.

Summary: Through a multi-year site selection process we were able to find multiple land and sites to be evaluated. However, after due diligence on multiple sites all sites were ruled out because they were either cost prohibitive (a reconfiguration far exceeded new construction costs) or they did not meet the needs of NW Natural (zoning, soils, etc). After we identified sites that could work we negotiated only to pay for land that could be developed and through due diligence and test fits identified the most cost effective solution for NW Natural that best meet their needs.

If you have any questions, we would be happy to provide additional information or have a discussion.

Thank you,

Matt Johnson
Executive Managing Director